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EL 4619 / 5776

POUND CREEK

ANNUAL REPORTS AND FINAL REPORT TO LICENCE FULL SURRENDER, FOR THE PERIOD 1/12/2010 TO 16/11/2017

Submitted by
South Australia Ludi Mining Pty Ltd
2017

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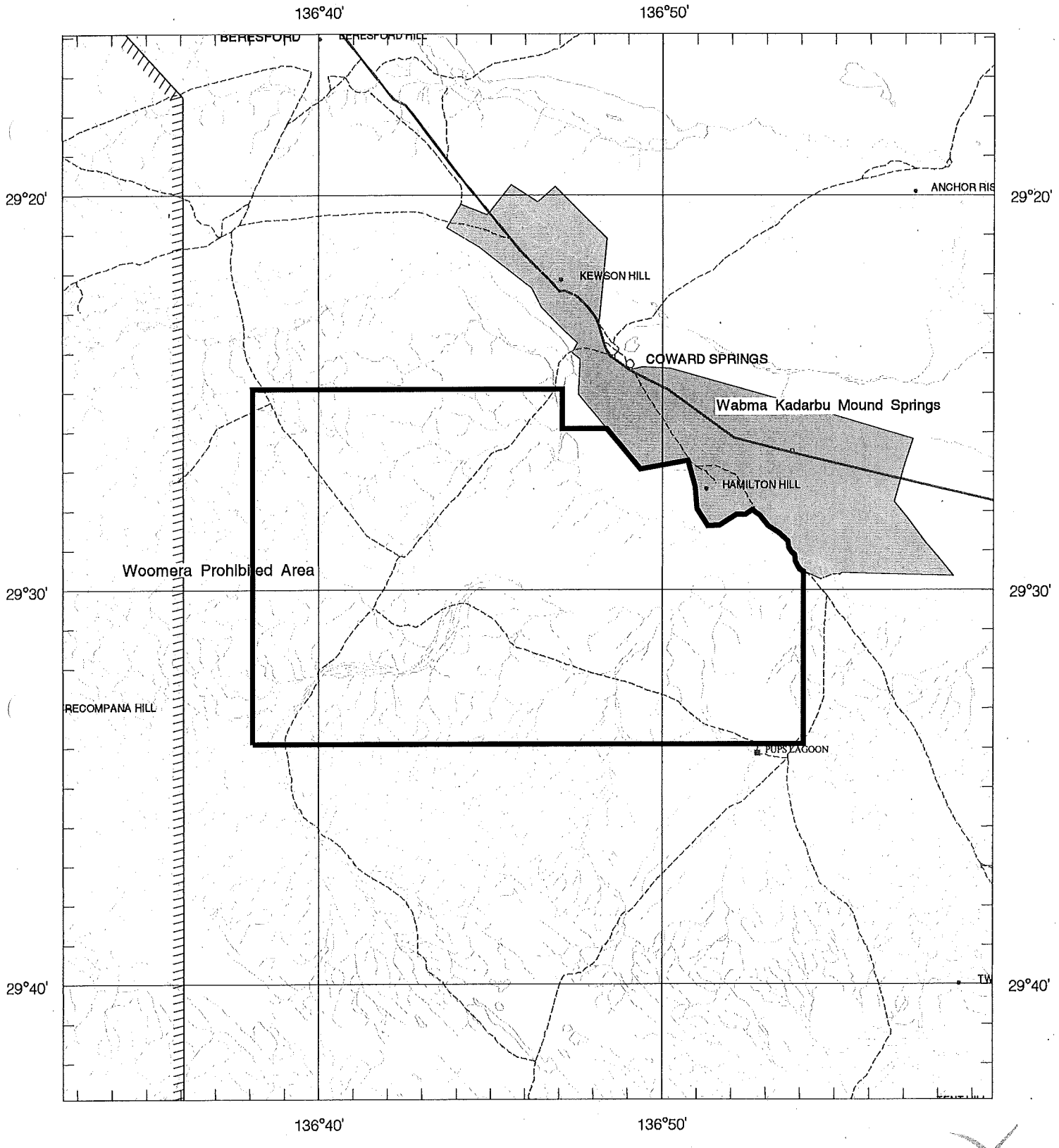
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Government of South Australia
Department of the Premier and Cabinet

SCHEDULE A



SCALE 1 : 250 000

KILOMETRES 5 0 5 10 15 20 25 KILOMETRES

LICENCE GRANTED IN : DATUM AGD66

GDA GEOCENTRIC DATUM OF AUSTRALIA

APPLICANT : **SOUTH AUSTRALIAN LUDI MINING PTY LTD**

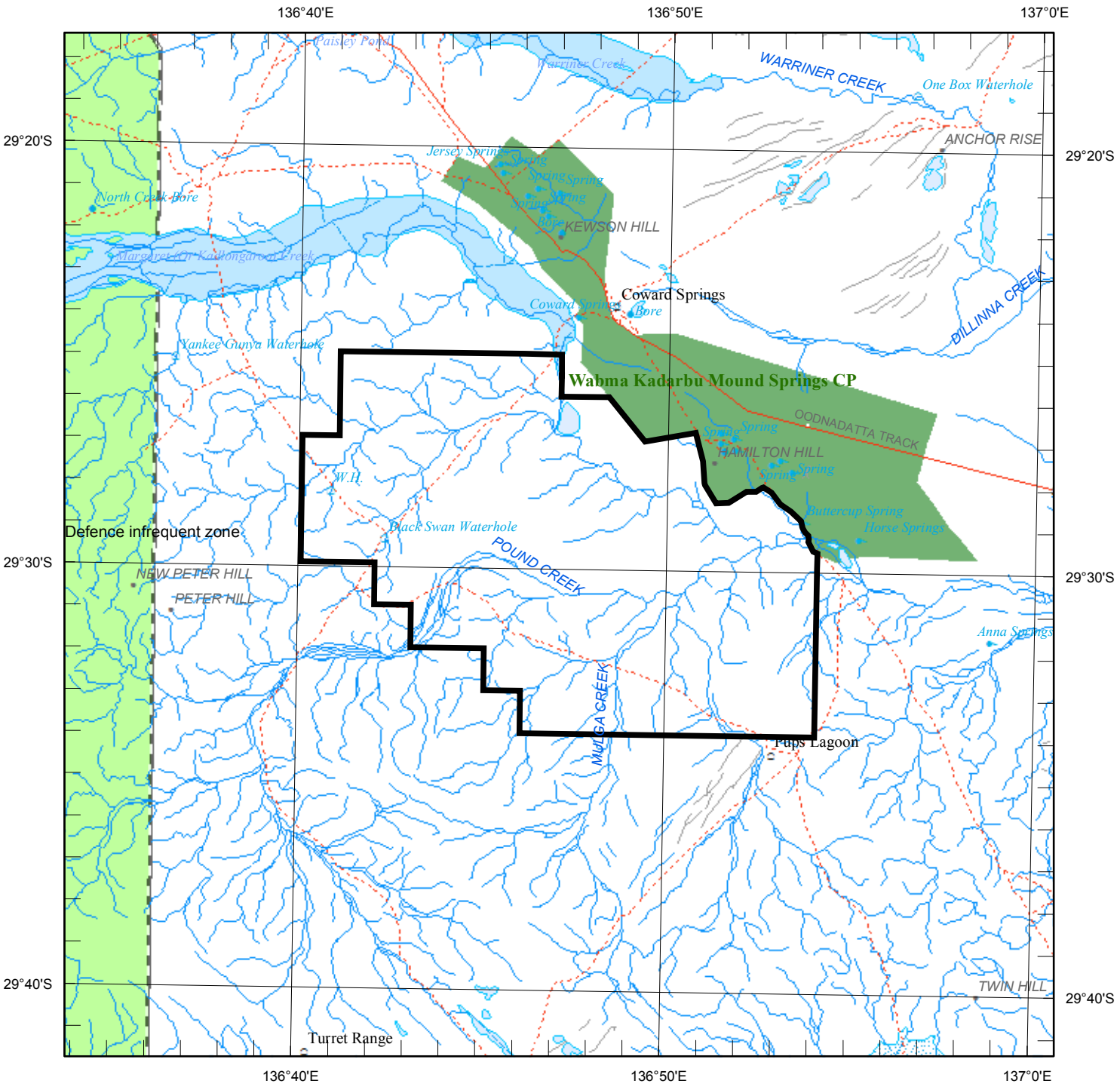
FILE REF : **68/10** TYPE : **MINERAL ONLY** AREA : **380** km² (approx.)

1:250000 MAPSHEETS : **CURDIMURKA**

LOCALITY : **POUND CREEK AREA - Approximately 120 km north of Roxby Downs**

DATE GRANTED : **01-Dec-2010** DATE EXPIRED : **30-Nov-2011** EL NO : **4619**

SCHEDULE A



SCALE 1 : 250 000

4 0 4 8 12 16 20

Kilometres

GDA GEOCENTRIC DATUM OF AUSTRALIA

LICENCE BOUNDARIES IN : DATUM AGD66

LOCALITY



APPLICANT : **SOUTH AUSTRALIAN LUDI MINING PTY LTD**

FILE REF : **2015/00172** TYPE : **MINERAL ONLY**

AREA : **272** sq km (approx)

1 : 250 000 MAPSHEETS : **CURDIMURKA**

LOCALITY : **POUND CREEK AREA -**
Approximately 120 km north of Roxby Downs

DATE GRANTED:**01-Dec-2015** DATE EXPIRED:**30-Nov-2017** EL NO: **5766**

SOUTH AUSTRALIA LUDI MINING PTY LTD

EL 4619 COWARD SPRINGS

Annual Technical Report

for the period

1 December 2010 to 30 November 2011

Author: Zhao Shenglu
South Australia Ludi Mining Pty Ltd

26 February 2012

Summary

Exploration Licence 4619 was granted to South Australia Ludi Mining Pty Ltd (SALM) on 1 December 2010 for a term of one year. The tenement is located on the Stuart Shelf in the northeastern margin of the Gawler Craton.

This area is considered to have potential for concealed Olympic Dam style Cu-Au deposits. The existence of unconformity related uranium deposits at the weathered interface between the Pandurra Formation and the underlying basement rocks, or associated with redox boundaries in the Adelaidean cover sequence, is also considered a possibility. In addition, palaeochannel hosted uranium may exist in the Mesozoic channel.

To date there has been no deep drilling on the tenement. Holes drilled in tenements to the south of EL 4619 failed to intersect basement at depths up to 1500m. Thick successions of Adelaidean sediments, Mesoproterozoic sediments and possibly volcanics cover the basement.

Work undertaken during the first year of tenure on EL 4619 consisted of two ground reconnaissance surveys, in December 2010 and January 2011, followed by a precision GPS-Gravity survey during August and September 2011, carried out by Daishsat Geodetic Surveyors. A total of 3,427 new gravity stations were surveyed.

Geological and geophysical interpretation commenced in late November 2011.

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Digital data

EL4619_2011_A_01_ReportBody.pdf
EL4619_2011_A_02_GravityRawData
EL4619_2011_A_03_GravityProcessedData

1. Introduction

EL 4619, Coward Springs, is located approximately 75 km southeast of William Creek and 5 km south of Coward Springs. It covers an area of approximately 380 sq km. The north east corner of the tenement lies adjacent to the Wabma Kadarbu Mound Springs Conservation Park.

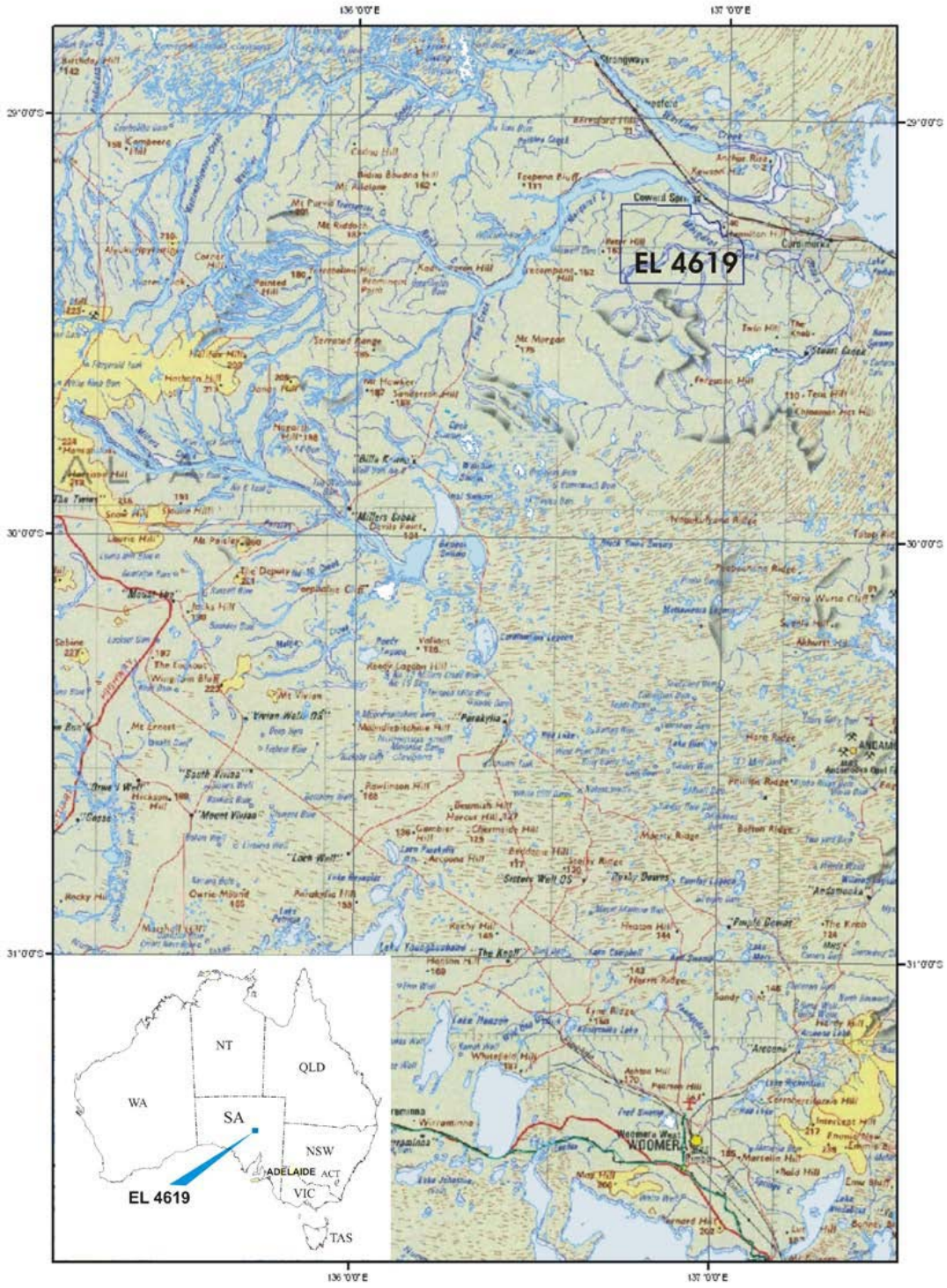


Figure 1: Location map - EL 4619.

1.1 Tenure

Exploration Licence 4619 was granted to South Australia Ludi Mining Pty Ltd on 1 December 2010 for a term of one year. A renewal application was lodged on 26 October 2011.

1.2 Climate, vegetation and physiography

The tenement area consists mainly of flat, arid desert landscapes, broken up by dry rivers and creek lines. It lies within the Stony Plains bioregion. Much of the ground is covered by Mulga scrub. Relief in the area consists of small hills and weathered breakaways. The aeolian sand and clay cover and widespread regolith crusts in the present-day landscape surface hamper a thorough definition of any subsurface structures and geological domains. The resulting knowledge of subsurface structure and geology is therefore poor in the study area.

1.3 Native Title and Aboriginal heritage

The tenement lies within the The Arabunna Peoples Native Title Claim (Tribunal Number SC98/2). There are two archaeological and three cultural sites registered close to the central part of the eastern tenement boundary.

Prior to any drilling program, a Part9B agreement will be negotiated with the claimants and heritage clearances will be carried out.

2. Previous Exploration

In the early 1970s, a number of Australian mining companies carried out mineral exploration, mainly for diamonds and coal.

In 1973 -1974, Australian Chevron Exploration mainly focused on exploring sandstone-hosted uranium resources in Algebuckina sedimentary rocks. Work included geological investigation, seismic survey, surface radiometric survey, vegetation survey and hydrogeology, resulting in the discovery of a few prospects of copper and celestite.

In 1974 Shell Co. Aust Ltd explored for coal hosted in Permian strata. Their shallow RC drilling program resulted in no significant discovery.

Since 1975, West Mining Corporation and BHP have carried out exploration programs for gold, copper and uranium deposits in the Roxby Downs area, south of EL 4619, that resulted in the discovery of the Olympic Dam Au-Cu-U deposits. These are hosted in the Mesoproterozoic Olympic Dam Breccia complex (ODBC) covered by ~350m of Mesoproterozoic-Cainozoic sedimentary rocks. Exploration for this style of deposit (IOCG) in the Roxby Downs area continues.

Following the discovery of the Olympic Dam IOCG deposit, explorers began to target the Gawler Craton basement beneath the Stuart Shelf. The principal tools were aeromagnetic and gravity surveys followed by deep drilling.

Newmont Pty Ltd and Dampier Mining Co. Ltd carried out exploration for Olympic Dam style Au-Cu-U deposits in the region from 1977-1980. The work consisted of geological, gravity and radiometric surveys and shallow drilling. No significant discovery was reported.

In 1989-1990, Cyprus and Metana explored for (Permian) coal and (Jurassic) diamond deposits, again with no significant results.

Using the exploration models of the Olympic Dam Au-Cu-U deposit (i.e. gravity and magnetic anomalies), exploration by Minotaur Resources was successful in discovering the Prominent Hill copper-gold deposit in 2001. This deposit is located to the west of EL 4619.

Similarly, to the south of EL 4619, Australian RMG Services discovered the Carrapateena Au-Cu-U deposit in 2005.

The project area is relatively underexplored in comparison to areas to the south and west. Based on the open file reporting from the Geological Survey of South Australia, there are very few historical tenements that either partially or fully covered EL 4619.

2.1 Previous Drilling

In 1976 Endeavour Oil Company NL drilled two holes within EL 234, looking for subsurface coal horizons. Hole No 4, approximately 2 km east of the eastern boundary of EL 4619, intersected unweathered basement at ~99 m.

The two closest deep drillholes with stratigraphy are SR17/2 (Newmont, 1979) and FHD1 (Western Mining Corp., 1977). Neither of these drillholes intersected basement.

Hole No SR17/2 was drilled by Newmont in 1979 on their Ferguson Hill exploration licence, situated north of Olympic Dam, and considered to be along strike. The results indicated that basement was more than 1500 m below surface. This was confirmed by a reflection seismic survey, resulting in termination of their exploration program.

2.2 Surface Geochemistry

Several surface geochemical sample assays from the north-eastern edge of EL 4619 returned no appreciable values of Cu, Pb, Zn or U. Further south (~30km) anomalous Cu values (highest 1.4%) in surface samples taken by Carpentaria Exploration have been recorded but no associated report has been located.

3. Geology and Mineralisation

3.1 Geology

EL 4619 licence is covered by unknown thicknesses of flat lying Cainozoic, Mesozoic and older to Neoproterozoic sediments. From the information dominantly derived from the regional geophysical (magnetic, gravity, seismic) data, interpretive map layers of solid geology have been compiled by the Geological Survey of South Australia, showing major Precambrian geological and structural elements. The geology of the project and surrounding areas is briefly described below.

The basement of the area is composed of Gawler Craton, a major Archaean - Mesoproterozoic regional crustal component. Regionally, most of the Gawler Craton is covered by the sediments of Neoproterozoic-Mesozoic basins. The oldest unit

likely to be present at depth in and around the project area is the Archaean-Mesoproterozoic Mulgathing Complex. It is possible that younger Mesoproterozoic granites that occur in the Olympic Dam deposit area may also occur in the project area.

It is known that Mesoproterozoic and older crystalline basement of the Olympic Dam district is covered by >200 m (commonly >500 m) of Neoproterozoic, Cambrian, and younger sedimentary basin rocks, collectively known as the Stuart Shelf. The basement of the Gawler Craton in and around the CURDIMURKA sheet is covered by Neoproterozoic platformal and Cambrian Arrowie Basin sediments. In the project area Gawler Craton remains only partially understood due to limited exposure and lack of deep drilling.

3.2 Mineralisation

The Gawler Craton hosts numerous significant iron oxide-copper-gold±uranium deposits and prospects, forming a broadly north-south oriented belt along the eastern margin of the craton. Two major IOCG deposits and numerous Cu-Au ± U prospects are known within the Olympic Cu-Au-(U) province. The largest of these is the giant Olympic Dam deposit; hence the belt has been termed the Olympic iron oxide-copper-gold province.

Other significant deposits in this metallogenic province include Prominent Hill and Carrapateena. South of this mineral province are the historically important mines of the Moonta-Wallaroo district, which currently is the focus of intense exploration interest, in part sparked by the recent discovery of the Hillside prospect on eastern Yorke Peninsula. All the known deposits and prospects in the province appear to have formed ~1590 to ~1580 Ma, synchronous with magmatism of the Hiltaba Suite, Donington Suite and Gawler Range Volcanics and associated hydrothermal alteration.

The key IOCG-related features of the prospects include: hydrothermal alteration with rich magnetite and/or hematite; sulphides being predominantly Cu and Fe bearing, and common accessory REE-bearing minerals; elevated Au and U in some prospects, but very low Pb and Zn; and alteration and mineralisation occurring as epigenetic replacements, veins, and breccias, commonly related to faults or shear zones.

The well-known IOCG deposits/prospects in the Olympic Dam IOCG Province, including Olympic Dam, Prominent Hill, Cairn Hill, Carrapateena, Kanmantoo, Punt Hill and Hillside, are characterized by numerous similar geological features, such as host rocks, controlling structures, age of mineralisation, alteration, geophysical and geochemical features and mineralising features. The economic commodities include iron, copper, gold, silver, uranium and rare earth elements.

Evidence derived from Olympic Dam, Prominent Hill and Carrapateena indicates that the Olympic Dam IOCG mineralisation was genetically associated with Olympic Dam Breccia Complex that resulted from the igneous activities of Mesoproterozoic granites (eg. Hiltaba Suite and Donington Suite) and volcanics (GRV).

4. Exploration Activities – Current Period

4.1 Ground reconnaissance

Two reconnaissance field trips were undertaken. The first, in December 2010, was unsuccessful as access was impossible due to heavy rain and flooding. The second was carried out in April 2011, to gain an understanding of the terrain, landforms and surface geology. Several celestine mineralisation occurrences were visited and four rock chip samples were collected. Some scintillometer readings were taken in the southern part of the tenement.

4.2 Gravity

Historically, the project area has been underexplored, with acquisition of only broad regional magnetic and gravity data and very little company exploration carried out.

Consequently SALM contracted Daishsat Geodetic Surveyors to carry out a precision GPS-Gravity survey during August and September 2011. A total of 3,427 new gravity stations at 250 m spacings were surveyed within an area of approximately 210 sq km (Figure 2). The southern boundary of the survey was about 95 km north of the Olympic Dam deposit and the western boundary of the survey was about 105 km east of Prominent Hill.

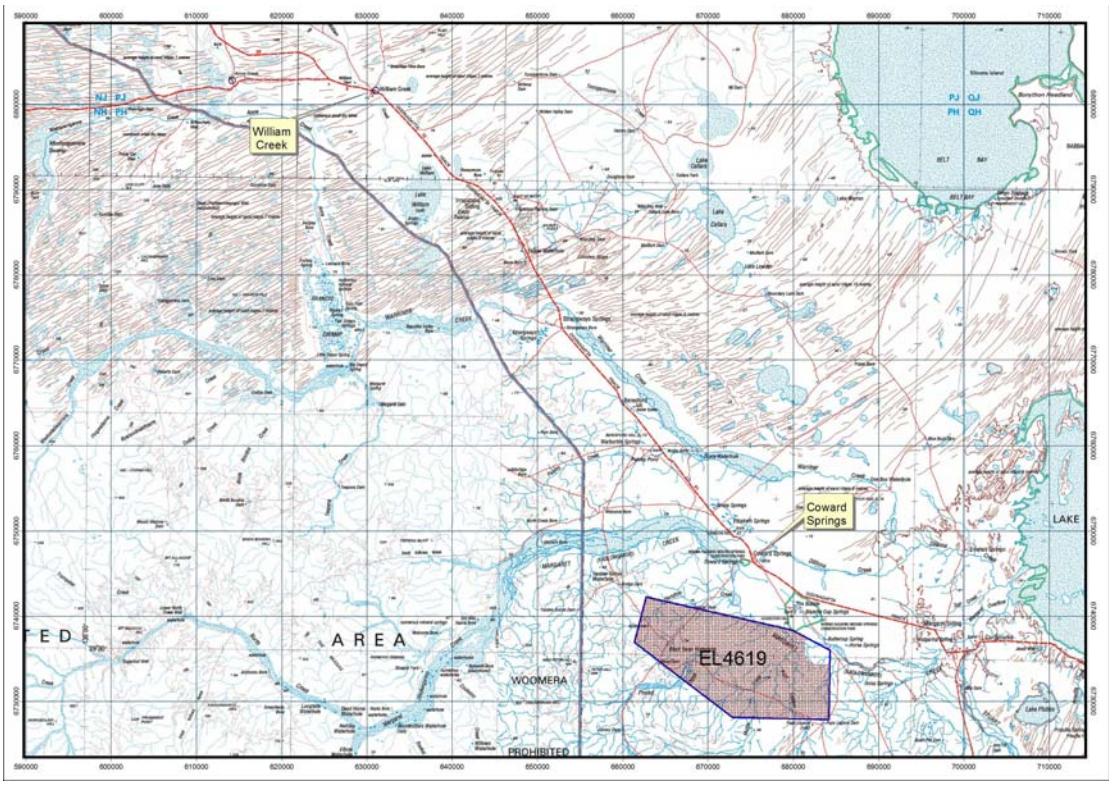


Figure 2: Map showing location of gravity survey

Gravity data was acquired using Scintrex CG-5 digital gravity meters. Position and level data were obtained using Leica GPS units to produce precise post-processed locations. Data was acquired using Daishsat ATV–borne methods.

Gravity data were reduced using standard reductions on the ISOGAL84 gravity network. GPS data were reduced to MGA coordinates with levels expressed as meters above the Australian Height Datum.

The high resolution Bouguer Gravity results show that there are a number of high gravity anomalies in the eastern and northeastern parts of the project area. Moreover, the Residual and Vertical Derivative gravity results indicate that the high gravity anomalous zones extend to the central part of the project area, suggesting four/five high gravity concentration zones.

The report by Daishsat Geodetic Surveyors is included in the Appendix. The digital data is separate.

5. Expenditure Statement

Exploration expenditure for the period 1 December 2010 to 30 November 2011 amounted to $142,710.

6. Conclusion and Recommendation

The geophysical interpretation of magnetics and the ground gravity survey has indicated possible targets. These targets are not considered drill ready and require further investigation before committing to drilling.

APPENDIX

EL4619 GRAVITY REPORT
August - September 2011
Report number 0011041
GA Coopes

EL4619 GRAVITY REPORT

August - September 2011

Report number 0011041

Written by GA Coopes



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DAISHSAT
GEODETIC SURVEYORS

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1. INTRODUCTION

Daishsat Geodetic Surveyors carried out a precision GPS-Gravity survey during August and September 2011 for South Australian Ludi Mining (SALM). A total of 3,427 new gravity stations were surveyed at SALM's EL4619 exploration lease located in the Lake Eyre region of central South Australia.

Gravity data was acquired using Scintrex CG-5 digital gravity meters. Position and level data were obtained using Leica GPS units to produce precise post-processed locations. Data was acquired using Daishsat ATV–borne methods.

Gravity data was reduced using standard reductions on the ISOGAL84 gravity network. GPS data were reduced to MGA coordinates with levels expressed as meters above the Australian Height Datum.

2. SURVEY OVERVIEW

The EL4619 gravity survey was located approximately 75km south-east of the small outback town of William Creek and 5km south of Coward Springs. Access to the survey area was via the Oodnadatta Track. Field surveying was carried out using heavily customised Daishsat All-Terrain Vehicles (DATV's) with semi-regional gravity data acquired at 250m x 250m station spacing's measured on a regular square grid. A small section of the lease in the north-east corner was unable to be surveyed due to Aboriginal heritage sights. Some stations were offset due to the thick vegetation, rough terrain or drainage channels.

FIGURE 1 shows the location of the survey, APPENDIX A contains a station plot of the survey area, and specifications for the survey are contained in APPENDIX C.



Photo 1 – Heavily Customised DATV used for data acquisition

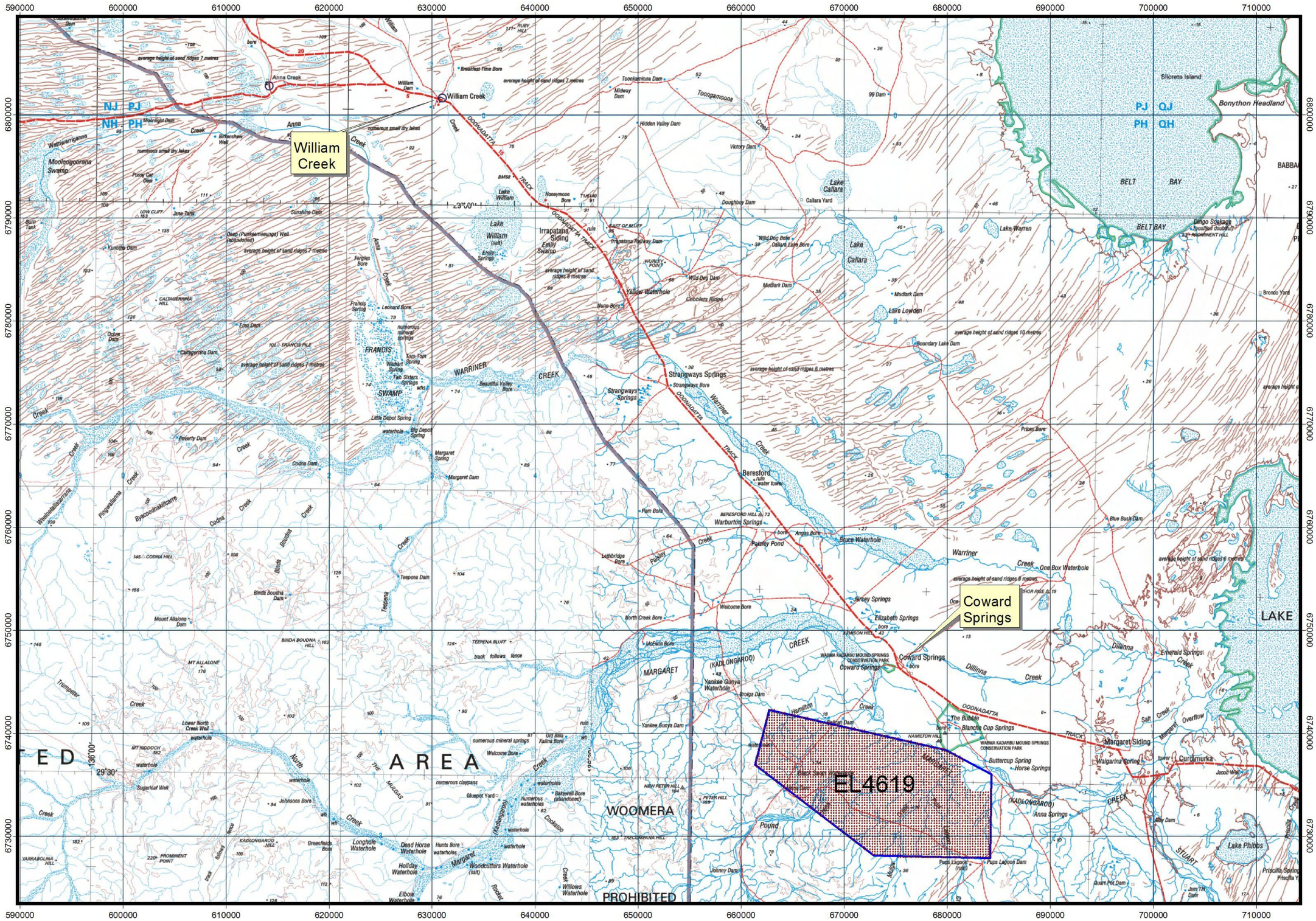


Figure 1 – Survey Location

3. PERSONNEL AND EQUIPMENT

3.1 Personnel

Field acquisition was carried out by Ben Wyschnja and Zac McEwen – who were responsible for daily management of the job and for nightly data processing to ensure quality and integrity.

Final data reduction, image processing and inspection were performed by the company geophysicist, Grant Coopes.

3.2 Survey equipment

Surveying equipment utilised on this survey included:
- Scintrex CG-5 Gravity meters
- Leica System 1200 & 500 dual frequency GPS receivers
- Garmin Handheld GPS receivers for navigation
- IBM notebooks for data processing and backup
- Various chargers, surveying equipment and batteries

3.3 Vehicles

Due to the type of terrain to be encountered, Toyota Landcruiser 4WD vehicles and Daishsat ATV's DATV's) were used on the survey. The Landcruiser vehicles were used for transport to and from site whilst the DATV's were used for data acquisition.

To maintain the high Daishsat safety record, vehicles were custom fitted with a range of safety equipment including:
- Omnitrack GPS tracking / communications system
- Dual fuel tanks
- Spare tires, tubes and tyre repair kit
- Satellite phone and UHF Radio
- Self-recovery equipment including, on board winch, snatch straps and rope
- Tools and spares to enable field repairs as necessary
- Survival kit with EPIRB emergency locator beacon

The DATVs used were equipped with the following survey and safety equipment:
- 10L jerry can of spare fuel
- UHF communications
- GPS receiver for surveying and navigation
- Personal First Aid Kit
- Self-recovery equipment including winch, snatch straps and rope
- Tyre repair kit
- Tools and spares to enable field repairs as necessary

3.4 Accommodation

The survey crews established a base camp within the survey grid to minimise travel times and improve survey efficiency.

3.5 Communications

The survey crews were equipped with hand-held Iridium satellite phones, vehicle-mounted UHF radios and the “Omnitrack” satellite-based tracking and communication system was used on all vehicles to enable asset monitoring via a web interface. Scheduled communication and data exchanges with the Perth and Murray Bridge offices were ongoing for the duration of the job.





Photos 2-3 – Survey Photos

4. GPS SURVEYING AND PROCESSING

4.1 Set out of the grid

This was done concurrently with the gravity data acquisition using the Leica 1200 GPS operating in post-processing mode. Where possible, the readings were taken as close to the ideal coordinates as possible using a Garmin GPS mounted in the DATV cabin to navigate to the stations. At each station, the station number, position and RL were recorded digitally by the GPS crew. At the repeat stations, a washer tied to pink flagging, marked with the station number, was used for identification. At each station, the station number, position and RL were recorded digitally by the GPS crew.

4.2 Survey datum and control

The gravity surveying, and hence any gravity reductions, used the Australian Height Datum (AHD) as the reference datum. A GPS base station – Base 1331 – was established at the main camp using three days' worth of static data, and connections to ITRF stations using Geoscience Australia's online GPS processing system, AUSPOS. For more information on this system, please visit http://www.ga.gov.au/geodesy/sgc/wwwgps/index.jsp. Final deviations of better than 5mm were obtained for x, y and z, for all occupations. Appendix D contains the GPS base station information.

4.3 Processing of the position and level data

The logged GPS data was recorded on removable CF cards, which were downloaded onto the laptops daily. The data was then processed using Novatel's Waypoint post-processing suite.

Waypoint combines the processing components, GrafNav and GrafNet, in a complete package. GrafNav processes data for one baseline (e.g. one base and one remote). GrafNav is normally used for kinematic data which it is extremely well suited for. It can also process single static baselines. Receiver types can be mixed and matched via the use of a common format. This component of Waypoint was used for processing the kinematic data acquired each day.

GrafNav and GrafNet share the same processing engine that has been under continuous development since its original inception by Waypoint in 1992. The core of this robust engine is its carrier phase kinematic (CPK) Kalman filter. Some of the major advantages of Waypoint's kernel are:

Fast processing - The GrafNav kernel is one of the fastest on the market. It will process ~0.8 epochs per MHz per second on a Pentium II.

Robust Kalman filter - From experience with processing GPS data from fast jets and NASA sounding rockets, the processing kernel has become extremely robust. Efforts have been made to account for all of the various data error possibilities given the different types of GPS receivers that GrafNav/GrafNet can handle.

Reliable OTF - Waypoint's on-the-fly (OTF) algorithm, called Kinematic Ambiguity Resolution (KAR), has had years of development and stresses reliability. Variations are implemented for both single and dual frequencies, and numerous options are available to control this powerful feature.

Accurate Static Processing - Three modes of static processing are implemented in the processing kernel. Fixed static is the most accurate. A quick static solution is also available as an alternative, while the float and iono-free float solution is useful for long baselines.

Dual Frequency - Full dual frequency support comes with GrafNav / GrafNet. For ambiguity resolution, this entails wide/narrow lane solutions for KAR, fixed static and quick static. Ionospheric processing is very important with the peak of the ionosphere's cycle occurring in 2000. The GrafNav kernel implements two ionospheric processing modes including the iono-free and relative models. The relative model is especially useful for airborne applications where initialization is near the base station, and this method is much less susceptible to L2 phase cycle slips.

Forward and Reverse - Processing can be performed in both the forward and reverse directions. Both GrafNav and GrafNet also have the ability to combine these two solutions to obtain a globally optimum one.

Velocity Determination - Since the GrafNav kernel includes the L1 Doppler measurement in its Kalman filter, velocity determination is very accurate. In addition to this, a considerable about of code has been added specifically for the detection and removal of Doppler errors.

Long Baseline - Because precise ephemeris and dual frequency processing is supported; long baselines accuracies can be as good as 0.1 PPM.

For more information about Waypoint processing software, and in particular, GrafNav, please visit the Waypoint http://www.waypnt.com/grafnav_d.html.

Grid coordinates were obtained by projecting the GPS-derived WGS84 coordinates using a UTM projection with zones 53 South. For more information about WGS84 please visit http://www.ga.gov.au/geodesy/datums/.

AHD heights were also calculated by Waypoint which utilises the latest geoid model for Australia, AUSGEOID98. Information about the geoid, and the modelling process used to extract separations (N values) can be found at http://www.ga.gov.au/geodesy/ausgeoid/.

5. GRAVITY ACQUISITION AND PROCESSING

5.1 Gravity data acquisition

Gravity observations were made simultaneously with the GPS observation. Two observations were made for each station so that any seismic or instrumental noise could be immediately detected. Each observation consisted of a 20-second or greater stacking time. The accepted tolerance between readings was limited to 0.030 of a dial reading to ensure accuracy. Vertical and horizontal levels were restricted to 10 arc seconds at all times.

At each station, the station number, time and two gravity readings (in dial units) were recorded in Daishsat carbon-copy gravity field books. The Scintrex CG-5 also automatically records the station, time and readings digitally to allow for downloading to computer.

5.2 Gravity base stations

A new gravity base station was established to coincide with GPS Base 1331 located at the main camp. This gravity base was used for calculation of absolute gravity and drift determination. Base 1331 was tied to Australian Fundamental Gravity Network (AFGN) Base 1967939308 located at the William Creek Hotel. Details of Base 1331 are contained in Appendix D.

When in the field, a base station reading was taken in the morning before observing, and at evening after the last observation. When taking a base station reading, the observed gravity values were stacked over 120 seconds to ensure accuracy. Observations were repeated until the readings repeated to 0.010 of a dial reading or less.

5.3 Gravity data processing

Raw gravity data were processed on a daily basis to check for quality and integrity. This interim process produced a set of Bouguer Gravity values, which were contoured and imaged to provide a check for any anomalous readings that would need repeating. Geosoft GRAVRED software was used for the gravity reduction in the field. Other software used on this project includes ArcView, ChrisDBF, and Oasis Montaj.

The formulae used in the gravity reduction are listed below:

Instrument scale factor: This correction was used to correct a gravity reading (in dial units) to a relative milliGal value based on the meter calibration.

Tidal correction: This correction was used to correct for background variations due to changes in the relative position of the moon and sun. The Scintrex calculated ETC was removed and a new ETC calculated using Geosoft Formulae and the surveyed GPS latitude. The formula is too complex to list here.

Instrument Drift: Since gravity meters are mechanical, they are prone to drift (extension of the spring with heat, obeying Hooke's law). If two base readings are taken one can assume that the drift between the two readings is linear and can therefore be calculated. The drift and tidal corrected value is referred to as the *observed gravity*.

Theoretical Gravity: The theoretical value of gravity was calculated using the 1967 variant of the International Gravity Formula and used to latitude correct the observed gravity.

$$GT = 978031.856 \times (1 + 0.005278895 \times \sin^2\phi + 0.000023462 \times \sin^4\phi)$$

where ϕ represents degrees of latitude

Free-Air Correction: Since gravity varies inversely with the square of distance, it is necessary to correct for changes in elevation between stations to reduce field readings to a datum surface (in this case, AHD).

$$FAC = 0.308596 \times h_{AHD}$$

Bouguer Correction: This correction accounts for the attraction of material between the station and datum plane that is ignored in the free-air calculation. A value of 2.67 gm/cc was used in the correction.

$$BC = 0.0419088 \times \rho \times h_{AHD}$$

where ρ = density (2.67 gm/cc)

Free Air Gravity: This is obtained by applying the free air correction (FAC) to the observed gravity reading.

$$FAG = G_{OBSG} - GT + FAC$$

Bouguer Gravity: This is obtained when all the preceding reductions or corrections have been applied to the observed gravity reading.

$$BG = G_{OBSG} - GT + FAC - BC$$

5.4 Gravity meter calibration and scale factor

The gravity meters used on the survey had previously been calibrated on the South Australian gravity calibration range. Derived scale factors from these calibrations are shown below:

Meter	Model	Serial Number	Scale Factor
B	Scintrex CG-5	041200100	1.000088
H	Scintrex CG-5	071040303	1.000434
V	Scintrex CG-5	091240603	1.000424

6. RESULTS

Raw and processed GPS and gravity data are contained on CD-ROM as APPENDIX E.
Hardcopy plots of station locations and gridded data images are contained in APPENDIX A.

6.1 Stations Surveyed and Survey Progress

In total 3,427 new stations were acquired during the project, and of these newly acquired stations, 209 were revisited for survey quality control. An additional 63 existing P.A.C.E. gravity stations located within the survey area were also acquired to assist in merging the data with existing regional data. The crews were typically able to achieve a high average production rate of 100 stations per crew per day with one crew having 2 days of downtime due to a mechanical problem with one of the DATV's.

A brief production summary for the area is shown in Table 1 below.

EL4619 Survey		
Gravity stations acquired (including repeats)	**3,699**	stations
New Gravity station repeats	**209**	6%
New gravity stations acquired	**3,427**	stations
New gravity stations acquired	**63**	stations
Total accidents	**0**	accidents
Total hours lost from accidents	**0**	hours

Table 1: Production Summary

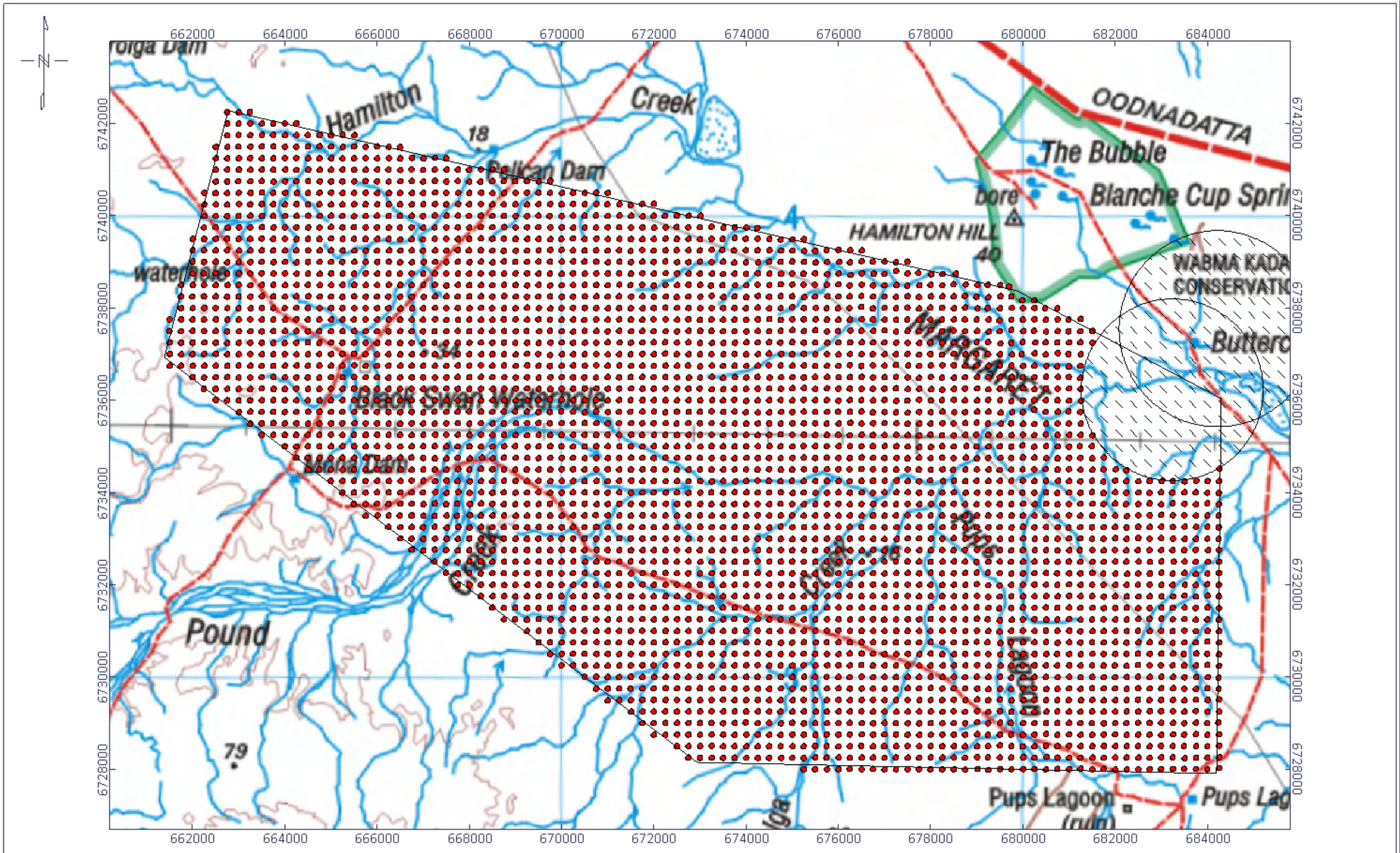
6.2 Data Repeatability

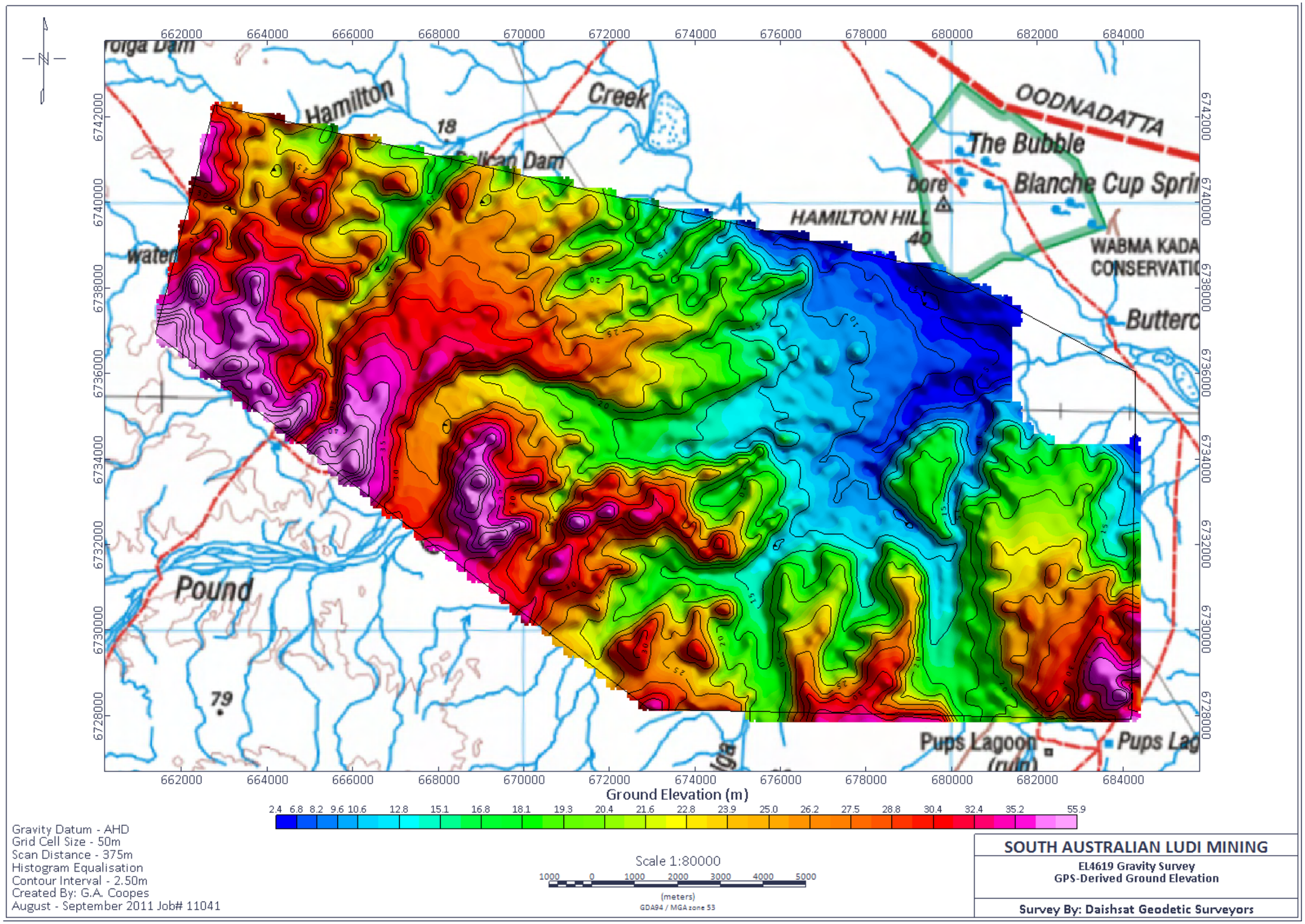
Analysis of the repeat data shows that measurement repeatability is excellent for both GPS and Gravity observations. An analysis of the survey data is included in APPENDIX B. Based on the repeat data, one can assume the following typical accuracies for the observables:

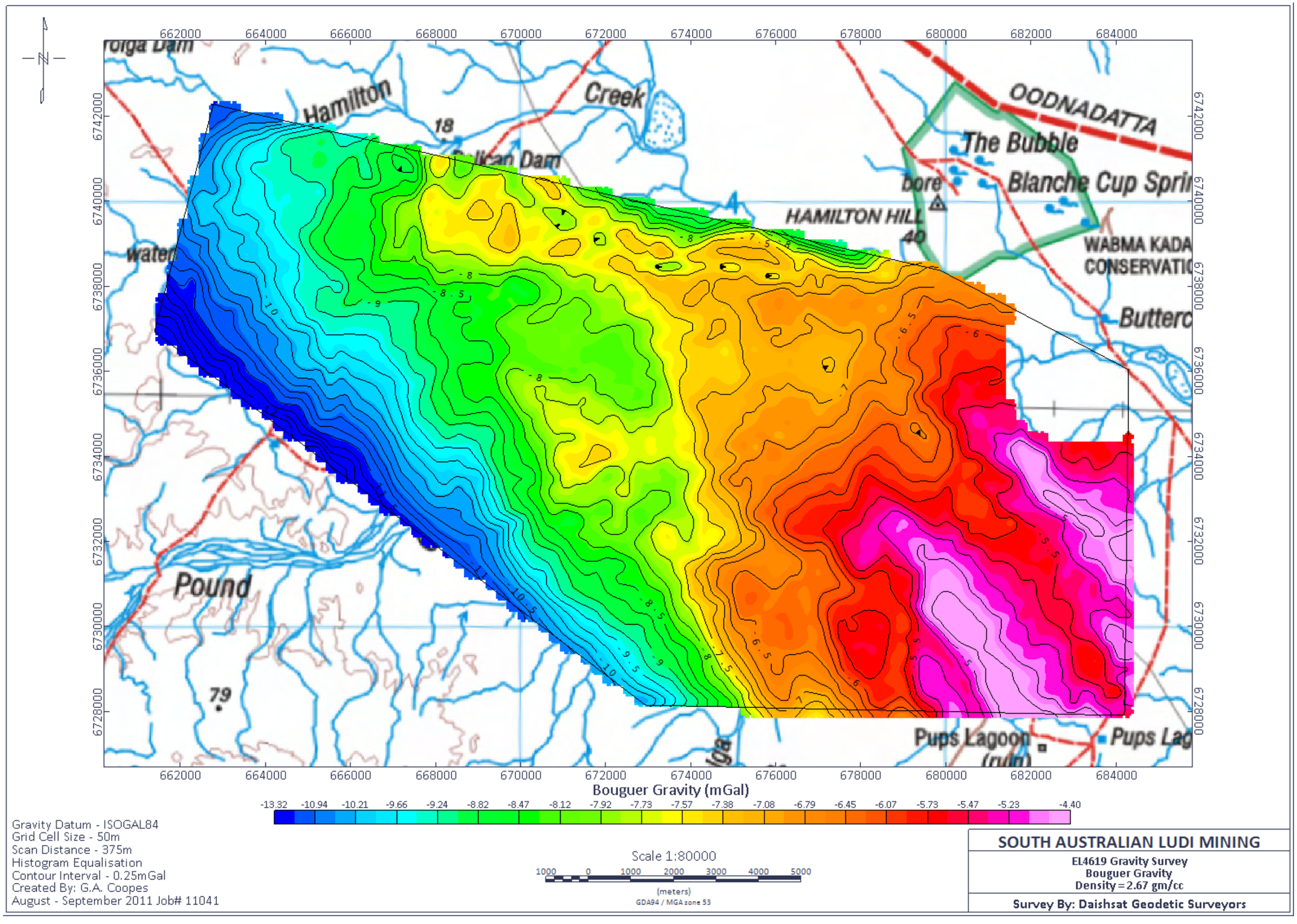
Z position observation: < 0.021 m
Gravity observation: < 0.018 mGals

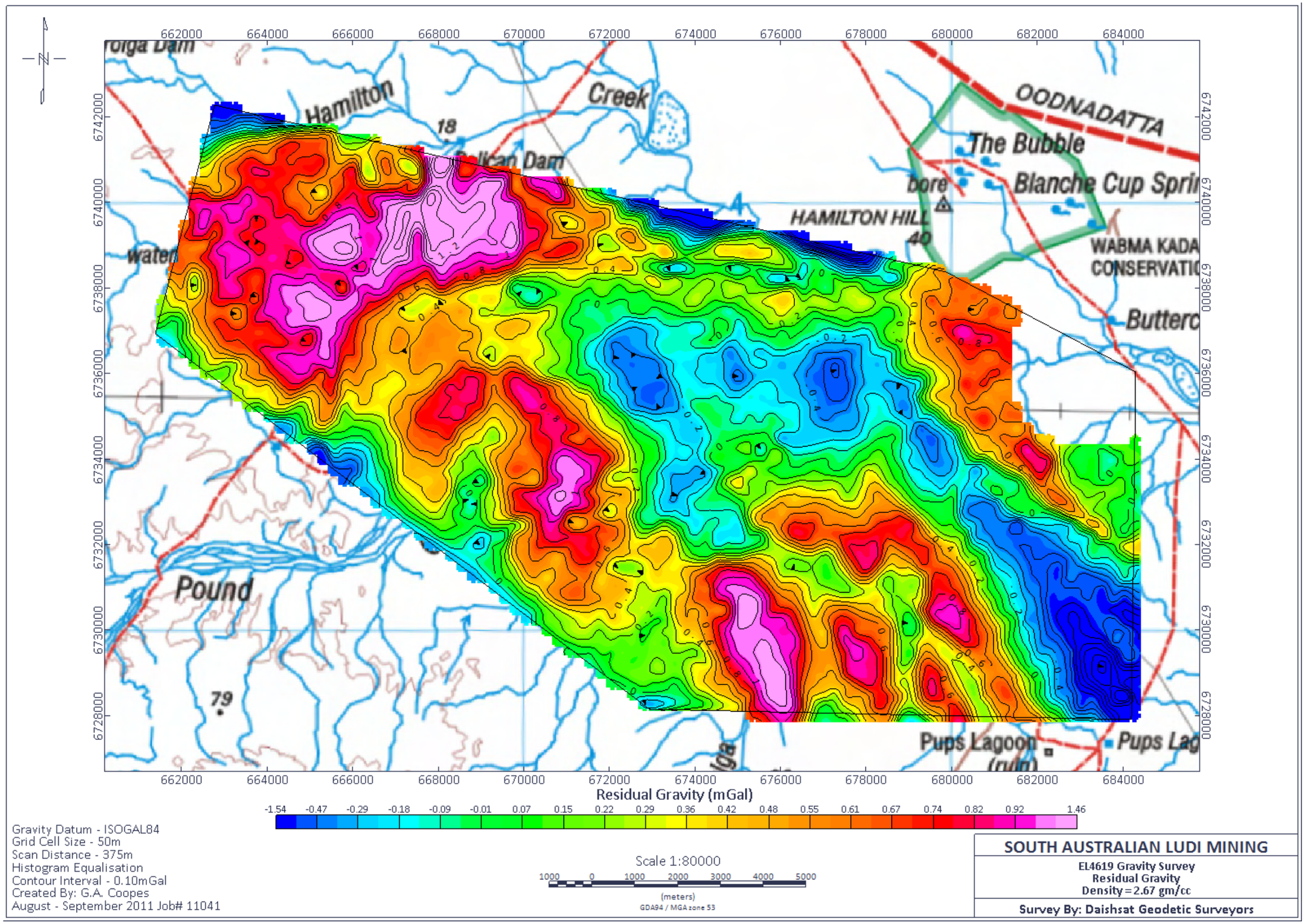
APPENDIX A

Station Location Plot and Data Images


662000
664000
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668000
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684000
6742000
6740000
6738000
6736000
6734000
6732000
6730000
6728000
Hamilton
Creek
18
Pelican Dam
OODNADATTA
The Bubble
bore
Blanche Cup Sprin
HAMILTON HILL
40
WABMA KADA
CONSERVATIO
Buttero
Lake Eyre
Lake Eyre
Lake Eyre


662000
664000
666000
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6736000
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6732000
6730000
6728000
Hamilton
Creek
18
OODNADATTA
The Bubble
bore
HAMILTON HILL
40
WABMA KADA
CONSERVATIO
Butterc
Pound
79
Pups Lagoon
Ground Elevation (m)
2.4 6.8 8.2 9.6 10.6 12.8 15.1 16.8 18.1 19.3 20.4 21.6 22.8 23.9 25.0 26.2 27.5 28.8 30.4 32.4 35.2 55.9
Gravity Datum - AHD
Grid Cell Size - 50m
Scan Distance - 375m
Histogram Equalisation
Contour Interval - 2.50m
Created By: G.A. Coopes
August - September 2011 Job# 11041
Scale 1:80000
1000 0 1000 2000 3000 4000 5000
(meters)
GDA94 / MGA zone 53
SOUTH AUSTRALIAN LUDI MINING
EL4619 Gravity Survey
GPS-Derived Ground Elevation
Survey By: Daishsat Geodetic Surveyors


662000
664000
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682000
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6742000
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6738000
6736000
6734000
6732000
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6728000
Hamilton
Creek
18
HAMILTON HILL
40
OODNADATTA
The Bubble
bore
Blanche Cup Sprin
WABMA KADA
CONSERVATIO
Butterc
Pound
79
Pups Lagoon
Pups Lag
Bouguer Gravity (mGal)
-13.32 -10.94 -10.21 -9.66 -9.24 -8.82 -8.47 -8.12 -7.92 -7.73 -7.57 -7.38 -7.08 -6.79 -6.45 -6.07 -5.73 -5.47 -5.23 -4.40
Gravity Datum - ISOGAL84
Grid Cell Size - 50m
Scan Distance - 375m
Histogram Equalisation
Contour Interval - 0.25mGal
Created By: G.A. Coopes
August - September 2011 Job# 11041
Scale 1:80000
1000 0 1000 2000 3000 4000 5000
(meters)
GDA94 / MGA zone 53
SOUTH AUSTRALIAN LUDI MINING
EL4619 Gravity Survey
Bouguer Gravity
Density = 2.67 gm/cc
Survey By: Daishsat Geodetic Surveyors



Gravity Datum - ISOGAL84
Grid Cell Size - 50m
Scan Distance - 375m
Histogram Equalisation
Contour Interval - 0.10mGal
Created By: G.A. Coopes
August - September 2011 Job# 11041

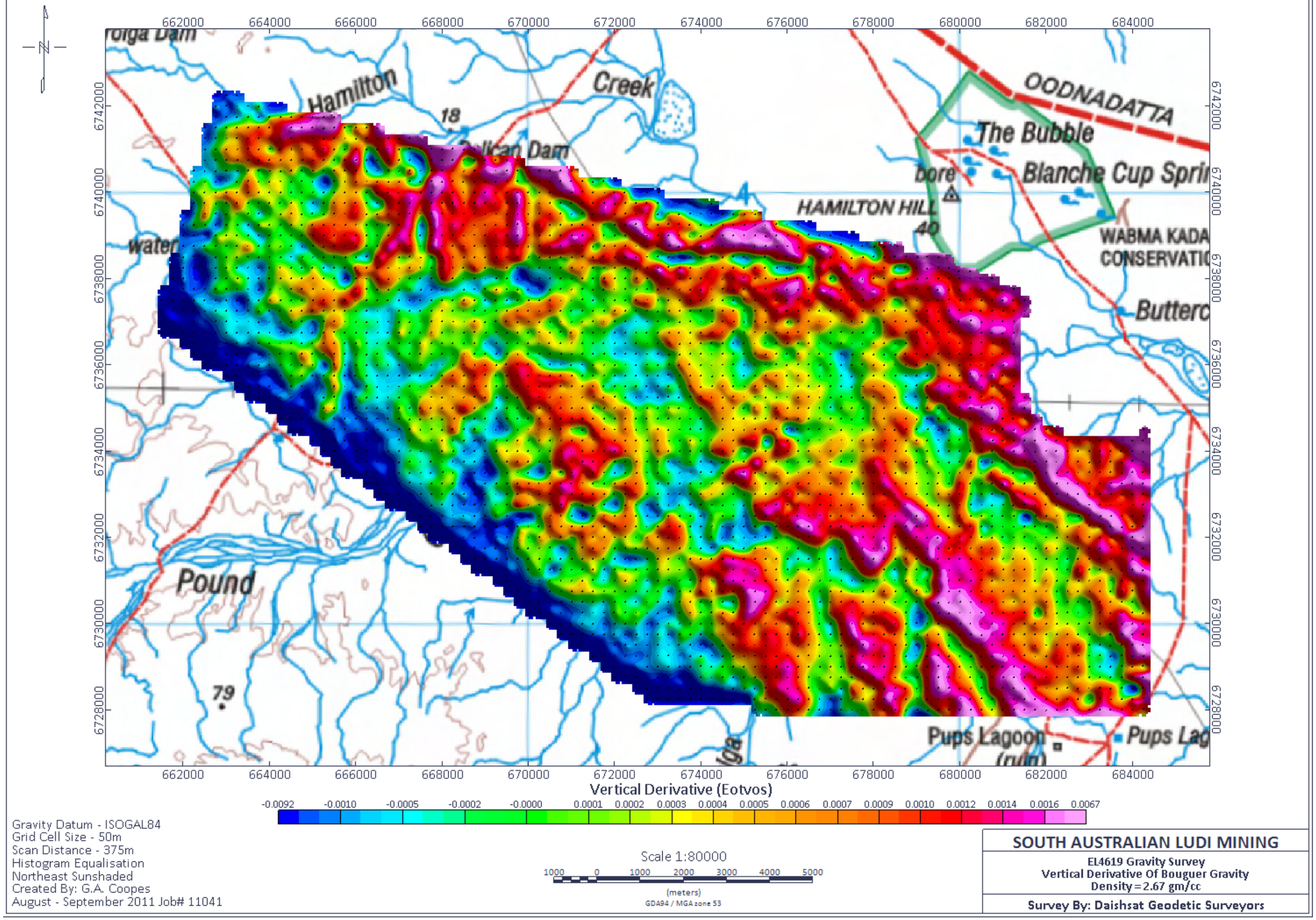
Scale 1:80000

1000 0 1000 2000 3000 4000 5000
(meters)
GDA94 / MGA zone 53

SOUTH AUSTRALIAN LUDI MINING

EL4619 Gravity Survey
Residual Gravity
Density = 2.67 gm/cc

Survey By: Daishsat Geodetic Surveyors



Gravity Datum - ISOGAL84
Grid Cell Size - 50m
Scan Distance - 375m
Histogram Equalisation
Northeast Sunshaded
Created By: G.A. Coopes
August - September 2011 Job# 11041

Scale 1:80000

1000 0 1000 2000 3000 4000 5000

(meters)

GDA94 / MGA zone 53

SOUTH AUSTRALIAN LUDI MINING

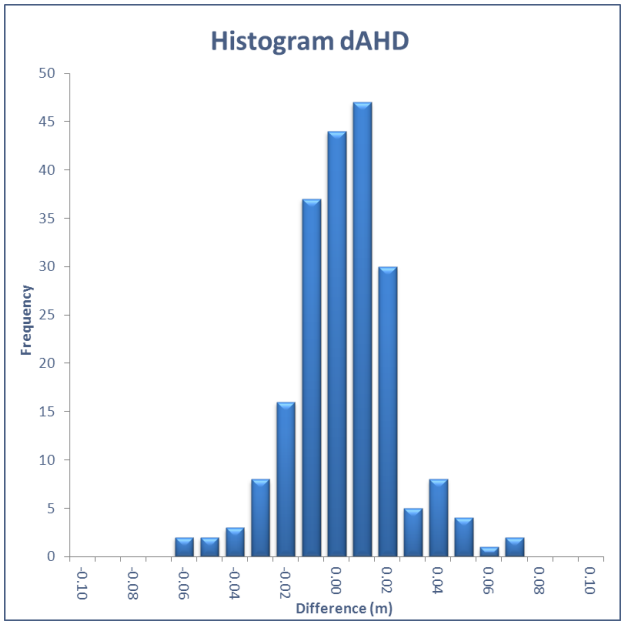
EL4619 Gravity Survey
Vertical Derivative Of Bouguer Gravity
Density = 2.67 gm/cc

Survey By: Daishsat Geodetic Surveyors

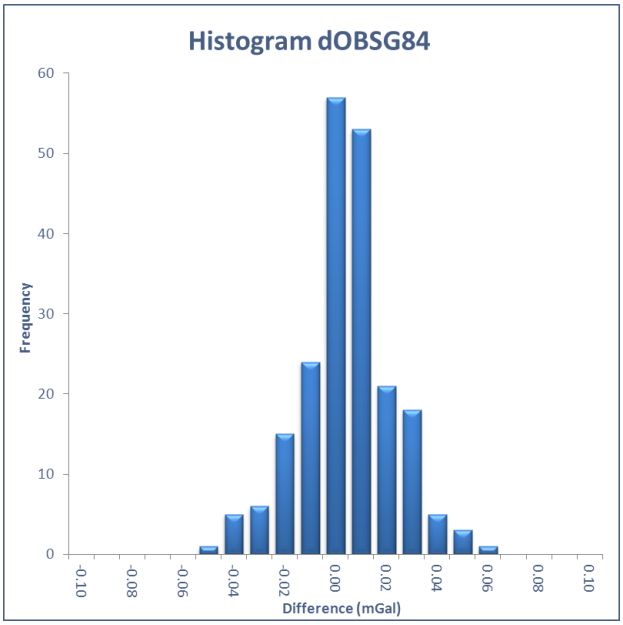
APPENDIX B

Repeat Tabulation and Analysis

Repeatability of AHD



Repeatability of OBSG84



Summary Statistics

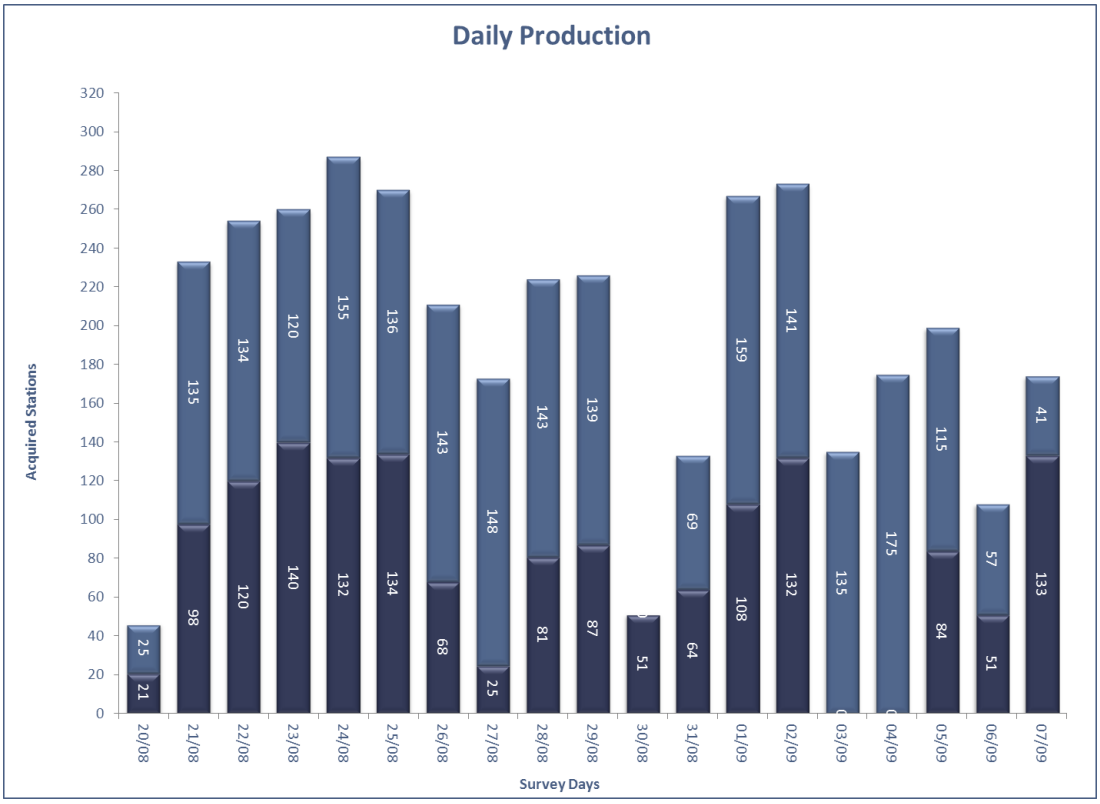
Summary Table	dAHD	dOBSG
Mean	-0.001	0.000
Standard Error	0.001	0.001
Median	-0.001	0.000
Mode	-0.003	0.003
Standard Deviation	0.021	0.018
Sample Variance	0.000	0.000
Kurtosis	1.431	0.630
Skewness	0.068	-0.022
Range	0.135	0.105
Minimum	-0.069	-0.052
Maximum	0.066	0.053
Sum	-0.267	-0.058
Count	**209**	**209**

APPENDIX C

Survey Information

EL4619 Survey	
Client	SOUTH AUSTRALIAN LUDI MINING
Operators	BW, ZM
Techniques Employed	Post-Processed GPS, DATV-borne Gravity
Station Spacing	250m
Line Spacing	250m
Gravity Meters	Scintrex CG5: B – SN: 041200100; H – SN: 071040303; V – SN: 091240603
GPS Units	Leica 500 (Base) & Leica 1200 (Rover)
Number of Points Surveyed	3,699 total, includes 3,427 new stations, 209 new repeats and 63 existing P.A.C.E. repeats.
Gravity Bases	Daishsat Base: 1331
GPS Base	Daishsat Base: 1331
Dates of Survey	20th of August to the 7th of September, 2011

Daily Production Rates



APPENDIX D

Base Station Information

GPS/Gravity Base 1331 - Pound Creek

MGA94		GDA94	
EASTING (m)	668822.357	LATITUDE (DMS)	29° 30' 15.6224" S
NORTHING (m)	6734871.839	LONGITUDE (DMS)	136° 44' 30.02503" E
ZONE (UTM)	53S	ELL HT (GRS80, m)	39.827
ORTHO HT (AHD, m)	33.808	N (AUSGEOID09, m)	6.019

OBSERVED GRAVITY	SURVEYED BY
979269.853 ISOGAL84 (mGal)	**GPS** – Daishsat using a multiple static sessions and the AUSPOS online GPS Processing system. Expected accuracy of station coordinates better than 0.005m. **Gravity** – Daishsat using multiple ABA ties to AFGN Base 1967939308 located at the William Creek Hotel. Expected accuracy better than 0.010 mGal

MISCELLANEOUS DETAILS

This base station consists of a small steel pin protruding from the ground by 30mm and is witnessed by a Daishsat survey plaque, placed on a large star picket ~ 0.3m to the right. The base is located on Stuart Creek Station, approximately 13km south-west of Coward Springs and can be accessed by travelling towards William Creek from Marree for 130km to Coward Springs. Turn left just after the Coward Springs turnoff (53J 0675335E/6746275N) and follow the track along the fence for 1.5km. Pass through the gate marked 'Stuart Creek Pastoral Lease' (0673908E/6746815N) and travel for another 17.3km to Mona Dam (664106E/6734541N). Turn left heading west and travel for 4.2km then pass over the creek. The base is up a hill 500m north-east of the track.

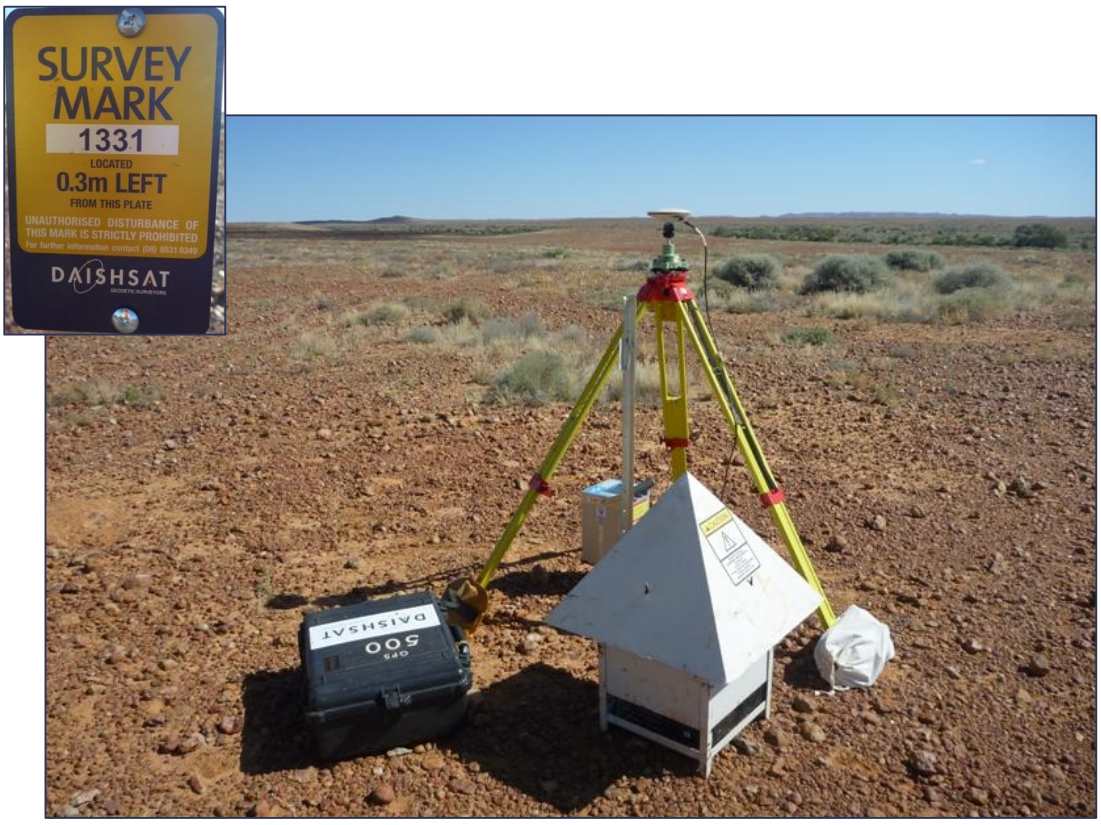


Photo of Base 1331 showing distinguishing features in the background

APPENDIX E

Survey Equipment Specifications



Commercial in Confidence.
Not to be distributed outside the intended user unless authorised in writing by Daishsat Pty. Ltd.

SURVEY EQUIPMENT

Scintrex CG5 Gravity Meter

The CG5 offers the highest quality gravity data possible. The CG-5 can be operated with minimal operator training, while automated features significantly reduce the possibility of reading errors. The CG-5 can be transported over very rough roads and the residual drift remains low.



Specifications:

- Sensor Type: Fused Quartz using electrostatic nulling
- Reading Resolution: 1 microGal
- Standard Field Repeatability: <5 microGal
- Operating Range: 8,000 mGal without resetting
- Residual Long-Term Drift: Less than 0.02 mGal/day (static)
- Automatic Tilt Compensation: ±200 arc sec
- Tares: Typically less than 5 microGals for shocks up to 20 G
- Automated Corrections: Tide, Instrument Tilt, Temperature, Drift, Near Terrain, Noisy Sample, Seismic
- Noise Filter
- Operating Temperature: -40°C to +45°C
- Ambient Temperature Coefficient: 0.2 microGal/°C (typical)
- Pressure Coefficient: 0.15 microGal/kPa (typical)
- Magnetic Field Coefficient: 1 microGal/Gauss (typical)
- Memory: Flash Technology (data security).

Leica 1200GPS System

GPS1200+ receivers are designed to work anywhere under the roughest conditions imaginable. They float, withstand falls, jolts and vibrations, operate in rain, dust, sand and snow, at temperatures from –40°C to + 65°C. High accuracy measurements, tracking to low elevations, the world's first phase multipath mitigation technology, high up-date rate and fast, reliable, long-range RTK.



Specifications:

- Triple frequency
- 16 L1 + 16 L2 GPS
- GPS / GLONASS / Galileo / Compass
- 120 Channels
- L1/L2/L5 GPS
- L1/L2 GLONASS
- E1/ E5a/ E5b /Alt-BOC Galileo
- Full Real Time RTK
- Use as rover or reference
- Real-Time RTK (or DGPS option)
- GPS L5 and Galileo ready
- Operating Temperature: -40°C to +65°C.

DAISHSAT
GEODETIC SURVEYORS

APPENDIX F

Data CD-ROM

(Attached to back cover)

SOUTH AUSTRALIA LUDI MINING PTY LTD

EXPLORATION LICENCE 4619 “COWARD SPRINGS”

ANNUAL TECHNICAL REPORT

For the period 1/12/2011 to 30/11/2012

1:250,000 map sheet
Curdimurka SI 53-08

1:100,000 map sheets
Strangways 6239
Trecompana 6238

Author: David Edgecombe, Teena Coppin
January 2013

South Australia Ludi Mining Pty Ltd ABN 31 135 646 187
10/ 237 Wakefield Street Adelaide SA 5000 Tel: 08 7225 0879 Email: ZSL68@163.com

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1. SUMMARY 1
2. INTRODUCTION 2
3. TENURE 2
4. PREVIOUS EXPLORATION 2
5. GEOLOGY 2
6. WORK COMPLETED 3
6.1 Data review 3
6.2 Geophysical Surveys and Interpretation 3
6.3 Drillsite selection 3
6.4 Native Title and Aboriginal Heritage 3
6.5 Access and site preparation 4
7. CONCLUSIONS 4
8. FUTURE EXPLORATION 4

APPENDICES

Appendix 1: EL 4619 DDIP Survey Logistics Summary
Appendix 2: EL 4619 Res/IP Interpretation

FIGURES

FIGURE 1: Location plan
FIGURE 2: Location of drill holes

1. SUMMARY

Exploration in the second year of tenure of Exploration Licence 4619 has comprised geophysical interpretation, review of historic exploration data, Aboriginal site clearance survey and access preparation. In May 2012 SALM was advised that PACE funding of $65,000 had been approved. A drill rig was mobilised to site at the end of the reporting period in preparation for deep drill testing of two priority targets.

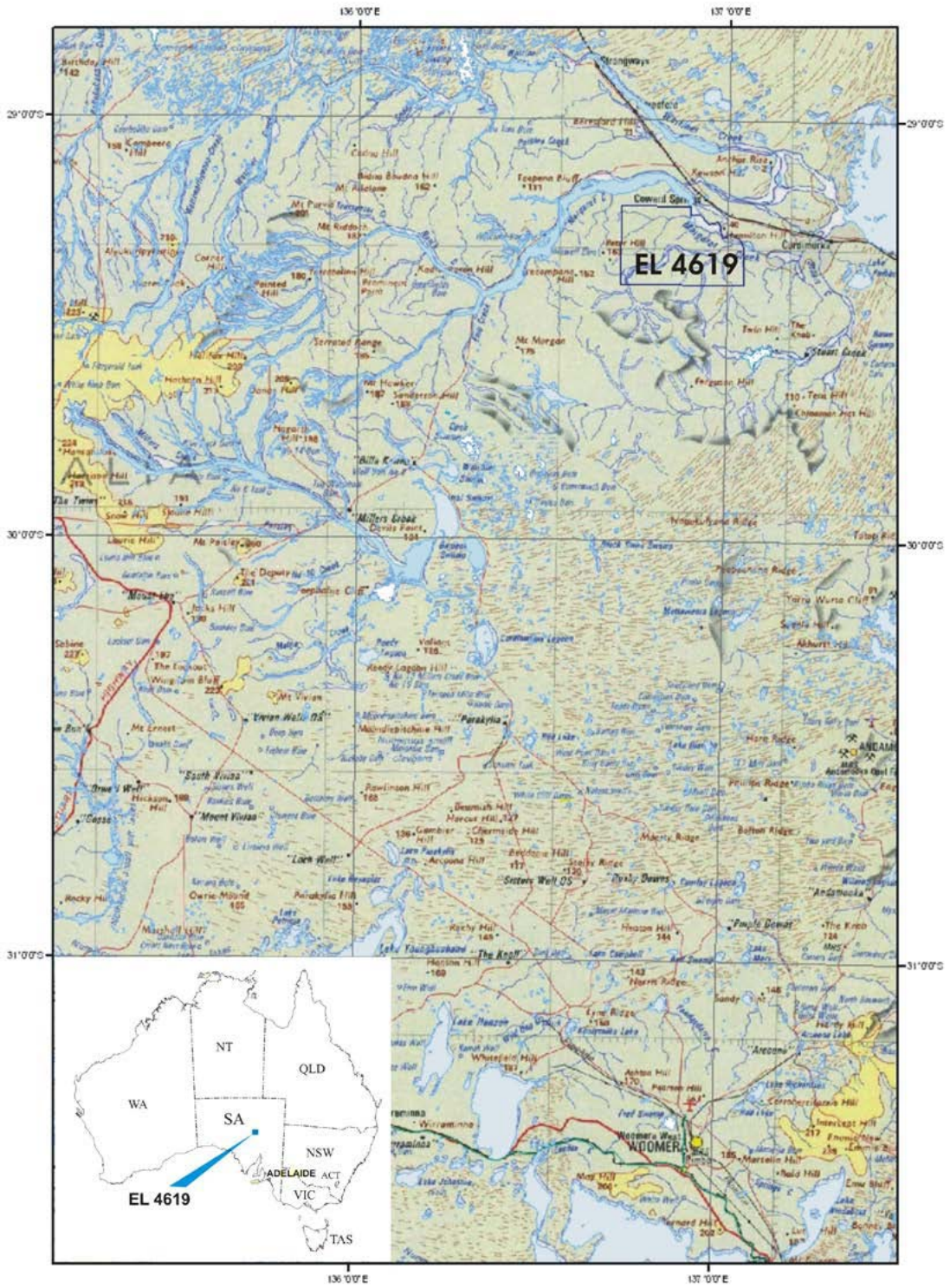


Figure 1. EL 4619 Location map

2. INTRODUCTION

Exploration Licence 4619 is located approximately 120 kilometres north of Olympic Dam and 75 kilometres southeast of William Creek, the nearest permanent settlement (Figure 1). The tenement covers land used for low density cattle grazing. The Marree to William Creek section of the Oodnadatta Track passes to the north of the licence and a limited network of station tracks provides access within the EL. The area is arid, has low relief and is only sparsely vegetated.

The tenement was acquired to explore for copper/gold/uranium deposits hosted in large Mesoproterozoic haematite breccias analogous to the Olympic Dam "IOCGU" deposit.

3. TENURE

Exploration Licence 4619 "Coward Springs" was granted to South Australia Ludi Mining ("SALM") on 1 December 2010. The licence has been renewed annually and will now expire on 30 November 2013.

4. PREVIOUS EXPLORATION

Previous exploration over the tenement area has been confined to geophysical surveys, principally gravity and magnetics. Two past drillholes, SR 17/2 (Newmont) and FHD 1 (WMC), located to the south and west of the EL, both failed to reach Mesoproterozoic basement, despite depths of 1,500 and 743 metres respectively. Recent government sponsored seismic and gravity data suggests that there is significant block faulting in the region and that Mesoproterozoic rocks may occur at shallower depths.

There has been no past exploration drilling within EL 4619 for Mesoproterozoic IOCGU deposits.

Work undertaken during the first year of tenure on EL 4619 consisted of two ground reconnaissance surveys, in December 2010 and January 2011, followed by a precision GPS-Gravity survey during August and September 2011, carried out by Daishsat Geodetic Surveyors. A total of 3,427 new gravity stations were surveyed.

Geological and geophysical interpretation commenced in late November 2011.

5. GEOLOGY

The tenement area is entirely covered by Mesozoic, Tertiary and Quaternary sediments, with no known outcrops of pre-Mesozoic basement rocks. Surficial aeolian sands, soil and silcrete lag overlie Mesozoic clay/shale and sands (Bulldog Shale, Cadna-owie Formation and Algebuckina Sandstone).

Outcrop areas to the east of the EL in the Alberrie Creek region comprise Neoproterozoic shale, sandstone and carbonates, and it is expected that similar rocks will underlie the Mesozoic within EL 4619. Mesoproterozoic rocks are not

known within EL 4619 but are expected to underlie the Neoproterozoic sediments.

6. WORK COMPLETED

6.1 Data review

Historical exploration data for the region has been reviewed and incorporated into geophysical modelling (see below). The principal conclusion is that there is no real geological information about basement rocks within the area of EL 4619, with the nearest basement intersecting drillhole (Newmont SR 17/2) located some 20 kilometres south of the southwestern edge of the tenement.

Current interpretations are that Mesoproterozoic rocks are likely to be present in parts of EL 4619 at reasonable depths beneath Cainozoic and Neoproterozoic cover. Geophysical data suggests that there is some block faulting present, with the south of the tenement likely to have less cover present.

6.2 Geophysical Surveys and Interpretation

As a consequence of the lack of geological data, targeting has been based largely on geophysical data. Regional gravity and magnetic data, along with some historic grid based surveys, have been integrated into geophysical models seeking to identify potential targets for copper/gold/uranium deposits comparable to Olympic Dam. The report of this study by Asis International is included as Appendix 1.

During April-May 2012, an IP survey was conducted by Zonge Engineering and Research Organisation over some of the targets, with the objective of locating chargeable and/or conductive zones. Instrumentation was a GDD GRX-32 IP Receiver was used to collect all the data. 1800 data points were surveyed along 5 lines for a total of 30 line kilometres. Details of this work and results are included as Appendices 2 (EL 4619 DDIP Survey Logistics Summary) and 3 (SALM EL 4619 Electrical Interpretation). **For Zonge Data See Government of SA Mineral Resources Website**

6.3 Drillsite selection Two sites, designated A1 and D1, have been selected for deep drill testing on the basis of geological and geophysical interpretations. Planned hole depth is 900 to 1,200 metres

As the proposed drill sites are within the area of the Great Artesian Basin and pressurised aquifers may be present, fully cased and cemented artesian precollars will be required at each site. These will be drilled using mud rotary techniques, cased and cemented into solid basement material. Holes will be completed using conventional wireline diamond coring techniques.

6.4 Native Title and Aboriginal Heritage

Prior to commencement of drilling operations SALM negotiated a formal Native Title Mining Agreement with Arabana Native Title Claimants. This has been registered at DMITRE.

In September 2012 a site clearance survey was undertaken over those parts of EL 4619 likely to be affected by proposed drilling operations. The survey team cleared all drill sites and access routes that will be affected by the planned drilling.

6.5 Access and site preparation

As station tracks were in poor condition, the track from Coward Springs to the turnoffs to the proposed drill sites were graded in late 2012. Local access will be cross country and not graded, though some sandy areas and gullies required minor earthworks to allow drill access.

At the two selected drill sites multiple sumps were excavated using a backhoe. This included sumps provided for drilling of water bores at each site, as well as for the deep exploration drillholes. All earthmoving work was carried out in consultation with Stuarts Creek Station management.

6.6 Drilling

A Bourne mud rotary drilling rig (Thompson Drilling Pty Ltd) was mobilised to the first proposed drill site in late November 2012, at the end of the current reporting period. This rig will drill a water bore and a precollar for the exploration hole at each site. It is anticipated that diamond drilling will commence in late December 2012.

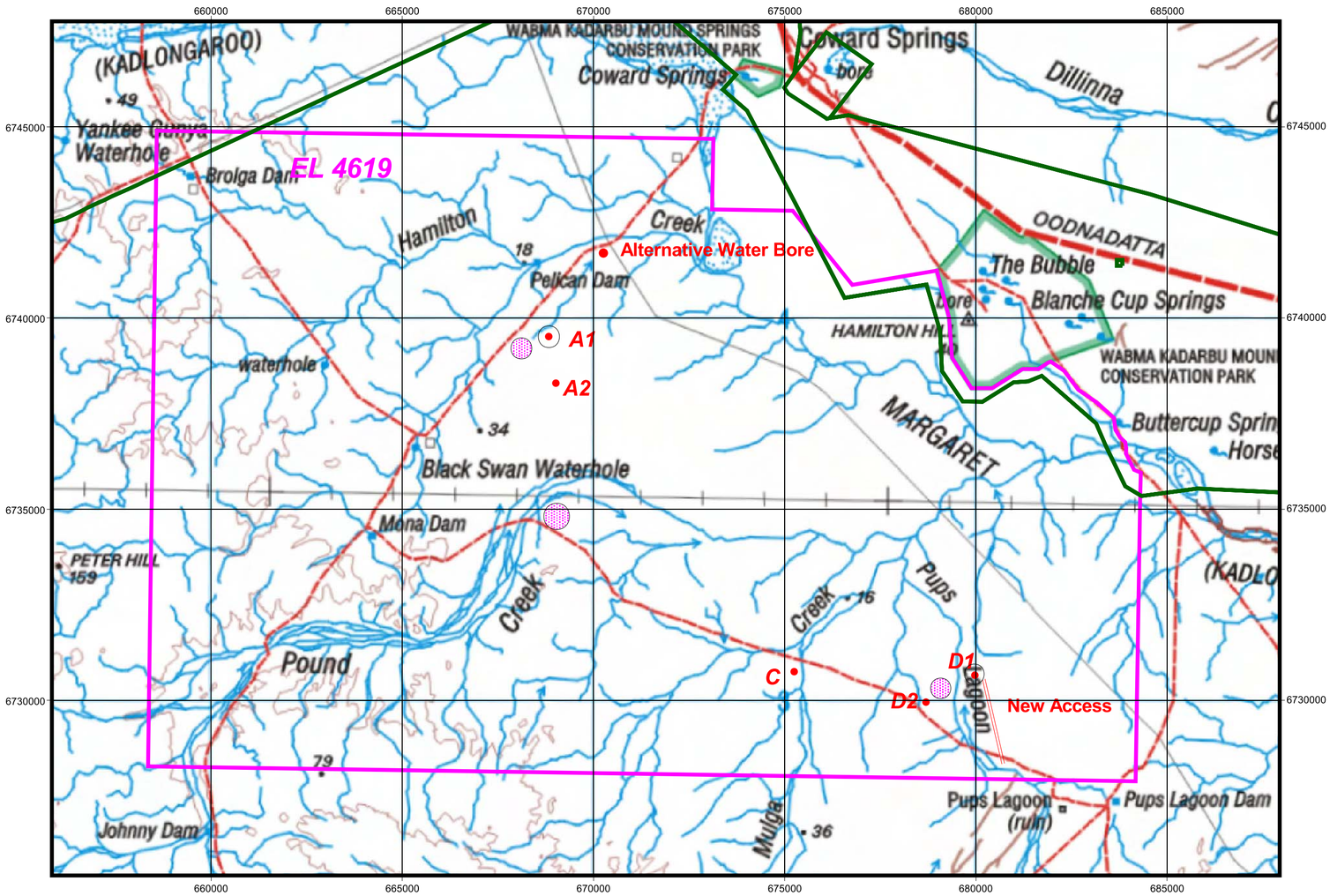
7. CONCLUSIONS

Exploration at Coward Springs is at a very early stage, with no previous drilling into pre-Mesozoic basement. Currently depths to Mesproterozoic targets are estimates based on geophysical interpretation and modelling. Data from the forthcoming drilling will be essential to refining those models and establishing whether Mesoproterozoic rocks are present at economically realistic depths.

8. FUTURE EXPLORATION

Diamond drilling was in progress on the first hole at the “A1” target in EL 4619 at the time of compilation of this report. Completion of this hole and a second at “D1” are scheduled for early 2013. Holes will be geologically and geophysically logged. Core from any potentially mineralised basement rocks will be cut and assayed for a range of elements.

Pending results from this work, further drilling may be completed in 2013.



Legend

- Drill holes
- Pastoral Boundaries
- EL Boundary
- Zone53_mga.ecw

SCALE 1 : 100000

0 2000 4000 6000 Meters

South Australia Ludi Mining

EL 4619

Proposed Drill Holes and Camp Sites

REF. EL 4619	
SCALE 1 : 100000	
AUTHOR :	REPORT :
DATE : 5/8/2012	PLAN :

APPENDIX 1

Zonge Engineering and Research Organization (Australia) Pty Ltd

EL4619
DDIP Survey

Logistics Summary

November 2011

For

South Australian Ludi Mining Pty Ltd

Compiled by:

S. Mann

Report No: 957

Date : May 2012

Zonge Engineering & Research Organization (Australia) Pty Ltd

39 Raglan Avenue Edwardstown SA 5039

Tel +61 8 83710020 Fax +61 8 83710080

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1. SUMMARY 1
2. IP INSTRUMENTATION 1
3. IP SURVEY PARAMETERS 2
4. PRODUCTION ISSUES AND SUMMARY 3
5. DATA PROCESSING 3
6. EXPLANATION OF FILES 4

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Table 1 DDIP survey line specifications 2

APPENDICES

APPENDIX I
Job 957 Summary

APPENDIX II
Zonge TS2DIP chargeability and resistivity inversion models

APPENDIX III
Loke RES2DINV chargeability and resistivity inversion models

1. SUMMARY

During April and May 2012, Zonge Engineering and Research Organization (Zonge) mobilised a four-person geophysical field crew to the EL4619 lease on Stuart Creek Station in South Australia to conduct a Dipole-Dipole Induced Polarisation (DDIP) survey for South Australian Ludi Mining Pty Ltd (SALM).

Survey line parameters were provided by LUDI with surveying specifications designed by Zonge based on requirements from LUDI for an approximate depth of investigation of 1000 metres. A DDIP survey providing n=16 coverage from 200 metre dipoles and station spacing was used and provided 1800 data points over 30 line kilometres.

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 GRX-32 IP receiver was used to take all of the data for this project. Data was recorded using specialised multi-conductor receiver cables allowing reading over the full 3.2 kilometre array simultaneously. Porous ceramic pots filled with copper sulphate were used as non-polarisable receiver electrodes.

IP transmitted fields were generated using a Zonge GGT-30 Geophysical Transmitter. Signal frequency was controlled directly by a Zonge XMT controller; synchronisation was automatically detected by the GDD IP Receiver.

The raw data from each day was downloaded every evening from the PDA used with the receiver to a laptop computer and emailed to Zonge’s Adelaide office. Data quality control, editing and modelling were completed in Zonge Engineering's Adelaide office.

3. IP SURVEY PARAMETERS

All data recorded during this survey was taken at a frequency of 0.125 Hertz. During acquisition chargeability data is recorded over 20 time windows after an initial delay of 20ms. A semi-log window scheme was used to record decay data over the 2000ms off-time. Stack size was typically 30 cycles and number of repeat stacks was adjusted in the field to balance survey speed with data quality. DDIP data repeatability was generally excellent with a minimum of three stacks acquired for each transmitter position.

DDIP were collected along five lines, line length varied between 3.2 and 9.6 kilometres in length with all data recorded in a "roll-along" style array with transmitter dipole preceding the receiver array for each acquisition cycle. Lines were on various orientations. Station spacing, receiver and transmitter dipoles were 200 metres with a maximum coverage of n=16 for most transmitter positions along line.

Station numbers with full corresponding GDA94 z53 coordinates are presented in '.stn' files on the disc accompanying this report. Station numbers are designed to start at approximately 5000 for each line and reflect distance along line in metres. Line specifications listed in order of surveying are presented below in Table 1.

Table 1 DDIP survey line specifications

Line No.	*Start station local (first electrode position)*	*Finish station local (finish electrode position)*	*Start station UTM mE/mN (first electrode position)*	*Finish station UTM mE/mN (finish electrode position)*	* Line Length (m)	No. of Data Points
5A (5000)	4400	7600	680087.3/6732208.9	682448/6734369	3200	136
4A (4000)	5000	14600	676473/6728060	683757/6734313	9600	648
1A (1000)	5000	9400	669232/6737010	668497/6741550	4400	232
2A (2000)	5000	12400	670182/6732222	674673/6738104	7400	472
3A (3000)	5000	10400	673795/6729027	677087/6733307	5400	312
Data points						1800
Line kilometres						30

*** Line length is taken from maximum extent of electrodes.**

4. PRODUCTION ISSUES AND SUMMARY

No significant delays due to weather or equipment problems were encountered during the survey however slower than expected production did occur due to slow travel on-site and damage to cables and electrodes by animals. Poor tracks and rough access around the survey site required the crew to drive very slowly between the camp site, survey lines and access to water. Ongoing minor delays occurred throughout the survey due to animals chewing and damaging cables and electrodes which required repair and rebuilding. A single resupply trip by the crew leader to Roxby Downs occurred to obtain additional food and water, in this time the remaining crew prepared transmitter electrodes for subsequent surveying.

No safety related incidents occurred during the survey. All safety information including Toolbox meetings and Job Safety Analysis and Emergency Response Plan can be found on accompanying disc under *"Safety_Documentation"*.

Appendix I provides a summary of the production of Job 957. More detailed information on daily production may be found on the accompanying disc under *"Production Reports"*.

5. DATA PROCESSING

Raw data from the receiver (*.gdd) were imported into a TQIP (Scientific Computing Applications) database on a daily basis to allow quality control of the data. The quality of each block of raw data was examined before being averaged to create a single record for each data point. Blocks or channels that were considered of poor quality were skipped before averaging each station's data however data quality for this survey is generally excellent. All raw data taken during this survey are included on the accompanying disc so that these data may be re-averaged if necessary.

Elevation data for each station along line was used in modelling and was extracted from NASA's SRTM data.

Edited data was output from TQIP in AMIRA format and where appropriate, imported into Zonge's TS2DIP inversion modelling software for modelling. Both default and reduced smoothness constraint model settings were used in modelling and files and plots associated with these models are presented on the accompanying disc under the "ts2dip" directories, reduced smoothness models are presented below in Appendix II. Default models are labelled Line_line#N.* and reduced smoothness models are labelled Line_line#N-sharp1.*.

Data were also imported into Loke's RES2DINV inversion modelling software for comparison and to test the robustness of the modelled structure. As with modelling in TS2DIP comparison models were run with default settings and modified model constraints to allow more complex structure, these models are labelled Line_line#-def.* and Line_line#N.* respectively and can be found on the accompanying disc within the "res2dinv" folders. Plots of reduced smoothness RES2DINV inversion models are presented in Appendix III.

In general data were high quality however observed chargeability data appears quite homogeneous and modelled results should be considered carefully. Structure is much more apparent in the resistivity data and appears more clearly defined than that in the chargeability. This is likely due to both a reduced depth to resistive changes and greater resistive contrast when compared to the chargeability data. Major features in both chargeability and resistivity inversion results are quite consistent however and are likely reliable. Both Zonge and Loke inversion results are broadly consistent in both resistivity and chargeability results however the Loke results appear to provide more realistic and clearer results.

The most prominent chargeable or "IP" features (higher values) in the modelled data appear associated with resistivity highs in both Zonge and Loke software. The most prominent features appear on line 4000 with chargeable/resistive features roughly coincident with gravity targets 1b and 4a with the feature associated with 4a appearing quite deep and extending beyond the limits of the survey data.

6. EXPLANATION OF FILES

Digital data is provided on CD along with paper plots of the data. Data from each surveyed line are placed in the following directory structure on the accompanying CD: *Processed_Data\line#*. File formats are explained below:

***.DAT**	AMIRA style data file from TQIP containing averaged and edited DDIP data
***.MDB**	TQIP database file containing all DDIP data.
***.IPM**	Inversion model files produced by TS2DIP
***.INV**	Inversion model files produced by RES2DINV
***.PNG/*.BMP**	Panel plot files showing modelled, observed and calculated data
***.GDD**	The edited raw data downloaded from the GDD receiver.
***.STN**	Station co-ordinate files containing station number, easting, northing and elevation.

APPENDIX I

Job 957 Production

Zonge Engineering & Research Organization (Aust) Pty Ltd

JOB HOURS SUMMARY

Job No.: 957 **Date:** 13th April, 2012
Client: SA Ludi Mining PtyLtd **By:** Peter Reece
Project Name: EL4619 - DDIP
Summary Sheet: 1 of 1

	Production Hours				Misc Hours		Equipment Hire			
DATE	Mobe	4 man	3 man	2 man	Standby (2 man)	Standby (4 man)	Camp Sup	Vehicle	Zonge Hours	Comments
Fri-13/4/12	12.5									Mobilisation from Adelaide to Lake Eyre
Sat-14/4/12	5.5	2.5				4.5	1		0.5	Continue Mobilisation from Lake Eyre to camp site & set up - Drive to site + Prep pits
Sun-15/4/12		12					1		0.5	Dig & prepare pits on line 5A
Mon-16/4/12		12					1		1	Acquire data on line 5A
Tue-17/4/12		11.5					1		1.5	Acquire data on line 5A / Prepare pits on line 4A
Wed-18/4/12		11.25					1		2	Prepare pits on line 4A
Thu-19/4/12		13					1		1	Acquire data on line 4A
Fri-20/4/12				12	12.5		1		1	Prepare pits / collect supplies
Sat-21/4/12		12					1		0.75	Acquire data on line 4A
Sun-22/4/12		12					1		0.5	Acquire data on line 4A
Mon-23/4/12		11.75		0.5			1		0.25	Acquire data on line 4A/Prepare pits on line 1A
Tue-24/4/12		12.25					1		0.5	Acquire data on line 1A
Wed-25/4/12		12.75					1		1	Acquire data on line 1A
Thu-26/4/12		10	2.5				1		2.5	Prepare pits on line 2A
Fri-27/4/12		13					1		0.5	Acquire data on line 2A
Sat-28/4/12		13					1		0.5	Acquire data on line 2A
Sun-29/4/12		12.5					1		0.5	Prepare Pits & RX Cables on line 3A
Mon-30/4/12		13					1		1	Acquire data on line 3A
Tue-1/5/12	4	6.5				2.5			0.5	Pack up camp and De-mobe to Roxby Downs
Wed-2/5/12	9.5									De-mobe from Roxby Downs to Adelaide

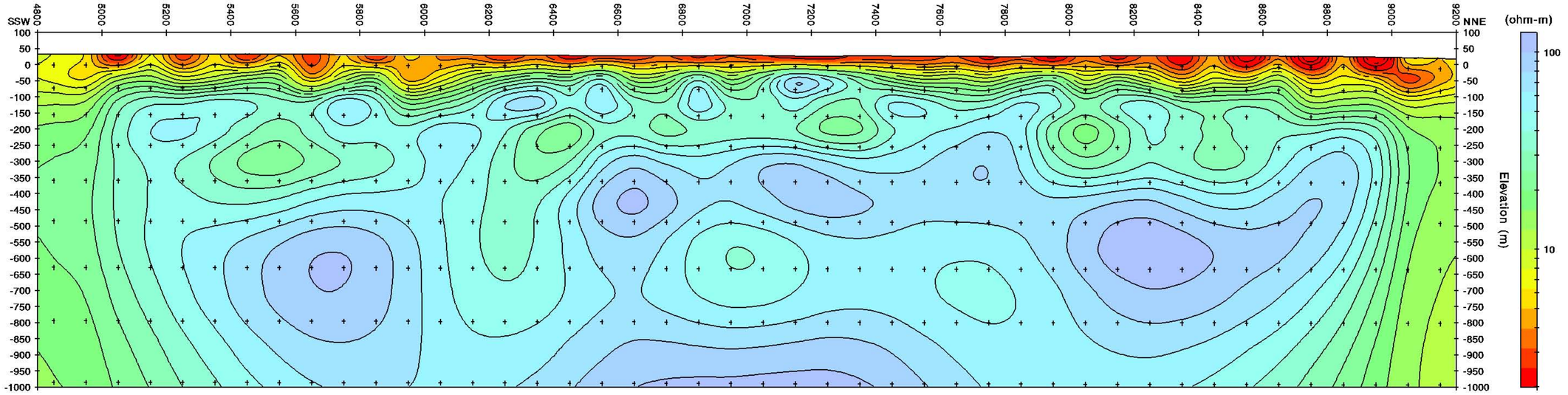
TOTAL HOURS

TOTALS	Mobe	4 man	3 man	2 man	Standby (2 man)	Standby (4 man)	Camp Support	Vehicle	Zonge Hours
Sub Totals	31.5	191	2.5	12.5	12.5	7	17	0	16
Totals	31.5	191	2.5	12.5	12.5	7	17	0	16
Rate p/hr	192.5	385	340	295	147.5	192.5	450	0	0
Billable Total	**$6,063.75**	**$73,535.00**	**$850.00**	**$3,687.50**	**$1,843.75**	**$1,347.50**	**$7,650.00**	**$0.00**	**$0.00**

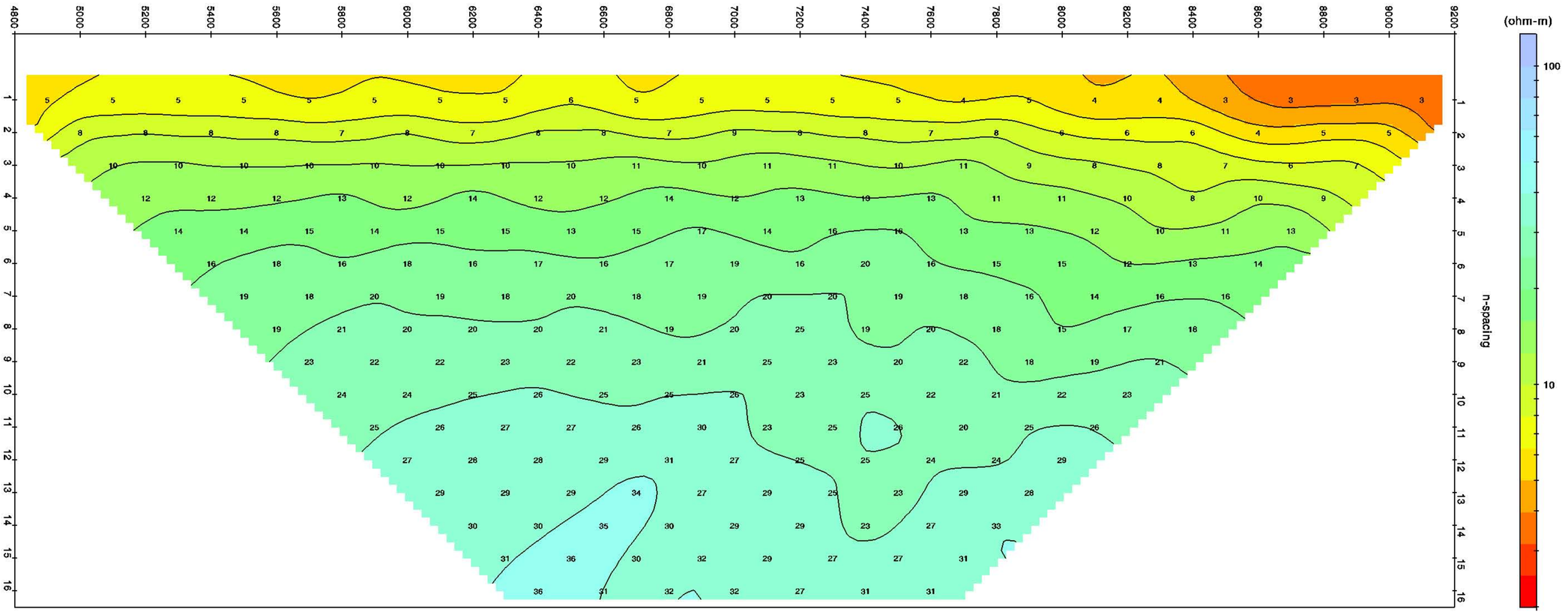
APPENDIX II

Zonge TS2DIP chargeability and resistivity inversion models

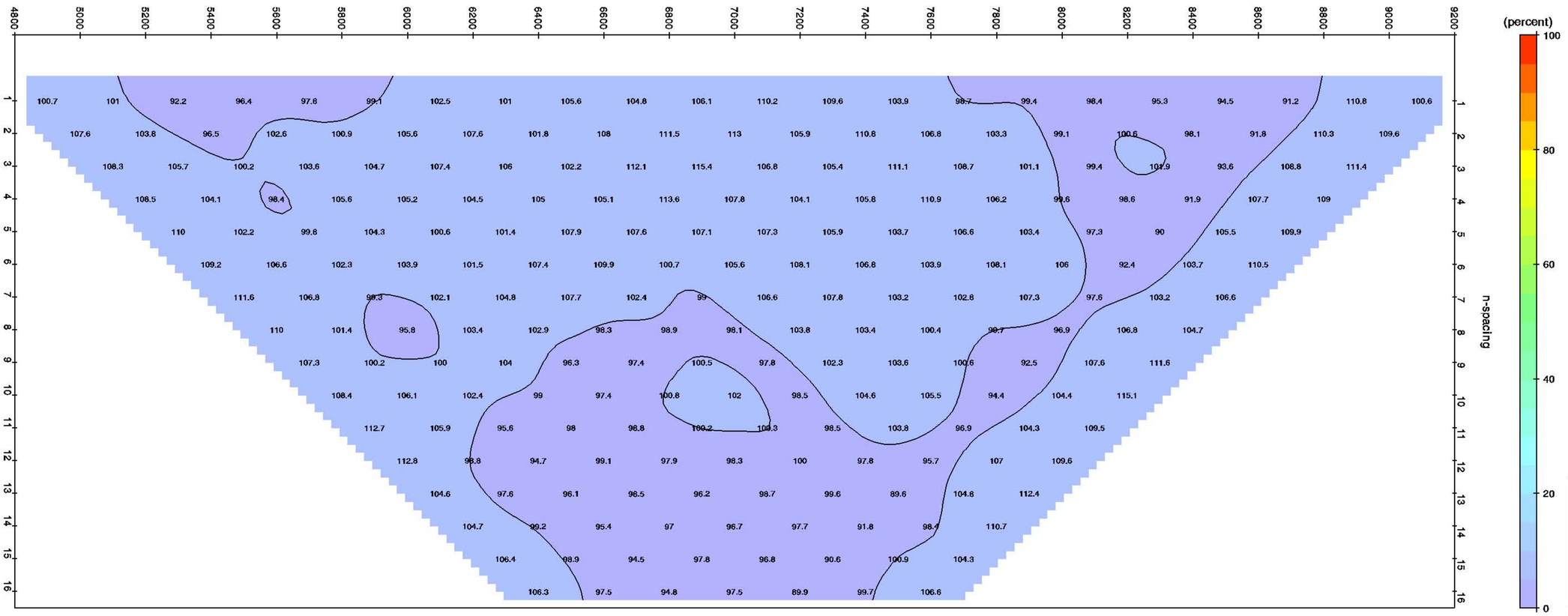
Resistivity Inversion Model



Resistivity Observed Data



Resistivity Observed-Calculated



SALM IP
Line 1000

Survey Parameters:
200 m Dipole-Dipole data
0.125 hertz repetition rate

Inversion control parameters:
ResSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
IPSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
TS2DIP v4.60e

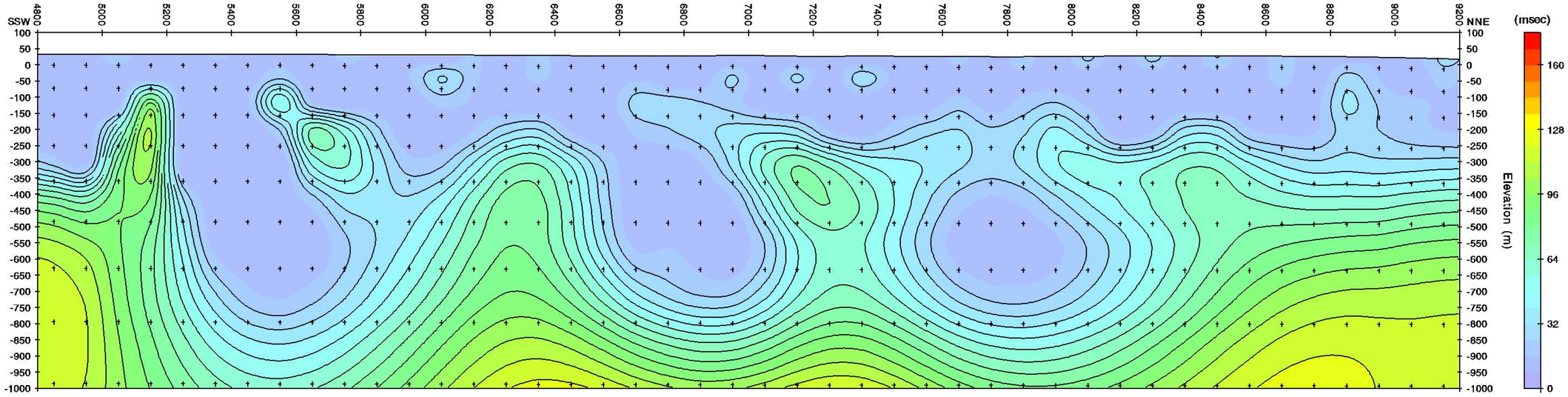
600 m

SALM
SALM IP
Line 1000
2D Smooth-Model Inversion
Dipole-Dipole Resistivity/IP Data

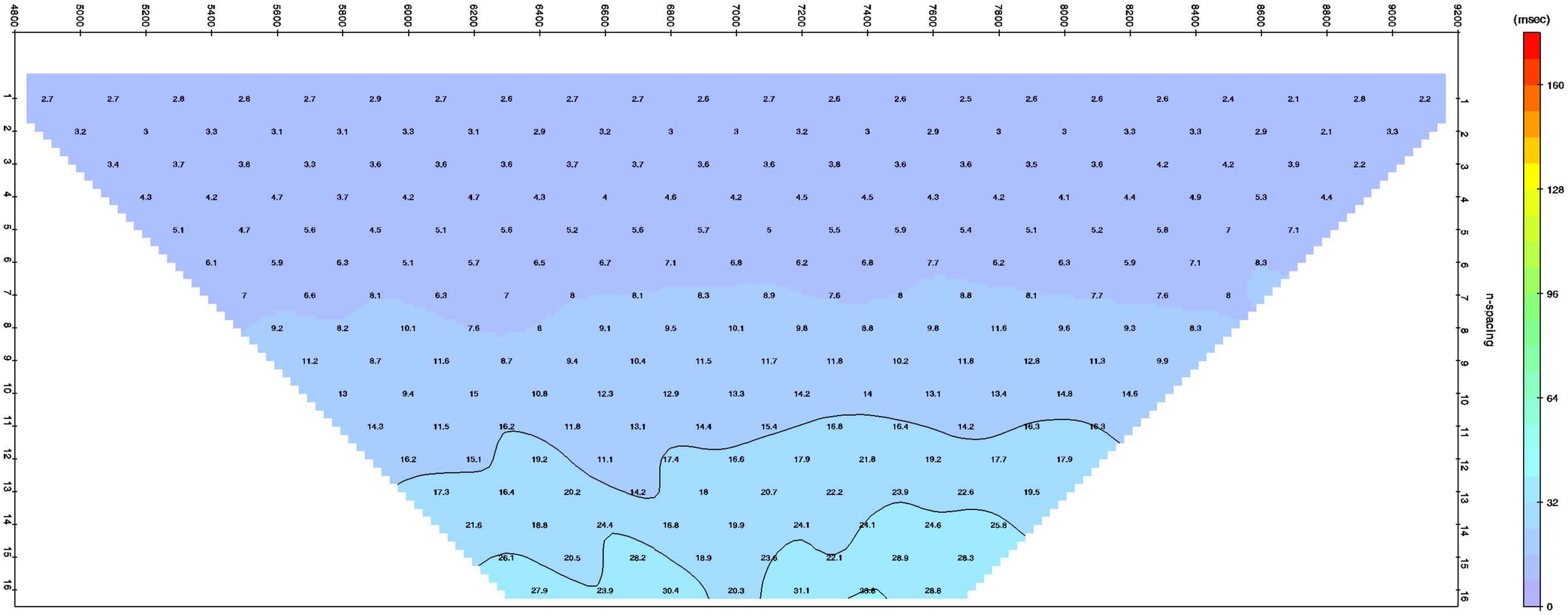
AUTHOR	DRAWN	DATE	SCALE	REPOR
Zonge	Zonge	23/04/12	1:10000	Job 957

REF: Line 1000N.s2d

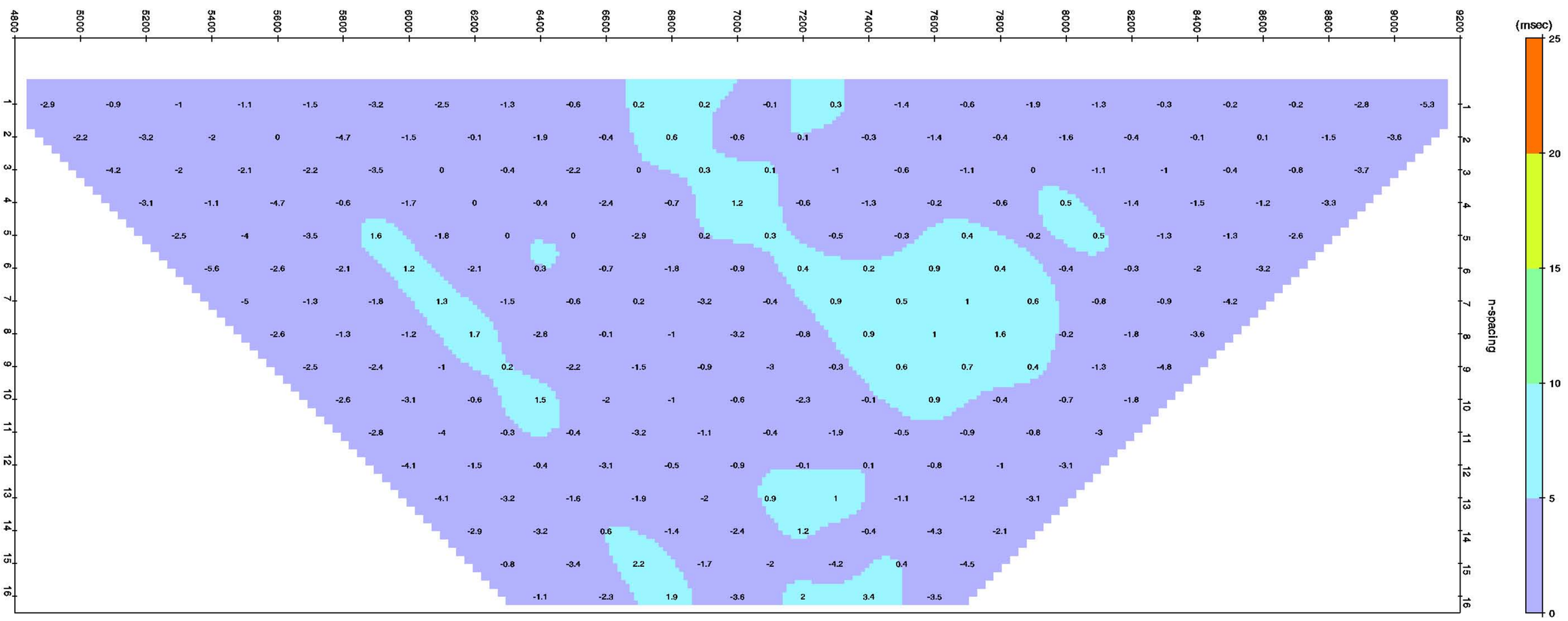
IP Inversion Model



IP Observed Data



IP Observed-Calculated



SALM IP
Line 1000

Survey Parameters:
200 m Dipole-Dipole data
0.125 hertz repetition rate

Inversion control parameters:
ResSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
IPSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
TS2DIP v4.60e

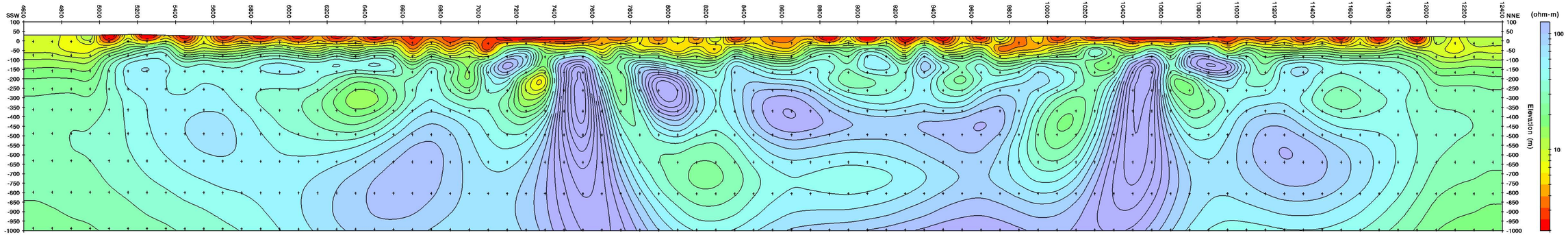
600 m

SALM
SALM IP
Line 1000
2D Smooth-Model Inversion
Dipole-Dipole Resistivity/IP Data

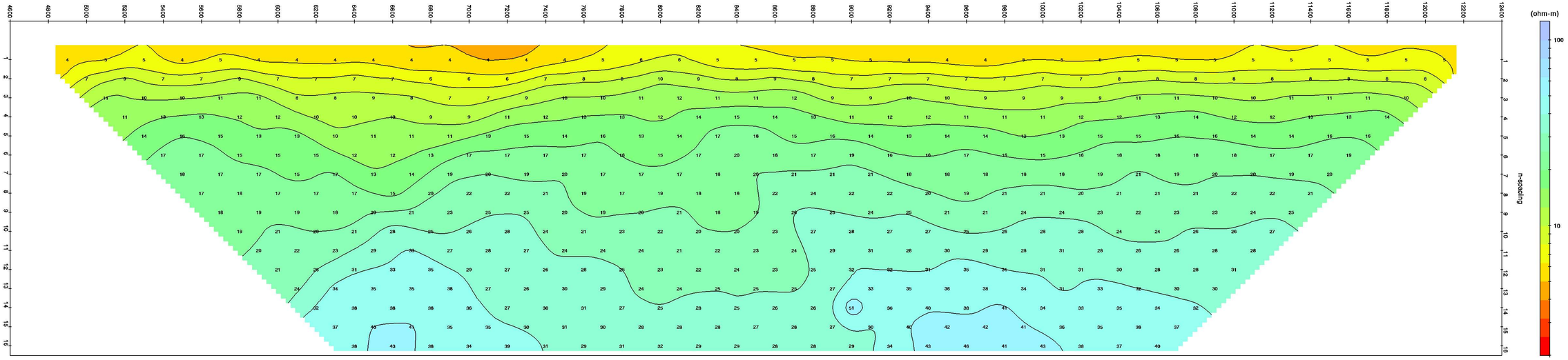
AUTHOR	DRAWN	DATE	SCALE	REPOR
Zonge	Zonge	23/04/12	1:10000	Job 957

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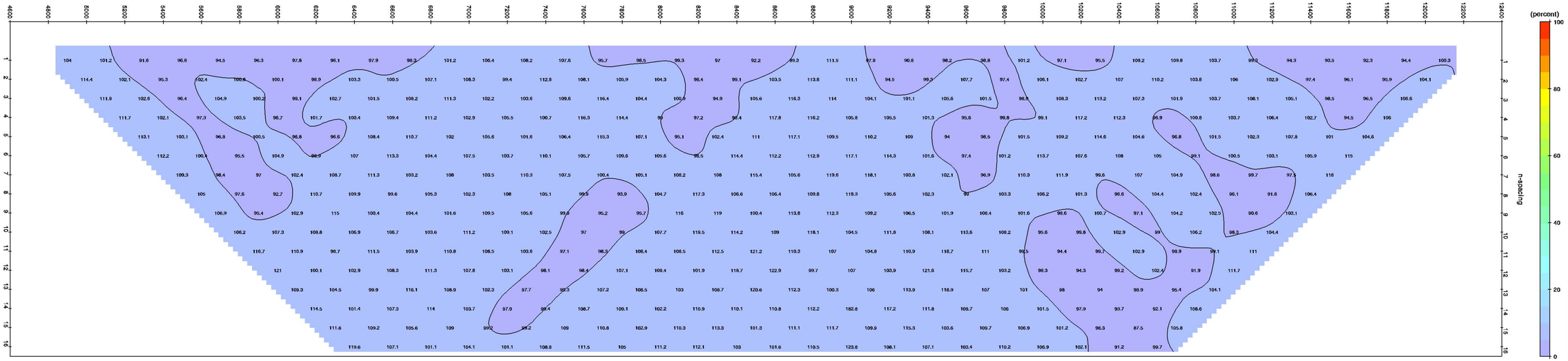
Resistivity Inversion Model



Resistivity Observed Data



Resistivity Observed-Calculated



SALM IP
Line 2000

Survey Parameters:
200 m Dipole-Dipole data
0.125 hertz repetition rate

Inversion control parameters:
ResSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
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TS2DIP v4.60h

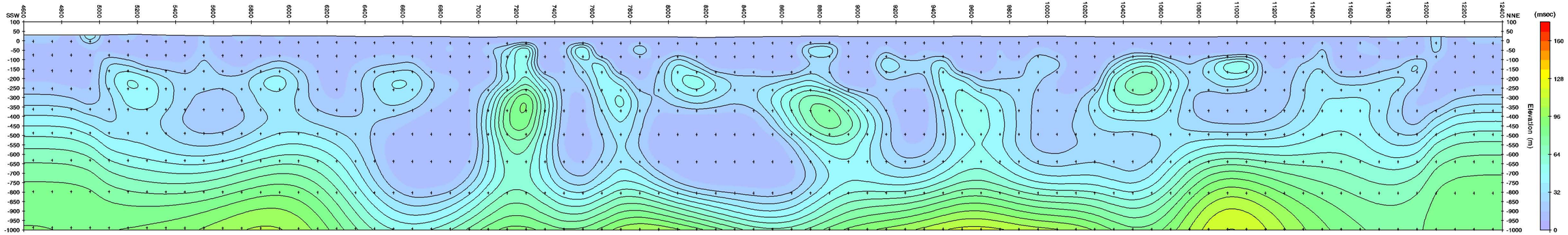
600 m

SALM
SALM IP
Line 2000
2D Smooth-Model Inversion
Dipole-Dipole Resistivity/IP Data

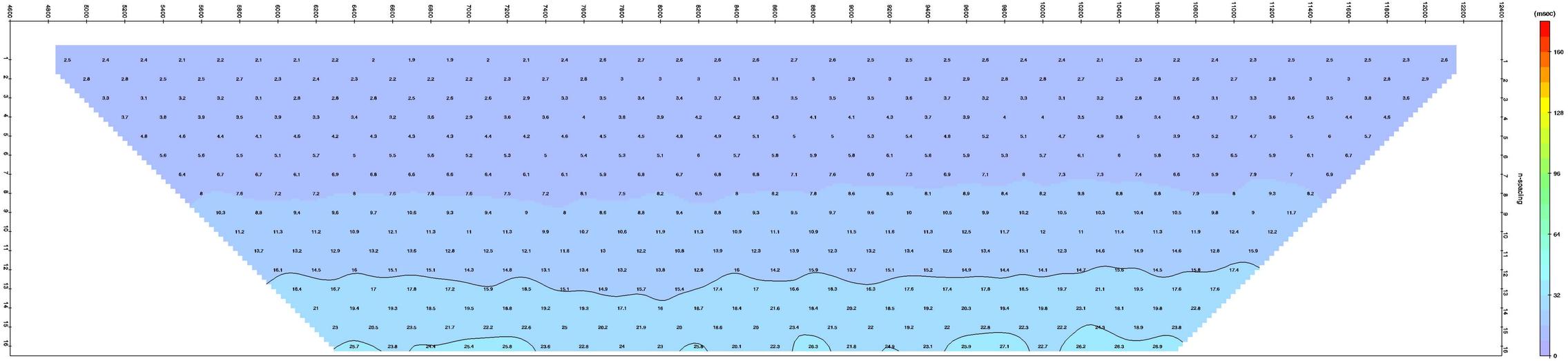
AUTHOR	DRAWN	DATE	SCALE	REPO
Zonge	Zonge	30/04/12	1:10000	Job 957

FILE: Line2000N.s2d

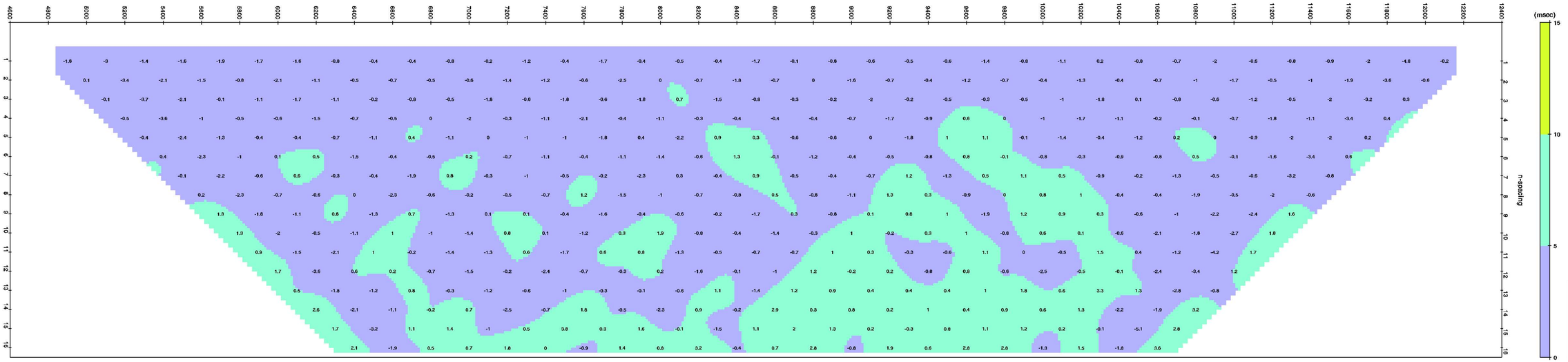
IP Inversion Model



IP Observed Data



IP Observed-Calculated



SALM IP
Line 2000

Survey Parameters:
200 m Dipole-Dipole data
0.125 hertz repetition rate

Inversion control parameters:
ResSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
IPSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
TS2DIP v4.60h

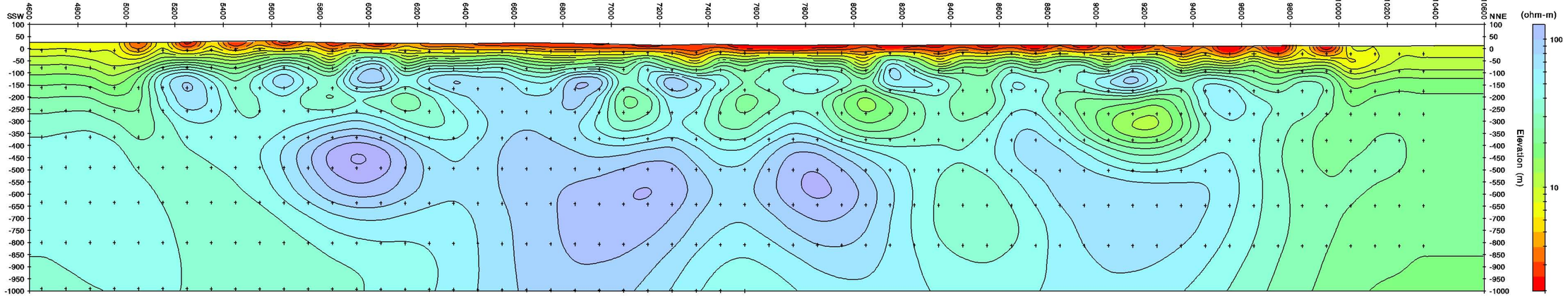
600 m

SALM
SALM IP
Line 2000
2D Smooth-Model Inversion
Dipole-Dipole Resistivity/IP Data

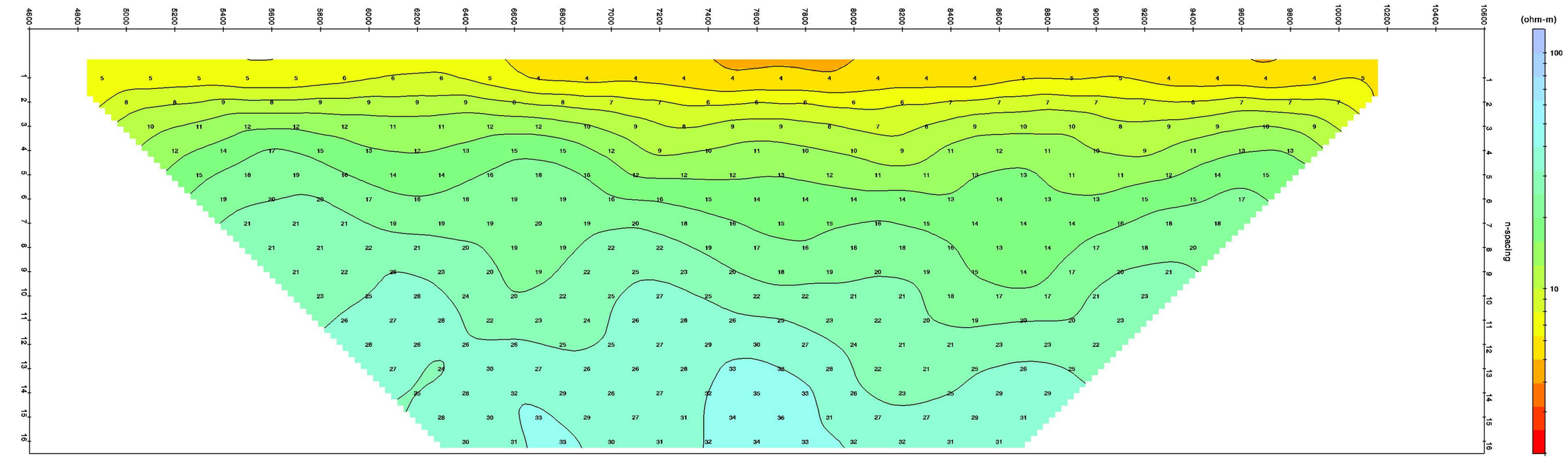
AUTHOR	DRAWN	DATE	SCALE	REPO
Zonge	Zonge	30/04/12	1:10000	Job 957

File: 2000N.s2d

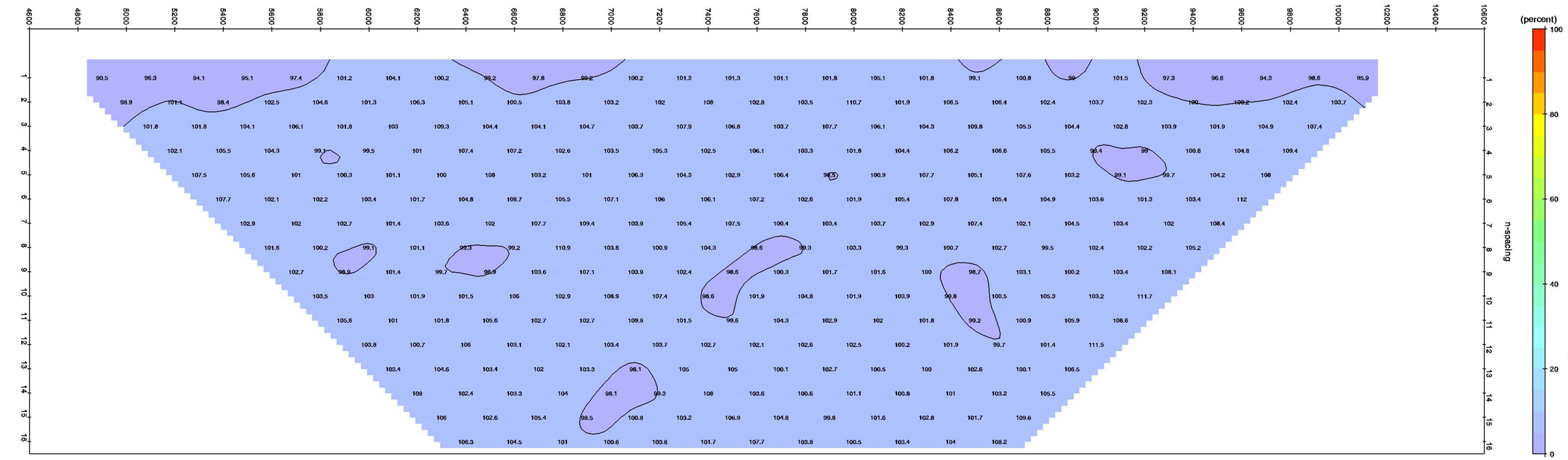
Resistivity Inversion Model



Resistivity Observed Data



Resistivity Observed-Calculated



SALM IP
Line 3000

Survey Parameters:
200 m Dipole-Dipole data
0.125 hertz repetition rate

Inversion control parameters:
ResSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
IPSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
TS2DIP v4.60h

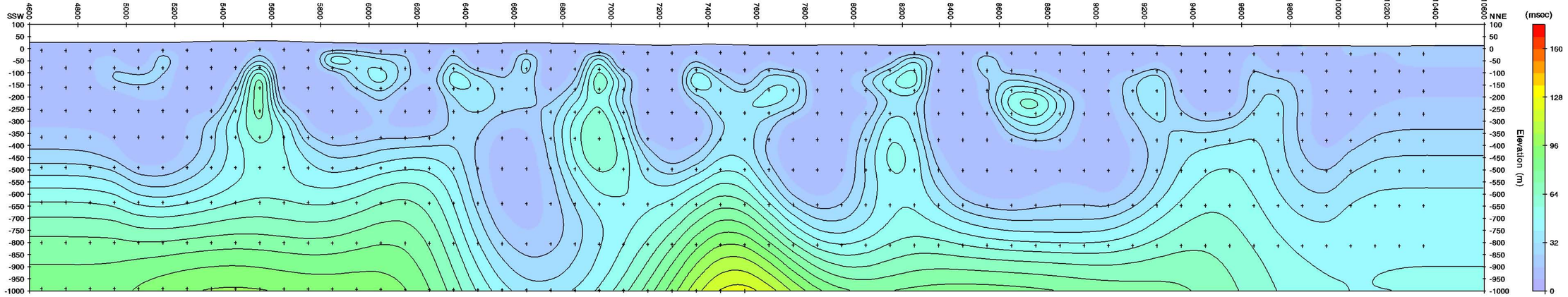
600 m

SALM
SALM IP
Line 3000
2D Smooth-Model Inversion
Dipole-Dipole Resistivity/IP Data

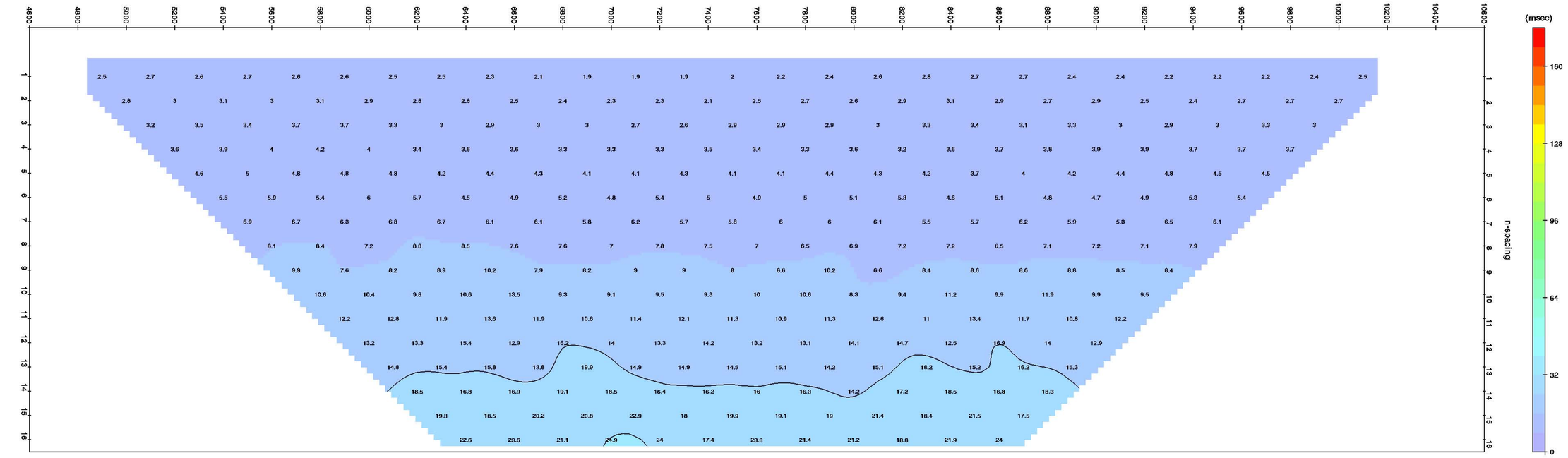
AUTHOR	DRAWN	DATE	SCALE	REPO
Zonge	Zonge	01/05/12	1:10000	Job 957

FILE: Line 3000N.s2d

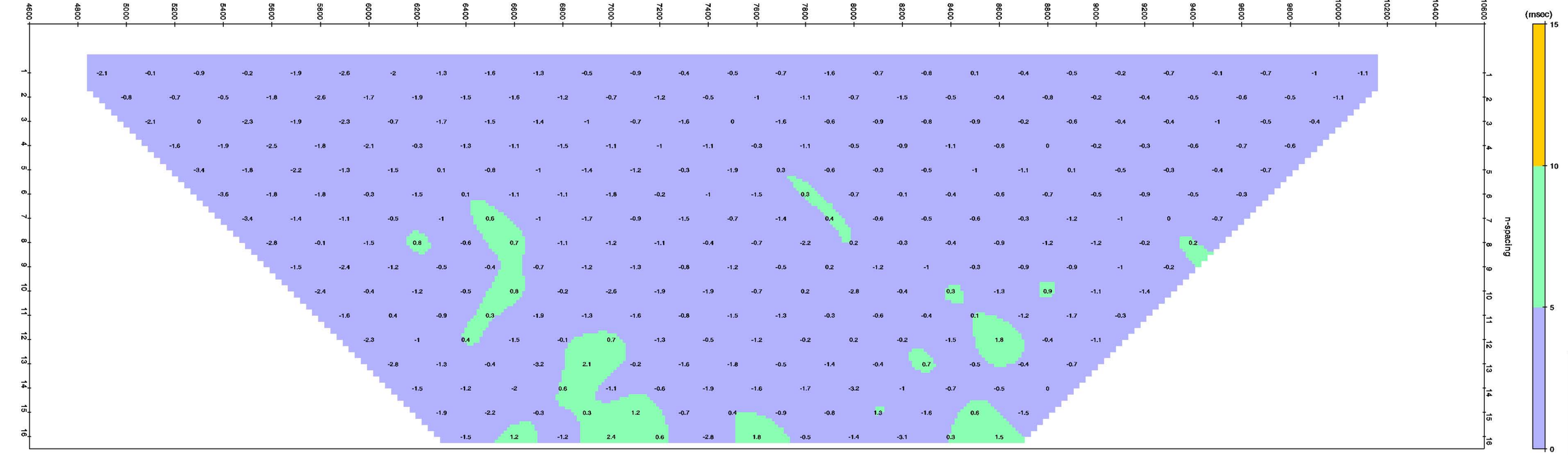
IP Inversion Model



IP Observed Data



IP Observed-Calculated



SALM IP
Line 3000

Survey Parameters:
200 m Dipole-Dipole data
0.125 hertz repetition rate

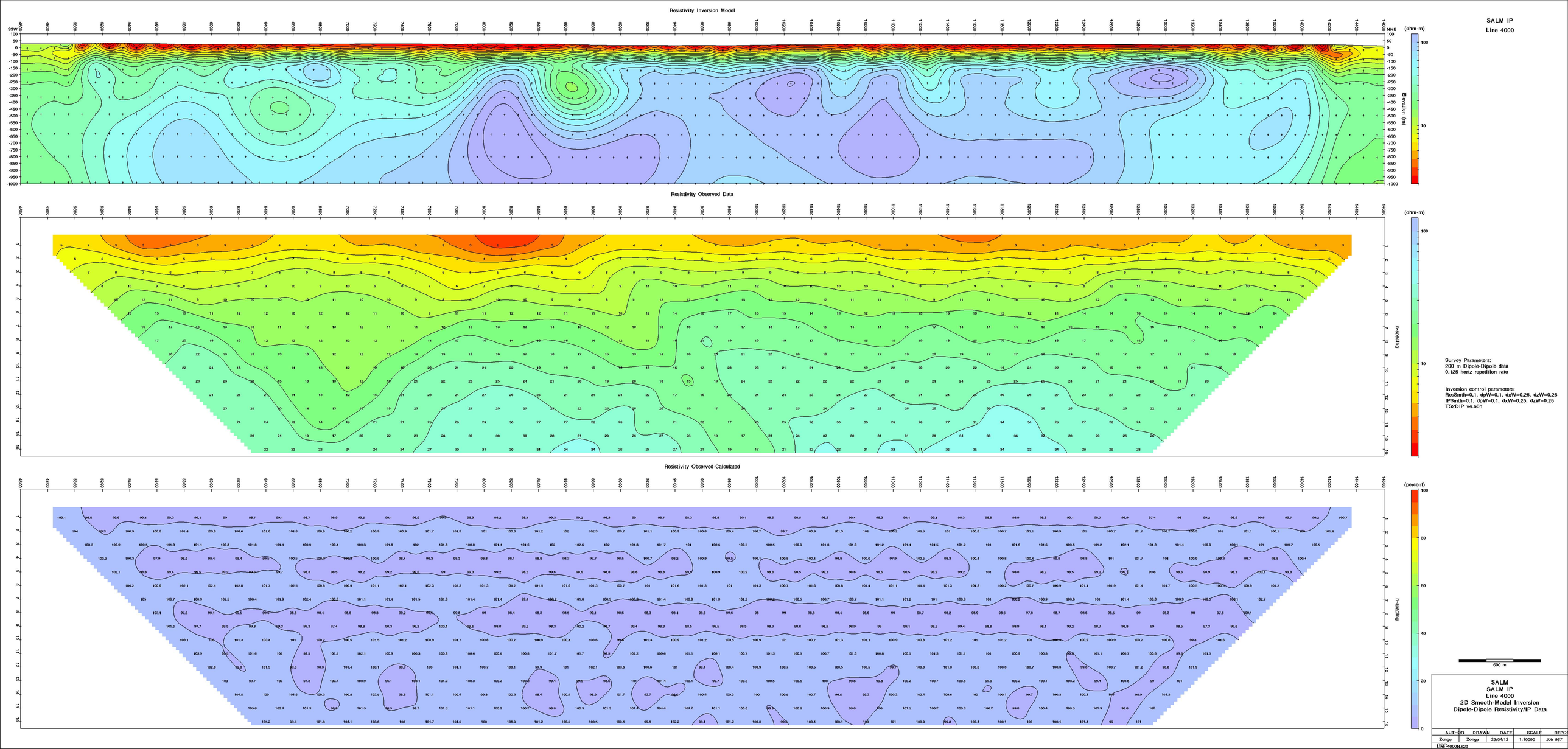
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TS2DIP v4.60h

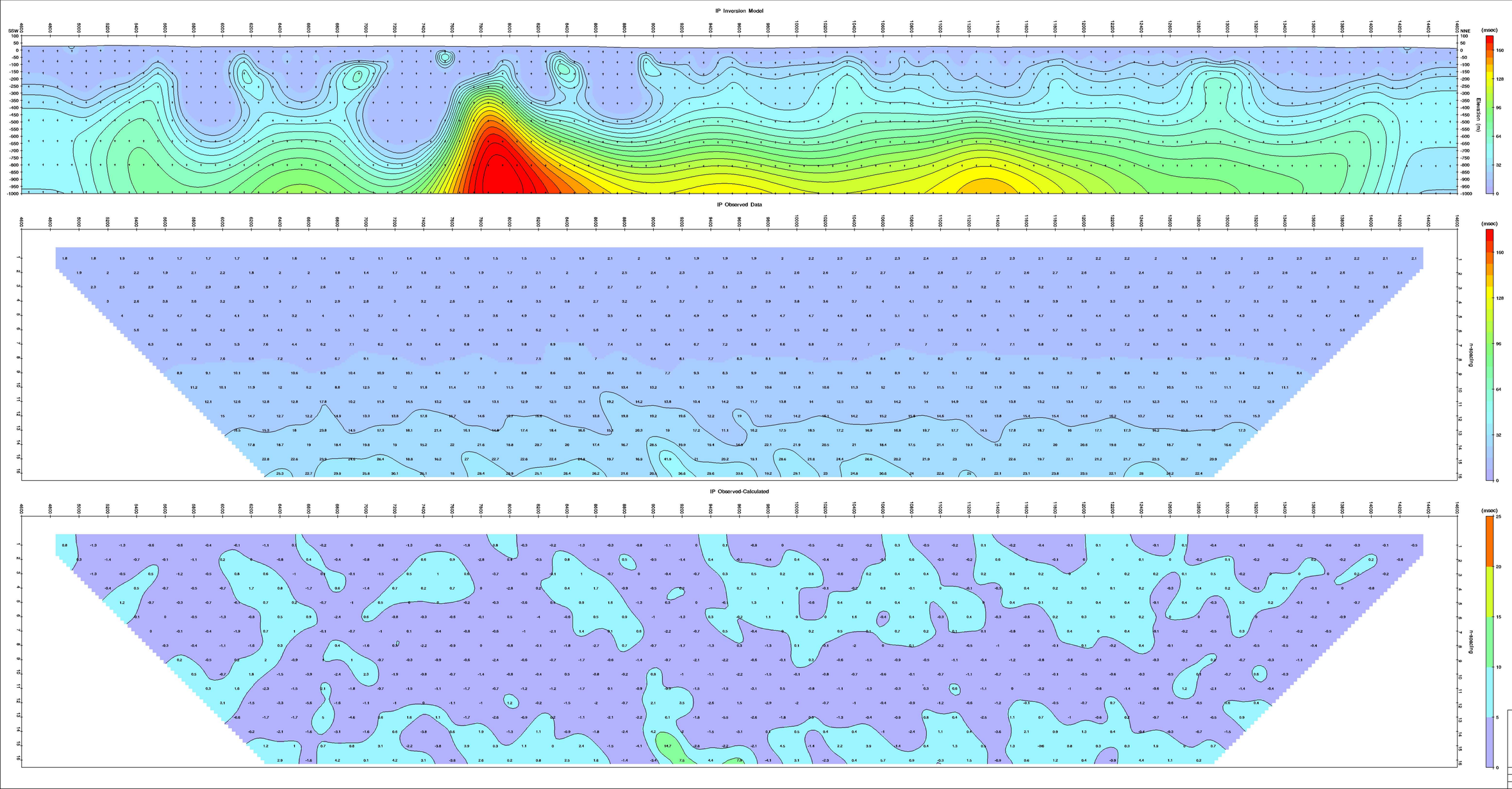
600 m

SALM
SALM IP
Line 3000
2D Smooth-Model Inversion
Dipole-Dipole Resistivity/IP Data

AUTHOR	DRAWN	DATE	SCALE	REPOR
Zonge	Zonge	01/05/12	1:10000	Job 957

FILE: 3000N.s2d


Resistivity Inversion Model
SSW
NNE
(ohm-m)
Elevation (m)
Resistivity Observed Data
n-spacing
Rosistivity Observed-Calculated
(percent)
SALM IP
Line 4000
Survey Parameters:
200 m Dipole-Dipole data
0.125 hertz repetition rate
Inversion control parameters:
ResSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
IPSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
TS2DIP v4.60h
600 m
SALM
SALM IP
Line 4000
2D Smooth-Model Inversion
Dipole-Dipole Resistivity/IP Data
AUTHOR Zonge
DRAWN Zonge
DATE 23/04/12
SCALE 1:10000
REPOR Job 957
FILE 4000N.s2d



SALM IP
Line 4000

Survey Parameters:
200 m Dipole-Dipole data
0.125 hertz repetition rate

Inversion control parameters:
ResSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
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TS2DIP v4.60h

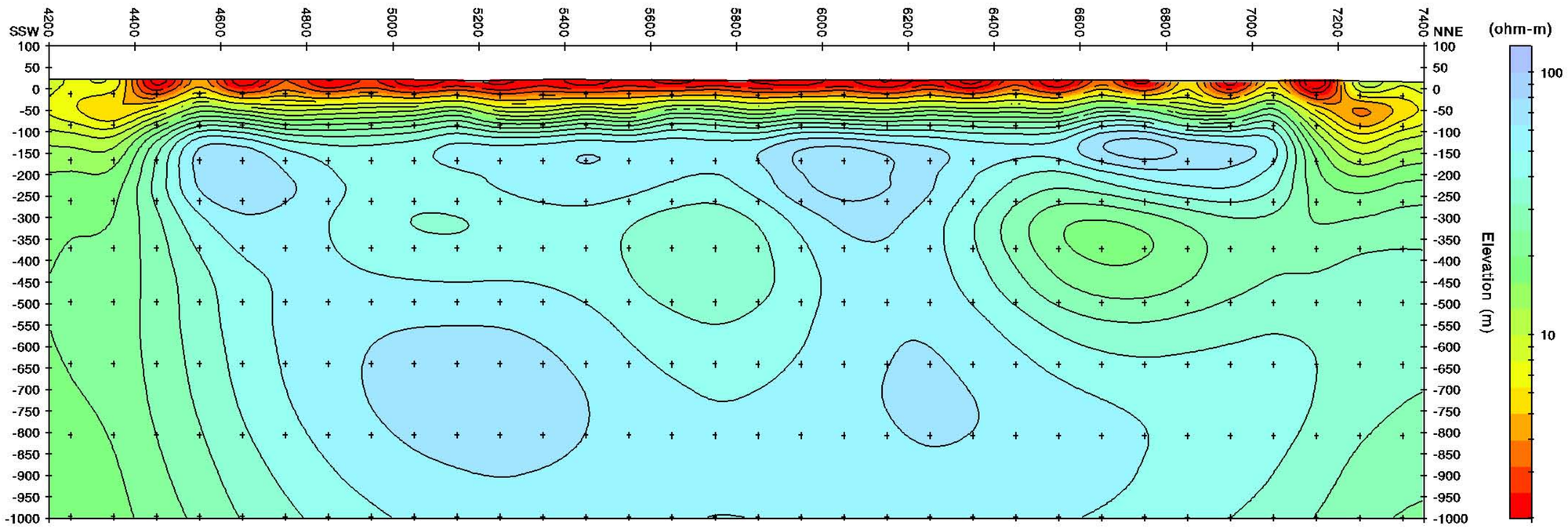
SALM
SALM IP
Line 4000
2D Smooth-Model Inversion
Dipole-Dipole Resistivity/IP Data

AUTHOR	DRAWN	DATE	SCALE	REPOR
Zonge	Zonge	23/04/12	1:10000	Job 957

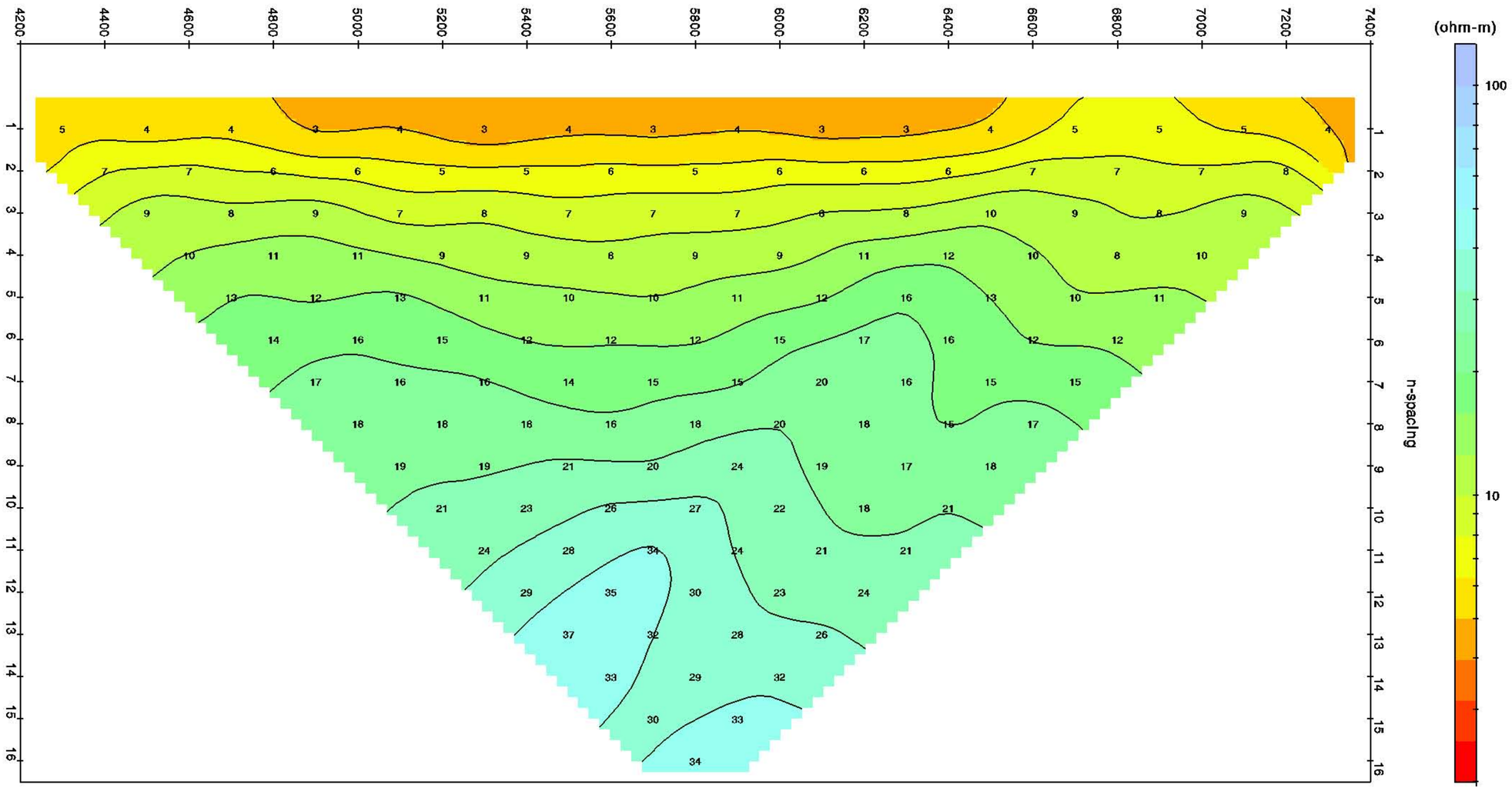
FILE: 4000N.s2d

SALM IP
Line 5000

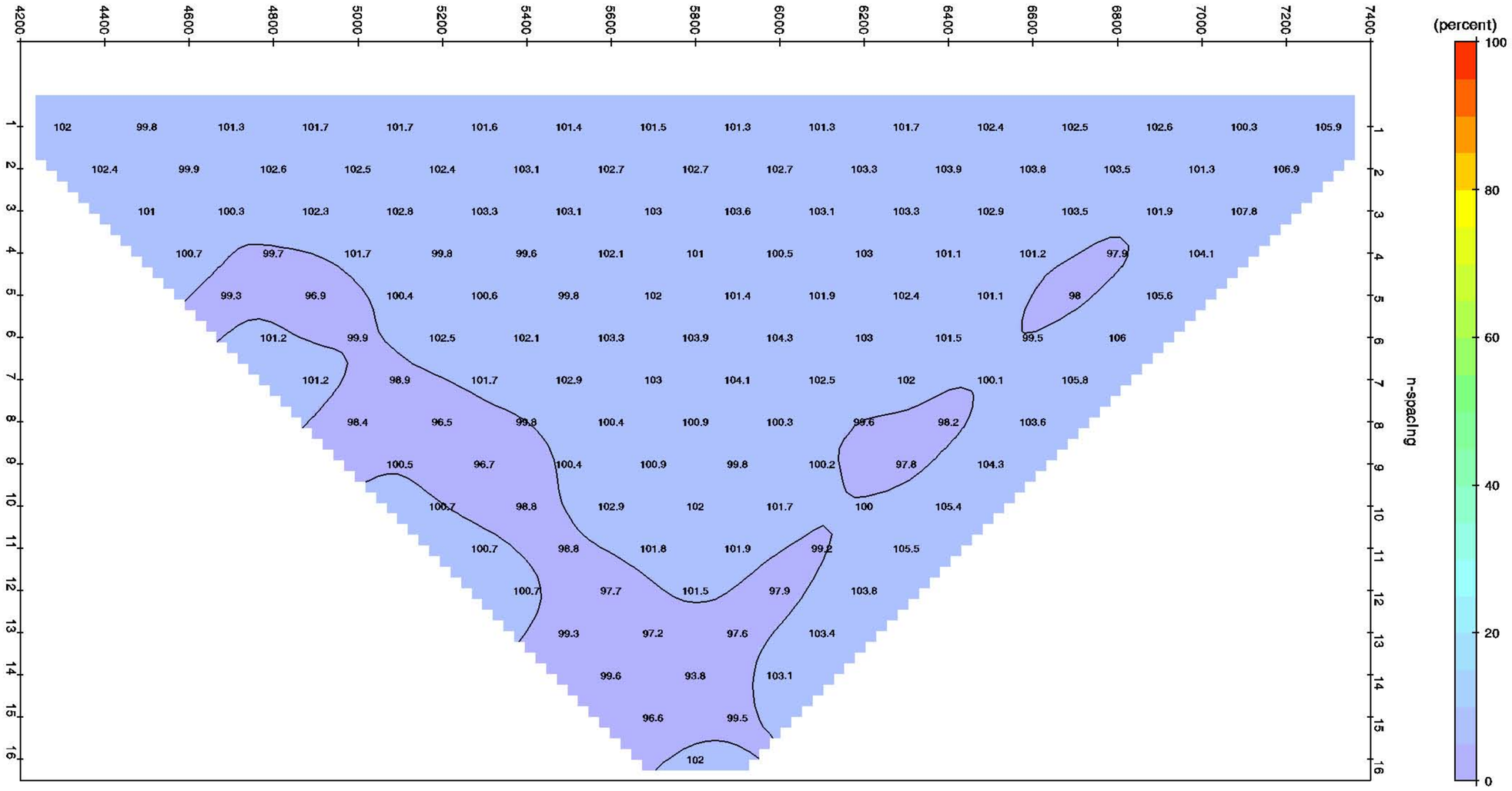
Resistivity Inversion Model



Resistivity Observed Data



Resistivity Observed-Calculated



Survey Parameters:
200 m Dipole-Dipole data
0.125 hertz repetition rate

Inversion control parameters:
ResSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
IPSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
TS2DIP v4.60e

600 m

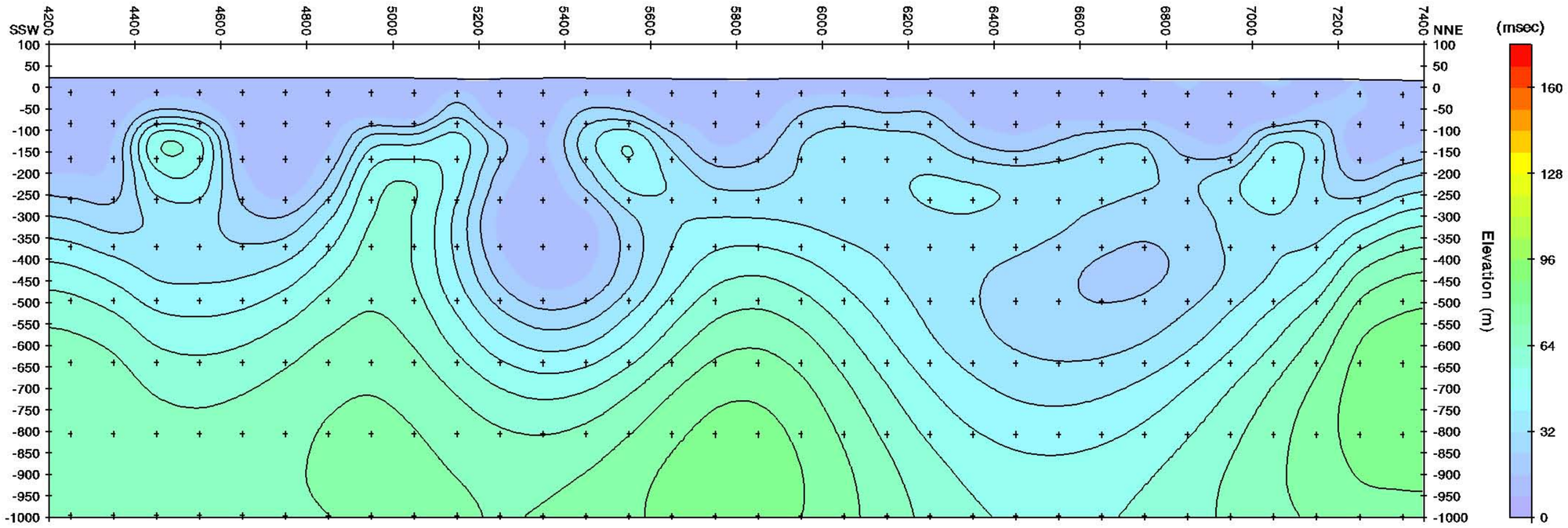
SALM
SALM IP
Line 5000
2D Smooth-Model Inversion
Dipole-Dipole Resistivity/IP Data

AUTHOR	DRAWN	DATE	SCALE	REPOR
Zonge	Zonge	23/04/12	1:10000	Job 957

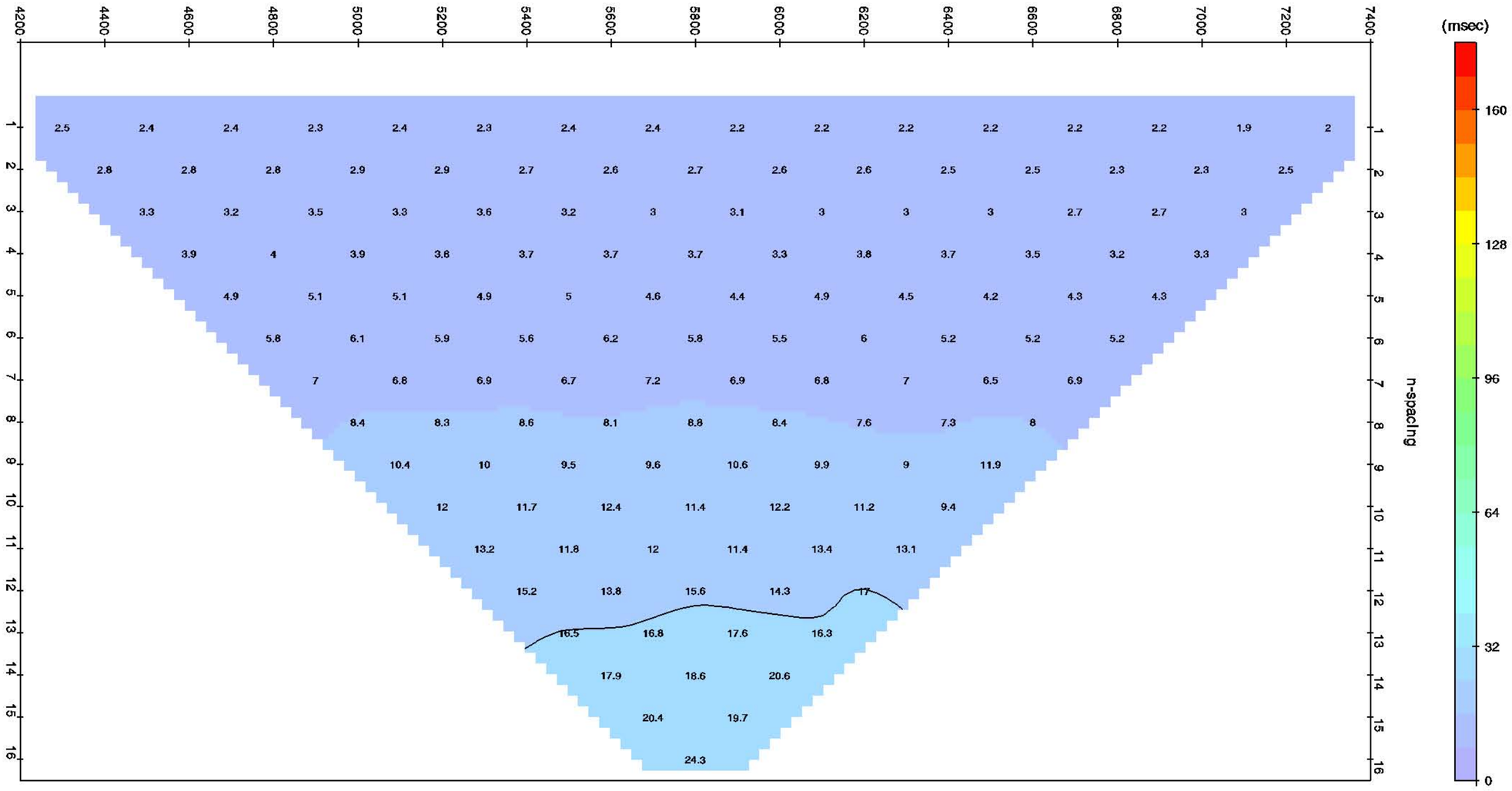
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SALM IP
Line 5000

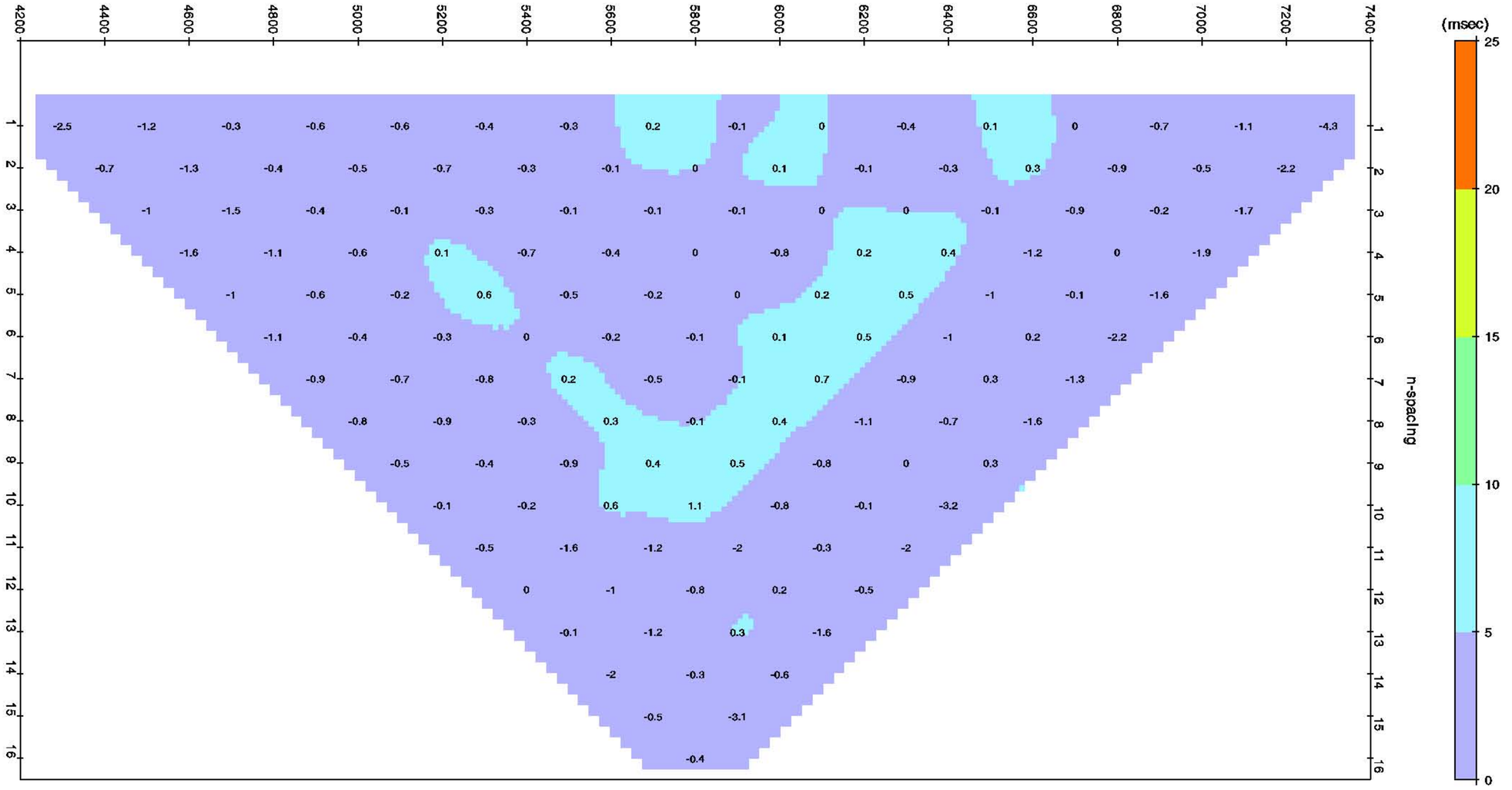
IP Inversion Model



IP Observed Data



IP Observed-Calculated



Survey Parameters:
200 m Dipole-Dipole data
0.125 hertz repetition rate

Inversion control parameters:
ResSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
IPSmth=0.1, dpW=0.1, dxW=0.25, dzW=0.25
TS2DIP v4.60e

600 m

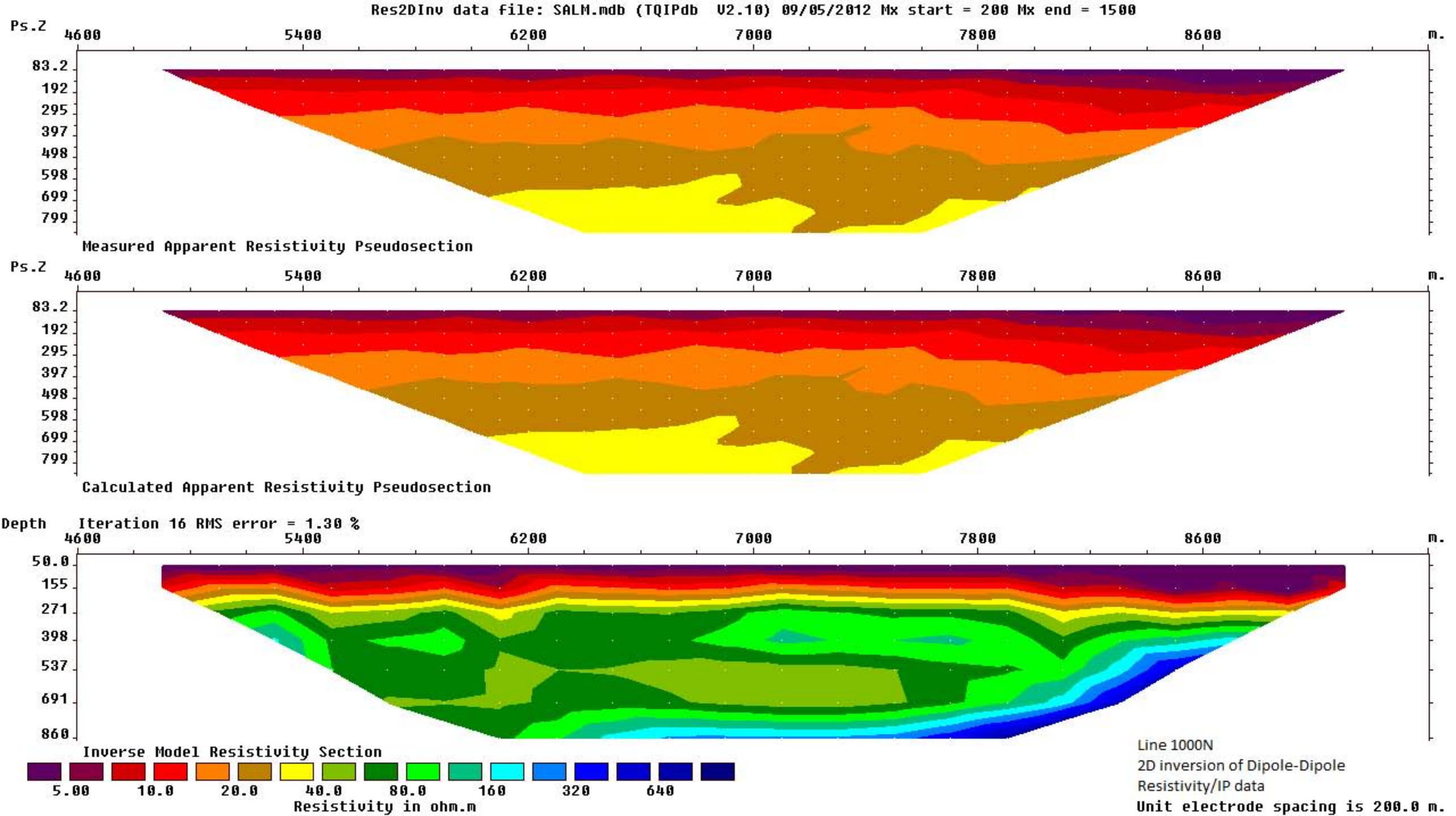
SALM
SALM IP
Line 5000
2D Smooth-Model Inversion
Dipole-Dipole Resistivity/IP Data

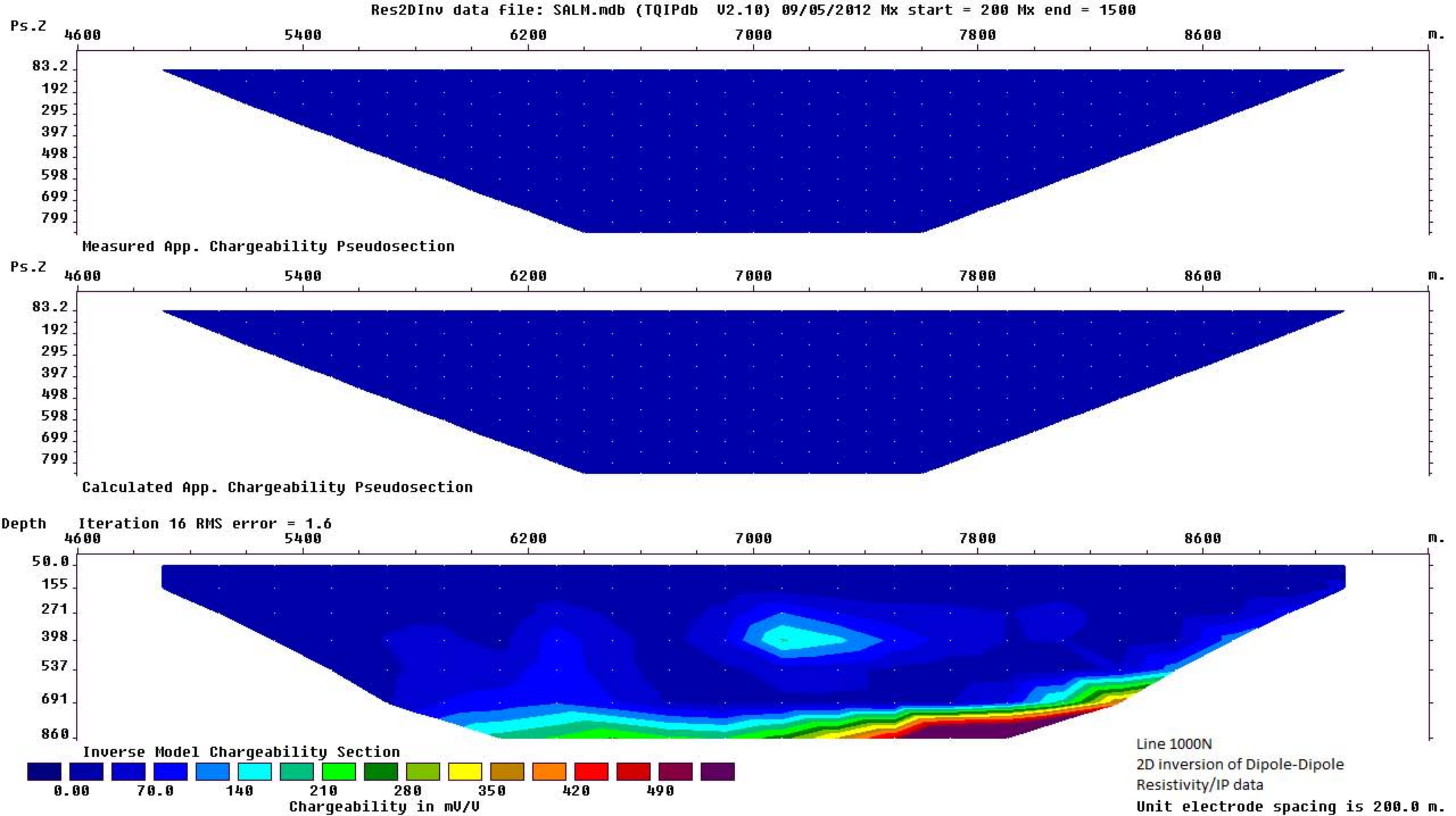
AUTHOR	DRAWN	DATE	SCALE	REPOR
Zonge	Zonge	23/04/12	1:10000	Job 957

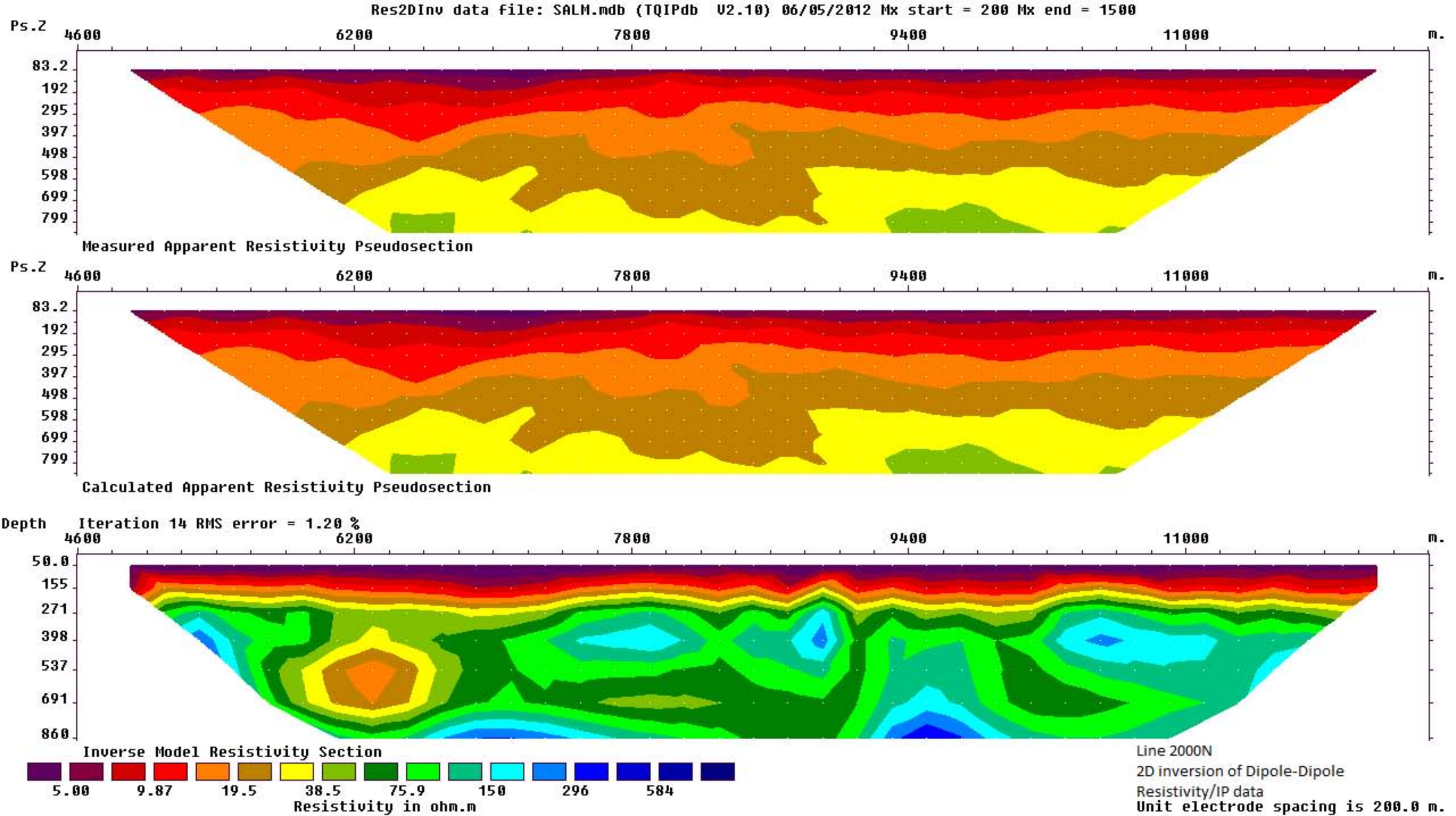
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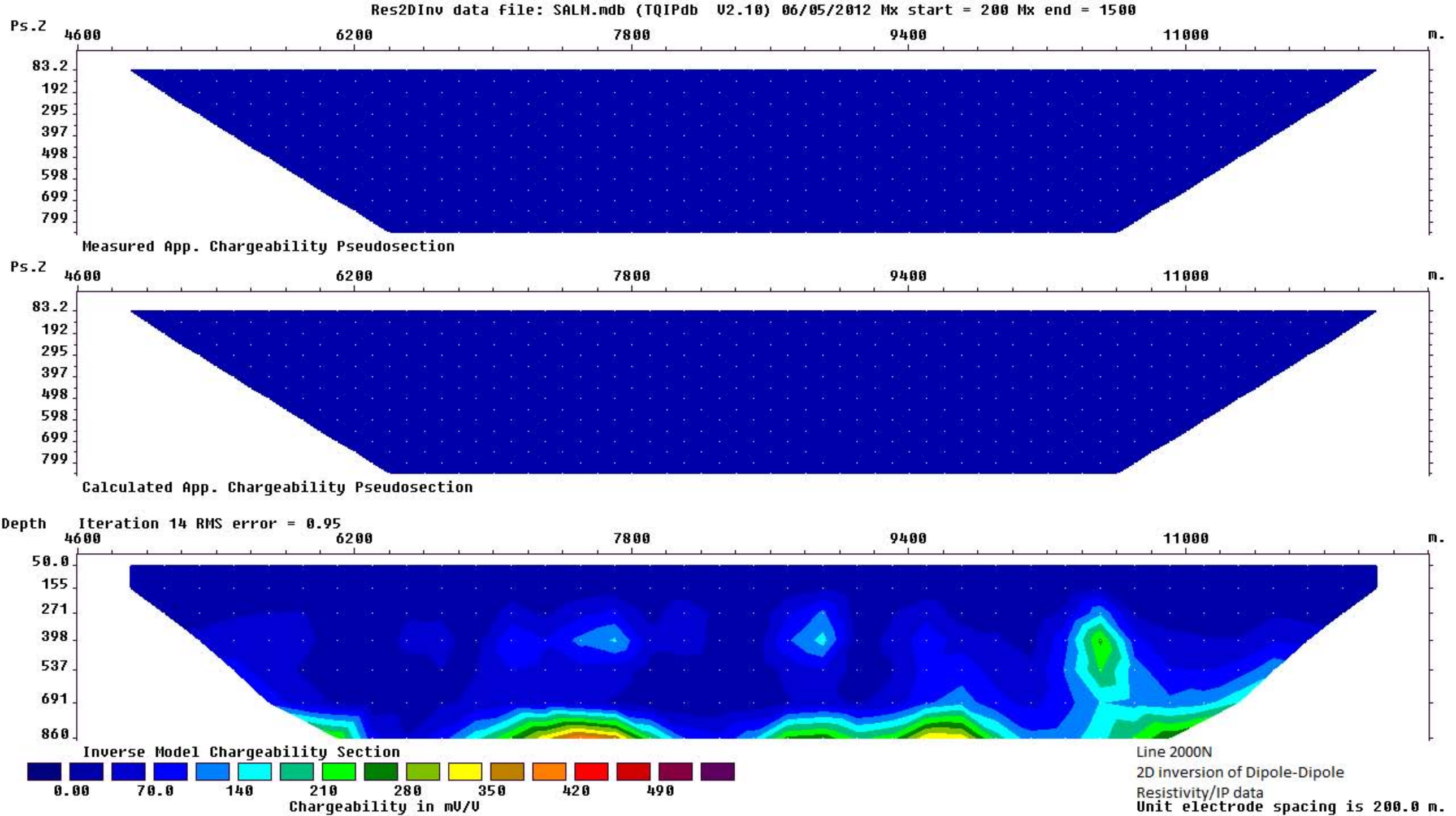
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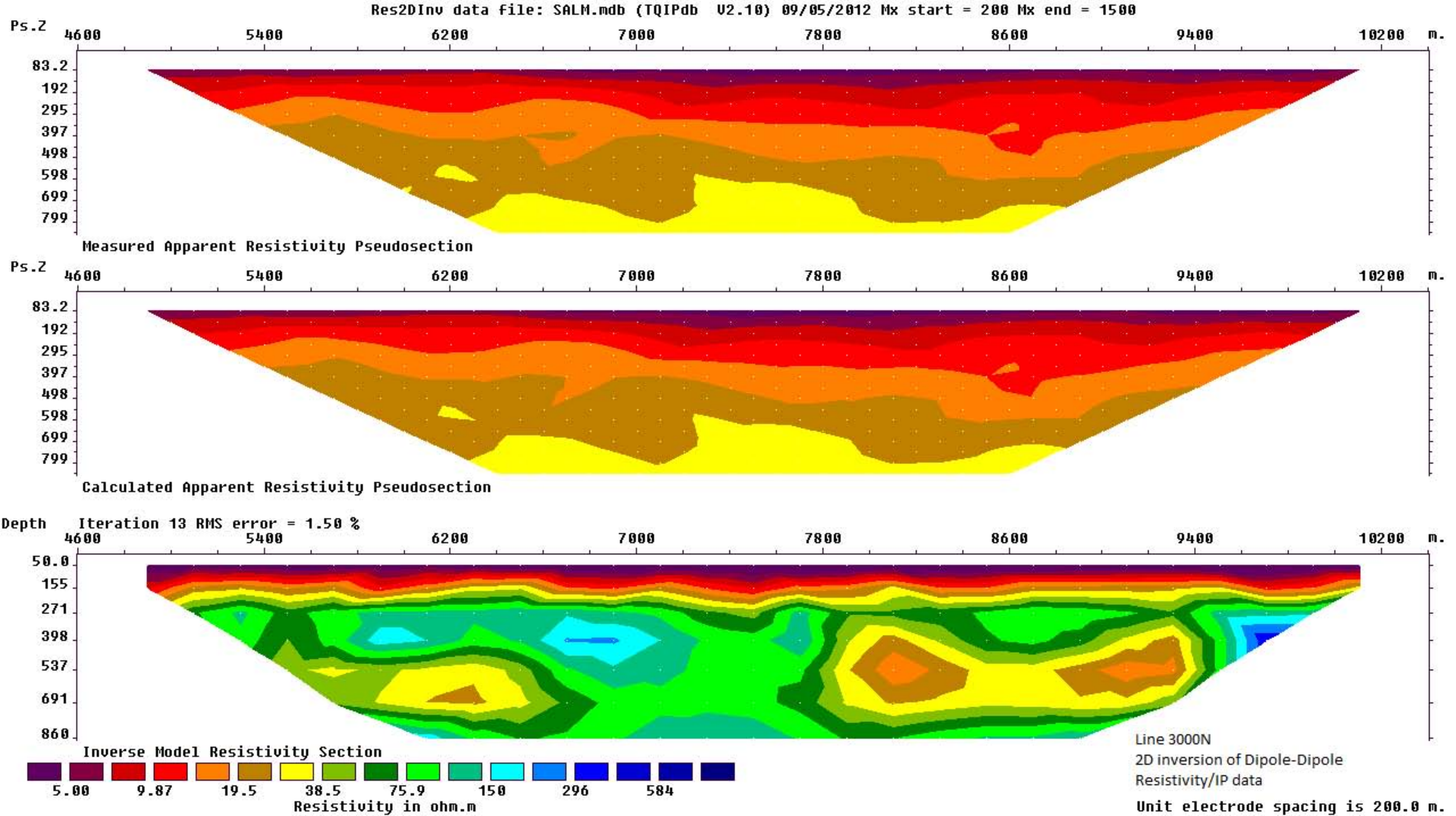
Loke RES2DINV chargeability and resistivity inversion models

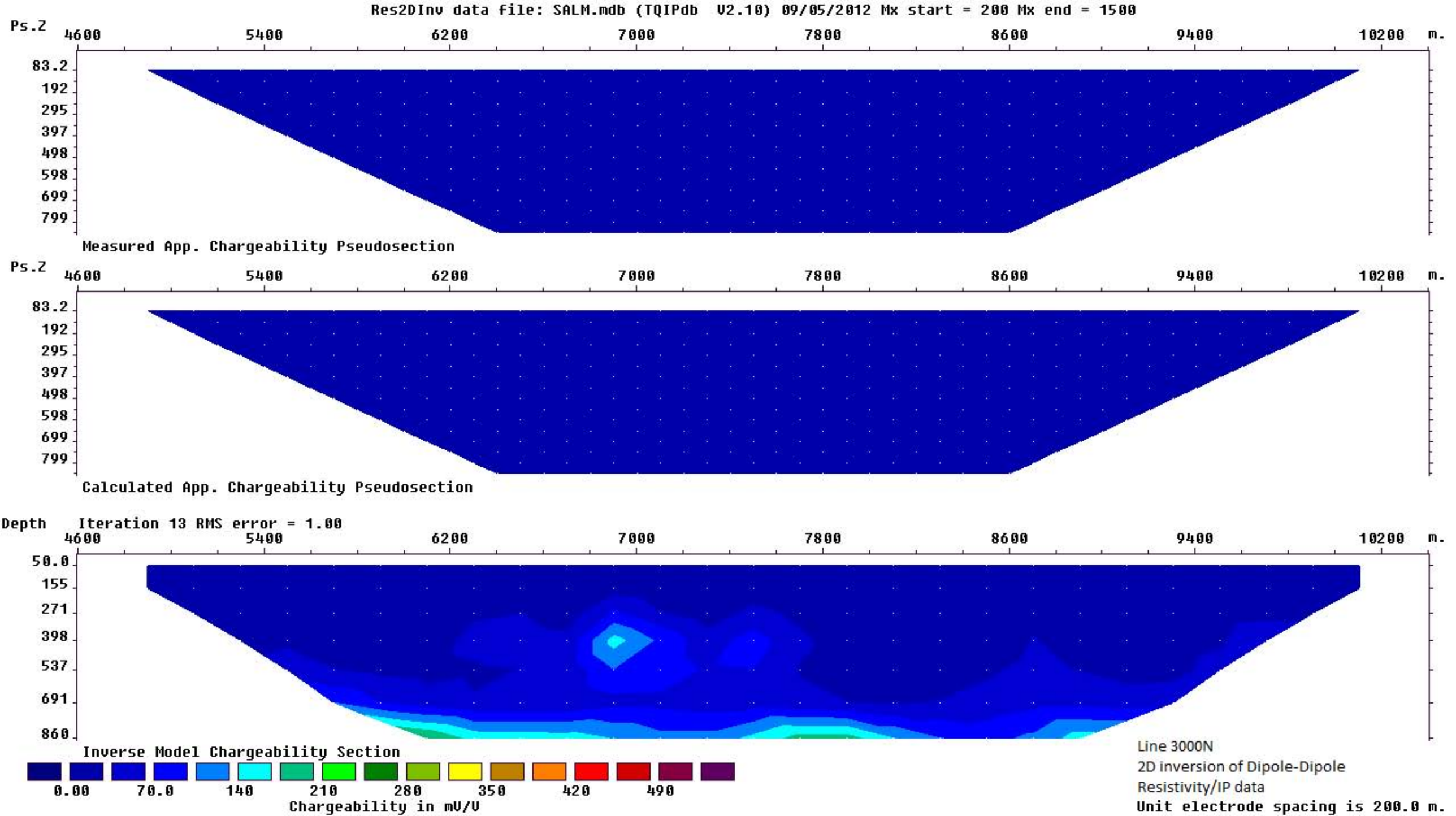

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Ps.Z
4600
5400
6200
7000
7800
8600
m.
83.2
192
295
397
498
598
699
799
Measured Apparent Resistivity Pseudosection
Ps.Z
Calculated Apparent Resistivity Pseudosection
Depth
Iteration 16 RMS error = 1.30 %
50.0
155
271
398
537
691
860
Inverse Model Resistivity Section
5.00
10.0
20.0
40.0
80.0
160
320
640
Resistivity in ohm.m
Line 1000N
2D inversion of Dipole-Dipole
Resistivity/IP data
Unit electrode spacing is 200.0 m.

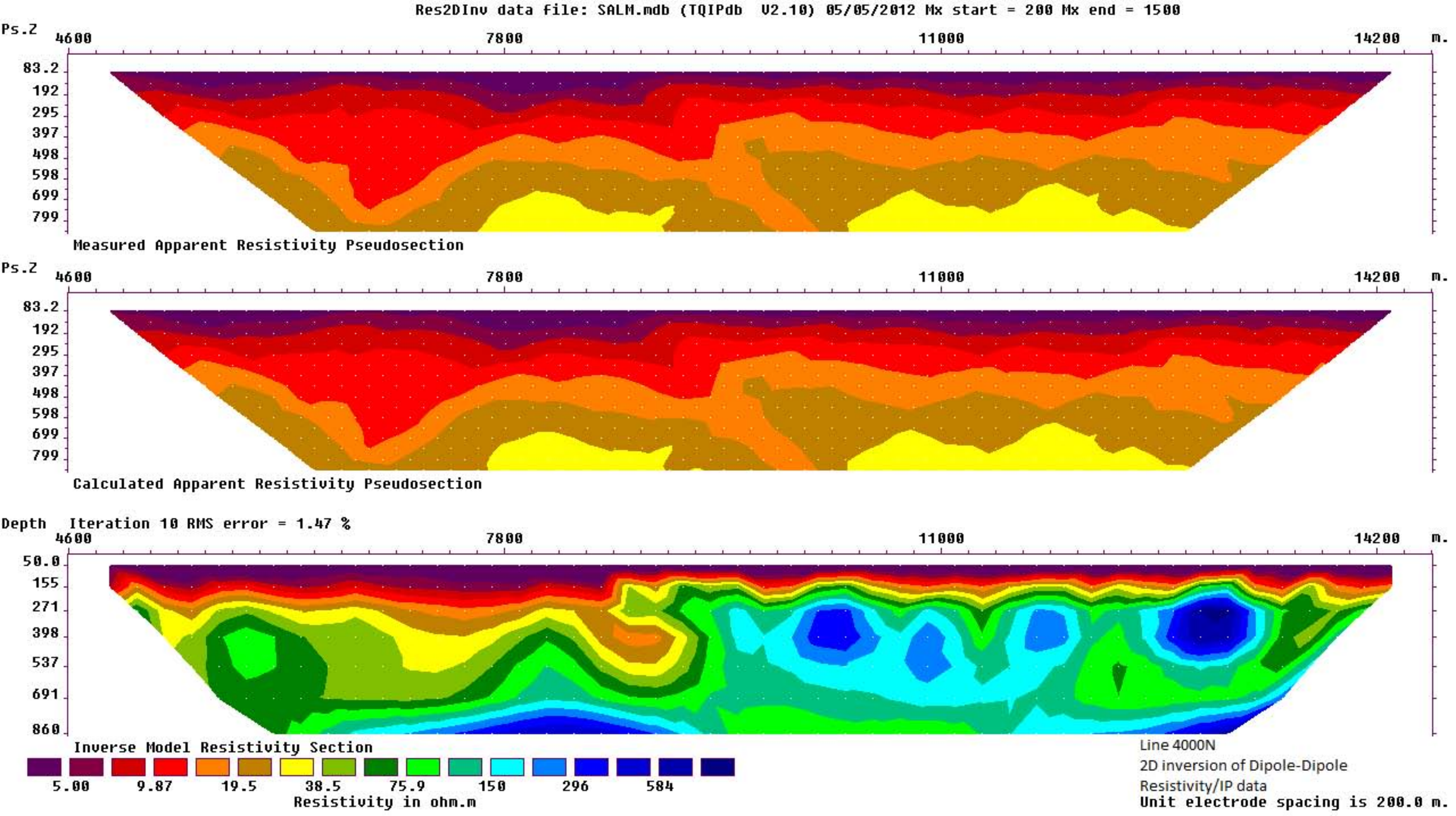

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Ps.Z
4600
5400
6200
7000
7800
8600
m.
83.2
192
295
397
498
598
699
799
Measured App. Chargeability Pseudosection
Ps.Z
Calculated App. Chargeability Pseudosection
Depth
Iteration 16 RMS error = 1.6
50.0
155
271
398
537
691
860
Inverse Model Chargeability Section
0.00
70.0
140
210
280
350
420
490
Chargeability in mV/V
Line 1000N
2D inversion of Dipole-Dipole
Resistivity/IP data
Unit electrode spacing is 200.0 m.

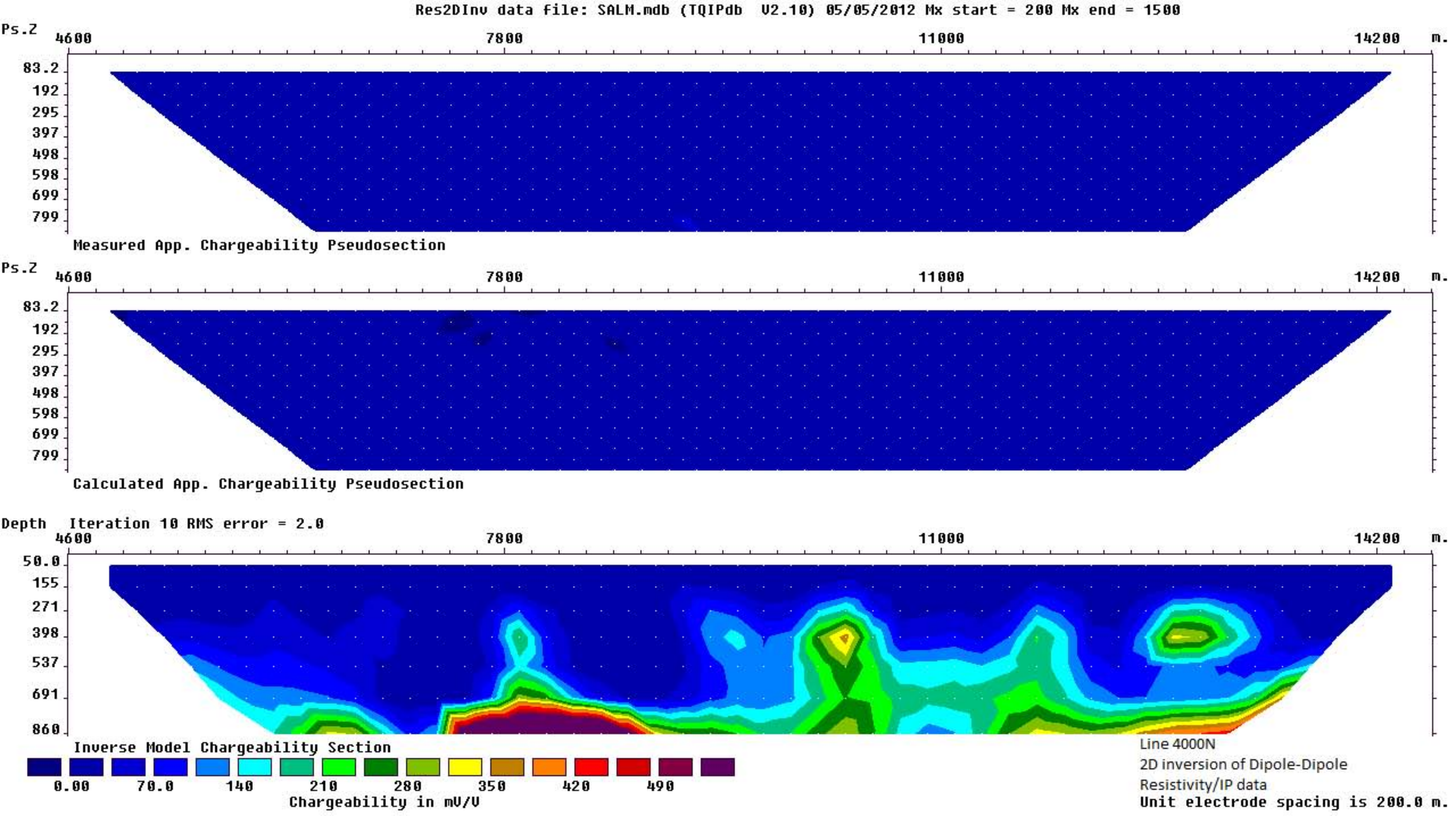

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Ps.Z
4600
6200
7800
9400
11000
m.
83.2
192
295
397
498
598
699
799
Measured Apparent Resistivity Pseudosection
Ps.Z
4600
6200
7800
9400
11000
m.
83.2
192
295
397
498
598
699
799
Calculated Apparent Resistivity Pseudosection
Depth
Iteration 14 RMS error = 1.20 %
4600
6200
7800
9400
11000
m.
50.0
155
271
398
537
691
860
Inverse Model Resistivity Section
5.00
9.87
19.5
38.5
75.9
150
296
584
Resistivity in ohm.m
Line 2000N
2D inversion of Dipole-Dipole
Resistivity/IP data
Unit electrode spacing is 200.0 m.

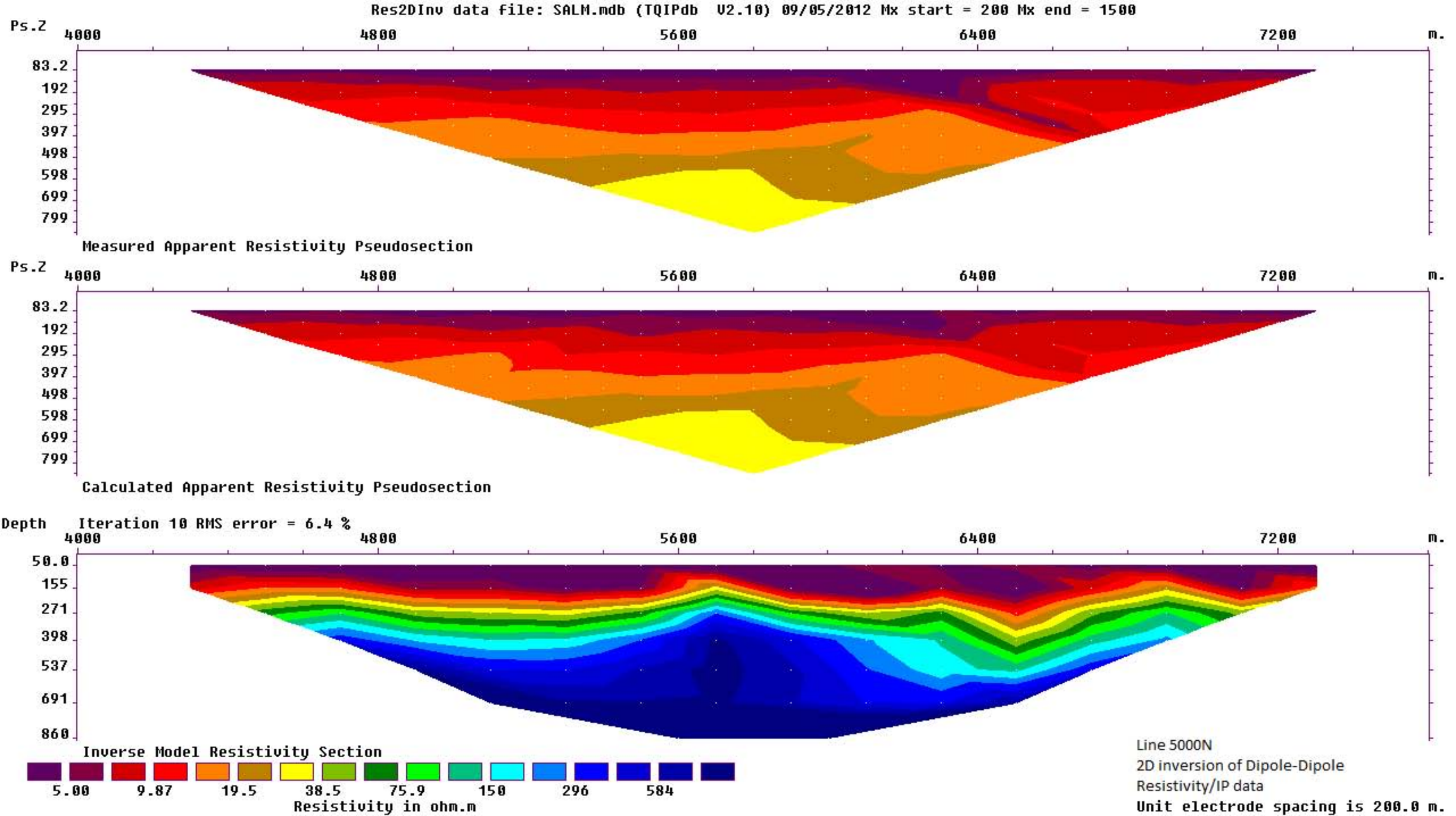

Res2DInv data file: SALM.mdb (TQIPdb V2.10) 06/05/2012 Mx start = 200 Mx end = 1500
Ps.Z
4600
6200
7800
9400
11000
m.
83.2
192
295
397
498
598
699
799
Measured App. Chargeability Pseudosection
Ps.Z
4600
6200
7800
9400
11000
m.
83.2
192
295
397
498
598
699
799
Calculated App. Chargeability Pseudosection
Depth
Iteration 14 RMS error = 0.95
4600
6200
7800
9400
11000
m.
50.0
155
271
398
537
691
860
Inverse Model Chargeability Section
0.00
70.0
140
210
280
350
420
490
Chargeability in mV/V
Line 2000N
2D inversion of Dipole-Dipole
Resistivity/IP data
Unit electrode spacing is 200.0 m.

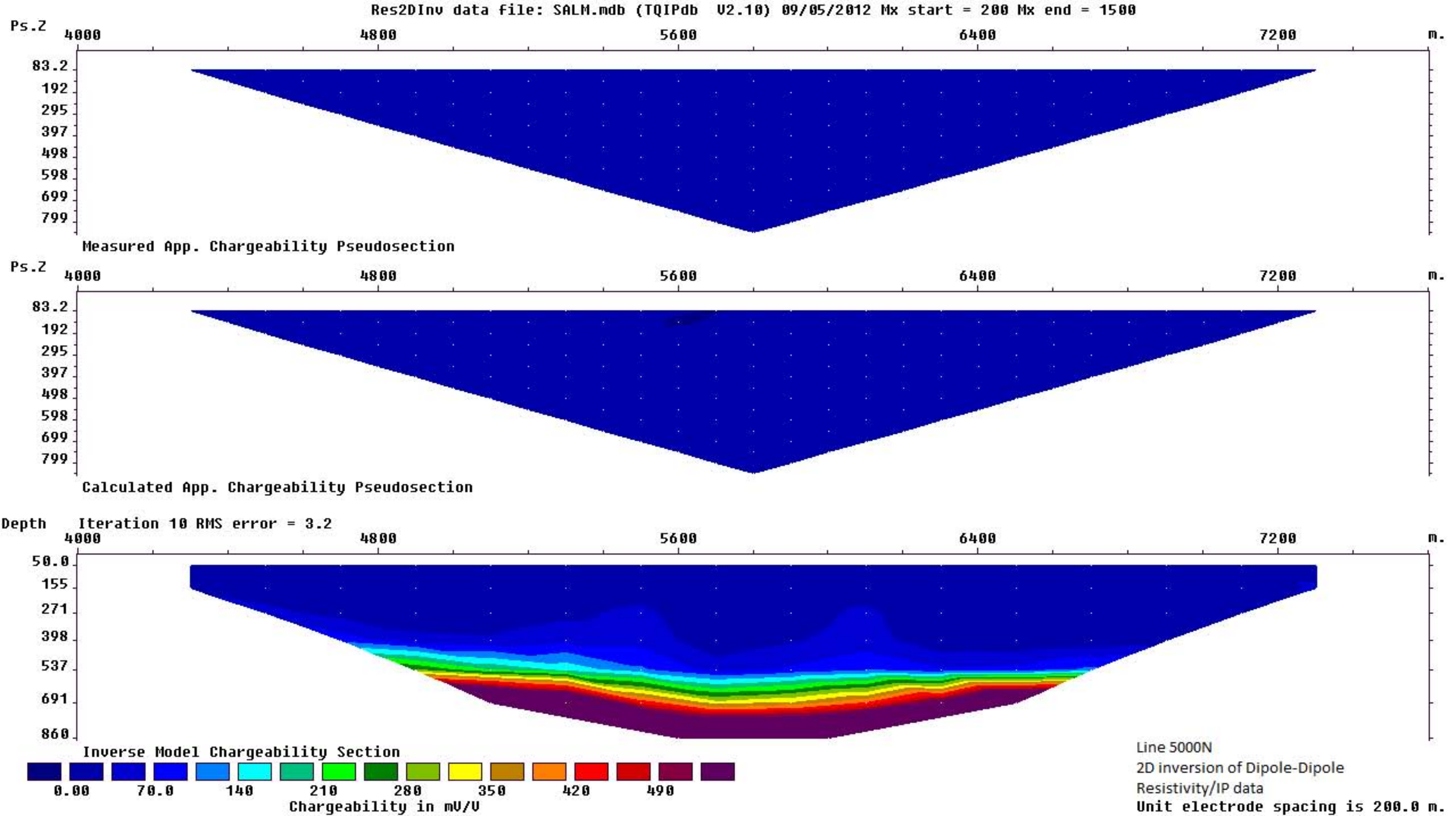

Res2DInv data file: SALM.mdb (TQIPdb V2.10) 09/05/2012 Mx start = 200 Mx end = 1500
Ps.Z
4600
5400
6200
7000
7800
8600
9400
10200
m.
83.2
192
295
397
498
598
699
799
Measured Apparent Resistivity Pseudosection
Ps.Z
Calculated Apparent Resistivity Pseudosection
Depth
Iteration 13 RMS error = 1.50 %
50.0
155
271
398
537
691
860
Inverse Model Resistivity Section
5.00
9.87
19.5
38.5
75.9
150
296
584
Resistivity in ohm.m
Line 3000N
2D inversion of Dipole-Dipole
Resistivity/IP data
Unit electrode spacing is 200.0 m.


Res2DInv data file: SALM.mdb (TQIPdb V2.10) 09/05/2012 Mx start = 200 Mx end = 1500
Ps.Z
4600
5400
6200
7000
7800
8600
9400
10200
m.
83.2
192
295
397
498
598
699
799
Measured App. Chargeability Pseudosection
Ps.Z
Calculated App. Chargeability Pseudosection
Depth
Iteration 13 RMS error = 1.00
50.0
155
271
398
537
691
860
Inverse Model Chargeability Section
0.00
70.0
140
210
280
350
420
490
Chargeability in mV/V
Line 3000N
2D inversion of Dipole-Dipole
Resistivity/IP data
Unit electrode spacing is 200.0 m.


Res2DInv data file: SALM.mdb (TQIPdb V2.10) 05/05/2012 Mx start = 200 Mx end = 1500
Ps.Z
4600
7800
11000
14200
m.
83.2
192
295
397
498
598
699
799
Measured Apparent Resistivity Pseudosection
Ps.Z
4600
7800
11000
14200
m.
83.2
192
295
397
498
598
699
799
Calculated Apparent Resistivity Pseudosection
Depth
Iteration 10 RMS error = 1.47 %
4600
7800
11000
14200
m.
50.0
155
271
398
537
691
860
Inverse Model Resistivity Section
5.00
9.87
19.5
38.5
75.9
150
296
584
Resistivity in ohm.m
Line 4000N
2D inversion of Dipole-Dipole
Resistivity/IP data
Unit electrode spacing is 200.0 m.


Res2Dinv data file: SALM.mdb (TQIPdb V2.10) 05/05/2012 Mx start = 200 Mx end = 1500
Ps.Z
4600
7800
11000
14200
m.
83.2
192
295
397
498
598
699
799
Measured App. Chargeability Pseudosection
Ps.Z
4600
7800
11000
14200
m.
83.2
192
295
397
498
598
699
799
Calculated App. Chargeability Pseudosection
Depth
Iteration 10 RMS error = 2.0
4600
7800
11000
14200
m.
50.0
155
271
398
537
691
860
Inverse Model Chargeability Section
0.00
70.0
140
210
280
350
420
490
Chargeability in mV/V
Line 4000N
2D inversion of Dipole-Dipole
Resistivity/IP data
Unit electrode spacing is 200.0 m.

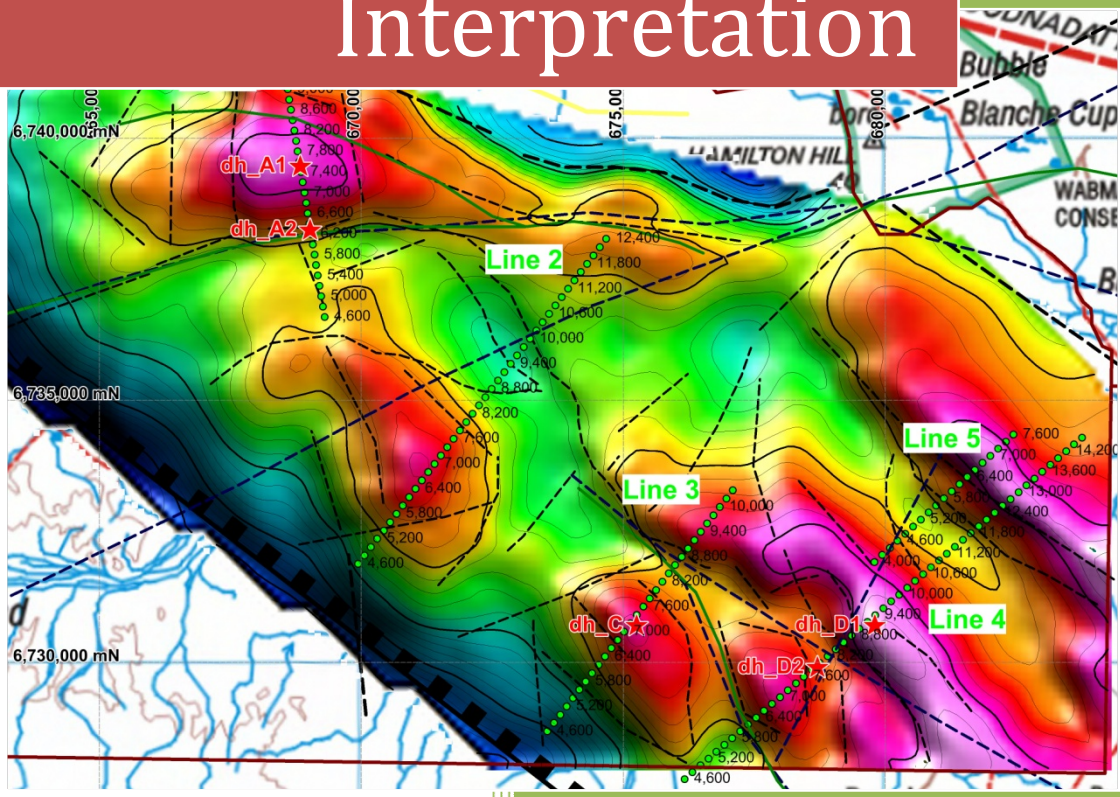

Res2DInv data file: SALM.mdb (TQIPdb V2.10) 09/05/2012 Mx start = 200 Mx end = 1500
Ps.Z
4000
4800
5600
6400
7200
m.
83.2
192
295
397
498
598
699
799
Measured Apparent Resistivity Pseudosection
Ps.Z
4000
4800
5600
6400
7200
m.
83.2
192
295
397
498
598
699
799
Calculated Apparent Resistivity Pseudosection
Depth
Iteration 10 RMS error = 6.4 %
4000
4800
5600
6400
7200
m.
50.0
155
271
398
537
691
860
Inverse Model Resistivity Section
5.00
9.87
19.5
38.5
75.9
150
296
584
Resistivity in ohm.m
Line 5000N
2D inversion of Dipole-Dipole
Resistivity/IP data
Unit electrode spacing is 200.0 m.


Res2DInv data file: SALM.mdb (TQIPdb V2.10) 09/05/2012 Mx start = 200 Mx end = 1500
Ps.Z
4000
4800
5600
6400
7200
m.
83.2
192
295
397
498
598
699
799
Measured App. Chargeability Pseudosection
Ps.Z
Calculated App. Chargeability Pseudosection
Depth
Iteration 10 RMS error = 3.2
50.0
155
271
398
537
691
860
Inverse Model Chargeability Section
0.00
70.0
140
210
280
350
420
490
Chargeability in mV/V
Line 5000N
2D inversion of Dipole-Dipole
Resistivity/IP data
Unit electrode spacing is 200.0 m.

APPENDIX 2

2012

SALM EL4619 Electrical Interpretation



Matthew

Asls International

7/4/2012

EL4619 Res/IP Interpretation

South Australia Ludi Mining (SALM)

Executive Summary

Resistivity and IP data (200m dipole) has been interpreted to assess gravity targets for IOCG mineralisation potential.

The data quality appears good. At depth the chargeability anomalies are most likely caused by chargeable minerals in fresh rock. The contributions of a large volume of rock is combined to generate data at depth, anomalies may be caused by 'off-line' sources.

Features from the previous gravity and magnetic interpretation have been plotted with the data sections in 3D. Contrasts in the electrical data have been interpreted as stratigraphy.

The IP data has enhanced the potential of several gravity anomalies as IOCG targets.

FIVE drillholes have been proposed to test THREE IOCG style targets and TWO structurally hosted chargeability anomalies.

Of the targets TWO have been given a high rank for drill testing.

Figure 4 and Table 1 summarise the intrepretation.

A series of Plans have been submitted with this report, presenting the resistivity and IP sections with interpretation.

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Figure 3. Chargeability of minerals at 1% (3 sec charge/discharge) 5

Table 1. Drillholes proposed to test EL4619 targets. Co-ordinates are GDA94 MGA zone 53. 12

Figure 4. Summary of the interpretation showing the location of the lines and proposed drillholes on band-pass gravity with interpreted structures. 13

Res/IP Properties of Rocks

The electrical properties of rocks vary more than any other physical property. The resistivity of a rock can range over several orders of magnitude. This is very beneficial when a strong contrast is observed, but also problematic due to the large number of plausible geological sources for moderate values. Therefore electrical geophysical surveys often return moderate strength complex anomalies, which are hard to interpret.

Figure 1 shows the general bulk resistivities of common rock types. The factors that affect a rock's resistivity include rock type, porosity, connectivity of pores and type of pore fluid, and metallic content of the solid matrix. Resistivity varies by many orders of magnitude. Chargeability is much harder to evaluate as there are many factors that contribute significantly to the effect.

Factors that affect chargeability include surface area to volume ratio, grain size, types of mineral and type and mobility of pore fluids. Charts showing chargeability of materials (minerals and rock types) is shown in Figure 3. The table on the left (A) shows values measured in the laboratory using large times of 1 minute for charging and for discharging (this is not representative of field measurements where charging and measuring times are small - seconds and milliseconds) giving values much larger than those expected to be observed in the field. The table on the right (B) shows values measured over much shorter (3 second) charging/discharging times and are more representative. Chargeability values measured in the field are often lower than those in the table due to the currents involved flowing through large volumes of mixed material.

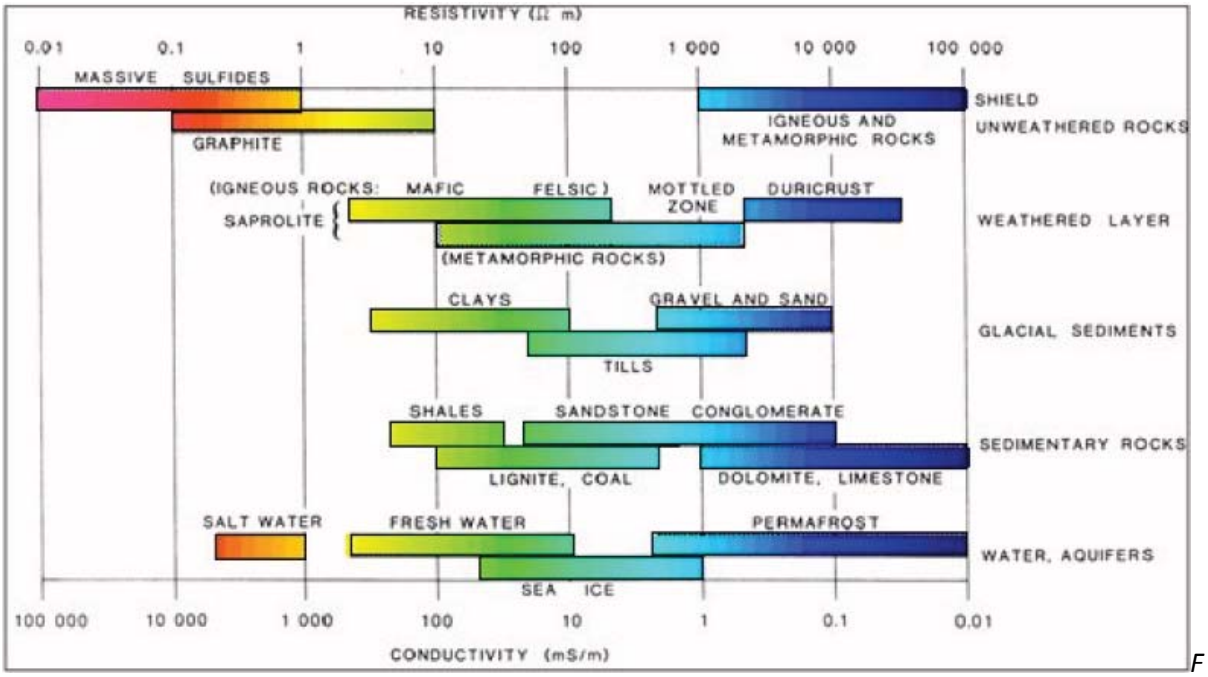


Figure 1. A chart showing general bulk resistivity of common rock types.

Material type	Chargeability (ms.)
20% sulphides	2000 - 3000
8-20% sulphides	1000 - 2000
2-8% sulphides	500 - 1000
volcanic tuffs	300 - 800
sandstone, siltstone	100 - 500
dense volcanic rocks	100 - 500
shale	50 - 100
granite, granodiorite	10 - 50
limestone, dolomite	10 - 20

A

Material type	Chargeability (ms.)
ground water	0
alluvium	1 - 4
gravels	3 - 9
precambrian volcanics	8 - 20
precambrian gneisses	6 - 30
schists	5 - 20
sandstones	3 - 12
argilites	3 - 10
quartzites	5 - 12

B

Figure 2. **A)** chargeability values measured in the laboratory with charging/discharging times of 1 minute (60 seconds) **B)** chargeability values measured in the laboratory with charging/discharging times of 3 seconds.

The resistivity values observed at EL4619 range between _ and _ ohm-m. Based on the chart the lowest resistivities (~1) are likely caused by graphite, salt water or sulphides. The low resistivities observed nearer the surface are likely caused by ground water saturation and weathering, with the more resistive areas representing relatively unweathered rock. Carbonate rocks such as dolomite have very high resistivity. The moderate resistivities have many possible sources. Metasediments, volcanics, and shales all having intermediate resisitivities.

The most chargeable material commonly found in the subsurface is sulphide(and some other metallic) mineralisation and graphite which, depending on concentration, can give chargeabilities orders of magnitude greater than common rock types. Other chargeable material includes clay minerals. Figure 4 shows the chargeability of minerals at 1% of the sample illustrating this.

Material type	Chargeability (ms.)
pyrite	13.4
chalcocite	13.2
copper	12.3
graphite	11.2
chalcopyrite	9.4
bornite	6.3
galena	3.7
magnetite	2.2
malachite	0.2
hematite	0.0

Figure 3. Chargeability of minerals at 1% (3 sec charge/discharge)

General Data Quality and Comments

The data generally appears to be of good quality with no obvious cultural effects or noise observed. There appears to be no significant coupling effect in the IP data. The slight linear increase in chargeability with depth can be partly explained (by the operator) as being caused by the greater volumes of material sampled in the later times.

Generally Res/IP data has complex anomalies in the weak to strong intensity range. The geology beneath EL4619 appears to be electrically bland enough to make the anomalies more simple, and the intensities observed are weak to moderate.

While the data appears to be clean the depth of the targets means that the anomalies do not appear strongly and obviously in the observed data.

The data has been modelled using two different inversion softwares with more than one set of inversion parameters applied. The ts2dip software has been run in smooth and sharp modes, with smooth being preferred for interpreting deeper features and sharp favouring shallow features.

Given the single line geometry of the survey and the depth of the anomalies there is a possibility the chargeability anomalies observed could be at least partly influenced by sources 'off-line' (perpendicular to the line direction).

Interpretation

The ts2dip inversions are preferred for interpretation of the data, especially the deeper features of interest. The lateral location of the anomalism in the inversions is fairly consistent independent of the software package. The resistivity sections appear to be better at resolving the near surface geology, while the IP channel is showing responses at depth.

The multiple inversions of the data are not presented as part of this report, but it is recommended that they be referred to be the reader.

Each line has the resistivity and IP sections presented with interpretation of the electrical data as well as includes linear features and block models from gravity and magnetic data. The data is clipped back to limit of observation. The apparent thickness of the interpreted magnetic and gravity features indicates the angle at which the feature crosses the section.

Line/Target 1

Line 1 appears to have good quality data in both the resistivity and IP channels. There are FOUR main layers interpreted from the section and TWO chargeability anomalies at depth and coinciding with other interpreted features.

The resistivity section appears to indicate FOUR layers in the inversion model as shown on Plan 1. The cover sequence is the most conductive, this zone hosts the most weathering minerals and groundwater. There is a significant thickening of the conductive layer north of station 7800 indicating a possible fault or paleoscarp. Beneath this a low resistivity layer, ~100 ohm-m interpreted as the Adelaidean sediments ~200-300m thick. Below this a less resistive zone, ~50 ohm-m, interpreted as Pandurra Formation (or equivalent) at least 400m thick. A more resistive zone, ~100 ohm-m, below ~600m depth is interpreted as possible basement. The boundary is not linear and the geology below the boundary not electrically homogenous. there are two slightly less resistive areas in the interpreted basement near stations 6200 and 7800. There are interpreted structures and a possible dyke cutting the section at station 6200.

In the IP section shown in Plan 2 there are two obvious chargeability anomalies at depth. The shallow data shows relatively little aside from a few isolated weak chargeability anomalies in the interpreted Adelaidean and in the Pandurra close to location of interpreted dykes. At depths of ~800m are two relatively strong chargeability anomalies, at station 6200/6400 and station 7400/7600. The inverted chargeability of the anomalies is in the order of 100 msec. The interpreted basement exhibits rather high background chargeability. The anomalism is likely to be caused by geology possibly graphite or sulphide minerals, and less probably magnetite.

The chargeability anomaly under station 7400/7600 coincides with a gravity anomaly Target 1. The depth of the gravity model and chargeability anomaly are similar at ~800m. Drillhole dh_A1 has been proposed to test the chargeability/gravity anomaly.

The chargeability anomaly under station 6200/6400 is slightly more intense and coincides with a major structure interpreted to be a semi regional EW fault in the gravity and magnetic data. There is

no obvious gravity anomaly associated with the chargeability anomaly. Drillhole dh_A2 has been proposed to test the chargeability anomaly.

Line 2/Target 2

Line 2 appears to have good quality data in both the resistivity and IP channels. There are THREE main layers interpreted from the section and ONE moderate chargeability anomaly at depth.

The resistivity section appears to indicate THREE layers in the inversion model as shown on Plan 3. The cover sequence is the most conductive, this zone hosts the most weathering minerals and groundwater. There is apparent thickening of the conductive layer north of station 10200 and south of station 7600 indicating a possible fault or paleoscarp. Beneath this a transition zone 200-600m deep interpreted as Adelaidean sediments. The main feature of the resistivity section is a large resistive unit, ~60 ohm-m, which dominates the section's deeper regions and has no easily distinguishable lower surface. This has been interpreted as Pandurra Formation or equivalent. The upper surface of the interpreted Pandurra appears to be faulted, and there is a reasonable correlation with features interpreted as structures from the gravity and magnetics. The faulting appears to thicken the cover sequence to the south.

The main feature in the Line 3 IP data, Plan 4, is a large moderate chargeability anomaly, 80-90 msec, at depth between stations 7000 to 10 000. This anomaly possibly indicates a basement source but does not have an associated gravity anomaly, being ~1km north of the modelled body. There is a magnetic feature above the anomaly but it is not strong. The northern and southern edges of the chargeability anomaly are reasonably coincident with features from the resistivity, gravity and magnetics. There are no strong features near the surface with only a few small chargeability anomalies observed in the interpreted Adelaidean.

The gravity model for Target 2 is deep at 1200m and this is supported by the electrical data with no significant anomalies observed under the gravity anomaly.

No drillholes have been proposed to test Target 2 or any electrical features on Line 2.

Line 3/Target 3

Line 3 appears to have good quality data in both the resistivity and IP channels. There are FOUR main layers interpreted from the section and ONE moderate chargeability anomaly at depth.

Line 3 appears to suggest faulting, with lateral variation in the resistivity data shown in Plan 5. The complexity of the data makes interpretation difficult. The interpreted gravity and magnetic features have been used in the interpretation. The geology appears to be block faulted with basement blocks deepening to the south back tilted. the top layers of the geology appear to be flat, but the base of the second layer, showing transitional resistivity is difficult to interpret. The deeper geological contact dipping to the north appears to represent the top of a resistive basement block. To the north and south of the interpreted fault zones the anomalism is complex. It is difficult to interpret the relative layers and the feature interpreted as Adelaidean and Pandurra could be all Adelaidean which would increase the cover thickness greatly.

In contrast to the resistivity data the Line 3 IP data shown on Plan 6 is simple, with one moderate anomaly, 60 msec, observed at depth between stations 6800 and 8400. The IP data shows a similar

north dipping gradient as the resistivity data but not as pronounced. There is very little chargeability anomalism in the shallower area of Line 3.

The southern end of the core of the chargeability anomaly under station 7200 is coincident with the top of gravity model and there is a reasonable correlation in interpreted depth. This is also interpreted as a point at which the basement is shallower. It should be noted that the gravity anomalism may be being predominantly influenced by the block faulting interpreted. The chargeability anomaly is also weakly coincident with magnetic anomalism from a deep source. While a dyke has been interpreted under station 8600 there is little evidence in the electrical data to support this.

Drillhole dh_C has been proposed to test the coincident gravity and chargeability anomalism.

Line 4/Target 4

Line 4 appears to have good quality data in both the resistivity and IP channels. There are FOUR main layers interpreted from the section and TWO chargeability anomalies at depth.

The Line 4 resistivity data, shown in Plan 7, is very smooth. The conductive cover sequence has been interpreted as 25-100m thick. The transitional layer below this is interpreted as Adelaidean. Below the transition is a resistive, 80 ohm-m, zone interpreted as the Pandurra Formation or equivalent. The transition zone and upper surface of the resistive zone show step like features that suggest faulting and a thickening of cover sequences to the south. Structures interpreted from gravity and magnetic data has a reasonable correlation with the step like features in the resistivity at the southern end of the line. The base of the Pandurra is hard to interpret from the resistivity data.

The Line 4 IP data is shown in Plan 8. There is chargeable zone at depth (700-800m) between stations 7600 and 12 000, with a small intense zone, 130 msec, at station 9200/9400 and a larger intense zone, 140 msec, under station 8000. These anomalies have the largest chargeability values (msec) observed in the survey. There is some small chargeability anomalism observed in the interpreted Adelaidean. There appears to be a strong chargeability contrast at depth at station 7600 which coincides very well with interpreted structure from gravity, with the data suggesting a deepening of the basement south of this structure.

The gravity model for Target 4 appears to be south of the structure at 7600 and therefore deeper. the gravity model under the gravity anomaly north of the structure appears erroneous, with the electrical data suggesting a more plausible source associated with the chargeability high at depth under station 9200/9400.

There is very little anomalism in the magnetic data and no evidence in the electrical data of a dyke interpreted at station 6200.

Drillhole dh_D1 has been proposed to test the strong chargeability anomaly under station 8000. While the anomaly has no coincident gravity or magnetics it is the strongest chargeability anomaly recorded in the survey and interpreted to represent relatively shallow basement. Drillhole dh_D2 has been proposed to test the coincident chargeability and gravity anomaly under station 9200/9400 as the electrical data suggest previous modelling was erroneous and supports a basement source for the gravity anomaly in an area of interpreted relatively shallow basement.

Line 5/Target 5a

Line 5 appears to have good quality data in both the resistivity and IP channels. There are FOUR main layers interpreted from the section and ZERO chargeability anomalies of interest.

The Line 5 resistivity data shows 4 interpreted layers and suggests block faulting with increasing thickness of cover to the south.

The Line 5 IP data shows no chargeability anomalies of interest, and does not match the resistivity data very well.

No drillholes have been planned to test Target 5a or any chargeability anomalies on Line 5.

Discussion

The electrical data support the gravity and magnetic interpretation in terms of (relative) depth and structures in most cases. On all lines there were features in the inversions that could be interpreted as geology.

The electrical contrasts have been interpreted as stratigraphic boundaries but may represent variation within the stratigraphic units.

At depth the chargeability anomalies are not likely to be caused by weathering minerals such as clay and are more likely to represent more chargeable zones of unweathered rock. There appears to be a chargeable layer at depth on most of the lines and this has been interpreted as a basement feature but it is conceivable that this is caused by variation in the cover geology.

The chargeability anomalies observed at depth either coincide with gravity anomalies (Target 1, Target 3, Target 4*) or with interpreted semi-regional structures from gravity and magnetics. The targets with coincident gravity and chargeability anomalies are considered IOCG style targets. There is no formal mineralisation model for the structurally hosted chargeability targets.

Targets 4* (not originally modelled as a basement target) and Target 1 are considered the most prospective for IOCG mineralisation. Target 4_2 has the highest chargeability observed in the survey and occupies a complex structural location (from gravity and magnetics interpretation).

While Target 4* was not originally modelled as a basement feature, the electrical data supports a basement source for the strong chargeability anomaly observed. This ranks the target as having IOCG potential. Line 4 was not specifically designed to cross this target. The peak gravity is SE and there is a zone of structural complexity to the NW. It must be considered that these could be contributing to the chargeability anomaly from 'off line'.

Target 1 has a chargeability anomaly coincident with the modelled basement gravity source. The chargeability is not the highest observed but is near 100 msec and the coincidence with the gravity anomaly location and depth is good.

Target 4 could have had a 3rd hole planned into the original gravity Target 4 (basement gravity model). The inversion suggests that the chargeability anomaly coincident with the modelled basement gravity source is ~100 msec, but the geophysics suggest that the target is on the down-thrown side of a basement fault increasing depth.

The structurally hosted targets could be caused by graphite in shear zones along the semi-regional structures.

A plan showing the electrical section locations and proposed location of proposed drillholes on band-pass gravity is shown in Figure 4, while Table 1 includes a brief description and characteristics of the target. The targets have been ranked based on their characteristics and depth.

Proposed Drillhole	X	Y	Target	Depth (m)	Gravity High	Line	Station	Res (ohm-m)	Charge-ability (msec)	Comments	Rank
dh_A1	668830	6739510	Target 1	800	Yes	1	7400/7600	80	95	Coincident chargeability and gravity anomaly. IOCG target.	**2**
dh_A2	669020	6738290	Target 1_2	800	No	1	6200/6400	80	100	Strong chargeability high on interpreted semi-regional structure.	**5**
dh_C	675250	6730750	Target 3	800	Yes	3	7200	70	65	Coincident moderate chargeability and gravity anomaly. IOCG target.	**3**
dh_D1	679800	6730750	Target 4*	800	Yes	4	9200/9400	60	130	Coincident strong chargeability and gravity anomaly. Electrical data suggests basement source. IOCG target.	**1**
dh_D2	678700	6729950	Target 4_2	700	No	4	8000	60	140	Strongest chargeability anomaly observed in survey. Coincident with complex structural intersection.	**3**

Table 1. Drillholes proposed to test EL4619 targets. Co-ordinates are GDA94 MGA zone 53.

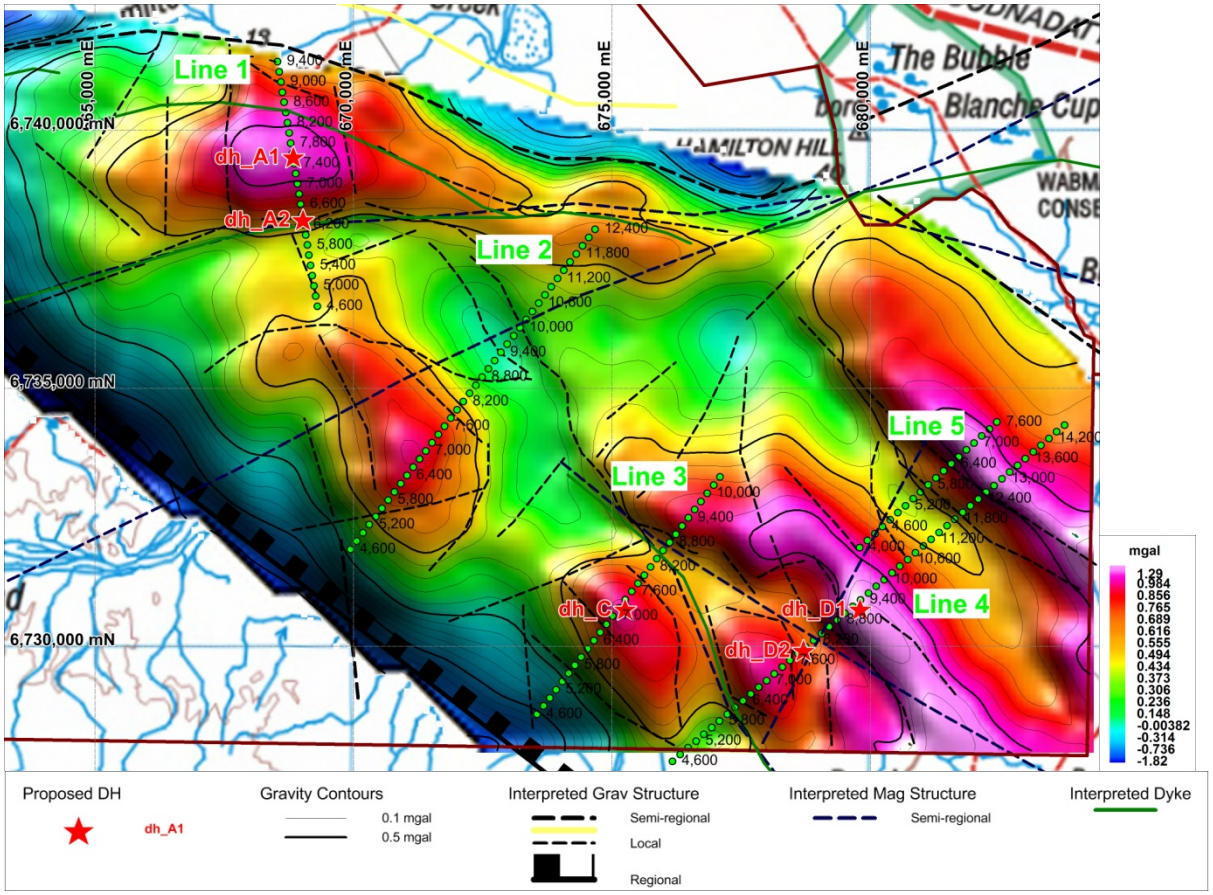


Figure 4. Summary of the interpretation showing the location of the lines and proposed drillholes on band-pass gravity with interpreted structures.

SOUTH AUSTRALIA LUDI MINING PTY LTD

EL 4619 - COWARD SPRINGS

ANNUAL REPORT TO 30 NOVEMBER 2013

1:250,000 map sheet
Curdimurka SI 53-08

1:100,000 map sheets
Strangways 6239
Trecompana 6238

March 2014

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FIGURES

Figure 1: EL4619, Drillhole locations and access tracks.

APPENDIX

Appendix: Rehabilitation report

File Verification Listing of Digital Files Supplied

Exploration Work Type	**File_Name**	**Format**
Office Studies		
Report preparation	EL4619_2013_A_01_ReportBody.pdf	pdf
		txt
		txt
		txt
		txt
		txt
		txt
File verification listing (this file)	EL4619_2013_A_06_FileList.txt	txt

1. SUMMARY

Exploration in the third year of term of Exploration Licence 4619 comprised drilling of a water bore and two deep exploration holes, downhole logging and assaying of selected core intervals, along with rehabilitation of drill sites, tracks and campsite.
(Data - see PACE Project, Final Report DPY7-01)

2. INTRODUCTION

Exploration Licence 4619 is located approximately 120 kilometres north of Olympic Dam and 75 kilometres southeast of William Creek, which is the nearest permanent settlement. The EL covers land used for low density cattle grazing. The Marree to William Creek section of the Oodnadatta Track passes to the north of the EL and a limited network of station tracks provide access within the E.L, see Figure 1. The area is arid, has low relief and is only sparsely vegetated.

South Australia Ludi Mining Pty Ltd ("SALM") acquired Exploration Licence 4619 "Coward Springs" to explore for large Mesoproterozoic copper/gold/uranium deposits analogous to Olympic Dam, which is located approximately 120 kilometres to the south. No previous exploration drilling for deposits of this type had been undertaken within the EL area, with the nearest deep drillhole located some 20 kilometres south of the southwest corner of the tenement. As geophysical data from government and industry sources suggested that potential for major IOCG deposits existed, SALM undertook a detailed review of that data, followed up with gravity and IP surveying, and identified two high priority exploration targets, designated "A1" and "D1".

During 2012 SALM obtained all the necessary statutory, Aboriginal and landholder approvals and commenced drilling in early December 2012.

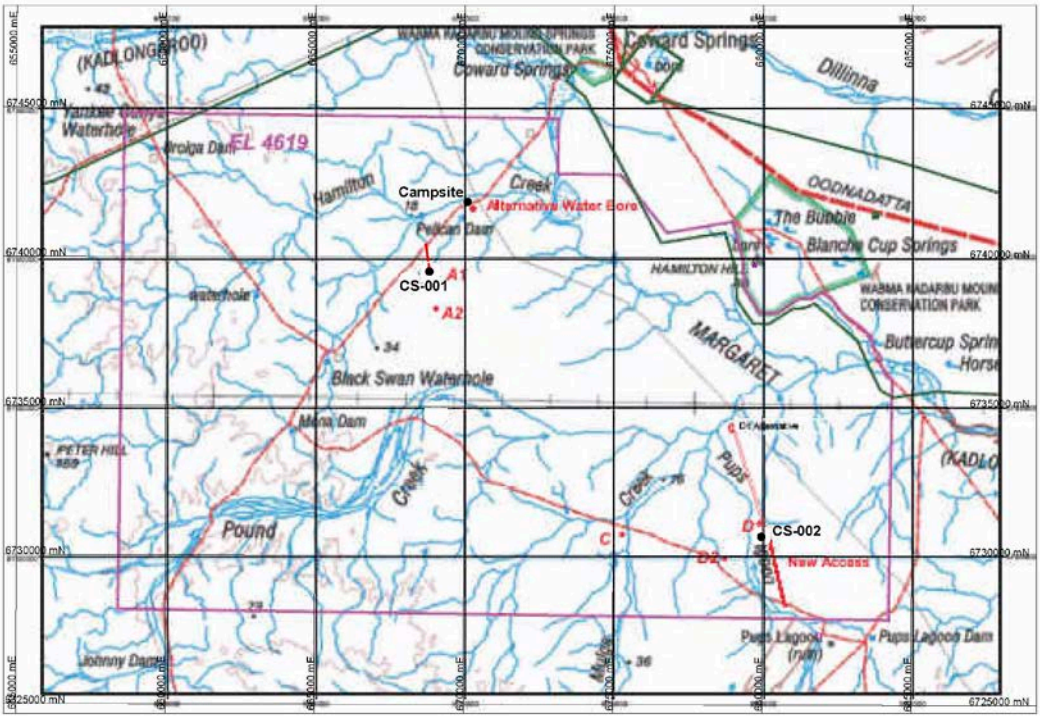


Figure 1: EL4619, Drillhole locations and access tracks.

3. TENURE

Exploration Licence 4619 “Coward Springs” was granted to South Australia Ludi Mining (“SALM”) on 1 December 2010. The licence has been renewed annually since then and will now expire on 30 November 2014. The Licence covers 380 square kilometres.

4. PREVIOUS EXPLORATION

Previous exploration over the tenement area has been confined to geophysical surveys, principally gravity and magnetics. Two past drillholes, SR 17/2 (Newmont) and FHD 1 (WMC), located to the south and west of the EL, both failed to reach Mesoproterozoic basement, despite depths of 1,500 and 743 metres respectively. Recent government sponsored seismic and gravity data suggest that there is significant block faulting in the region and that Mesoproterozoic and older rocks may occur at shallower depths.

There has been no past exploration drilling within EL 4619 for Mesoproterozoic IOCGU deposits.

5. GEOLOGY

Exploration Licence 4619 is located near the interpreted northern edge of the Stuart Shelf. The tenement area is entirely covered by Mesozoic, Tertiary and Quaternary sediments, with no known outcrops of pre-Mesozoic basement rocks. Surficial aeolian sands, soil and silcrete lag overlie Mesozoic clay/shale and sands (Bulldog Shale, Cadna-owie Formation and Algebuckina Sandstone). Outcrop areas to the east of the EL in the Alberrie Creek region comprise Neoproterozoic shale, sandstone and carbonates, and it was expected that similar rocks would underlie the Mesozoic within EL 4619.

Precambrian basement geology in the area is very poorly known, with the nearest outcrops some 60 kilometres to the east. The nearest basement penetrating drillhole is located 20 kilometres south of the southwestern corner of the tenement. This hole (Newmont SR 17/2) penetrated 1,460 metres of Neoproterozoic sediments beneath 40 metres of Mesozoic Bulldog Shale and did not reach the Mesoproterozoic target.

Stratigraphic interpretation of SR 17/2 is as follows:
0-40m: Mesozoic Bulldog Shale with minor sandstone (probably Cadna Owie Formation)
40-433m: Neoproterozoic Wilpena Group red/brown and greenish shale and siltstone, lesser sandstone "calcitic in part".
433-438m: Elatina Formation (Umberatana Group) sandstones with glacial dropstones.
438-494m: Brighton Formation (Umberatana Group) feldspathic sandstones, quartzite.
494-915m: Tapley Hill Formation (Umberatana Group) grey/green siltstone, dolomitic and pyritic.
915-1500m: Wilyerpa Formation (Umberatana Group) siltstone, sandstone, diamictite

6. WORK COMPLETED

As geophysical data from government and industry sources suggested that potential for major IOCG deposits existed, SALM undertook a detailed review of that data, followed up with gravity and IP surveying, (see 2012 annual report for EL 4619) and identified two high priority exploration targets, designated “A1” and “D1”, where depth to Mesoproterozoic basement was interpreted as being around 800 metres..

During 2012 SALM obtained all necessary statutory, Aboriginal and landholder approvals and commenced drilling in early December 2012

6.1 DRILLING (Data - see PACE Project, Final Report DPY7-01)

6.1.1 Precollars and water bores

Thomson Drilling Pty Ltd was engaged to construct precollars into basement at targets A1 and D1, along with a water bore targeting Algebuckina Sandstone at each site. Drill rig and crew arrived at site on 29/11/2012 and established a camp at the “A1 alternative water bore” site (see Figure 1), as access to A1, the planned camp site, was not accessible following a substantial rain event.

Drilling of the A1 water bore commenced on 1/12/2012 and encountered strong flow (20 litres/second) and pressure (280 kPa) from Algebuckina Sandstone at relatively shallow depth (68-74 metres). Control presented some difficulties and a mud weight of 1.6 was required to stem the flow. The high mud weight exceeded the SG of PVC casing, necessitating the use of steel casing above the PVC screen. The casing was successfully placed, packed and cemented and drilling of the A1 precollar (named CS-001) commenced. The precollar was completed at 90 metres in Neoproterozoic shale, since ascribed to Angepena Formation/Willochra Subgroup (Umberatana Group). Steel casing (100mm) was pressure cemented in the hole to 90 metres in preparation for diamond drilling.

The drill rig was shifted to site D1 on 6/12/2012 and intersected Neoproterozoic basement shale and limestone at shallow depth (27 metres). As no aquifer sands were present the hole was cased with 100mm steel casing to 42 metres, pressure cemented as a precaution against possible flows from shear zones connected to the artesian aquifers.

6.1.2 Diamond drilling

Techdrill Services Pty Ltd conducted diamond drilling using the Thompson prepared precollars and water bore at A1. Drill rig (Sandvik DE 811) and crew arrived on site 14/12/2012 but could not move onto first site (A1, drillhole CS-001) until 19/12/2012 following a major rain event on the day of arrival. (It had been planned to drill at D1 first, however access issues due to the rain event precluded this.)

Operations commenced on a single (day) shift basis on 20/12/2012, with an additional (night) shift from 5/1/2013. Techdrill based their crews in William Creek, some 75 kilometres from Coward Springs along the Oodnadatta Track.

Drilling was by conventional wireline coring utilising in ground sumps previously excavated by backhoe. Core recovery was excellent throughout and no significant problems were encountered. Hole CS-001 was drilled HQ3 to 720 metres, then NQ3 to end of hole at 1,164 metres. Hole CS-002 was drilled HQ3 to 719.5 metres, then NQ3 to 1,167 metres (EOH). Production on a normal shift averaged 36 to 42 metres, with a peak of 54 metres achieved on several shifts. Reagent usage was acceptable.

On completion the tops of both exploration holes were cemented, with a plug placed approximately 30 metres below the base of the precollar, cemented back to surface. As there was no interest in retaining the water bore for stock use it was cemented over its full length.

6.2 WIRELINE LOGGING (Data - see PACE Project, Final Report DPY7-01)

Drillholes were geophysically logged by Borehole-Wireline Pty Ltd using a Toyota Landcruiser mounted logging unit. Logging required two runs, one for the NQ section at bottom of hole (below 720 metres), then after pulling the HQ rods, logging of the top section. Logging time for each section averaged 11-12 hours. As the logging unit only had 1,046 useable metres of cable, the bottom of the holes below this depth could not be logged.

Holes were logged for gamma ray, short and deep spaced induction, short and deep focused resistivity, magnetic susceptibility and drift (azimuth and inclination) responses. Data are excellent and formation boundaries are distinctive. No anomalous gamma responses were recorded. Digital logging data have previously been submitted to DMITRE accompanying report "South Australia Ludi Mining Pty Ltd, Exploration Licence 4619, "Coward Springs", Final Report, PACE Project DPY7-01", submitted in August 2013.

7. DRILLHOLE GEOLOGY (Data - see PACE Project, Final Report DPY7-01)

Drillhole data collected comprised collar information, downhole surveys and geology. Digital data files in .txt format have previously been lodged with DMITRE accompanying report "South Australia Ludi Mining Pty Ltd, Exploration Licence 4619, "Coward Springs", Final Report, PACE Project DPY7-01", submitted in August 2013.

7.1 HOLE CS-001

Hole CS-001 intersected Neoproterozoic sediments from the base of the Mesozoic (Bulldog Shale, Cadna Owie Formation and Algebuckina Sandstone) to end of hole. At 1,164 metres the hole was in a sequence of interbedded siltstone, fine sandstone and diamictite, believed to be Wilyerpa Formation (Umberatana Group). The hole did not reach the top of the target Mesoproterozoic.

Summary geology:
0-1: Cainozoic sand and soil, abundant silcrete lag.
1-54: Bulldog Shale, massive clay shale.
54-67.5: Cadna Owie Formation, silty and clayey quartz sands.

67.5-73.5: Algebuckina Sandstone, coarse-very coarse pebbly quartz sands.
73.5-388.9: Angepena Formation, brown/red and grey shale, siltstone, minor limestone and dolomite. Small scale cross bedding, slumps, scours.
388.9-391.6: ?Etina Formation, shale and diamictite, minor nodular limestone.
391.6-440.27: Brighton Formation/Limestone, red/brown limestone and shales, minor sandstone.
440.27-1,000.60: Tapley Hill Formation, laminated grey shale and limestone (sandy, some intraclastic and/or oolitic)-dolomitic in part. Scours, small scale cross beds, slumps.
1,000.60-1,164.20: Wilyerpa Formation, brown and grey siltstone and fine sandstone, diamictite.

7.2 HOLE CS-002

Hole CS-002 intersected Bulldog Shale beneath a thin veneer of Cainozoic. Neoproterozoic basement was intersected from 27 metres, with Cadna Owie Formation and Algebuckina Sandstone both absent, suggesting a basement high at this location.

Summary geology:
0-0.5: Cainozoic sand/silt soil.
0.5-27: Bulldog Shale, massive clay/shale.
27-712.96: Angepena Formation, brown and grey shale and siltstone, minor quartz/lithic sandstone (commonly glauconitic) and limestone/dolomite, scours, small cross beds, ripples, mud cracks.
712.96-714.68: ?Etina Formation, shale with limestone nodules.
714.68-723.00: Brighton Formation, pale brown shale and limestone.
723.00-792.66: Yankaninna Siltstone (Tapley Hill Formation), red/brown siltstone and shale, limy in part, quartz/lithic sandstones at top, subordinate pale grey stromatolitic and sandy limestones (possibly equivalents of Wockerawirra Dolomite and/or Woocalla Dolomite).
792.66-832.80: Yankaninna/Tapley Hill Formation transition, brown and lesser grey laminated calcareous shale and siltstone, limestone.
832.80-1,167.20: Tapley Hill Formation, interlaminated grey calcareous shale and limestone, occasional thicker stromatolitic and sandy limestones, minor brown shale and siltstone.

7.3 MINERALISATION

In both holes rare small aggregates, fine veins and single crystals of fine pyrite and chalcopyrite are present, most commonly in limestone or greyish reduced sandstones.

In CS-002 a sinuous fine (1-2mm) sulphide vein of chalcopyrite, bornite and pyrite is present between 818.07 and 818.10 metres in limestone ascribed to the transition between Yankaninna Siltstone and Tapley Hill Formation. Core through the limestone interval (815-823 metres) has been cut and half core subjected to multi-element analysis. Peak copper value was 250 ppm. Digital assay data in .txt format have previously been lodged with DMITRE accompanying report “South Australia

Ludi Mining Pty Ltd, Exploration Licence 4619, "Coward Springs", Final Report, PACE Project DPY7-01", submitted in August 2013.

8. CONCLUSIONS

Drilling of two deep holes at Coward Springs has intersected thick sequences of flat lying Neoproterozoic sediments. The targeted Mesoproterozoic crystalline basement was not reached. Subsequent review of geophysical data suggests that gravity anomalies are caused by dense sediments (probably dolomites) rather than crystalline basement sources. IP responses are attributed to near surface coupling, possibly due to graphite in reduced Neoproterozoic sediments and perhaps also influenced by saline groundwater.

9. FUTURE EXPLORATION

Results from the 2013 drilling are still under review. Drillhole data are being integrated with geophysics to establish if a Mesoproterozoic IOCG target remains at acceptable depths, with a third drillhole under consideration.

10. REHABILITATION

Drill sites, access tracks, IP lines and the campsite have all been rehabilitated. A report documenting these activities is included as the Appendix.

APPENDIX - REHABILITATION REPORT

SOUTH AUSTRALIA LUDI MINING

EL 4619 COWARD SPRINGS

REHABILITATION REPORT, MAY 2013.

1. INTRODUCTION

South Australia Ludi Mining (SALM) has conducted two phases of exploration involving ground disturbing activities on EL 4619, Coward Springs. The first phase was an IP survey on five lines for a total of 30 line kilometres. Light vehicle access along the IP lines produced vehicle tracks. The second phase was a drilling programme consisting of one water bore and two 1200 metre cored holes drilled between December 2012 and February 2013. Drilling activities affected station tracks, local access tracks, drill pads and camp area. The locations of the activities are shown in Figure 1.

Core from the drill holes was strapped on pallets at the camp and sent to the Core Storage facility at Thebarton as part of this rehabilitation programme.

This report details rehabilitation activities completed between 6th to 12th May 2013.

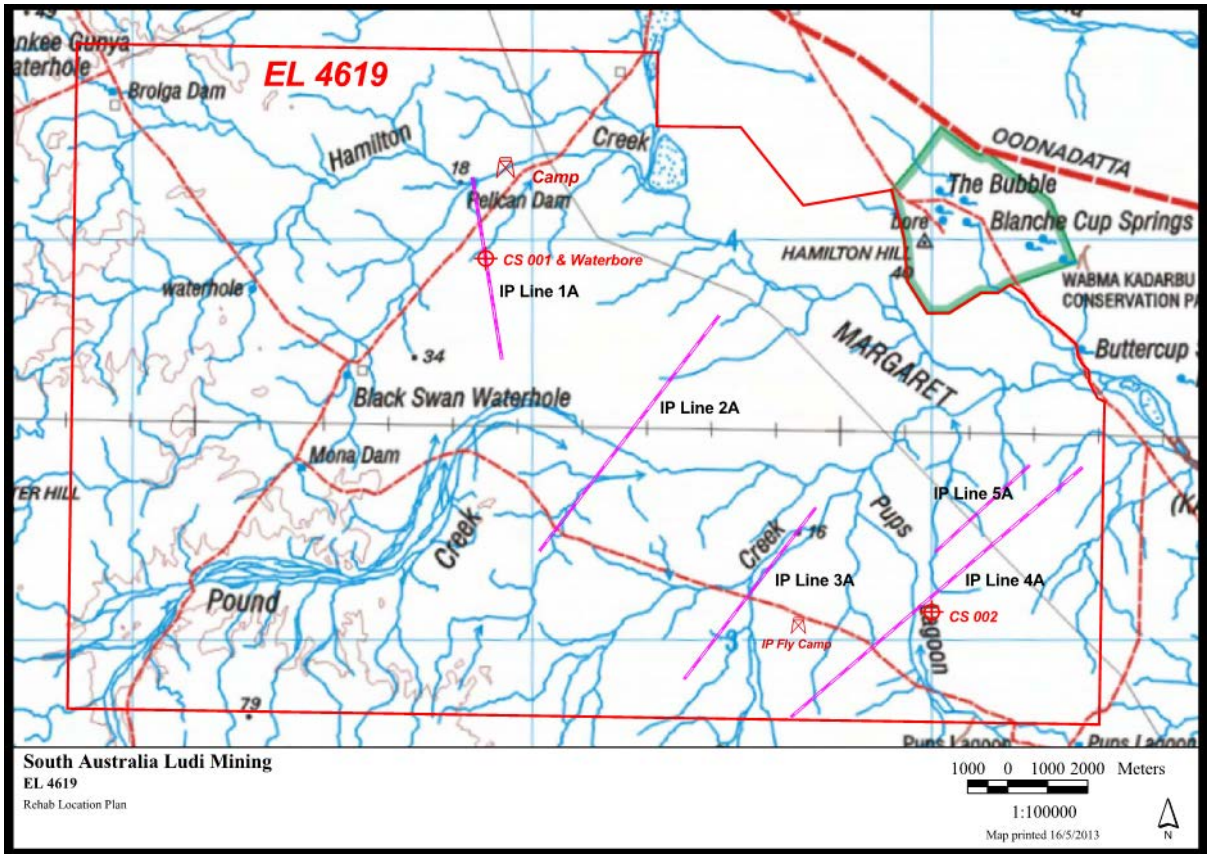


Figure 1: Rehabilitation Location Plan, EL 4619 Coward Springs.

2. EQUIPMENT

Equipment used to complete the rehabilitation were a Volvo L120E articulated loader (Photo 1) supplied by ODT Australis, Roxby Downs and a ABitruff 01 scarifier (Photo 2) supplied by Andrew Brockhoff, Coober Pedy.





Photo 1: Volvo loader

Photo 2: Scarifier

3. REHABILITATION ACTIVITIES

3.1 IP Lines

IP surveying was conducted over 5 lines for a total of 30 line kilometres. The IP lines are shown in purple on Figure 1. The tracks produced by light vehicles were selectively scarified, depending on the impact on the ground surface. The photos below show the “before” and “after” scarifying to demonstrate the effectiveness of the rehabilitation. Small electrode pits used during the survey were rehabilitated where required (Photo 7.)

Line 3A; photos taken at 675375gdaE, 6731080gdaN towards 200^0mag.



Photo 3: Before scarifying



Photo 4: After scarifying

Line 4A; photos taken at 681539gdaE, 6732395gdaN towards 040^0 mag.



Photo 5: Before scarifying



Photo 6: After scarifying

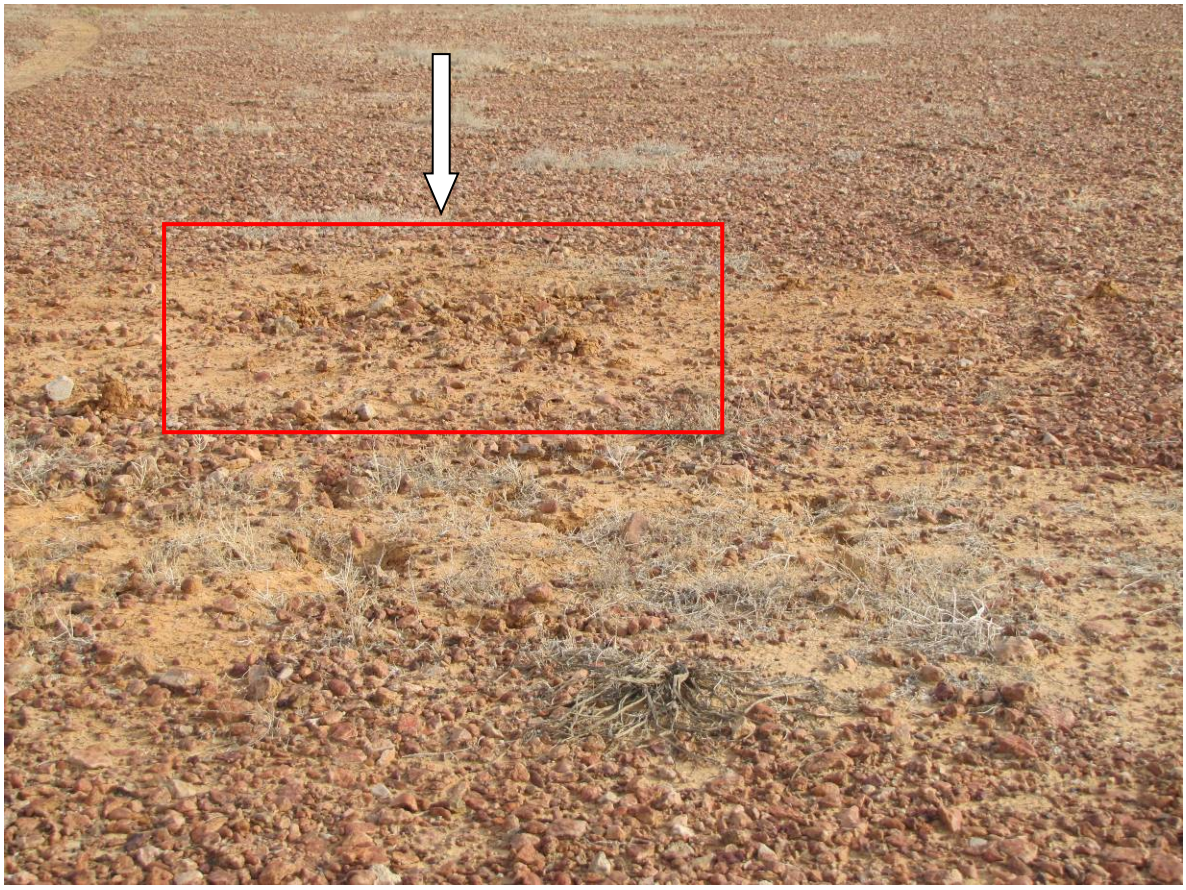


Photo 7: IP electrode hole (arrowed) after rehabilitation

3.2 Station Tracks

Reconnaissance in July 2012 showed the station track from Coward Springs to Stuart Creek Homestead via Mona Dam and Pups Lagoon Dam had not been graded for five years and was virtually impassable for light vehicles. Consequently SALM graded the entire track from Coward Springs to the homestead, even though the company only used from Coward Springs to near Pups Lagoon Dam.

Carting water to drill hole CS002 led to "bull dusting" of the station track at zones dominated by kopi. SALM used ODT to clay these zones during the drilling programme by in-filling the zones with clay obtained from nearby borrow pits. Discussions were held with Peter Paisley, Senior Advisor Land Management, BHP Billiton prior to commencing work on the borrow pits used to repair the station tracks. The borrow pits were "landscaped" to remove steep sides and allow safe ingress and egress of cattle and native fauna. Additional work was carried out where appropriate to prevent erosion. Some parts of the track had detours around the soft patches before infilling by clay. These detours were flattened and recontoured with mini-bunds to prevent erosion. The rehabilitation work was inspected by Mr Ken Lamb on 10th May, and he was satisfied with the rehabilitation.



Photo 8: Station track with detours on right before rehabilitation



Photo 9: Closeup after rehabilitation showing mini bunding to prevent erosion



Photo 10: Borrow pit at 671586gdaE, 6732303gdaN before rehab



Photo 11: Borrow pit after rehabilitation showing “landscaping” with low gradient sides

3.3 Access tracks

Access tracks to the drill sites were graded only where necessary prior to drilling. Drill hole CS001 was accessed using existing IP line 1A. Access to drillhole CS002 was on a track made through gibber plains and low semi-fixed sand dunes.



Photo 12: Access track to drillhole CS001 after scarifying



Photo 13: Access to drillhole CS002 at 680765gdaE, 6729335gdaN towards 300^0 mag before drilling



Photo 14: Access to drillhole CS002 at 680765gdaE, 6729335gdaN towards 300^0 mag after drilling



Photo 15: Access to drillhole CS002 at 680765gdaE, 6729335gdaN towards 300^0 mag after scarifying



Photo 16: Access to drill pad CS 002 blocked by replaced sand-dune



Photo 17: Access to drill pad CS 002 blocked by sand and gravel near entrance from station track

3.4 Drill pads

Drill collars were selected in flat, un-vegetated areas that required no earthworks. Containment sumps were dug using a backhoe, with topsoil stockpiled separately to sub-soil. The sumps were allowed to dry and backfilled with original spoil and topsoil spread last. The drillholes were cemented from bottom to top and the casing cut below surface level and backfilled. The entire area of the drill pads was then scarified.



Photo 18: Cementing operations

3.4.1 Drillhole CS001



Photo 19: Drillhole CS001 drillpad before drilling



Photo 20: Drillhole CS001 drillpad after sumps filled in and area scarified



Photo 21: Drill collar for CS001 exposed prior to cutting below ground level.



Photo 22: Drill collar for CS001 cut prior to burial below ground level



Photo 23: Backfilling sumps at drillhole CS001



Photo 24: Levelling drillpad for CS001 prior to spreading topsoil. Topsoil heap arrowed.



Photo 25: Spreading topsoil at drillpad CS001

3.4.2 Drillhole CS002



Photo 26: Drillpad CS002 prior to drilling



Photo 27: Drillpad CS002 prior to rehabilitation



Photo 28: Drillpad CS002 after rehabilitation



Photo 29: Casing for drillhole CS002 exposed for cutting below ground level.



Photo 30: Casing for drillhole CS002 cut prior to burial below ground level



Photo 31: Backfilling sumps at drillpad CS002

3.5 Campsite

The campsite was situated at a site approved for an alternative water bore that was not drilled. The camp consisted of caravans which were removed at the completion of the drilling programme. All rubbish was taken to either Roxby Downs or William Creek. Photographs below show two views of the campsite.



Photo 32: Camp site



Photo 33: Campsite after rehabilitation and scarifying



Photo 34: Alternative waterbore site prior to becoming campsite



Photo 35: Alternative waterbore site/campsite after scarifying

3.6 Drill Core

The drill core was strapped onto pallets and transported to the Core Storage facility at Thebarton.



Photo 36: Core ready for transport



Photo 37: Loading core

12 January 2015

EL Reporting Officer
Mineral Tenements
Department of State Development
GPO Box 320
ADELAIDE SA 5001

Dear Nella

EL 4619 Annual Technical Report for the year ending 30 November 2014

No field work was undertaken during the period 1 December 2013 and 30 November 2014. As no new technical data were acquired, a formal report will not be submitted.

Total expenditure for the period was $18,586. Details have been provided in the relevant summary reports.

Please contact me on 8342 4914 or 0415 397 870 if you require additional information.

Yours sincerely

Teena Coppin
Tenement Manager

South Australia Ludi Mining Pty Ltd ABN 31 135 646 187
10/ 237 Wakefield Street Adelaide SA 5000 Tel: 08 7225 0879 Email: ZSL68@163.com

29 January 2016

EL Reporting Officer
Mineral Tenements
Department of State Development
GPO Box 320
ADELAIDE SA 5001

Dear Nella

EL 4619 Annual Technical Report for the year ending 30 November 2015

No field work was undertaken during the period 1 December 2014 to 30 November 2015. As no new technical data were acquired, a formal report will not be submitted.

Expenditure details have been provided in the relevant summary reports.

Please contact me on 8342 4914 or 0415 397 870 if you require additional information.

Yours sincerely

Teena Coppin
Tenement Manager

South Australia Ludi Mining Pty Ltd ABN 31 135 646 187
10/ 237 Wakefield Street Adelaide SA 5000 Tel: 08 7225 0879 Email: ZSL68@163.com

3 January 2017

EL Reporting Officer
Mineral Tenements
Department of State Development
GPO Box 320
ADELAIDE SA 5001

Dear Nella

EL 5766 Coward Springs Annual Technical Report for the year ending 30 November 2016

EL 5766 was granted on 1 December 2015, as a replacement exploration licence for EL 4619.

No field work was undertaken during the first year of tenure from 1 December 2015 to 30 November 2016.

As no new technical data were acquired, a formal report will not be submitted.

Expenditure details have been provided in the relevant summary reports.

Please contact me on 8342 4914 or 0415 397 870 if you require additional information.

Yours sincerely

Teena Coppin
Tenement Manager

South Australia Ludi Mining Pty Ltd ABN 31 135 646 187
804 Harriet Road, Kangaroo Island: PO Box 29, Parndana, South Australia 5220
M:+61 452 627 022; M:+86 15069111015; Email: zsl68@163.com

21 November 2017

EL Reporting Officer
Mineral Tenements
Department of the Premier and Cabinet
GPO Box 320
ADELAIDE SA 5001

Dear Nella

EL 5766 Coward Springs – Final Technical Report for the period 1st December 2016 to 16th November 2017.

EL 5766 was granted on 1st December 2015. On the 16th November 2017 SA Ludi Mining Pty Ltd lodged the surrender forms for this exploration licence with the Department of Premier and Cabinet.

As no field work was undertaken during the reporting period and no new technical data was acquired, a formal report will not be submitted.

Details of expenditure have been provided in the relevant summary reports.

Please contact me on 0405 362 457 if you require additional information.

Yours sincerely

Sarah Blieschke
Tenement Manager

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M:+61 452 627 022: M:+86 15069111015; Email: zsl68@163.com