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Assessment Report on
Ground Geophysical Surveying on
the Jackfish and Kellyn Properties
Mining Claims 3003597, 4207575, 4207577,
4218780, 4228966, 4247131 and 4247132

Syine Township
Thunder Bay Mining Division
District of Thunder Bay, Ontario

NTS 42D15

March 25-29, 2017 and August 21-30, 2017

NAD83 Zone 16 UTM

504,091 mE 5,409,527 mN

Latitude 48° 50' 19.3"N Longitude 86° 56' 39.3"W

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POT2WO

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December 4, 2017

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Introduction

Between the dates of March 25 - 29, 2017 and August 21 - 30, 2017 two Very Low Frequency Electromagnetic (VLF-EM) geophysical surveys were undertaken on the Jackfish and Kellyn properties. The purpose of the work was to delineate conductive structures possibly hosting gold and basemetal mineralization within the Terrace Bay Batholith granodiorite rocks of the Schreiber- Hemlo greenstone belt. The Terrace Bay Batholith is host to numerous small historic gold and base metal occurrences and there is potential to find others, perhaps of economic significance in current times.

This report adds some additional information about the properties and the mining claims over which the surveys covered and includes the survey reports in the appendices.

Property Location, Description and Access

The Jackfish and Kellyn properties are located within the Syine Township, on the north shore of Lake Superior in northwestern Ontario, approximately 250 km east of Thunder Bay (Figure 1). The property area is centered on 504,091 mE 5,409,527 mN (NAD 83 Zone 16) or at Latitude 48° 50' 19.3"N Longitude 86° 56' 39.3"W.



Figure 1: Property Location Map.

The property is accessed by travelling 20 km east of Terrace Bay or 63 km west from Marathon via Trans-Canada Highway 17. The mining claims are readily accessible off the Highway 17 by All-terrain vehicle (ATV) along bush trails.

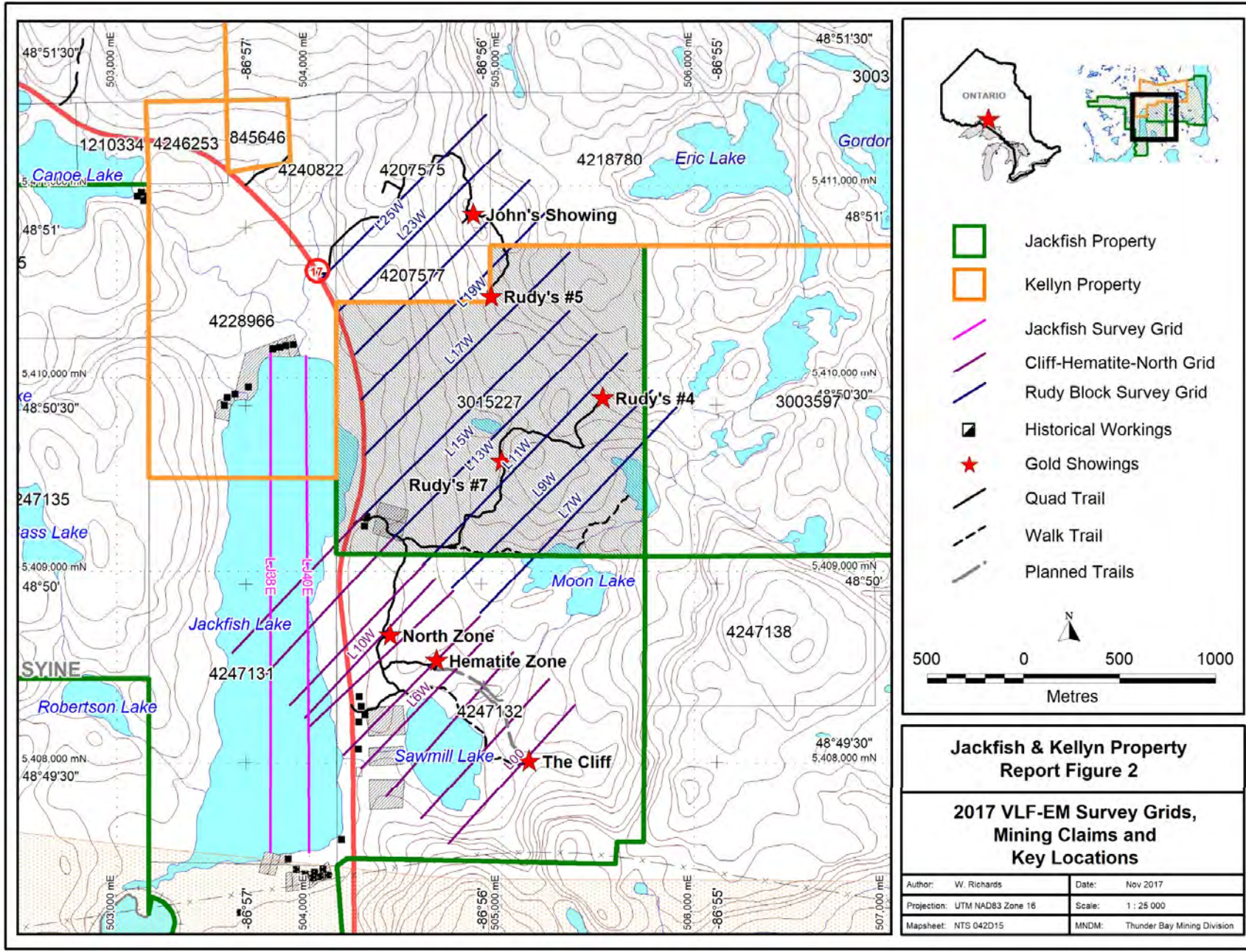
The terrain around the property is quit rugged and vegetation cover is moderately thick comprising mixed conifers and trembling aspen with an undergrowth of young conifers and tag alder. There is a sparse to

moderate amount of bedrock outcrop on the property, mostly along cliffs and at highway road cuttings, but exposure in the forest is commonly masked by moss cover.

The VLF-EM surveys were conducted over the mining claims listed in Table 1 and shown on the map (Figure 2).

Table 1: Property Mining Claims and VLF-EM Survey Grids.

Claim #	Ownership	Recording Date	Units	VLF-EM Grid	Line Km
3003597	100% Wayne Larry Richards	Dec-09, 2008	16	Rudy Block	0.3
4207575	50% James Mark Hamel, 50% Wayne Larry Richards	Mar-30, 2007	4	Rudy Block	1.8
4207577	50% James Mark Hamel, 50% Wayne Larry Richards	Jul-26, 2007	2	Rudy Block	1.2
4218780	50% James Mark Hamel, 50% Wayne Larry Richards	Jul-03, 2007	8	Rudy Block	0.6
4228966	50% James Mark Hamel, 50% Wayne Larry Richards	Dec-09, 2008	8	Jackfish / Rudy Block	1.2 / 0.1
4247131	100% Wayne Larry Richards	Feb-02, 2009	13	Jackfish / Cliff-Hematite-North	4.0 / 2.1
4247132	100% Wayne Larry Richards	Feb-02, 2009	16	Cliff-Hematite-North / Rudy Block	7.5 / 0.7



Regional Geological Setting

The property is located in the Wawa subprovince of the Superior Province of the Canadian Shield specifically the metavolcano-sedimentary Schreiber-Hemlo greenstone belt.

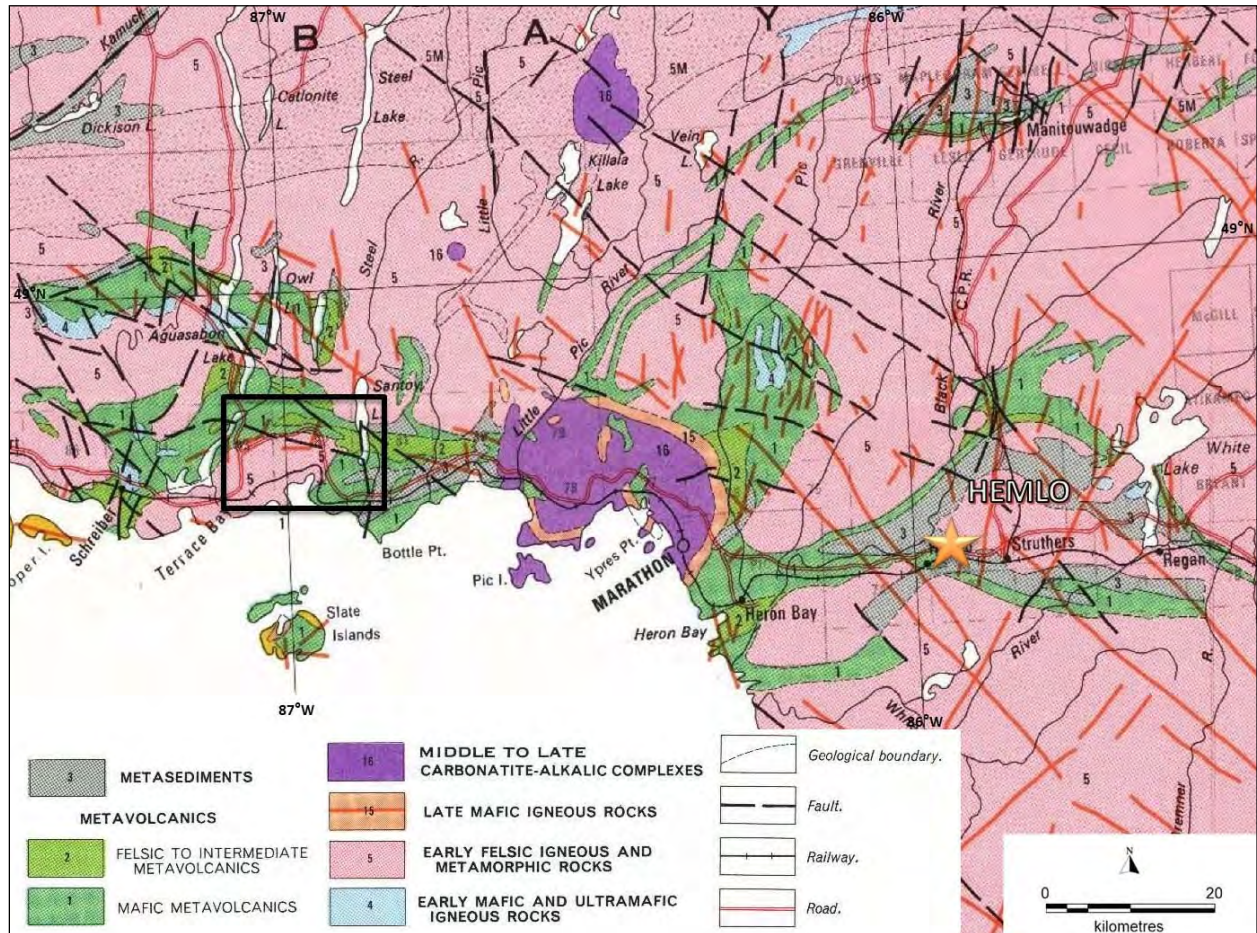


Figure 3: Regional Geological Setting Map (after Ayres et al, 1970).

Property Geology and Mineralization

The Kellyn and Jackfish properties straddle the eastern margin of the Terrace Bay Batholith where the granodiorite rocks of the intrusive come into contact with the greenstone belt sequence of the Schreiber-Hemlo belt in a combination of an intrusive and structural setting. The various rock types that have been observed or interpreted to underlie the area are depicted on the property geology map in Figure 4.

Gold, silver and base metal mineralization is known to occur and has been mined historically from quartz-carbonate veins in three different settings across the region; as lenses or stringers within shear zones of the greenstone belt, as networks parallel to the contact between the batholith and supracrustal rocks and as fracture fill within the batholith. The more prominent historical workings and current mineralized showings are shown on Figure 4.

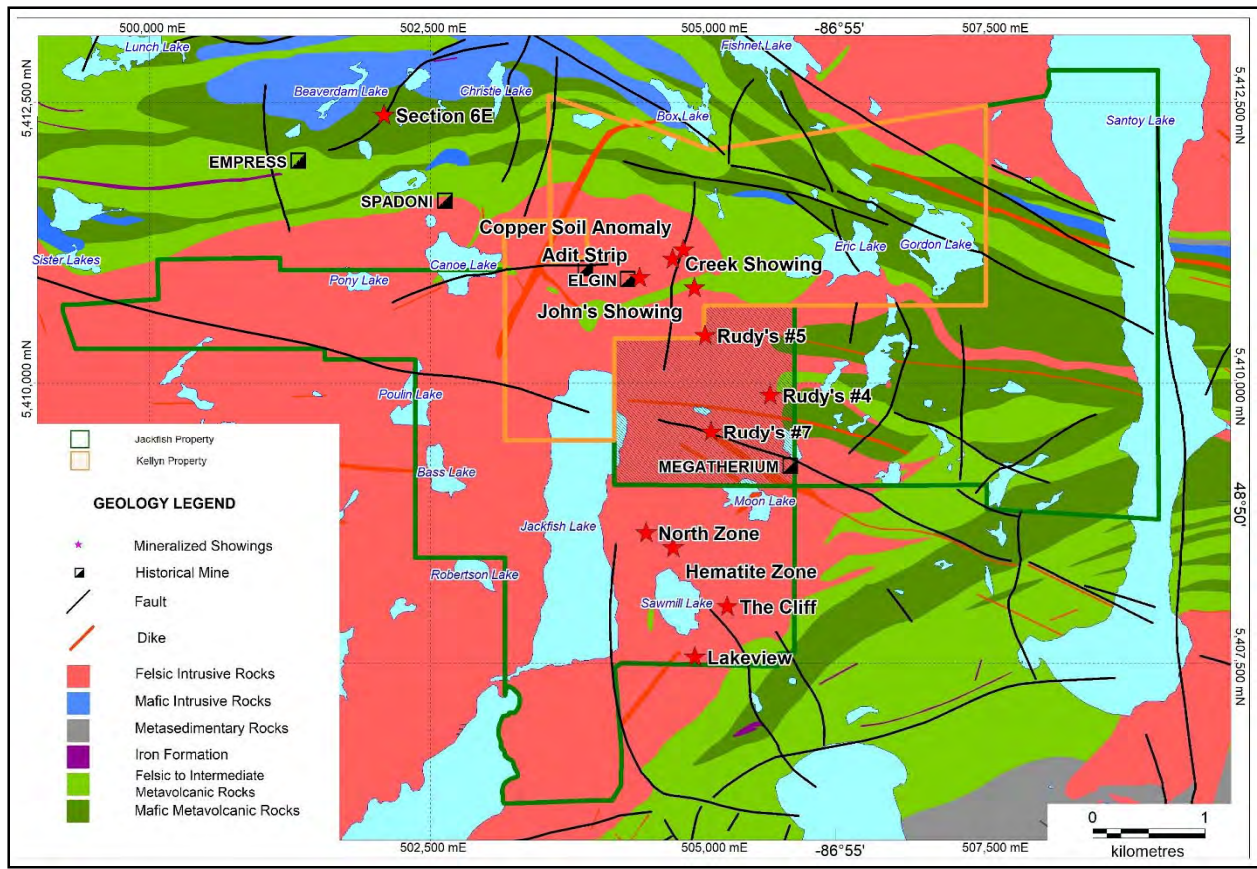


Figure 4: Property Geology Map.

Exploration Work

VLF-EM ground geophysical surveys were undertaken to delineate conductive structures possibly hosting gold and base metal mineralization within the Terrace Bay Batholith granodiorite rocks and provide definitive targets for drill testing. The surveys were conducted by Superior Exploration, Adventure and Climbing Co. Ltd. Over two field programs from March 25 to 29, 2017 and August 21 to 30, 2017. The equipment, field methods and data processing are all described in detail in the two reports included with this report Appendices. The grid lines in relation to the property mining claims are shown on Figure 2.

Conclusions and Recommendations

Based on the data and image processing presented within the VLF_EM survey reports it was concluded that the reconnaissance method of VLF geophysical surveying using the EM-16 was a valid and useful means of identifying conductive structures on the Jackfish and Kellyn property mining claims. The recommendations presented in the survey reports will be followed up on in the field over the coming season.

References

- Ayers L.D., Lumbers S.B., Milne V.G. and Robeson D.W. 1970. Ontario Geological Map West Central Sheet; Ontario Geological Survey, M2199, 1p.
- Walker J.W.R. 1967. Geology of Jackfish Middleton Area; Ontario Geological Survey, M2107, 1p

Appendix 1:

VLF EM-16 Surveying Report
On The JackFish Lake Property
JackFish Lake Grid
&
Cliff-Hematite-North Grid



VLF EM-16 Surveying Report

On The JackFish Lake Property

JackFish Lake Grid

&

Cliff-Hematite-North Grid

District of Thunder Bay, Ontario

By: Shaun Parent

Superior Exploration, Adventure and Climbing Co. Ltd.

June 29, 2017

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Executive Summary

This Test/Orientation ground VLF survey was completed on the Jackfish Lake Property, District of Thunder Bay in Northern Ontario. The property is located approximately 20 km. east of Terrace Bay, Ontario and is adjacent to Highway 17 at Jackfish Lake.

The survey was carried out in March 2017, using a VLF EM-16 unit and a handheld Garmin GPS-60CSX. Two transmitters were read at each station: NAA - Cutler, Maine and NML - La Moure, North Dakota.

A total of 5.2 Km of VLF was carried out over 2 grid lines on the Jackfish Lake Grid:
Lines J38 and J40

A total of 10.02 Km was carried out over 10 grid Lines on the Cliff-Hematite-North Grid:
Lines 00, 2N, 4N, 6N, 7N, 9N, 10N, 11N, 13N, 15N

The objective of the 2017 VLF EM-16 survey was to:

- Determine if the VLF Survey could delineate the location of the structures on which the Cliff, Hematite and North Gold showing occur
- Ground truth airborne EM conductors that crossed the survey area on Jackfish Lake and the Cliff-Hematite-North Grid
- Identify if VLF conductors were apparent between the Cliff- Hematite-North showings
- Determine if the VLF could interpret conductive zones or structures across the Jackfish Grid and the Cliff-Hematite-North Grid

Deposit Types

Gold in the Jackfish Lake area occurs in the following structural settings.

- Mineralized shear/fault zones that occur in supracrustal rocks near the margins of the Terrace Bay batholith.
- Quartz-carbonate vein systems that parallel the batholith-supracrustal rock contact and are located at or near the contact.
- Quartz-carbonate veins that occupy late brittle fracture systems within the batholith. Magnus and Walker (2015)

Introduction

A VLF-EM16 survey is a relatively simple and economic geophysical survey that is used to better understand shallow, vertical and sub vertical bedrock conductors.

This report describes the findings and results of the VLF EM-16 survey utilizing the VLF2DMF processing software of which the author of this report has assisted in its development since 2007. It enables the processing and inversion of electromagnetic (EM) induction data acquired along a survey area using a Very Low Frequency (VLF) (Santos 2013)

The software generates profiles of Raw Data, Fraser Filtered Data, KH, Resistivity and (2-D) Modelled Inversions

VLF data collected in the surveyed area was also compiled onto plan maps of contoured Fraser Filter data and contours of Resistivity data:

- Jackfish Lake: TX NAA Map 4 (A, B, C) & TX NML Map 5 (A, B, C)
- Cliff-Hematite-North: TX NAA Maps 9, 10 & 11 & TX NML Maps 13, 14 & 15

Personnel

The VLF EM-16 operator and GPS field navigator responsible for the collection of raw data was Shaun Parent, P. Geo. VLF2DMF Processing & Interpretation was completed by Shaun Parent and Sandra Slater.

Map 1 General Location Map



Map 2 Jackfish Lake VLF Grid



Map 3 Cliff-Hematite North VLF Grid



Work Performed

Fieldwork

Jackfish Lake Grid

The VLF EM-16 survey consisted of running 2 VLF lines J38E J40E on Jackfish Lake in a direction of 00-180 degrees true azimuth using a VLF EM-16 unit and a handheld Garmin 60-CSX. Lines were 200 meters apart and two frequencies were read at 20 meter stations.. Each VLF station was located based on a northerly azimuth and distance from the start of the survey line at south end of Jackfish Lake

Cliff Hematite North Grid

The VLF EM-16 survey consisted of running 10 VLF lines J38E J40E to cover the Cliff-Hematite-North Gold showings in a direction of 44 degrees true azimuth using a VLF EM-16 unit and a handheld Garmin 60-CSX. Lines were 100 & 200 meters apart and two frequencies were read at 20 meter stations. Each VLF station was located based on a easterly azimuth and distance from the start of the survey line at south west side.

The following parameters were used throughout the surveys:

VLF Transmitters Used: NAA - 24.0 KHz. Cutler, Maine (East)
NML - 25.2 KHz. La Moure, North Dakota (West)

VLF survey direction: The VLF Em-16 receiver was facing 00 degrees (True North) along the 2 Jackfish Lake lines beginning in the south 0+00. On the Cliff-Hematite-North Grid, the VLF receiver was facing 44 degrees with lines beginning in the southwest at 0+00.

VLF survey stations: All readings were taken at approximately 20 meter stations along the Virtual VLF lines.

Parameters of Measurement: In-phase and Quad-phase components of vertical magnetic field as a percentage of horizontal primary fields. (Tangent of tilt angle and ellipticity). VLF transmitter NAA was to the east, while transmitter NML was to the west. The transmitters are chosen so that the direction to the transmitting station is as close to the orientation of the bedrock strike.

VLF Data Collection Process

Field data was collected as follows on each surveyed line.

- Each station was saved onto the Handheld Garmin 60CSX GPS Unit (including local features such as powerline poles, houses, and roads)
- VLF readings for each station were recorded in a notebook as In-Phase and Quadrature corresponding to the line number and station number. (See example in Table 1)
- Field information was transferred to a Garmin map source program where line and station information could be viewed.
- Garmin and VLF data were compiled onto an excel spreadsheet and then inputted into the VLF2DMF processing software. For this test survey all UTM Values are NAD 83.

Table 1 Example of VLF Data Collection

Line 0+00	NAA In phase	NAA Quadrature	NML In phase	NML Quadrature	Notes
2+00N	10	6	4	5	house
2+20N	8	4	2	4	Powerline

Interpretation & Modelling

VLF2DMF Data Processing

All VLF data collected was processed and interpreted separately for TX NAA and TX NML. Profiles of Raw data, Fraser Filter data and 2D Inversion Models are included in the Appendix at the end of this report.

VLF2DMF Profiles & Models

Raw and Filtered Data Profiles

The raw data for each frequency was plotted for each line surveyed. No filtering or smoothing of the raw data was done.

Fraser Filter Profile with Fraser Peaks

Raw data was run through the Fraser filter. This filter transforms In-Phase cross overs and inflections into positive peak anomalies. (Fraser 1969) In-Phase inflections and cross overs are usually plus to minus, while Quadrature responses are negative to positive giving a negative peak anomaly when the Fraser Filter is applied. All Fraser Filter peaks are shown on the profile.

K-H Profiles

Raw Data was run through the Karous-Hjelt (K-H) filter. The filter is applied to obtain a section of current density. The higher values are generally associated with conductive structures. (Karous, Hjelt 1983) If there is depth extent, this is shown on the In-phase profile as dark blue.

Resistivity Profiles: 4000 Ohm's

The apparent resistivity was calculated. The resistivity can be calculated if the mean environmental resistivity is known at the beginning of the VLF profile. A mean resistivity of 4000 ohm's was used for all lines.

Model 4000 Ohm's

A resistivity of 4000 Ohm's was used to build an initial model used in the inversion to obtain a realistic cross section of the line surveyed. Conductive zones are red/yellow while resistive zones are blue. A depth scale is found on the left side of model profiles. Surface conductive zones show little depth extent, have a horizontal display and are limited in depth. Fraser Filter picks are shown across the top of the models. When using a resistivity of 4000 Ohms, the depth of the model is determined to be 204 meters with Transmitter NAA and 199 meters with Transmitter NML. The vertical exaggeration of all models is 1.0.

Discussion of Results

Jackfish Lake Grid

Lines J38, J40

It appears that Jackfish Lake is underlain by a very resistive unit. The stronger NAA anomalies were interpreted into main trends, however, there are more, weaker ones that could not be followed due to the 200 meter spacing between lines. A more accurate result could be achieved with additional fill in lines being completed in order to verify responses.

Resistivity maps show more conductivity along line J38E, with several VLF anomalies within the lowest resistivity values. (NAA Map 4-C and NML Map 5-C)

Google images show the Fraser Picks and Trends on Jackfish Lake (NAA Map 6 and NML Map 7)

There are many more VLF anomalies on both line J38E and J40E but because of weak responses, they cannot be traced between the 200 line meter separation.

Interpreted VLF Trends were identified for NAA (10 trends) and NML (11 trends)

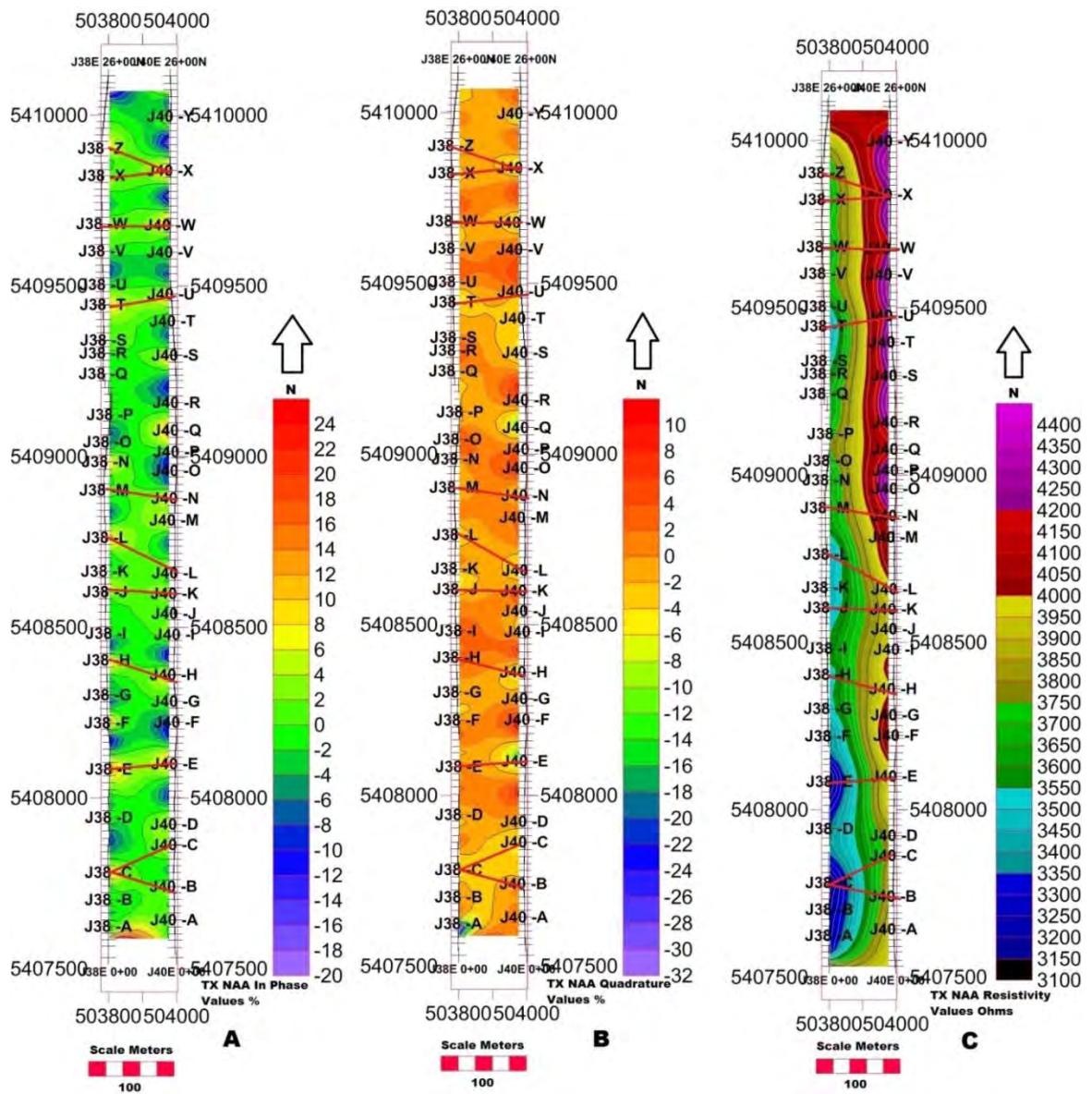
NAA:

- | | |
|---------------|---------------------------------|
| 1. J38C-J40B | Bedrock Conductor |
| 2. J38C-J40C | Bedrock Conductor |
| 3. J38E-J40E | Narrow Bedrock Conductor |
| 4. J38H-J40H | Narrow Bedrock Conductor |
| 5. J38L-J40L | Narrow Strong Bedrock Conductor |
| 6. J38M-J40M | Surficial Conductor |
| 7. J38T-J40V | Bedrock Conductor |
| 8. J38W-J40W | Bedrock Conductor |
| 9. J38X-J40X | Bedrock Conductor |
| 10. J38Z-J40X | Bedrock Conductor |

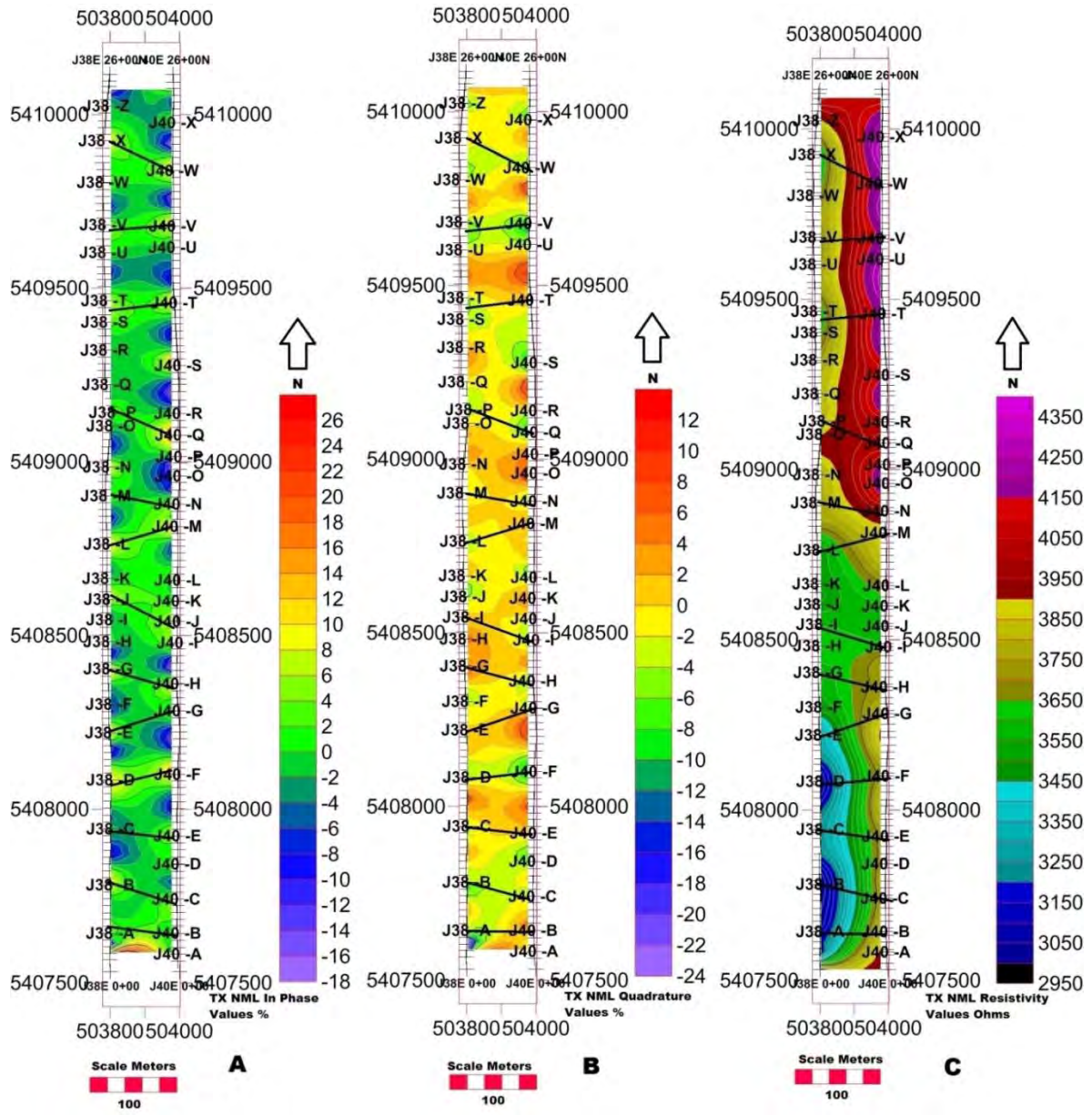
NML:

- | | |
|---------------|--------------------------|
| 1. J38A-J40B | Bedrock Conductor |
| 2. J38B-J40C | Surficial Conductor? |
| 3. J38C-J40C | Surficial Conductor |
| 4. J38D-J40F | Bedrock Conductor |
| 5. J38E-J40G | Bedrock Conductor |
| 6. J38G-J40H | Bedrock Conductor |
| 7. J38J-J40J | Wide Bedrock Conductor |
| 8. J38L-J40M | Narrow Bedrock Conductor |
| 9. J38P-J40Q | Bedrock Conductor? |
| 10. J38T-J40T | Bedrock Conductor |
| 11. J38V-J40W | Bedrock Conductor |

Map 4 Jackfish Lake - TX NAA In-Phase, Quadrature & Resistivity Values



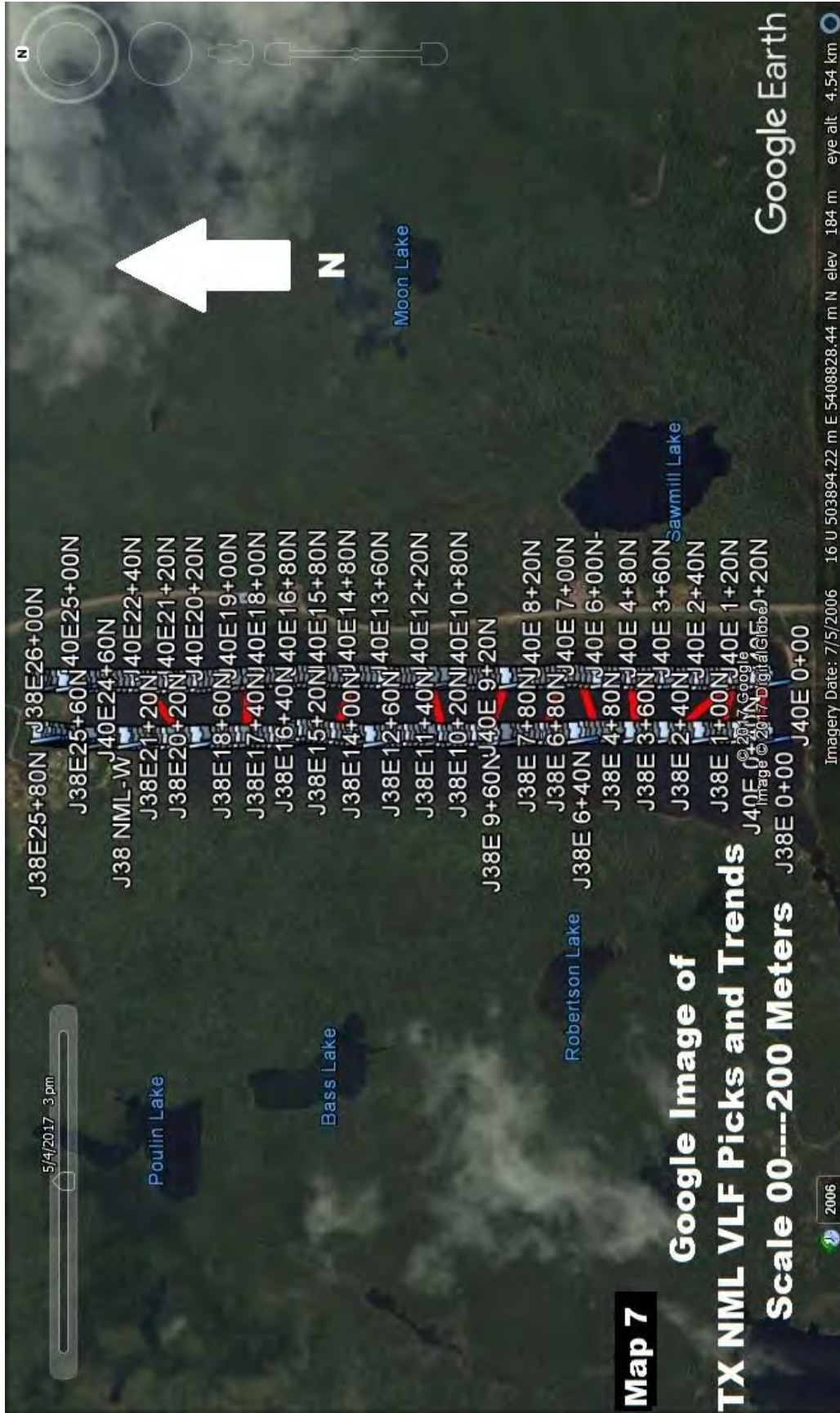
Map 5 Jackfish Lake - TX NML In-Phase, Quadrature & Resistivity Values



Map 6 Jackfish Lake - Google Image of TX NAA Fraser Picks & Trends



Map 7 Jackfish Lake - Google Image of TX NML Fraser Picks & Trends



Cliff Hematite North Grid

Lines 00, 2N, 4N, 6N, 7N, 9N, 11N, 13N & 15N

The Cliff-Hematite-North VLF grid was carried out on 9 Virtual VLF lines. Map 8 shows the layout of the VLF lines on an elevation contour map.

It appears that the Cliff-Hematite-North grid is underlain by mafic volcanics. Anomalies are strong and the main trends are easily interpreted between the 100 meter spaced lines and some of the 200 meter spaced lines. There are more, weaker Fraser picks occurring within the 200 meter spaced lines that could not be followed due to the distance between them. A more accurate result could be achieved with additional fill in lines being completed in order to verify responses.

The powerline affects several trends on lines 9W, 10W & 11W.

Several of the VLF trends follow an area of low resistivity. (Map 11-TX NAA) & (Map 15-TX NML). This is very apparent between lines 00 and 9W.

The main North showing trend follows a well-defined resistivity low from:

NAA Line 00 to Line 15W

NML Line 6W through to Line 15W

VLF Anomalies

VLF Trends were identified for TX NAA (11 trends) and TX NML (9 trends)

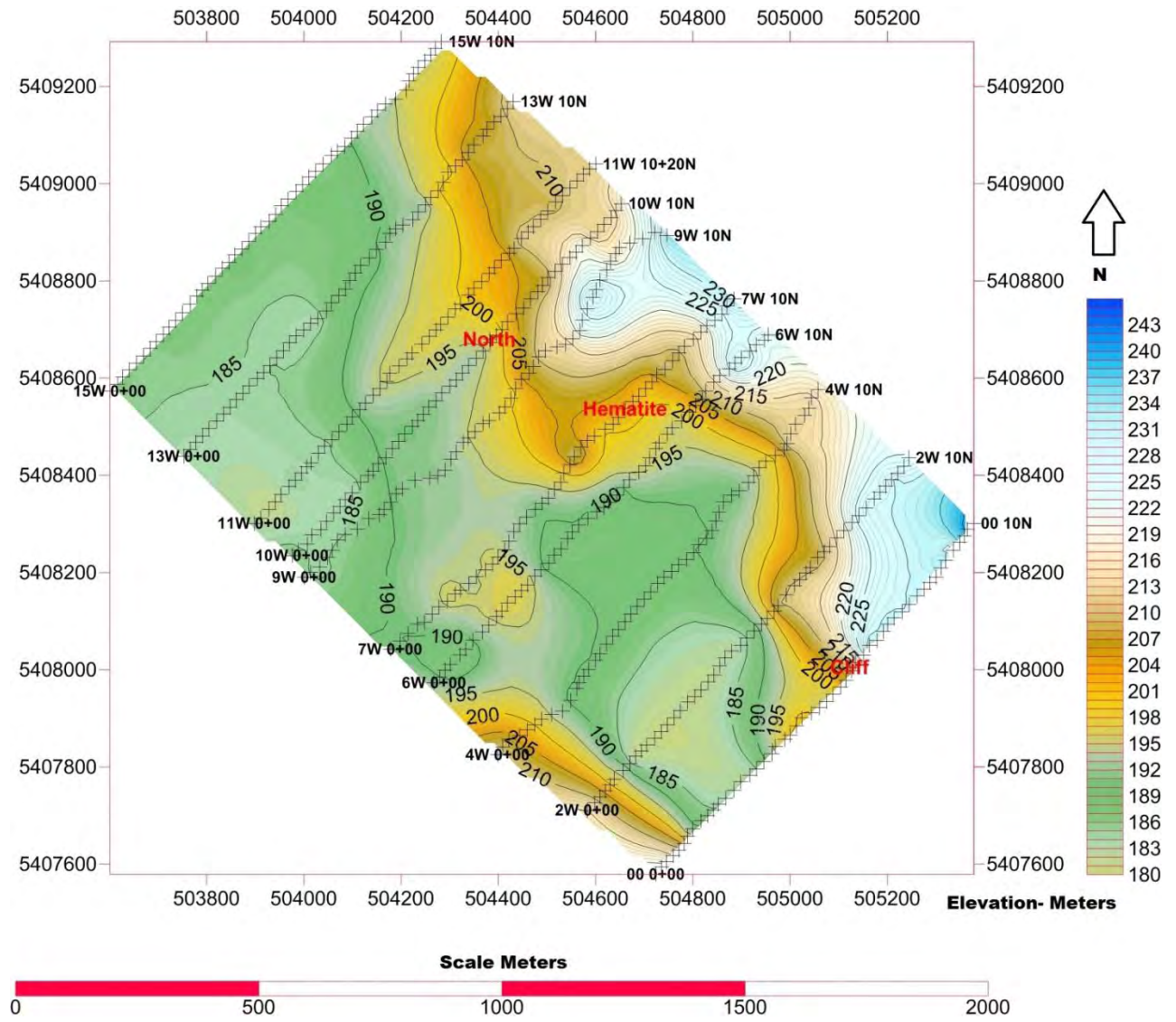
TX NAA (11 trends)

- | | |
|--|--|
| 1. 00-B, 2W-A, 4W-A, 6W-B, 7W-A | Bedrock Conductor |
| 2. 00-B 2W-B 4W-A 6W-B 7W-A | Bedrock Conductor |
| 3. 9W-A, 10W-B | Possible Powerline Response |
| 4. 6W-C, 7W-C | Bedrock Conductor |
| 5. 9W-C, 10W-C, 11W-C, 13W-B, 15W-A | Bedrock Conductor (trend of the North Showing) |
| 6. 9W-C, 10W-C, 11W-C, 13W-D | Bedrock Conductor (trend of the North Showing) |
| 7. 9W-C, 10W-D, 11W-D | Bedrock Conductor |
| 8.a 00-C, 2W-D, 4W-D, 6W-D, 7W-D, 9W-E, 10W-G, 11W-F, 13W-G, 15W-G | Bedrock Conductor- (Possible main trend for North showing) |
| 8.b (Variation) 11W-F, 13W-F and 11W-F, 13W-H | Separate Bedrock Trends |
| 9. 00-D, 2W-F, 4W-H, 6W-F, 7W-F | Bedrock Conductor-(Main trend for Cliff to Hematite showing) |
| 10. 7W-G, 7W-J, 9W-H | Bedrock Conductor |
| 11. 10W-K, 11W-I, 13W-J, 15W-H | Bedrock Conductor |

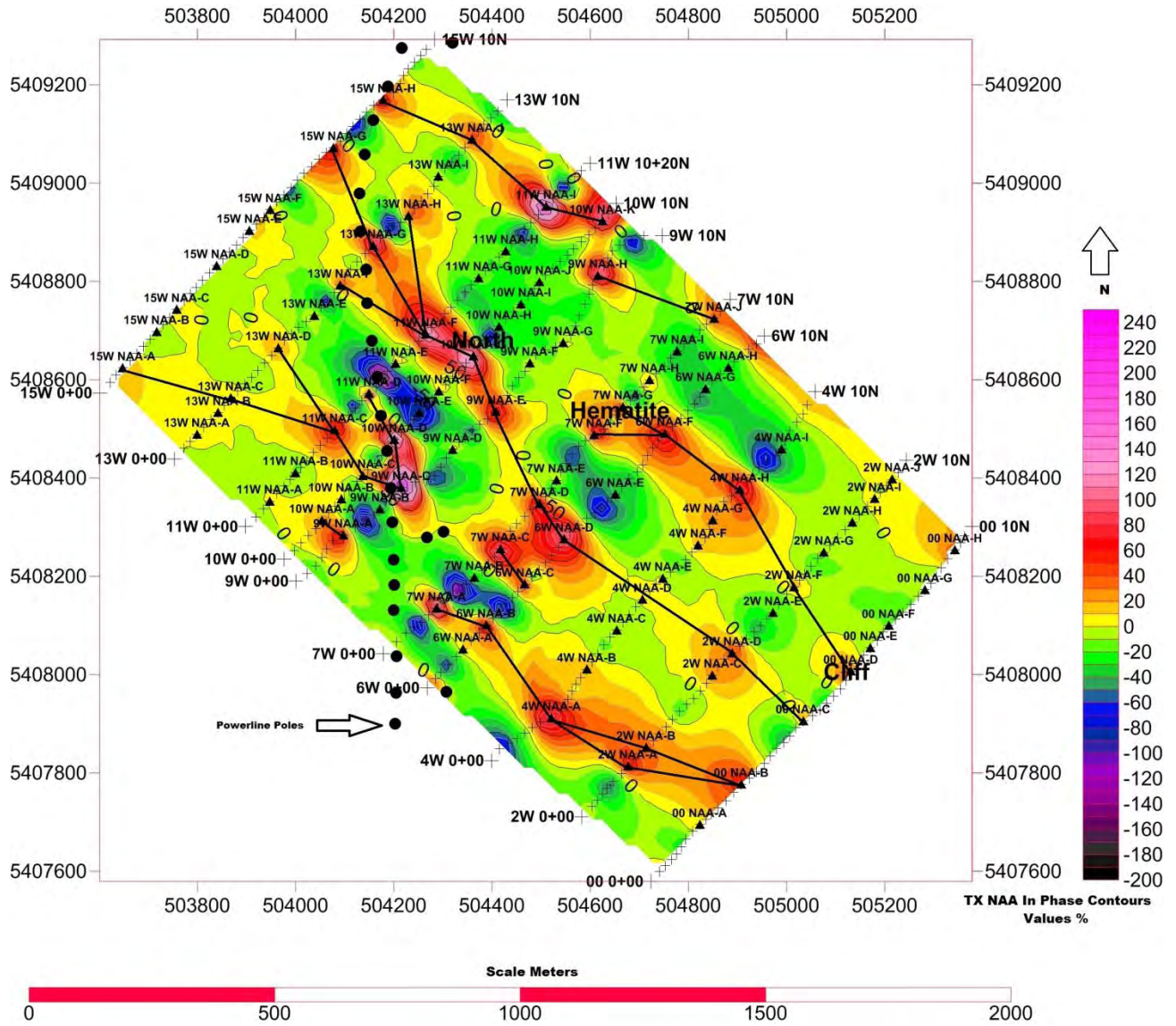
TX NML (9 trends)

- | | |
|--|---|
| 1. 00-D, 2W-A, 4W-A, 6W-A, 7W-A, 9W-A, 10W-A, 11W-A | Bedrock Conductor |
| 2. 00-D, 2W-B, 4W-A, 6W-B, 7W-A, 9W-A, 10W-A, 11W-A | Bedrock Conductor |
| 3. 00-D, 2W-B, 4W-B, 6W-C, 7W-B, 9W-B, 10W-C, 11W-B,
13W-B, 15W-A | Bedrock Conductor |
| 4. 00-D, 2W-B, 4W-B, 6W-C, 7W-B, 9W-B, 10W-C, 11W-B,
13W-D, 15W-E | Bedrock Conductor |
| 5. 9W-B, 10W-D, 11W-C | Possible Powerline response |
| 6.a 6W-D, 7W-C, 9W-D, 10W-F, 11W-E, 13W-F, 15W-E | Bedrock Conductor, North
Showing Trend |
| 6.b 6W-D, 7W-C, 9W-D, 10W-F, 11W-E, 13W-G, 15W-G | Bedrock Conductor Variation
of North Showing Trend |
| 7. 00-F, 2W-F, 4W-H, 6W-F, 7W-E, 9W-E, 10W-F, 11W-E,
13W-F, 15W-E | Bedrock Conductor (Cliff-
Hematite - North Showings) |
| 8. 7W-I, 9W-G | Bedrock Conductor |
| 9. 10W-J, 11W-H, 13W-J, 15W-I | Bedrock Conductor |

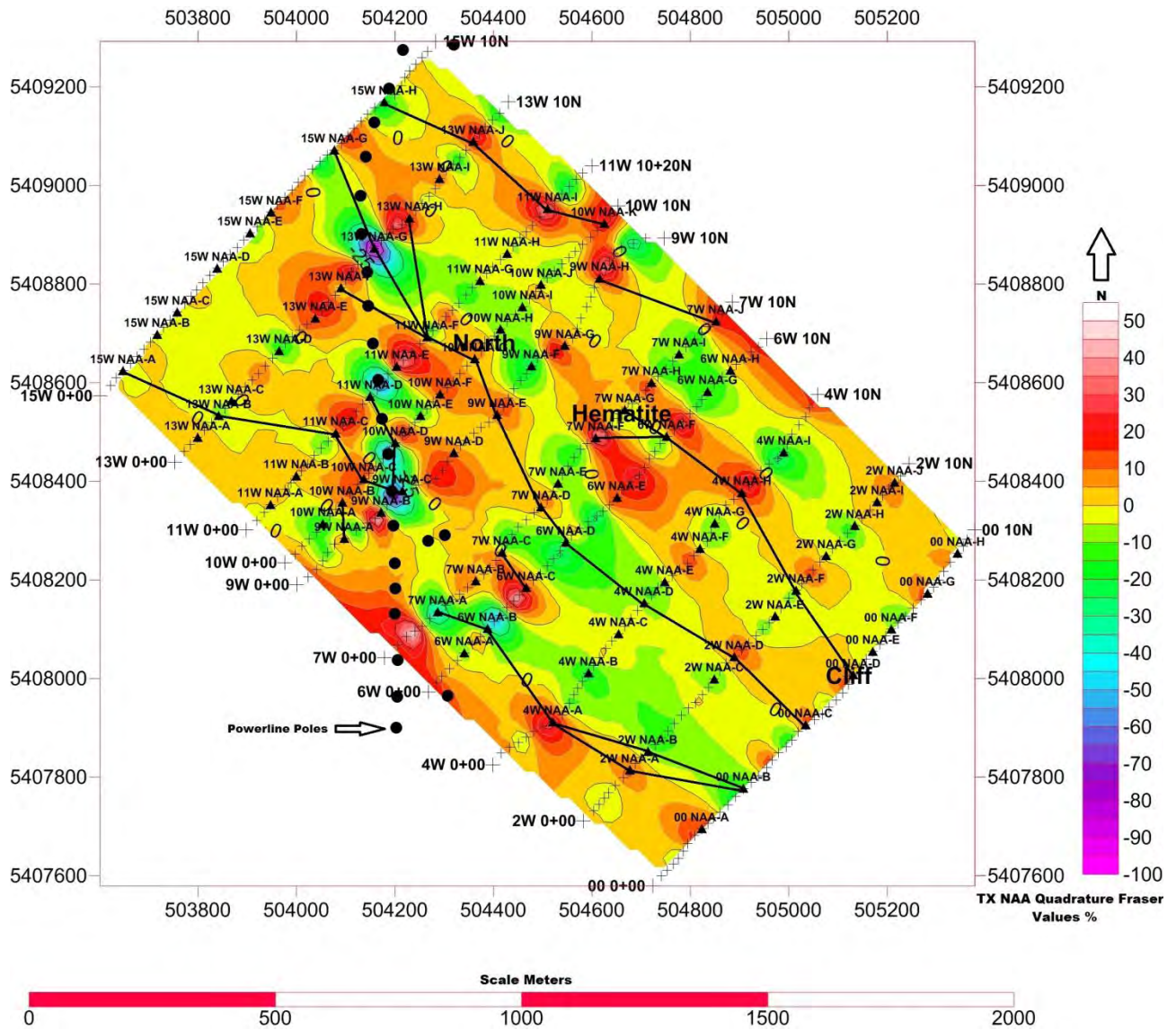
Map 8 Cliff Hematite North Grid Elevation Map



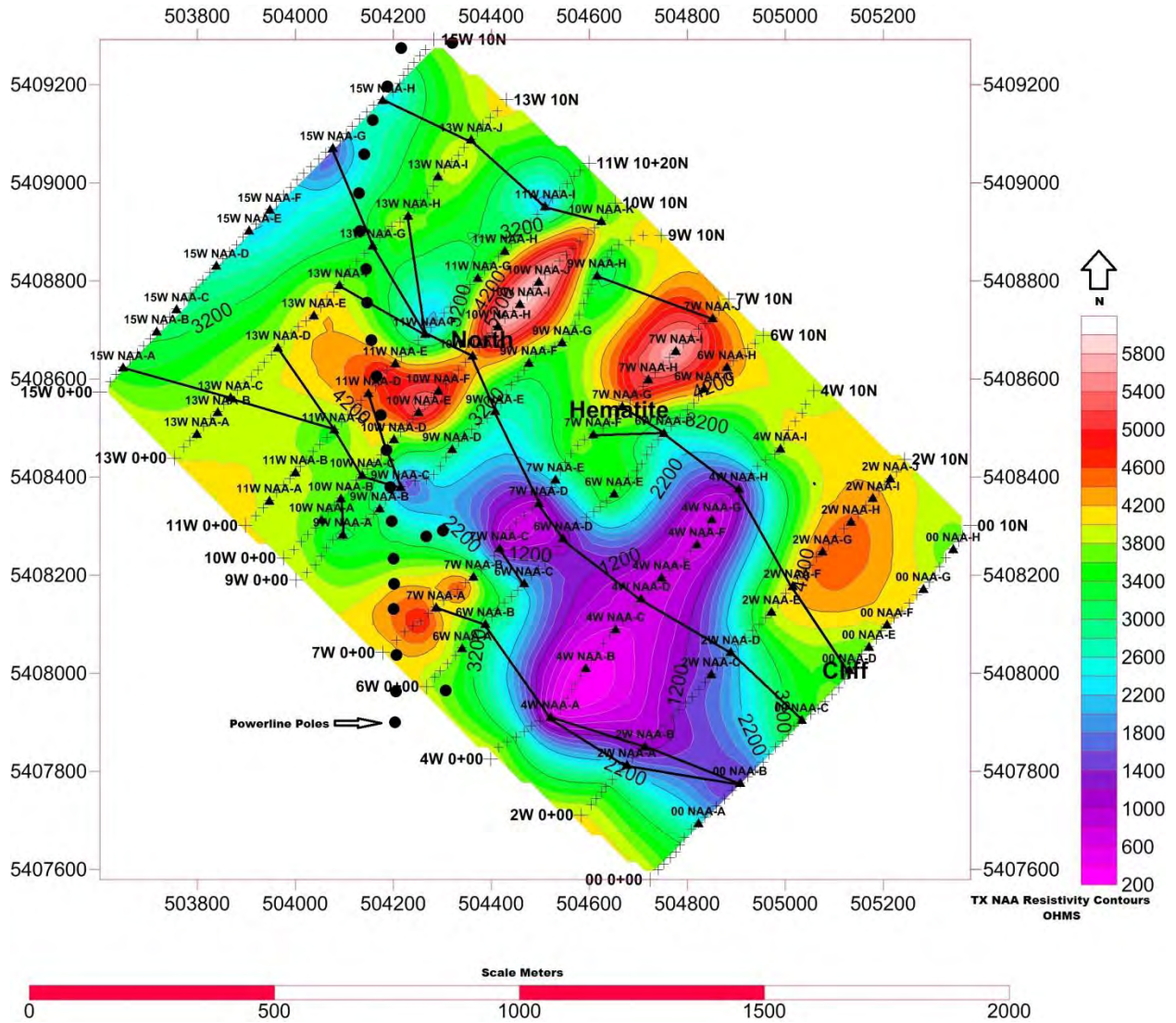
Map 9 Cliff Hematite North - NAA In-Phase Fraser Contours with Picks & Trends



Map 10 Cliff Hematite North - TX NAA Quadrature Picks & Trends



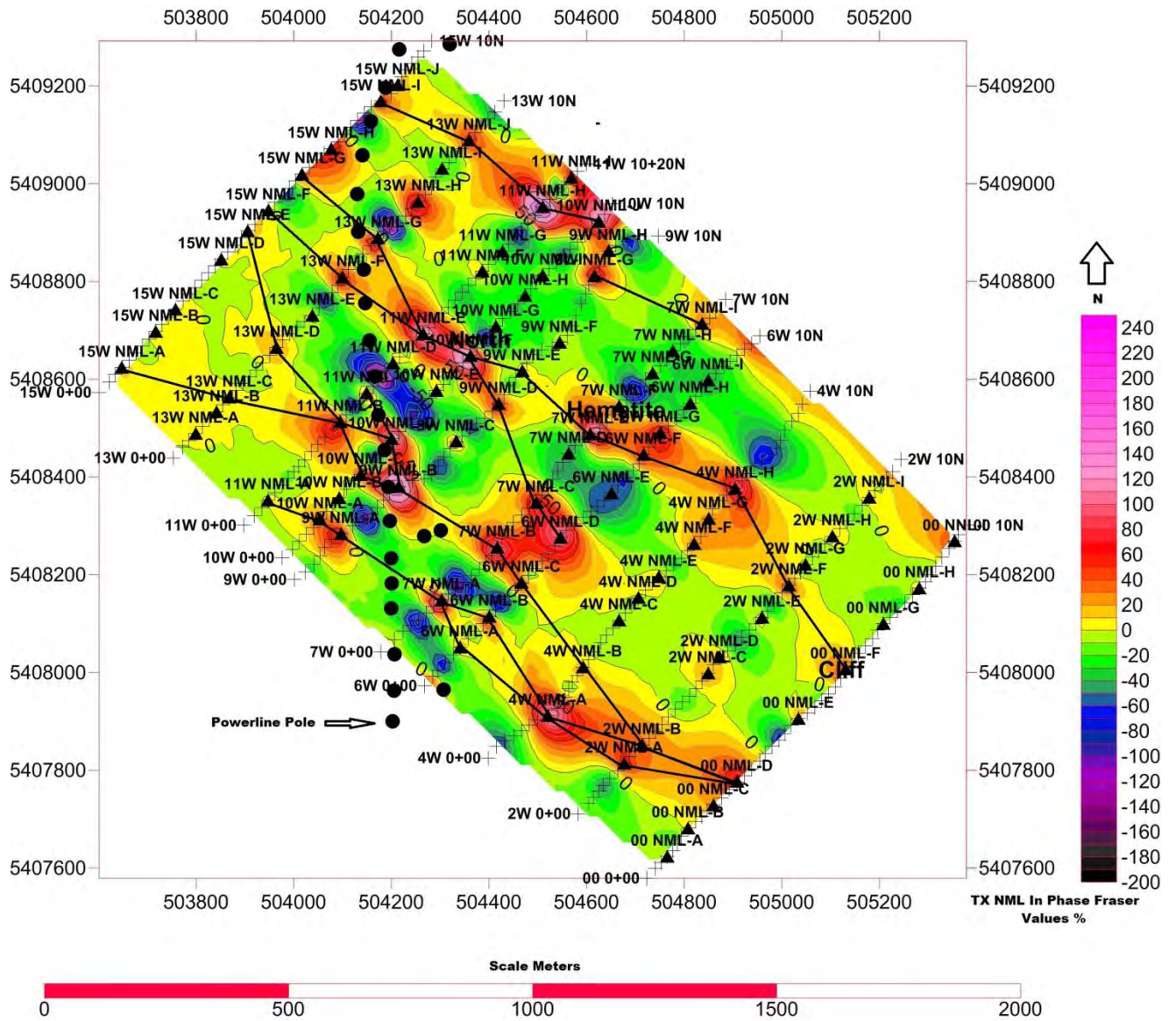
Map 11 Cliff Hematite North - TX NAA Resistivity Contours with Picks & Trends



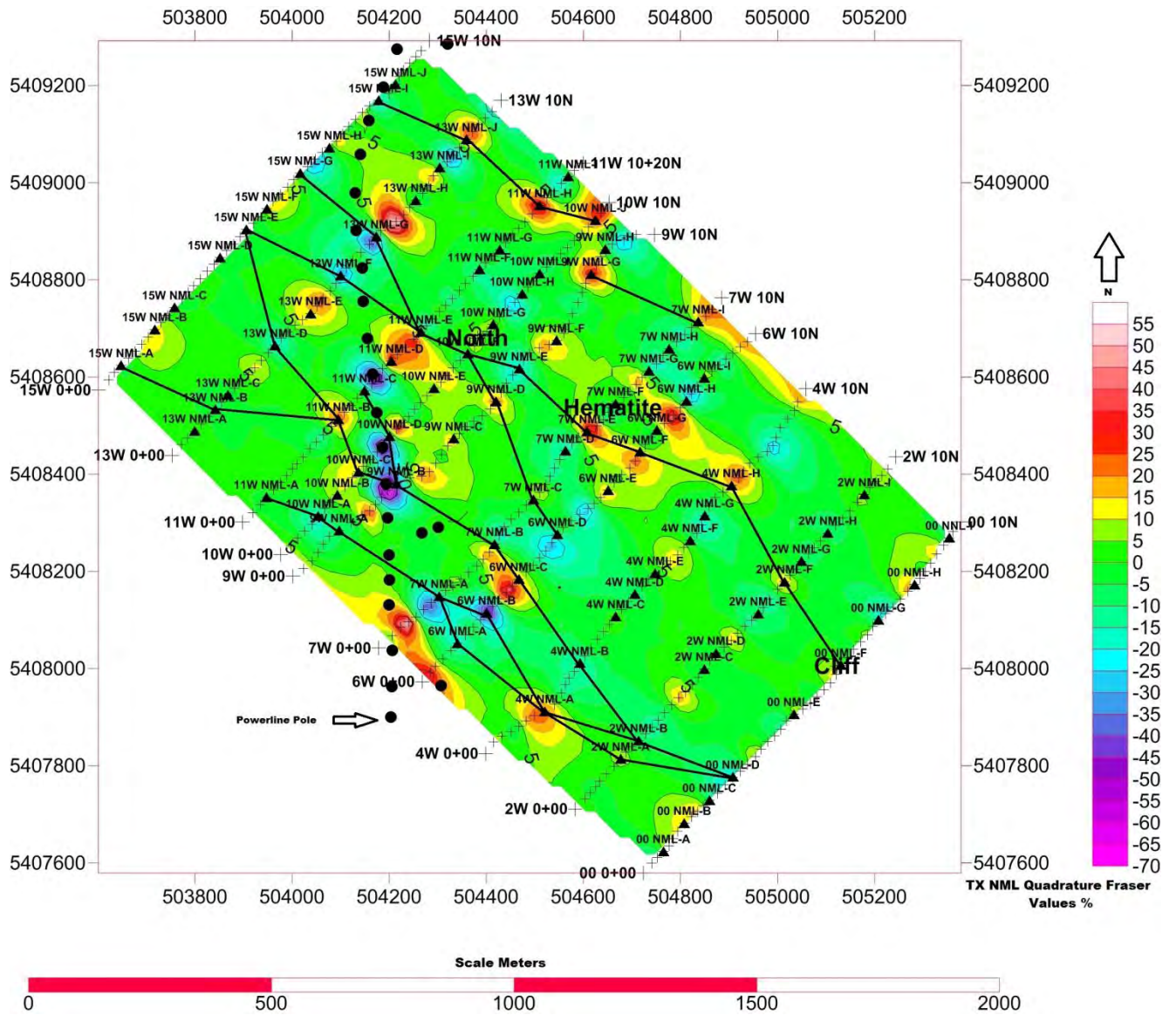
Map 12 Cliff Hematite North - Google Image of TX NAA Picks & Trends



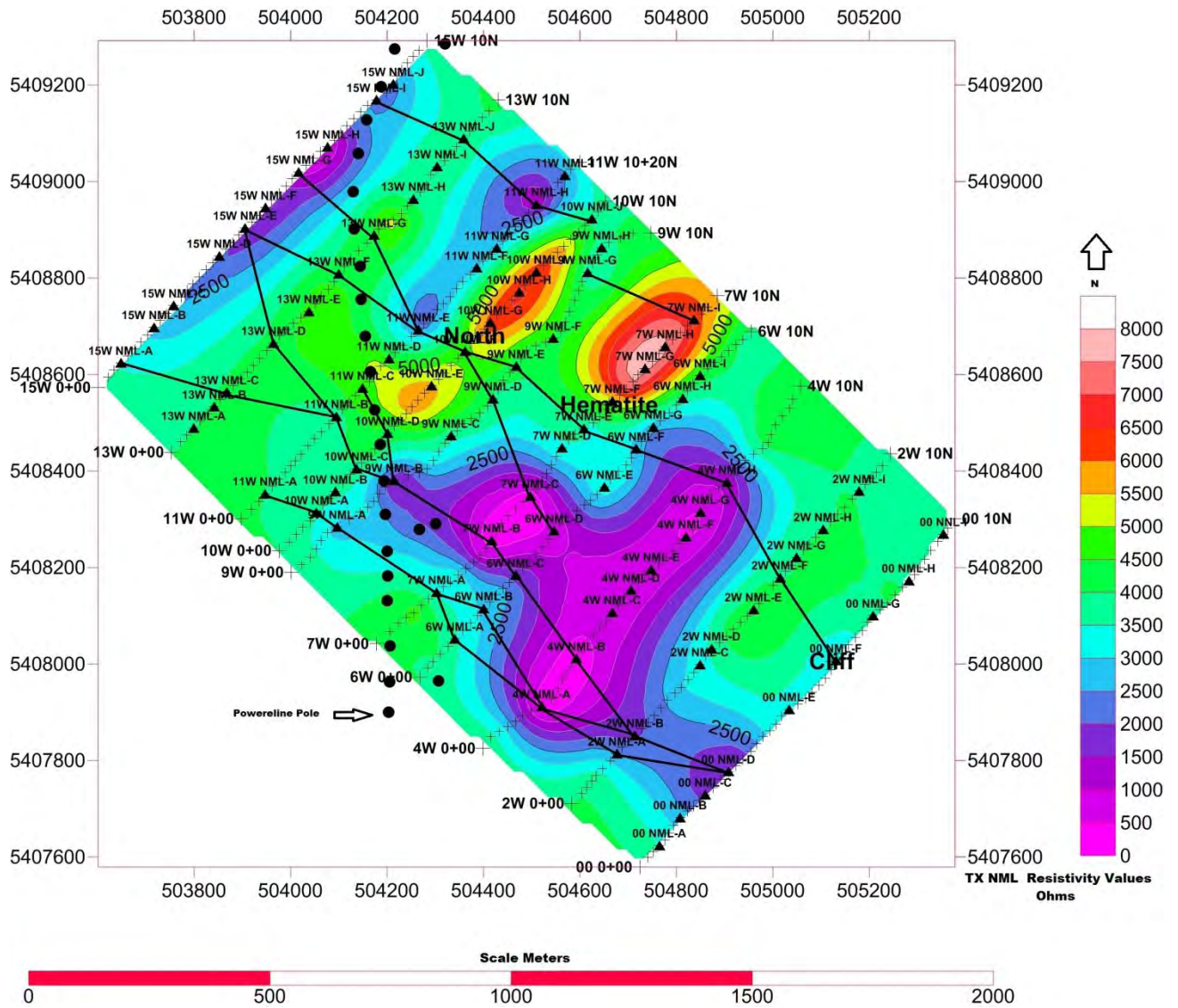
Map 13 Cliff Hematite North - TX NML In-Phase Fraser Contours Picks & Trends



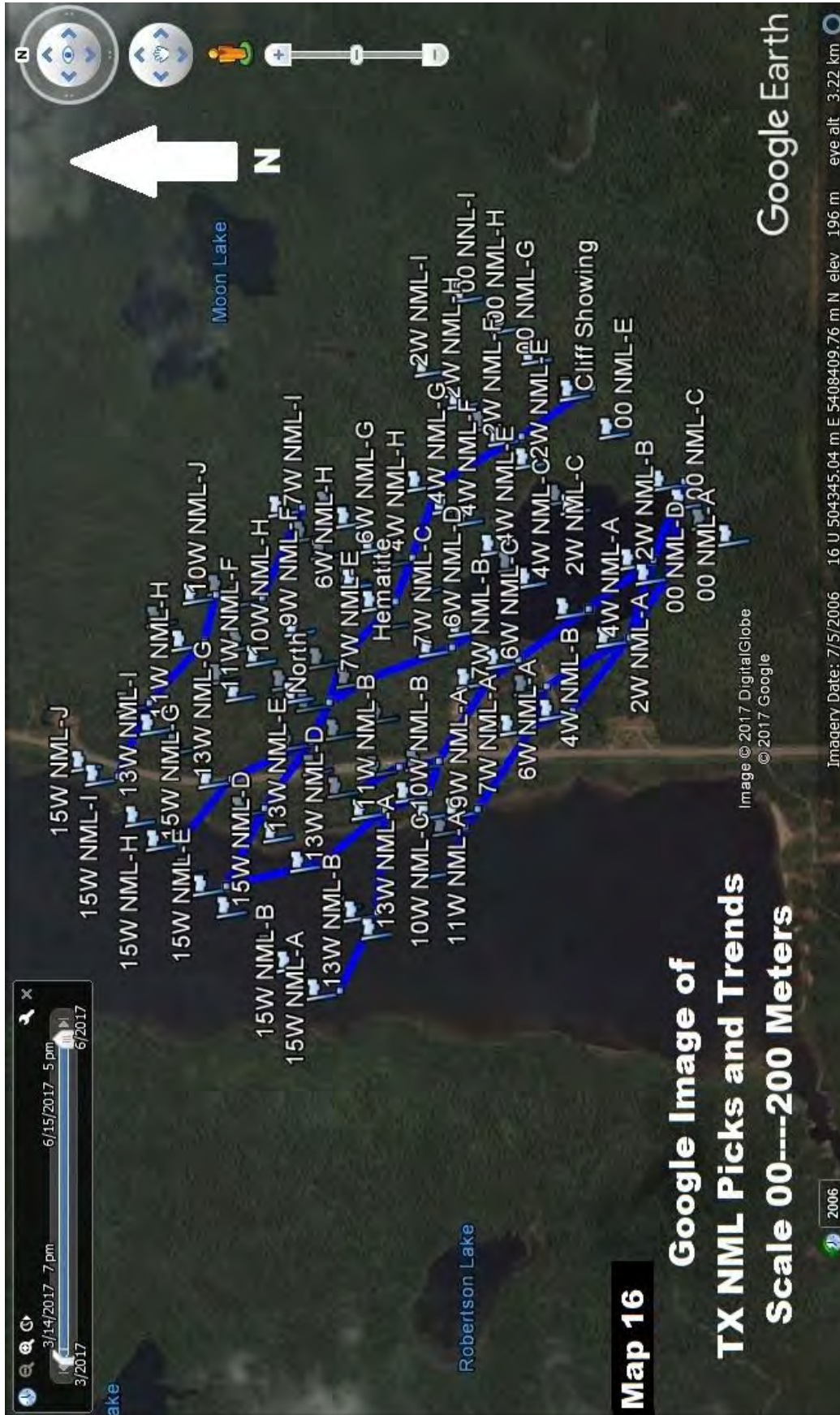
Map 14 Cliff Hematite North - TX NML Quadrature Fraser Contours Picks & Trends



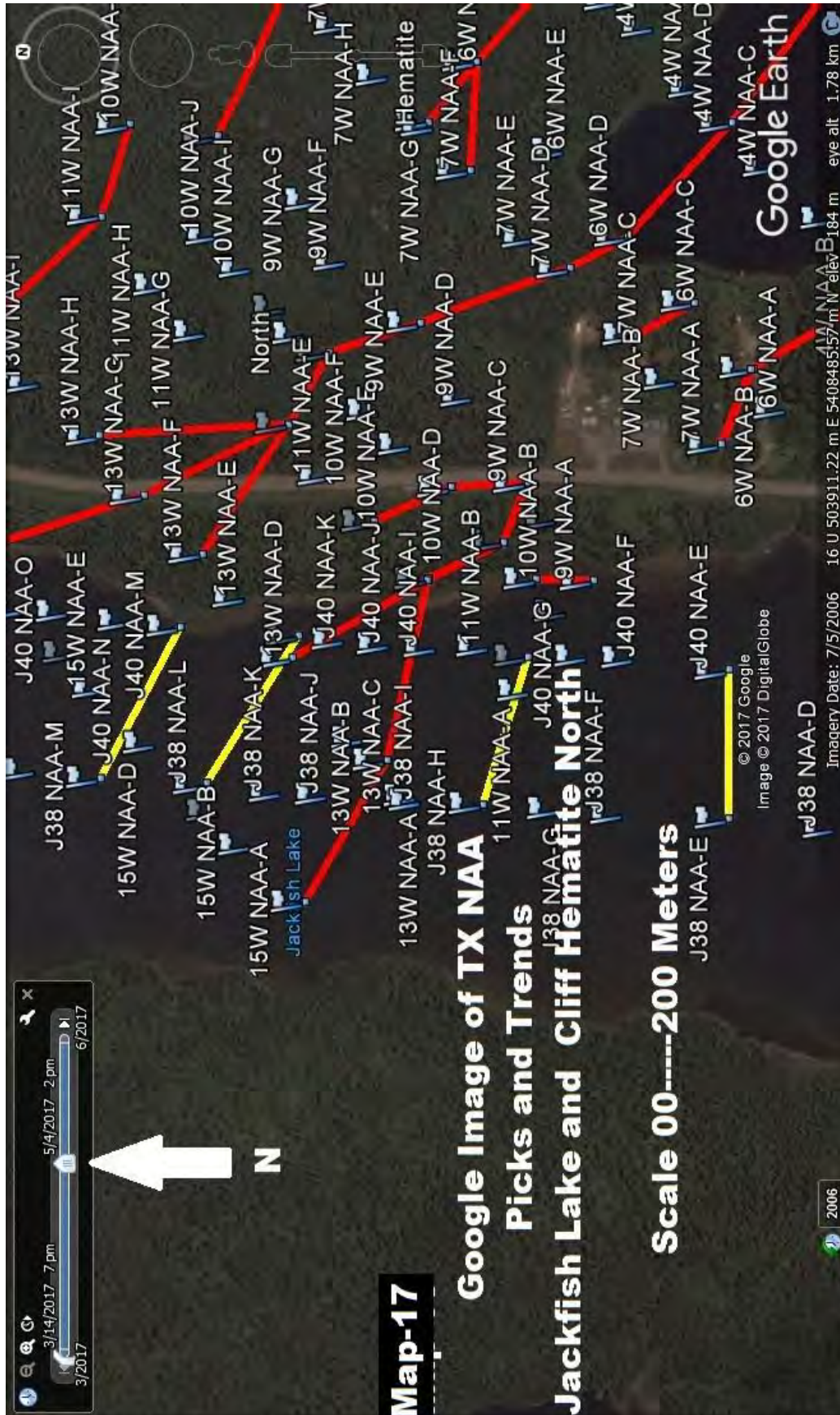
Map 15 Cliff Hematite North - TX NML Resistivity Contours With Picks & Trends



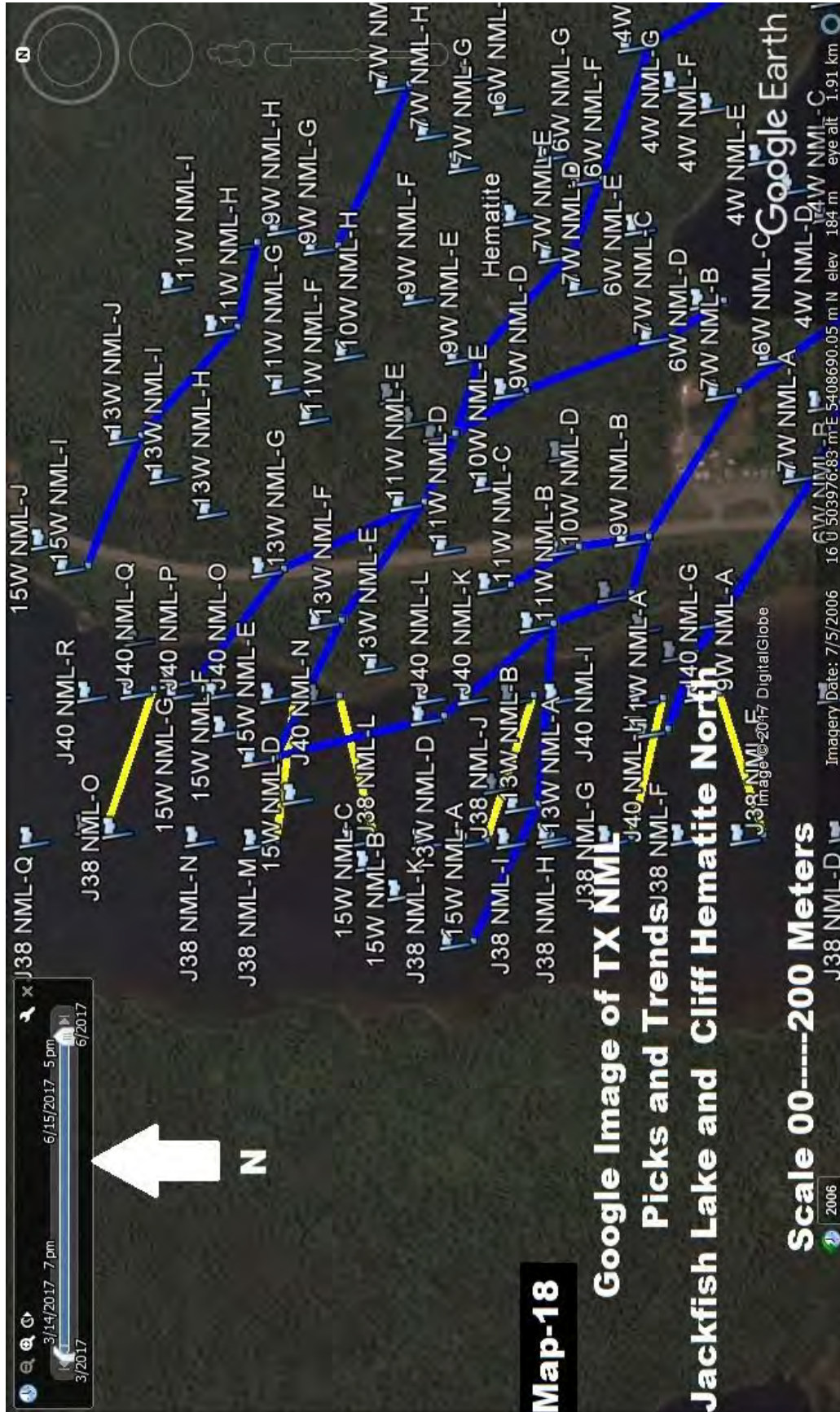
Map 16 Cliff Hematite North - Google Image of TX NML Picks & Trends



Map 17 Combined Grids - Google Image TX NAA with Picks & Trends



Map 18 Combined Grids - Google Image TX NML with Picks & Trends



Conclusions

Jackfish Lake Grid

The Ground VLF EM-16 reconnaissance survey was successful in:

- a) Defining Several VLF bedrock conductors within a very resistive granite.
- b) Several of the reconnaissance lines have similar inversion profiles as the Cliff-Hematite-North Grid
- c) Using a bedrock background resistivity of 2000 ohms gave us a modelled section to 144.0 meters in depth and outlined several highly resistive and minimally resistive rock units.
- d) Several of the Jackfish NAA and NML Trends coincide with the NAA and NML trends on the Cliff-Hematite-North grid
- e) With 200 meter spaced VLF lines, it was difficult to define trends between J38E and J40E. Only the strongest VLF anomalies could be matched.

Cliff Hematite North Grid

The Ground VLF EM-16 reconnaissance survey was successful in:

- a) Defining the Cliff Showing Line 00 (Pick D Figure-3 00 NAA, Pick F Figure-3 00 NML)
- b) Defining the Hematite Showing Line 7W (Pick G Figure-3 7W NAA)
- c) Defining the North Showing Line 10W (Pick-G Figure-3 10W NAA, Pick F Figure-3 NML)
- d) Defining a strong VLF trend on Lines 00 through line 9W that might be associated with a lineament on strike to the south.
- e) Defining several other VLF trends.

Combined Grids - Fraser Picks & Grid Trends

There is good correlation between the Jackfish Lake and Cliff Hematite North VLF Trends (Maps 17 &18)

Recommendations

Jackfish Lake

- a) View the Reconnaissance VLF lines J38 and J40 on Google earth images in order to identify linear structures that extend onto the main land, from where VLF trends are interpreted. (Maps 7, 8)
- b) Run 100 meter in fill VLF lines to cover Jackfish Lake from the east shore to the west shore. This can be completed in the summer by Sea Kayak or in the winter on the frozen lake.
- c) Run 1 VLF line at J39E and incorporate this data into J38E and J40E to better interpret trends of NAA and NML.
- d) Run several 100 meter spaced VLF lines on the west side of Jackfish Lake in order to tie together the VLF trends from the Cliff-Hematite-North grid westward.
- e) Ground proofing and prospecting along shoreline of Jackfish Lake. If this has been completed previously, then such data should be compared with the VLF survey trends seen on Maps 7 & 8.
- f) Combining of all Jackfish Lake VLF data for TX NAA and TX NML with that of the Cliff-Hematite-North VLF data to produce plan maps of VLF Picks and trends for NAA and NML.
- g) Split both J38E and J40E VLF Data into 2 sections for processing. This will allow better detail in the VLF profiles.

Cliff Hematite North

- a) Ground follow-up of the North Showing Trend. (Maps 8, 12)
- b) Ground follow-up of the Cliff showing –Hematite Trend. (Maps 8, 12)
- c) Prospecting to the south of line 00 along the shear seen on Maps 15 & 16.
- d) Ground follow-up of other bedrock conductor trends to the northeast of the Hematite and North showings.
- e) Trenching from the Hematite showing to the VLF anomalies on Line 7N (TX NAA Anomaly 7N-F) and (TX NML Anomaly 7N-E) located 60 meters to the west of the Hematite Showing.
- f) Trenching from the North Showing to the VLF anomalies on Line 7N (TX NAA Anomaly 7N-G) and (TX NML Anomaly 7N-F) located 20 meters to the west of the North Showing.
- g) Run 100 meter fill in lines 1N, 3N, 5N, 8N, 12N, 14N to better define the NAA and NML trends defined in this test survey.
- h) Run 100 meter spaced VLF Lines south of line 00 beyond the Powerline to define the width of the lineament seen on Maps 15 & 16.
- i) Extend the VLF lines further to the east in order to define the trends that occur at the edge of present coverage.

List of References

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Certificate of Qualifications

I, Shaun Parent, P. Geo (LTD.) residing at 282 B Whispering Pines Road, Batchawana Bay, Ontario do certify that:

1. I am a consulting Geoscientist with Superior Exploration, Adventure & Climbing Co. Ltd.
2. I graduated with a Geological Technician Diploma from Sir Sandford Fleming College in 1986.
3. I graduated with a BSc. from the University of Toronto in 1986.
4. I am a member in good standing with the Association of Professional Geoscientists of Ontario #1955 and a member of the Prospectors and Developers Association of Canada.
5. I have been employed continuously as a Geoscientist for the past 31 years since my graduation from University.
6. The nature of my involvement with this project was to carry out the VLF Survey and the interpretation of the VLF data using the EMTOMO VLF2DMF Software of which I assisted in developing with Dr. Fernando Santos of Lisbon, Portugal.

Dated this 29th day of June 2017



Shaun Parent, Dipl-Geo, BSc. P. Geo (Limited)

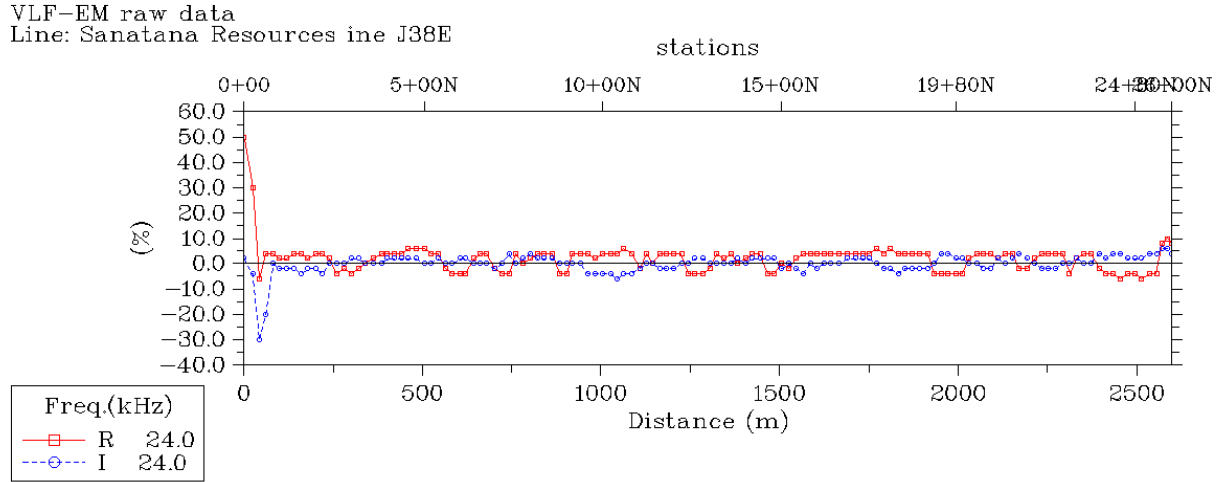
APPENDIX A

Jackfish Lake Grid

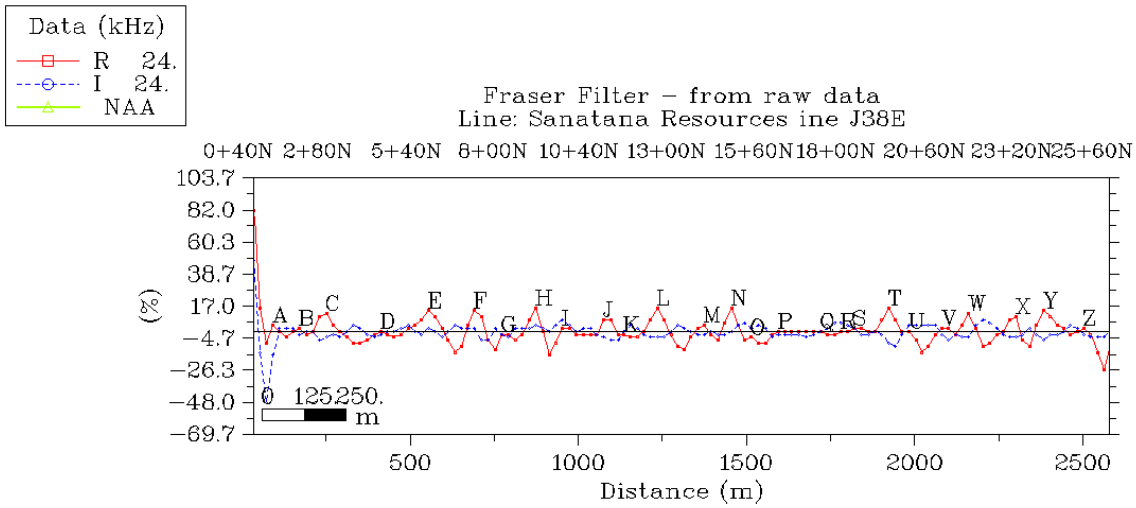
Profiles & Models

TX NAA & TX NML

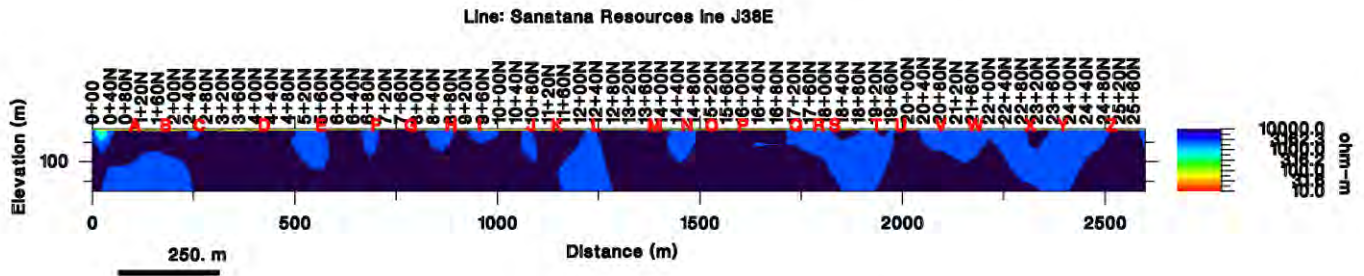
J38E NAA Figure 1 Raw Data Profile



J38E NAA Figure 2 Fraser Filter Profile with Fraser Picks



J38E NAA Figure 3 Model 4000 Ohm with Fraser Picks



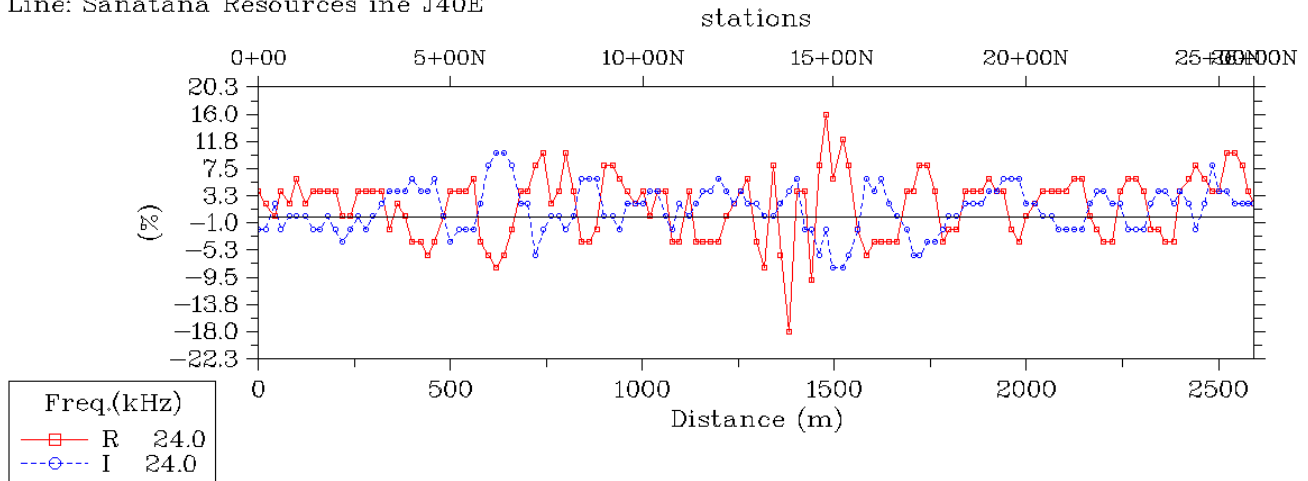
Transmitter: NAA

Vertical Exaggeration: 1.0

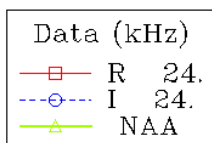
J40E NAA Figure 1 Raw Data Profile

VLF-EM raw data

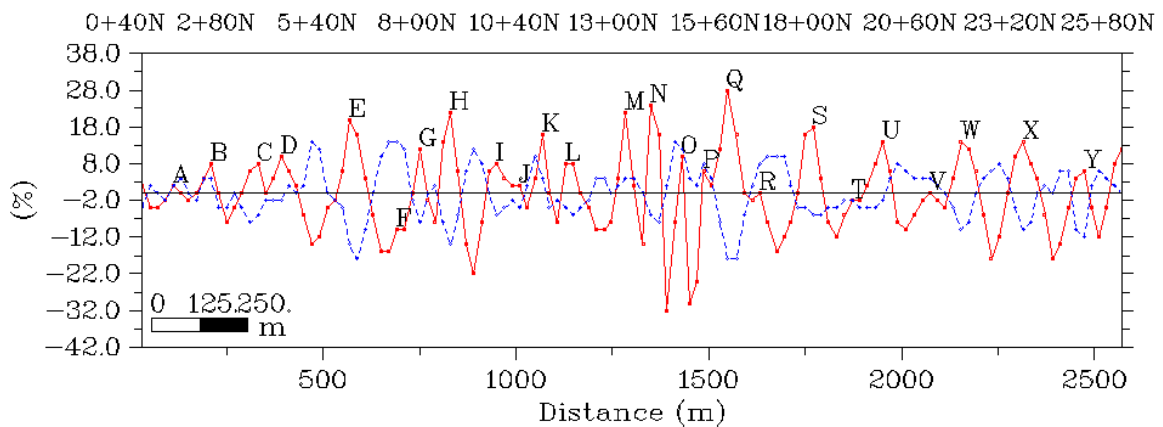
Line: Sanatana Resources ine J40E



J40E NAA Figure 2 Fraser Filter Profile with Fraser Picks

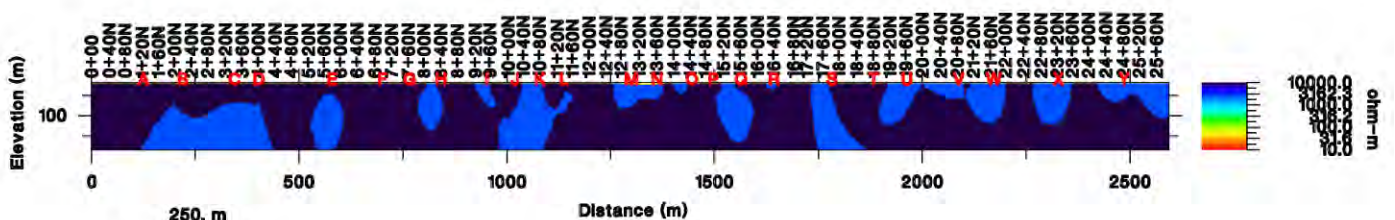


Fraser Filter – from raw data
Line: Sanatana Resources ine J40E



J40E NAA Figure 3 Model 4000 Ohm with Fraser Picks

Line: Sanatana Resources ine J40E



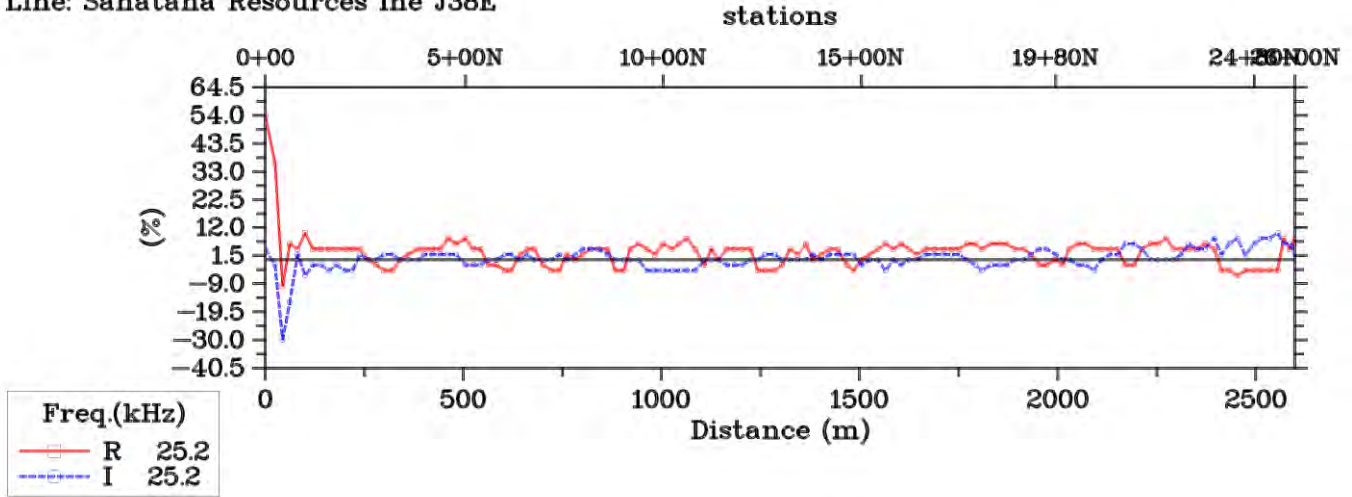
Transmitter: NAA

Vertical Exaggeration: 1.0

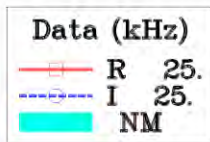
J38E NML Figure 1 Raw Data Profile

VLF-EM raw data

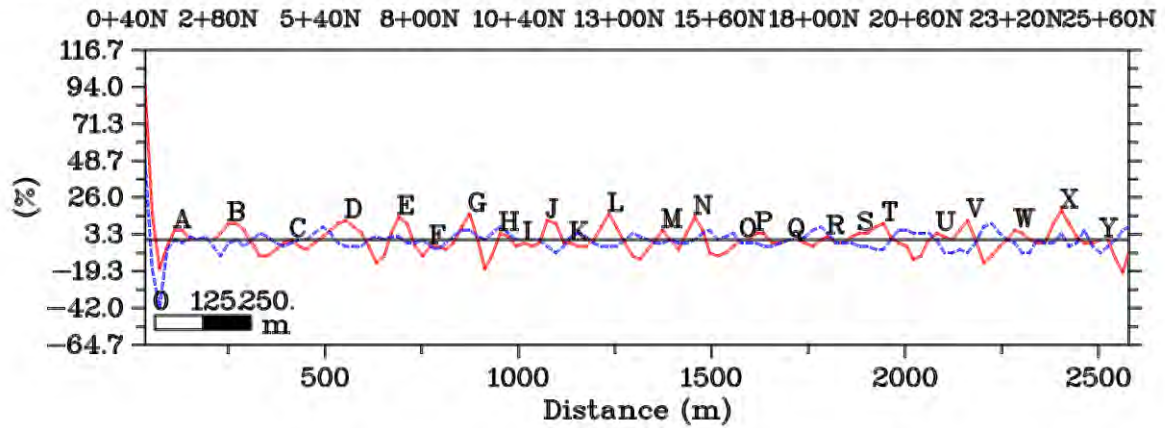
Line: Sanatana Resources ine J38E



J38E NML Figure 2 Fraser Filter with Fraser Picks

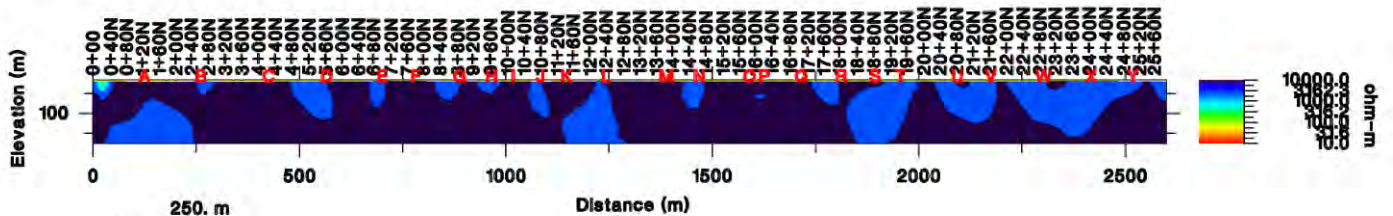


Fraser Filter - from raw data
Line: Sanatana Resources ine J38E



J38E NML Figure 3 Model 4000 Ohm with Fraser Picks

Line: Sanatana Resources ine J38E

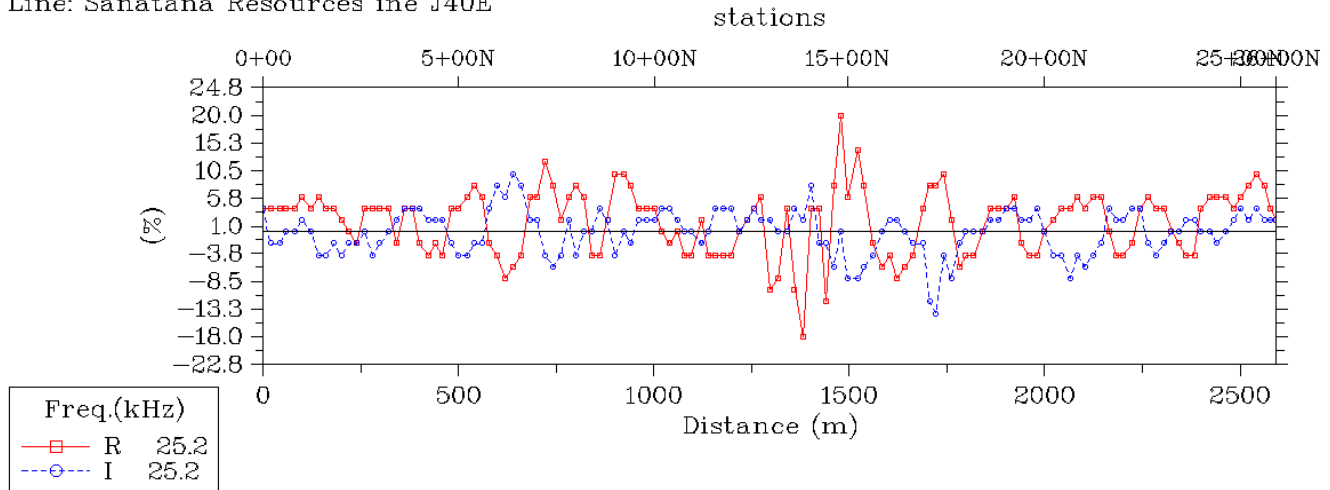


Transmitter NML

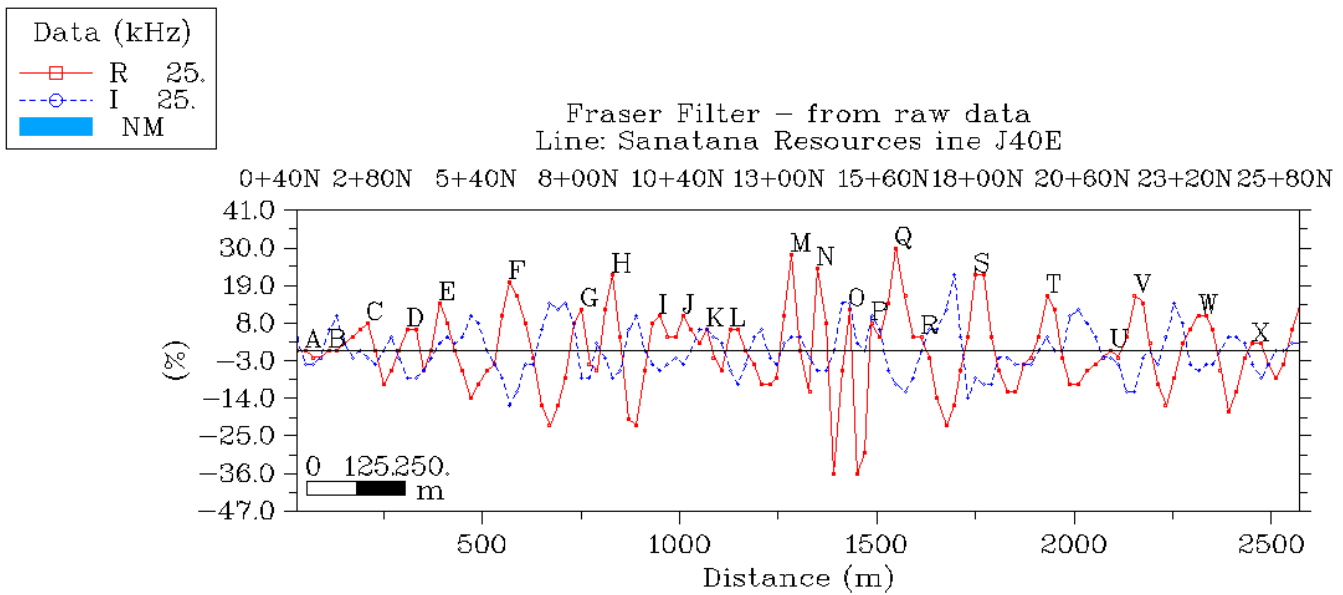
Vertical Exaggeration: 1.0

J40E NML Figure 1 Raw Data Profile

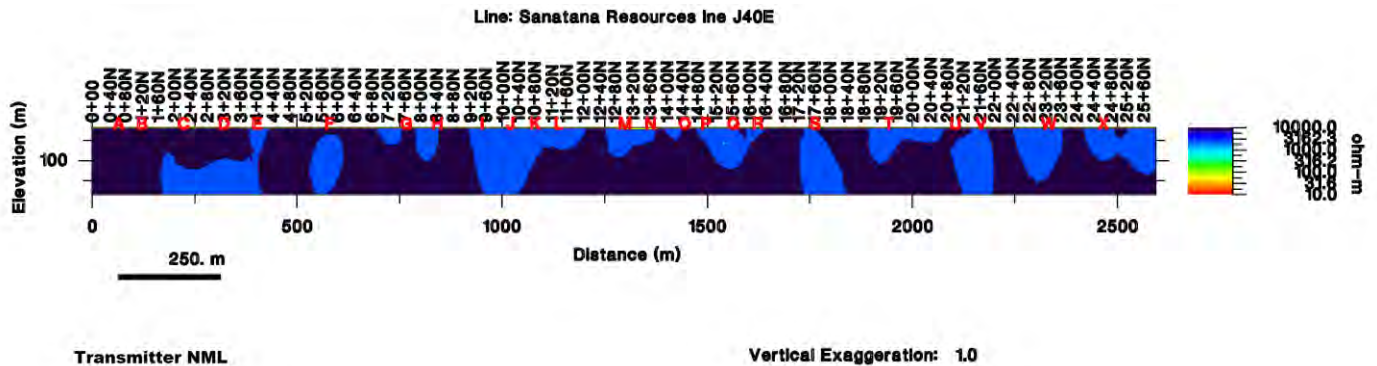
VLF-EM raw data
Line: Sanatana Resources ine J40E



J40E NML Figure 2 Fraser Filter Profile with Fraser Picks



J40E NML Figure 3 Model 4000 Ohm with Fraser Picks



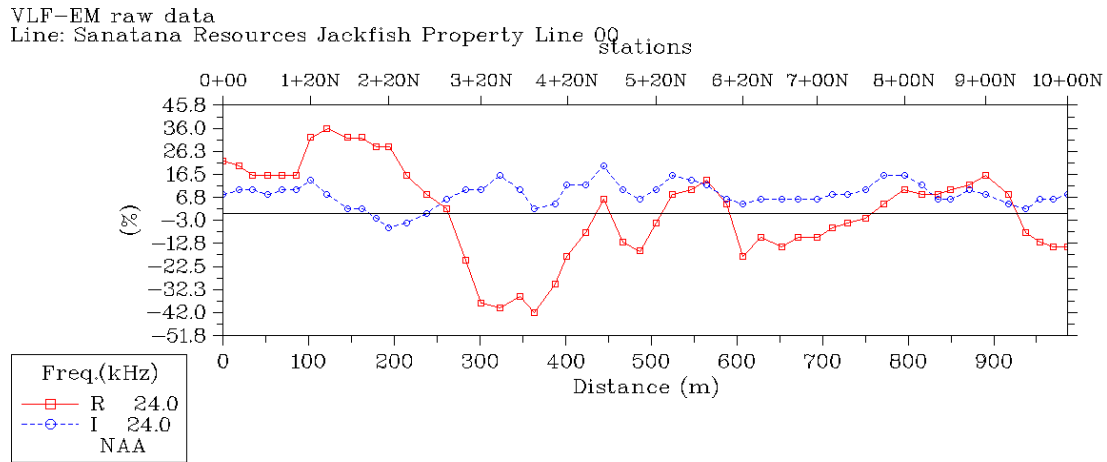
APPENDIX B

Cliff-Hematite-North Grid

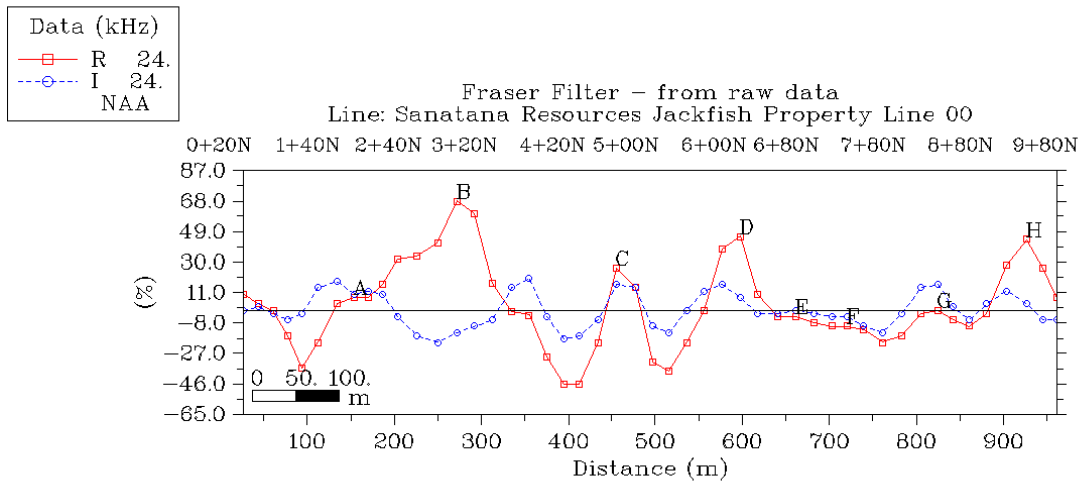
Profiles & Models

TX NAA & TX NML

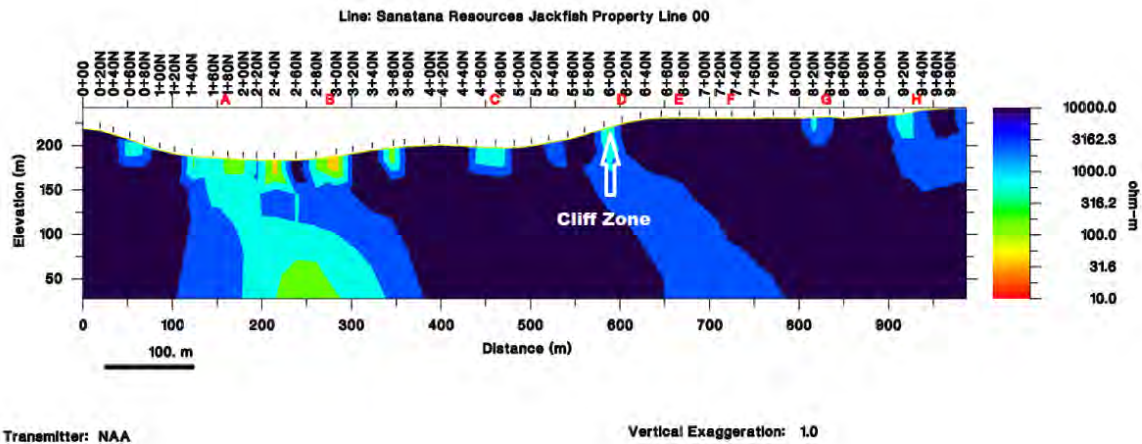
Line 00 NAA Figure 1 Raw Data Profile



Line 00 NAA Figure 2 Fraser Filter Profile with Fraser Picks



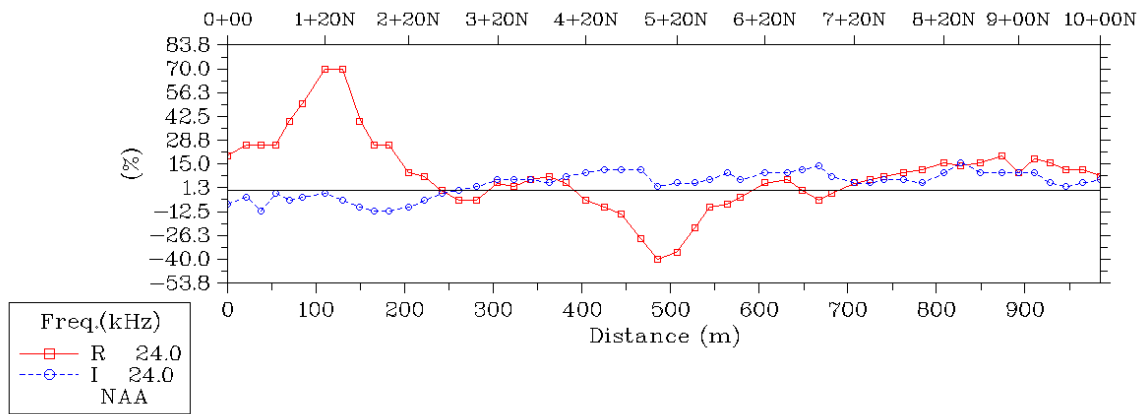
Line 00 NAA Figure 3 Model 4000 Ohm with Fraser Picks



Line 2W NAA Figure 1 Raw Data Profile

VLF-EM raw data

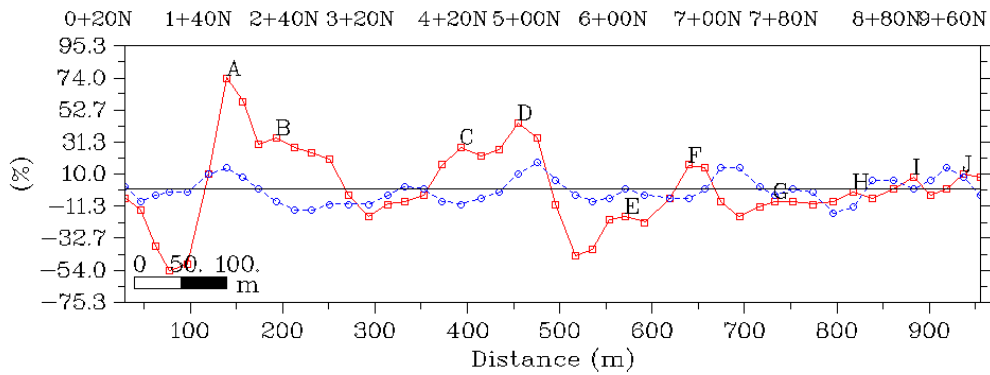
Line: Sanatana Resources Jackfish Property Line2W Stations



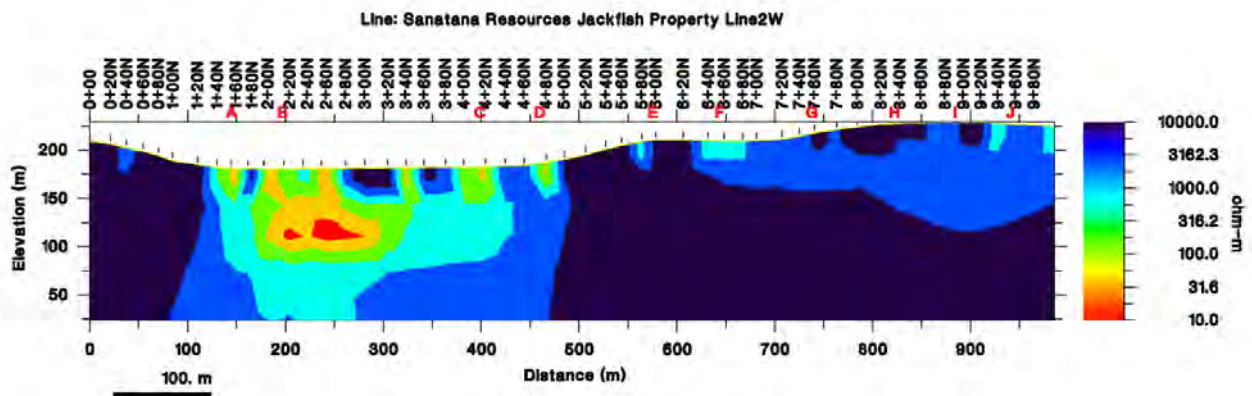
Line 2W NAA Figure 2 Fraser Filter Profile with Fraser Picks

Data (kHz)
 - R 24.
 - I 24.
 NAA

Fraser Filter - from raw data
 Line: Sanatana Resources Jackfish Property Line2W



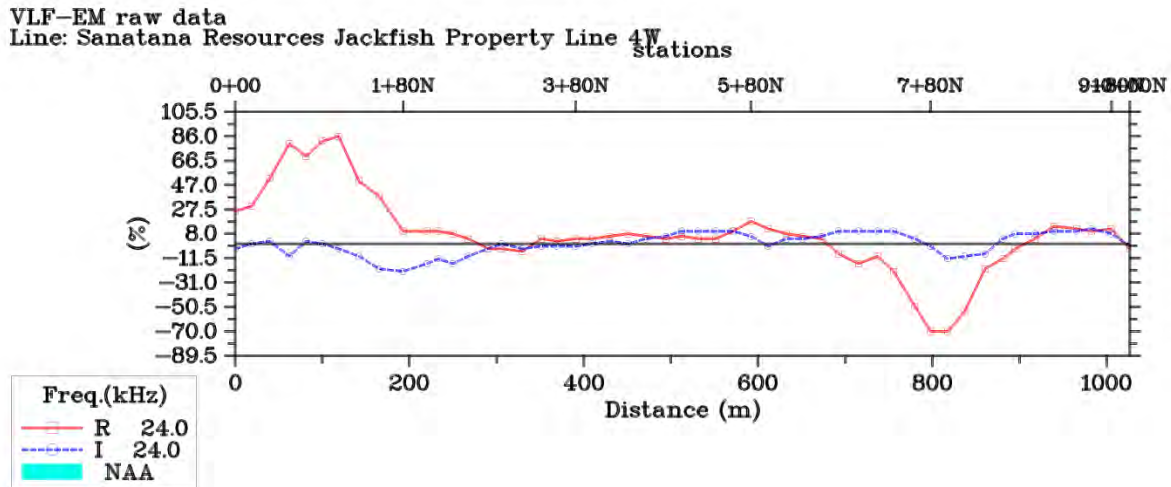
Line 2W NAA Figure 3 Model 4000 Ohm with Fraser Picks



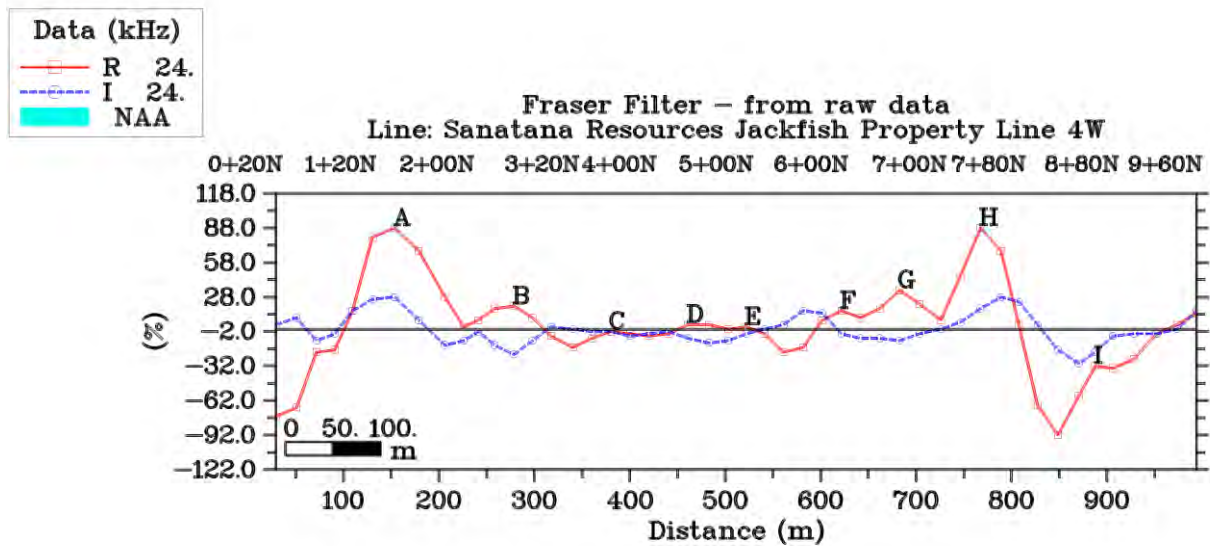
Transmitter: NAA

Vertical Exaggeration: 1.0

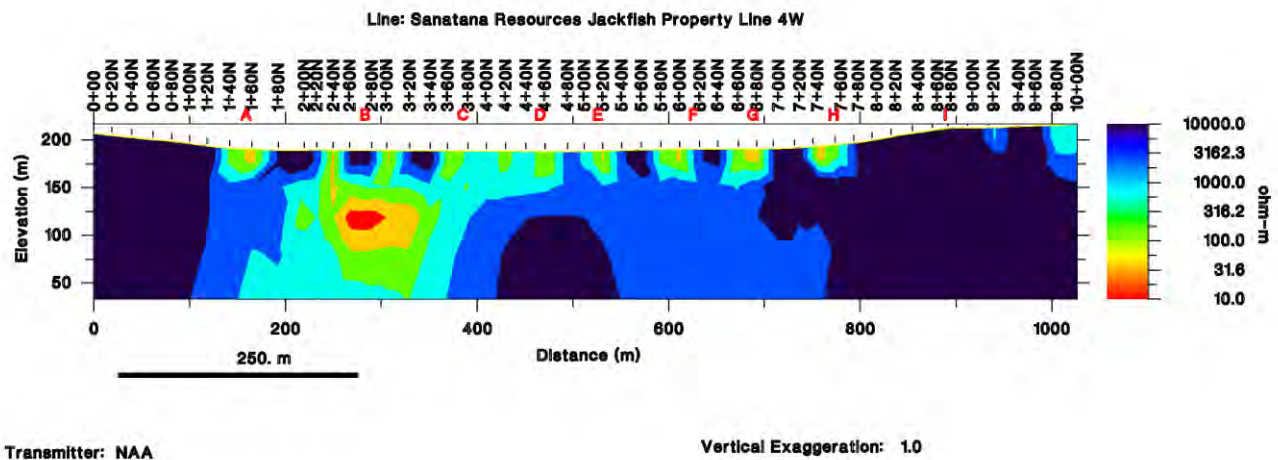
Line 4W NAA Figure 1 Raw Data Profile



Line 4W NAA Figure 2 Fraser Filter Profile with Fraser Picks

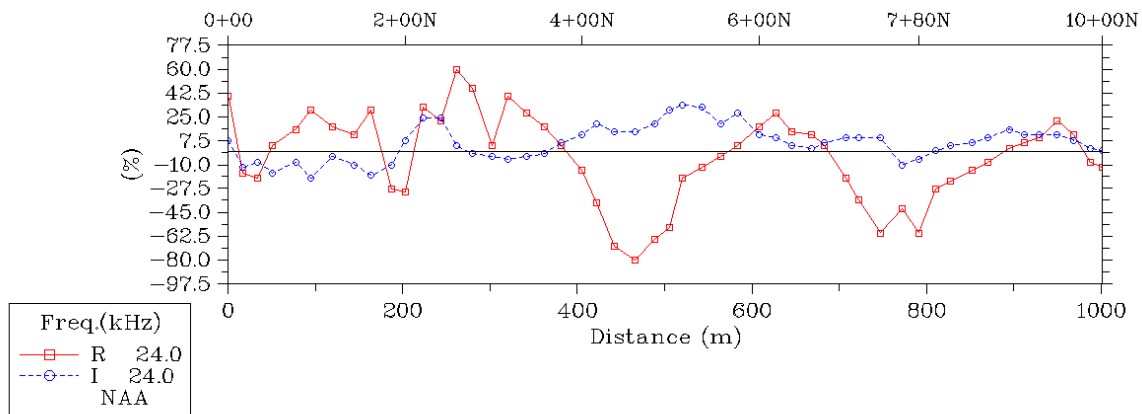


Line 4W NAA Figure 3 Model 4000 Ohm with Fraser Picks

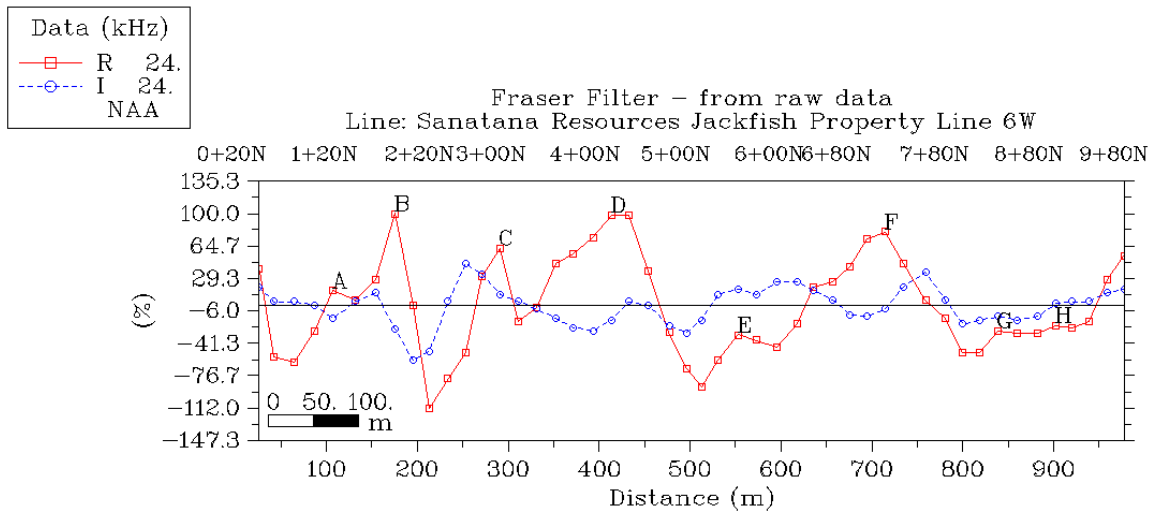


Line 6W NAA Figure 1 Raw Data Profile

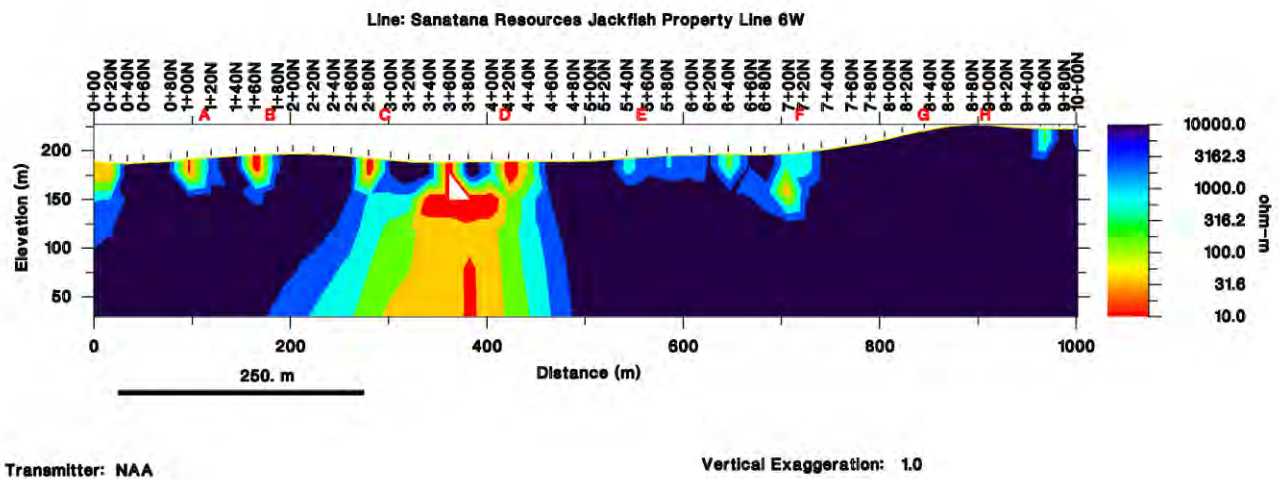
VLF-EM raw data
Line: Sanatana Resources Jackfish Property Line 6W
Stations



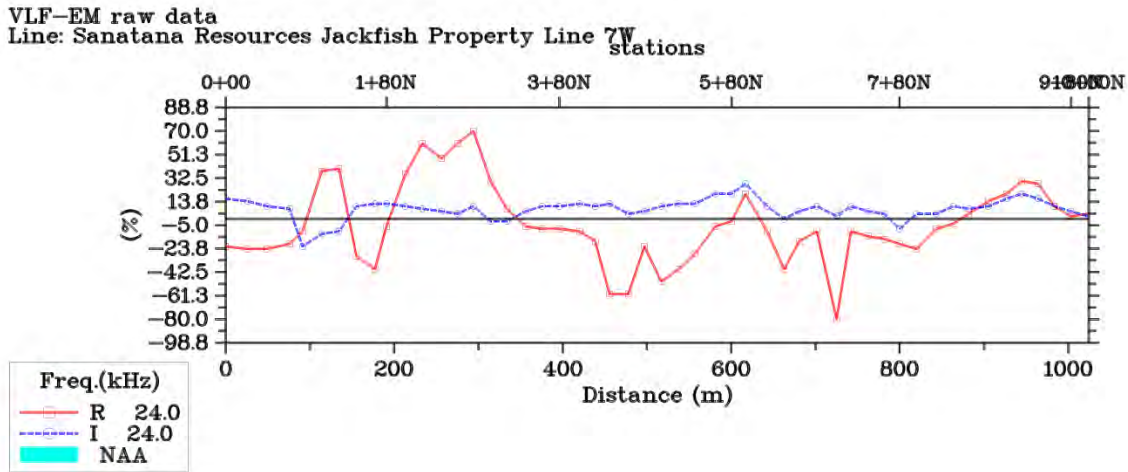
Line 6W NAA Figure 2 Fraser Filter Profile with Fraser Picks



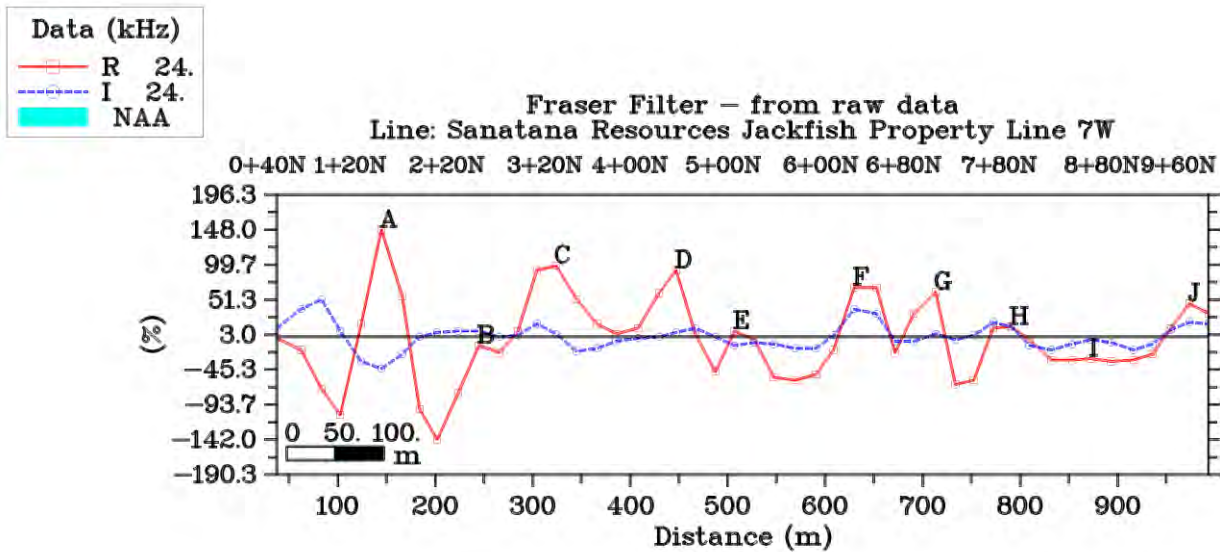
Line 6W NAA Figure 3 Model 4000 Ohm with Fraser Picks



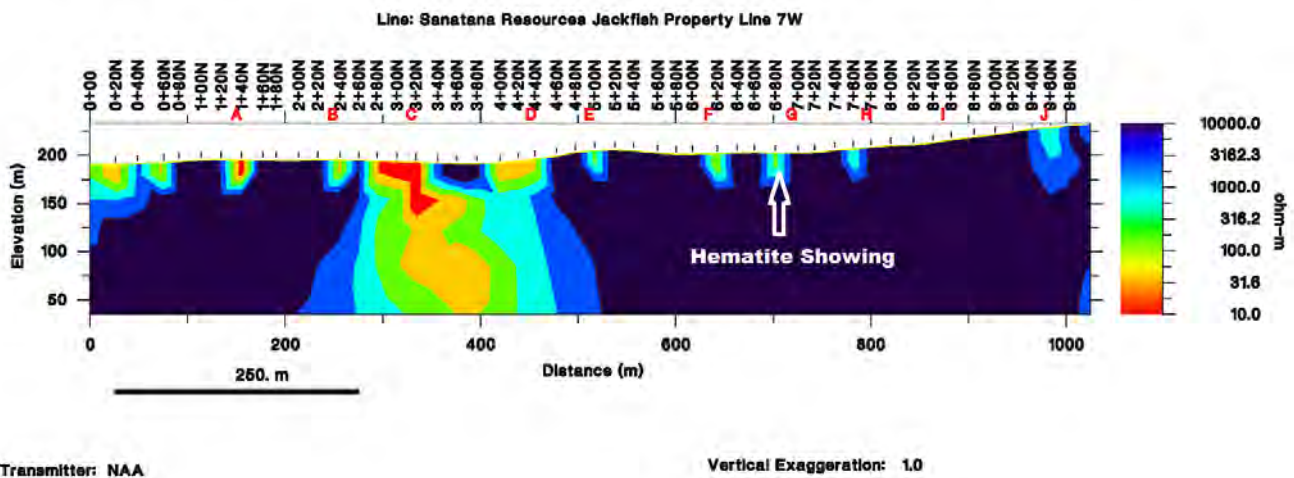
Line 7W NAA Figure 1 Raw Data Profile



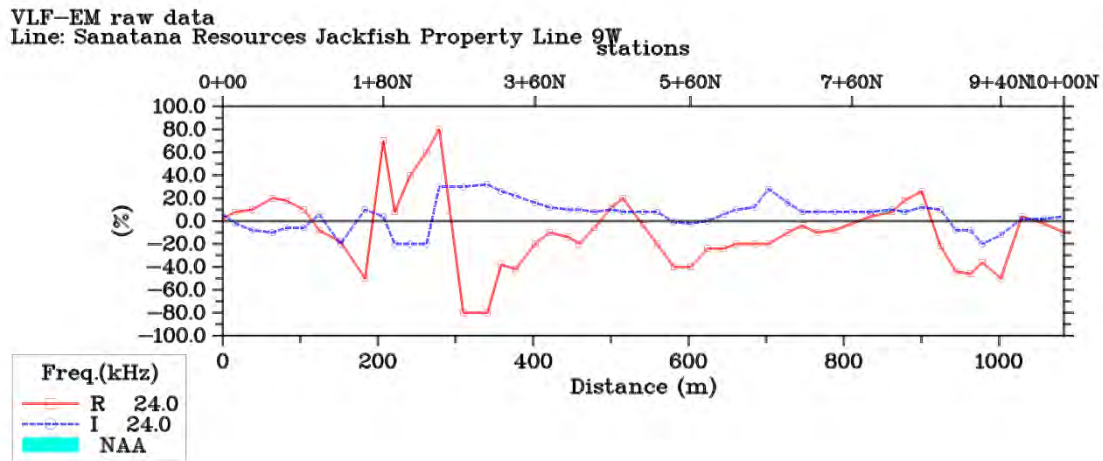
Line 7W NAA Figure 2 Fraser Filter Profile with Fraser Picks



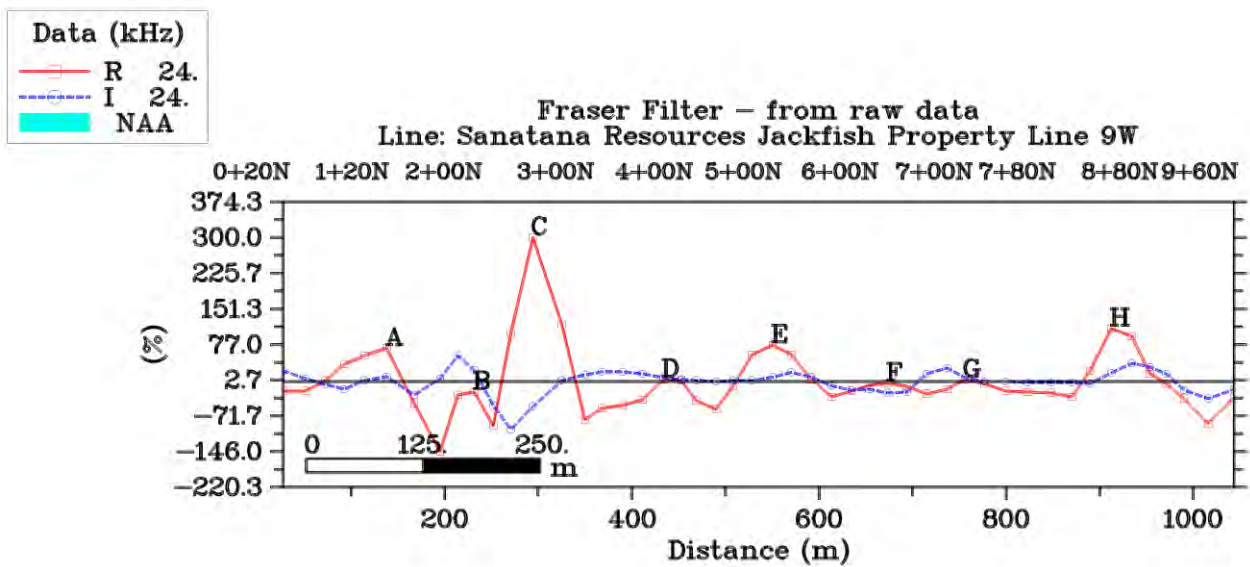
Line 7W NAA Figure 3 Model 4000 Ohm with Fraser Picks



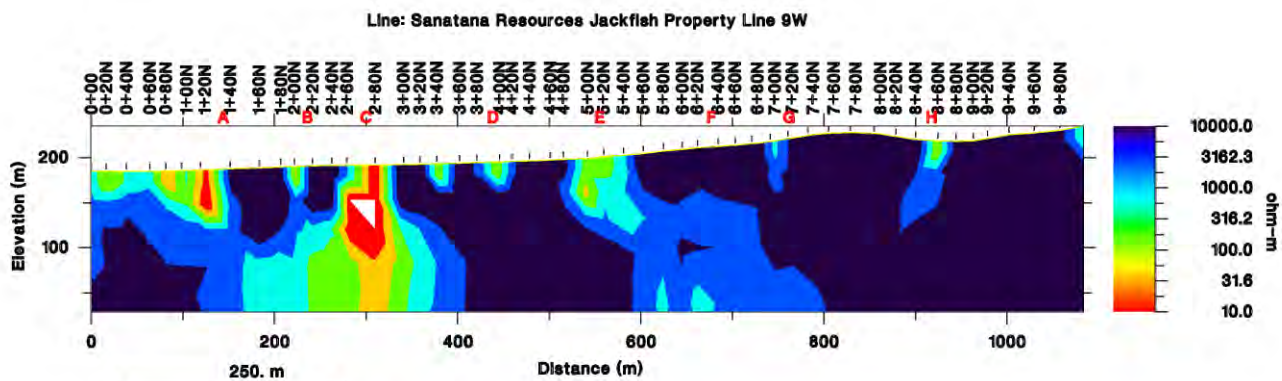
Line 9W NAA Figure 1 Raw Data Profile



Line 9W NAA Figure 2 Fraser Filter Profile with Fraser Picks



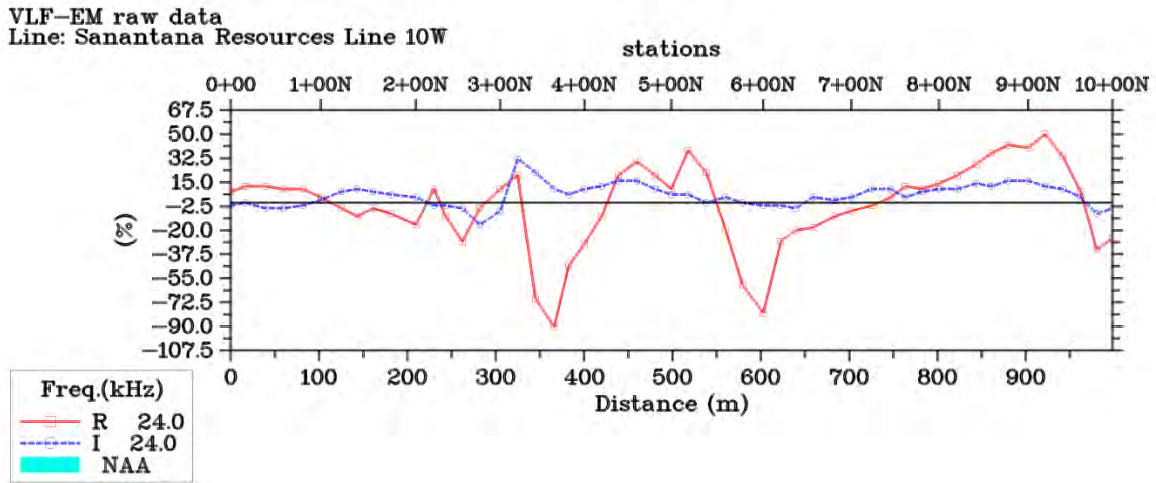
Line 9W NAA Figure 3 Model 4000 Ohm with Fraser Picks



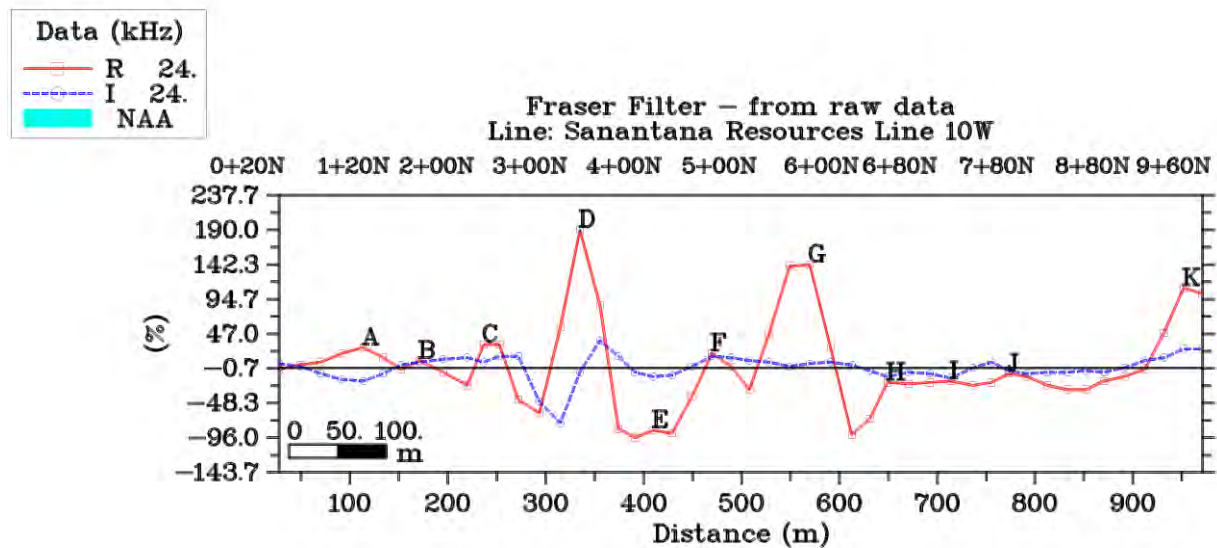
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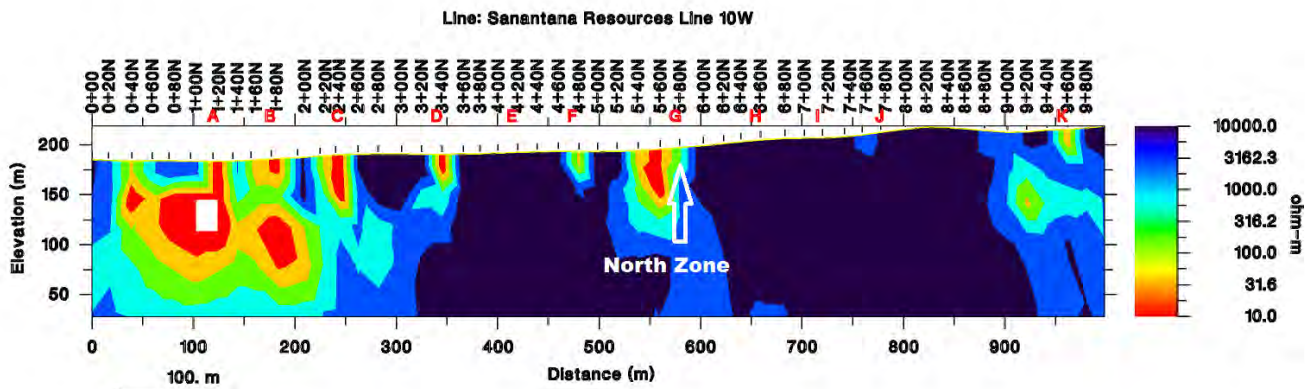
Line 10W NAA Figure 1 Raw Data Profile



Line 10W NAA Figure 2 Fraser Filter Profile with Fraser Picks



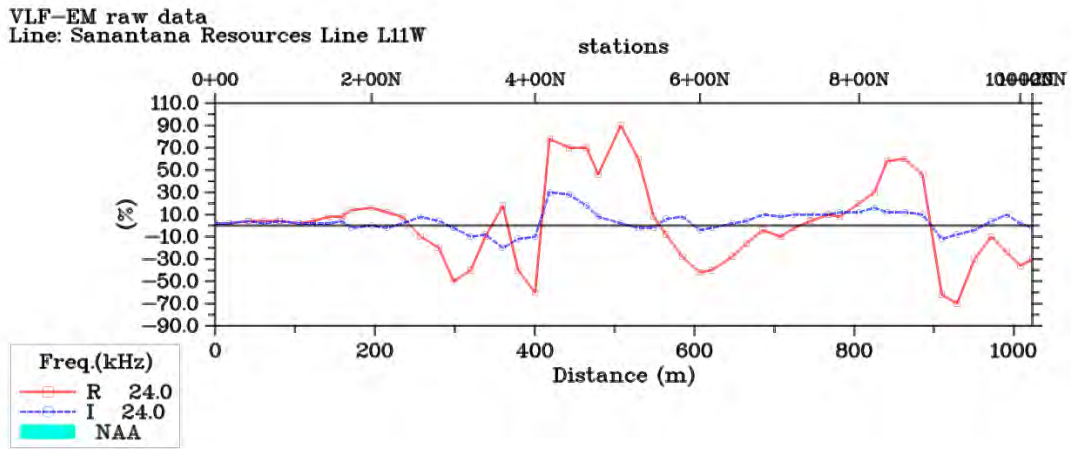
Line 10W NAA Figure 3 Model 4000 Ohm with Fraser Picks



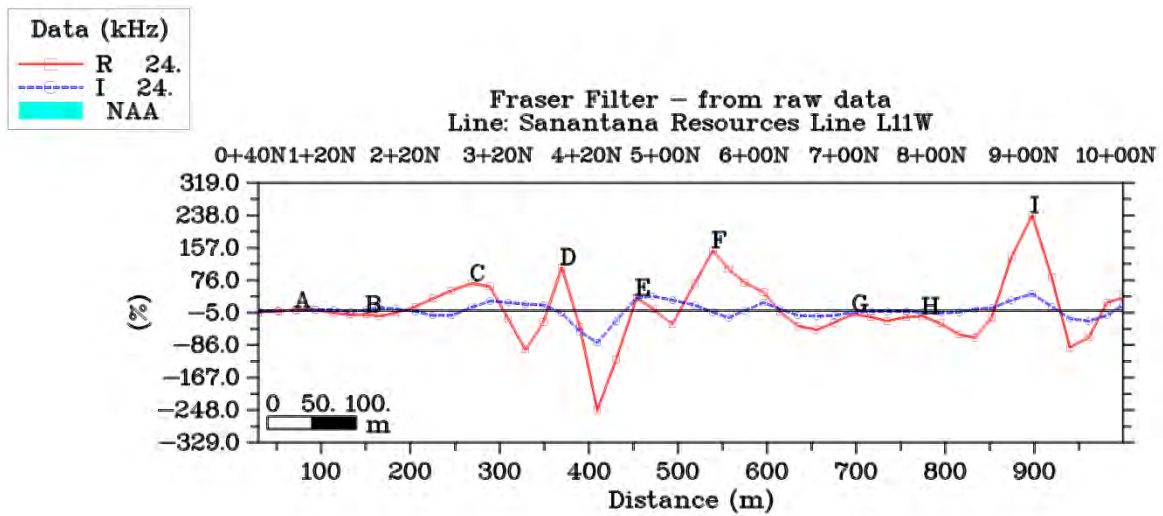
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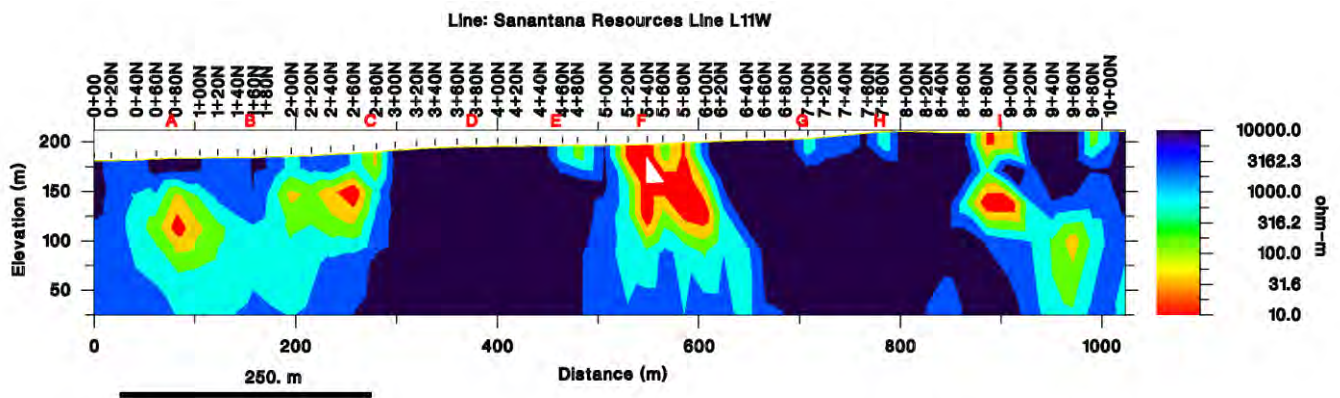
Line 11W NAA Figure 1 Raw Data Profile



Line 11W NAA Figure 2 Fraser Filter Profile with Fraser Picks



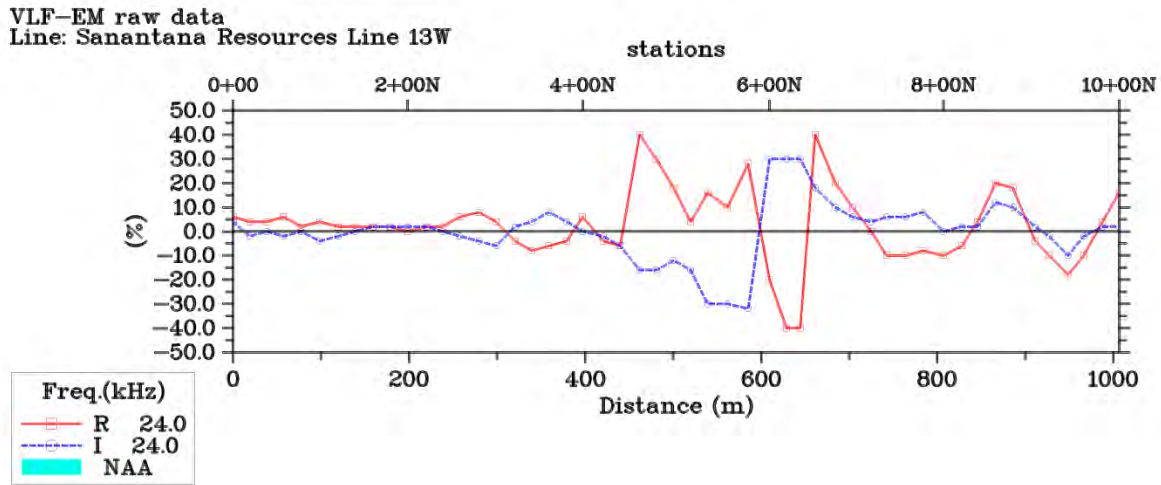
Line 11W NAA Figure 3 Model 4000 Ohm with Fraser Picks



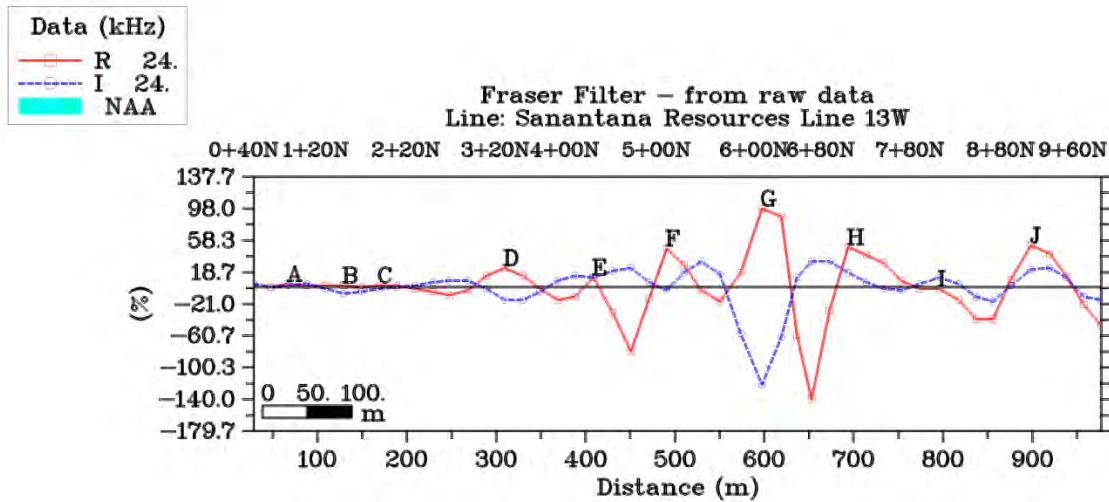
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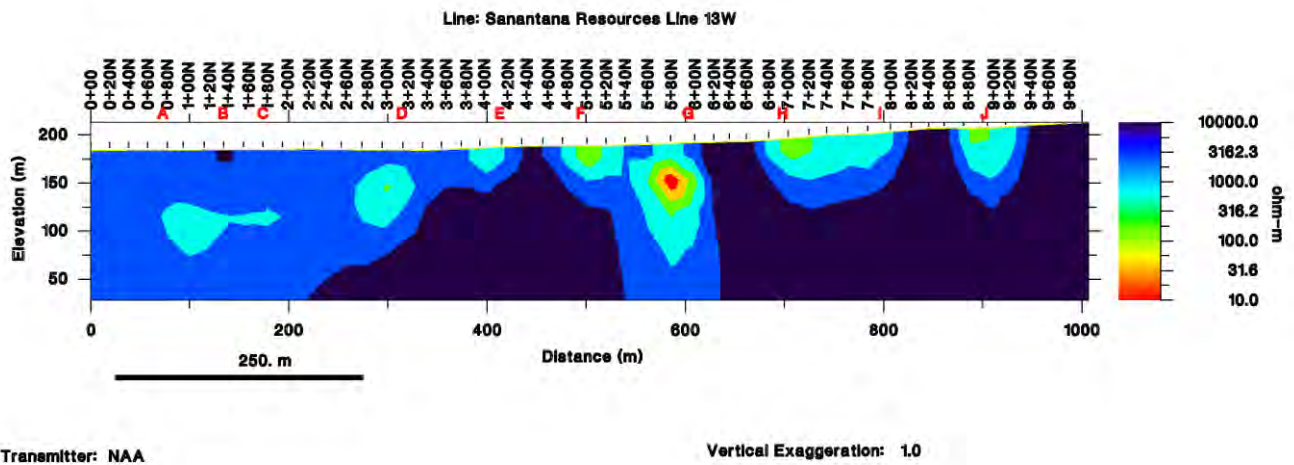
Line 13W NAA Figure 1 Raw Data Profile



Line 13W NAA Figure 2 Fraser Filter Profile with Fraser Picks



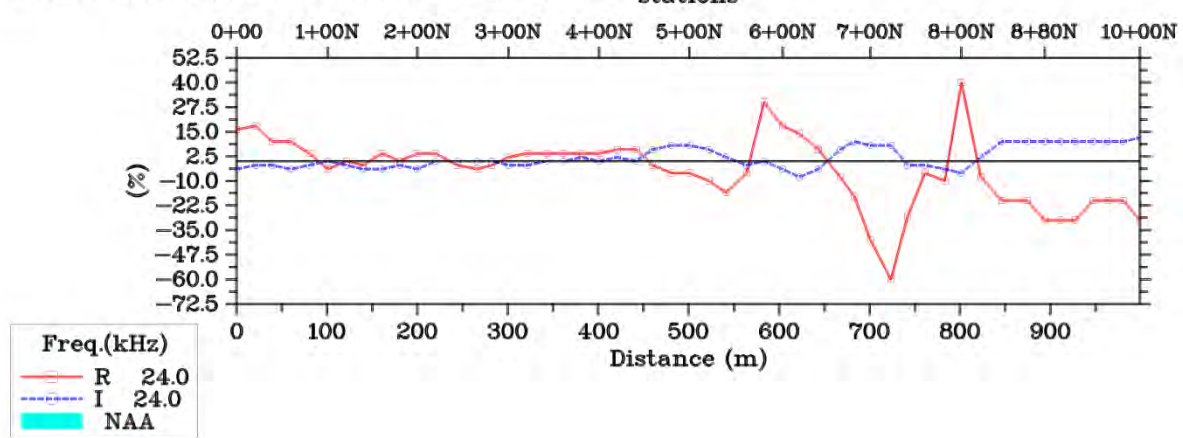
Line 13W NAA Figure 3 Model 4000 Ohm with Fraser Picks



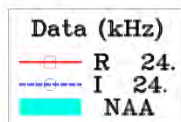
Line 15W NAA Figure 1 Raw Data Profile

VLF-EM raw data

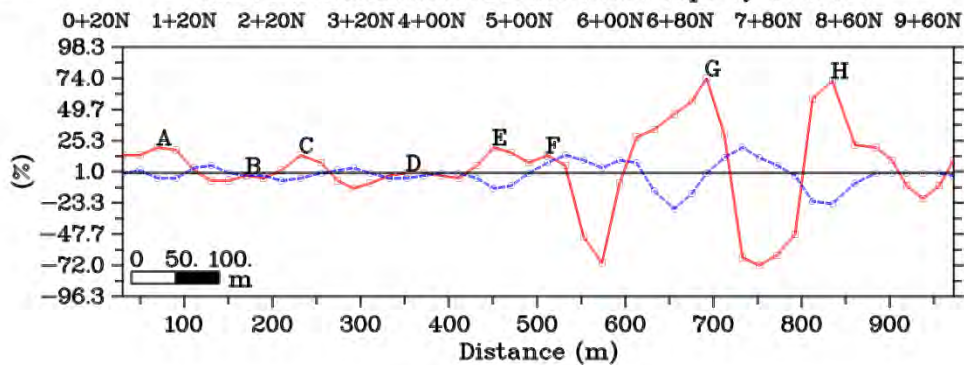
Line: Sanatana Resources Jackfish Property Line 15W



Line 15W NAA Figure 2 Fraser Filter Profile with Fraser Picks

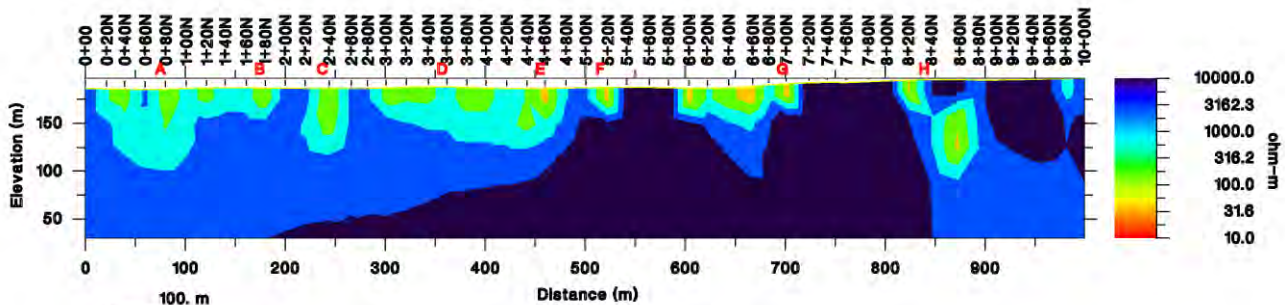


Fraser Filter – from raw data
 Line: Sanatana Resources Jackfish Property Line 15W



Line 15W NAA Figure 3 Model 4000 Ohm with Fraser Picks

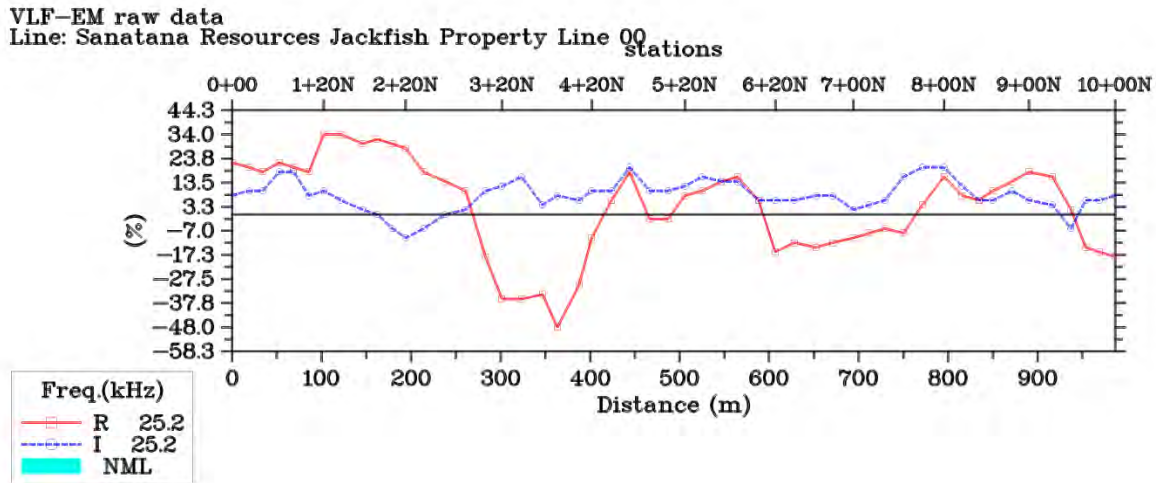
Line: Sanatana Resources Jackfish Property Line 15W



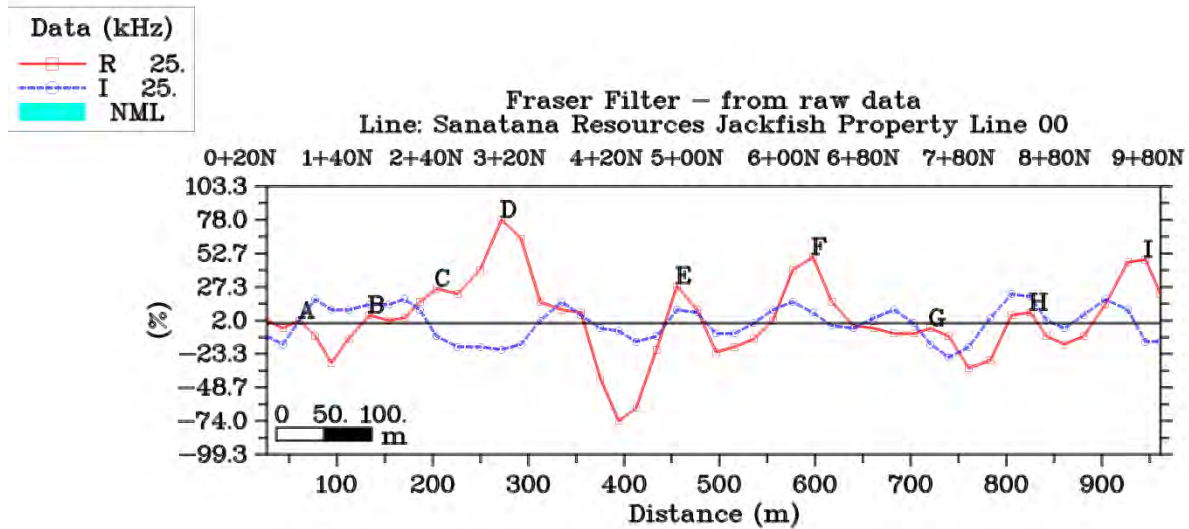
Transmitter: NAA

Vertical Exaggeration: 1.0

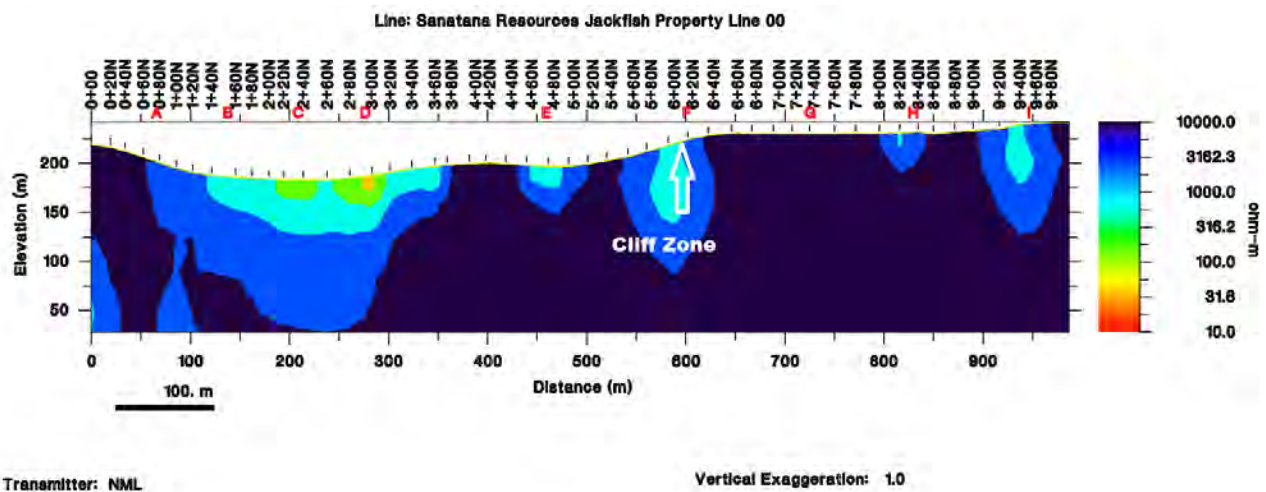
Line 00 NML Figure 1 Raw Data Profile



Line 00 NML Figure 2 Fraser Filter Profile with Fraser Picks



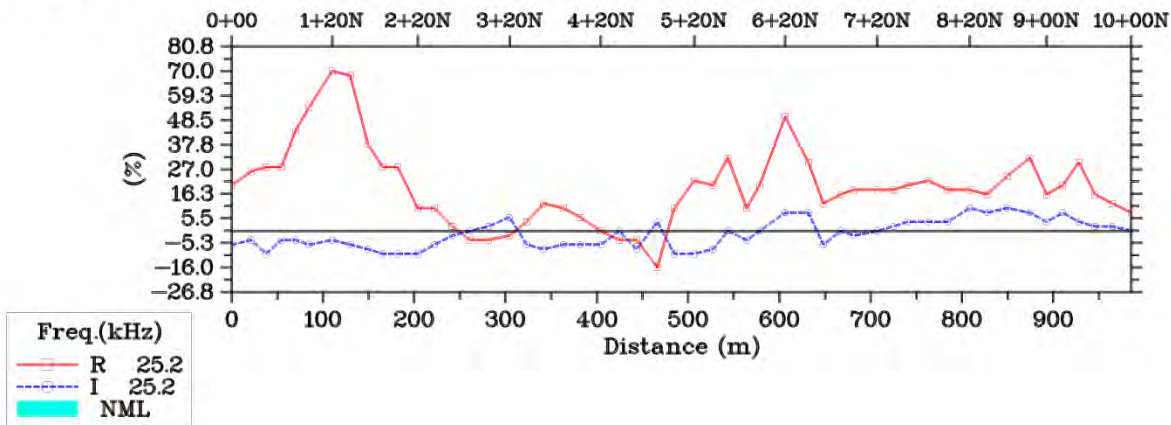
Line 00 NML Figure 3 Model 4000 Ohm with Fraser Picks



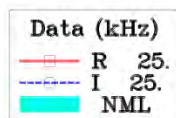
Line 2W NML Figure 1 Raw Data Profile

VLF-EM raw data

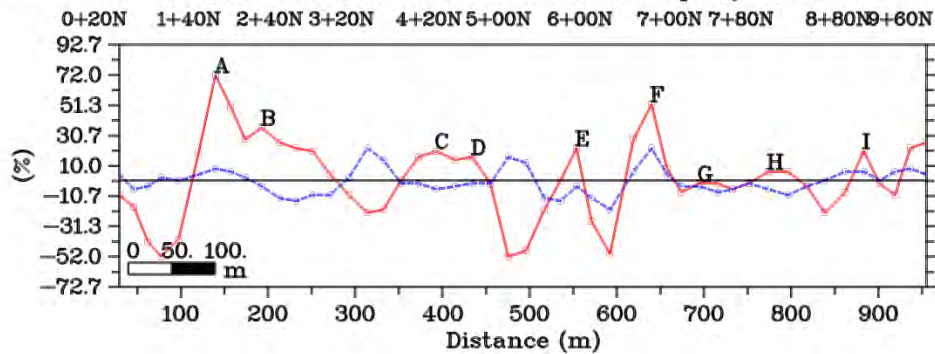
Line: Sanatana Resources Jackfish Property Line2W stations



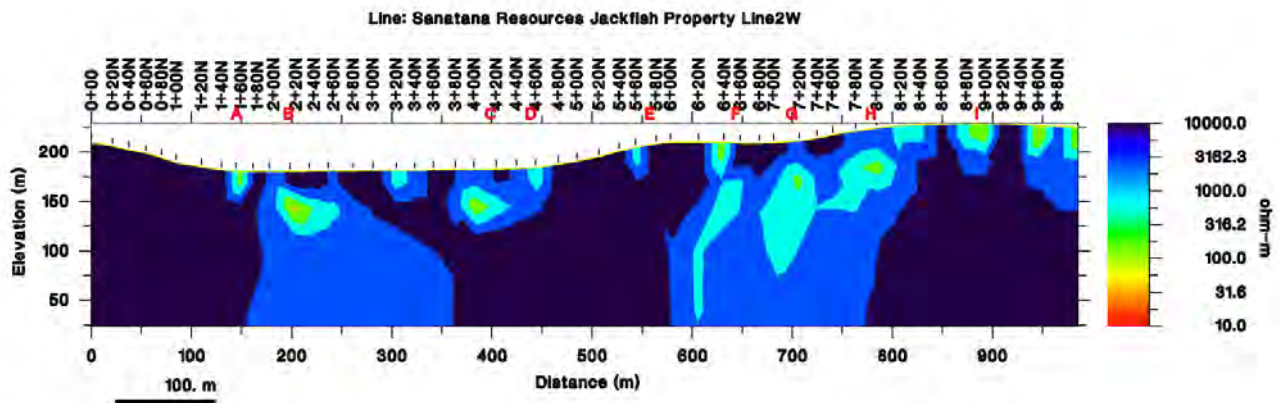
Line 2W NML Figure 2 Fraser Filter Profile with Fraser Picks



Fraser Filter - from raw data
Line: Sanatana Resources Jackfish Property Line2W



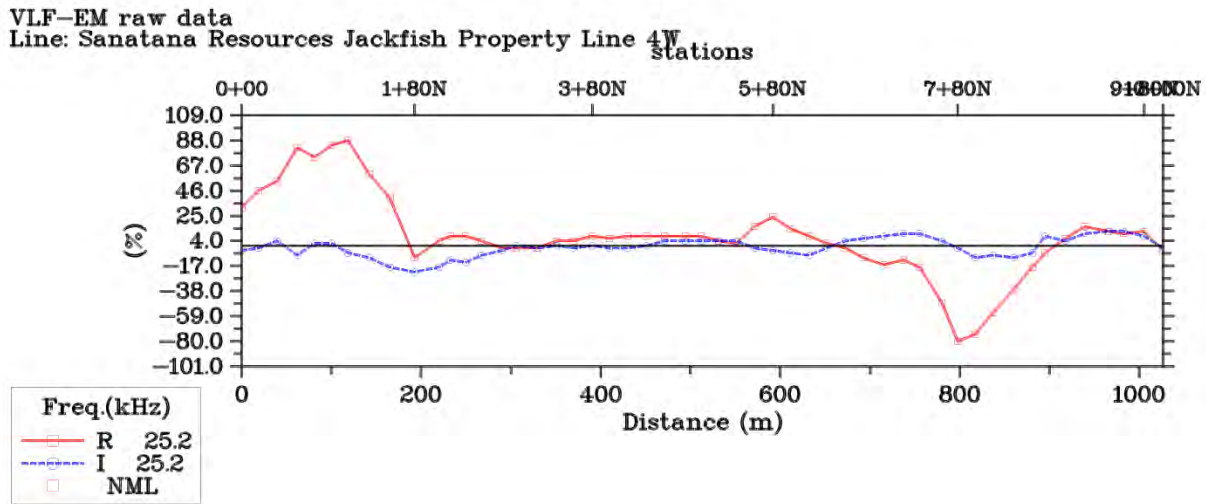
Line 2W NML Figure 3 Model 4000 Ohm with Fraser Picks



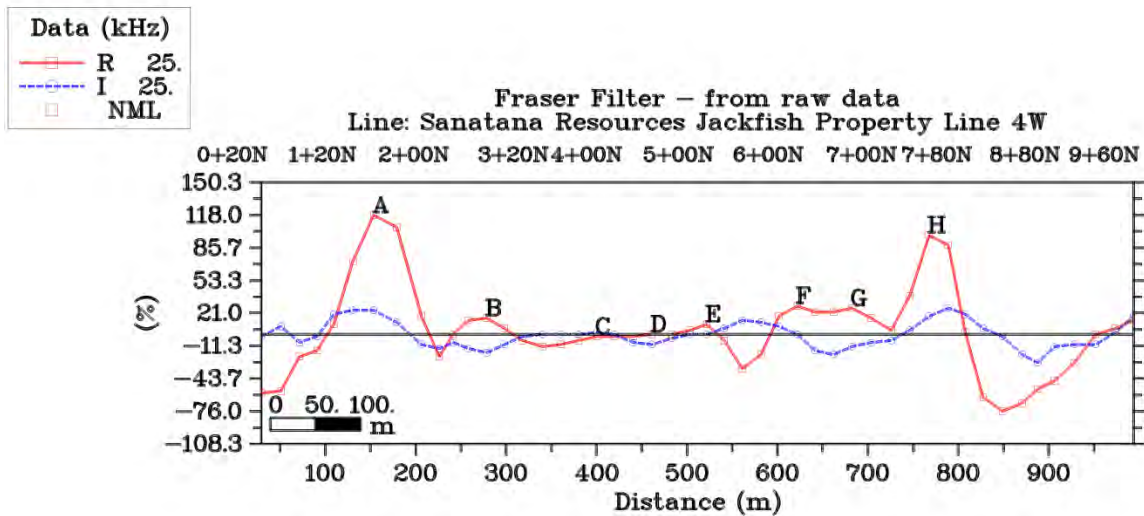
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Vertical Exaggeration: 1.0

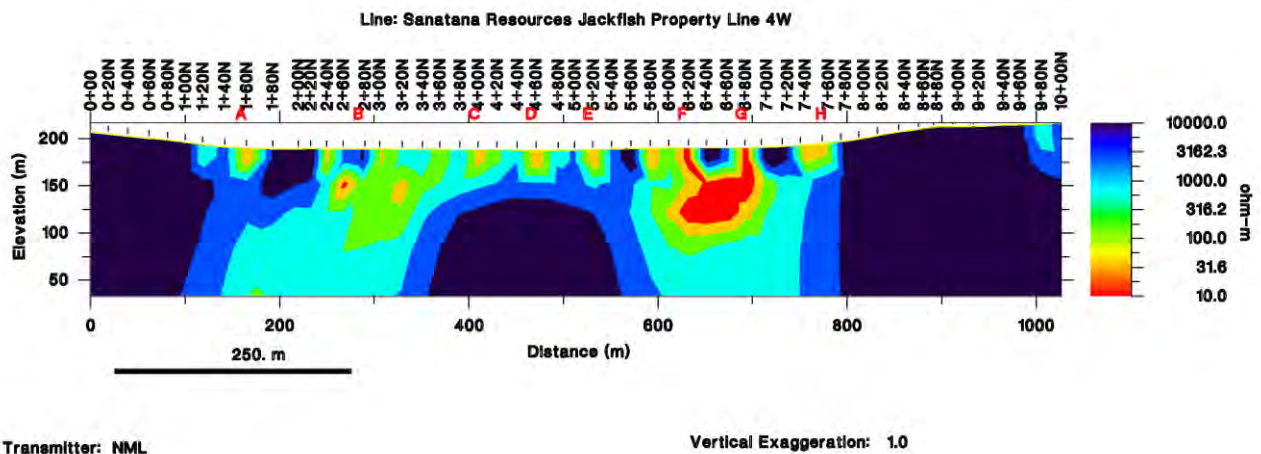
Line 4W NML Figure 1 Raw Data Profile



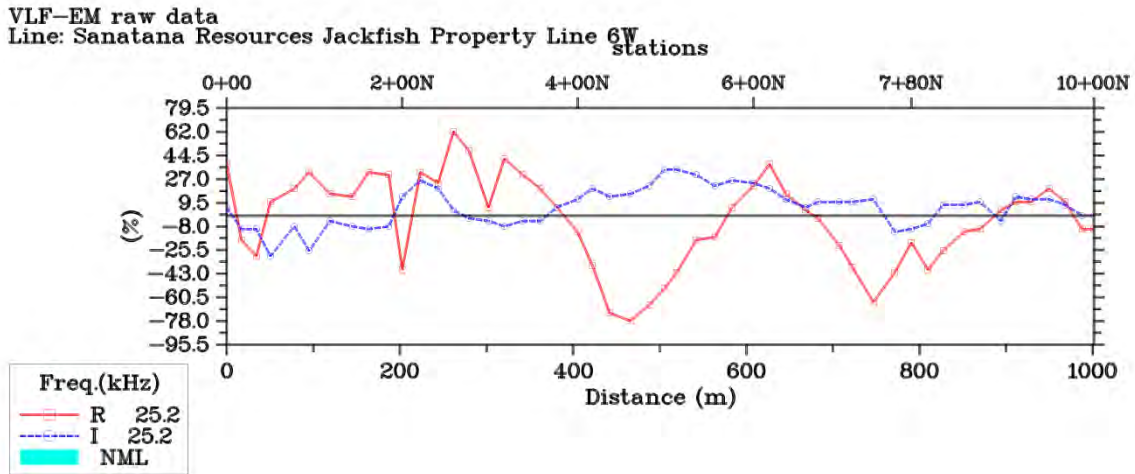
Line 4W NML Figure 2 Fraser Filter Profile with Fraser Picks



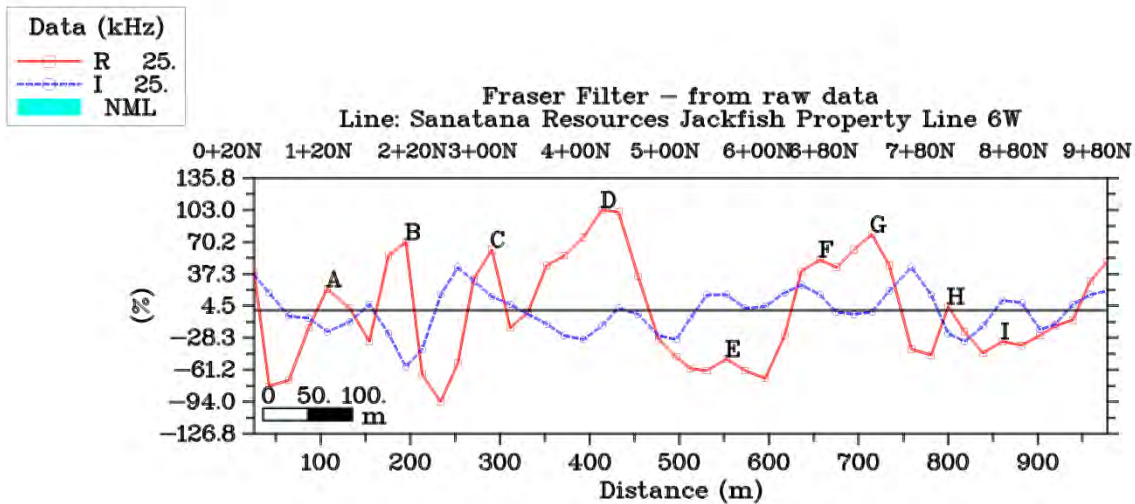
Line 4W NML Figure 3 Model 4000 Ohm with Fraser Picks



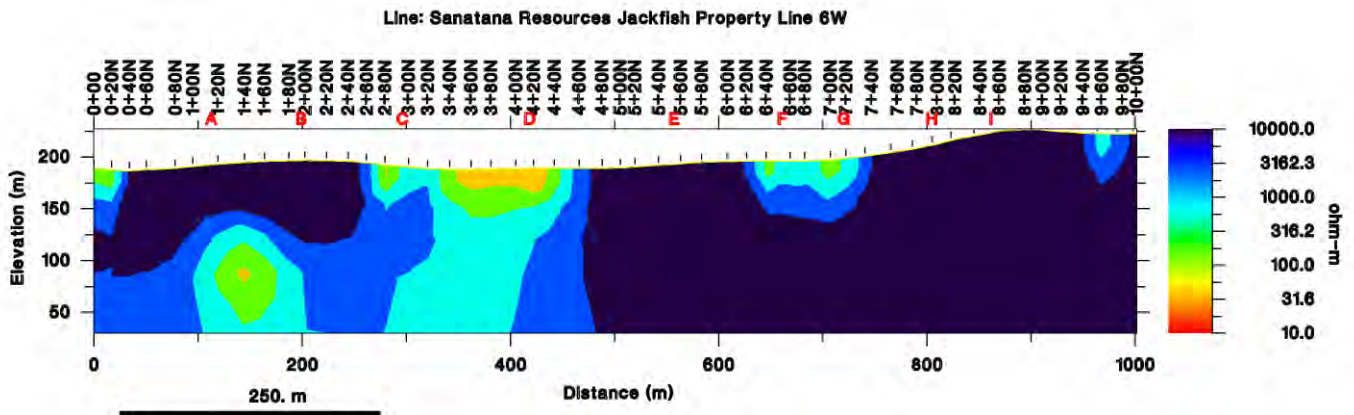
Line 6W NML Figure 1 Raw Data Profile



Line 6W NML Figure 2 Fraser Filter Profile with Fraser Picks



Line 6W NML Figure 3 Model 4000 Ohm with Fraser Picks



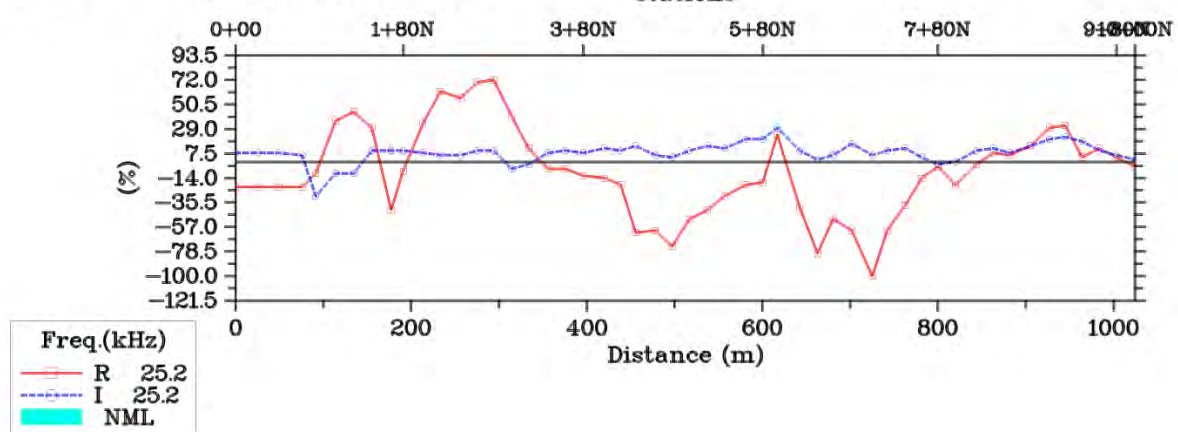
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Vertical Exaggeration: 1.0

Line 7W NML Figure 1 Raw Data Profile

VLF-EM raw data

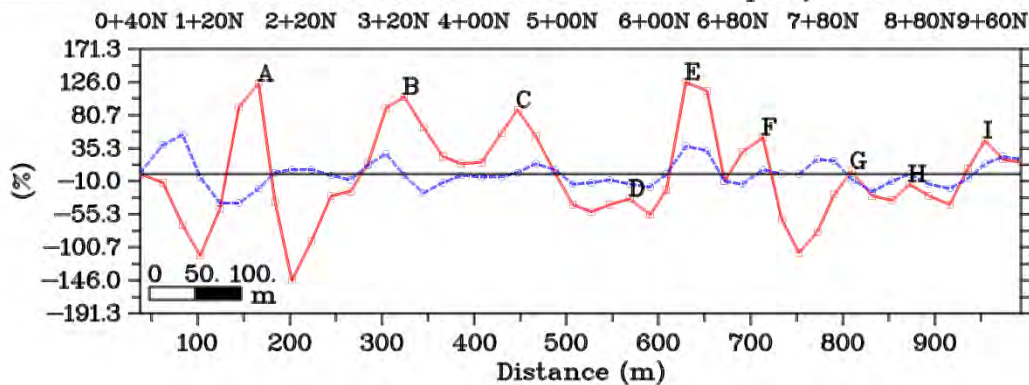
Line: Sanatana Resources Jackfish Property Line 7W



Line 7W NML Figure 2 Fraser Filter Profile with Fraser Picks

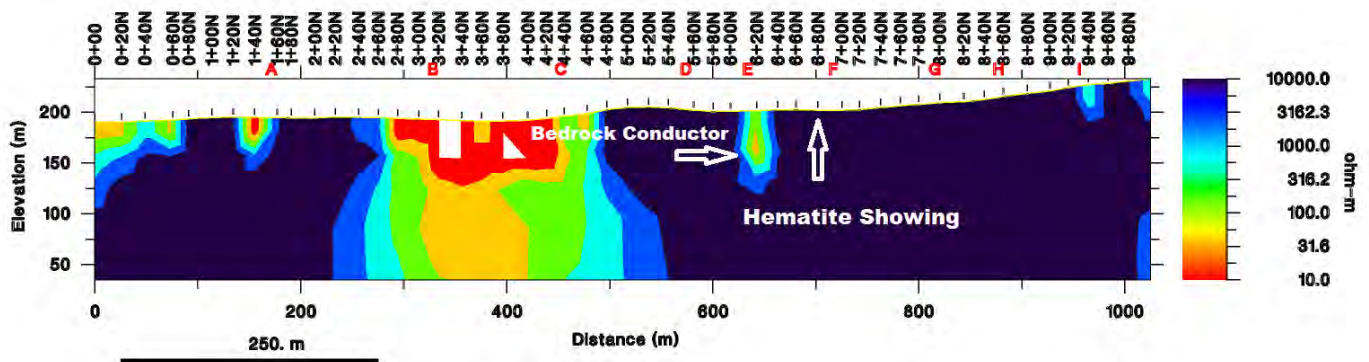
Data (kHz)
 R 25.
 I 25.
 NML

Fraser Filter – from raw data
 Line: Sanatana Resources Jackfish Property Line 7W



Line 7W NML Figure 3 Model 4000 Ohm with Fraser Picks

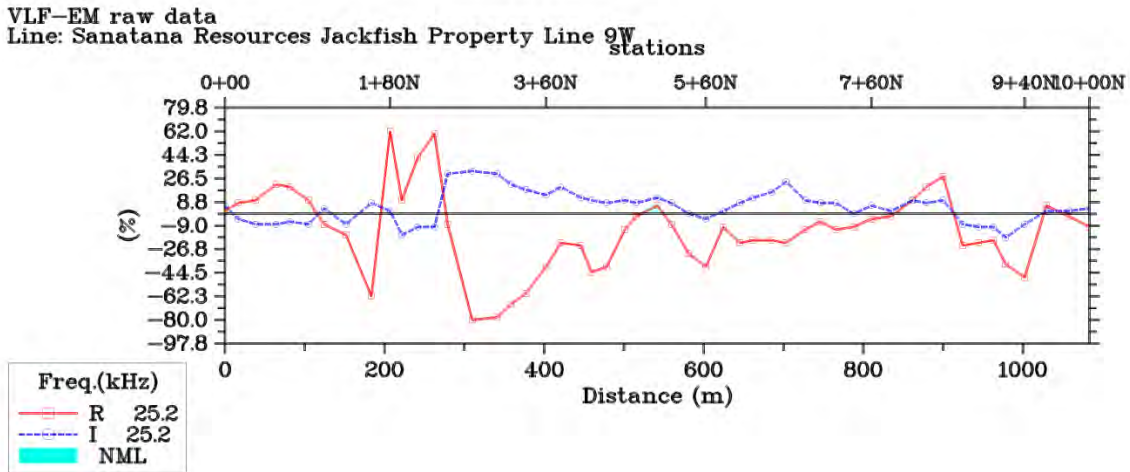
Line: Sanatana Resources Jackfish Property Line 7W



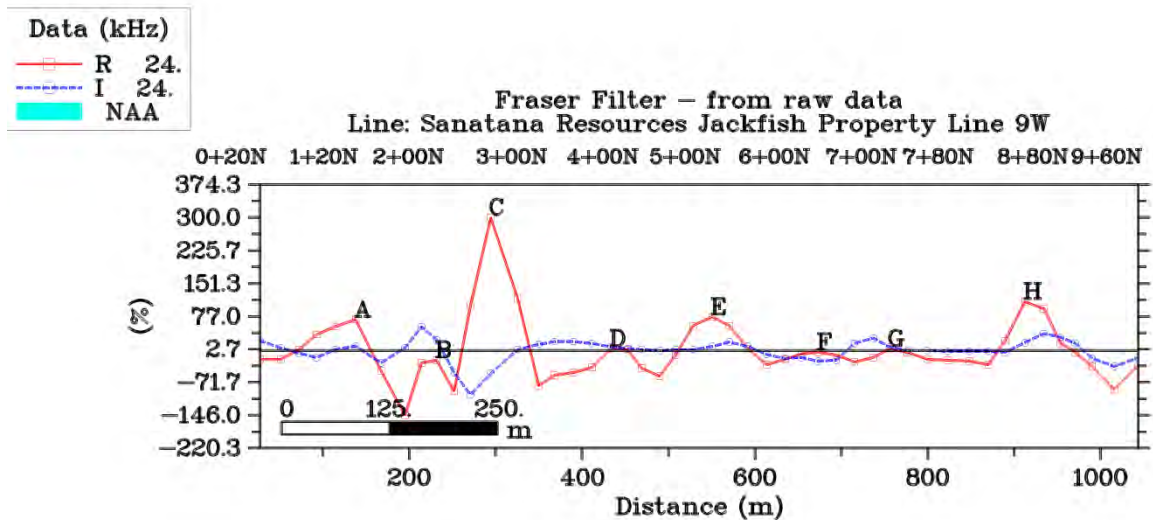
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Vertical Exaggeration: 1.0

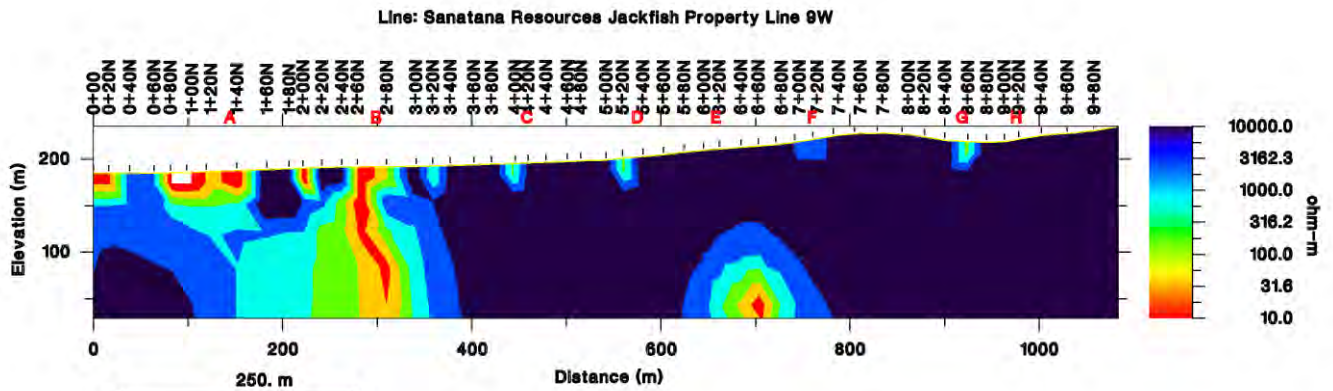
Line 9W NML Figure 1 Raw Data Profile



Line 9W NML Figure 2 Fraser Filter Profile with Fraser Picks



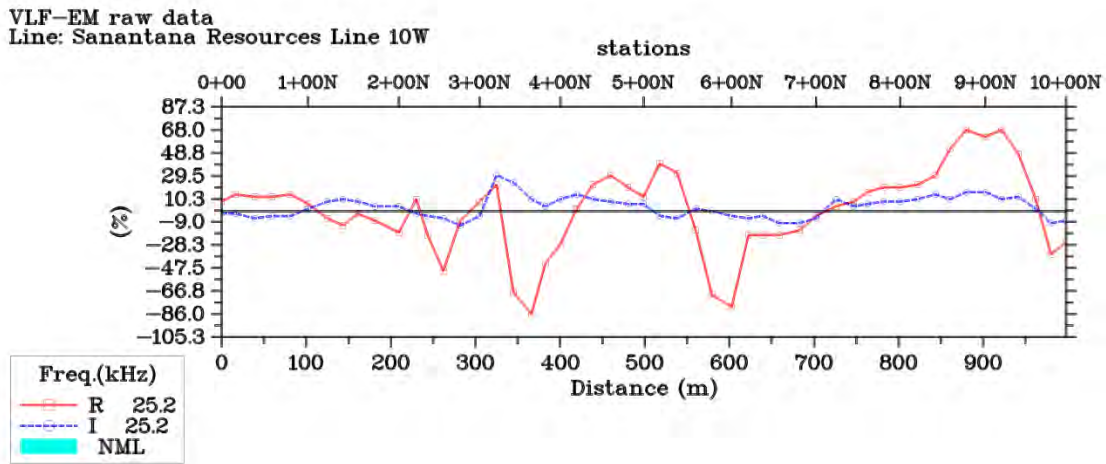
Line 9W NML Figure 3 Model 4000 Ohm with Fraser Picks



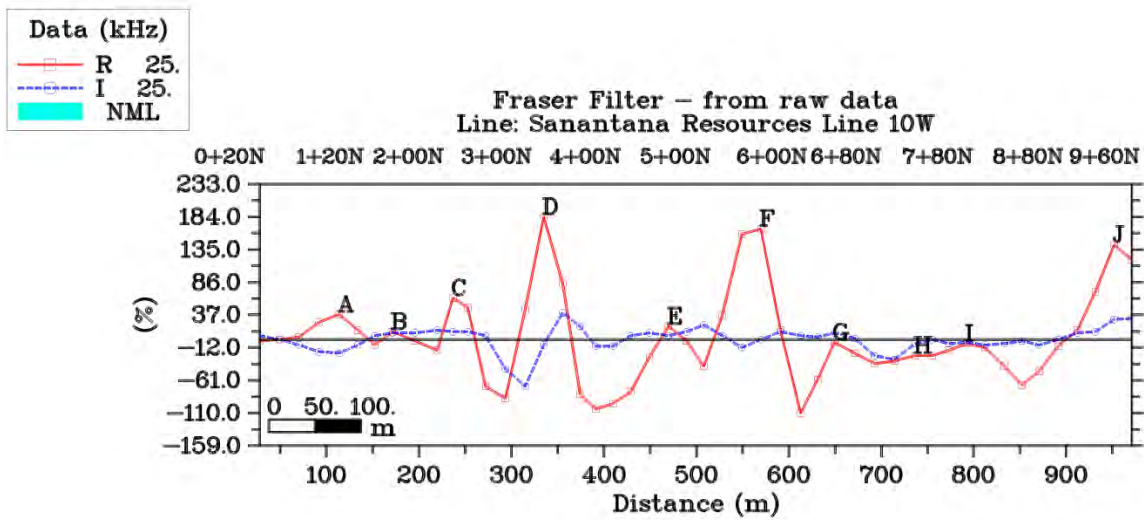
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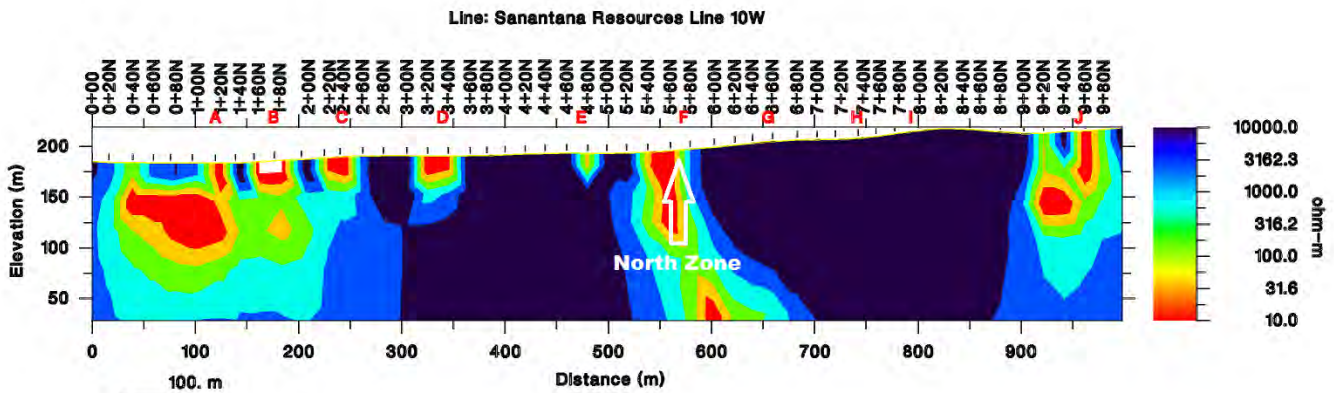
Line 10W NML Figure 1 Raw Data Profile



Line 10W NML Figure 2 Fraser Filter Profile with Fraser Picks



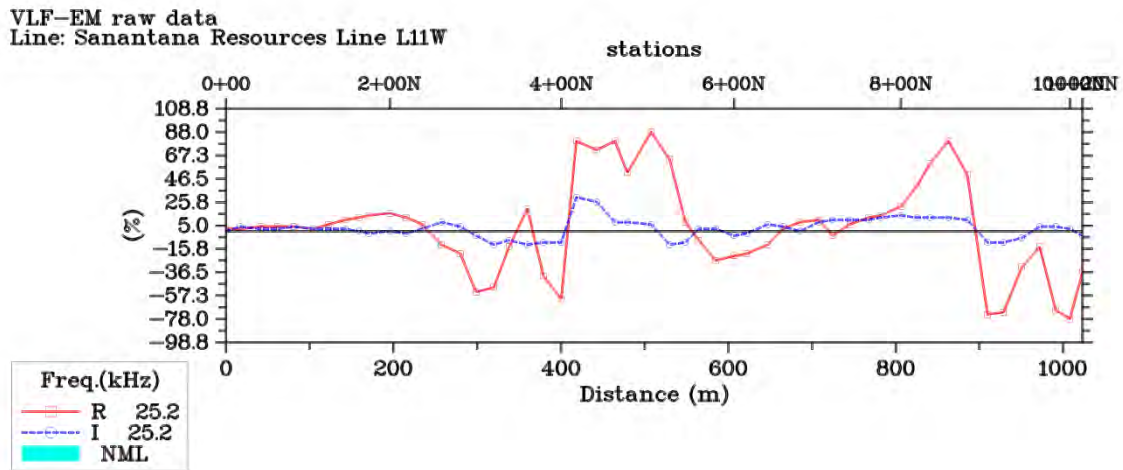
Line 10W NML Figure 3 Model 4000 Ohm with Fraser Picks



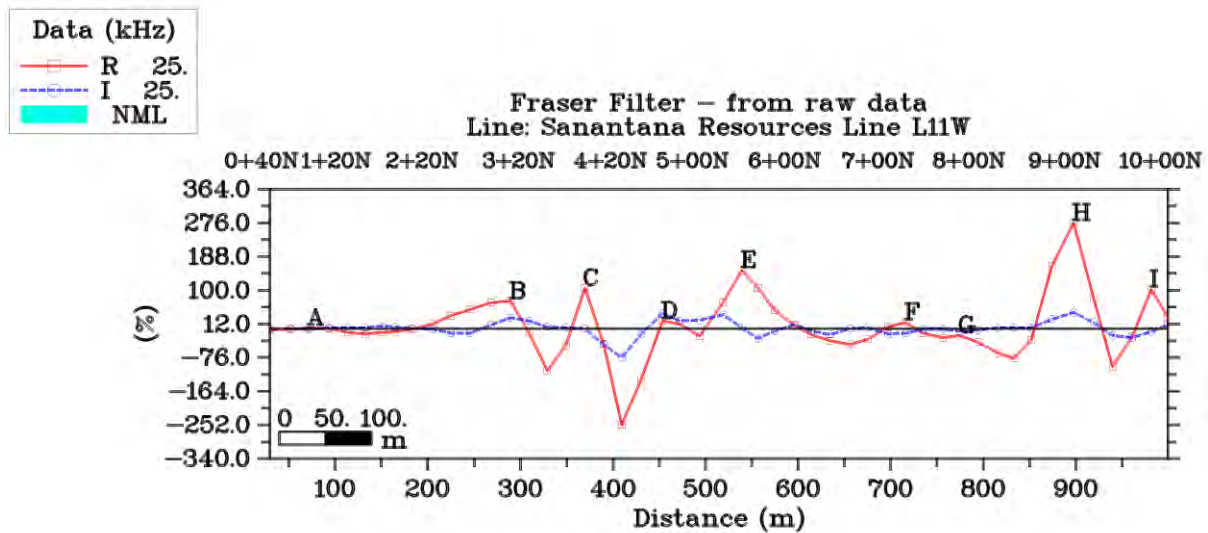
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Vertical Exaggeration: 1.0

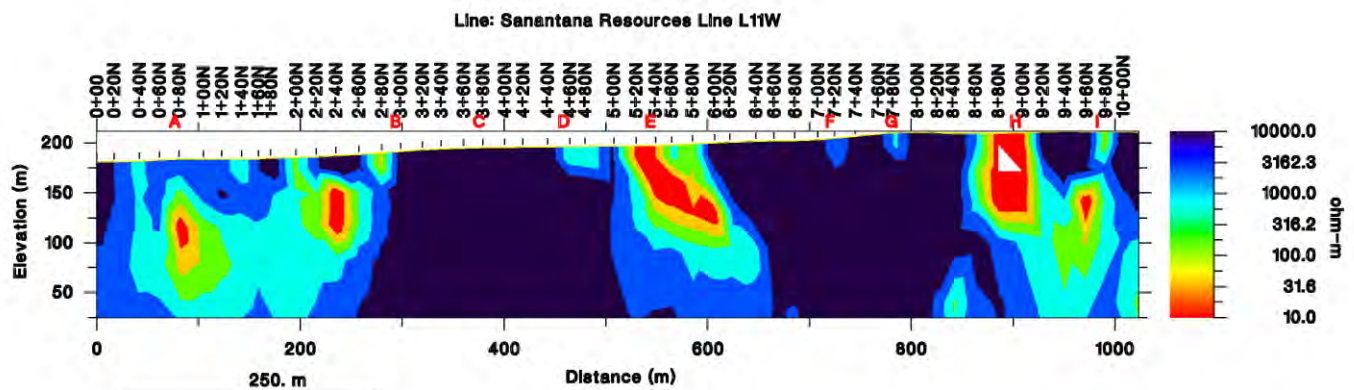
Line 11W NML Figure 1 Raw Data Profile



Line 11W NML Figure 2 Fraser Filter Profile with Fraser Picks



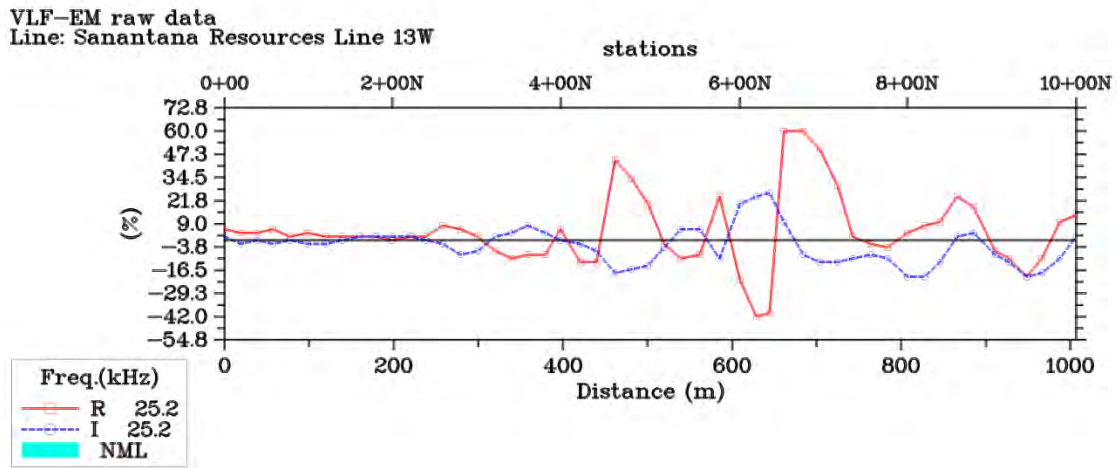
Line 11W NML Figure 3 Model 4000 Ohm with Fraser Picks



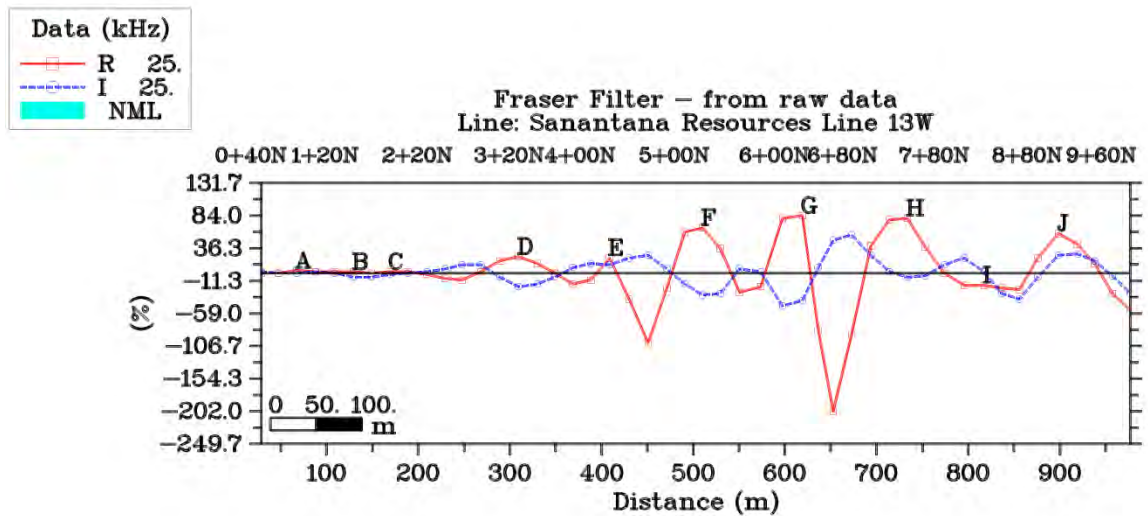
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Vertical Exaggeration: 1.0

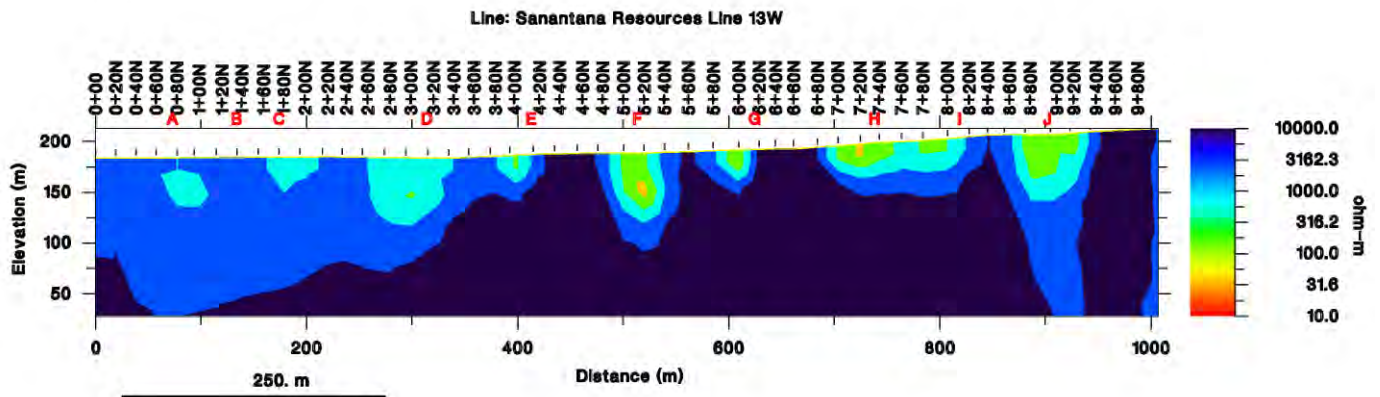
Line 13W NML Figure 1 Raw Data Profile



Line 13W NML Figure 2 Fraser Filter Profile with Fraser Picks



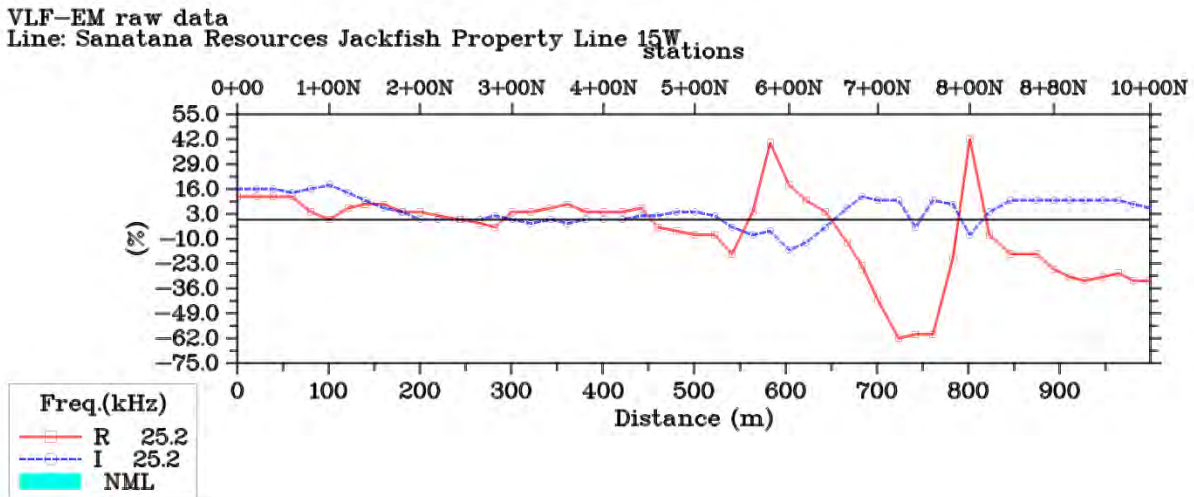
Line 13W NML Figure 3 Model 4000 Ohm with Fraser Picks



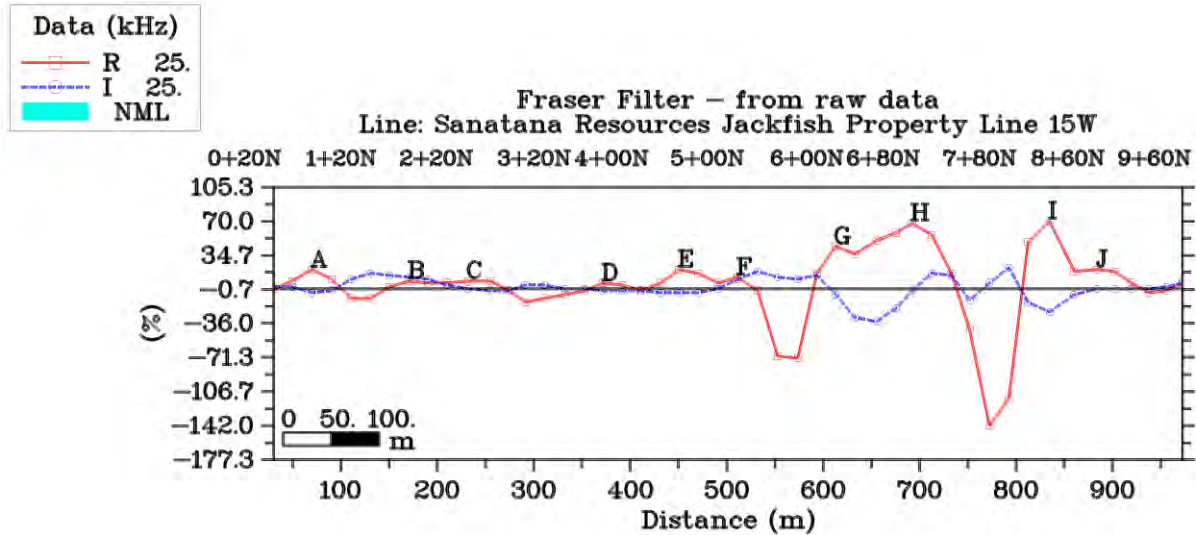
Transmitter: NML

Vertical Exaggeration: 1.0

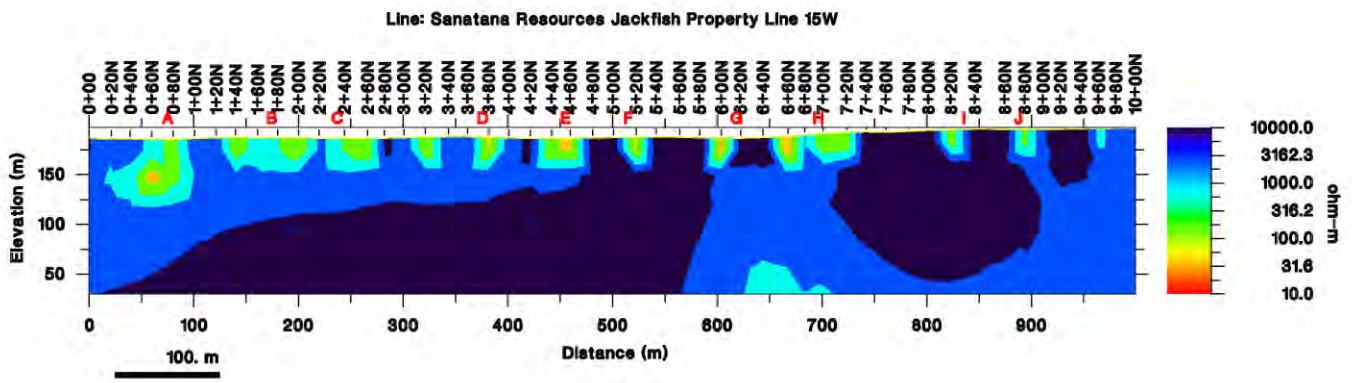
Line 15W NML Figure 1 Raw Data Profile



Line 15W NML Figure 2 Fraser Filter Profile with Fraser Picks



Line 15W NML Figure 3 Model 4000 Ohm with Fraser Picks



Transmitter: NML

Vertical Exaggeration: 1.0

Appendix 2:

VLF EM-16 Surveying Report

On The

Rudy Block



VLF EM-16 Surveying Report

On The

Rudy Block

In the

District of Thunder Bay, Ontario

By: Shaun Parent

Superior Exploration, Adventure & Climbing Co. Ltd.

October 4, 2017

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Preamble

Superior Exploration, Adventure & Climbing Co. Ltd. is an Incorporated Company specializing in Mining Exploration and Geophysics as well as Professional climbing.

Our ground VLF surveys (YVLF) have proven themselves as a very effective way to complete geophysics on the ground in a non-invasive way. No cut lines are needed and a permit is not required.

We have worked in many countries and have experience working in a wide variety of environments such as VMS, Breccia Pipes, Epithermal Veins and Shear Hosted Gold Deposits.

Shaun Parent, BSc. P. Geo is a member of the Association of Professional Geoscientists of Ontario as well as the Prospectors & Developers Association of Canada. He has over 30 years' experience working in the Geological and Geophysical Field, specializing in VLF, however, has also worked with I.P., Max Min , Surface & Borehole Pulse EM, Airborne Magnetics and Magnetometer.

Sandra Slater is a member of the Prospectors & Developers Association of Canada. She has been working in the Geological/Geophysical field for over 8 years, specializing in data analysis and VLF2DMF software.

Shaun began working with the developer of the VLF2DMF software since its inception in 2008 and he and Sandra continue to do so. Throughout the process, many test surveys have been completed with proven, successful results.

Executive Summary

This Test/Orientation ground VLF survey was completed on the Jackfish Lake Property, District of Thunder Bay in Northern Ontario. The property is located approximately 20 km. east of Terrace Bay, Ontario and is adjacent to Highway 17 at Jackfish Lake.

The survey was carried out in August 2017 using a VLF EM-16 unit and a handheld Garmin GPS-60CSX. Two transmitters were read at each station: NAA - Cutler, Maine and NML - La Moure, North Dakota.

A total of 14.1 Km of VLF was carried out over the Rudy Block

The objective of the 2017 VLF EM-16 survey was to:

- Determine if the VLF Survey could delineate the location of the structures on which several showings occurred
- Ground truth airborne EM conductors that crossed the survey area on the Rudy Block
- Identify if VLF conductors were apparent between the many old gold occurrences on the Rudy Block
- Determine if the VLF could interpret conductive zones or structures across the Rudy Block

Deposit Types

Gold in the Jackfish Lake area occurs in the following structural settings.

- Mineralized shear/fault zones that occur in supracrustal rocks near the margins of the Terrace Bay batholith.
- Quartz-carbonate vein systems that parallel the batholith-supracrustal rock contact and are located at or near the contact.
- Quartz-carbonate veins that occupy late brittle fracture systems within the batholith. Magnus and Walker (2015)

Introduction

A VLF-EM16 survey is a relatively simple and economic geophysical survey that is used to better understand shallow, vertical and sub vertical bedrock conductors.

This report describes the findings and results of the VLF EM-16 survey utilizing the VLF2DMF processing software of which the author of this report has assisted in its development since 2007. It enables the processing and inversion of electromagnetic (EM) induction data acquired along a survey area using a Very Low Frequency (VLF) (Santos 2013)

The software generates profiles of Raw Data, Fraser Filtered Data, KH, Resistivity and (2-D) Modelled Inversions

VLF data collected in the surveyed area was also compiled onto plan maps of contoured Fraser Filter data and contours of Resistivity data:

- TX NAA Maps 4, 5 & 6
- TX NML Maps 8, 9 & 10

Personnel

The VLF EM-16 operator and GPS field navigator responsible for the collection of raw data was Shaun Parent, P. Geo. VLF2DMF Processing & Interpretation was completed by Shaun Parent and Sandra Slater.

Map 1 General Location Map



Map 2 VLF Grid



Work Performed

Fieldwork

The VLF EM-16 survey consisted of running 10 VLF lines 7W, 9W, 11W, 13W, 15W, 17W, 19W, 21W, 23W, 25W to cover the Rudy Block Gold showings in a direction of 44 degrees true azimuth using a VLF EM-16 unit and a handheld Garmin 60-CSX. Lines were spaced 200 meters apart and two frequencies were read at 20 meter stations. Each VLF station was located based on an easterly azimuth and distance from the start of the survey line at south west side.

The following parameters were used throughout the surveys:

VLF Transmitters Used: NAA - 24.0 KHz. Cutler, Maine (East)
NML - 25.2 KHz. La Moure, North Dakota (West)

VLF survey direction: The VLF Em-16 receiver was facing 44 degrees (True North) with lines beginning in the southwest at 0+00.

VLF survey stations: All readings were taken at approximately 20 meter stations along the Virtual VLF lines.

Parameters of Measurement: In-phase and Quad-phase components of vertical magnetic field as a percentage of horizontal primary fields. (Tangent of tilt angle and ellipticity). VLF transmitter NAA was to the east, while transmitter NML was to the west. The transmitters are chosen so that the direction to the transmitting station is as close to the orientation of the bedrock strike.

VLF Data Collection Process

Field data was collected as follows on each surveyed line.

- Each station was saved onto the Handheld Garmin 60CSX GPS Unit (including local features such as powerline poles, houses, and roads)
- VLF readings for each station were recorded in a notebook as In-Phase and Quadrature corresponding to the line number and station number. (See example in Table 1)
- Field information was transferred to a Garmin map source program where line and station information could be viewed.
- Garmin and VLF data were compiled onto an excel spreadsheet and then inputted into the VLF2DMF processing software. For this survey all UTM Values are NAD 83.

Table 1 Example of VLF Data Collection

Line 7W	NAA In phase	NAA Quadrature	NML In phase	NML Quadrature	Notes
10+20N	10	6	4	5	Quartz
10+40N	8	4	2	4	Rusty

Interpretation & Modelling

VLf2DMF Data Processing

All VLF data collected was processed and interpreted separately for TX NAA and TX NML. Although all profiles/filters explained below were used in the interpretation process, only the Raw Data, Fraser Filter Data and 2D Inversion Models are included in the Appendices at the end of this report.

VLf2DMF Profiles & Models

Raw and Filtered Data Profiles

The raw data for each frequency was plotted for each line surveyed. No filtering or smoothing of the raw data was done.

Fraser Filter Profile with Fraser Peaks

Raw data was run through the Fraser filter. This filter transforms In-Phase cross overs and inflections into positive peak anomalies. (Fraser 1969) In-Phase inflections and cross overs are usually plus to minus, while Quadrature responses are negative to positive giving a negative peak anomaly when the Fraser Filter is applied. All Fraser Filter peaks are shown on the profile.

K-H Profiles

Raw Data was run through the Karous-Hjelt (K-H) filter. The filter is applied to obtain a section of current density. The higher values are generally associated with conductive structures. (Karous-Hjelt 1983) If there is depth extent, this is shown on the In-phase profile as dark blue.

Resistivity Profiles: 4000 Ohm's

The apparent resistivity was calculated. The resistivity can be calculated if the mean environmental resistivity is known at the beginning of the VLF profile. A mean resistivity of 4000 ohm's was used for all lines.

Model 4000 Ohm's

A resistivity of 4000 Ohm's was used to build an initial model used in the inversion to obtain a realistic cross section of the line surveyed. Conductive zones are red/yellow while resistive zones are blue. A depth scale is found on the left side of model profiles. Surface conductive zones show little depth extent, have a horizontal display and are limited in depth. Fraser Filter picks are shown across the top of the models. When using a resistivity of 4000 Ohms, the depth of the model is determined to be 204 meters with Transmitter NAA and 199 meters with Transmitter NML. The vertical exaggeration of all models is 1.0. Quartz veins and rusty zones found along the VLF line are shown on the model profiles.

Discussion of Results

Lines 7W, 9W, 11W, 13W, 15W, 17W, 19W, 21W, 23W, 25W

The Rudy Block VLF grid was carried out on 10 Virtual VLF lines. Map 3 shows the layout of the VLF lines on an elevation contour map.

It appears that the Rudy Block grid is underlain by an Intrusive body. Some anomalies are strong and the main trend is easily interpreted between the 200 meter spaced lines. There are more, weaker Fraser picks occurring within the 200 meter spaced lines that could not be tied together due to the 200 meter line separation. A more accurate interpretation could be achieved with additional fill in lines being completed in order to verify responses.

There is one main VLF trend that follows an area of low resistivity. (TX NAA Map 6) & (TX NML Map 10). This is very apparent between lines 7W and 17W.

VLF Anomalies

All VLF trends are bedrock conductors and were identified for TX NAA (13 trends) and TX NML (11 trends).

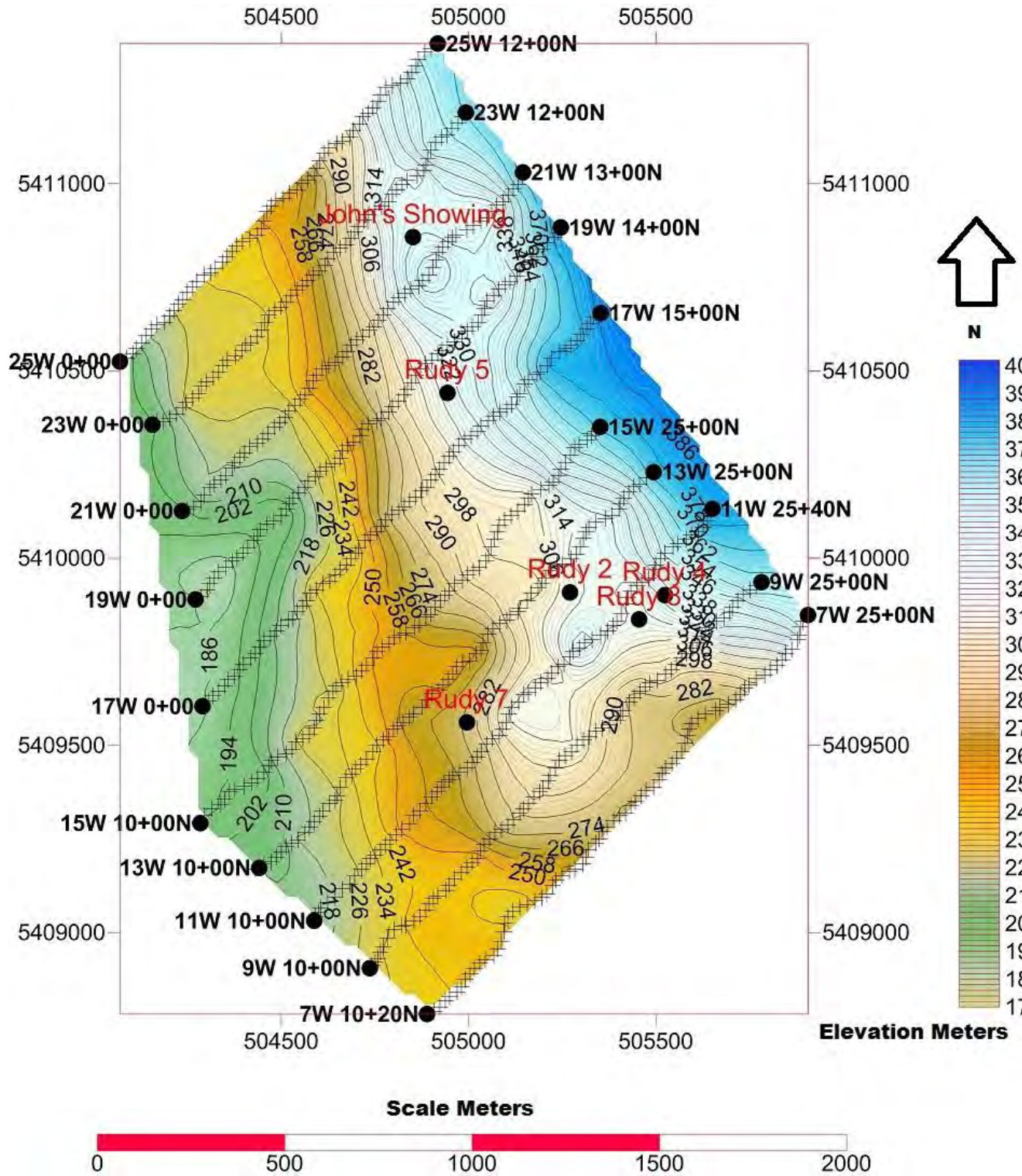
TX NAA

1. 7W-C, 9W-A, 11W-A, 13W-A, 15W-A
2. 7W-E, 9W-C, 11W-D, 13W-F
3. 7W-I, 9W-F, 11W-F, 13W-H, 15W-D
4. 7W-N, 9W-I, 11W-I, 13W-L, 15W-F, 17W-C
5. 19W-D, 21W-B
6. 17W-F, 19W-G, 21W-G
7. 19W-J, 21W-E, 23W-G, 25W-D
8. 23W-E, 25W-B
9. 9W-M, 11W-N, 13W-R, 15W-L, 17W-J
10. 13W-S, 15W-N, 17W-L, 19W-N, 21W-H, 23W-J, 25W-G
11. 19W-Q, 21W-K, 23W-M, 25W-J
12. 21W-G, 23W-I
13. 17W-N, 19W-P, 21W-L, 25W-J

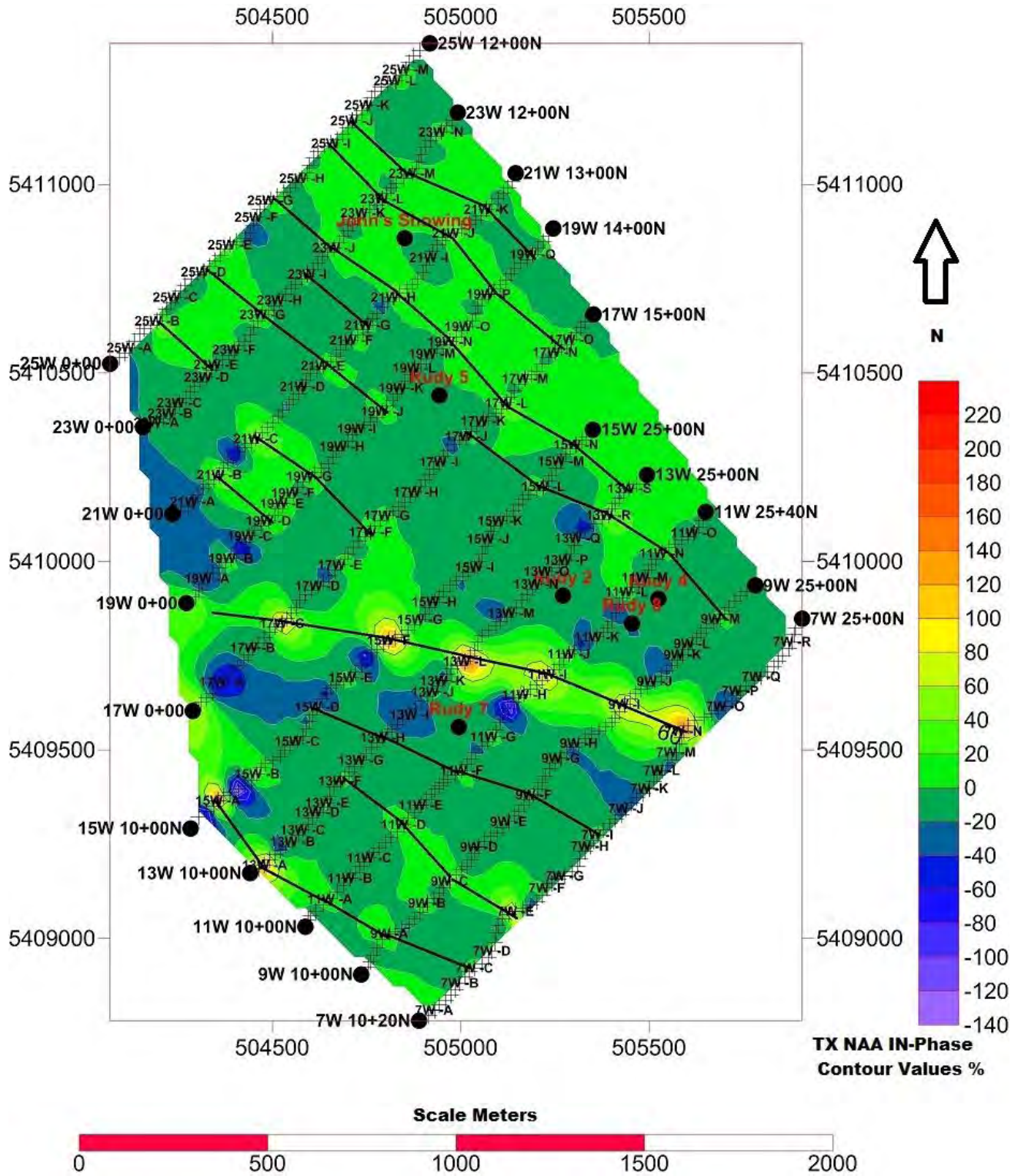
TX NML

1. 7W-B, 9W-B, 11W-A, 13W-A, 15W-A
2. 7W-D, 9W-E, 11W-D, 13W-E
3. 7W-L, 9W-M, 11W-J, 13W-L, 15W-F, 17W-B
4. 11W-H, 13W-J
5. 19W-C, 21W-B
6. 17W-G, 19W-F, 21W-G, 23W-C, 25W-B
7. 19W-I, 21W-E, 23W-F, 25W-D
8. 9W-O, 11W-P, 13W-Q, 15W-L, 17W-J
9. 19W-K, 21W-G, 23W-H
10. 17W-M, 19W-M, 21W-H, 23W-I
11. 17W-O, 19W-O, 21W-J, 23W-M, 25W-J

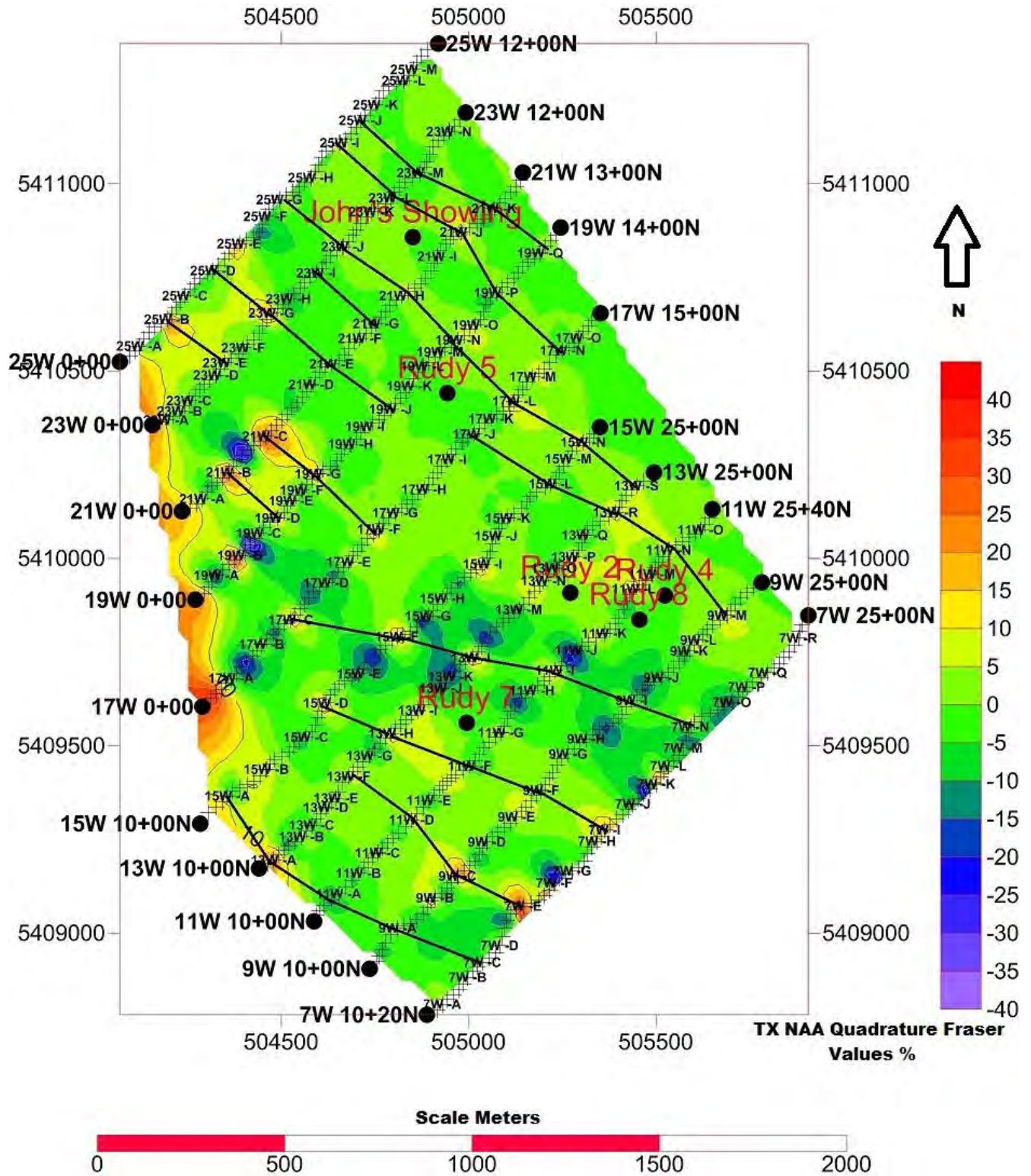
Map 3 Grid Elevation Map



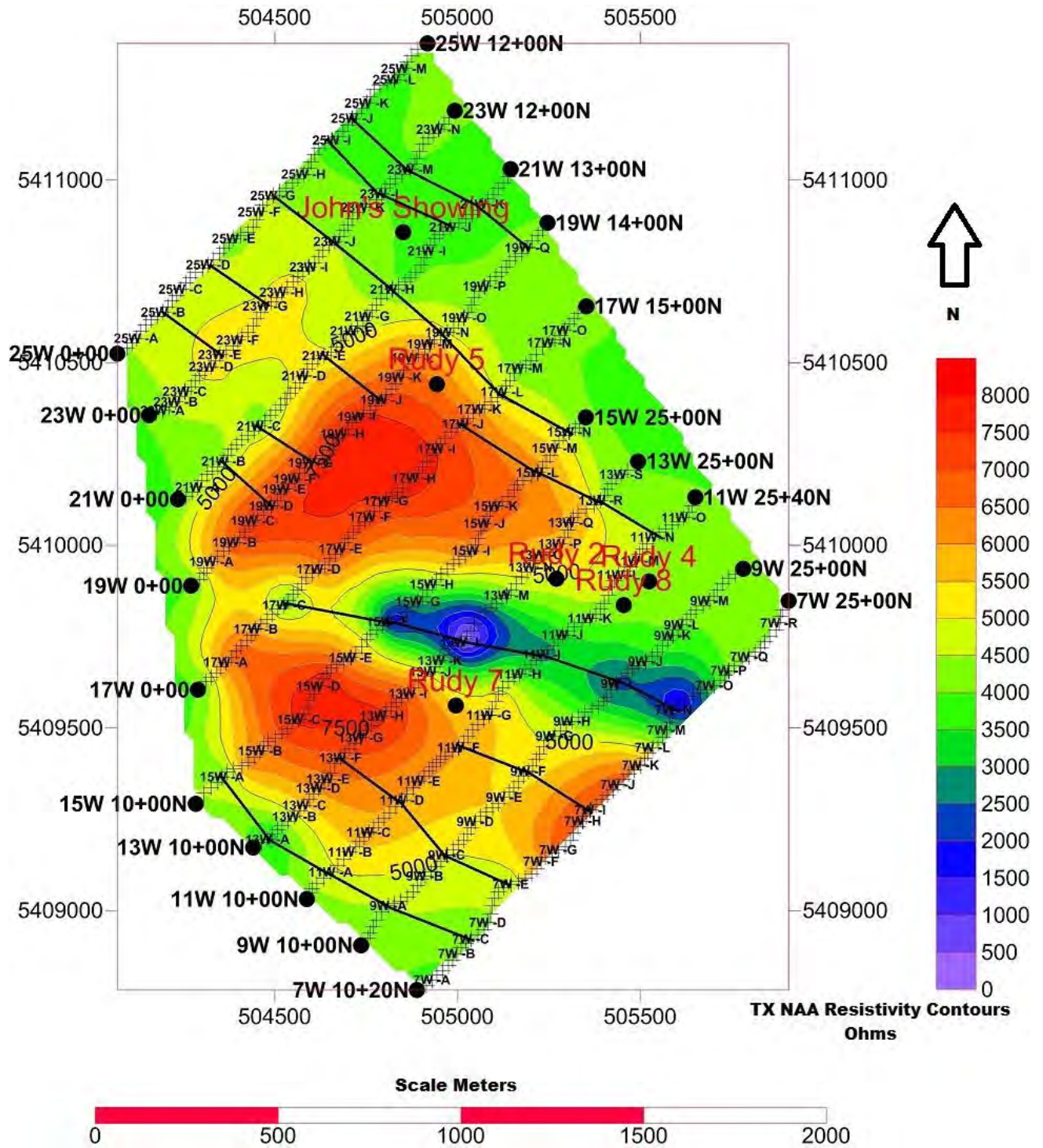
Map 4 TX NAA In-Phase Fraser Contours with Picks & Trends



Map 5 TX NAA Quadrature Fraser Contours with Picks & Trends



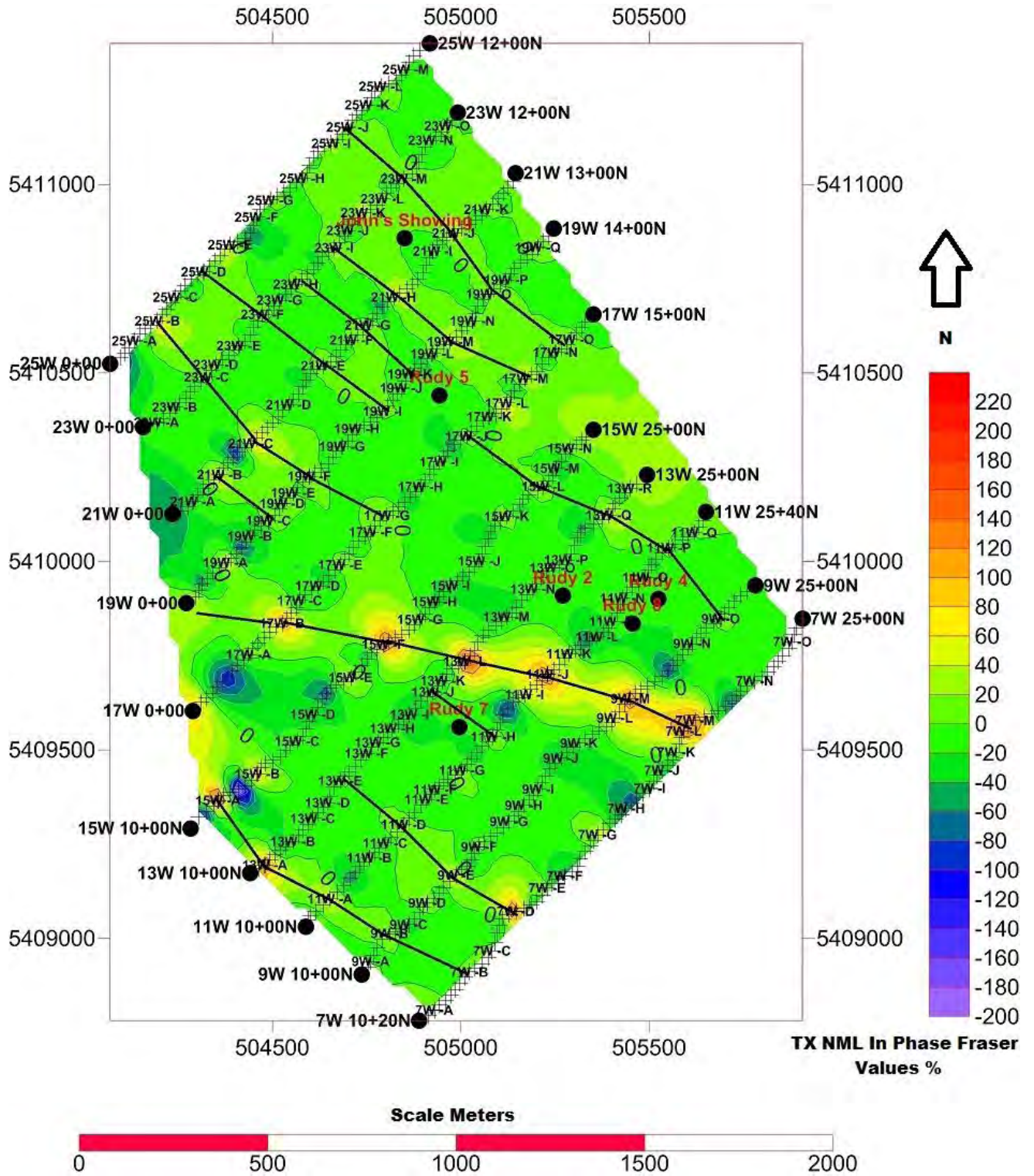
Map 6 TX NAA Resistivity Contours with Picks & Trends



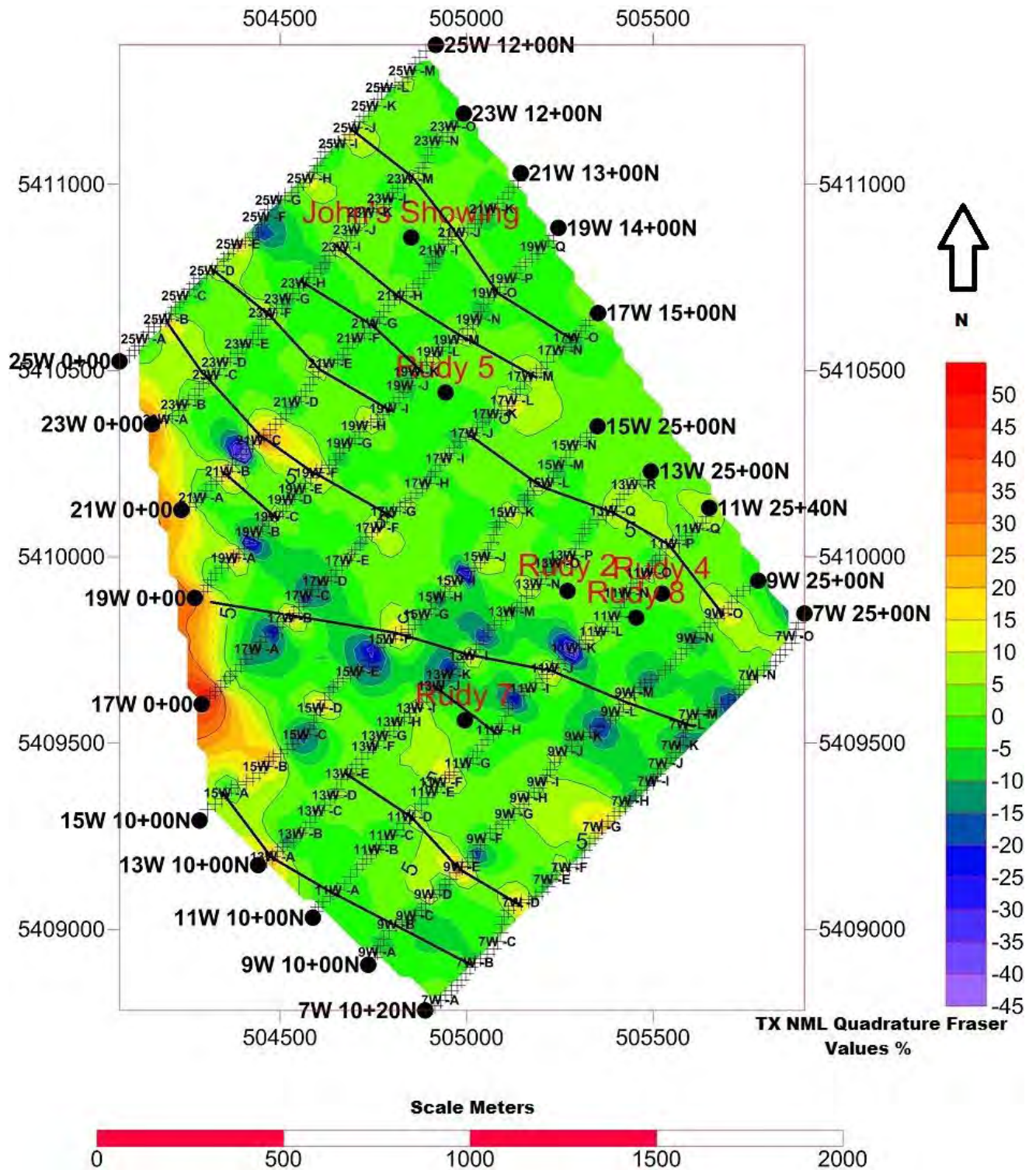
Map 7 Google Image of TX NAA Picks & Trends



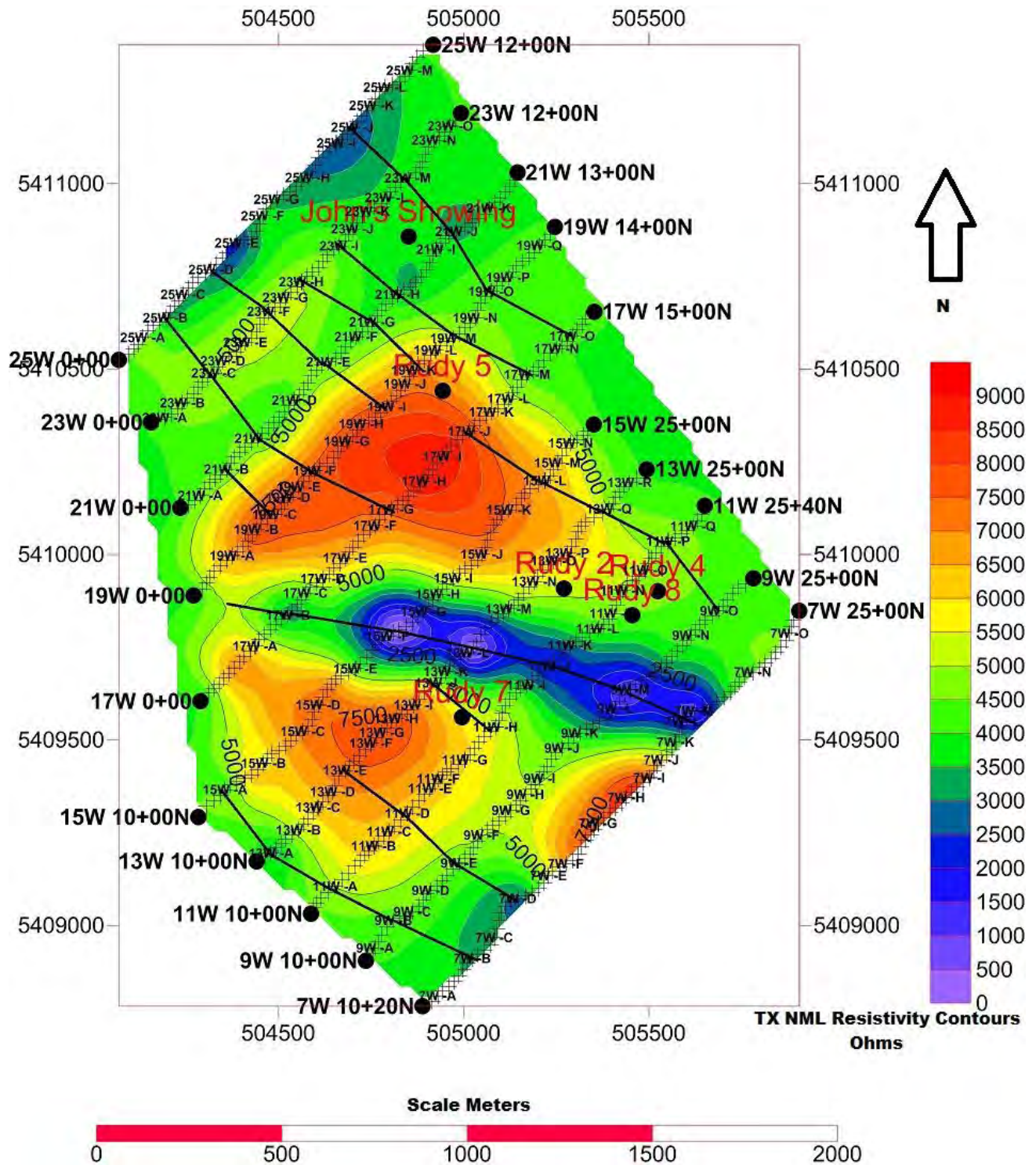
Map 8 TX NML In-Phase Fraser Contours with Picks & Trends



Map 9 TX NML Quadrature Fraser Contours with Picks & Trends



Map 10 TX NML Resistivity Contours with Picks & Trends



Map 11 Google Image of TX NML Picks & Trends



Conclusions

The Ground VLF EM-16 reconnaissance survey was successful in:

- a) Defining a strong VLF conductor across the Rudy Block from Line 7W to Line 17W.
TX NAA Trend 4 (7W-N, 9W-I, 11W-I, 13W-L, 15W-F, 17W-C)
TX NML Trend 3 (7W-L, 9W-M, 11W-J, 13W-L, 15W-F, 17W-B)
- b) Defining a weak trend on strike of Rudy 5 to the south.
TX NAA Trend 9 (9W-M, 11W-N, 13W-R, 15W-L, 17W-J)
TX NML Trend 8 (9W-O, 11W-P, 13W-Q, 15W-L, 17W-J)
- c) Defining a weak trend on strike of Rudy 5 to the north.
TX NAA Trend 12 (21W-G, 23W-I)
TX NML Trend 9 (19W-K, 21W-G, 23W-H)
- d) Defining a resistivity low across the Rudy Block from Line 7W to Line 17W.
TX NAA Trend 4 (7W-N, 9W-I, 11W-I, 13W-L, 15W-F, 17W-C)
TX NML Trend 3 (7W-L, 9W-M, 11W-J, 13W-L, 15W-F, 17W-B)
- e) The VLF anomaly on 23W (NAA-K) (NML-K) at 8+20N with associated rust might be the north extension of the John Showing.
- f) The VLF Identified the Creek showing on Line 25N (NAA-I) (NML-I).
- g) Several rusty outcrops and quartz veins associated with VLF conductors were found during the survey. (See table below as well as Model Profiles included in the Appendices at the end of this report)

Table 2 Quartz Veins and Rusty Outcrop Discoveries

Line Number	Station	Easterly	Northerly	Type
7W	14+80N	505218	5409112	Rust
9W	17+80N	505249	5409469	Quartz
9W	20+80N	505476	5409667	Quartz
9W	23+80N	505697	5409853	Rust
11W	17+60N	505107	5409595	Rust/Old Sample.
11W	19+40N	505255	5409717	Rust
11W	20+40N	505319	5409779	Quartz
11W	21+20N	505384	5409820	Rust
11W	24+50N	505607	5410074	Rust
13W	15+20N	504798	5409538	Rust
13W	17+60N	504973	5409717	Rust
13W	18+00N	505004	5409731	Limonite Vein
13W	25+00N	505498	5410231	Quartz Rust
17W	7+40N	504824	5410135	Quartz
17W	12+80N	505182	5410491	Old Sample
19W	2+00N	504426	5410046	Quartz
19W	6+60N	504751	5410351	Old Sample 997009
19W	11+40N	505069	5410711	Old Sample
21W	7+00N	504752	5410613	Quartz
23W	6+80N	504651	5410833	Quartz
23W	8+20N	504768	5410939	Rust
23W	10+60N	504907	5411100	Rust/Quartz
25W	7+00N	504588	5411023	Quartz
25W	8+20N	504658	5411114	Creek Showing

Recommendations

- a) Ground follow-up of VLF conductors with associated new discoveries of Quartz and Rust as found in Table 2
- b) Run 100 meter fill in lines (8W, 10W, 12W, 14W, 16W & 18W) to cover the strong VLF conductive trend that has associated rust in order to better define the NAA and NML trend between Lines 7W to Line 17W.
 - TX NAA Trend 4 (7W-N, 9W-I, 11W-I, 13W-L, 15W-F, 17W-C)
 - TX NML Trend 3 (7W-L, 9W-M, 11W-J, 13W-L, 15W-F, 17W-B)
- c) Run fill in lines in the areas near the best showings on the Rudy Block. Only line 25W crossed over the Creek showing.
- d) Extend the VLF grid to the south of line 7W to follow the strong VLF conductor Trend 4 South/Easterly.
- e) Extend VLF grid lines 11W, 13W, 15W, 17W, 19W & 21W to the south in order to follow trend 4 North/Westerly.
- f) Drill into the Strong VLF conductor with associated rust on line 13W (NAA-L) (NML-L) using the following parameters:
 - Collar Setup: Line 13W, Station 17+20N, UTM 504946/5409676
 - Azimuth: 44
 - Inclination: 45
 - Length: 150 M

List of References

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Monteiro Santos, F.A; 2013: VLF2DMF V5.1 A program for 2D inversion

Certificate of Qualifications

I, Shaun Parent, P. Geo (LTD.) residing at 282 B Whispering Pines Road, Batchawana Bay, Ontario do certify that:

1. I am a consulting Geoscientist with Superior Exploration, Adventure & Climbing Co. Ltd.
2. I graduated with a Geological Technician Diploma from Sir Sandford Fleming College in 1986.
3. I graduated with a BSc. from the University of Toronto in 1986.
4. I am a member in good standing with the Association of Professional Geoscientists of Ontario #1955 and a member of the Prospectors and Developers Association of Canada.
5. I have been employed continuously as a Geoscientist for the past 31 years since my graduation from University.
6. The nature of my involvement with this project was to carry out the VLF Survey and the interpretation of the VLF data using the EMTOMO VLF2DMF Software of which I assisted in developing with Dr. Fernando Santos of Lisbon, Portugal.

Dated this 4th day of October 2017

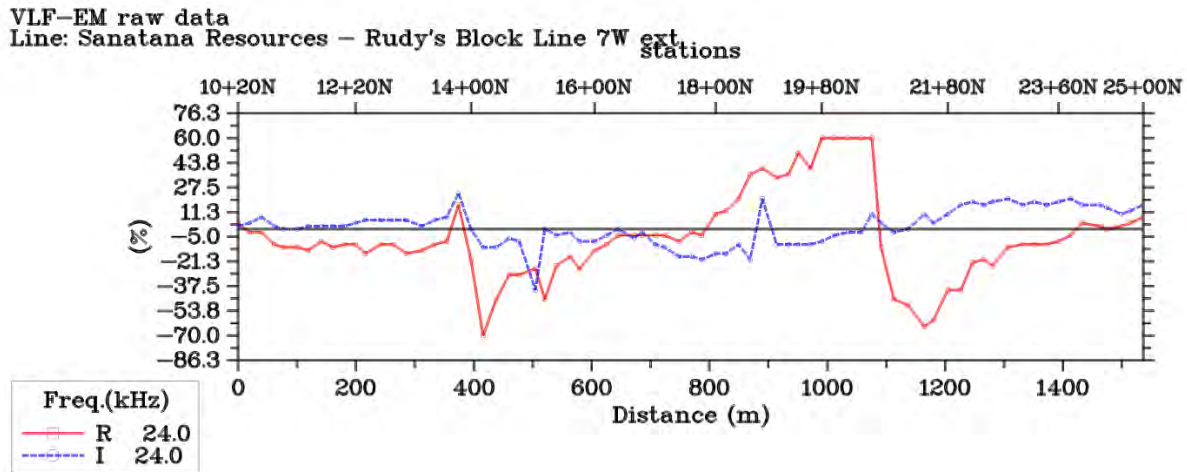


Shaun Parent, Dipl-Geo, BSc. P. Geo (Limited)

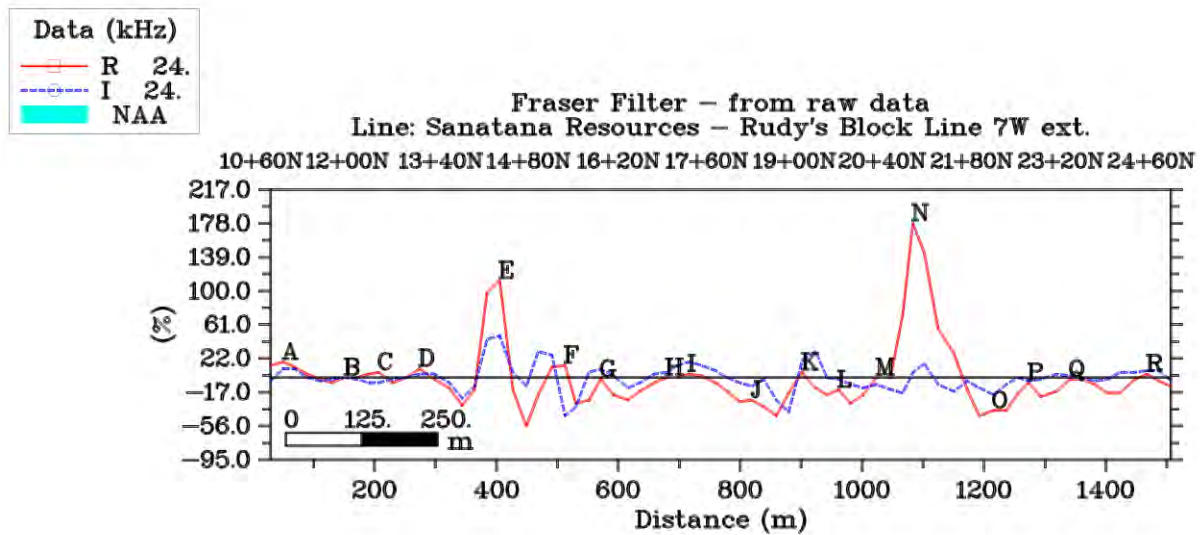
APPENDIX A

TX NAA Figures

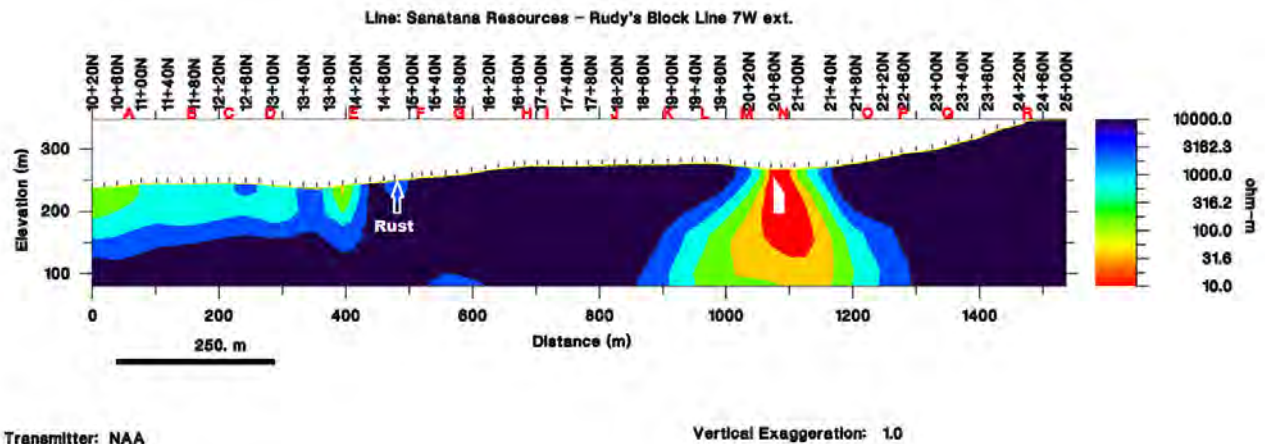
Line 7W NAA Figure 1 Raw Data Profile



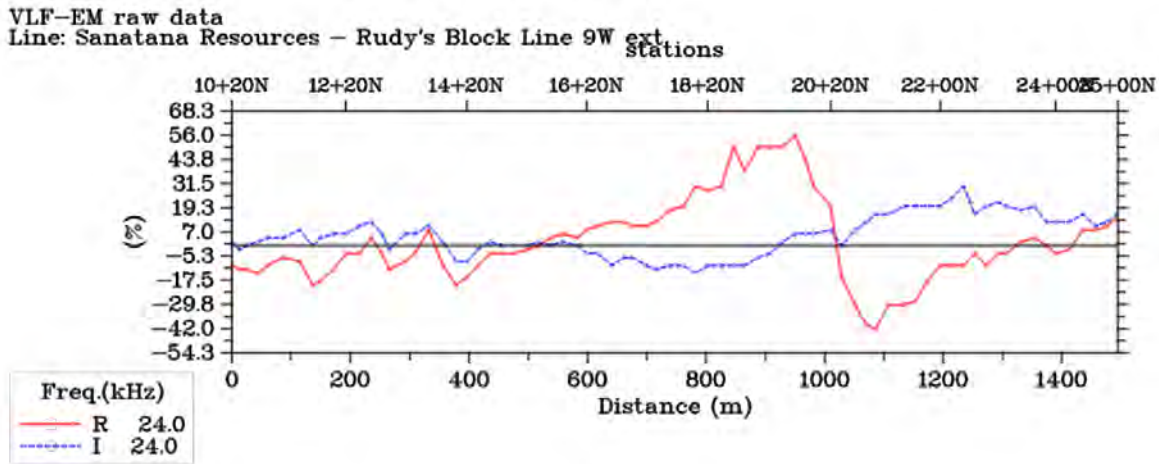
Line 7W NAA Figure 2 Fraser Filter Profile with Fraser Picks



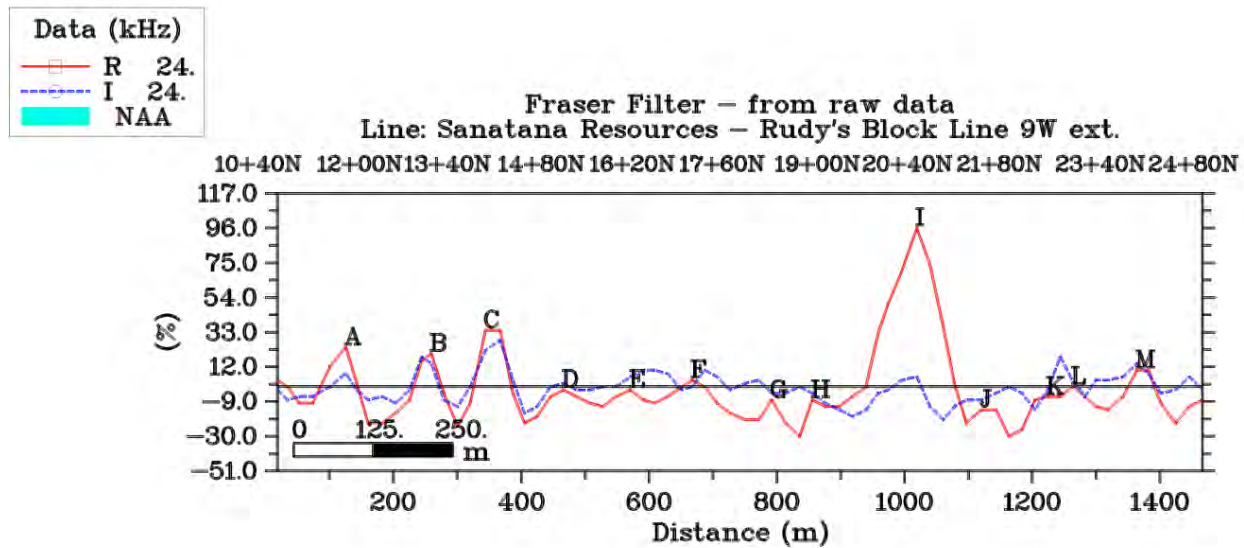
Line 7W NAA Figure 3 Model 4000 Ohm with Fraser Picks



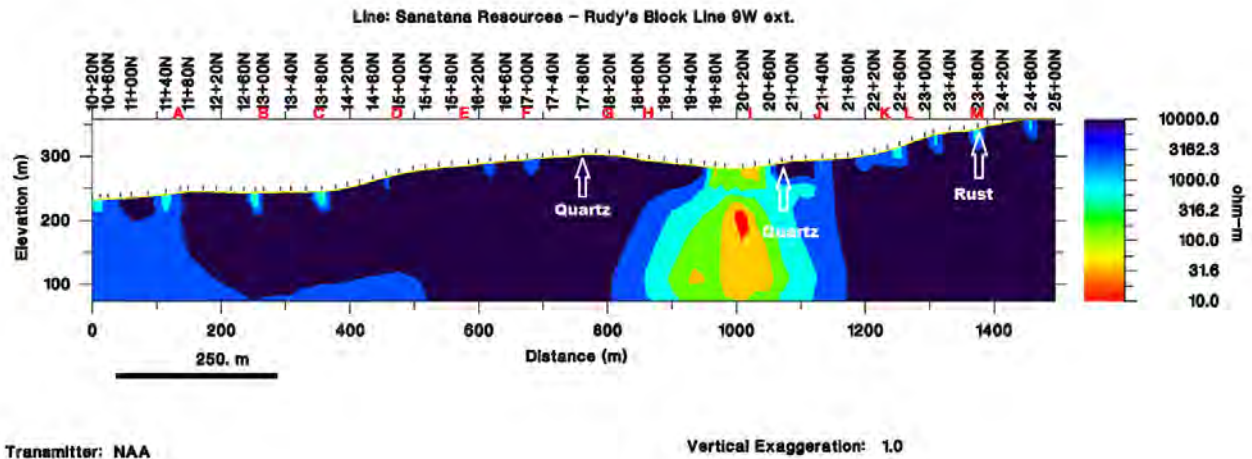
Line 9W NAA Figure 1 Raw Data Profile



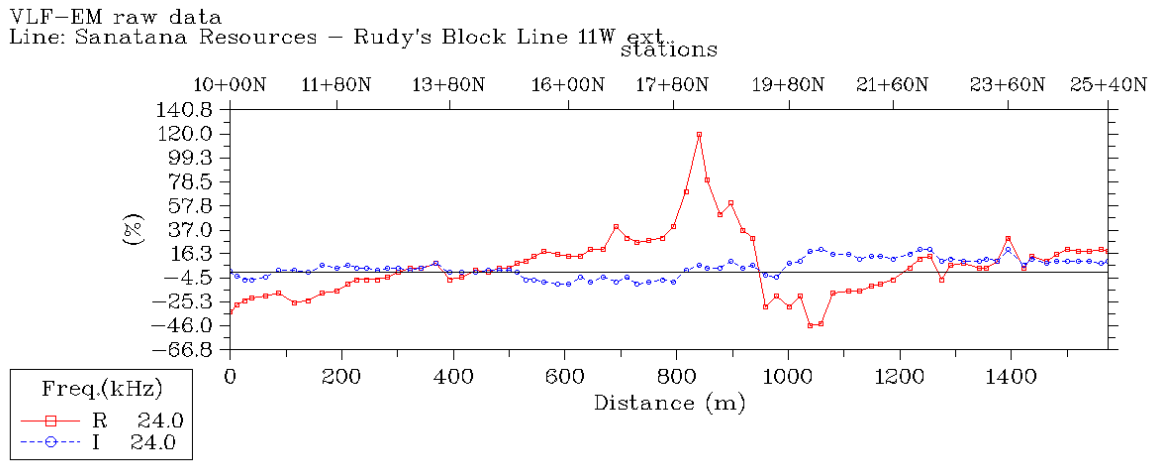
Line 9W NAA Figure 2 Fraser Filter Profile with Fraser Picks



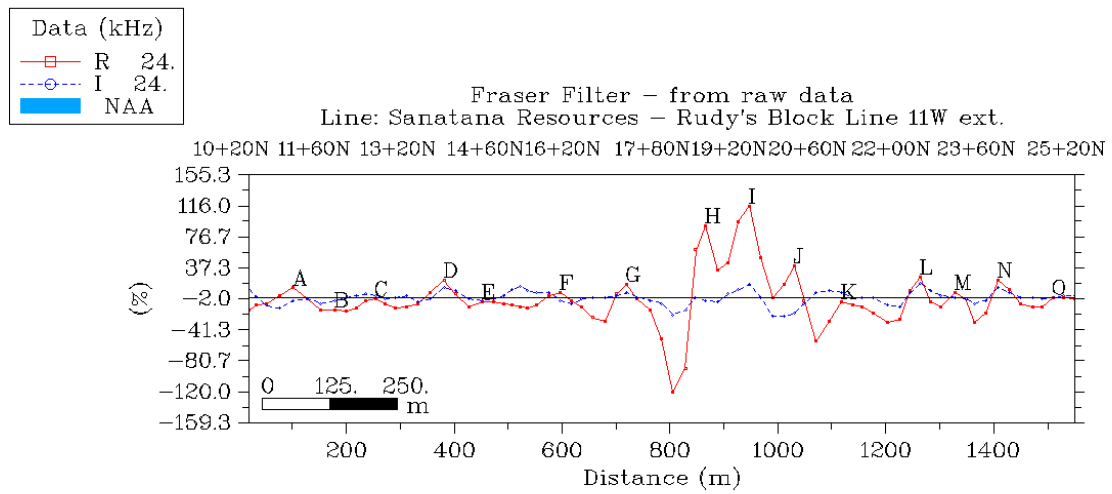
Line 9W NAA Figure 3 Model 4000 Ohm with Fraser Picks



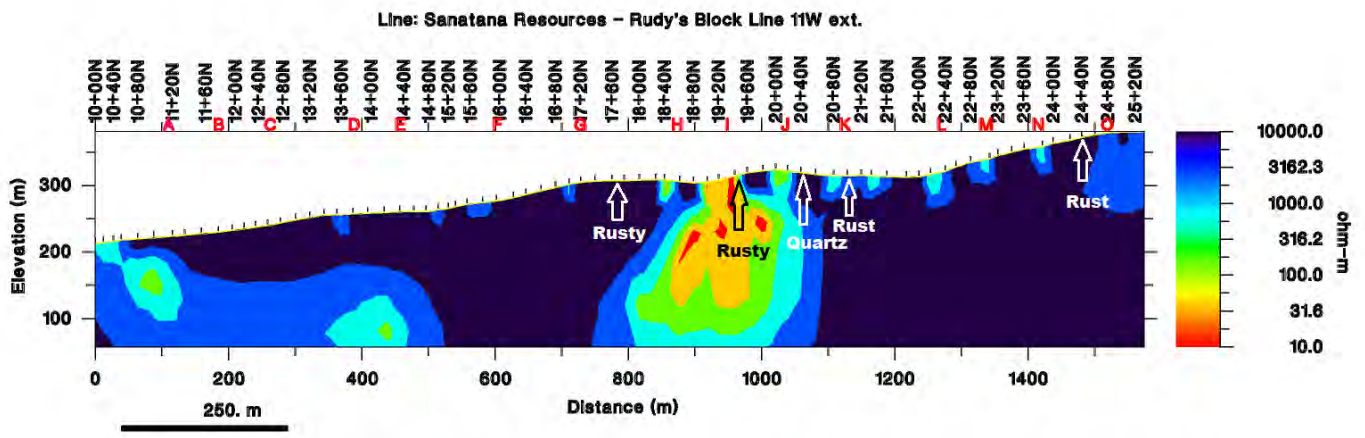
Line 11W NAA Figure 1 Raw Data Profile



Line 11W NAA Figure 2 Fraser Filter Profile with Fraser Picks



Line 11W NAA Figure 3 Model 4000 Ohm with Fraser Picks

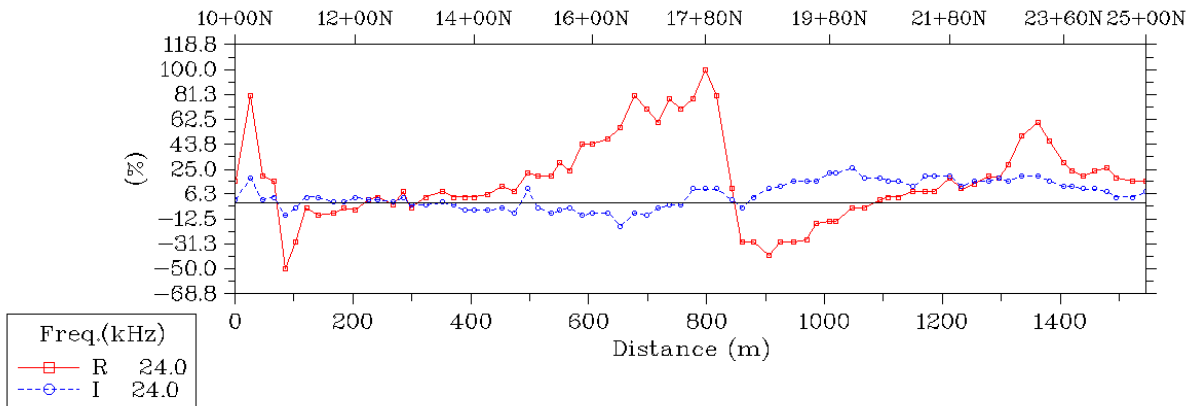


Transmitter: NAA

Vertical Exaggeration: 1.0

Line 13W NAA Figure 1 Raw Data Profile

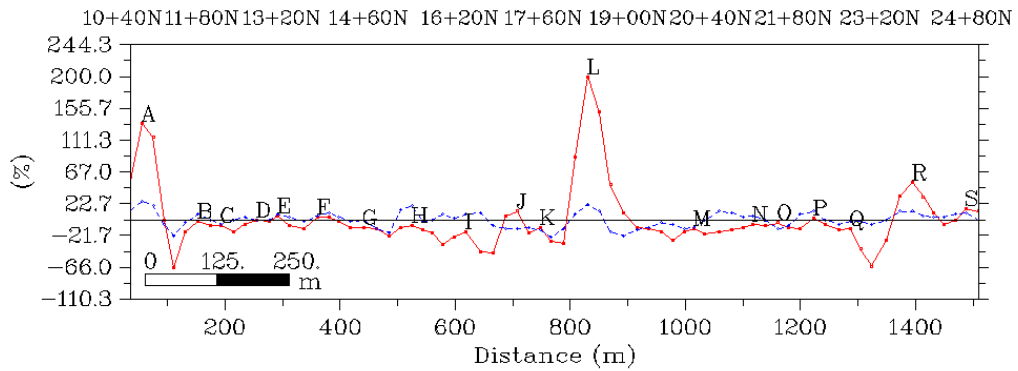
VLF-EM raw data
Line: Sanatana Resources – Rudy's Block Line 13W ext. stations



Line 13W NAA Figure 2 Fraser Filter Profile with Fraser Picks

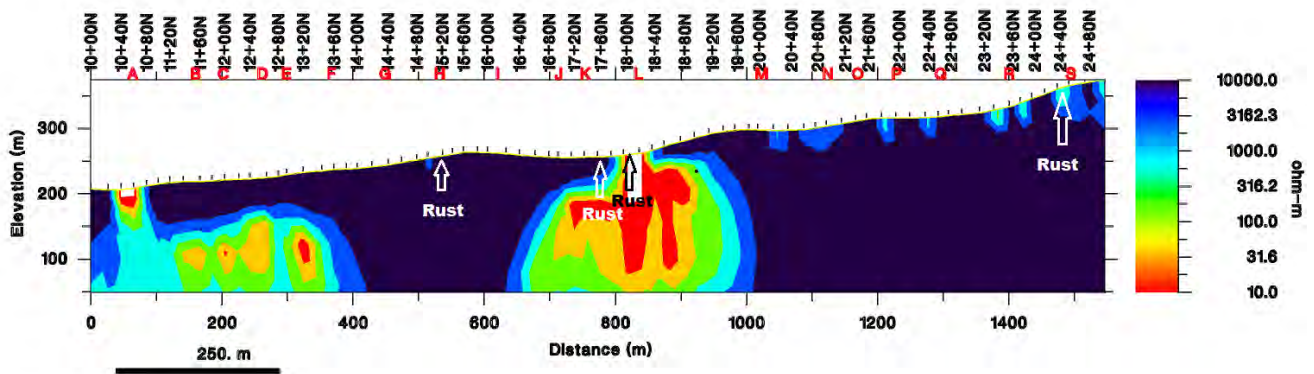
Data (kHz)
 R 24.
 I 24.
 NAA

Fraser Filter – from raw data
Line: Sanatana Resources – Rudy's Block Line 13W ext.



Line 13W NAA Figure 3 Model 4000 Ohm with Fraser Picks

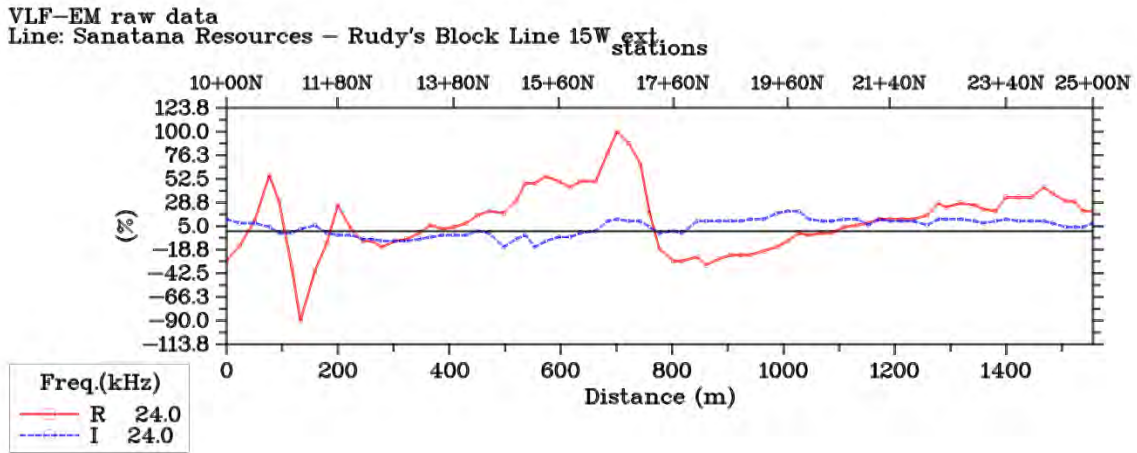
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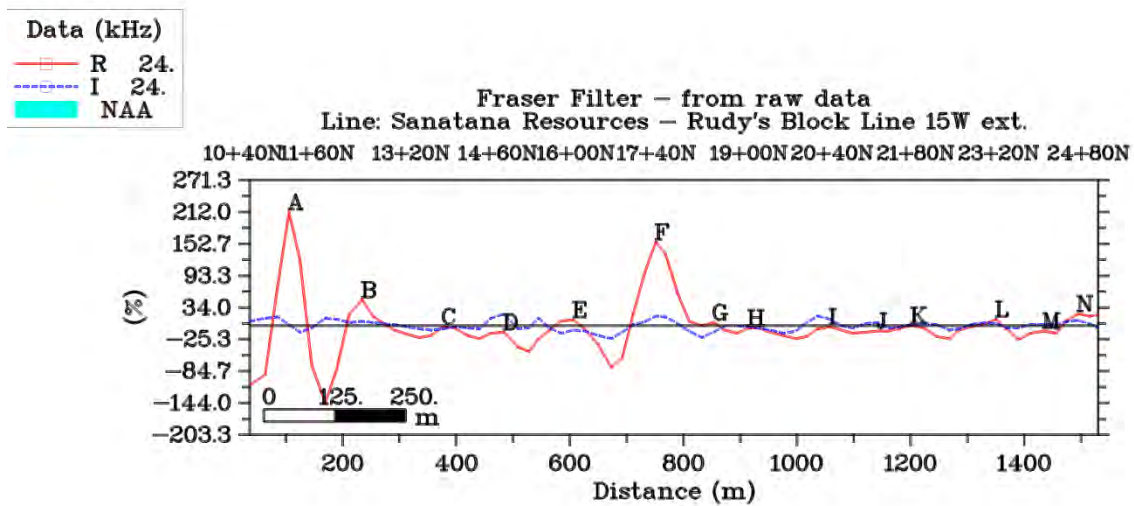
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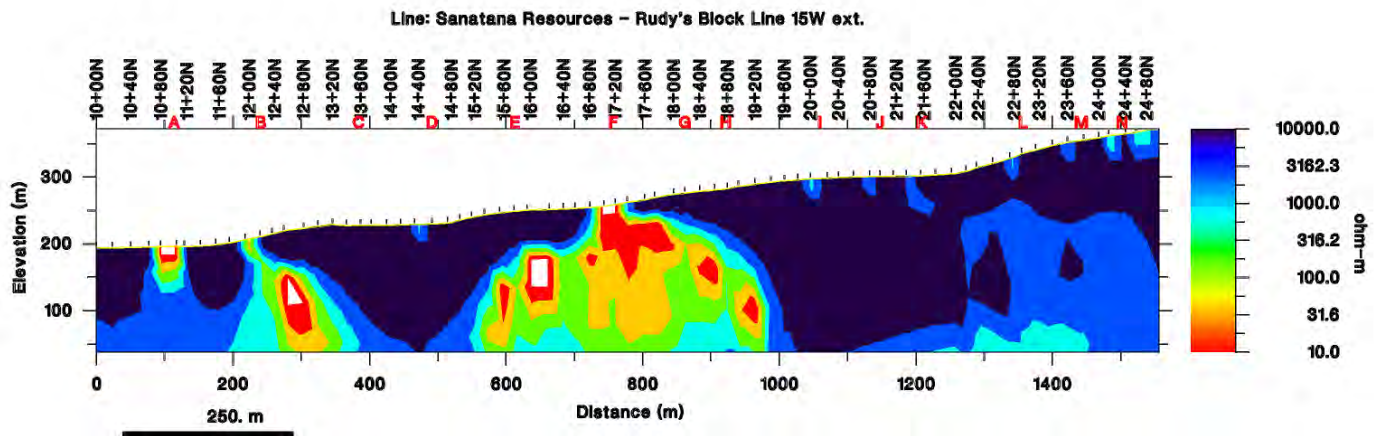
Line 15W NAA Figure 1 Raw Data Profile



Line 15W NAA Figure 2 Fraser Filter Profile with Fraser Picks



Line 15W NAA Figure 3 Model 4000 Ohm with Fraser Picks



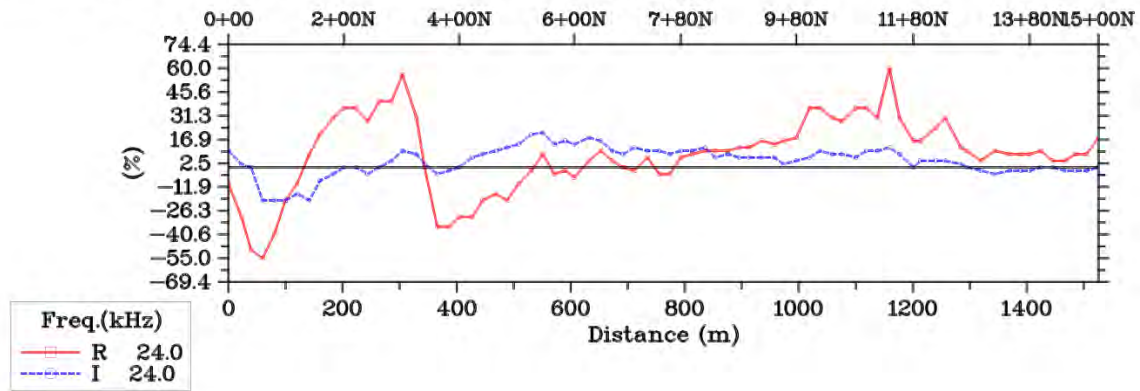
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Vertical Exaggeration: 1.0

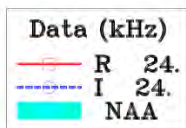
Line 17W NAA Figure 1 Raw Data Profile

VLF-EM raw data

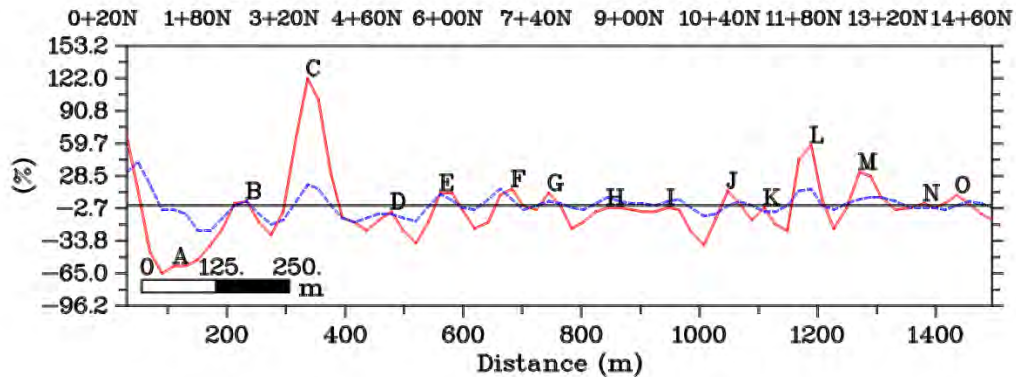
Line: Sanatana Resources – Rudy's Block Line 17W stations



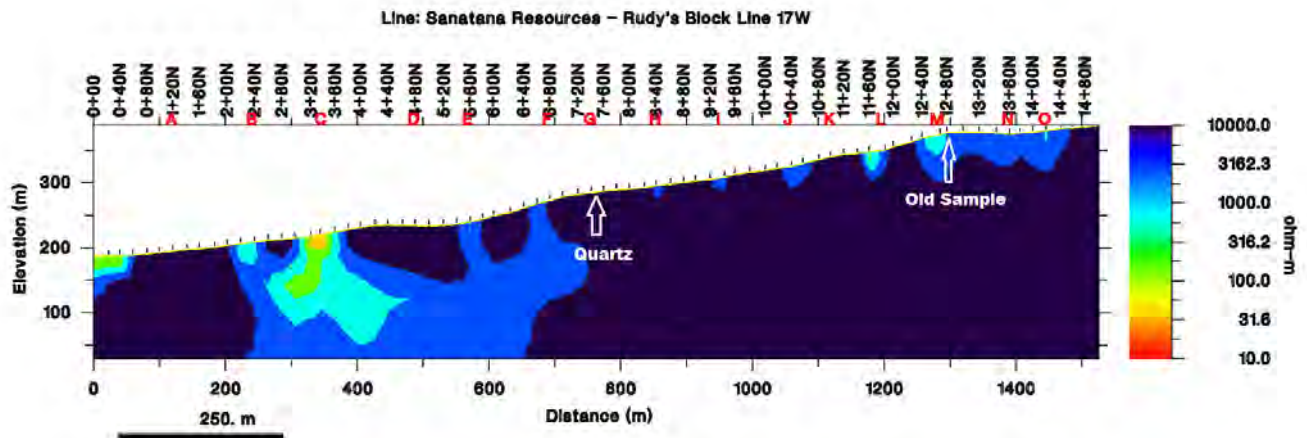
Line 17W NAA Figure 2 Fraser Filter Profile with Fraser Picks



Fraser Filter – from raw data
 Line: Sanatana Resources – Rudy's Block Line 17W



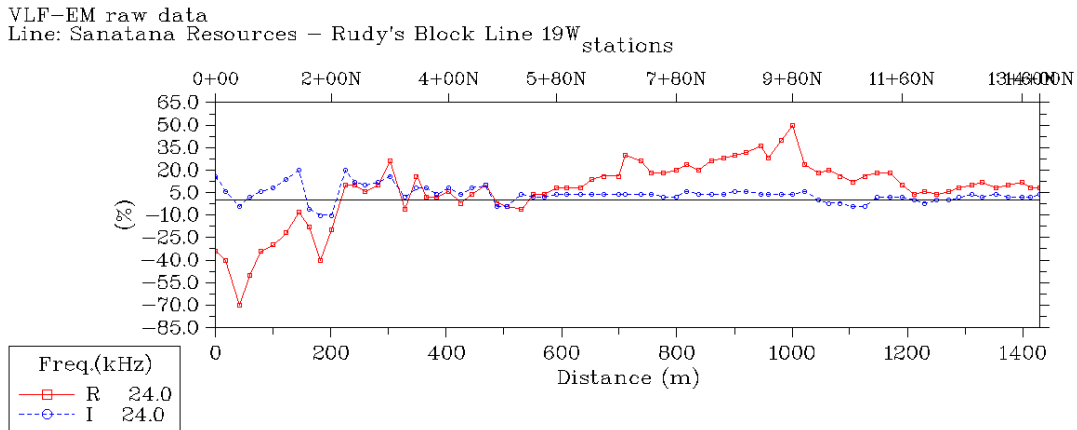
Line 17W NAA Figure 3 Model 4000 Ohm with Fraser Picks



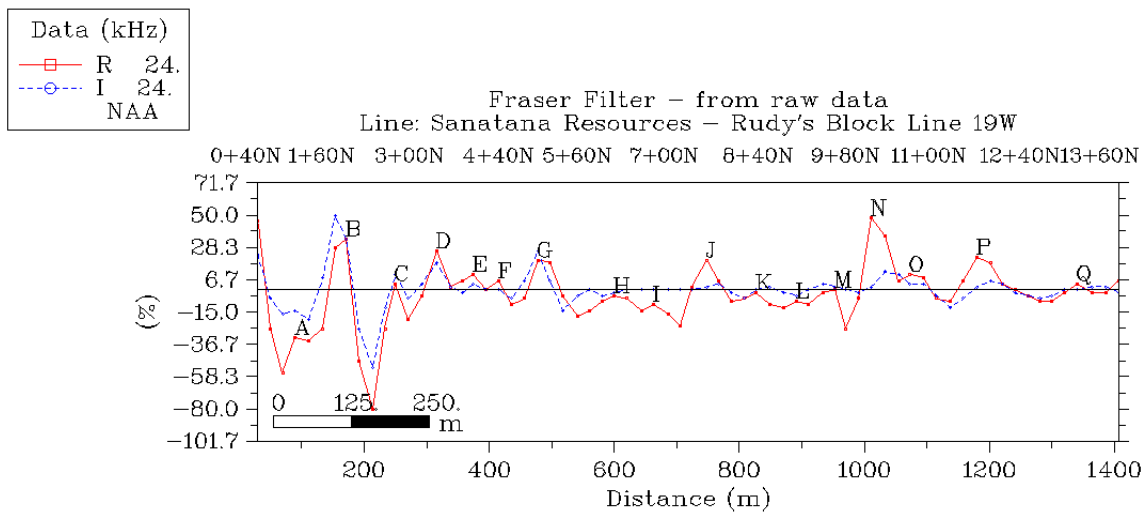
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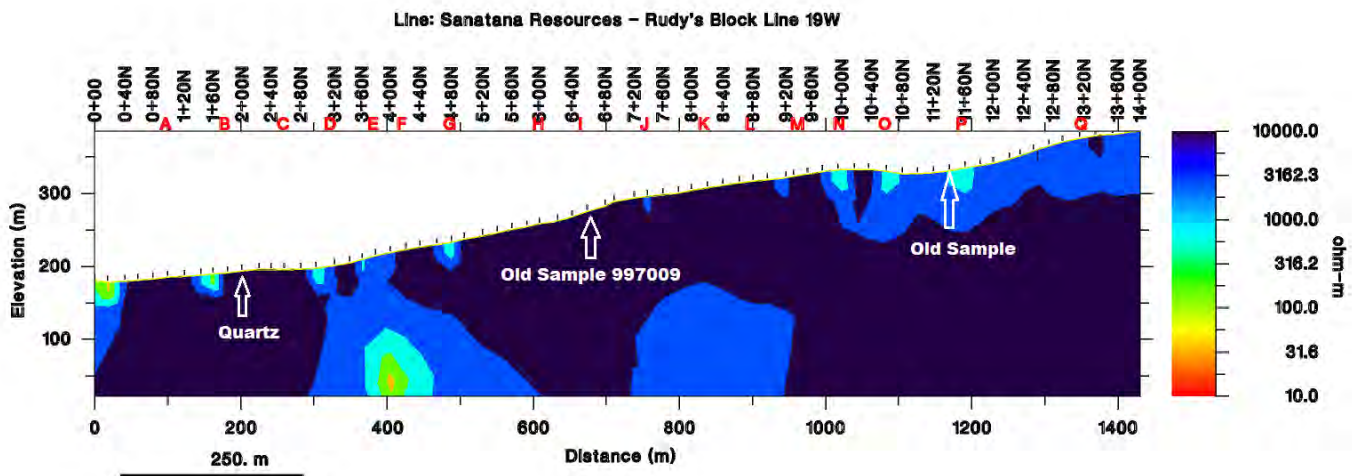
Line 19W NAA Figure 1 Raw Data Profile



Line 19W NAA Figure 2 Fraser Filter Profile with Fraser Picks



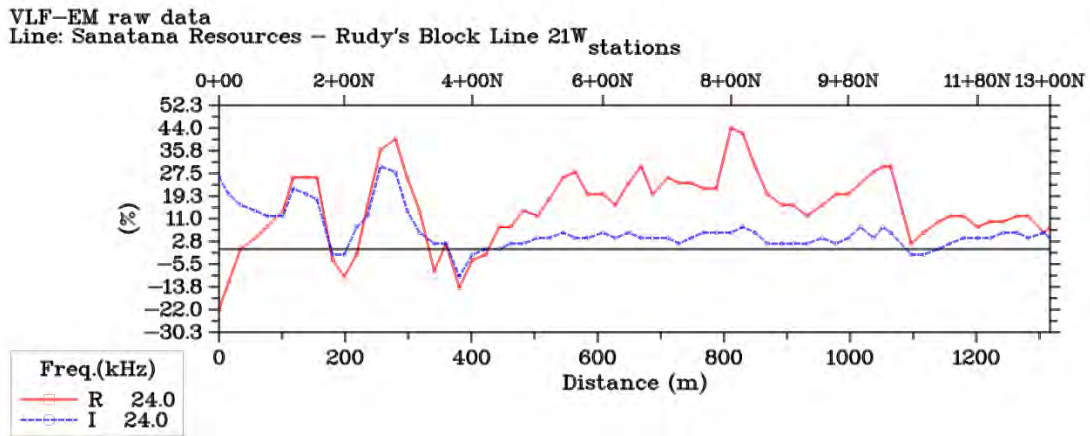
Line 19W NAA Figure 3 Model 4000 Ohm with Fraser Picks



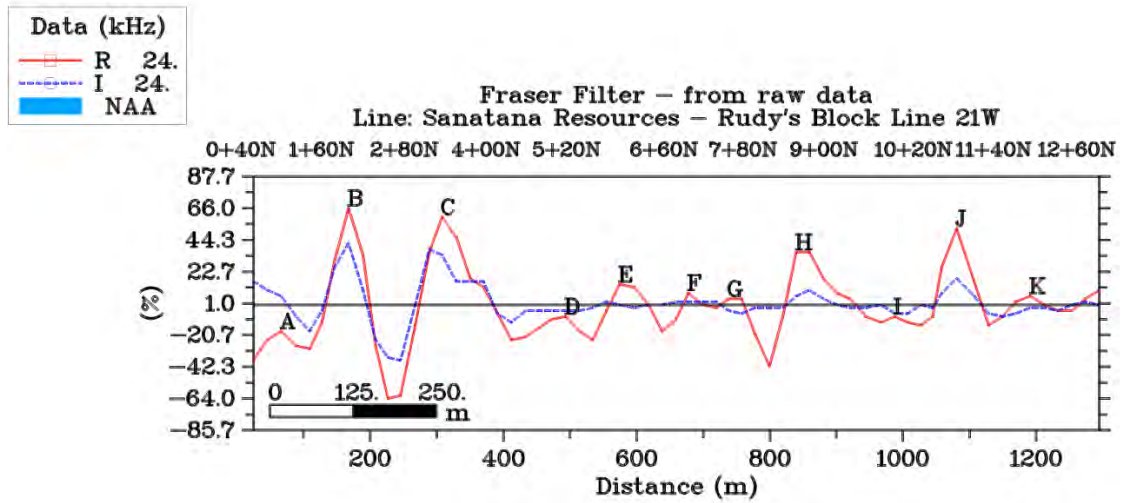
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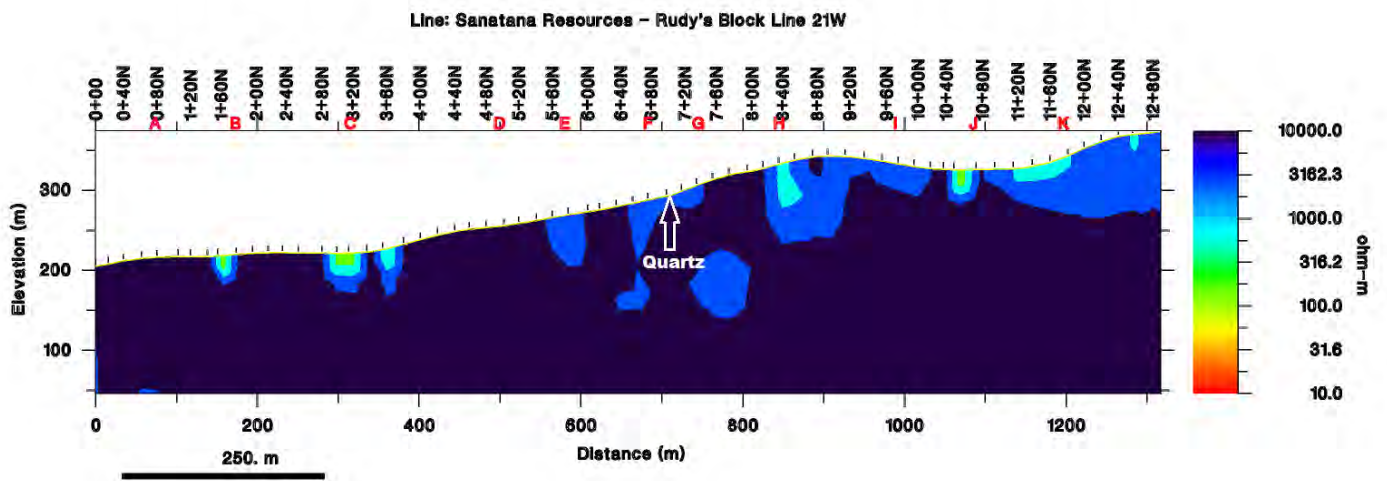
Line 21W NAA Figure 1 Raw Data Profile



Line 21W NAA Figure 2 Fraser Filter Profile with Fraser Picks



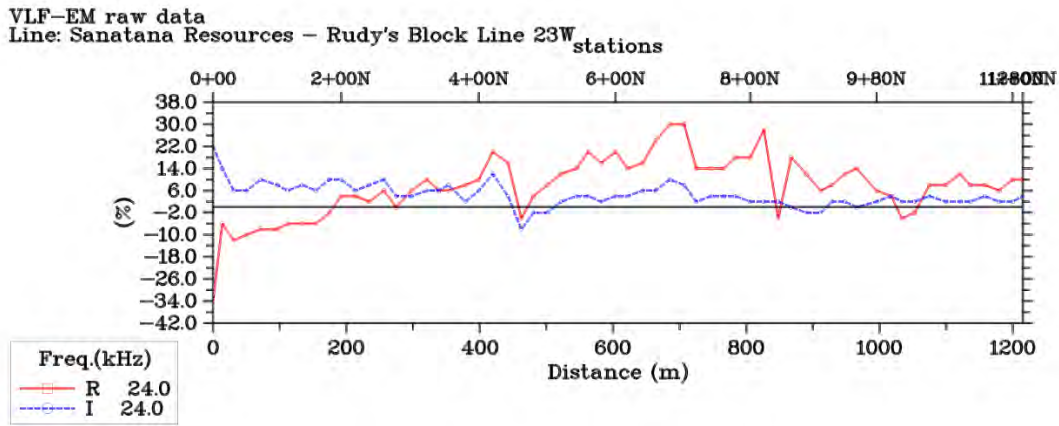
Line 21W NAA Figure 3 Model 4000 Ohm with Fraser Picks



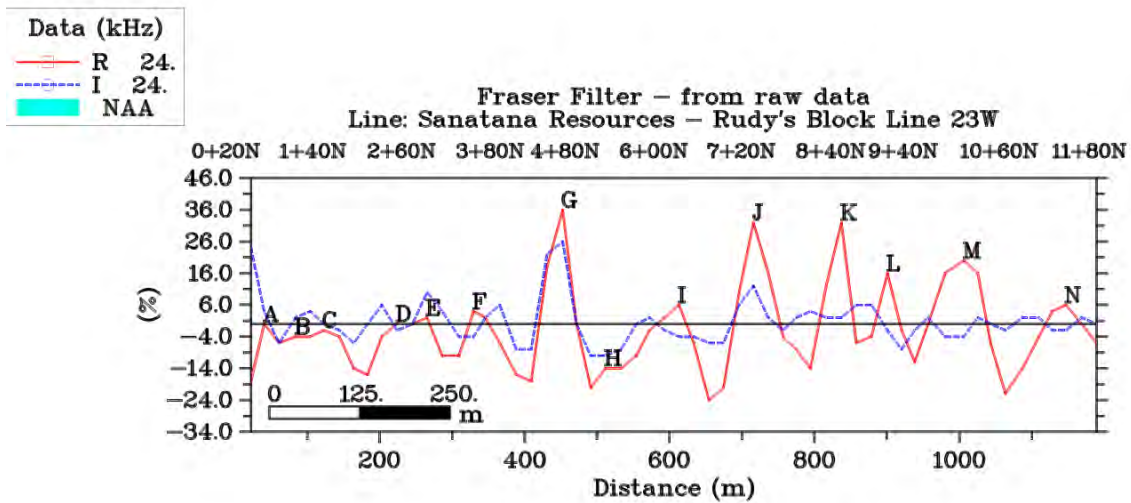
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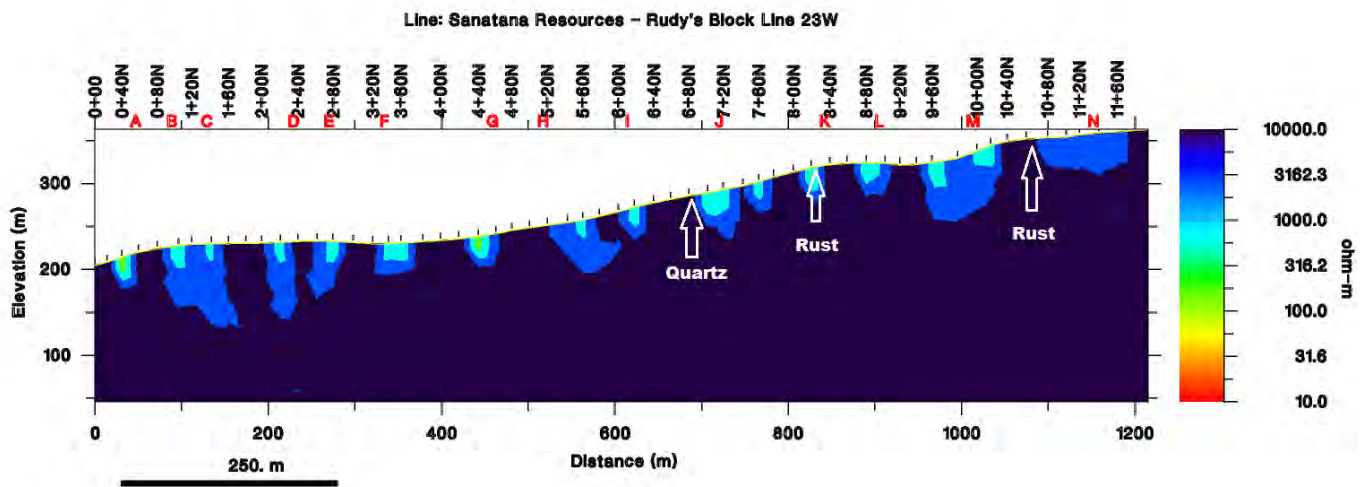
Line 23W NAA Figure 1 Raw Data Profile



Line 23W NAA Figure 2 Fraser Filter Profile with Fraser Picks



Line 23W NAA Figure 3 Model 4000 Ohm with Fraser Picks



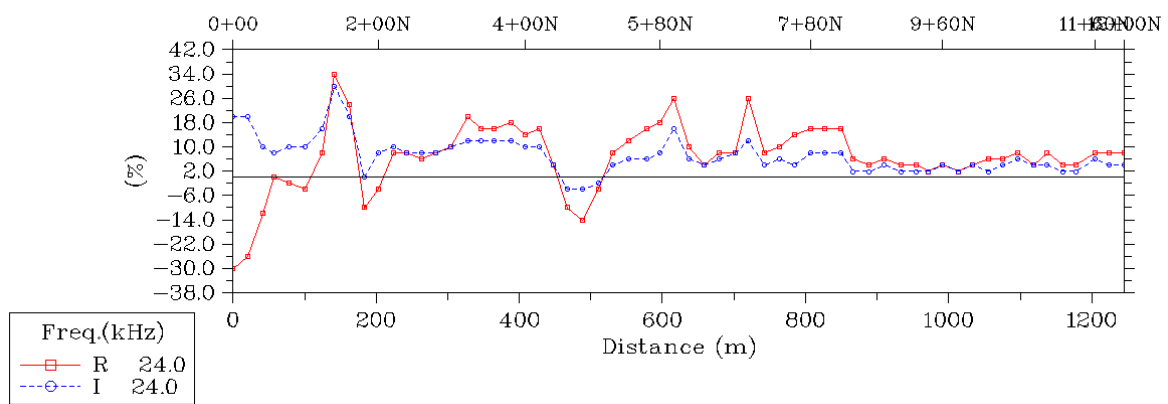
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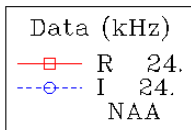
Line 25W NAA Figure 1 Raw Data Profile

VLF-EM raw data

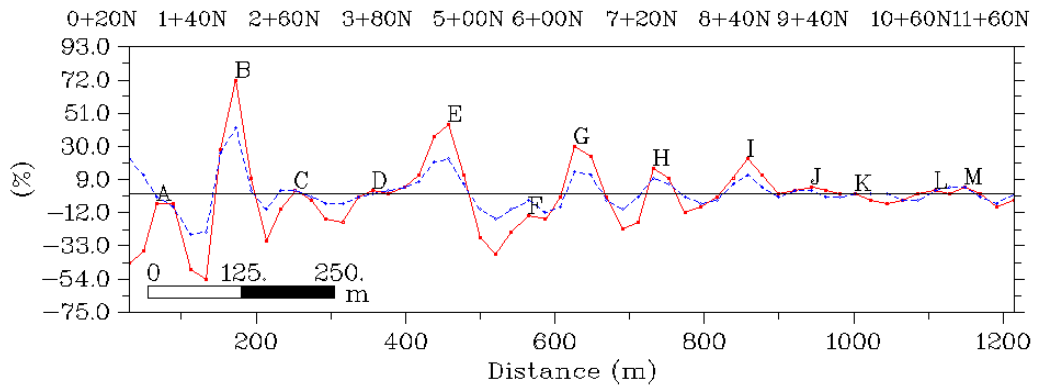
Line: Sanatana Resources - Rudy's Block Line 25W



Line 25W NAA Figure 2 Fraser Filter Profile with Fraser Picks

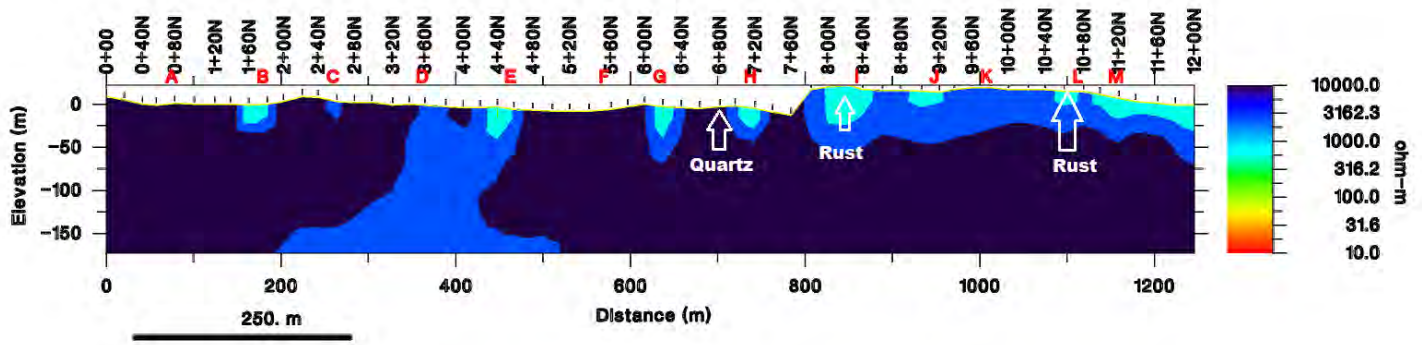


Fraser Filter - from raw data
Line: Sanatana Resources - Rudy's Block Line 25W



Line 25W NAA Figure 3 Model 4000 Ohm with Fraser Picks

Line: Sanatana Resources - Rudy's Block Line 25W



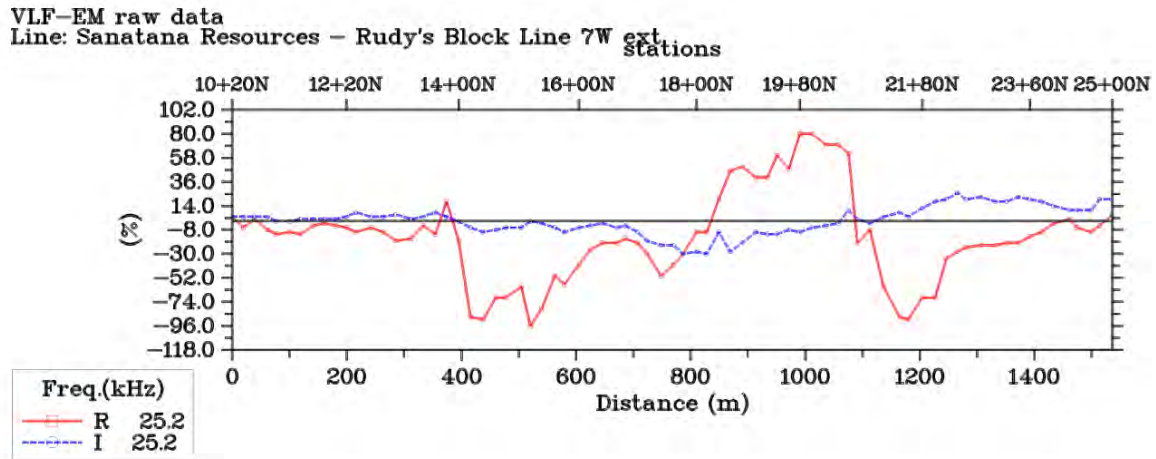
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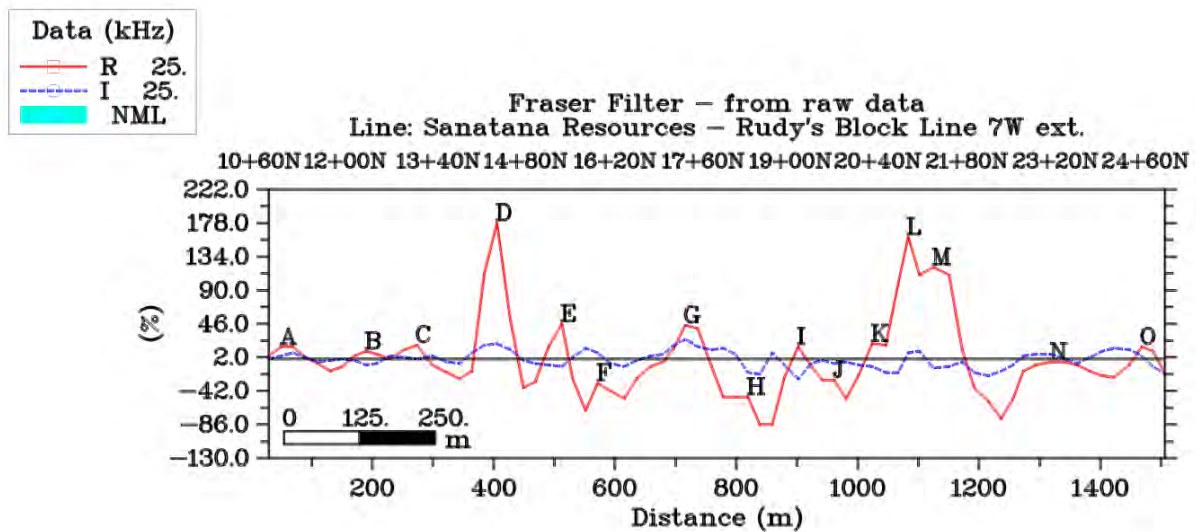
APPENDIX B

TX NML Figures

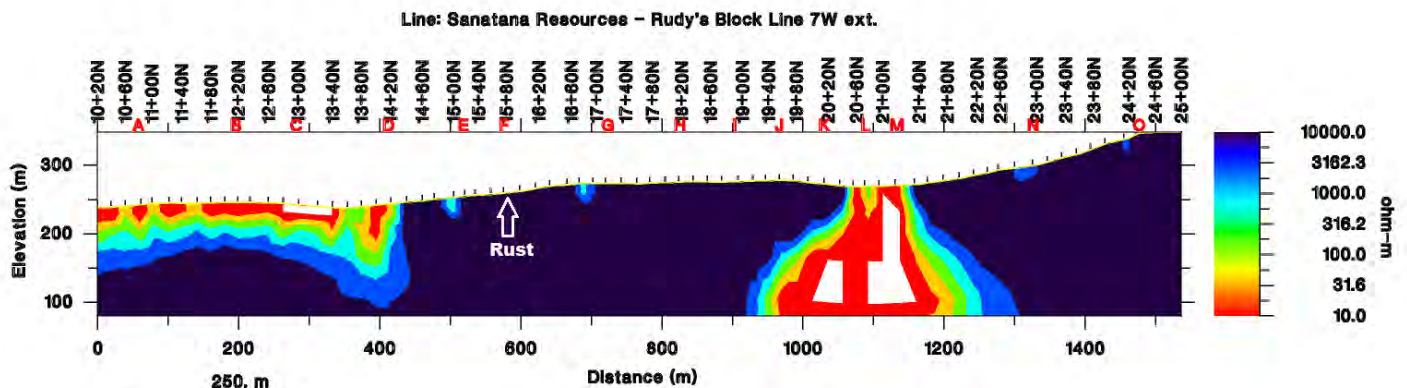
Line 7W NML Figure 1 Raw Data Profile



Line 7W NML Figure 2 Fraser Filter Profile with Fraser Picks



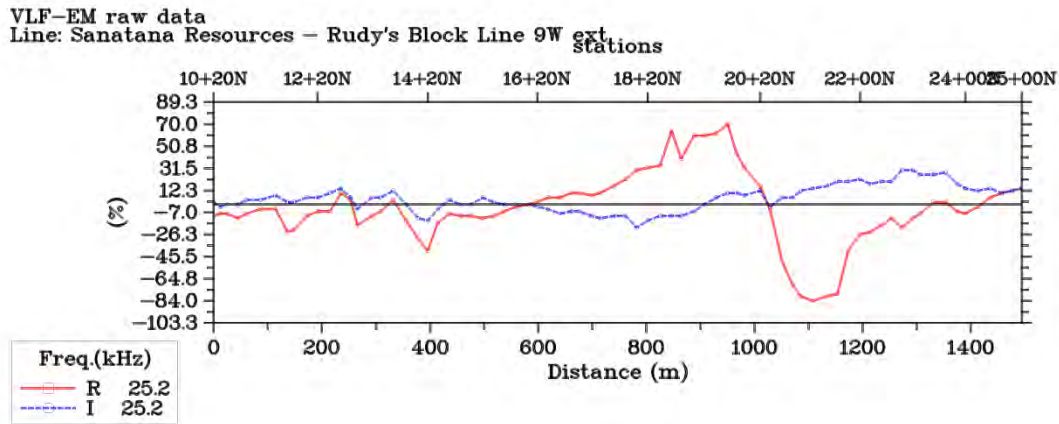
Line 7W NML Figure 3 Model 4000 Ohm with Fraser Picks



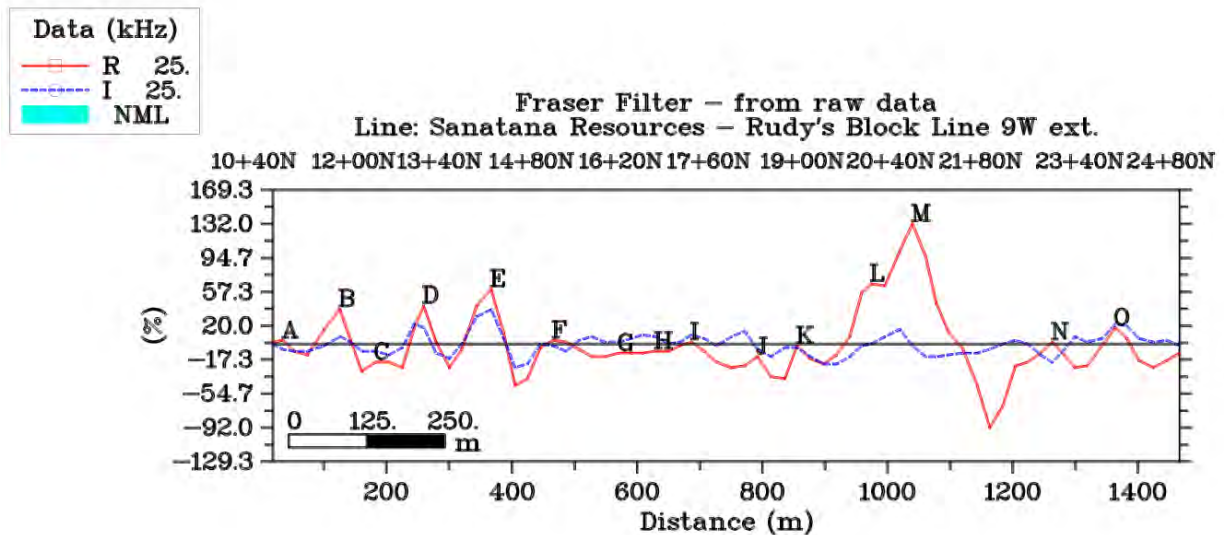
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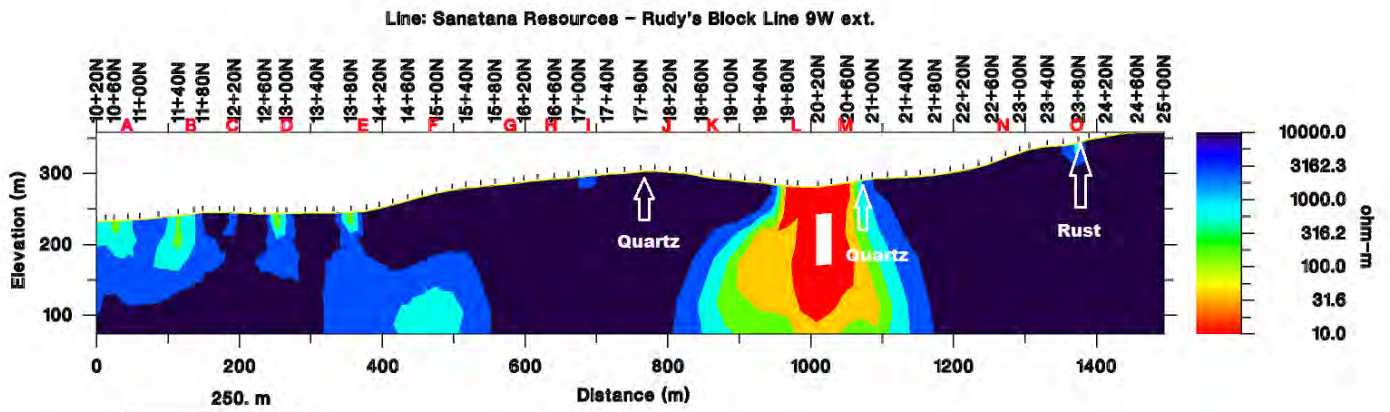
Line 9W NML Figure 1 Raw Data Profile



Line 9W NML Figure 2 Fraser Filter Profile with Fraser Picks



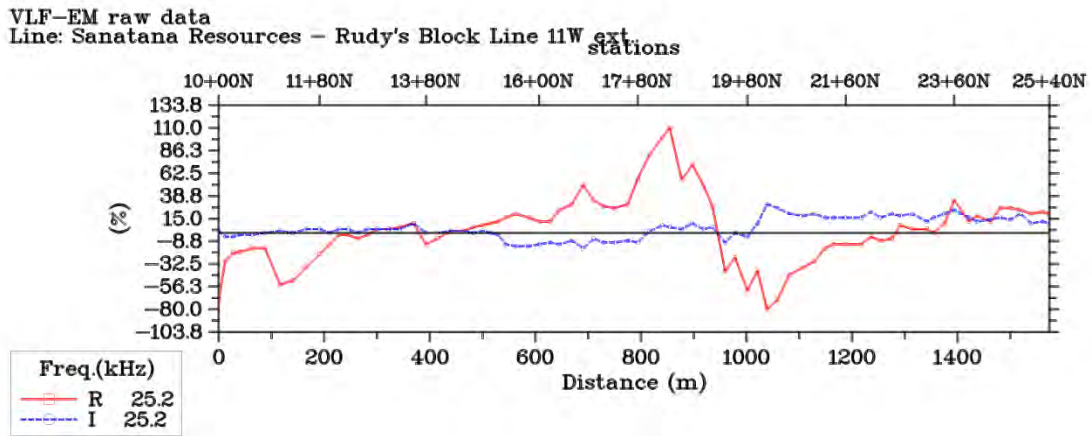
Line 9W NML Figure 3 Model 4000 Ohm with Fraser Picks



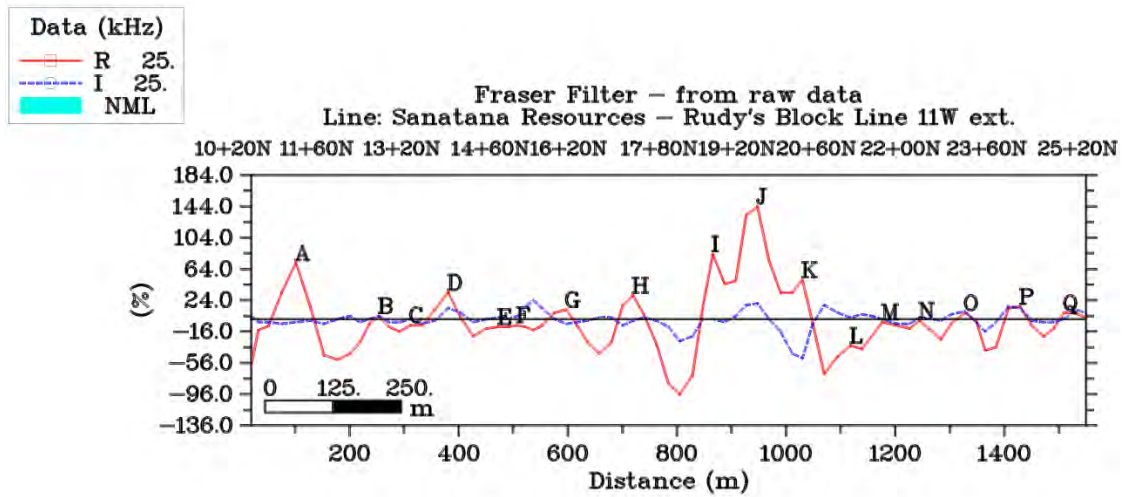
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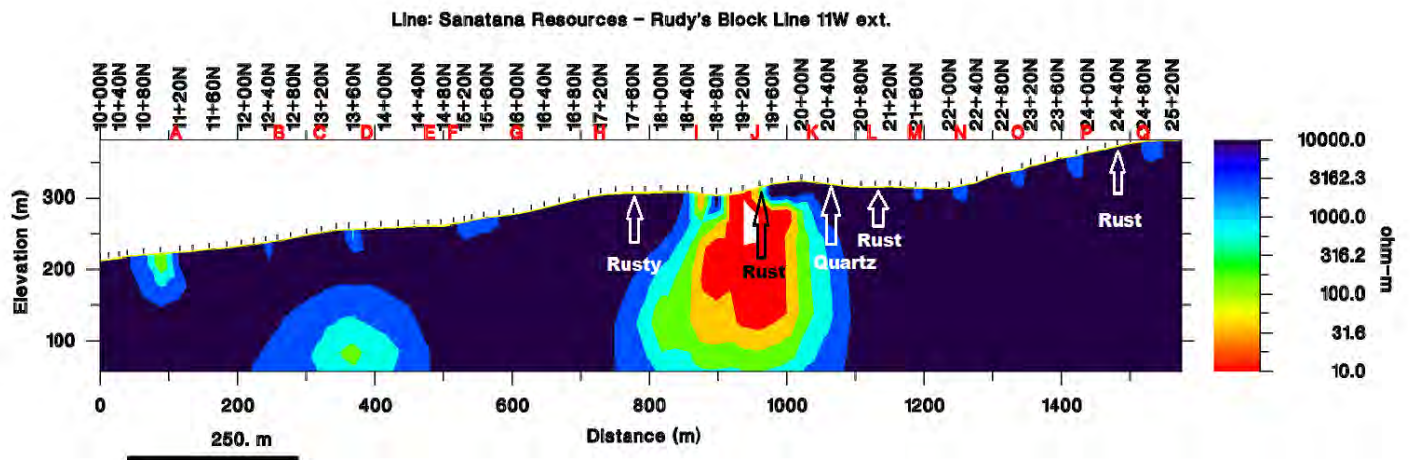
Line 11W NML Figure 1 Raw Data Profile



Line 11W NML Figure 2 Fraser Filter Profile with Fraser Picks



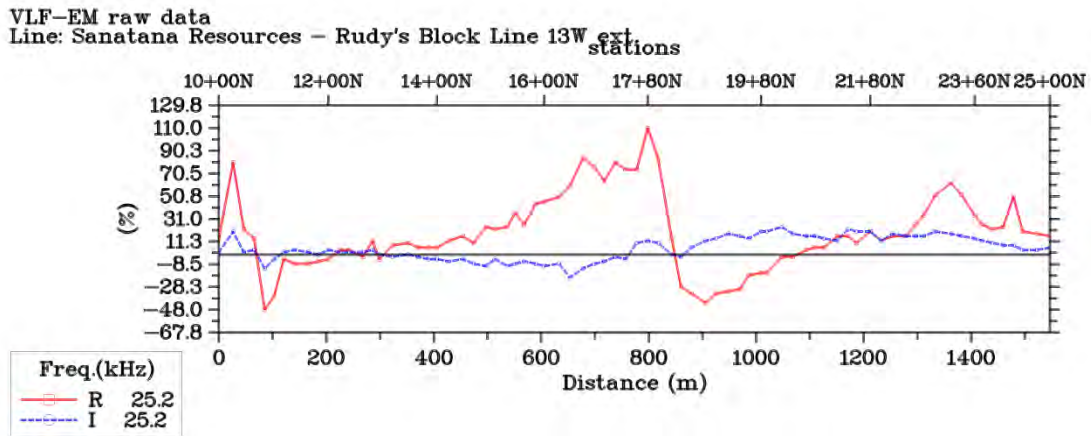
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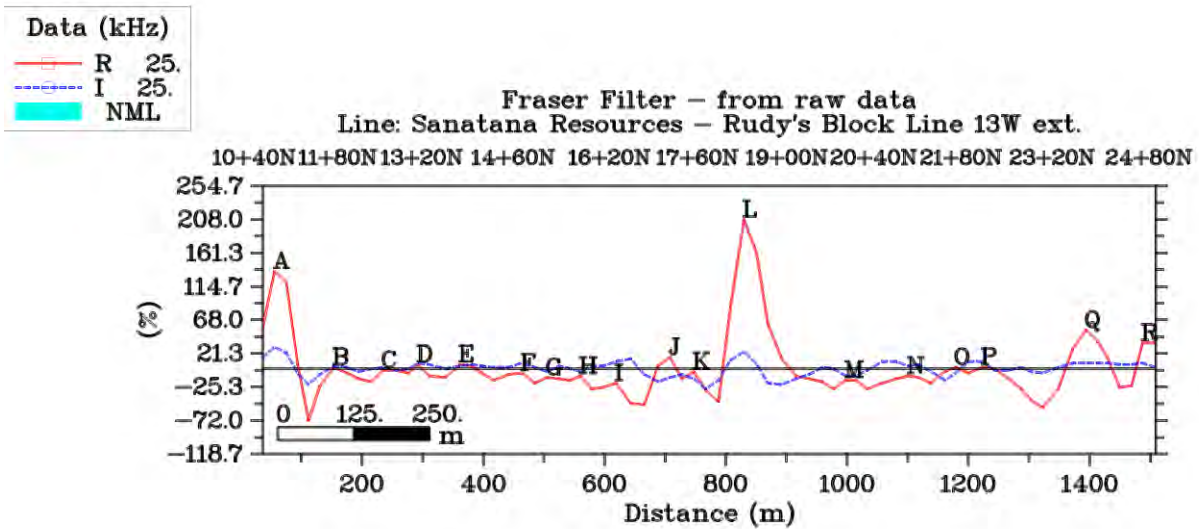
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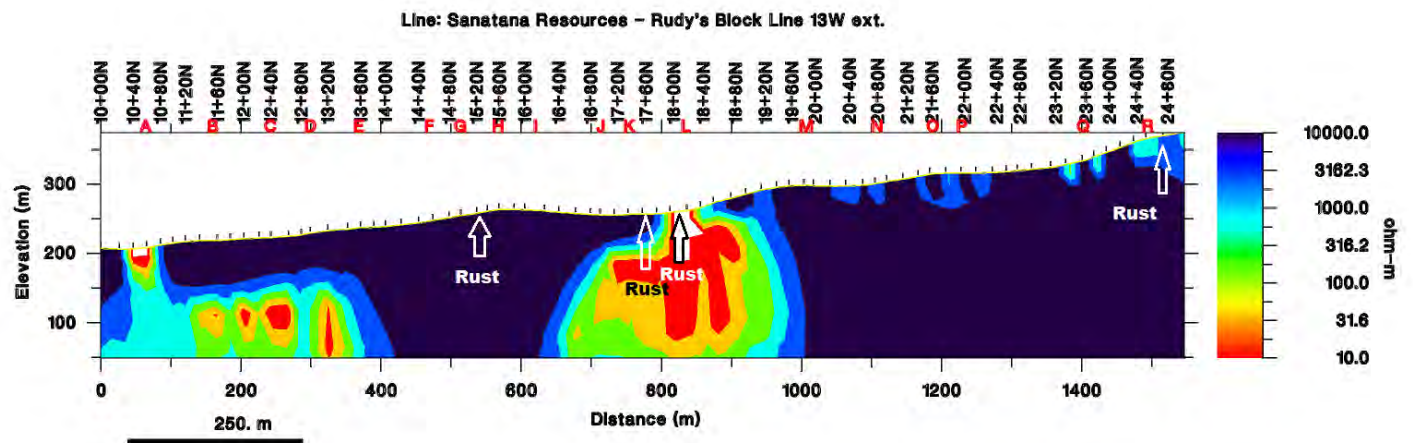
Line 13W NML Figure 1 Raw Data Profile



Line 13W NML Figure 2 Fraser Filter Profile with Fraser Picks



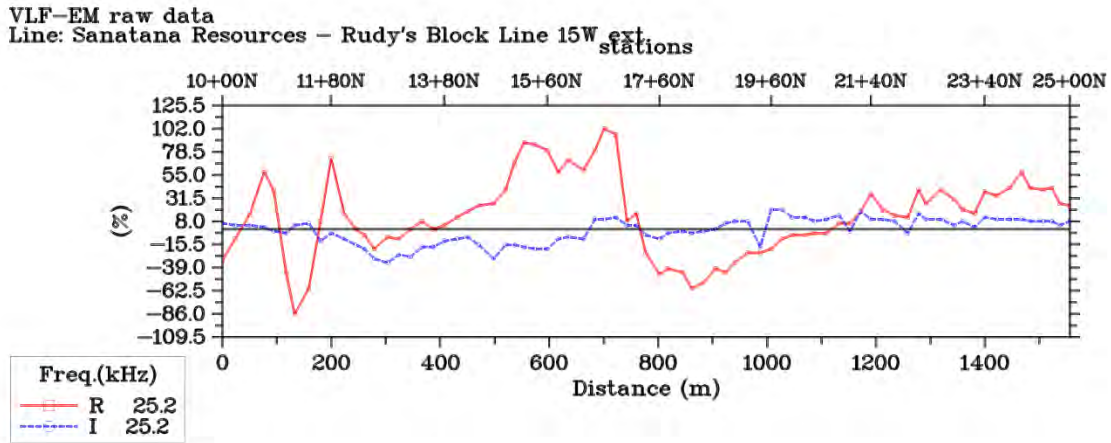
Line 13W NML Figure 3 Model 4000 Ohm with Fraser Picks



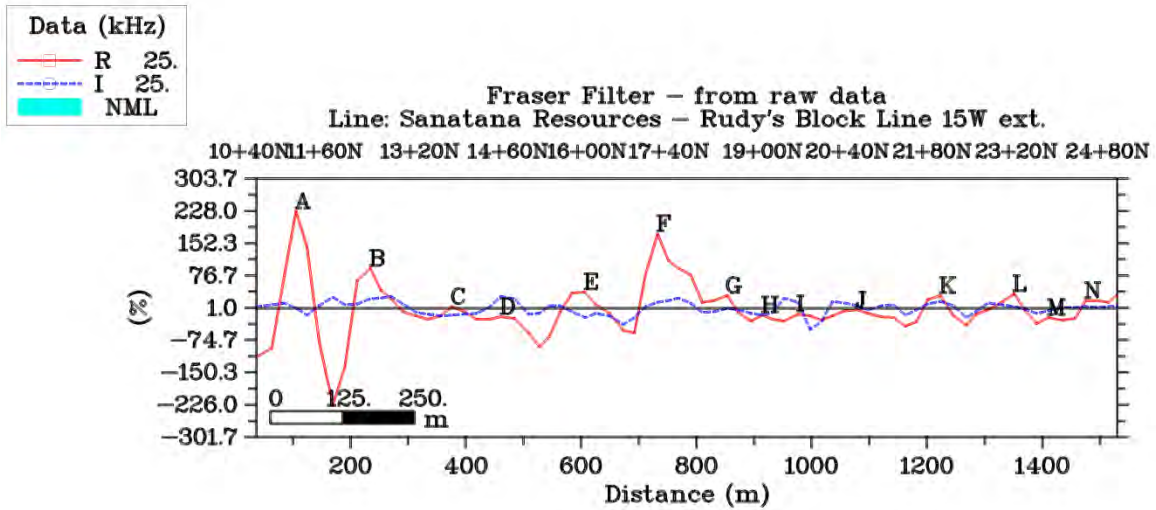
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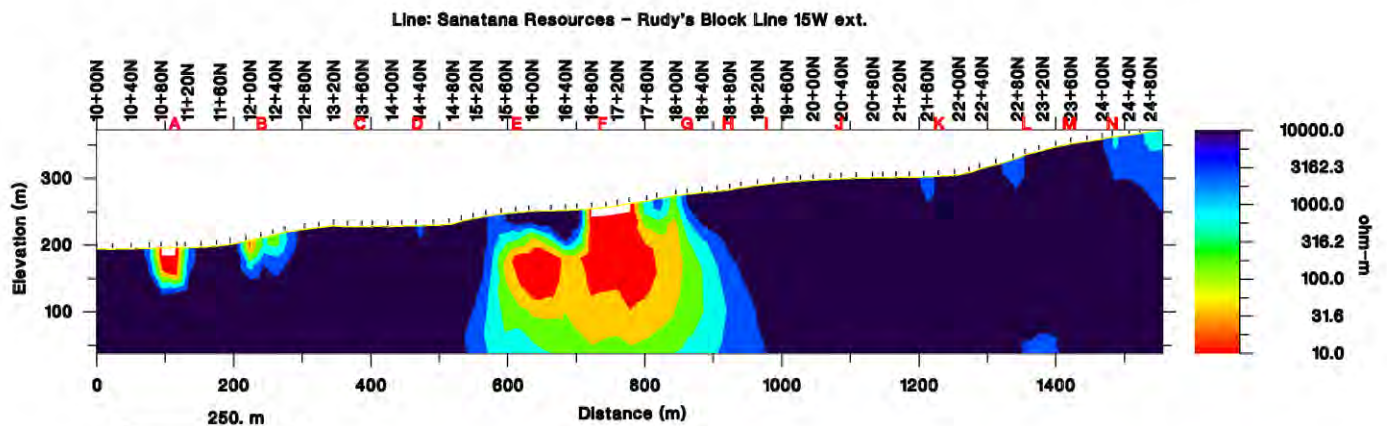
Line 15W NML Figure 1 Raw Data Profile



Line 15W NML Figure 2 Fraser Filter Profile with Fraser Picks



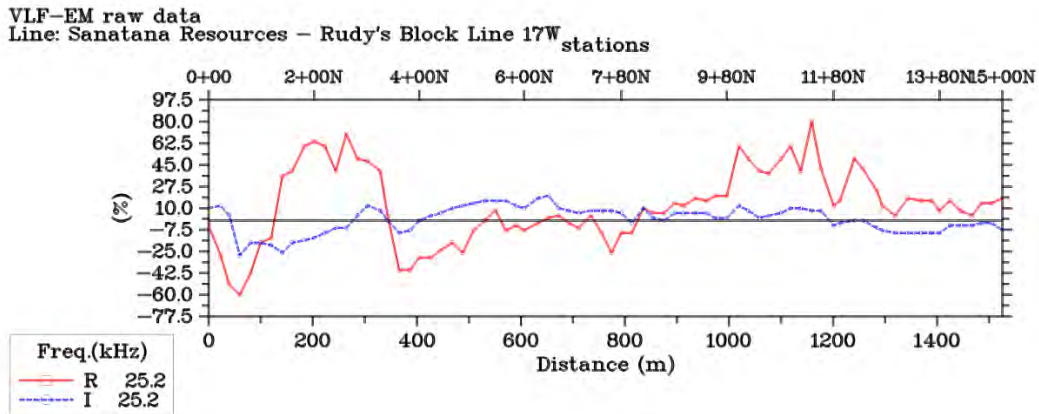
Line 15W NML Figure 3 Model 4000 Ohm with Fraser Picks



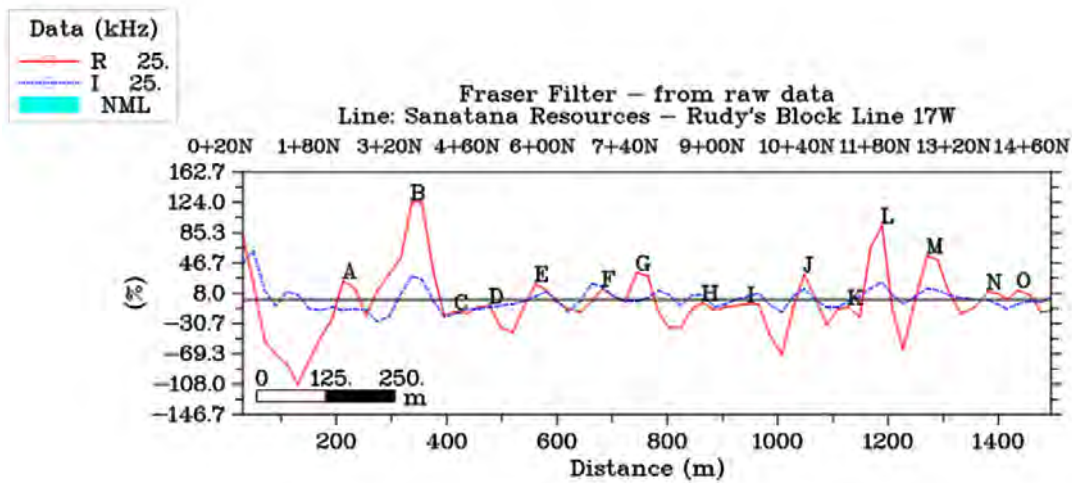
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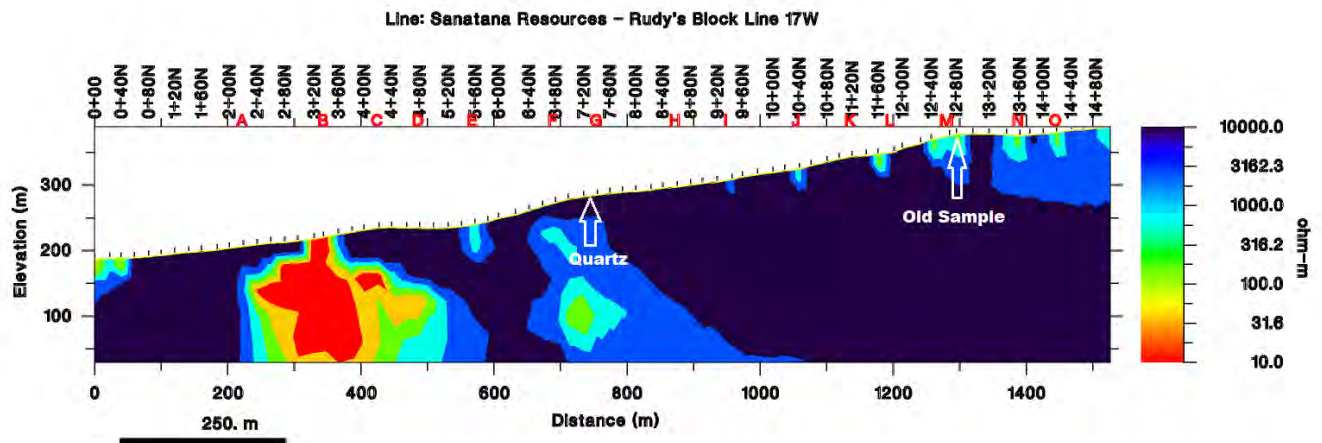
Line 17W NML Figure 1 Raw Data Profile



Line 17W NML Figure 2 Fraser Filter Profile with Fraser Picks



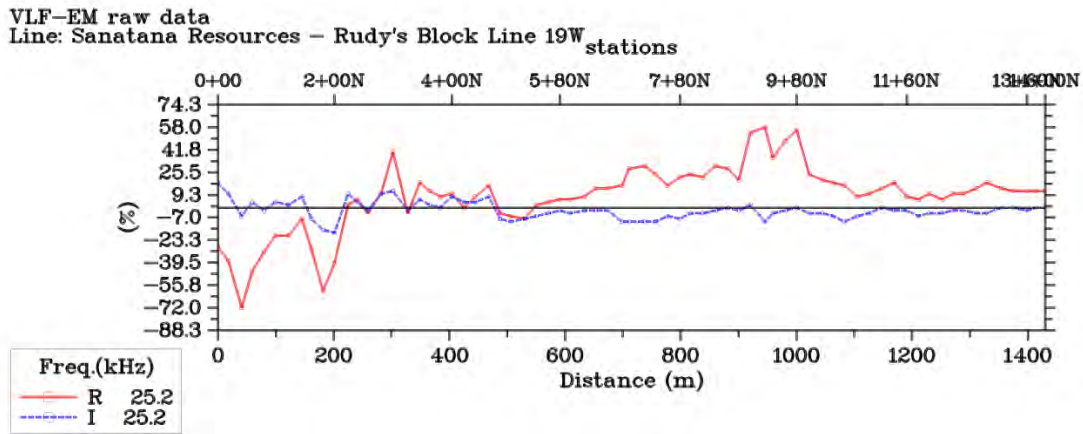
Line 17W NML Figure 3 Model 4000 Ohm with Fraser Picks



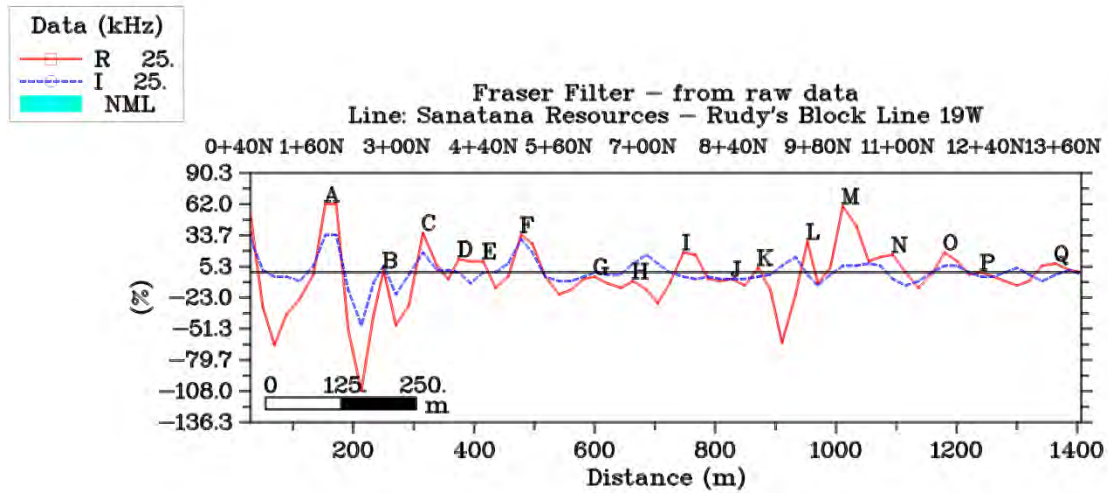
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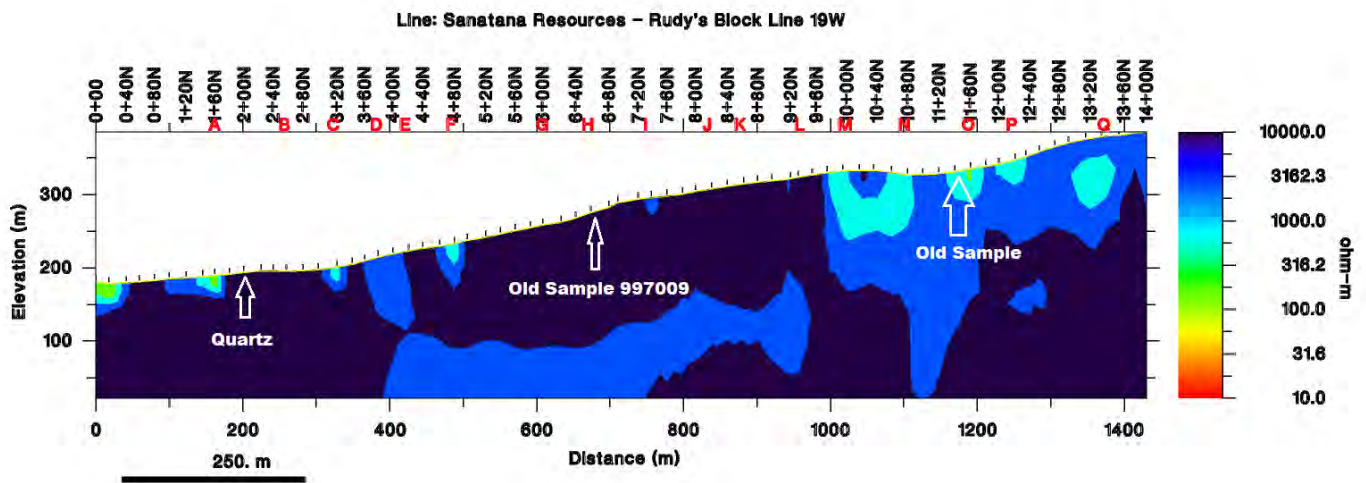
Line 19W NML Figure 1 Raw Data Profile



Line 19W NML Figure 2 Fraser Filter Profile with Fraser Picks



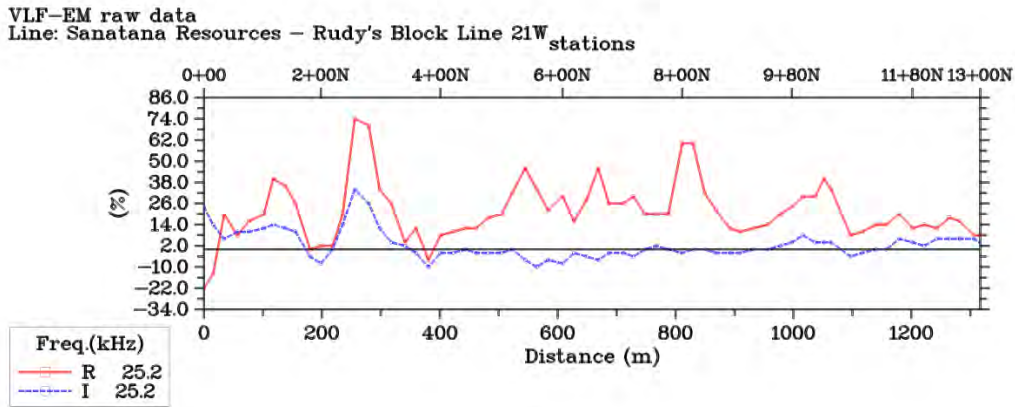
Line 19W NML Figure 3 Model 4000 Ohm with Fraser Picks



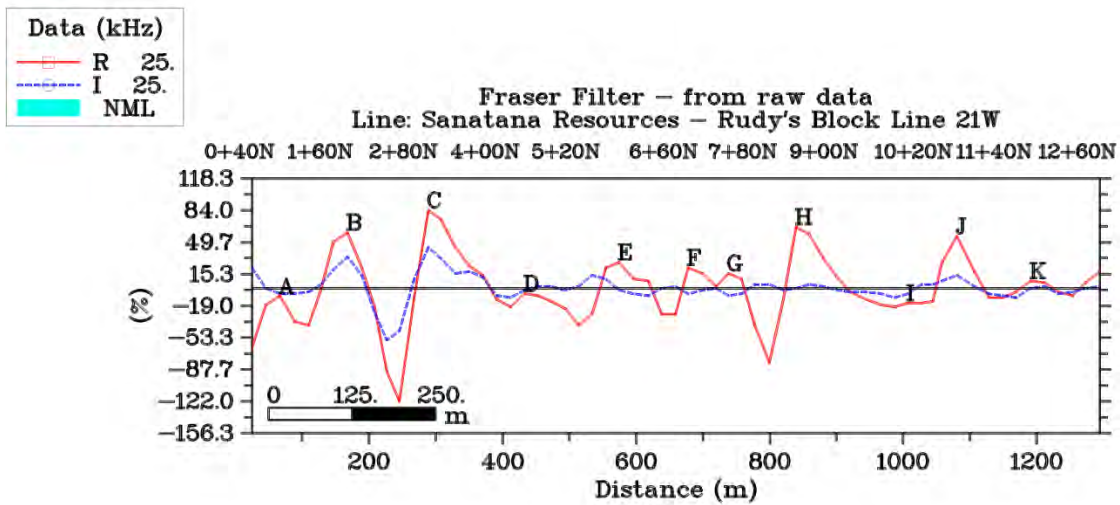
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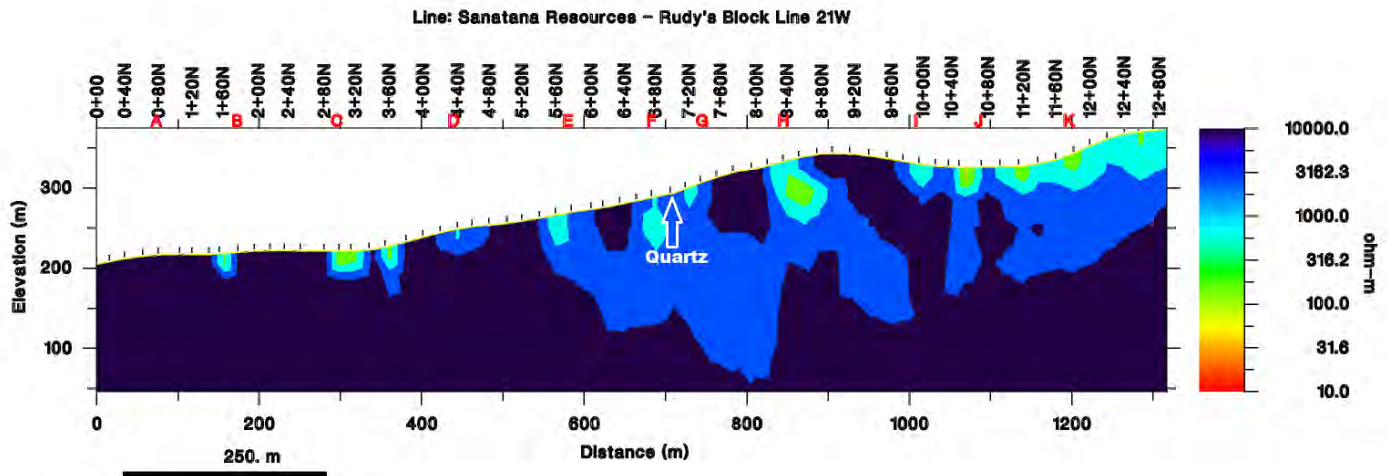
Line 21W NML Figure 1 Raw Data Profile



Line 21W NML Figure 2 Fraser Filter Profile with Fraser Picks



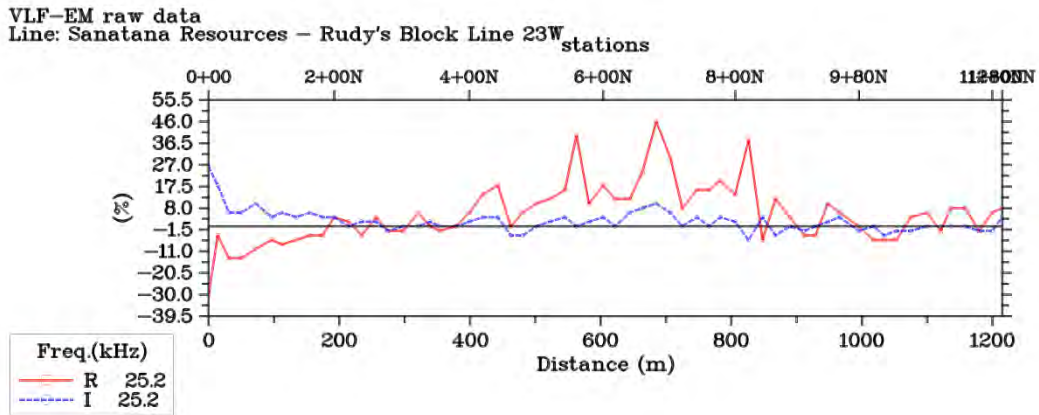
Line 21W NML Figure 3 Model 4000 Ohm with Fraser Picks



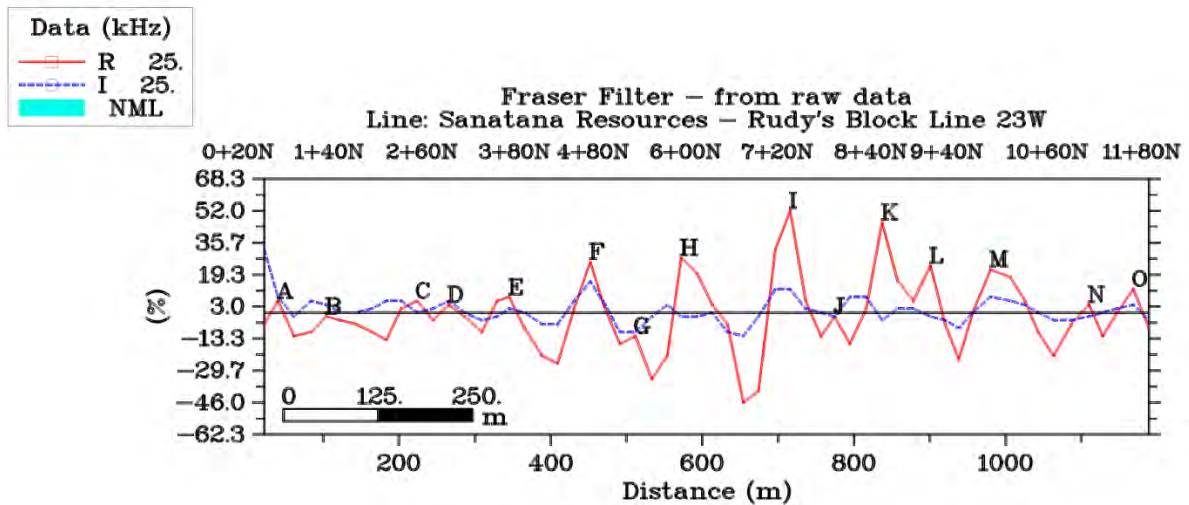
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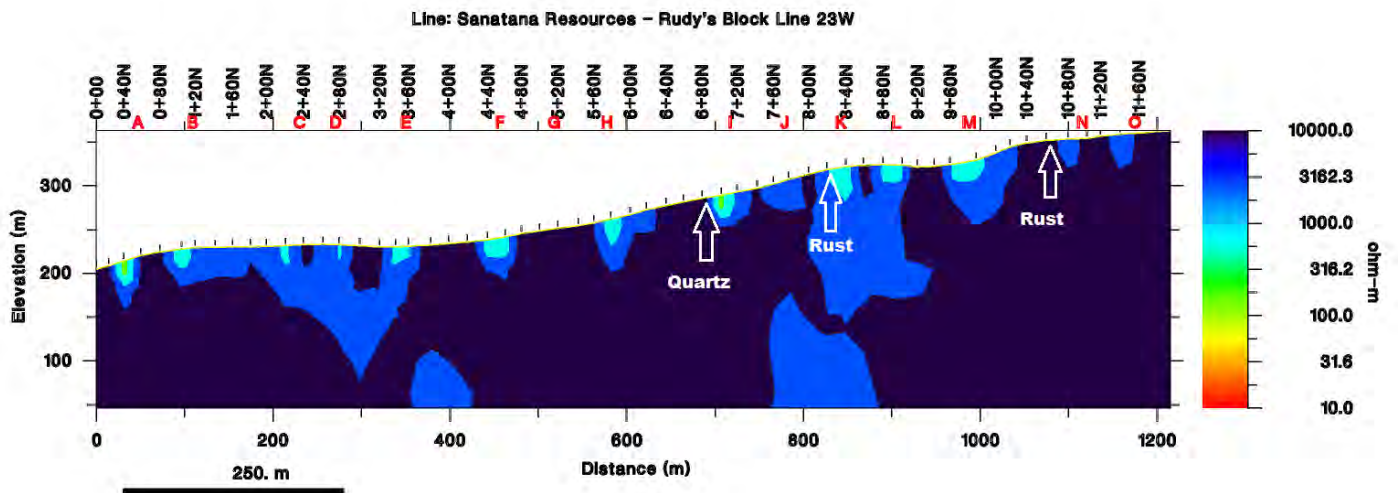
Line 23W NML Figure 1 Raw Data Profile



Line 23W NML Figure 2 Fraser Filter Profile with Fraser Picks



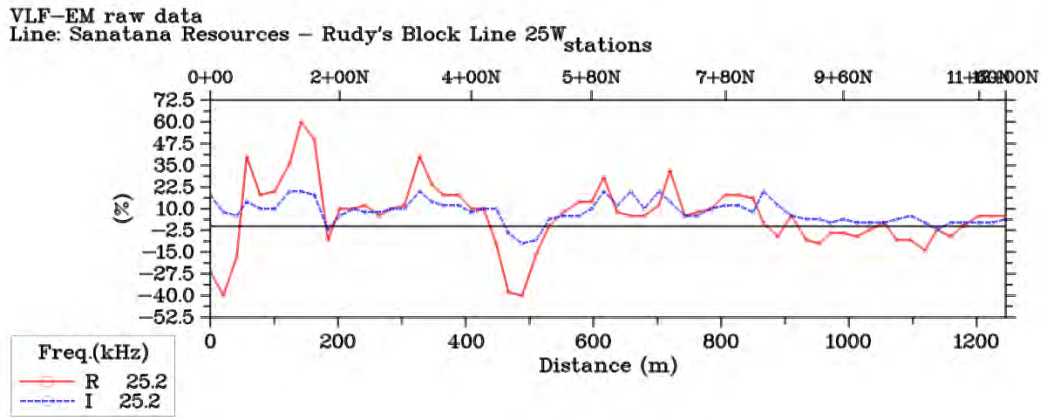
Line 23W NML Figure 3 Model 4000 Ohm with Fraser Picks



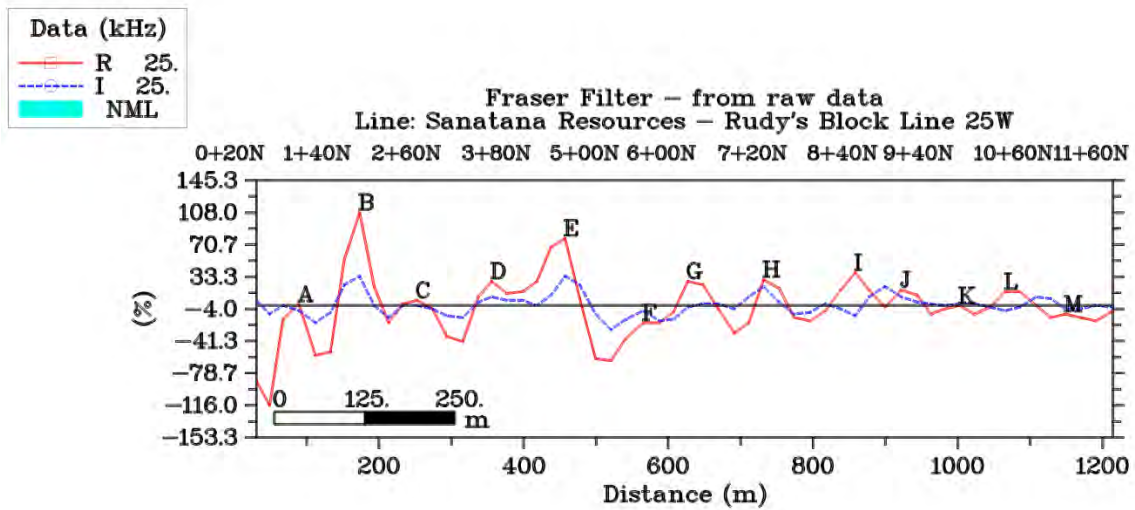
Transmitter: NML

Vertical Exaggeration: 1.0

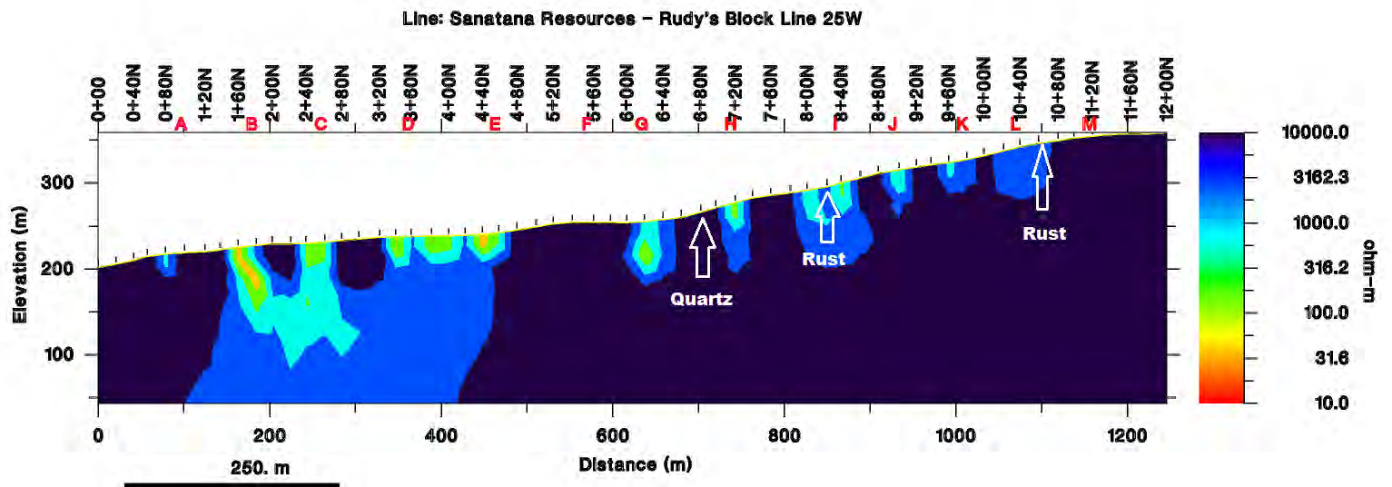
Line 25W NML Figure 1 Raw Data Profile



Line 25W NML Figure 2 Fraser Filter Profile with Fraser Picks



Line 25W NML Figure 3 Model 4000 Ohm with Fraser Picks



Transmitter: NML

Vertical Exaggeration: 1.0