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Ontario

Report on VLF Electromagnetic Survey

On the

Block A/Burda Claims

Knight Township

Larder Lake Mining Division, Ontario

For

Tim Young

by: R.J. Meikle

November 4, 2016

Table of Contents

1.0 Introduction

The 2016 VLF-EM Survey, subject of this report was carried out between August 25 – September 7, 2016. The field work was done by R. Meikle, J. Kleinboeck, and R. Matthew. The survey was done centered on a previously known mineralized showing in the north west corner of claim no. 1221719. The survey was designed to determine the VLF response over the showing and trace it to the east and west.

The VLF-EM Survey was carried out on all or parts of claims 1221682, 4247571, 4251937, 1221720, 1221719. The claims are 100% owned by Tim A. Young, Client # 302446, with the exception of claim #1221682 which is 70% owned by Tim A. Young and 30% owned by Golden Harp Resources, client #403237.

This report deals with the parameters used for and the results of the 2016 VLF-EM Survey. A report by J.M. Kleinboeck and A.W. Beecham, "Gardner-Courageous Showing Area", July 29, 2016, describes the geology, mineralization and history of the property as part of a larger group of claims.

2.0 Location and Access

The property is located 135 km NNW of Sudbury, 85 km south of Timmins and 90 km SW of Kirkland Lake in the eastern Shining Tree area.

Access is via Highway 560 to a point immediately east of a major power lines which crosses the highway. From this point, Arthur Lake gravel road runs north, passing west of Moon Lake then an east branch of the road leads to the property. The distance from the highway is approximately 5km.

3.0 Summary of 2016 VLF-EM Survey

A GPS controlled grid was established, centered at the known stripped area with lines every 50m azimuth 360 degrees true north, turned off an east-west baseline. The baseline runs from L495350mE to L496050mE, at 5282100mN (utm co-ordinates, Nad 83). The north-south cross lines averaged approx 225m in length each side of the baseline and were staggered to reflect the east – southeast trend of the conductive anomaly.

The geophysical program consisted of a VLF-EM Survey for a total of 3.5km of survey. The VLF readings were taken by the author on GPS lines established by Joerg Kleinboeck, consulting geologist and Rob Matthew. The following parameters were used for the survey:

Instrument: Geonics EM-16, VLF receiver

Transmitter Station: Cutler Maine

Frequency: 24.0 Kilo Hertz

Parameters Read: In-phase tilt angle (in degrees) and Quadrature component (in %).

Reading Interval: 25 meters

Note: all readings taken facing north-northeast, normal to the transmitter station azimuth. Therefore a conductor axis is a positive inphase walking north on the line changing to a negative inphase on the north side of the conductor. This is the conventional plotting method. The actual resultant inphase component dips away from the conductor.

Data Presentation: The in-phase and quadrature (out of phase) readings were posted and profiled in plan map form at a scale of 1:2500. A "Fraser Filter" was applied to the in-phase readings and the results plotted in plan form, contoured with a superimposed coloured grid image. The filter helps to pick out anomaly or conductor axis, especially when due to several different reasons, the in-phase cross-over is not always coincident with the conductor axis. Quit often the actual axis is reflected by an inflection of the profile which is enhanced by the filter.

A description of the survey method and equipment used can be found in Appendix 'A', back of this report.

4.0 Results of the 2016 VLF-EM Survey

The Cutler Maine Transmitter station appears to have provided reasonably good coupling with a good signal strength. The VLF-EM survey outlined a linear, weak to moderate conductor striking east-southeast. The stronger part of the conductor is between L495400mE and L495750mE. The conductor is open to the east and west, appearing to be stronger to the west-northwest with one of the stronger responses on L495700mE which is coincident with a geological showing with some trenching by previous companies.

For the most part there is a positive sense Quadrature response meaning that the Quadrature followed the In-phase which is most often indicative of a bedrock conductor as opposed to an overburden response. While the eastern part of the conductor does not have a "true cross-over" on the in-phase, it does show an inflection on the profile which could be a result of weaker conductivity and or a more shallow dip.

5.0 Conclusions and Recommendations

The VLF-EM Survey appears to have a good response coincident with the known showing on L495700mE and seems to have delineated a linear strike direction extending a minimum of 350m each side of the showing, open in both directions.

It is recommended that the conductor axis be ground proofed by geological mapping and or trenching with a focus on L495550mE at 5282113mN and L495450mE at 5282160mN where the VLF signature is very similar to the one on the "showing line" L495700mE.

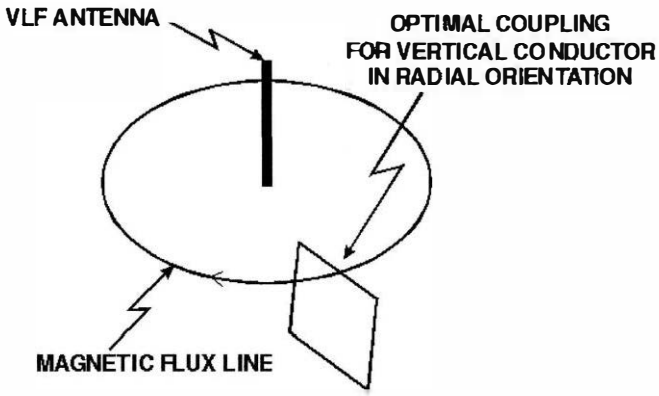
An Induced Polarization Survey is recommend to compliment the VLF results as well as outline any disseminated sulphides parallel to the conductor which would not be detected by the VLF Survey. A "dipole-dipole" or "pole-dipole" electrode array, with a dipole spacing of 25m reading 6 dipoles should be an efficient and cost effective way to accomplish this.

APPENDIX 'A'

"THE VLF-EM METHOD"

The VLF Method

- The very low frequency (VLF) method is a reconnaissance electromagnetic technique used mainly in mineral exploration
- The method makes use of powerful VLF transmitters (3-30 kHz) that are used for military communications
- The U.S. Navy operates 11 transmitters that serve as standard VLF sources for geophysical work



- The VLF method is essentially a tilt-angle technique. In the absence of any conductive body, the secondary field is zero, and the resultant (primary) magnetic field is thus horizontal. If a conductor is present, the associated secondary field will cause the resultant to be tilted.

- Flux linkage analysis can be used to show that vertically above the conductor, the tile angle passes through zero (see Reynolds, 1997, p. 656).

- VLF signal strength diminishes rapidly with depth (i.e., the skin depth is small). Consequently, VLF methods are primarily used to detect near-surface features, and not for depth-sounding.
  Data acquisition:
- The most common field technique (VLF-EM) uses a hand-held antenna. In older systems, an audio signal is nulled to determine the tilt angle. In newer systems, data acquisition is entirely digital (push one button, the electronics do the rest). The measured parameters are tilt angle (in degrees) and quadrature component (in %).

- Another field technique, known as VLF-R, uses an electrical dipole. Measured parameters are apparent resistivity (Ohm-m) and quadrature component (%).

APPENDIX 'B'

QUALIFICATIONS OF AUTHOR

CERTIFICATION

I, Raymond Joseph Meikle of North Bay, Ontario hereby certify that:

1. I hold a three year Technologist Diploma from the Haileybury School of Mines, Haileybury, Ontario, obtained in May 1975.

2. I have been practising my profession since 1973 in Ontario, Quebec, Nova Scotia, New Brunswick, Nova Scotia, Newfoundland, NWT, Manitoba, Greenland, Colorado, Nevada, Germany, Chile.

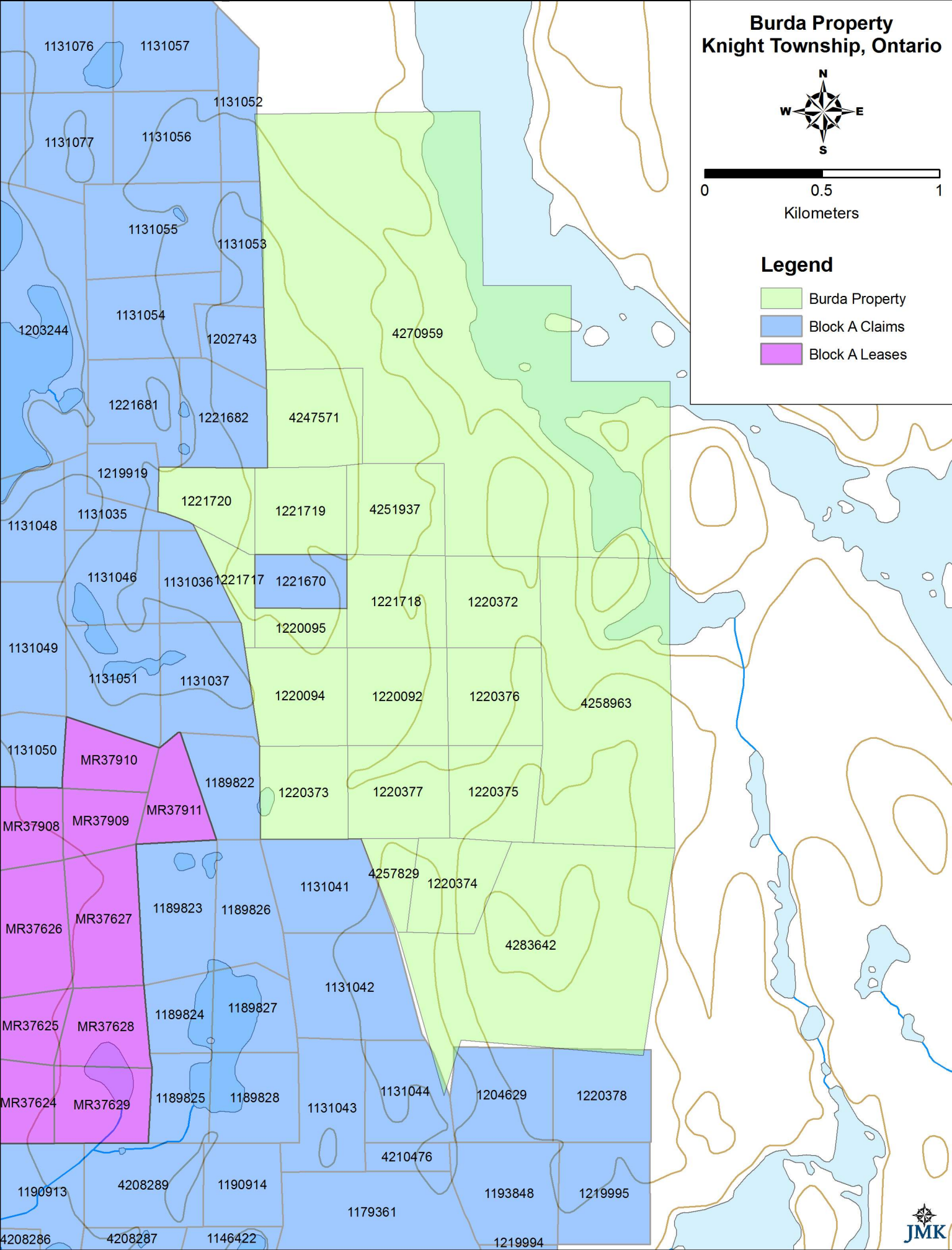
3. I have been employed directly with Teck Corporation, Metallgessellschaft Canada Ltd., Sabina Industries, R.S. Middleton Exploration Services and self employed since 1989 with R.J. Meikle& Associates.

4. I have based conclusions and recommendations contained in this report on knowledge of the area, previous experience in the area and the results of the field work conducted on the property during 2016 by the author.

5. I hold no interest, directly or indirectly in this property, nor do I expect to receive any interest of considerations from Tim Young, other than for professional and contract fees rendered.

Dated this 4th day November,

2016, at North Bay, Ontario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Knight Township, Ontario
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0.5
1
Kilometers
Legend
Burda Property
Block A Claims
Block A Leases
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1131077
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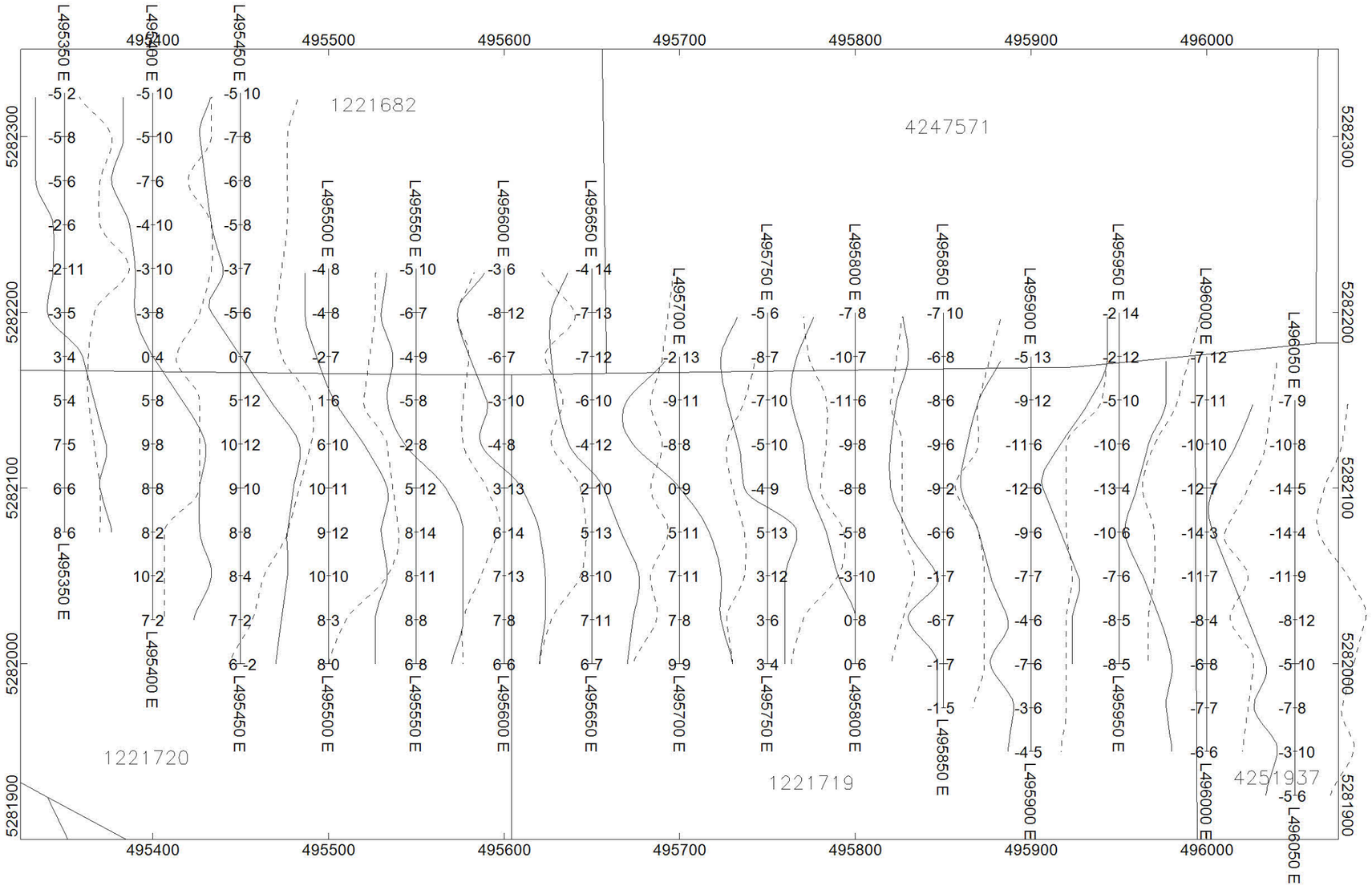
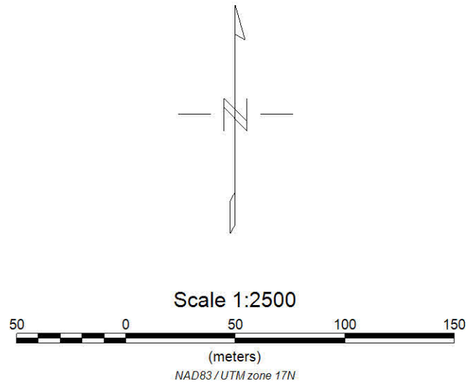


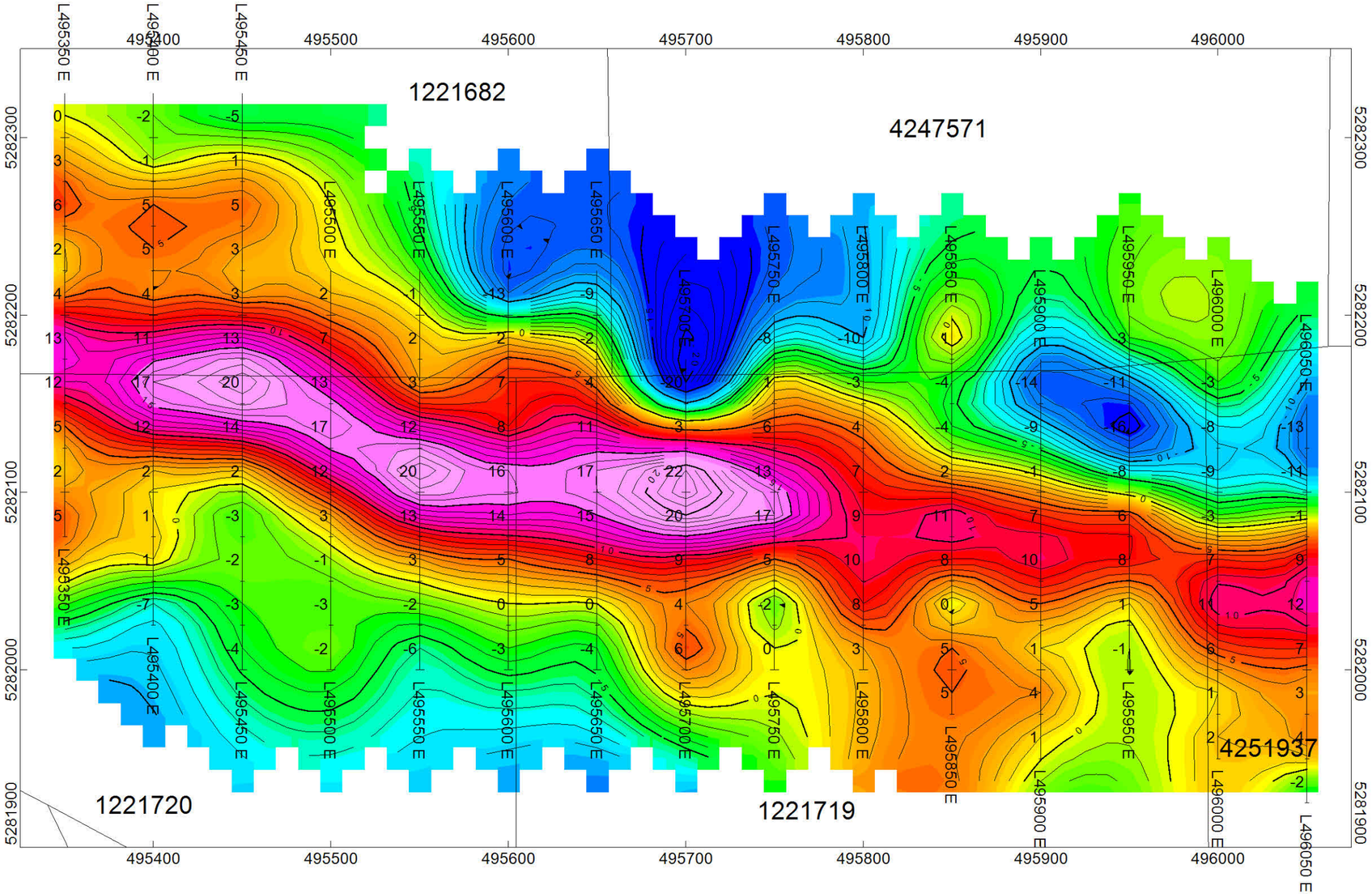


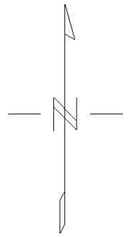
TIM YOUNG

PROFILED VLF SURVEY
BLOCK A/BURDA CLAIMS
KNIGHT TWP., SHINING TREE, ONTARIO

INSTRUMENT: GEONICS EM-16
TRANSMITTER STATION: CUTLER MAINE 24.0KHZ
ALL READINGS FACING NORTH,

R.J. MEIKLE





Scale 1:2500

50 0 50 100 150

(meters)

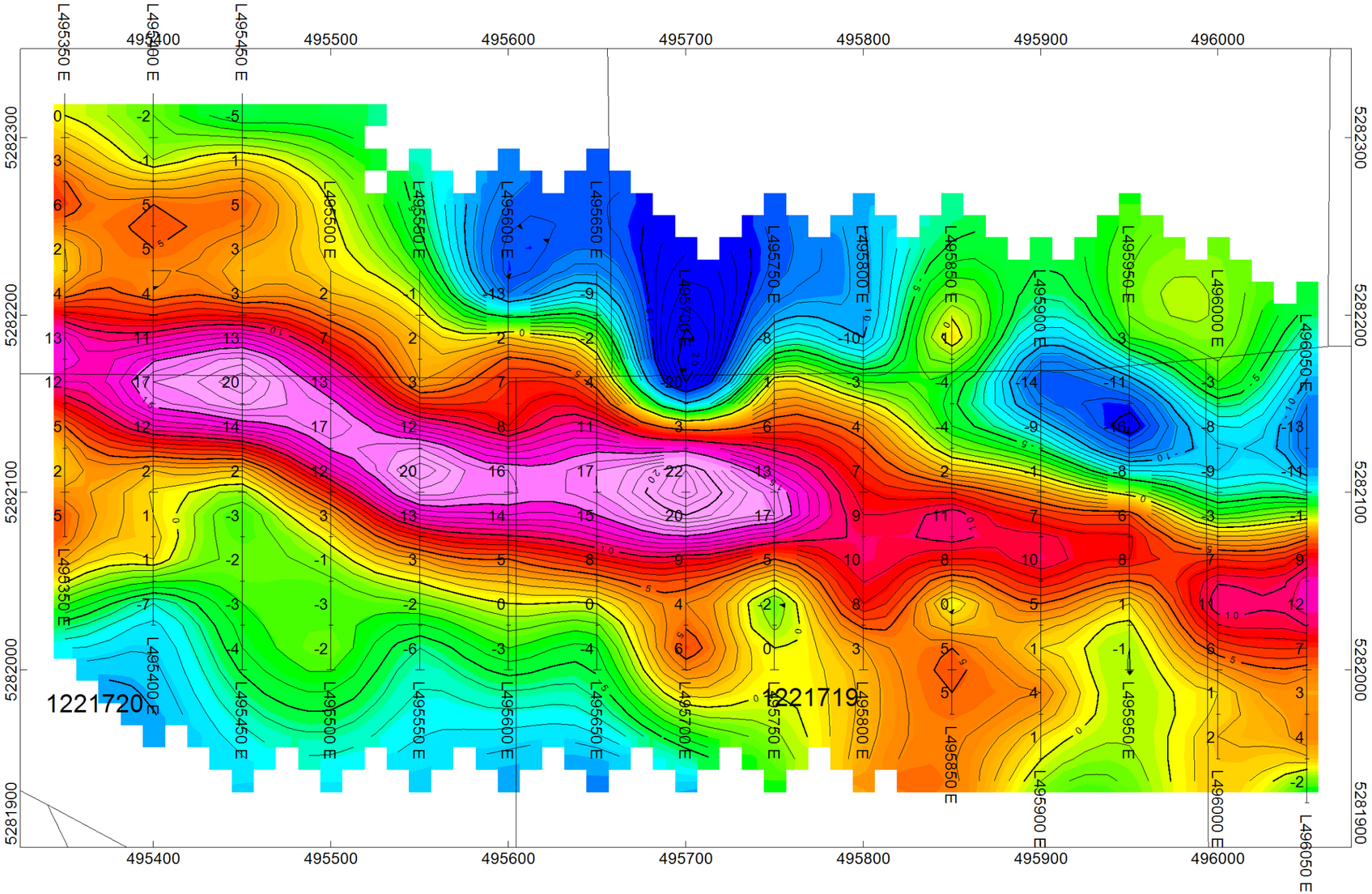
NAD83 / UTM zone 17N

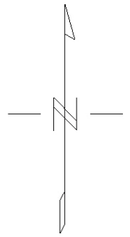
TIM YOUNG

FRASER FILTERED VLF INPHASE CONTOUR MAP
BLOCK A/BURDA CLAIMS
KNIGHT TOWNSHIIP, SHINING TREE, ONTARIO

INSTRUMENT: GEONICS EM-16 VLF
TRANSMITTER STATION: CUTLER MAINE 24.0KHZ
ALL READINGS TAKEN FACING NORTH

R.J. MEIKLE





Scale 1:2500

50 0 50 100 150

(meters)

NAD83 / UTM zone 17N

POSTED VALUES = FRASER FILTERED VLF IN-PHASE READINGS
CONTOUR INTERVAL = 1 FILTERED UNIT
HIGER POSITIVE CONTOURS INDICATE CONDUCTOR AXIS

TIM YOUNG

FRASER FILTERED VLF INPHASE CONTOUR MAP
BLOCK A/BURDA CLAIMS
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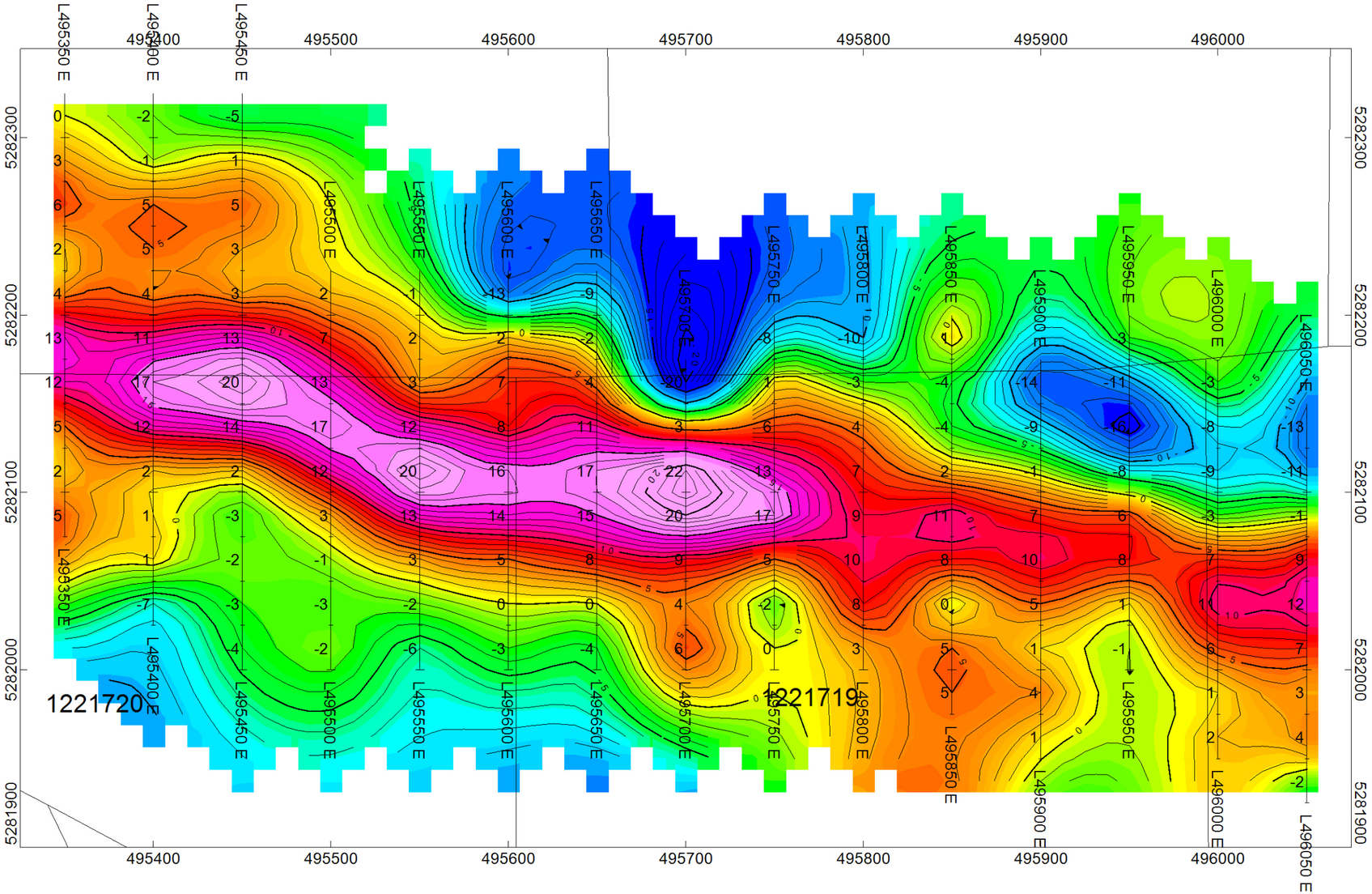

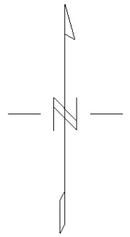

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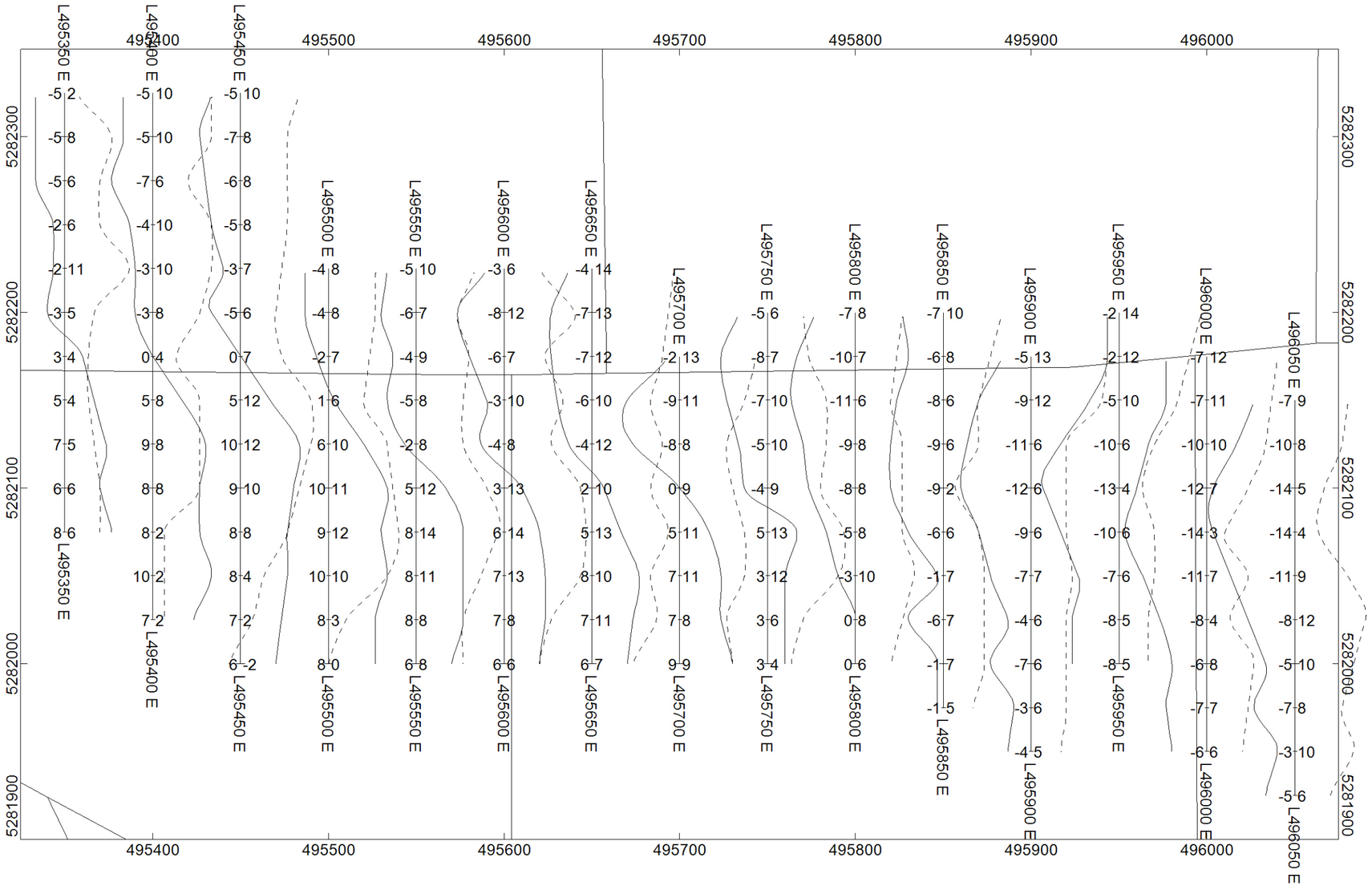

Scale 1:2500

50 0 50 100 150

(meters)

NAD83 / UTM zone 17N

VLF IN-PHASE DATA POSTED LEFT OF LINE
VLF QUADRATURE DATA POSTED RIGHT OF LINE
IN-PHASE PROFILE = SOLID LINE
QUADRATURE PROFILE = DASED LINE

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PROFILED VLF SURVEY
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