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Assessment Report on

Ground Geophysical Surveying on

at the Jackfish Property Mineral Claims

130628, 160744, 166072, 195337, 225461, 225462, 225463, 261360, 268806, 268807, 309242, 309243, 315967, 332243 and 332244

Syine Township

Thunder Bay Mining Division

District of Thunder Bay, Ontario

NTS 42D15

NAD83 Zone 16 UTM

504,107 mE 5,409,480 mN Latitude 48° 50’ 17.8”N Longitude 86° 56’ 38.5”W

August 21-30, 2017 and July 10-15, 2018

By Troy Gill, B.Sc., MAIG.
Sanatana Resources Inc.
#1910-925 West Georgia Street
VANCOUVER, BC, V6C 3L2
Cl. #409847

August 19, 2019

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Summary

The Jackfish property is located within the Syine Township, on the north shore of Lake Superior in northwestern Ontario, approximately 250 km east of Thunder Bay (Figure 1). In total, the Jackfish property comprises 281 combined single and boundary cell mining claims covering an area of 3,769 hectares, held under option by Sanatana Resources Inc. from three separate parties. The property is accessed by bush trails off of the Trans-Canada Highway 17. All co-ordinates quoted in text or appearing on maps are either latitude and longitude or Universal Transverse Mercator (UTM) metres easting and northing using the North American Datum 83 (NAD83) Zone 16.

The property is located in the Wawa terrane of the Superior Province of the Canadian Shield, specifically the Schreiber-Hemlo greenstone belt. The greenstone belt in the region consists of metavolcanic and metasedimentary rocks into which the Terrace Bay pluton was emplaced. The property encompasses the eastern half of the Terrace Bay pluton as well as the contact metamorphic zone and part of the the Schreiber-Hemlo greenstone belt supracrustal sequence of folded and foliated metavolcanic basalts and felsic flows and tuffs intercalated with metsedimentary rocks in the northern and eastern parts of the property. The Terrace Bay Pluton 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.

Historic mining and exploration on the property dates back to the late 19th century. Since then various companies explored in the area completing surveys, including geophysical surveys, mapping, trenching, sampling and drilling and discovered several mineral occurrences.

Two Very Low Frequency Electromagnetic (VLF-EM) ground geophysical surveys were undertaken on the Rudy Wahl claim block of the Jackfish property between the dates of August 21 - 30, 2017 and July 10 – 15, 2018. This report presents the survey reports and VLF-EM data as well as additional information about the property and the mining claims covered by surveys and provides some interpretations that will help to guide future exploration work on the Jackfish property.

The results of both surveys identified several anomalous conductor trends on the property. Based on the data and image processing presented in the VLF-EM survey reports it was concluded that this reconnaissance method of geophysical surveying using the EM-16 was a valid and useful means of identifying conductive structures on the Rudy Block of claims of the Jackfish property.

The recommendations presented in the survey reports will be followed up on in the field over the coming seasons with prospecting, outcrop stripping and potentially drilling along the major conductive lineaments.

Introduction

Two Very Low Frequency Electromagnetic (VLF-EM) ground geophysical surveys were undertaken on the Rudy Wahl claim block of the Jackfish property between the dates of August 21 - 30, 2017 and July 10 – 15, 2018. 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 presents the survey reports and VLF-EM data as well as additional information about the property and the mining claims covered by surveys and provides some interpretations that will help to guide future exploration work on the Jackfish property.

Property Location, Description and Access

The Jackfish property is 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 is centered on 504,107 mE 5,409,480 mN (NAD 83 Zone 16) or at Latitude 48° 50' 17.8"N Longitude 86° 56' 38.5"W.

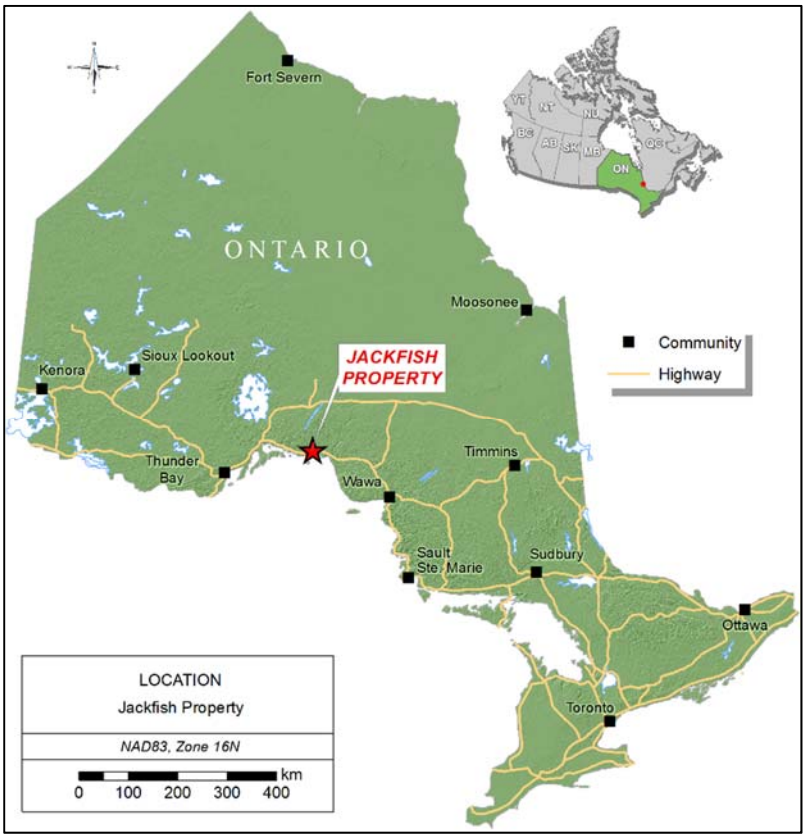


***Figure 1**: Property Location Map.*

In total, the Jackfish property comprises 281 combined single and boundary cell mining claims covering an area of 3,769 hectares, held under option by Sanatana with three optionor groups; Alto Ventures Ltd., Rudy Wahl and Richards *et al* (including Wayne Richards, Francine Richards and James Hamel) (Figure 2). The VLF-EM surveys covered 15 cell mining claims of the Jackfish property held 100% by Rudy Wahl, as

listed in Table 1. Other cell mining claims covered by both surveys are excluded from this report and have been filed for assessment separately.

***Table 1**: Report Cell Mining Claims.*

Tenure #	Township	Cell #	Type	Client ID	Holder
130628	SYINE	42D15E391	Boundary Cell Mining Claim	206079	100% Rudy Wahl
160744	SYINE	42D15E351	Single Cell Mining Claim	206079	100% Rudy Wahl
166072	SYINE	42D15E393	Boundary Cell Mining Claim	206079	100% Rudy Wahl
195337	SYINE	42D15E331	Boundary Cell Mining Claim	206079	100% Rudy Wahl
225461	SYINE	42D15E332	Boundary Cell Mining Claim	206079	100% Rudy Wahl
225462	SYINE	42D15E330	Boundary Cell Mining Claim	206079	100% Rudy Wahl
225463	SYINE	42D15E353	Boundary Cell Mining Claim	206079	100% Rudy Wahl
261360	SYINE	42D15E373	Boundary Cell Mining Claim	206079	100% Rudy Wahl
268806	SYINE	42D15E370	Boundary Cell Mining Claim	206079	100% Rudy Wahl
268807	SYINE	42D15E392	Boundary Cell Mining Claim	206079	100% Rudy Wahl
309242	SYINE	42D15E352	Single Cell Mining Claim	206079	100% Rudy Wahl
309243	SYINE	42D15E371	Single Cell Mining Claim	206079	100% Rudy Wahl
315967	SYINE	42D15E390	Boundary Cell Mining Claim	206079	100% Rudy Wahl
332243	SYINE	42D15E350	Boundary Cell Mining Claim	206079	100% Rudy Wahl
332244	SYINE	42D15E372	Single Cell Mining Claim	206079	100% Rudy Wahl

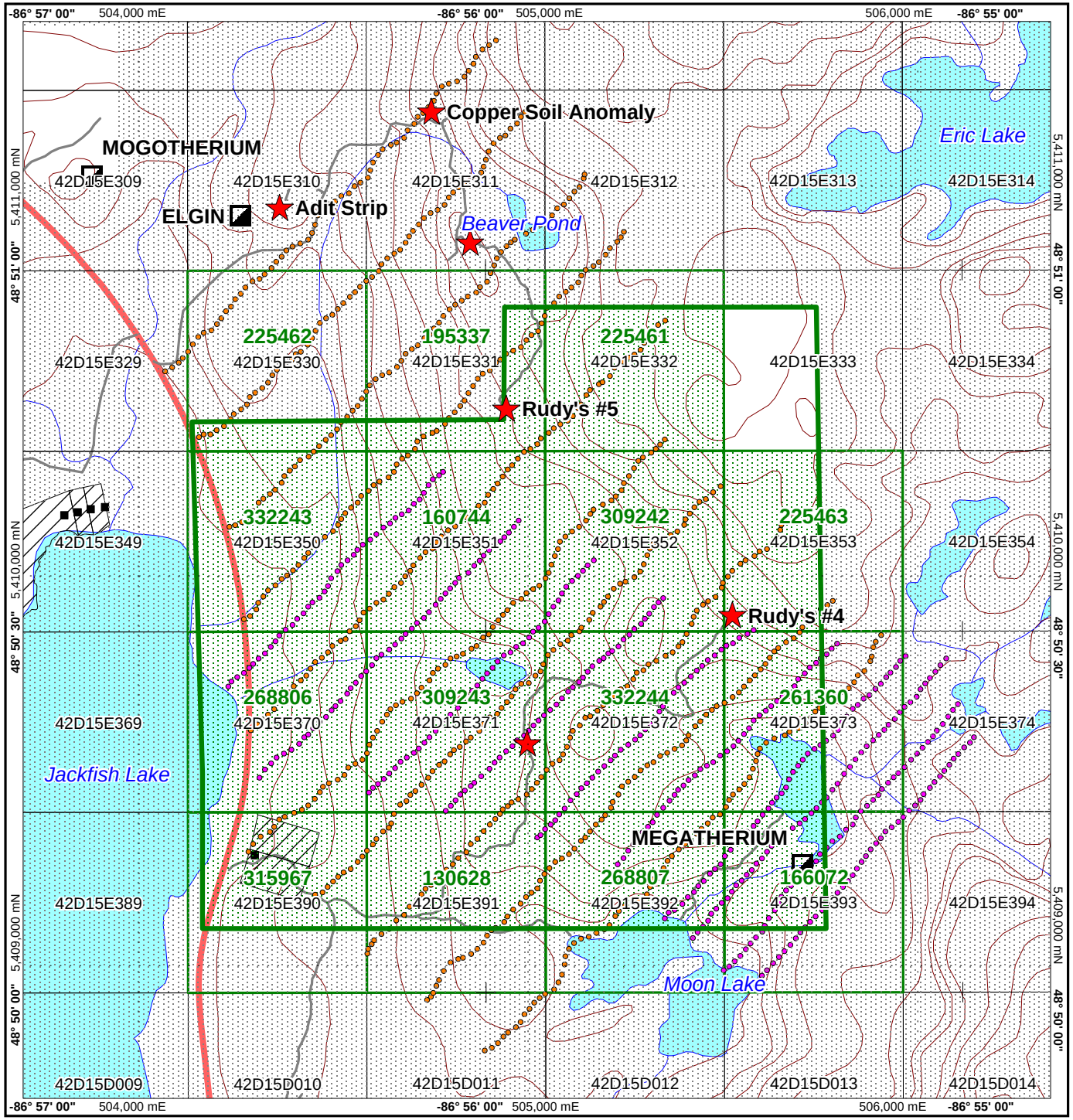
The property is accessed by travelling 20 km east of Terrace Bay or 63 km west from Marathon via Trans-Canada Highway 17. The mining claims are readily accessible off the Highway 17 by all-terrain vehicle (ATV) along bush trails (Figure 2).

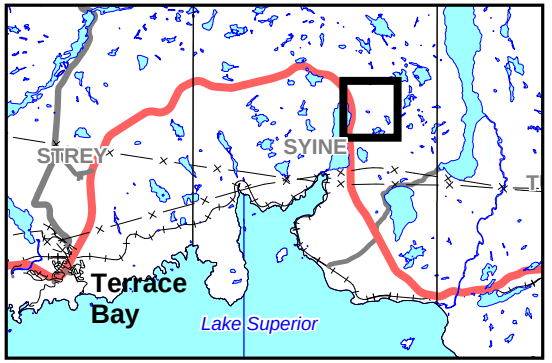
The terrain around the property is quite rugged and vegetation cover is moderately thick. There is a sparse to moderate amount of bedrock outcrop on the property, mostly along cliffs and at highway road cuttings, but exposure in the forest is commonly masked by moss cover.

All co-ordinates quoted in text or appearing on maps are either latitude and longitude or Universal Transverse Mercator (UTM) metres easting and northing using the North American Datum 83 (NAD83) Zone 16.

Property History

The exploration activity in the area of the Jackfish property started at the end of the 19th century sparked by the discovery of the Empress Mine in 1895 (Walker, 1967) in metavolcanic rocks of the Schreiber-Hemlo Greenstone Belt just north of the Terrace Bay Pluton. Relevant historical mining and exploration work conducted on the property, mostly sourced from assessment reports filed with the Ministry of Energy, Northern Development and Mines, is summarized in Table 2.





- Historical Workings
- Building
- Stripped Showings
- 2017 VLF Station
- 2018 VLF Station
- Highway 17
- Watercourse
- Trail
- Contour
- Rudy Wahl Legacy Property
- Excluded Area
- Rudy Wahl Cell Mining Claims
- Provincial Grid
- Land Disposition
- Waterbody

%

300 0 300 600

Metres

Jackfish Property
Report Figure 2

2017 - 2018 VLF Survey Grids, Mining Claims and Key Locations

Author:	T. Gill	Date:	August 2019
Projection:	UTM NAD83 Zone 16	Scale:	1 : 15 000
Mapsheet:	NTS 042D15	MNDM:	Thunder Bay Mining Division

***Table 2**: Historical exploration work in the property area.*

Year	Company	Type of Work	Results	Assessment Report #
1882	Elgin Silver	Underground mining from 2 adits	No production data	42D15SW8353
1932	Siville-Ferrier Syndicate	Stripping, sampling	Up to 10.29 g/t Au over 0.91 m	42D15SW8353
1982	Micham Explorations Inc.	Magnetic and electromagnetic (VLF) surveys	No magnetic anomalies; several weak to moderate conductors	42D14SE1074
1983	Rose Resource Corp.	Magnetic and electromagnetic (VLF) surveys	10 EM conductors and no significant magnetic anomalies	42D15SE0128
1983	Wasabi Resources	Airborne magnetic and EM (VLF) survey	Identified 6 EM conductors	42D15SW0088
1983	Wasabi Resources	Ground proofing of airborne EM conductors	All 6 conductors sulfide iron formation with no Au values	42D15SW0066
1984	John Ferguson	Magnetic and electromagnetic surveys	No significant mag; 2 weak VLF anomalies	42D15SW0121
1984	Goldhurst Resources	Magnetic and electromagnetic surveys	No significant mag; 11 very weak EM conductors	42D15SW0116
1984	Goldhurst Resources	Drilling, 4 drill holes; total 305.1m (1001 feet)	Drill hole 84-04: 2.87 g/t Au over 2.44 m including 6.07g/t Au over 0.91m and 0.96g/t Au over 1.22m	42D15SW0118
1985	Micham Explorations Inc.	Mapping, trenching, sampling (58 rock samples)	Highest assay 13.54 g/t Au in quartz vein at N Siville showing outside of Jackfish claims	42D15SW0114
1985	Micham Explorations Inc.	Soil sampling (1521 samples)	Two anomalous areas: Empress structure W Siville showing; Mocan valley structure	42D15SW0115
1985	Micham Explorations Inc.	Diamond drilling 4 drill holes 482.9m (1584.2 ft)	Highest assays 1166 ppb Au over 1.52m; 1588 ppb Au over 1.83m, 44.23 g/t Au over 0.61 m	42D15SW0117
1986	John Ferguson	Stripping, de-watering, trenching; sampling	Highest assay 13.03 g/t Au; 4,075 g/t Ag	42D15SW0504
1986	John Ferguson	Magnetic and electromagnetic surveys	No significant results	42D15SW0111
1987	John Ferguson	Soil sampling	No significant results	42D15SW0106
1987	Forerunner Resources	Mapping, stripping, trenching, sampling	Highest assay 93.24 g/t Au; 109.03 g/t Ag; 1.2% Cu; 7.85% Pb	42D15SW0505
1987	Micham Explorations Inc.	Diamond drilling 10 drill holes 1674m	No assays recorded	42D15SW0109
1988	Beardmore Resources	Trenching, soil sampling, bedrock sampling	Highest assays: 21.05 g/t Au plus 13.3 g/t Ag and 11.45 g/t Au plus 0.2 g/t Ag	42D15SW8353
1989	J.R. Hamel	Sampling	Highest assay 93.26 g/t Au, 82.79 g/t Ag	42D15SW0110
1991	J.R. Hamel	Stripping and sampling	Highest assay 21.05 g/t Au and 26.06g/t Ag	42D15SW0102
1992	Beavercreek Exploration (J.R. Hamel)	Drilling 2 drill holes 28.04 m (92 ft)	Highest assay 12.21 g/t Au over 1.52 m	42D15SW0002
1994	Beavercreek Exploration (J.R. Hamel)	Drilling 5 drill holes 45.1 m (148 ft)	Best result: 0.51 g/t Au over 3.05 m	42D15SW0001
1995	George Daniels et al.	Stripping, trenching, sampling, line cutting, VLF survey	16.39 g/t Au on claim #1207882 Santoy Lake; 15.77 g/t Au Syine Twp. Historic claim #1224852	42D15NW0009
1996	Big Lake Geological Consulting on behalf of J. Ferguson	Mapping, sampling	Highest assays from trench 14.3 g/t Au and 16.39 g/t Au	42D15NW0038
1996	George Daniels	Prospecting, stripping, trenching	Highest assays from trench 21.94 g/t Au	42D15NW0028
1996	Rudolph Wahl et al.,	Rock sampling (100 samples); soil sampling	No significant results	42D15SW0008
1997	Landis Mining Corp.	Evaluation of previous exploration activity in the area	20 lb composite grab sample: 22.97 g/t Au over 3.05 m from Empress structure	42D15SW2002
1998	George Daniels	Sampling	Highest assays from Jon's showing 1.45 g/t Au	42D15SW2003
1999	Cameco Gold Inc.	Line cutting; mag., IP; trenching; re-logging & re-sampling	DDH 441087-9: 8.07 g/t Au; 93.8 g/t Ag over 0.52 m; DDH 44184-7: 7.09 g/t Au; 19.8 g/t Ag over 1.4 m	42D15SW2010

Year	Company	Type of Work	Results	Assessment Report #
2000	George Daniels	Trench cleaning, minor blasting	No results	42D15SW2013
2004	Brian Fowler	Line cutting; mag; prospecting, sampling (21)	Highest assay 324 ppb Au	42D15SW2024
2005	Phoenix Matachewan Mines	Prospecting sampling (19 rock samples)	Highest assay 262 ppb Au	20000001155
2007	Wayne Richards	Prospecting, mapping, stripping, sampling (4 samples)	No Au assays; two samples >100 g/t Ag	20000003831
2007	Alto Ventures Ltd.	Mapping, prospecting and sampling (47 rock samples)	Highest assay 2,278 ppb Au	20000002005
2008	Alto Ventures Ltd.	Drilling 2 drill holes 332 m on Empress structure	0.66 g/t Au over 2.3 m	20000003772
2009	Rudolph Wahl	Prospecting, mapping, sampling (22 samples)	No significant results	I20000004525
2010	Galahad Metals	Soil sampling (619 samples), mapping trenching, sampling (89 samples)	26.8 g/t Au and 119 g/t Ag; 24.7 g/t Au and 40.4 g/t Ag at creek showing	20000005783
2010	Bond et al.	Prospecting, mapping, rock samples (63 samples) and lake sediment samples (7 samples)	309 and 459 ppb Au	20000006073
2010	Bond et al.	Drilling 2 holes 240 m	No significant results	20000006073
2012	Rudolph Wahl	Prospecting, mapping, sampling (30 samples)	1.9 g/t Au sample # 997103	20000007183
2012	Hamel et al.	Prospecting , mapping, sampling (11 samples), diamond drilling	No significant results	20000007081, 2.53866
2014	Alto Ventures Ltd.	Bedrock sampling (21 samples)	No significant results	20000008044
2016	Wayne Richards	Diamond drilling, outcrop stripping, sampling	38.3g/t and 5.21g/t Au grab samples, no significant results from drilling	20000013548
2017	Wayne Richards	Ground VLF Survey	Weak conductors identified	20000015411

Regional Geological Setting

The property is located in the Wawa terrane of the Superior Province of the Canadian Shield, specifically the Schreiber-Hemlo greenstone belt (Figure 3). The greenstone belt in the region consists of metavolcanic and metasedimentary rocks into which the Terrace Bay pluton was emplaced.

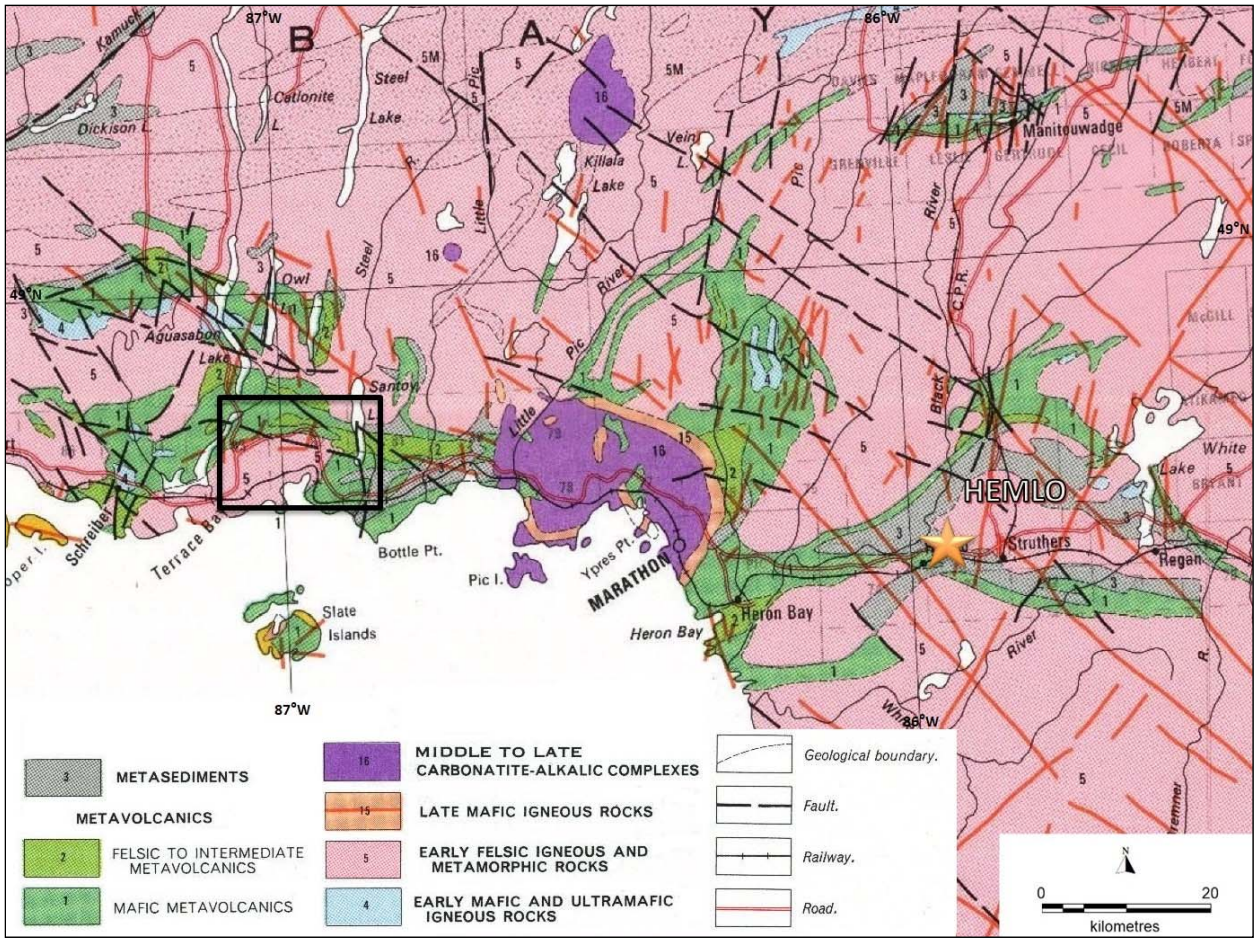
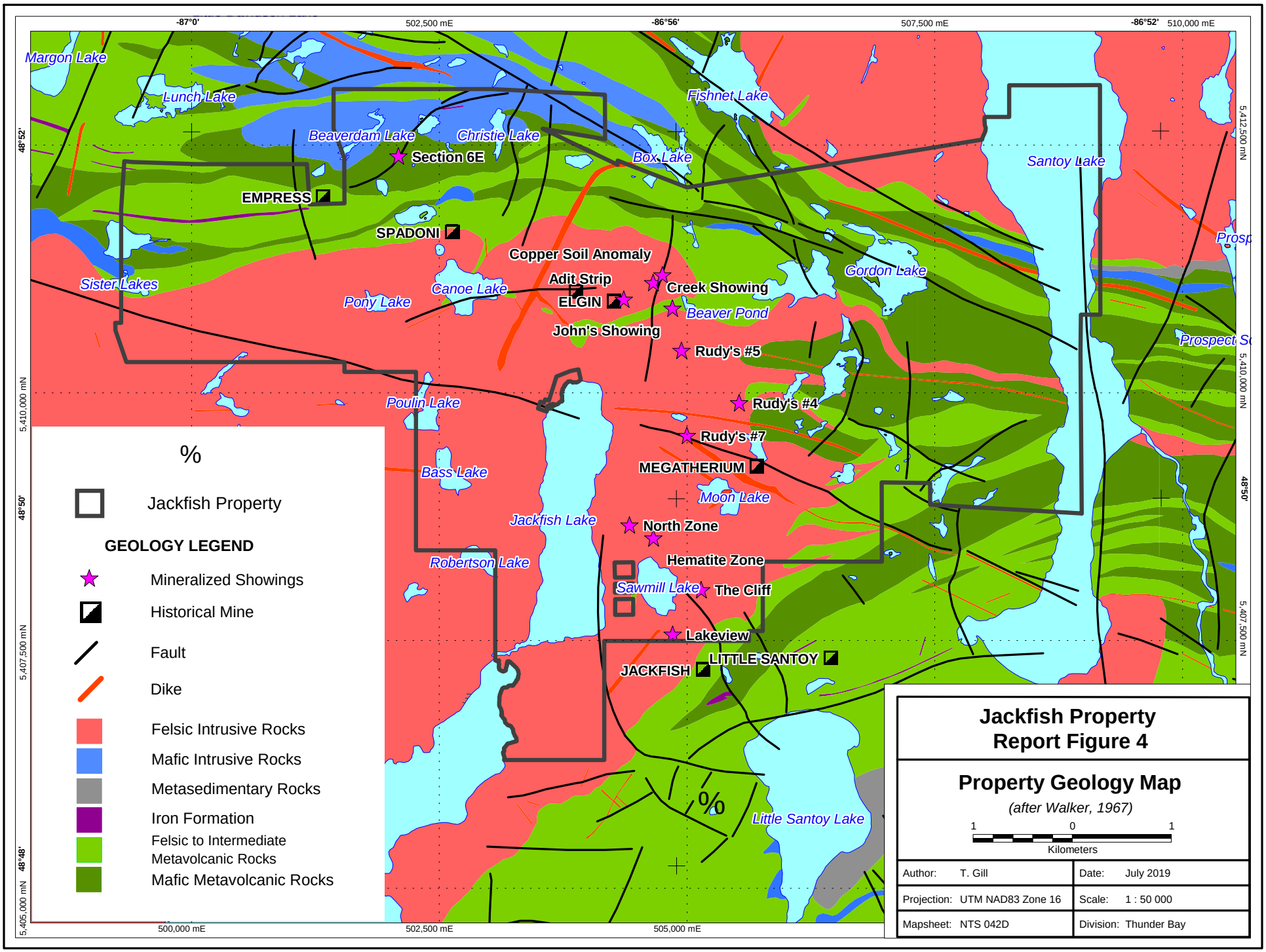


***Figure 3**: Regional Geological Setting Map (after Ayres et al, 1970).*

Property Geology and Mineralization

The Jackfish property straddles the eastern margin of the Terrace Bay Pluton where the granodiorite rocks of the intrusive come into contact with the folded and foliated supracrustal sequence of the Schreiber-Hemlo greenstone 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 pluton and supracrustal rocks and as fracture fill within the pluton. These styles of orogenic gold deposits are the key targets of focus for exploration activities on the Jackfish property. The more prominent historical workings and currently active mineralized showings are shown on Figure 4.


-87°0'
502,500 mE
-86°56'
507,500 mE
-86°52'
510,000 mE
48°52'
5,412,500 mN
5,410,000 mN
48°50'
5,407,500 mN
48°48'
5,405,000 mN
500,000 mE
502,500 mE
505,000 mE
Margon Lake
Lunch Lake
Beaverdam Lake
Christie Lake
Section 6E
EMPRESS
SPADONI
Fishnet Lake
Box Lake
Santoy Lake
Copper Soil Anomaly
Adit Strip
ELGIN
Creek Showing
Beaver Pond
John's Showing
Rudy's #5
Rudy's #4
Rudy's #7
MEGATHERIUM
Moon Lake
North Zone
Hematite Zone
The Cliff
Lakeview
LITTLE SANTOY
JACKFISH
Sister Lakes
Pony Lake
Canoe Lake
Gordon Lake
Poulin Lake
Bass Lake
Jackfish Lake
Robertson Lake
Sawmill Lake
Little Santoy Lake
%
Jackfish Property
GEOLOGY LEGEND
Mineralized Showings
Historical Mine
Fault
Dike
Felsic Intrusive Rocks
Mafic Intrusive Rocks
Metasedimentary Rocks
Iron Formation
Felsic to Intermediate Metavolcanic Rocks
Mafic Metavolcanic Rocks
Jackfish Property Report Figure 4
Property Geology Map
(after Walker, 1967)
1 0 1
Kilometers
Author: T. Gill
Date: July 2019
Projection: UTM NAD83 Zone 16
Scale: 1 : 50 000
Mapsheet: NTS 042D
Division: Thunder Bay

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 August 21 to 30, 2017 and July 10 to 15, 2018. The equipment used, field methods and data processing are all described in detail in the two survey reports included with this report (Appendices 1 and 2). The VLF-EM stations measured along grid lines are shown on Figure 2 in relation to the property cell mining claims and the combined data from both surveys is provided in Appendix 3. In the 2017 survey, 10.0 line kilometres out of the total survey of 14.1 line kilometres were within the report cell mining claims and 6.4 line kilometres of the 8.56 line kilometres total in the 2018 survey covered the same property area.

Interpretations

Both reports contain a section on “Discussion of Results” that identifies and describes a number of VLF anomalies and conductors based on the many images generated by data processing and inversion methods.

Conclusions and Recommendations

Based on the data and image processing presented in the VLF-EM survey reports it was concluded that this reconnaissance method of geophysical surveying using the EM-16 was a valid and useful means of identifying conductive structures on the Rudy Block of claims of the Jackfish property.

The recommendations presented in the survey reports will be followed up on in the field over the coming seasons with prospecting along the major conductive lineament that could lead to outcrop stripping or potentially drilling of the observed conductive targets from the Current Density cross sections in the report (Appendix 2).

Cost Statement and Expenditure Distribution

The bulk of the costs of the program are from the contractor who performed the survey work. These costs were paid on invoices (Appendix 3) as a total charge for services. Because the survey work traversed properties with different ownership, only the share of the costs, pro-rated by the total number of survey stations, are presented for assessment in this report (Table 3).

***Table 3**: Pro-Rated VLF-EM Survey Summary Costs Included in this Report.*

Item	Description	Cost
Superior Exploration	Labour: VLF-EM field survey work 2017, 10.0 of 14.1 Lkm @ $1,200/Lkm	$ 12,000
	Labour: Data processing 2017, 10.0 of 14.1 Lkm @ $150/Lkm	$ 1,500
	Labour: Share of additional 2017 data processing 67% of $1,350	$ 900
	Labour: VLF-EM field survey work 2018, 6.4 of 8.56 Lkm @ $1,200/Lkm	$ 7,680
	Labour: Data processing and report 2018, 6.4 of 8.56 Lkm @ $300/Lkm	$ 1,920
	Labour: 75% share of $1,000 cost of additional maps in 2018	$ 750
	Labour: Share of additional 2018 data merging and modelling 75% of $1,830	$ 1,373
	Mobilization: 75% share of $1,000 cost in 2018	$ 750
	Personal Transport: Truck rental in 2018, 2 of 6 days @ $100/day	$ 200
	Lodging: 1 room for 1 week of 10 nights total in 2017 @ $594.65/week	$ 595
	Lodging: 1 room for 2 nights of 6 nights total in 2018 @ $89.95/night	$ 180
	Food: Meals in 2017 for 7 of 10 days @ $75/day	$ 525
	Food: Meals in 2018 for 2 of 6 days @ $75/day	$ 150
Total		**$ 28,523**

The costs from both surveys were distributed over the cell mining claims depending on the number of stations recorded on each claim (Table 4), taking into account the legacy property area when allocating amounts of expenditure to boundary cell mining claims (Figure 2).

***Table 4**: Distribution of Pro-Rated Expenditures across Rudy Wahl Cell Mining Claims.*

Tenure #	Grid Cell	Township	Title Type	Client ID	Holder	2017 Stations	2018 Stations	Total Stations	% of Costs	Expenditure
130628	42D15E391	SYINE	BCMC	206079	100% Rudy Wahl	36	3	**39**	5%	**$ 1,401**
160744	42D15E351	SYINE	SCMC	206079	100% Rudy Wahl	46	37	**83**	10%	**$ 2,982**
166072	42D15E393	SYINE	BCMC	206079	100% Rudy Wahl		41	**41**	5%	**$ 1,473**
195337	42D15E331	SYINE	BCMC	206079	100% Rudy Wahl	17		**17**	2%	**$ 611**
225461	42D15E332	SYINE	BCMC	206079	100% Rudy Wahl	26		**26**	3%	**$ 934**
225462	42D15E330	SYINE	BCMC	206079	100% Rudy Wahl	10		**10**	1%	**$ 359**
225463	42D15E353	SYINE	BCMC	206079	100% Rudy Wahl	15	1	**16**	2%	**$ 575**
261360	42D15E373	SYINE	BCMC	206079	100% Rudy Wahl	33	36	**69**	9%	**$ 2,479**
268806	42D15E370	SYINE	BCMC	206079	100% Rudy Wahl	29	31	**60**	8%	**$ 2,155**
268807	42D15E392	SYINE	BCMC	206079	100% Rudy Wahl	32	28	**60**	8%	**$ 2,155**
309242	42D15E352	SYINE	SCMC	206079	100% Rudy Wahl	57	17	**74**	9%	**$ 2,658**
309243	42D15E371	SYINE	SCMC	206079	100% Rudy Wahl	58	57	**115**	14%	**$ 4,131**
315967	42D15E390	SYINE	BCMC	206079	100% Rudy Wahl	18		**18**	2%	**$ 647**
332243	42D15E350	SYINE	BCMC	206079	100% Rudy Wahl	43	16	**59**	7%	**$ 2,119**
332244	42D15E372	SYINE	SCMC	206079	100% Rudy Wahl	51	56	**107**	13%	**$ 3,844**
Totals						471	**323**	**794**	100%	**$ 28,523**

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Statement of Qualifications

Troy Gill
1910-925 West Georgia Street
Vancouver, BC, V6C 3L2
Telephone: 604-762-0380
Email: troy@sanatanaresources.com

I, Troy Gill, do hereby certify that:

1. I am employed as Exploration Manager for Sanatana Resources Inc.

2. I am responsible for the Report titled "Assessment Report on Ground Geophysical Surveying on at the Jackfish Property Mineral Claims 130628, 160744, 166072, 195337, 225461, 225462, 225463, 261360, 268806, 268807, 309242, 309243, 315967, 332243 and 332244, Syine Township, Thunder Bay Mining Division, District of Thunder Bay, Ontario, NTS 42D15" dated August 19, 2019, and prepared for Sanatana Resources Inc.

3. I hold the following academic qualifications: B.Sc. Geology (1993), University of Wollongong, NSW, Australia.

4. I am a member in good standing of the Australian Institute of Geoscientists (MAIG).

5. I have worked on a range of commodities including Au, Cu, Ni, diamonds, coal and iron ore in various geological settings in Australia and Canada since 1993.

6. This Report is compiled from data collected by or on behalf of Sanatana Resources Inc. in 2017. I conducted fieldwork, supervised the data acquisition and provided the data interpretation associated with this report.

Dated this 19th Day of August, 2019.

_____

Troy Gill, B.Sc., MAIG.

Exploration Manager, Sanatana Resources Inc.

Appendix 1: 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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List of Appendices A (TX NAA)

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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).

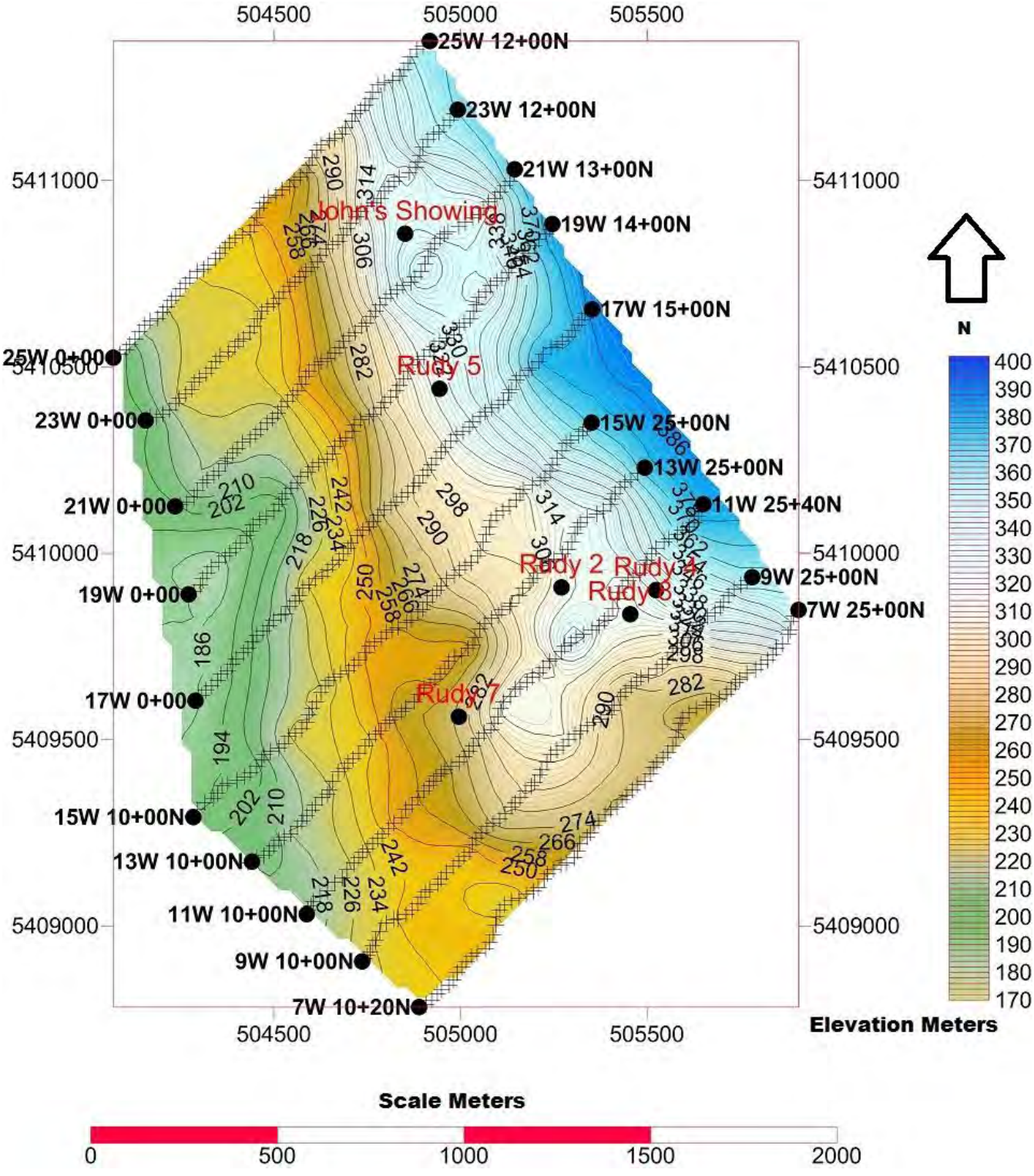
TX NAA

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

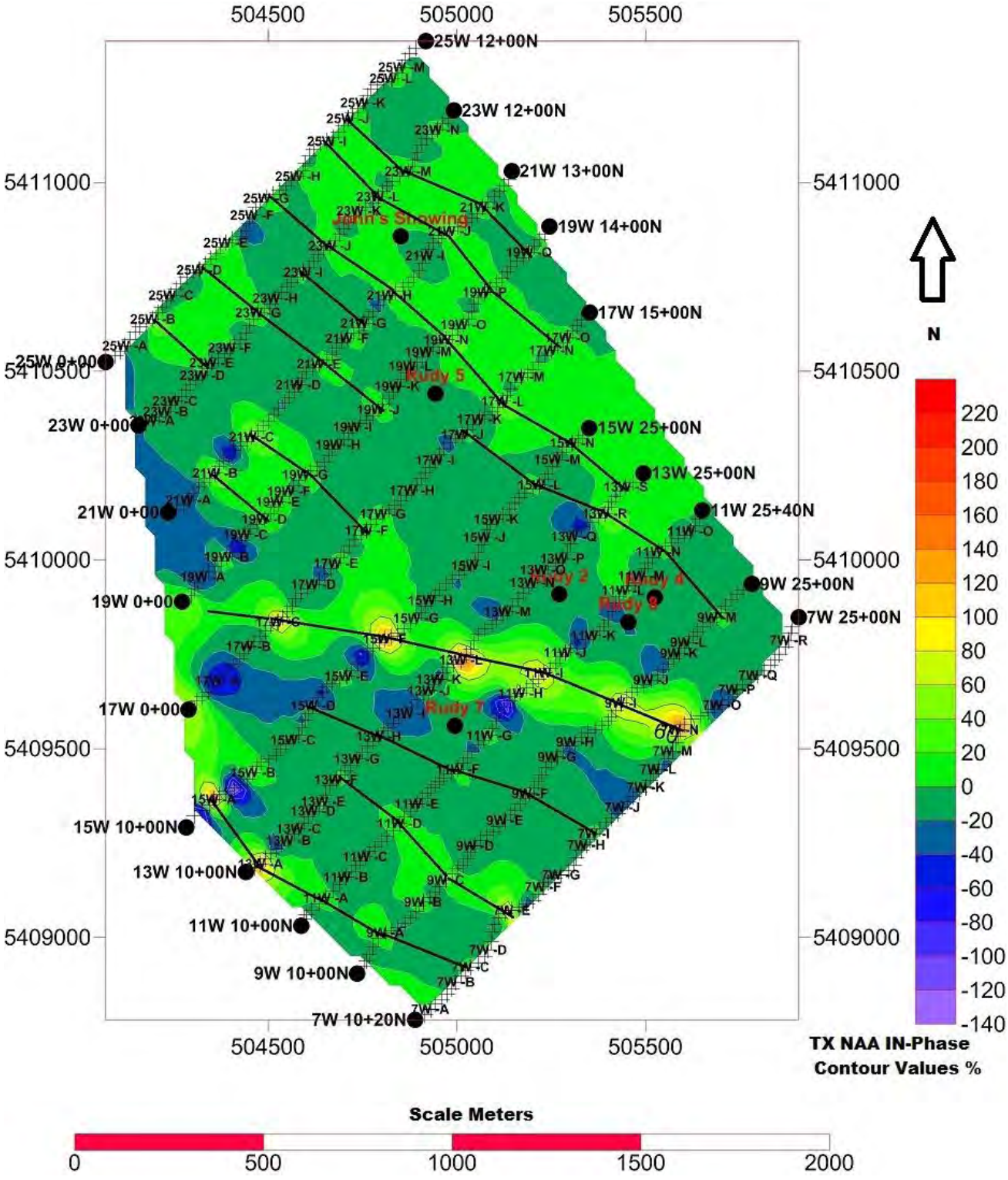
TX NML

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

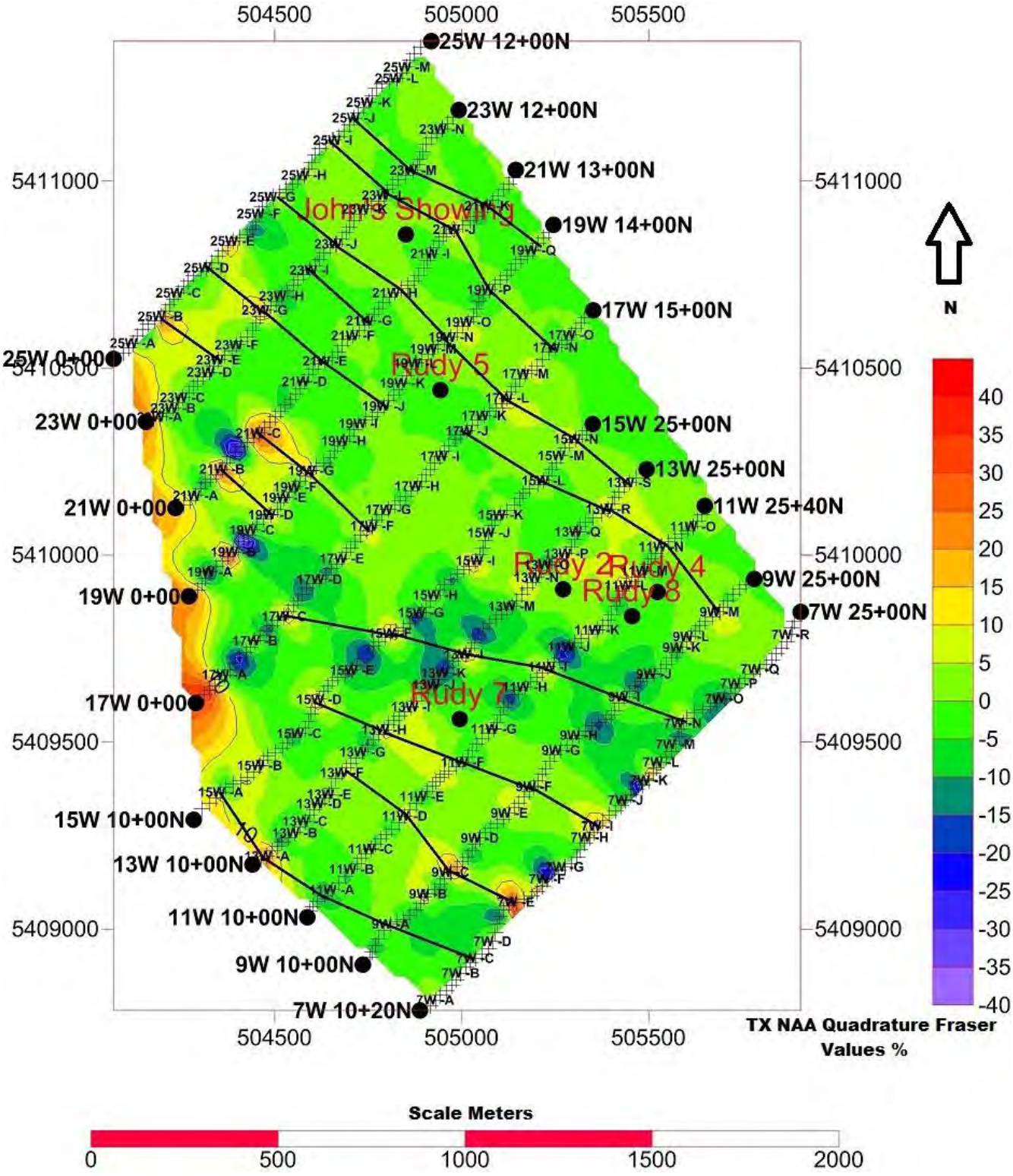
Map 3 Grid Elevation Map



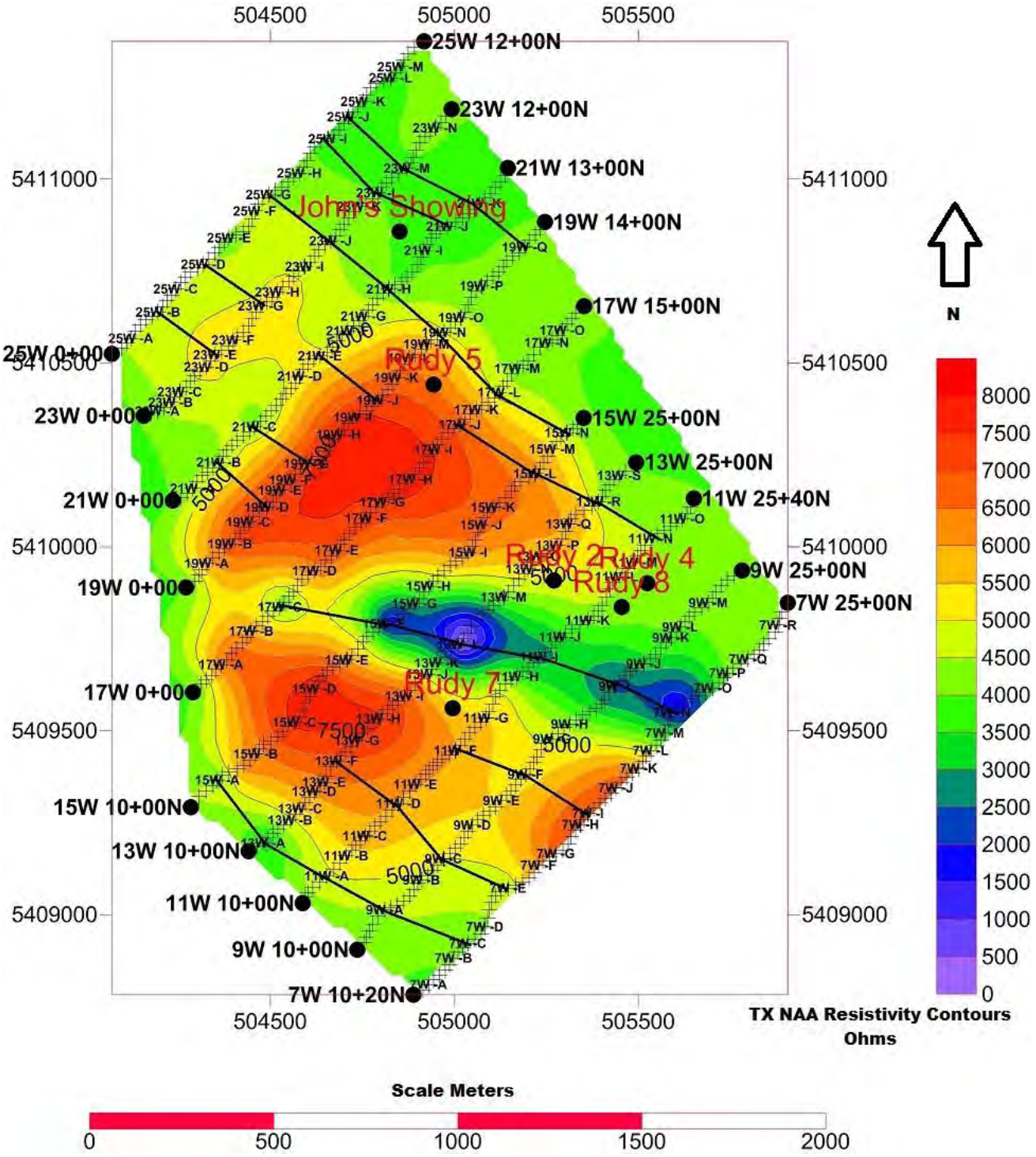
Map 4 TX NAA In-Phase Fraser Contours with Picks & Trends



Map 5 TX NAA Quadrature Fraser Contours with Picks & Trends

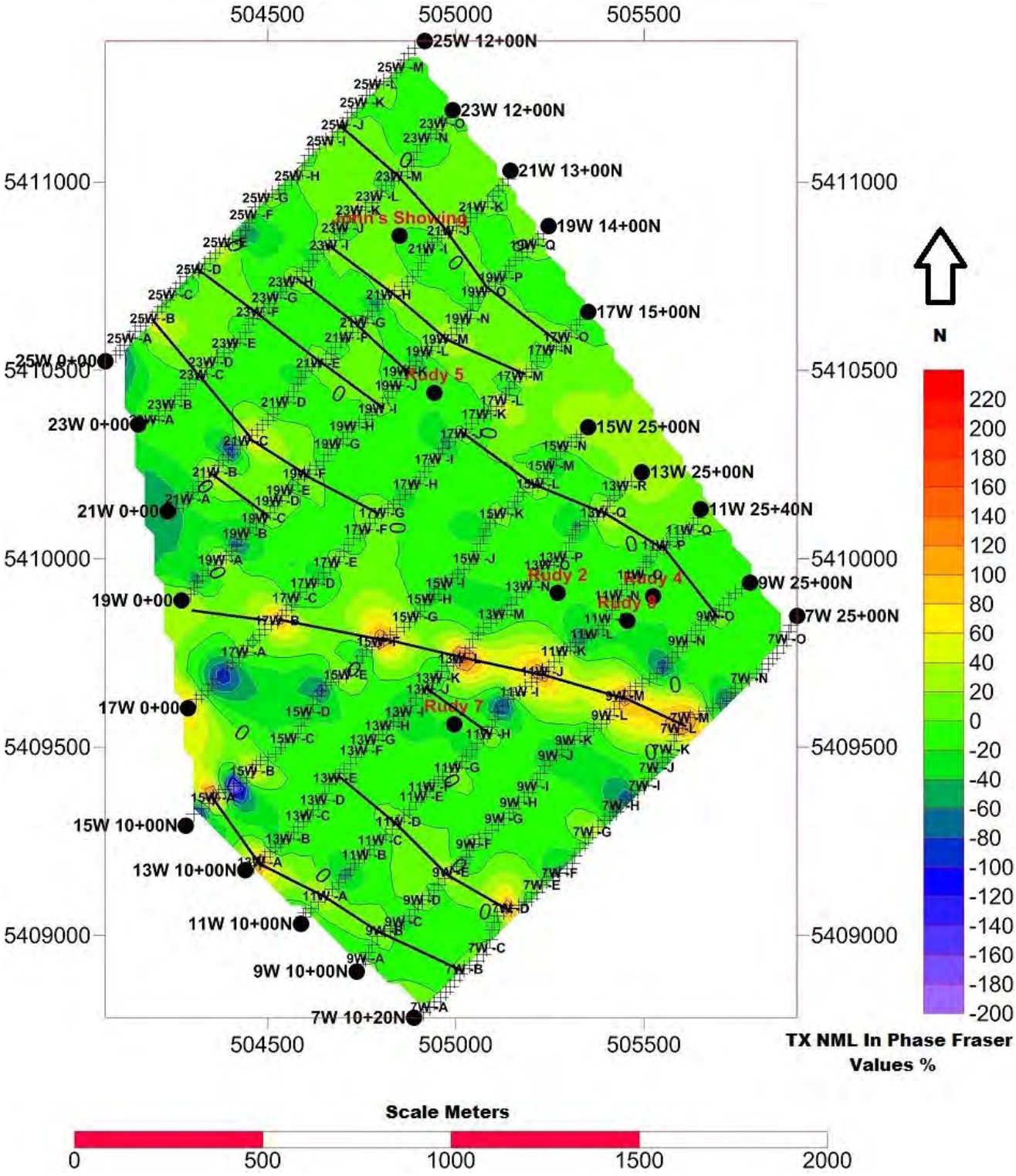


Map 6 TX NAA Resistivity Contours with Picks & Trends

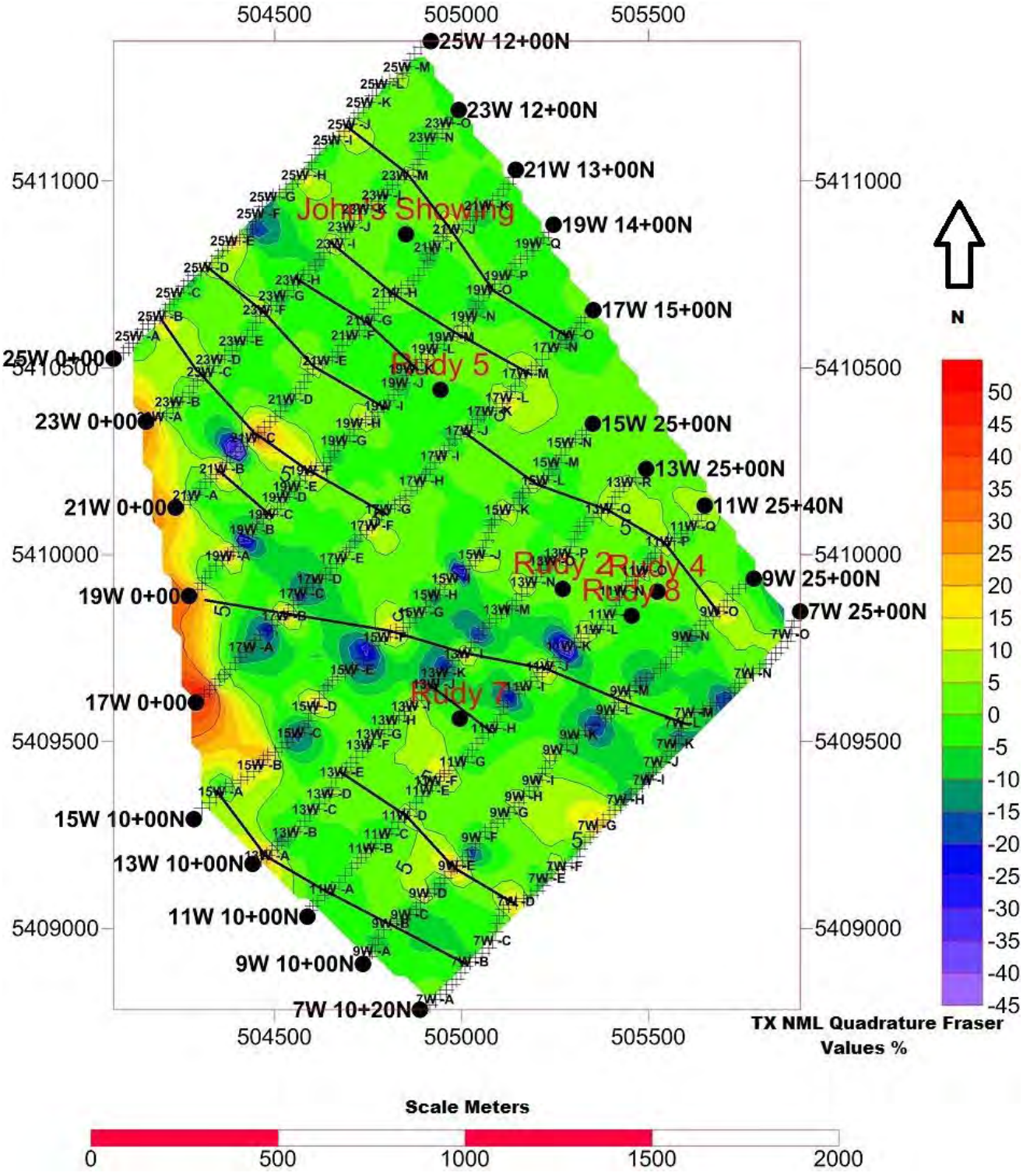


Map 7 Google Image of TX NAA Picks & Trends

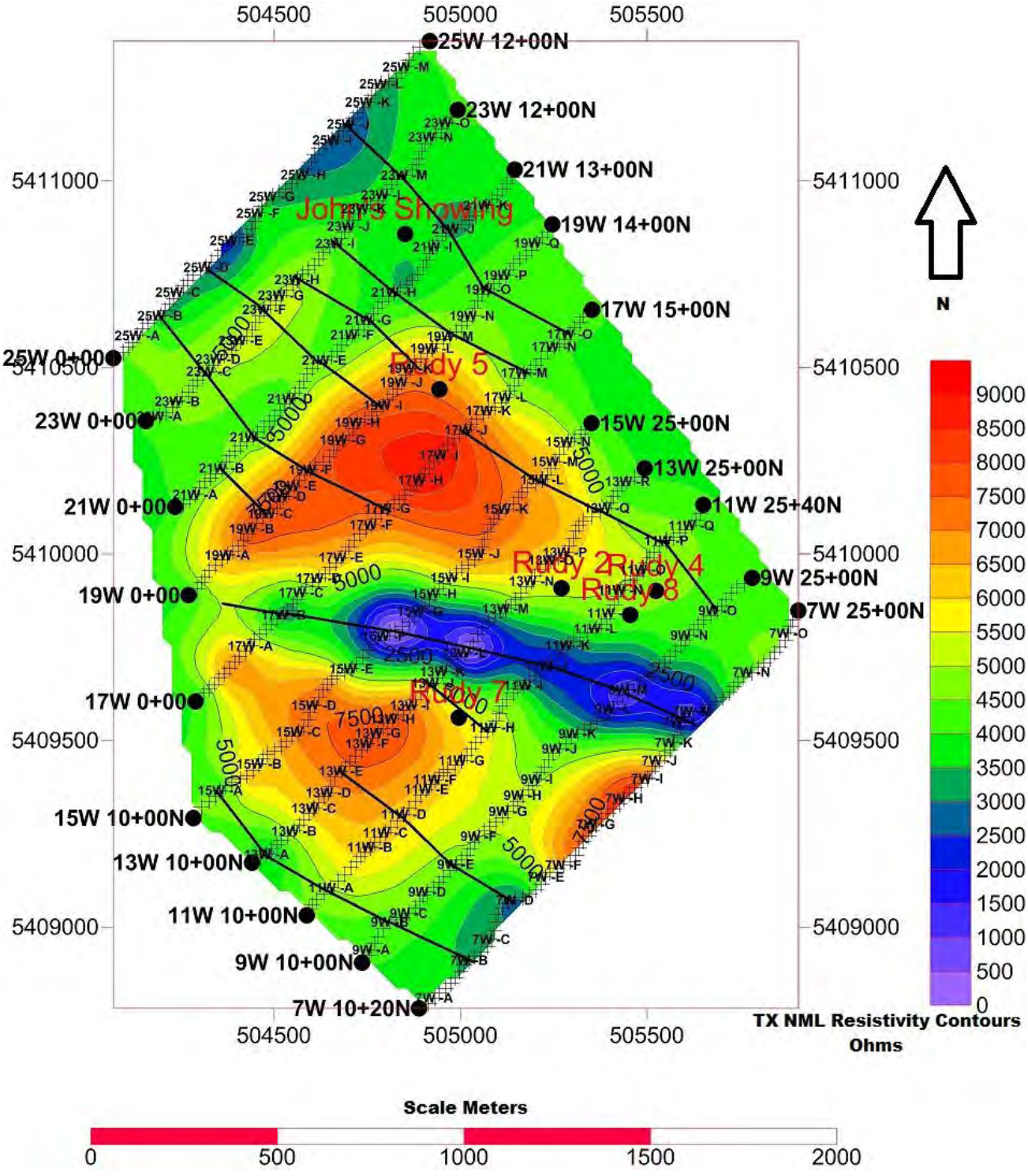
Map 8 TX NML In-Phase Fraser Contours with Picks & Trends



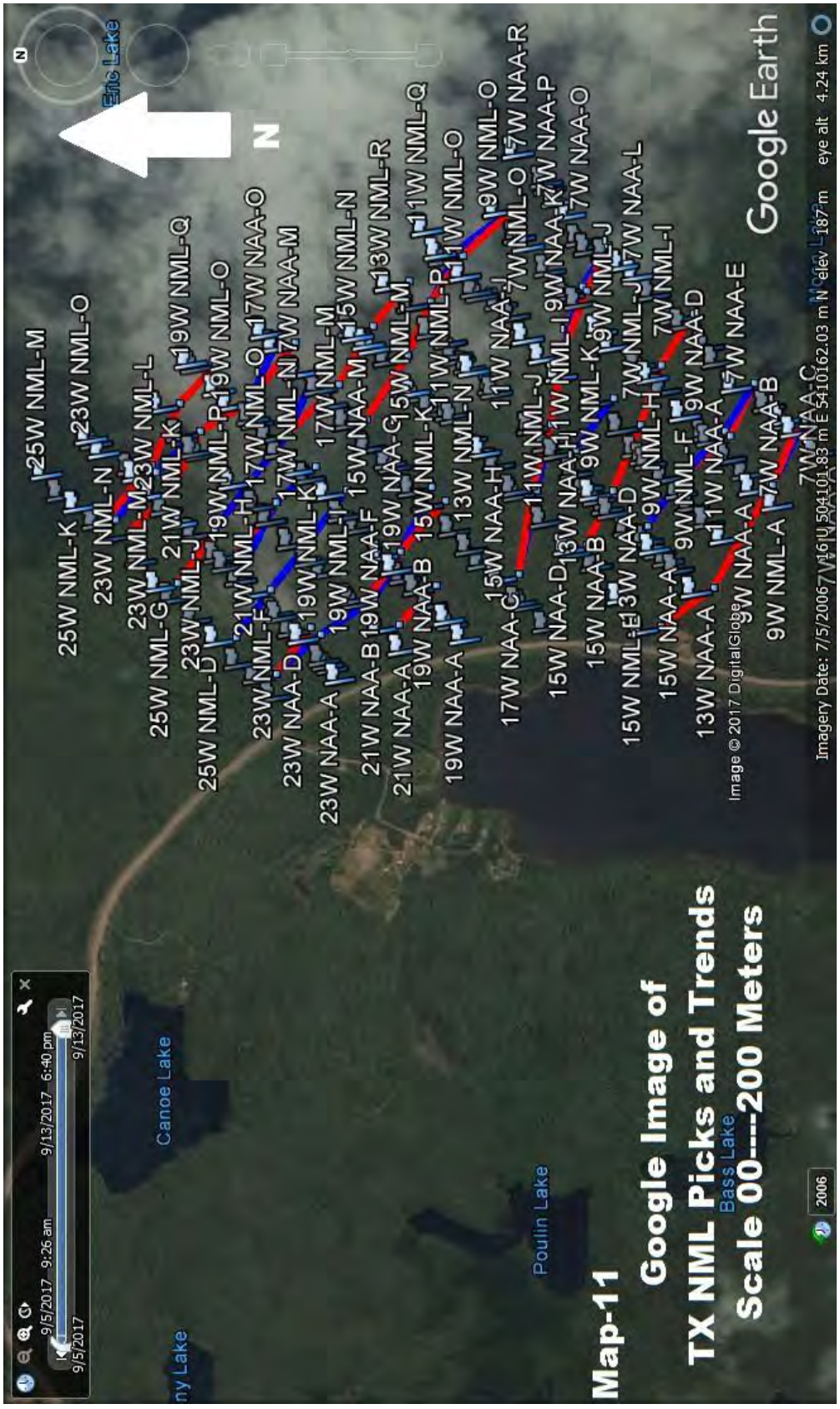
Map 9 TX NML Quadrature Fraser Contours with Picks & Trends



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

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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.

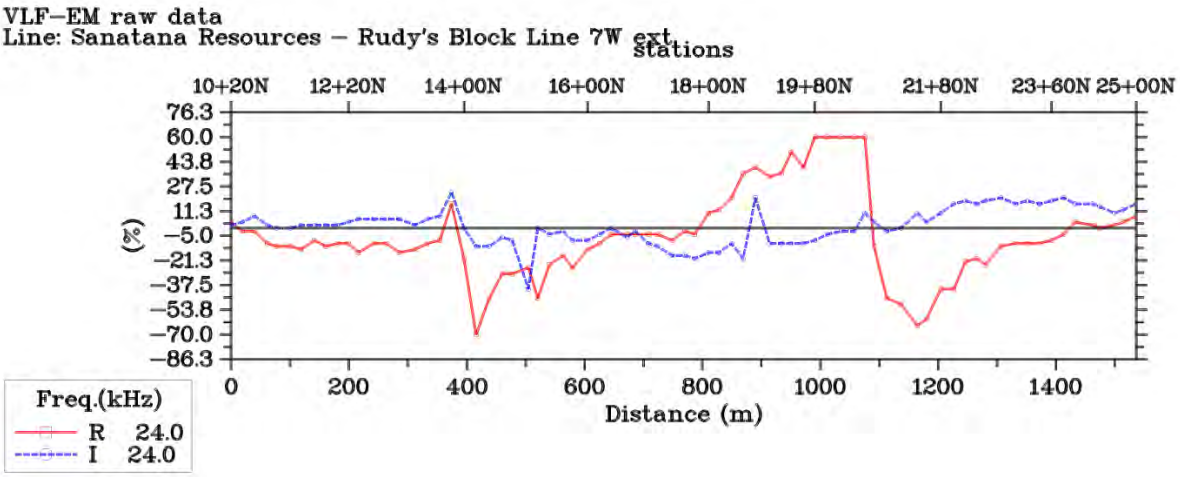
Dated this 4th day of October 2017

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

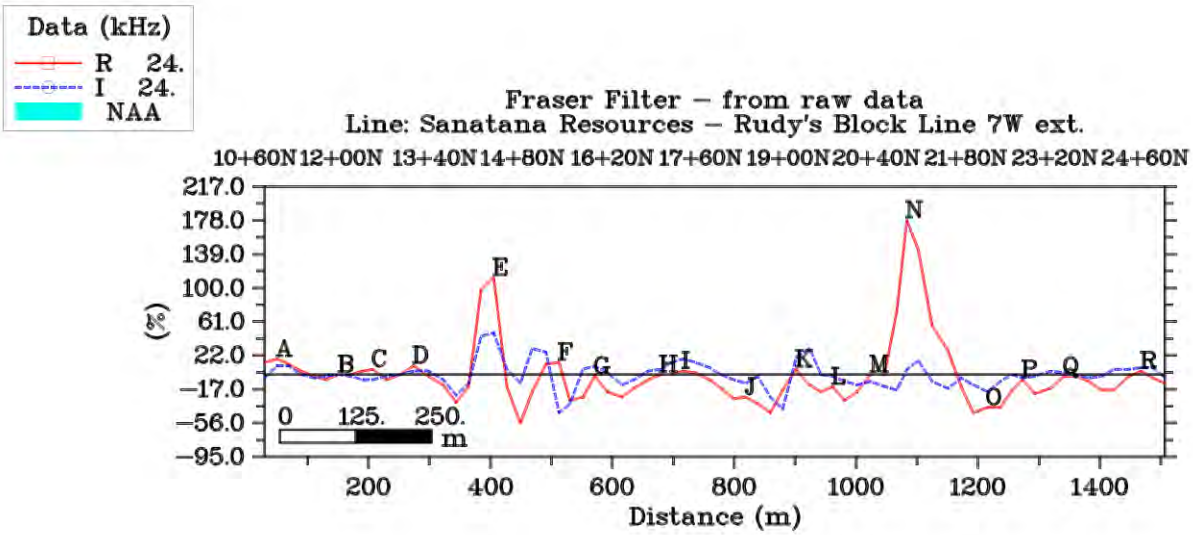
APPENDIX A

TX NAA Figures

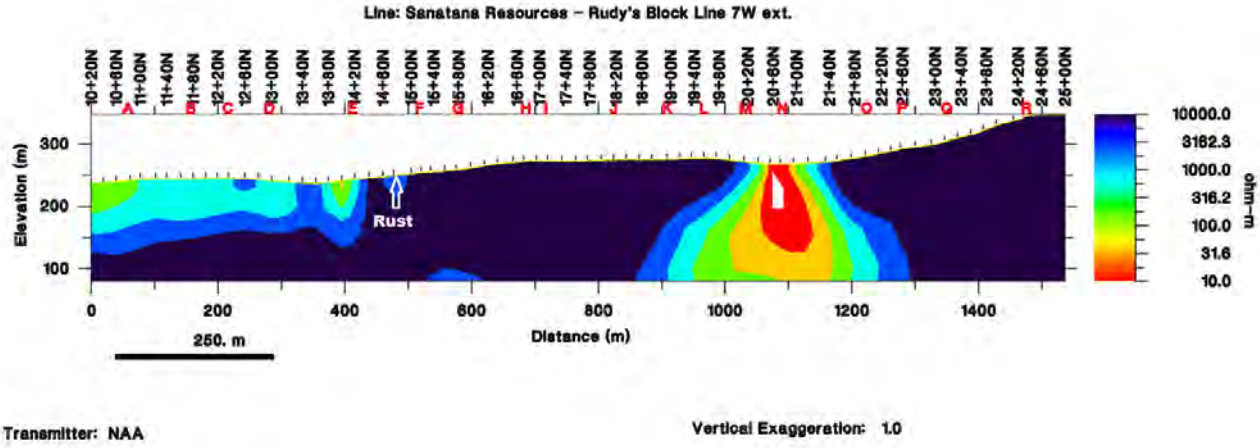
Line 7W NAA Figure 1 Raw Data Profile



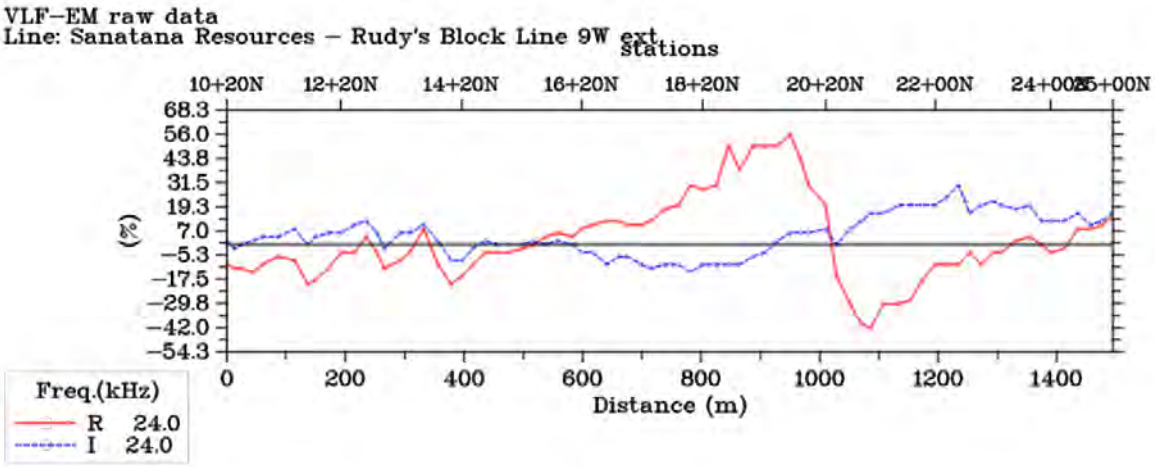
Line 7W NAA Figure 2 Fraser Filter Profile with Fraser Picks



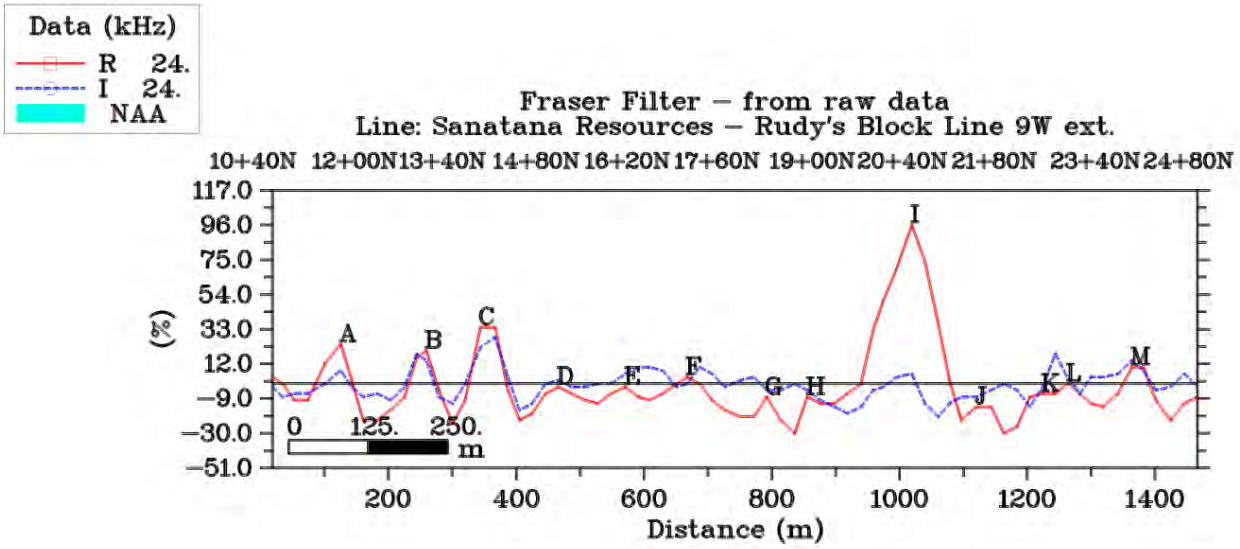
Line 7W NAA Figure 3 Model 4000 Ohm with Fraser Picks



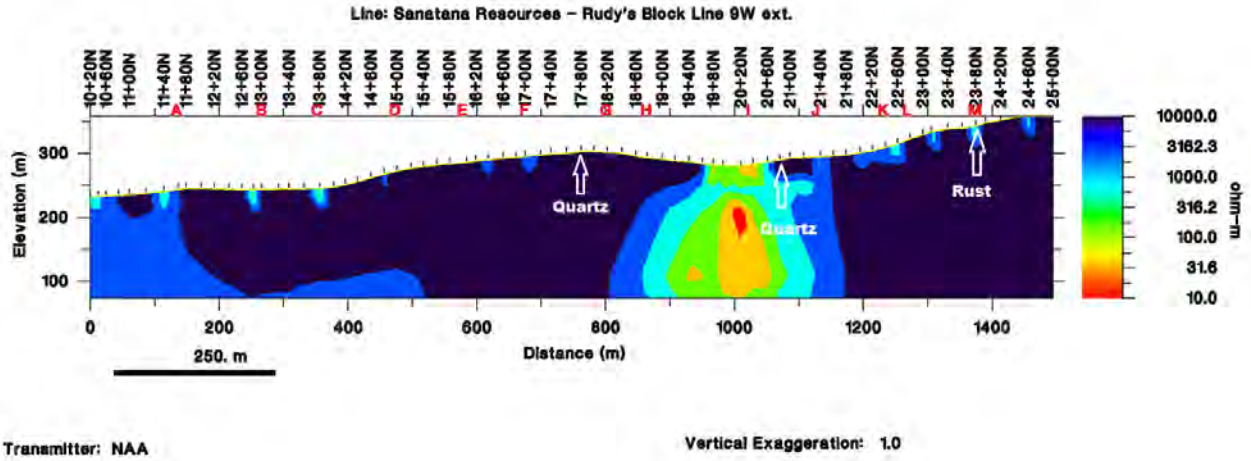
Line 9W NAA Figure 1 Raw Data Profile



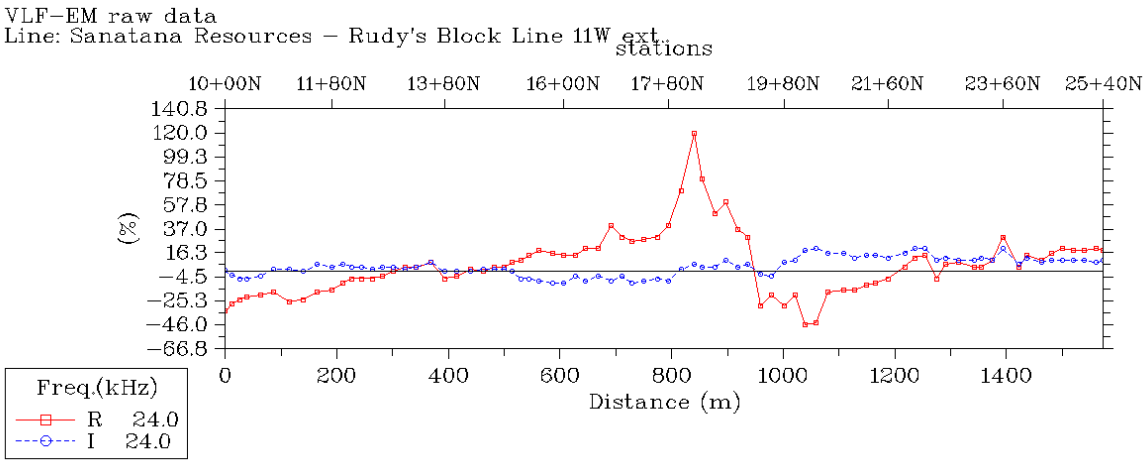
Line 9W NAA Figure 2 Fraser Filter Profile with Fraser Picks



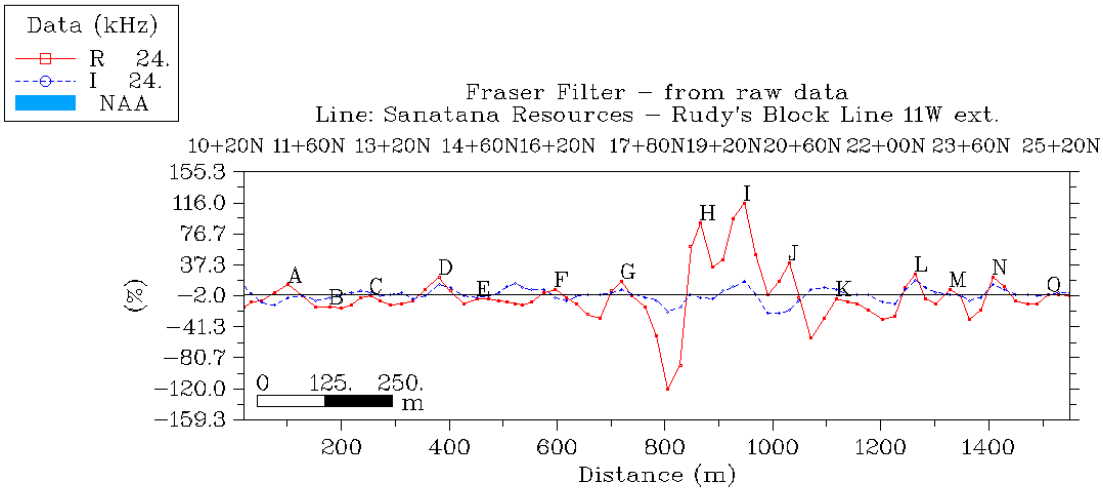
Line 9W NAA Figure 3 Model 4000 Ohm with Fraser Picks



Line 11W NAA Figure 1 Raw Data Profile



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



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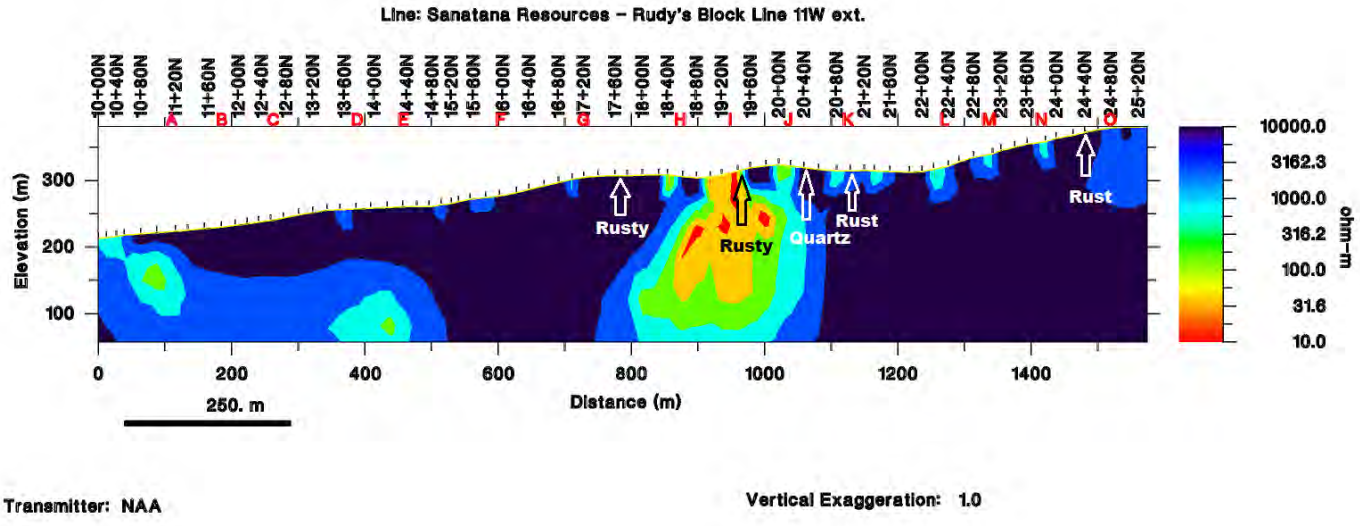

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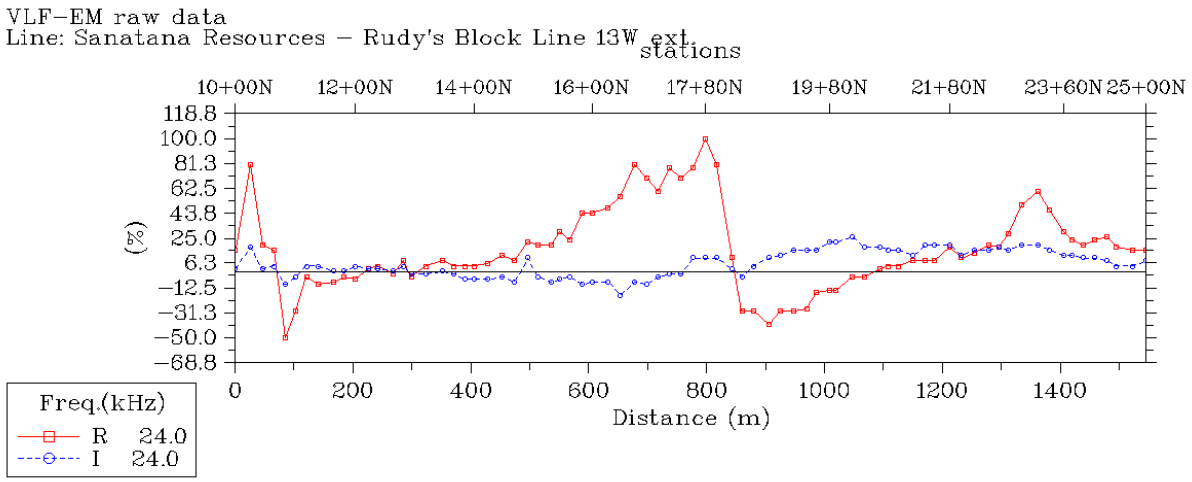
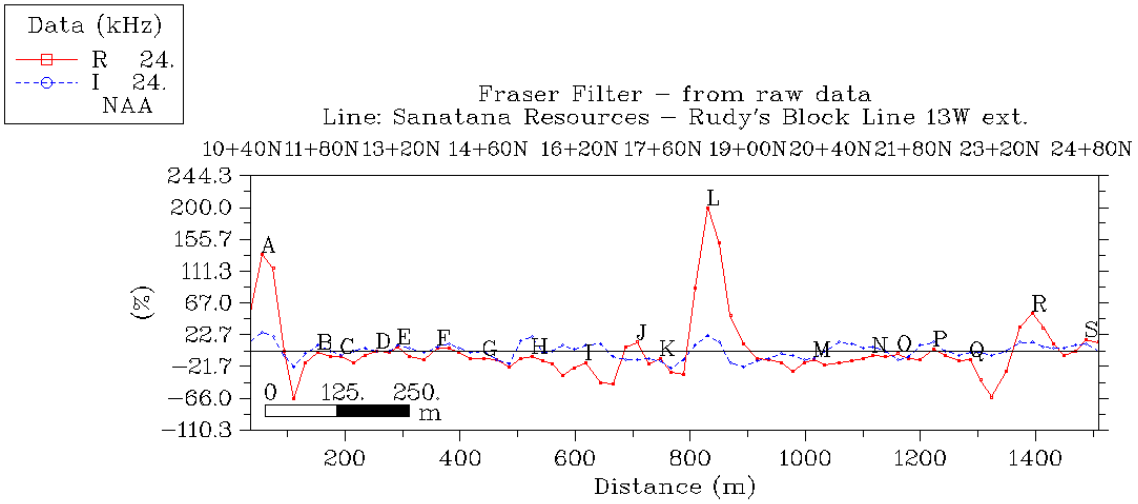


Line 13W NAA Figure 2 Fraser Filter Profile with Fraser Picks



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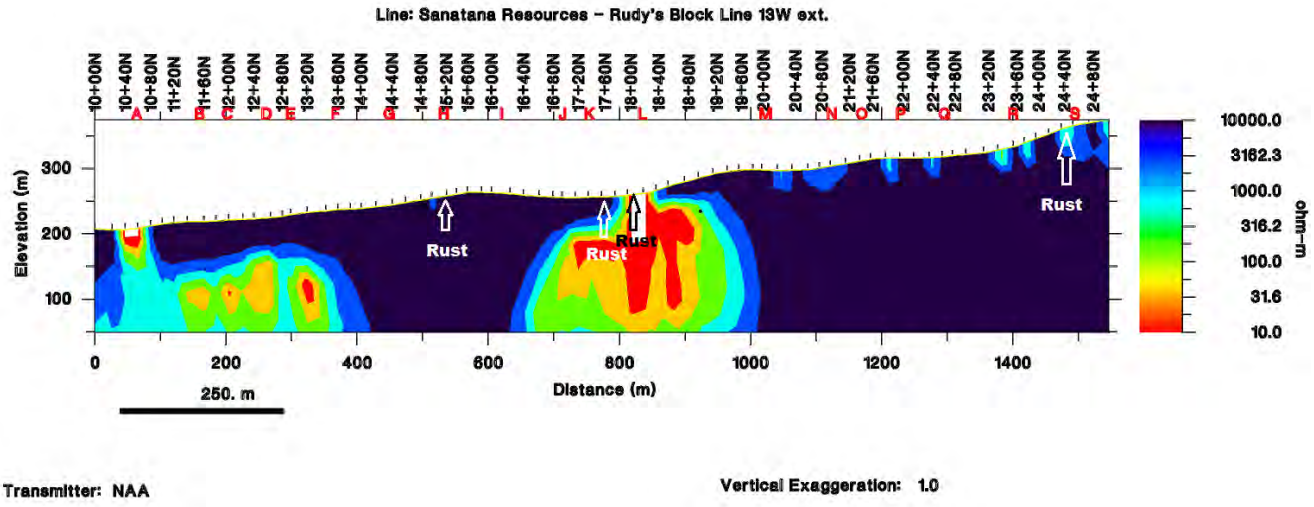

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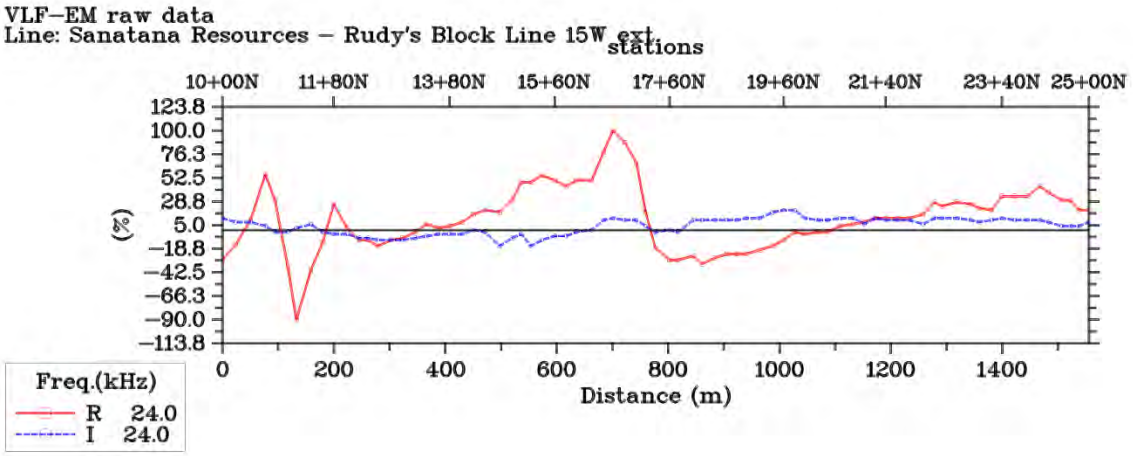
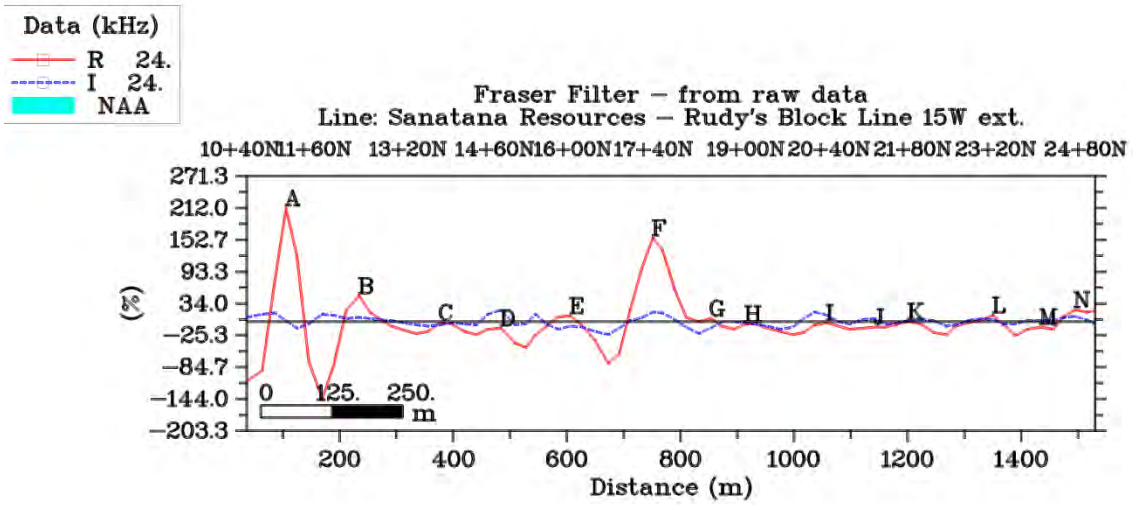
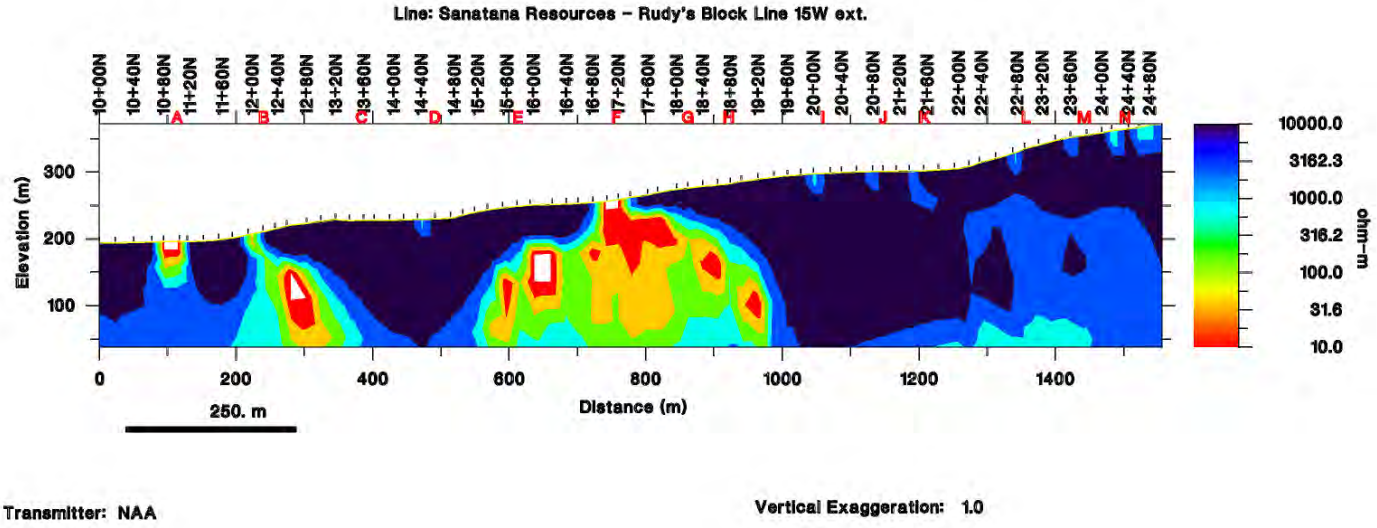


Line 15W NAA Figure 2 Fraser Filter Profile with Fraser Picks



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



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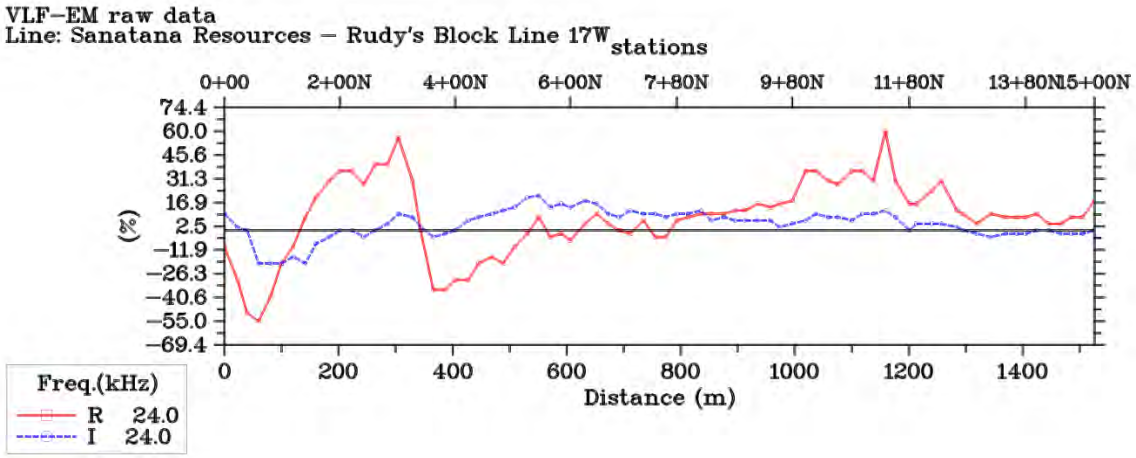
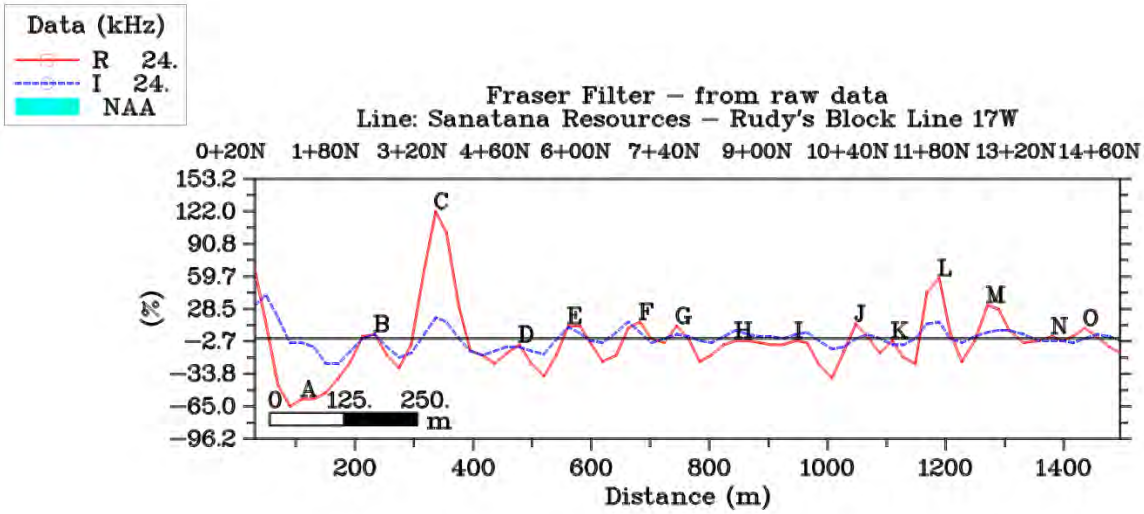
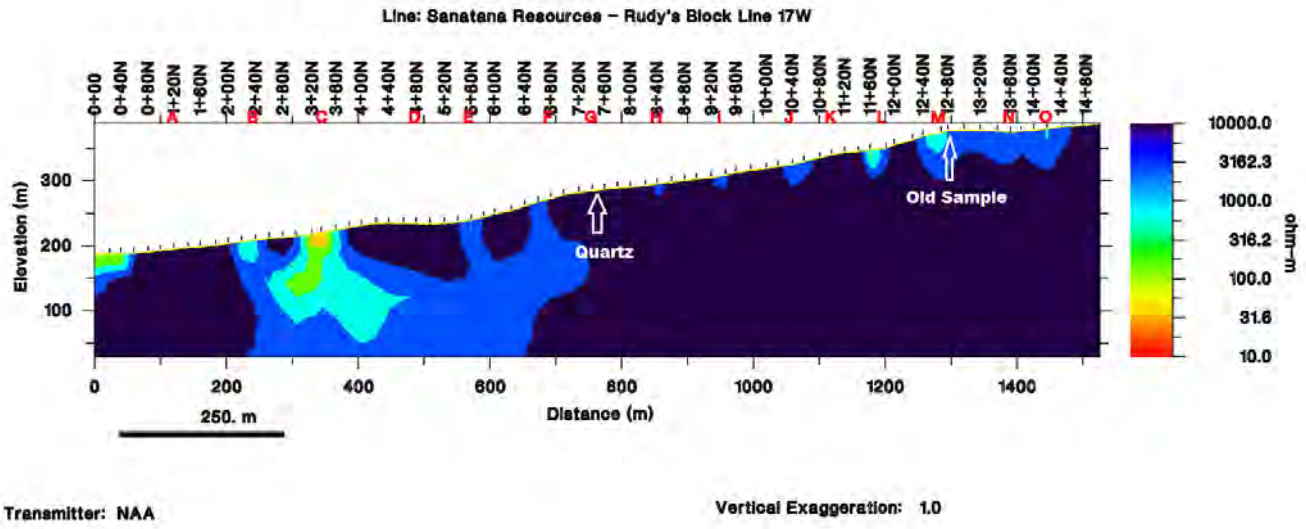


Line 17W NAA Figure 2 Fraser Filter Profile with Fraser Picks



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



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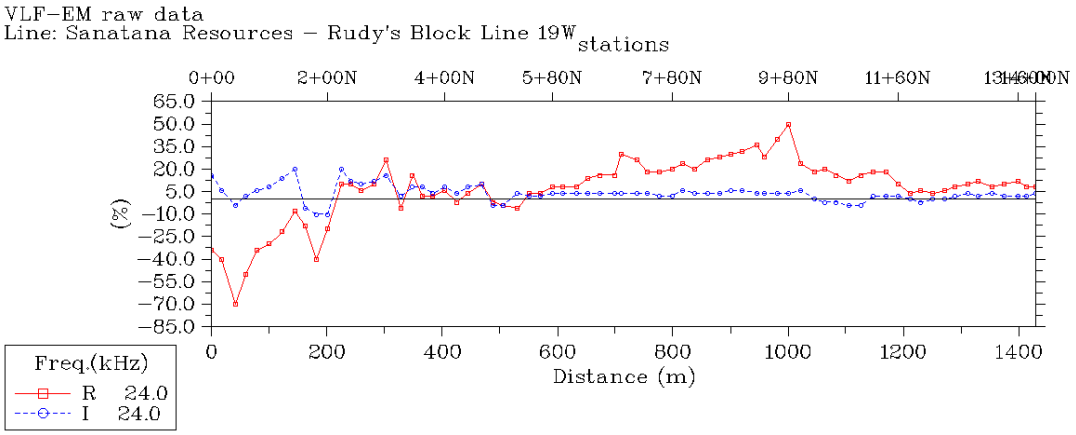
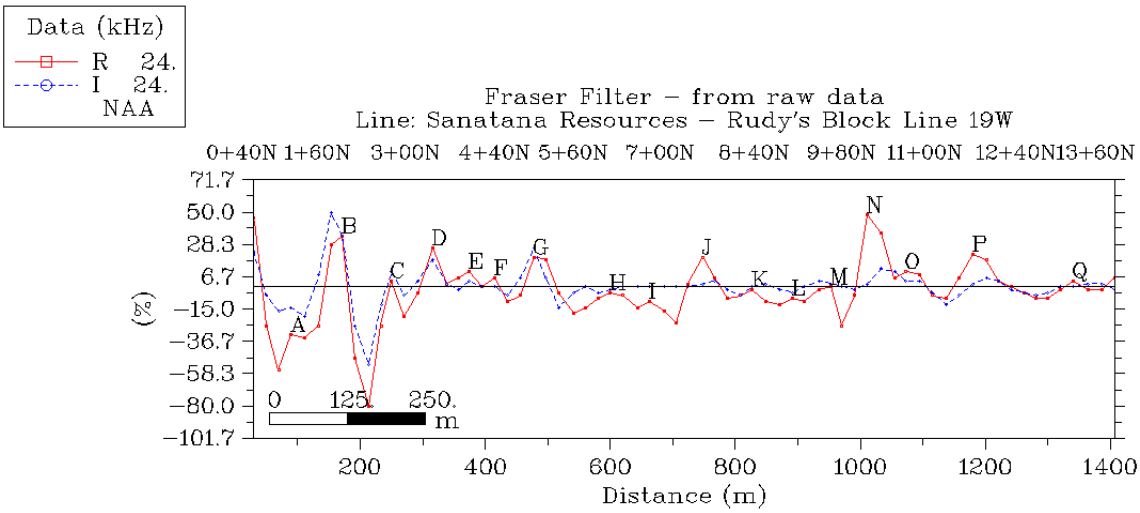


Line 19W NAA Figure 2 Fraser Filter Profile with Fraser Picks



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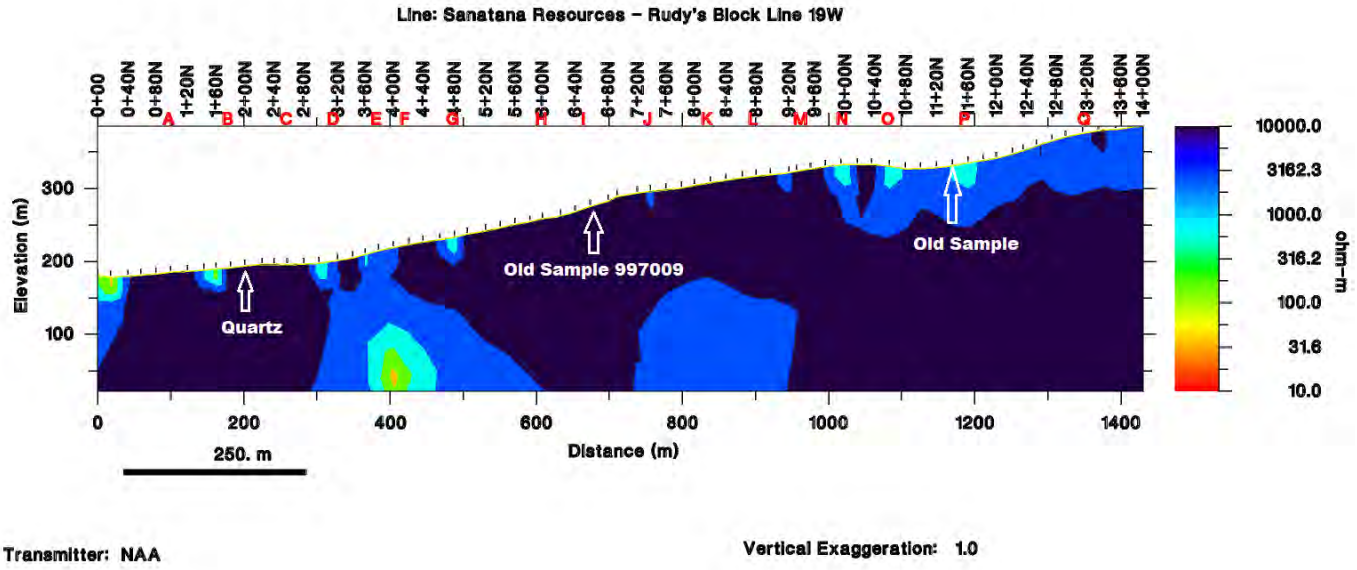

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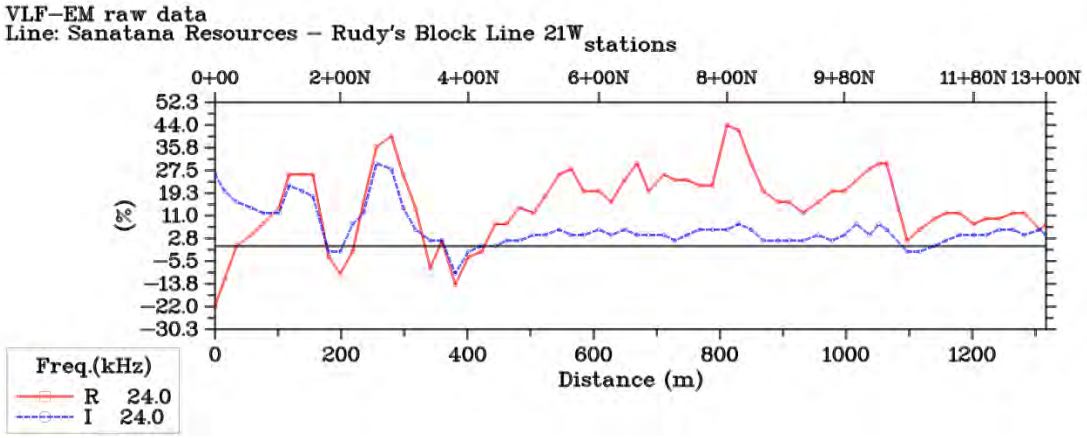
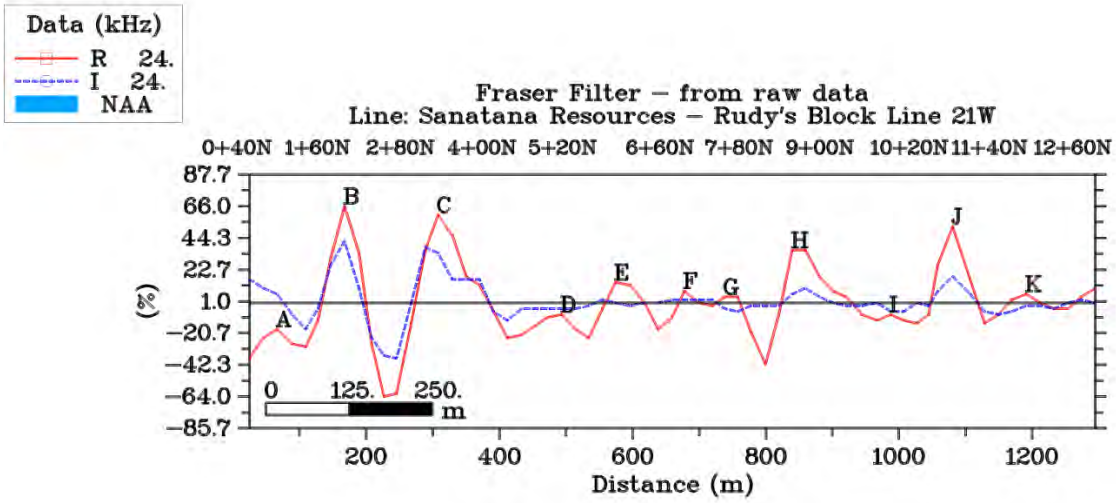


Line 21W NAA Figure 2 Fraser Filter Profile with Fraser Picks



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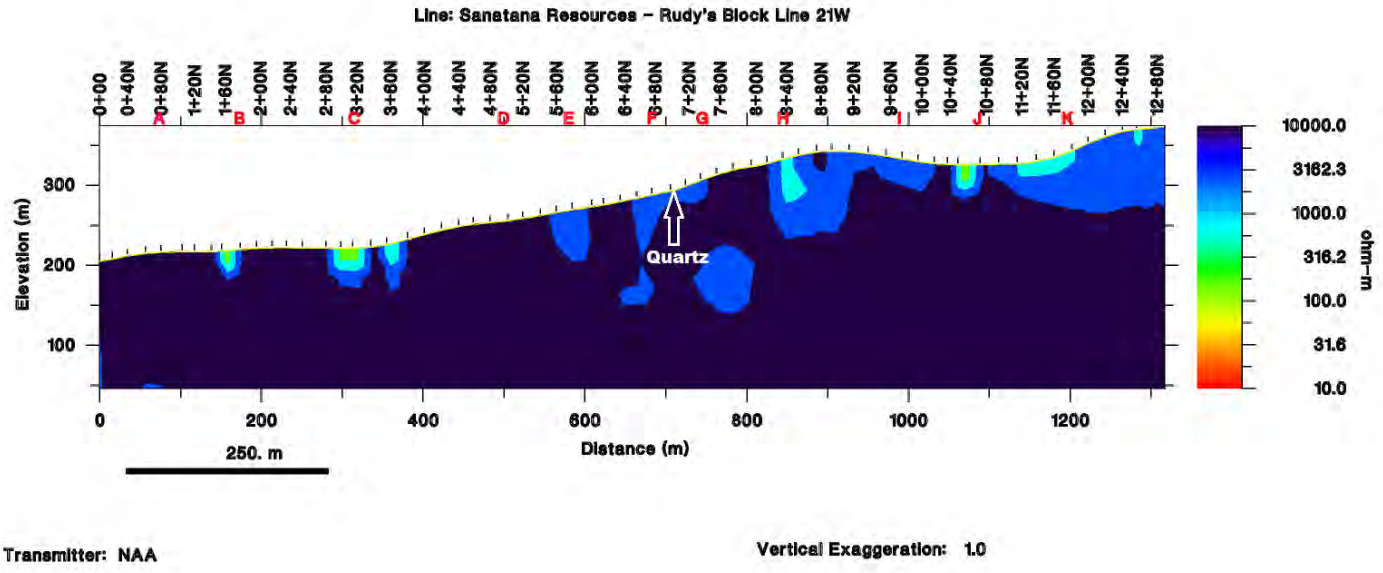

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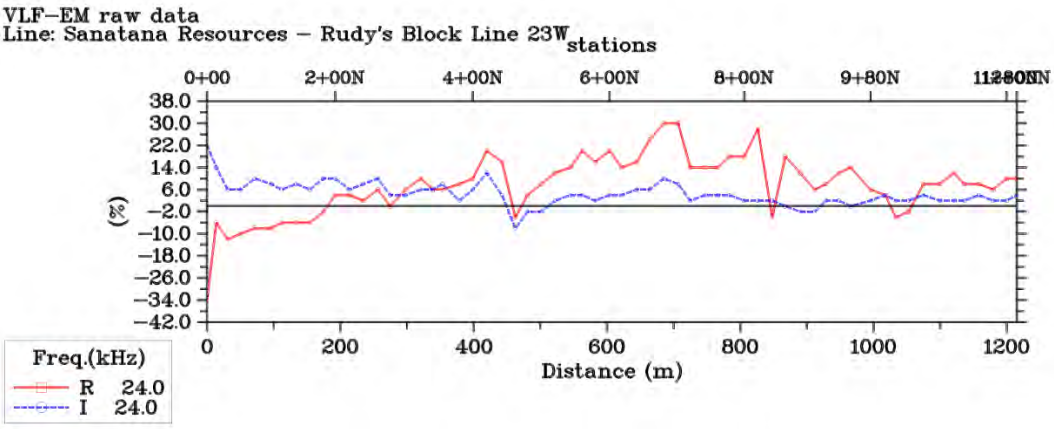
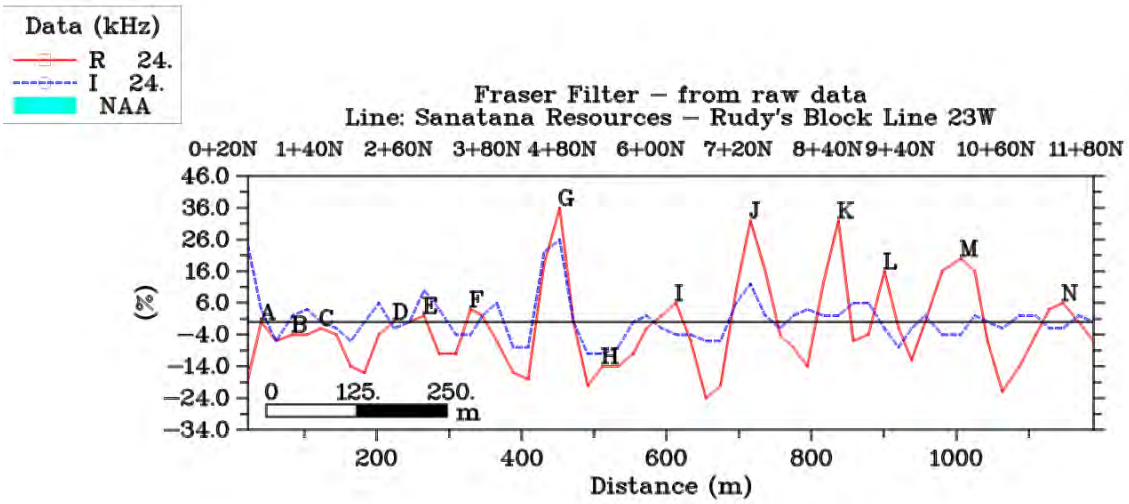
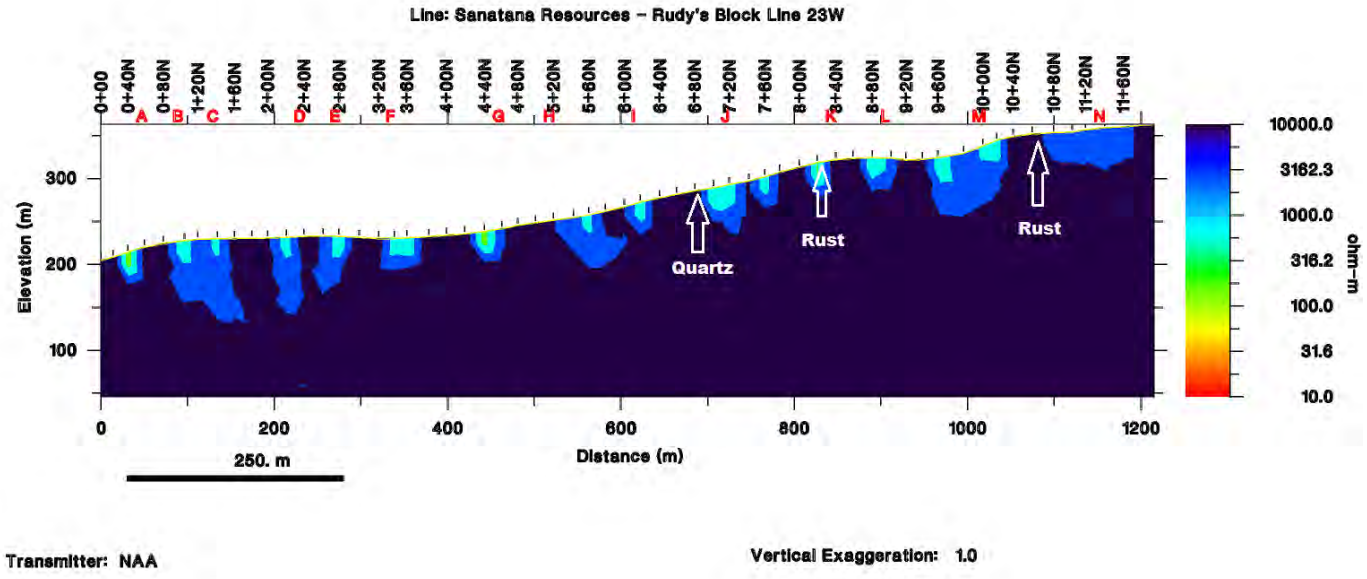


Line 23W NAA Figure 2 Fraser Filter Profile with Fraser Picks



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



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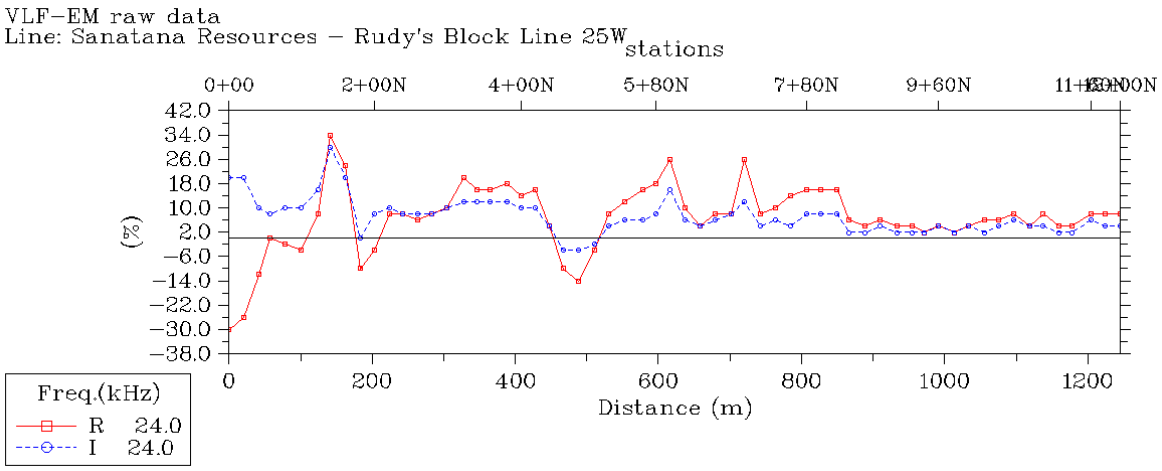
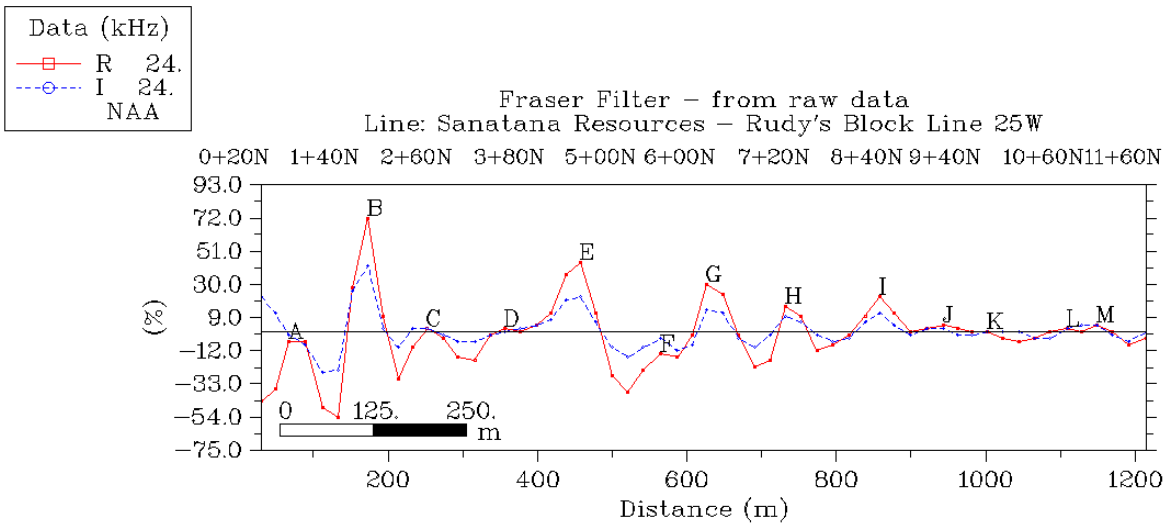
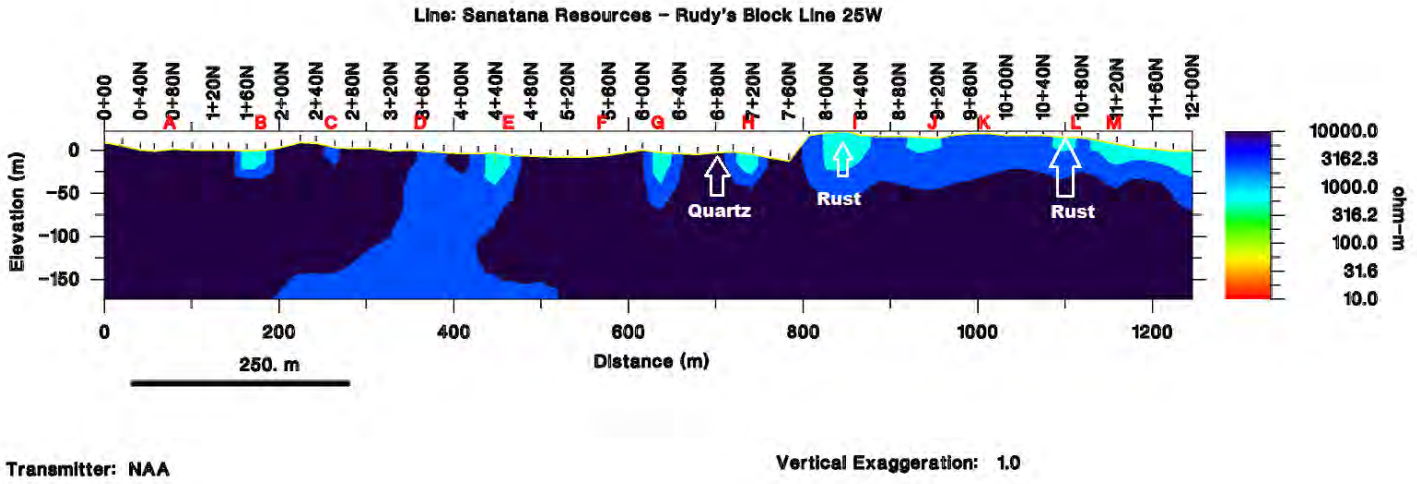


Line 25W NAA Figure 2 Fraser Filter Profile with Fraser Picks



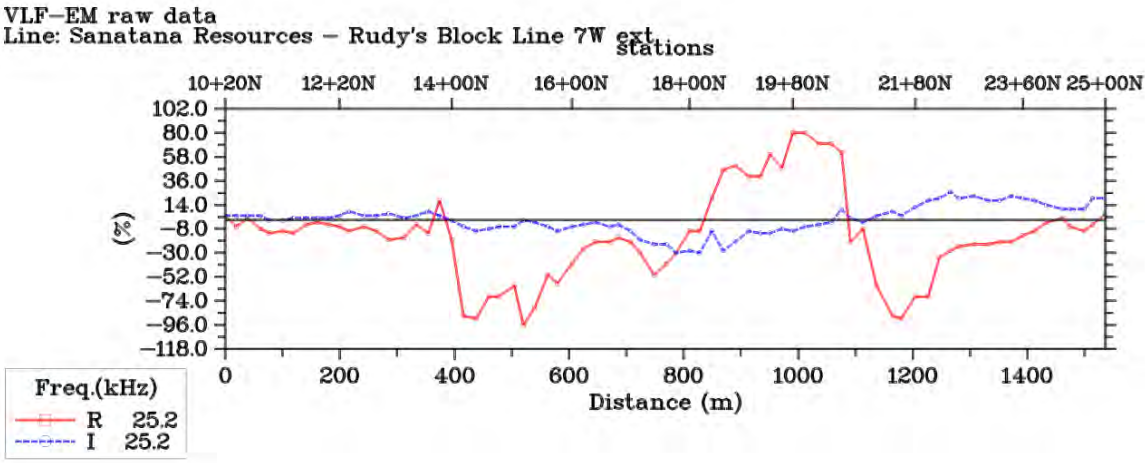
Line 25W NAA Figure 3 Model 4000 Ohm with Fraser Picks



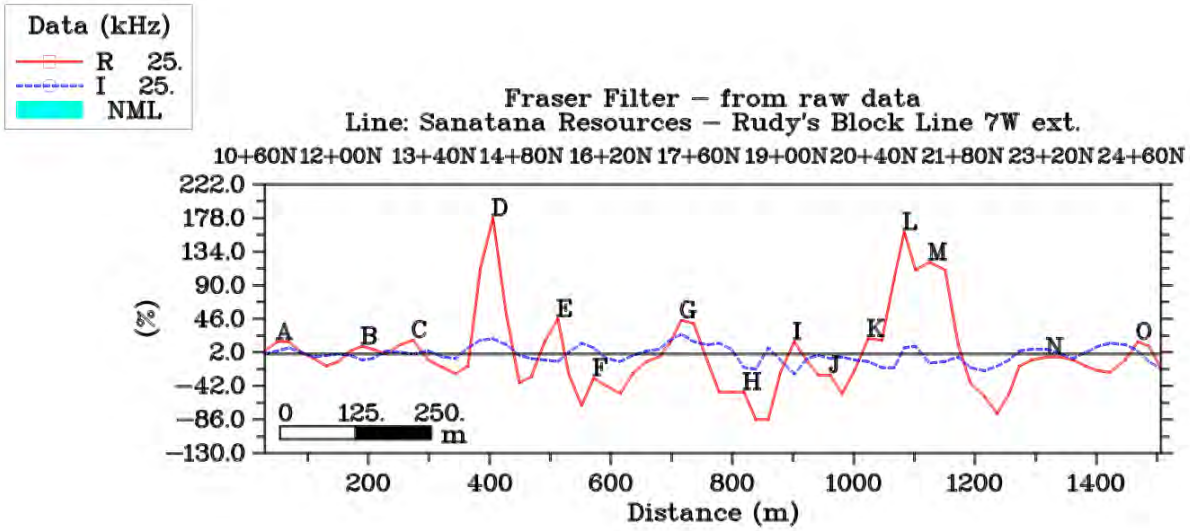
APPENDIX B

TX NML Figures

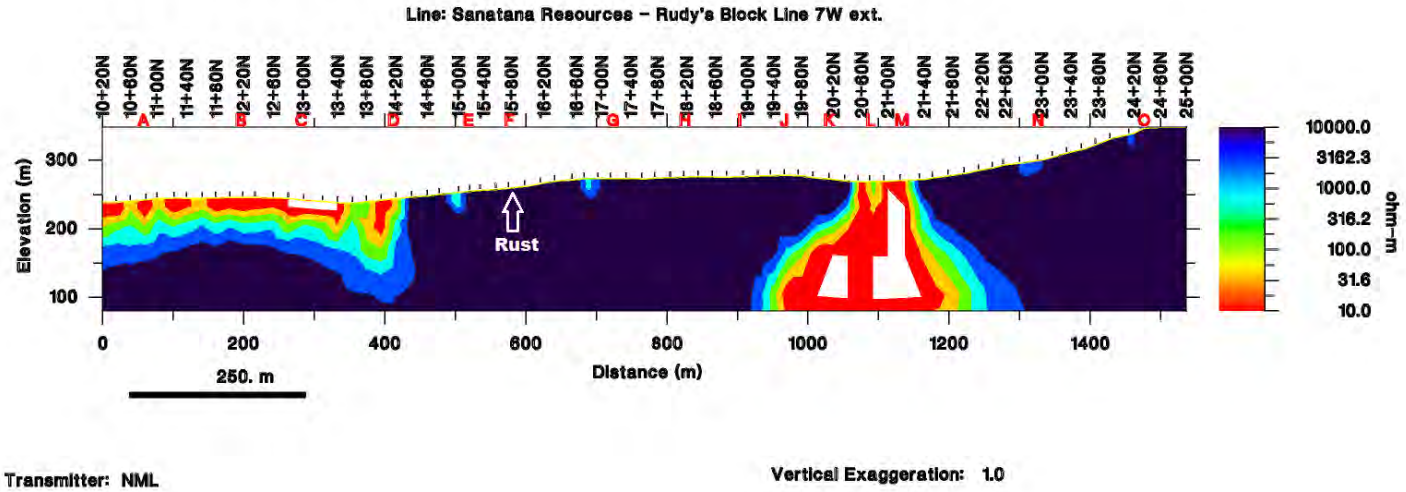
Line 7W NML Figure 1 Raw Data Profile



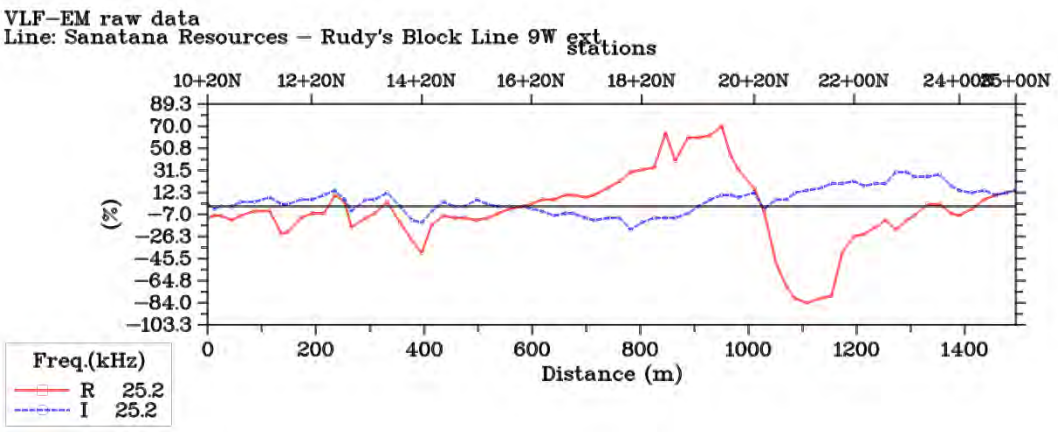
Line 7W NML Figure 2 Fraser Filter Profile with Fraser Picks



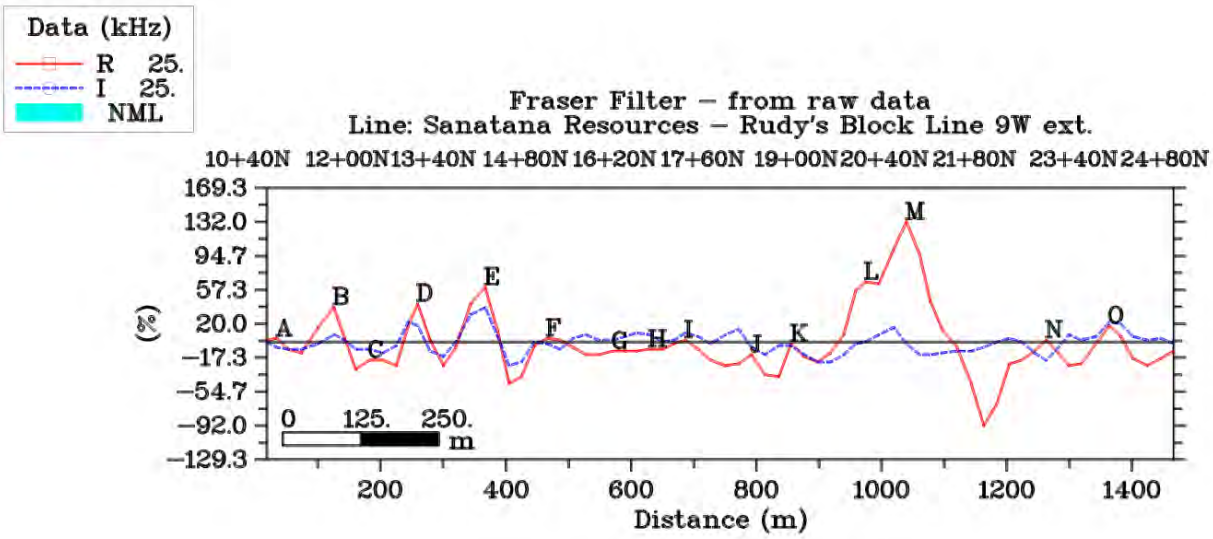
Line 7W NML Figure 3 Model 4000 Ohm with Fraser Picks



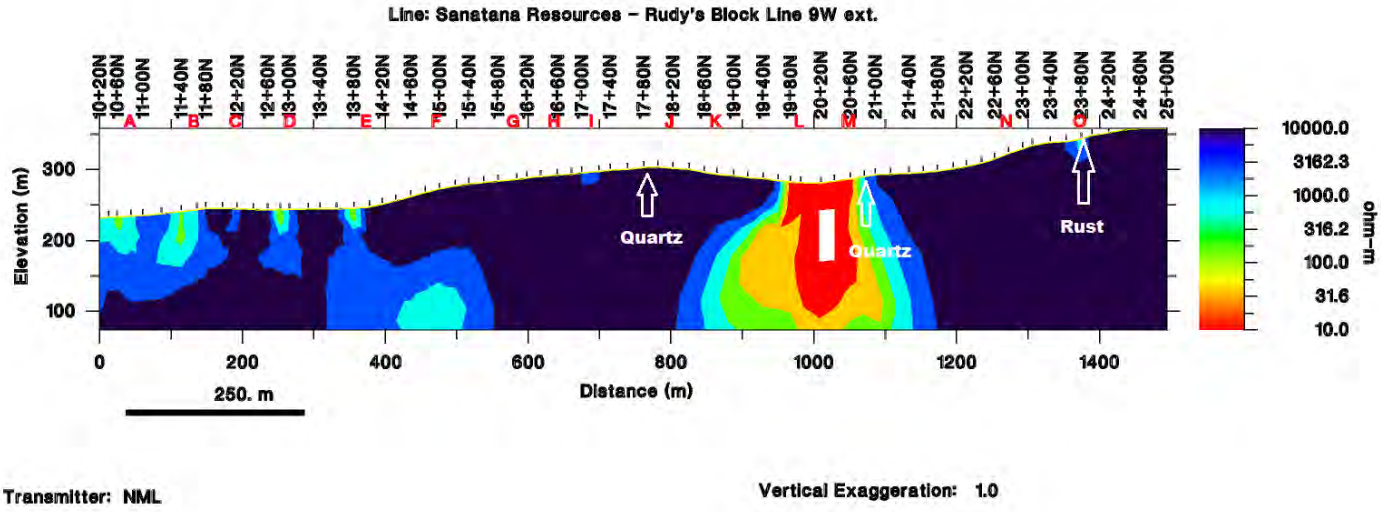
Line 9W NML Figure 1 Raw Data Profile



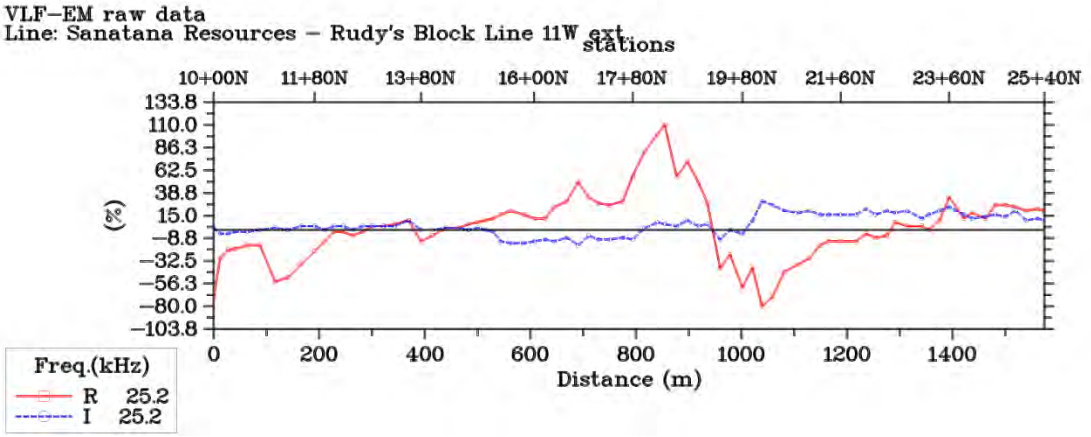
Line 9W NML Figure 2 Fraser Filter Profile with Fraser Picks



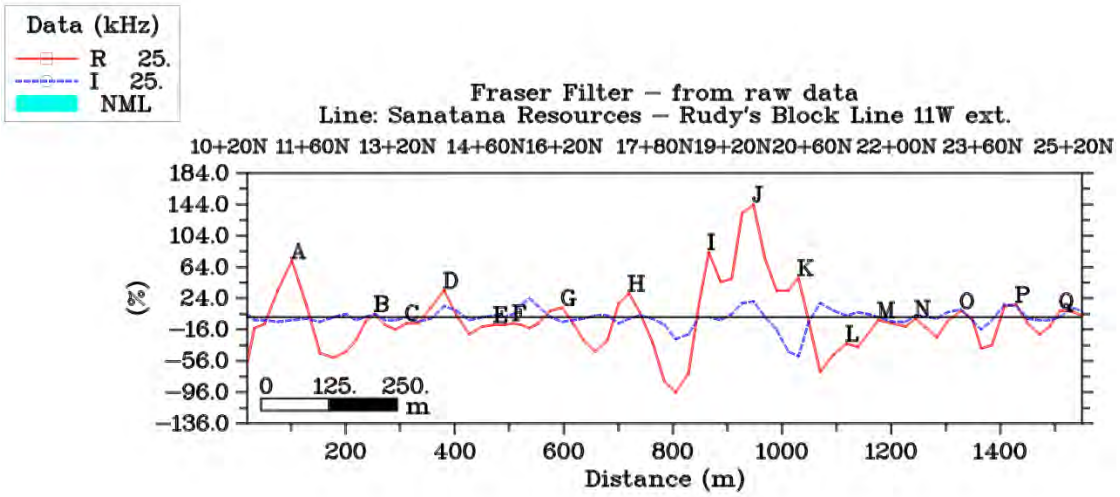
Line 9W NML Figure 3 Model 4000 Ohm with Fraser Picks



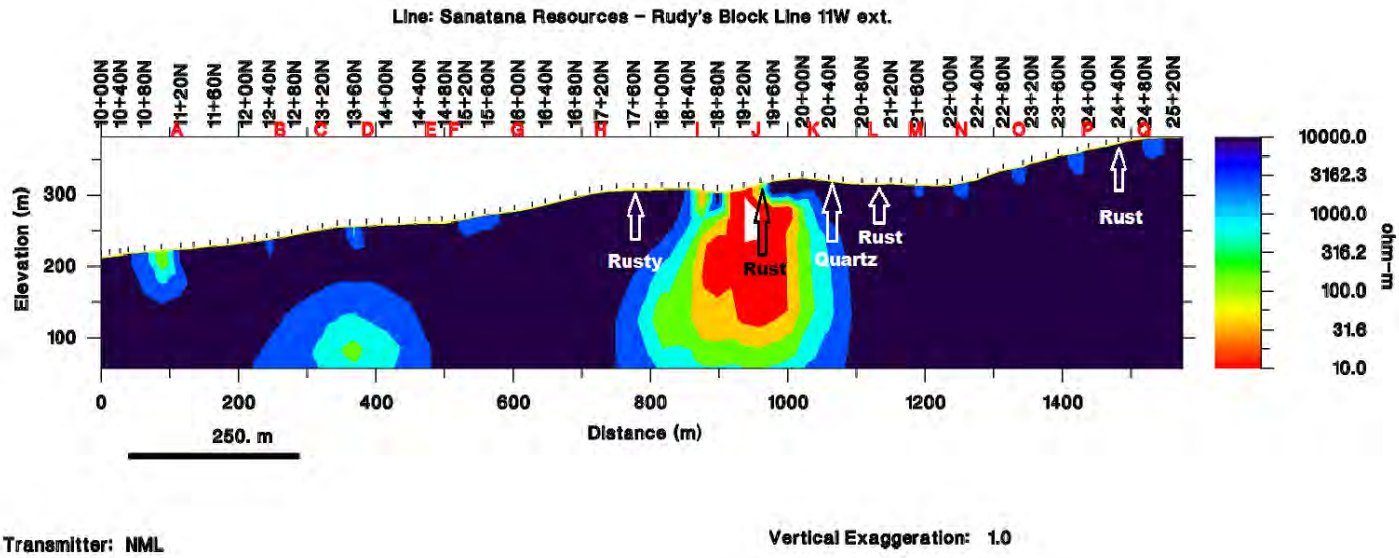
Line 11W NML Figure 1 Raw Data Profile



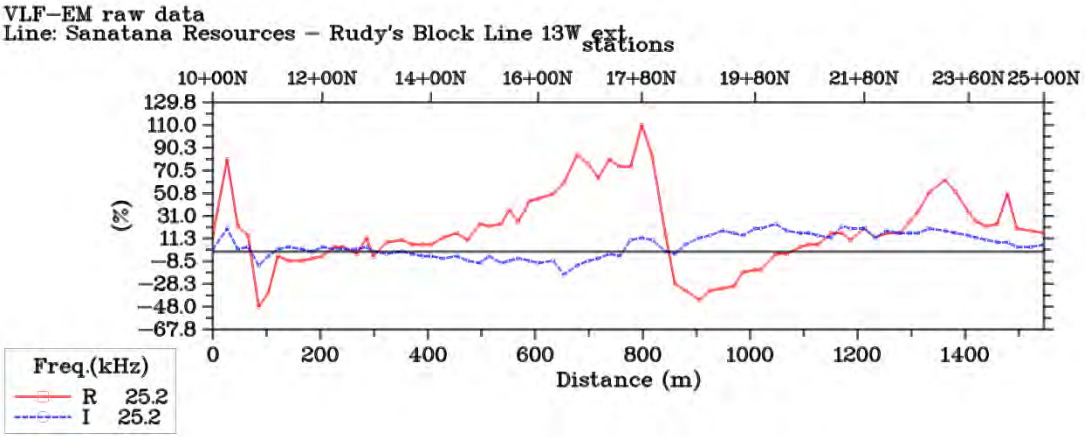
Line 11W NML Figure 2 Fraser Filter Profile with Fraser Picks



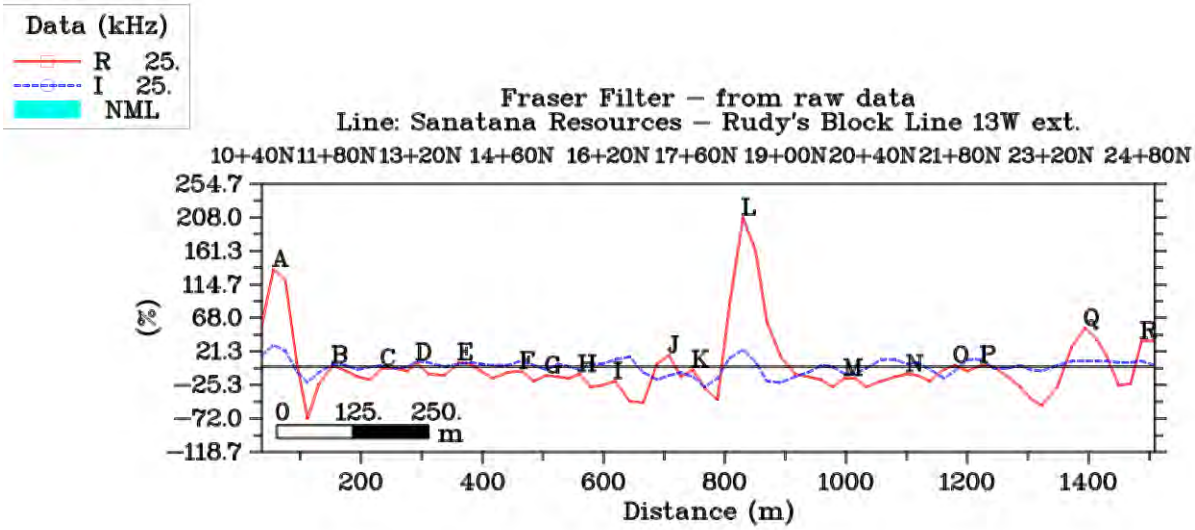
Line 11W NML Figure 3 Model 4000 Ohm with Fraser Picks



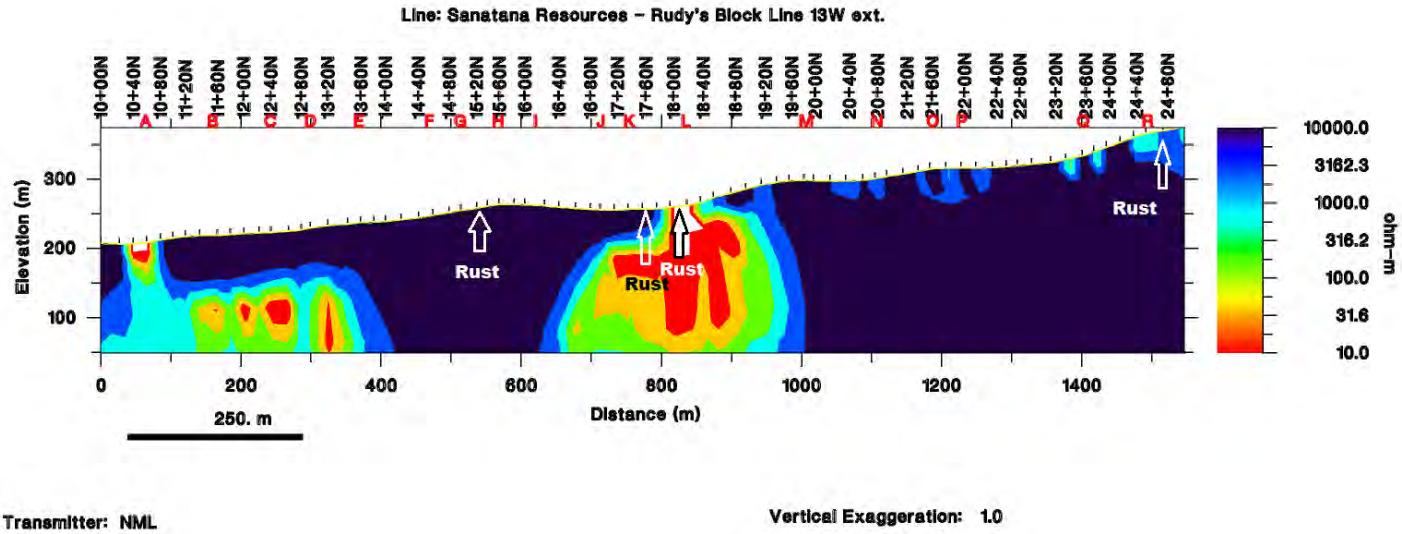
Line 13W NML Figure 1 Raw Data Profile



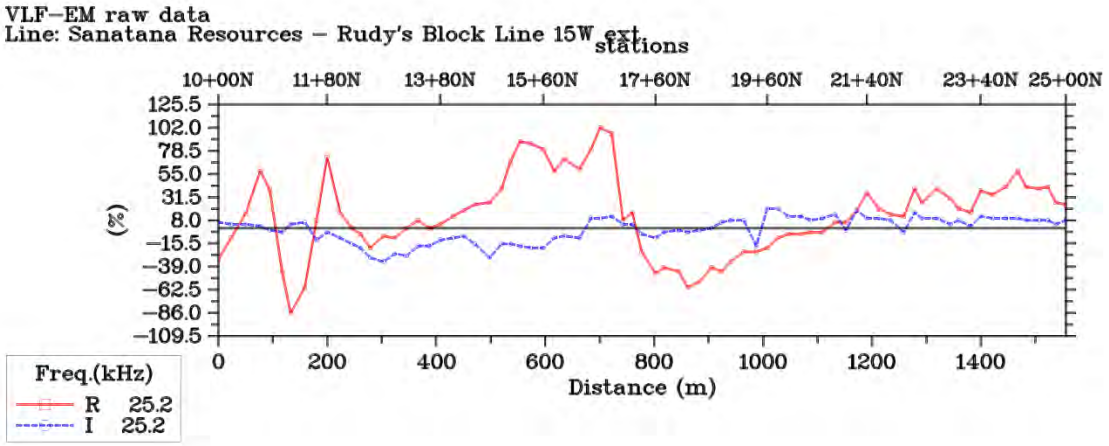
Line 13W NML Figure 2 Fraser Filter Profile with Fraser Picks



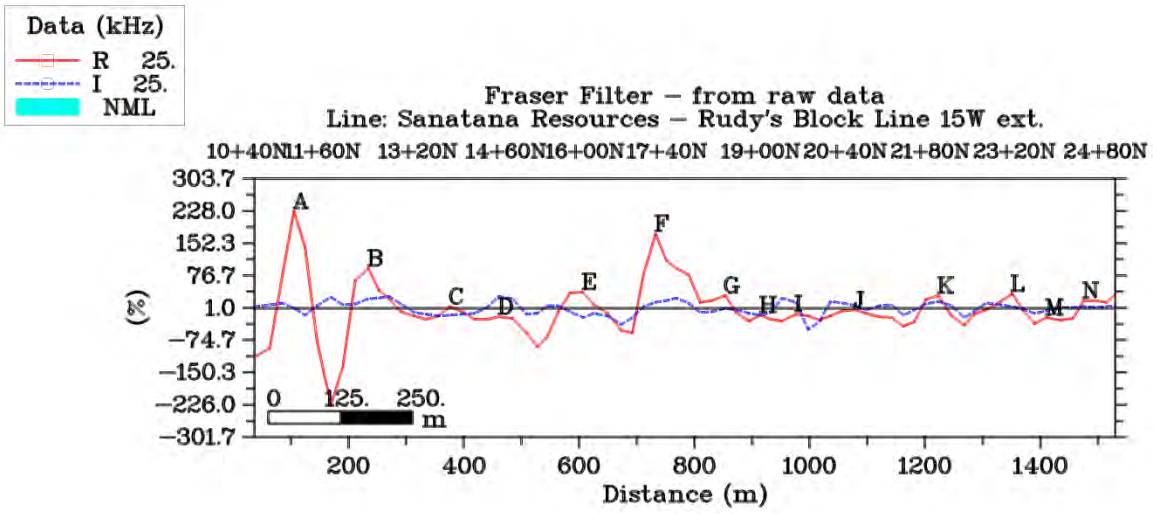
Line 13W NML Figure 3 Model 4000 Ohm with Fraser Picks



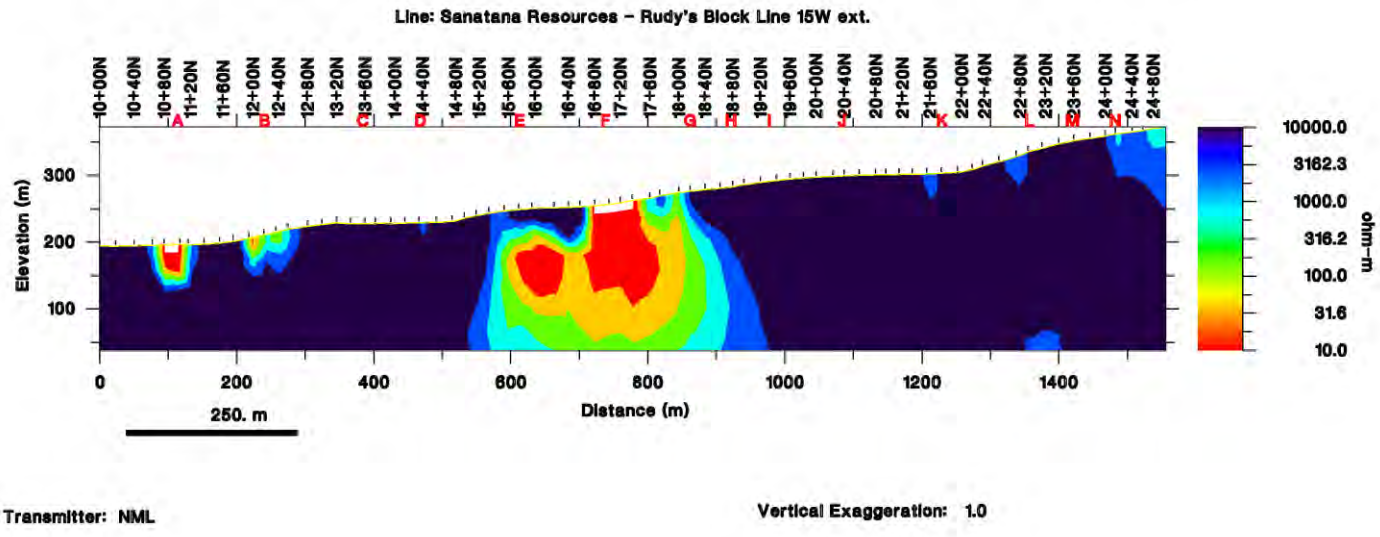
Line 15W NML Figure 1 Raw Data Profile



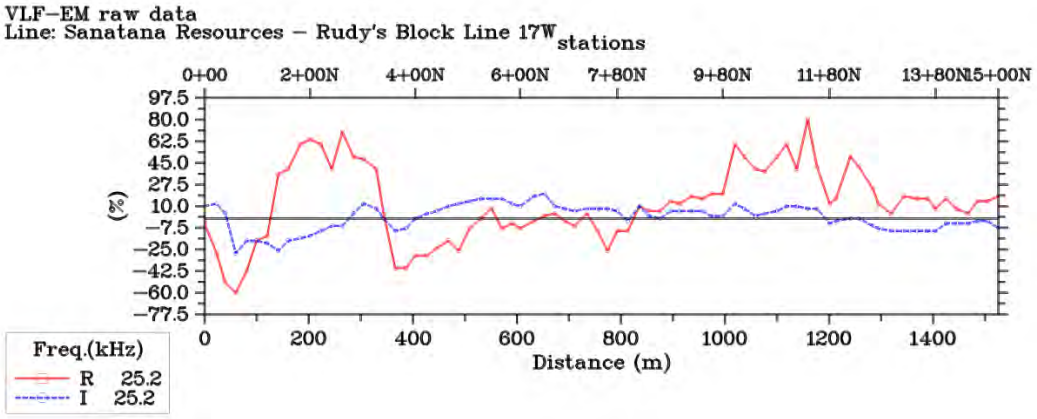
Line 15W NML Figure 2 Fraser Filter Profile with Fraser Picks



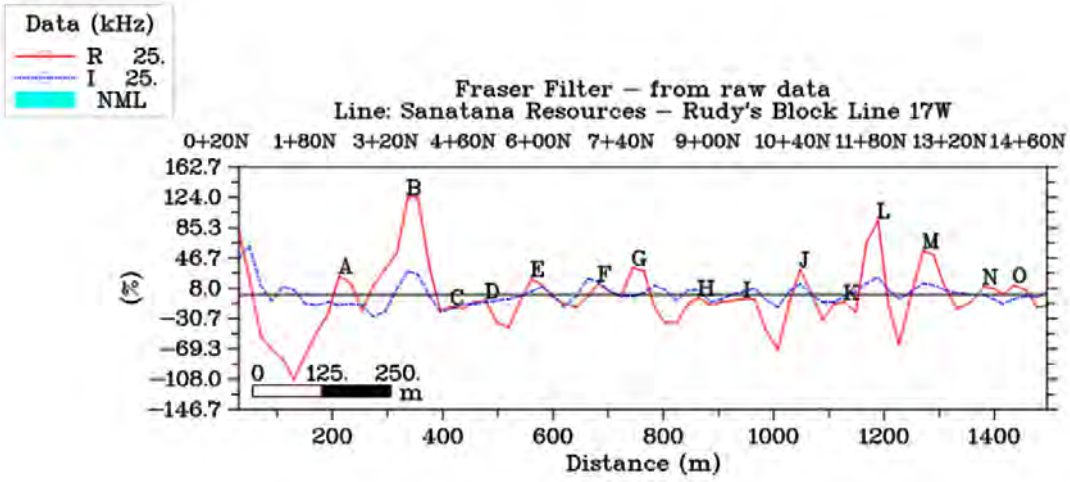
Line 15W NML Figure 3 Model 4000 Ohm with Fraser Picks



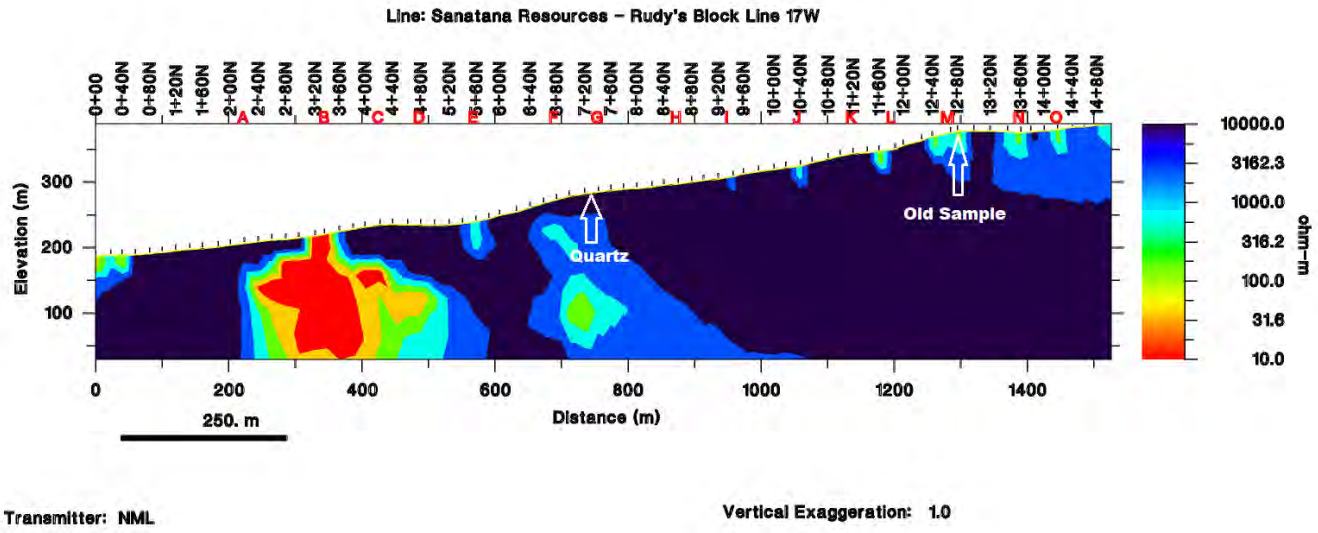
Line 17W NML Figure 1 Raw Data Profile



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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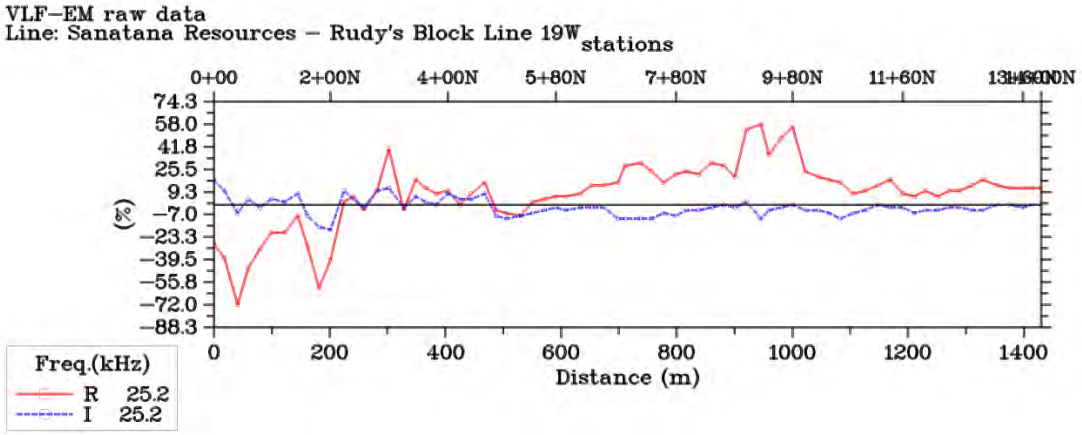
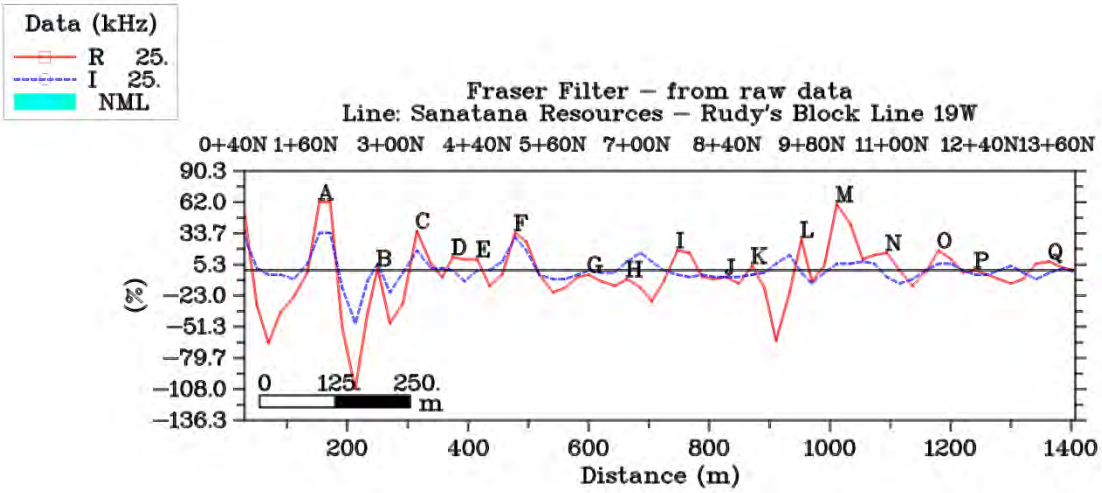
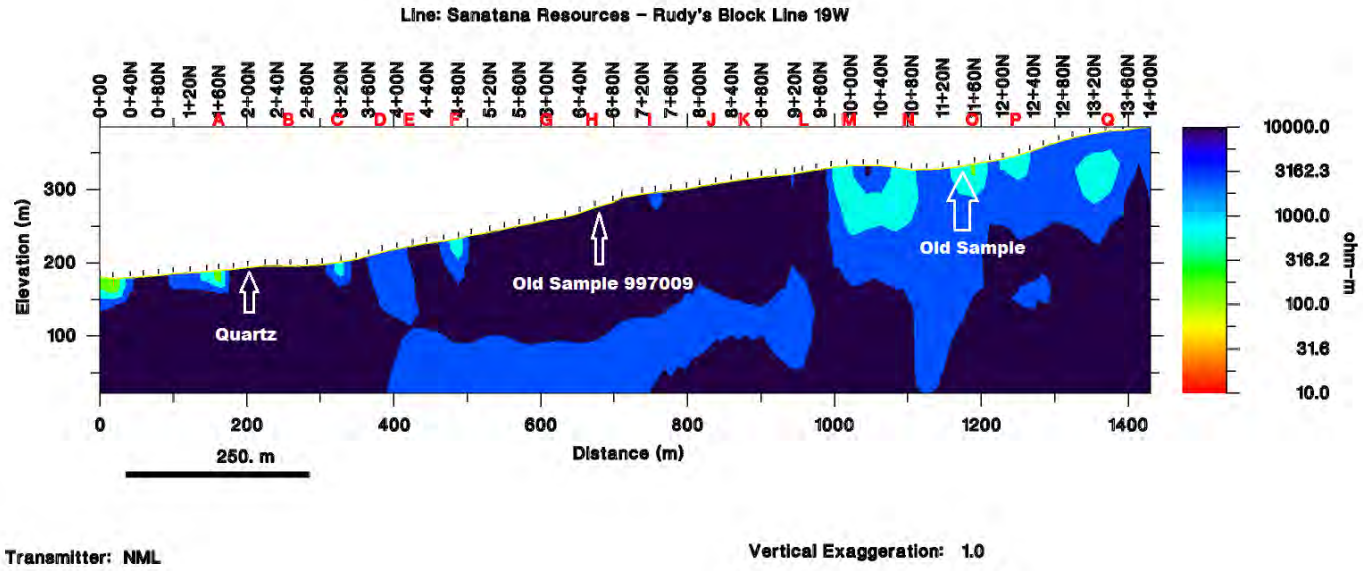


Line 19W NML Figure 2 Fraser Filter Profile with Fraser Picks



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



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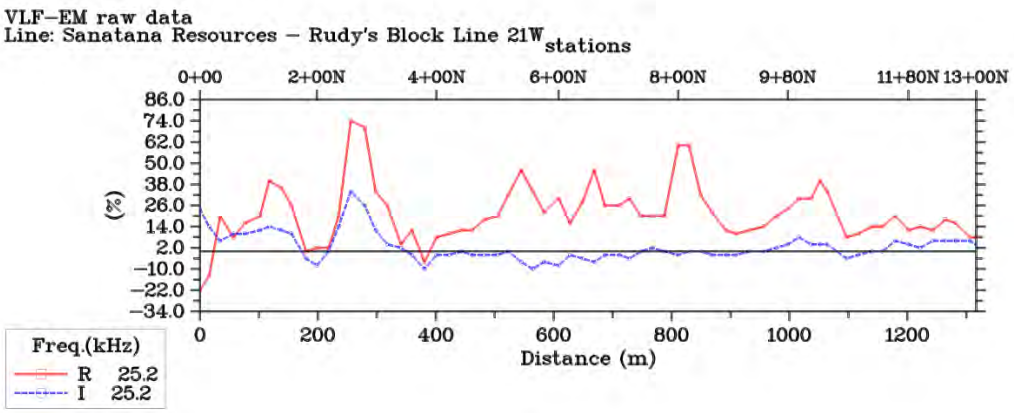
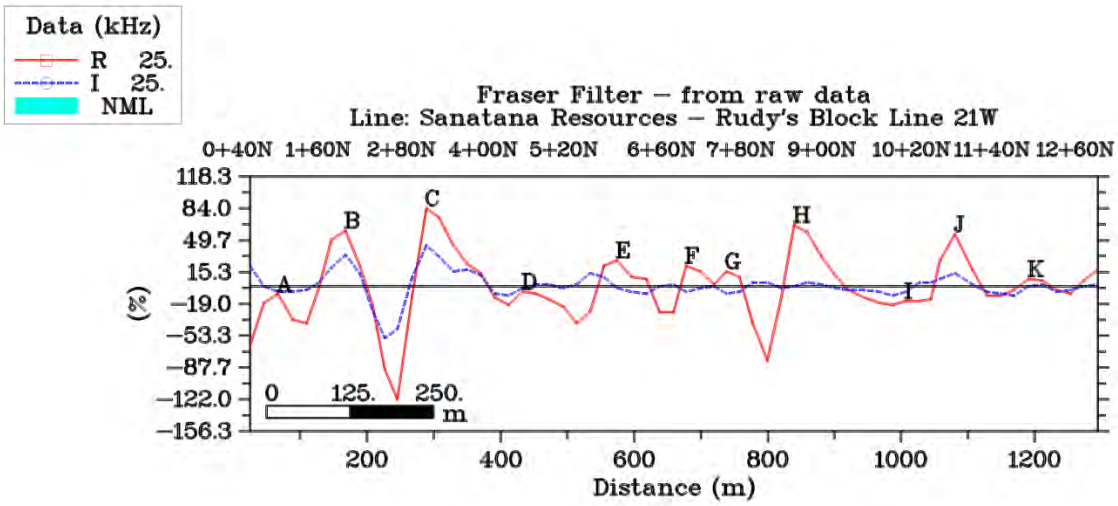
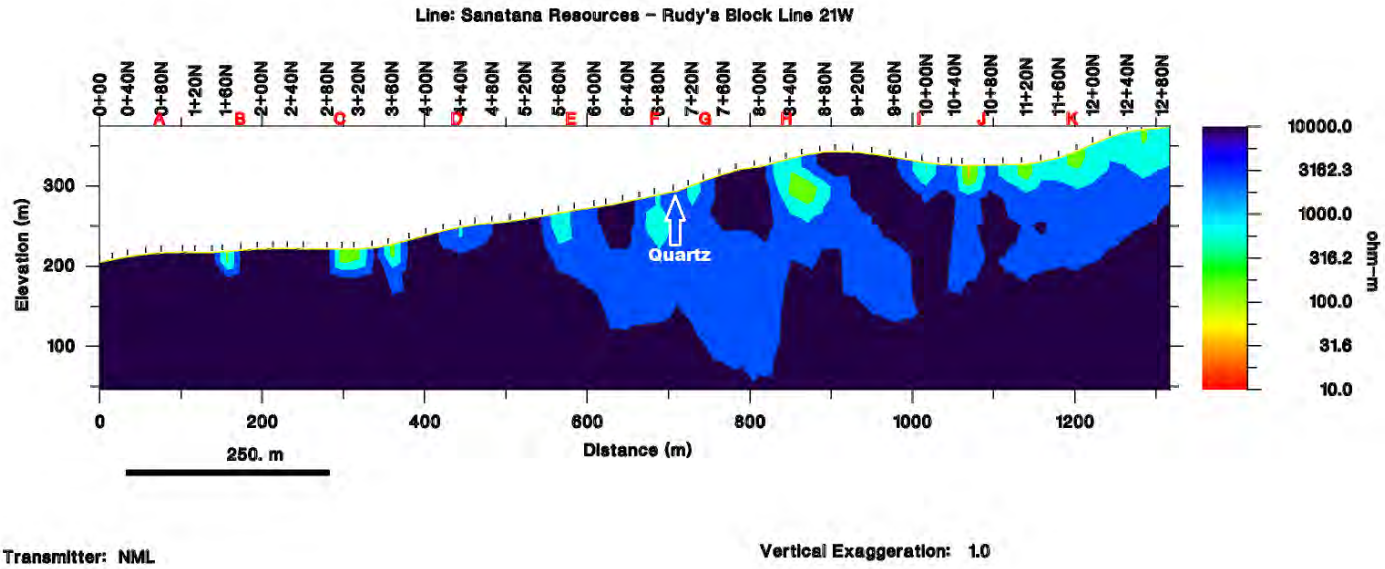


Line 21W NML Figure 2 Fraser Filter Profile with Fraser Picks



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



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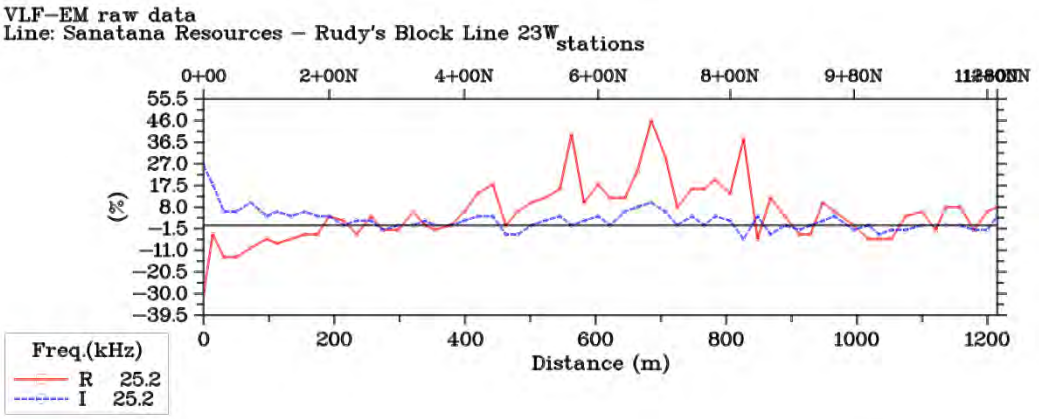
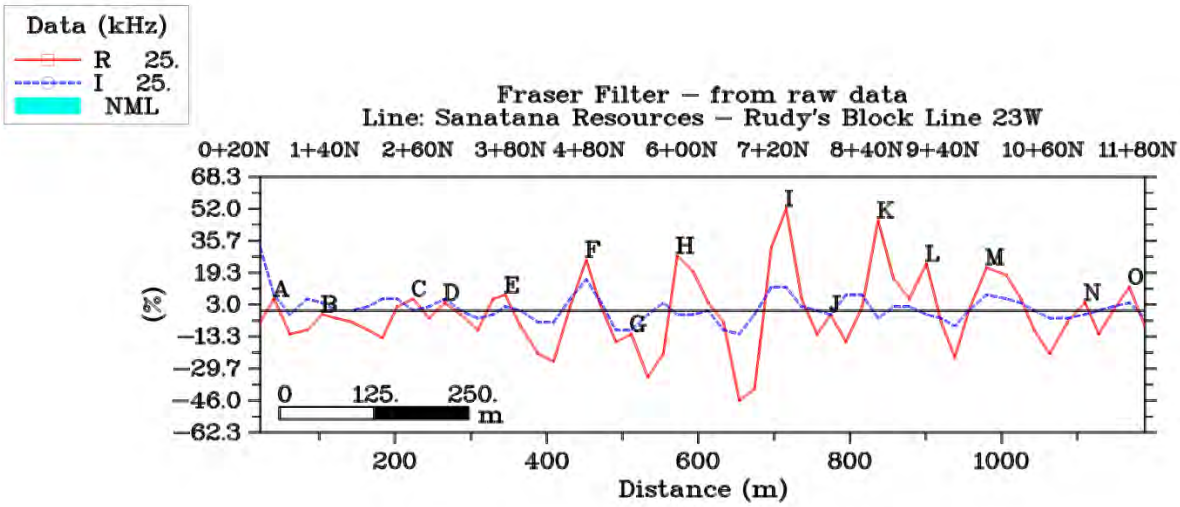
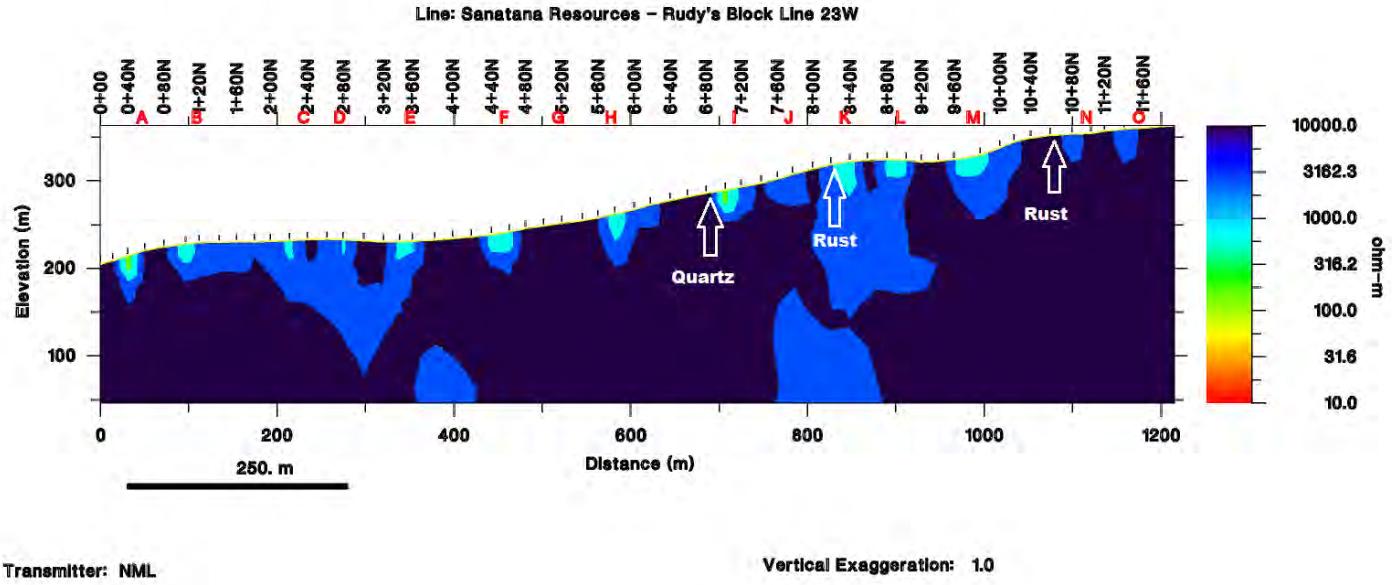


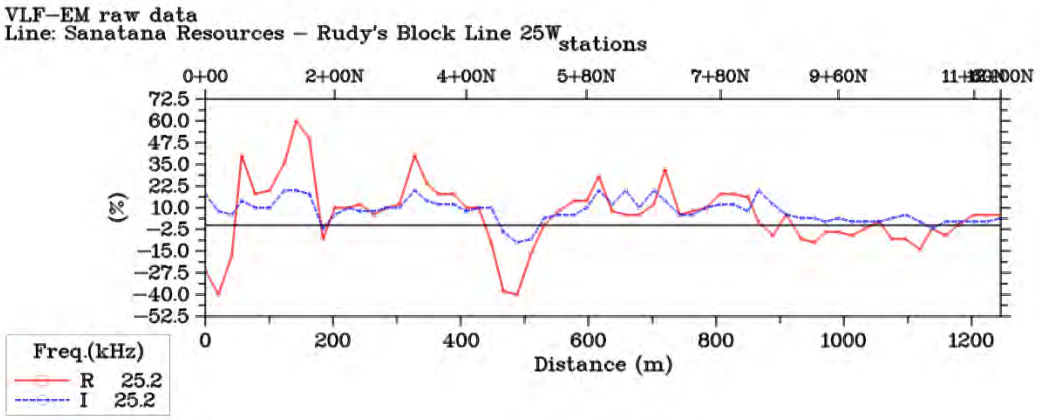
Line 23W NML Figure 2 Fraser Filter Profile with Fraser Picks



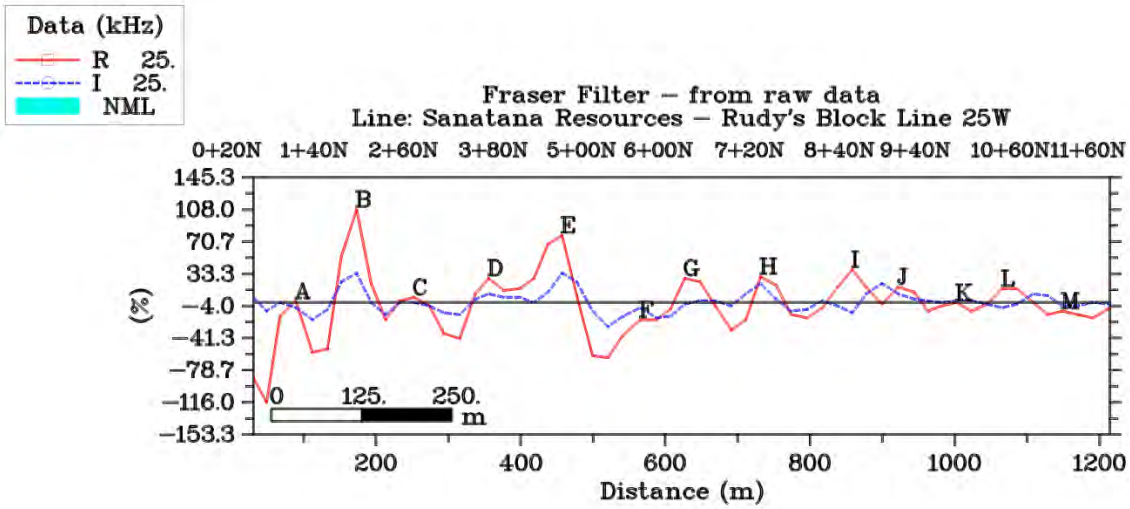
Line 23W NML Figure 3 Model 4000 Ohm with Fraser Picks



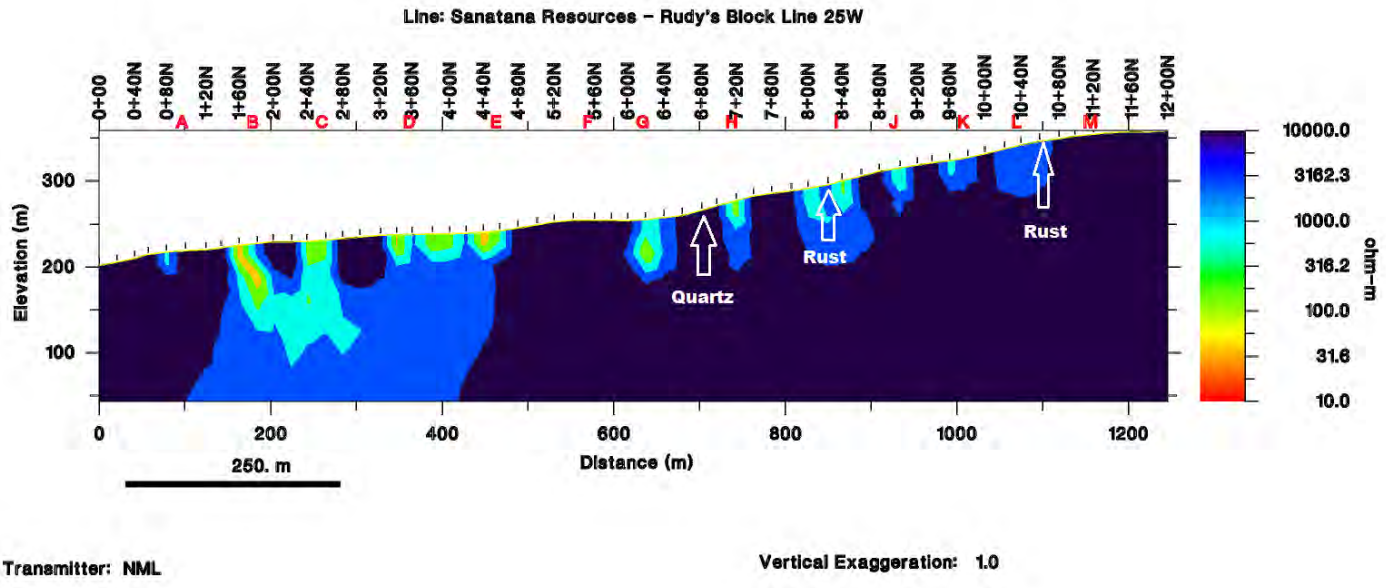
Line 25W NML Figure 1 Raw Data Profile



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



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



Appendix 2: VLF EM-16 Survey / Interpretation Report

Over the Rudy Block Grid

VLF EM-16 Survey / Interpretation Report

Over the Rudy Block Grid

In the District of Thunder Bay, Ontario

Prepared For

Sanatana Resources Ltd.

By

Shaun Parent

Superior Exploration, Adventure & Climbing Co. Ltd.

October 9, 2018

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List of Tables and Maps

List of Appendices A (TX NAA)

List of Appendices B (TX NML)

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 an exploration 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 Ground Magnetometer.

Sandra Slater is a member of the Prospectors & Developers Association of Canada. She has been working in the Geological/Geophysical field for over 10 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. Many case history surveys have been completed over various ore bodies and mineralized zones with proven, successful results.

Executive Summary

This 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 June and July 2018 using a VLF EM-16 unit and a handheld Garmin GPS-60CSX. Two transmitters were read at each station: NAA 24.0 KHz – Cutler, Maine and NML 25.2 KHz- La Moure, North Dakota

A total of 8.56 Km of VLF surveying was completed. Results from this survey were merged with results from another VLF survey carried out in August 2017 over the Rudy Block.

The objective of the 2018 VLF EM-16 survey was to:

- Carry out a VLF survey and merge this data with that from the August 2017 survey
- Determine if the VLF Survey could delineate the location of the structures on which several historical showings have 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
- Obtain more detailed VLF information across the Rudy Block Grid, focusing on the Main trend that was interpreted during the August 2017 survey.

Deposit Types

Historically, 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)

Property Access

Access is by the following:

The property is adjacent to Highway 17 to the east of Jackfish Lake. It can be found behind the Jackfish Lake Cottages on the Trans-Canada Hwy in Terrace Bay, ON. A series of access roads cross most of the VLF grid.

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, JY Inversions 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 all raw data was Shaun Parent. Processing, Modelling and Interpretation of VLF data was completed by Sandra Slater and Shaun Parent.

Map 1 General Location Map

Map 2 Location of VLF Grid Lines

Work Performed

Fieldwork

The VLF EM-16 survey consisted of running 10 Reconnaissance lines in order to cover the Rudy Block Gold showings: 3W, 4W, 5W, 6W, 8W, 10W, 12W, 14W, 16W & 18W
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:

Navy VLF Transmitters Used:

NAA Cutler, Maine (East)
Frequency: 24.0 kHz
Transmission Power: 2000 kW
Distance: 1,567 km
Azimuth: 114 degrees
Location (Nad 83): 636530E, 4944115N)

NML La Moure, North Dakota (West)
Frequency: 25.2 kHz
Transmission Power: 500 kW
Distance: 900 km
Azimuth: 248 degrees
Location (Nad 83): 551100E, 5134900N

VLF survey direction: All lines began at the southwest end. The VLF Em-16 receiver faced a direction of 44 degrees true azimuth for each reading taken.

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

Parameters of Measurement: In-phase and Quad-phase components of a vertical magnetic field is measured 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 aligned to the best bedrock strike orientation.

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
- 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 3W	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 from this survey and relevant data from the August 2017 survey were merged together, 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, 2D Inversion Models and JY Inversion models are included in the Appendices at the end of this report.
(TX NAA - Appendix A) & (TX NML - Appendix B)

VLF2DMF Profiles & Models

Raw Data Profiles

The raw data for each frequency was plotted for each line surveyed. No filtering or smoothing of the raw data was done. The Raw Data profiles also show a cross section of topography and the calculated resistivity along the line. These profiles can be found in Appendix A (NAA) and Appendix B (NML)

Fraser Filter Plan Map with Fraser Peaks and Trends

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. Fraser filter data was compiled to produce Plan Maps. (NAA Maps 4, 5) & (NML Maps 8, 9)

Fraser Pseudo Sections

Fraser Filters of various lengths are applied across the survey line

Apparent Current Density (JY) Section Models

A 2D inversion that looks for the best distribution of the density of current (JY). The output is the apparent current density with positive values associated with conductors (light blue to green to orange) and negative values associated with resistive units. (dark blue)

These profiles can be found in Appendix A (NAA) and Appendix B (NML)

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 Plan Maps: 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. Resistivity data was compiled to produce Plan Maps. (NAA Map 6) (NML Map 10)

Model 4000 Ohm's Profiles

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.

The maximum depth slice with a bedrock resistivity of 4000 Ohms is 204 meters for transmitter NAA (24.0 KHz.) and 199 meters for TX NML (25.2 KHz.).

All Inversion models have the same color scaling using a minimum resistivity of 10 and a maximum of 10,000. The vertical exaggeration of all models is 1.0.

Fraser Filter anomaly picks are found across the top of all models. These Models can be found in Appendix A (NAA) and Appendix B (NML)

Discussion of Results

The Rudy Block grid consists of 17 VLF lines. Lines 3W, 4W, 5W, 6W, 7W, 8W, 9W, 10W, 11W, 12W, 13W, 14W, 15W, 16W, 17W, 18W & 19W

VLF Anomalies

It appears that the Rudy Block grid is underlain by an Intrusive body. Some anomalies are strong and the main trend was easily interpreted. There are more, weaker anomalies occurring that could not be tied together due to the 100 meter distance between lines. A more accurate interpretation could be achieved with additional fill in lines being completed in order to verify the weaker responses and trends.

All VLF trends are bedrock conductors and were identified for TX NAA (15 trends) and TX NML (17 trends). There is one main VLF trend that follows an area of low resistivity. This is very apparent between lines 3W and 19W.

Plan Maps & Trends

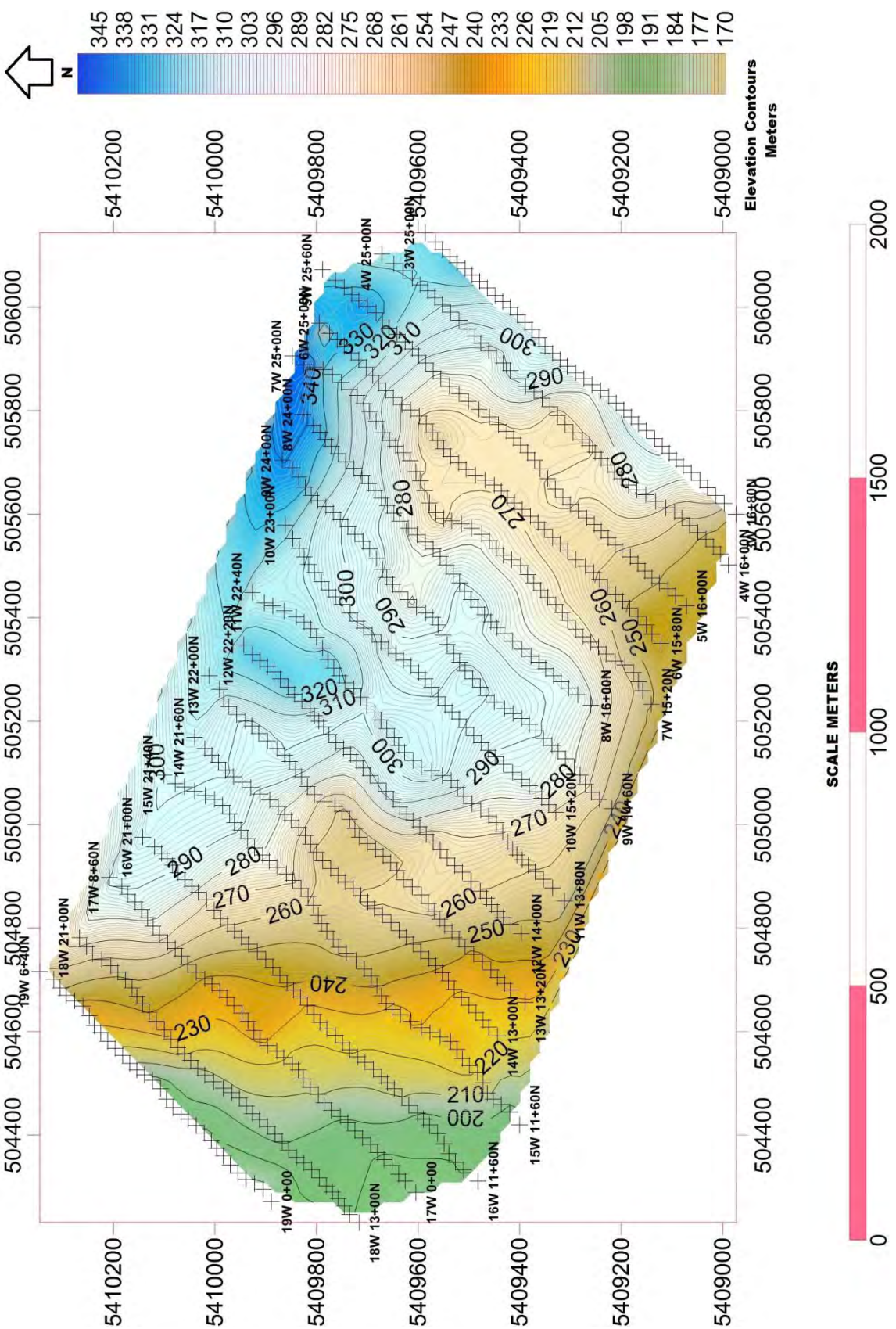
Trends are signified as the following example:

18E-B to 20E-D to 22E-E (Line 18E, VLF Pick B to Line 20E, VLF Pick D to Line 22E, VLF Pick E

Map 3 Elevation Contour Map displaying the layout of VLF lines with NAA Picks and Trends.

- It appears that the main trend across the 17 lines follows a topographic low

Map 3 Grid Elevation Map



TX NAA Maps & Trends

Map 4 Fraser Filter In-Phase Contours with NAA Picks and Trends

Map 5 Fraser Filter Quadrature Contours with NAA Picks and Trends

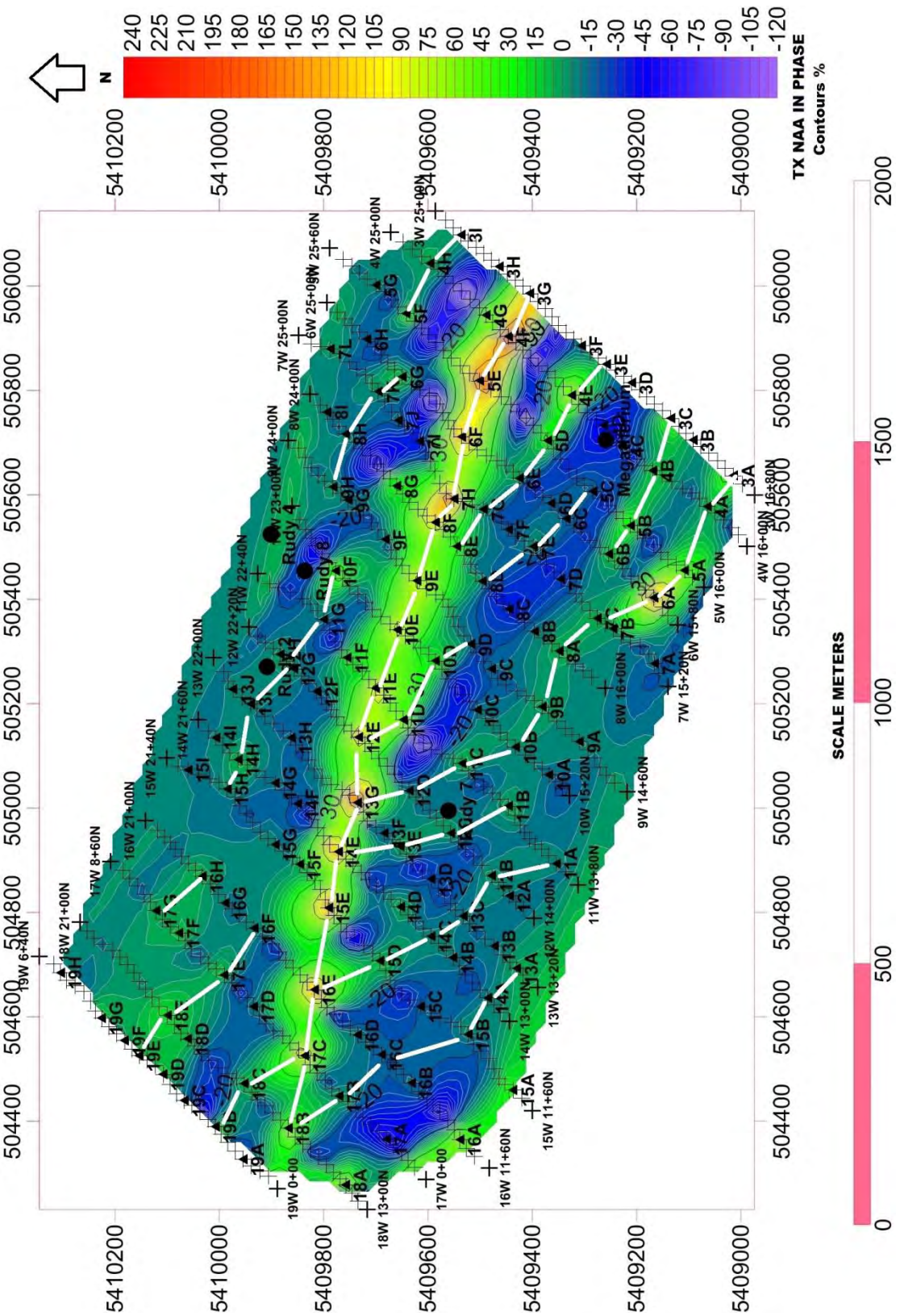
Map 6 Resistivity Contours with NAA Picks and Trends

Map 7 Google Image showing the location of NAA Picks and Trends between lines

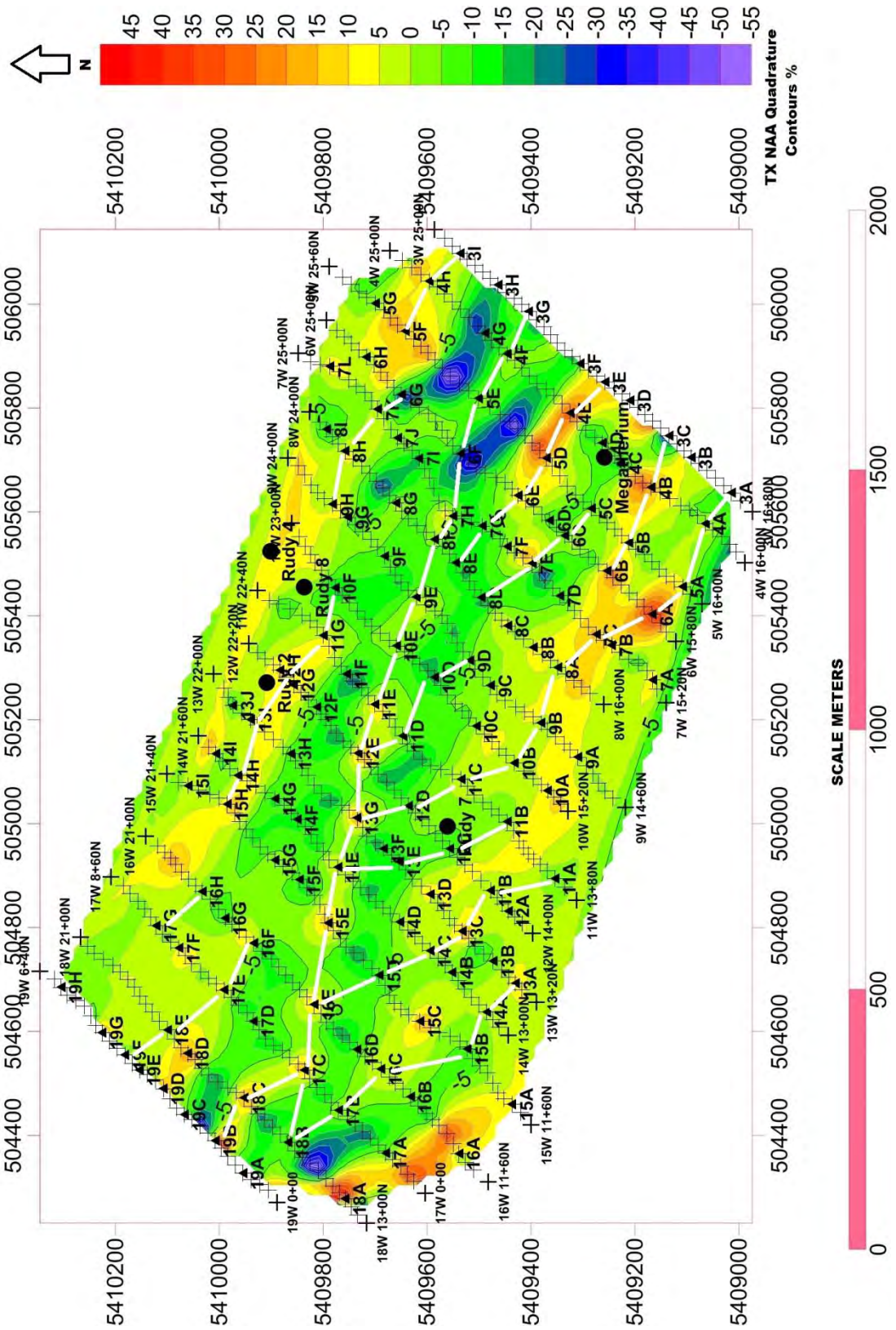
TX NAA Trends (with Main Trend 9 highlighted in **Red**)

1. 3A-4A-5A-6A-7C-8A-9B-10B-11C-12D-13C
2. 3C-4B-5B-6B
3. 11A-12B-13C-14C-15D-16E
4. 9D-10D-11D-12E
5. 13A-14A-15B-16C-17B-18B
6. 11B-12C-13E-14E
7. 5C-6C-7E-8D
8. 3E-4E-5D-6E-7G-8E
9. **3G-4F-5E-6F-7H-8F-9E-10E-11E-12E-13G-14E-15E-16E-17C-18B**
10. 3I-4H-5F
11. 6G-7K-8H-9H
12. 10F-11G-12H-13I-14H-15H
13. 17C-18C-19B
14. 16H-17G-
15. 16F-17E-18E-19F

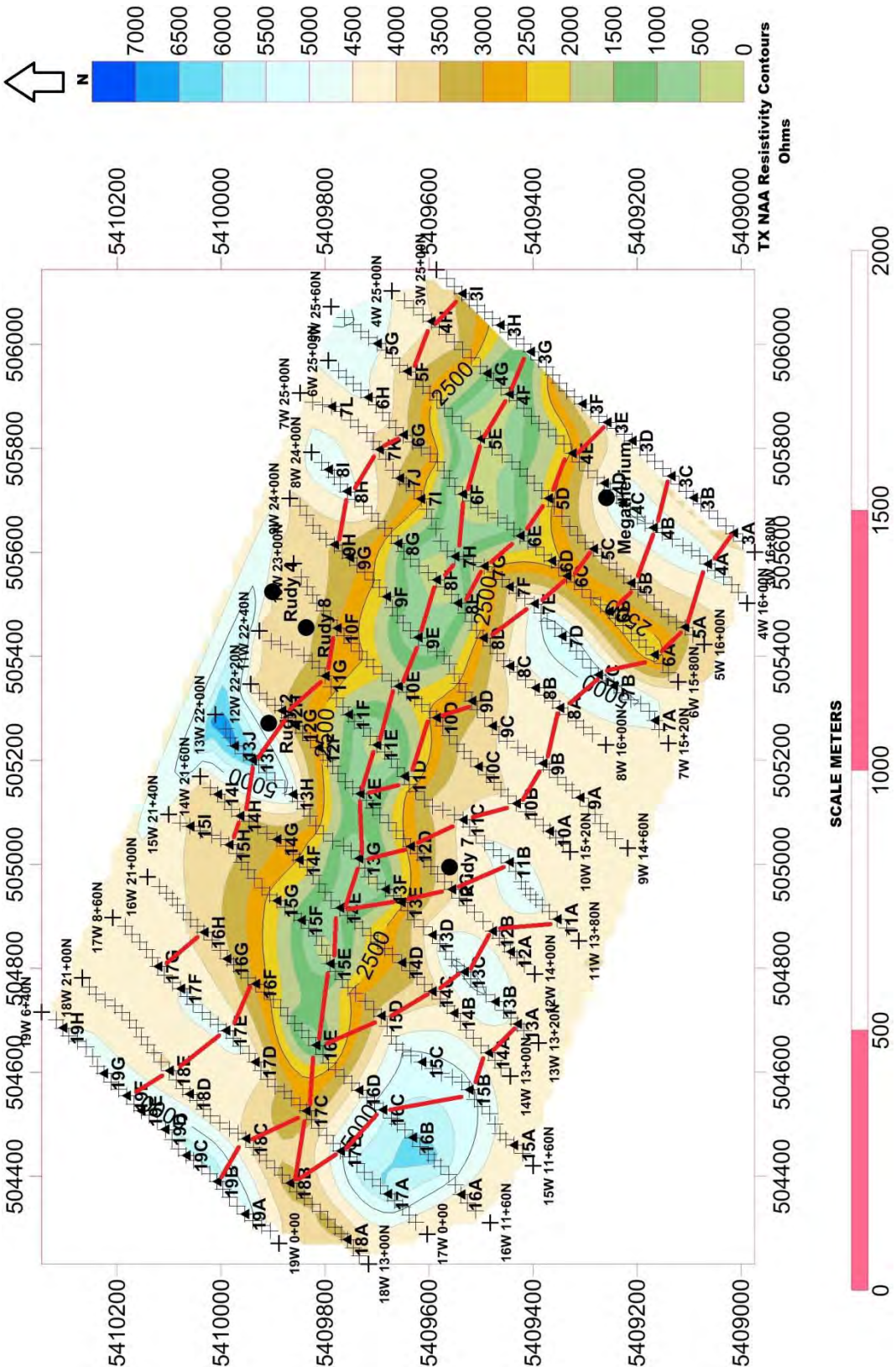
Map 4 TX NAA In-Phase Fraser Contours with Picks & Trends



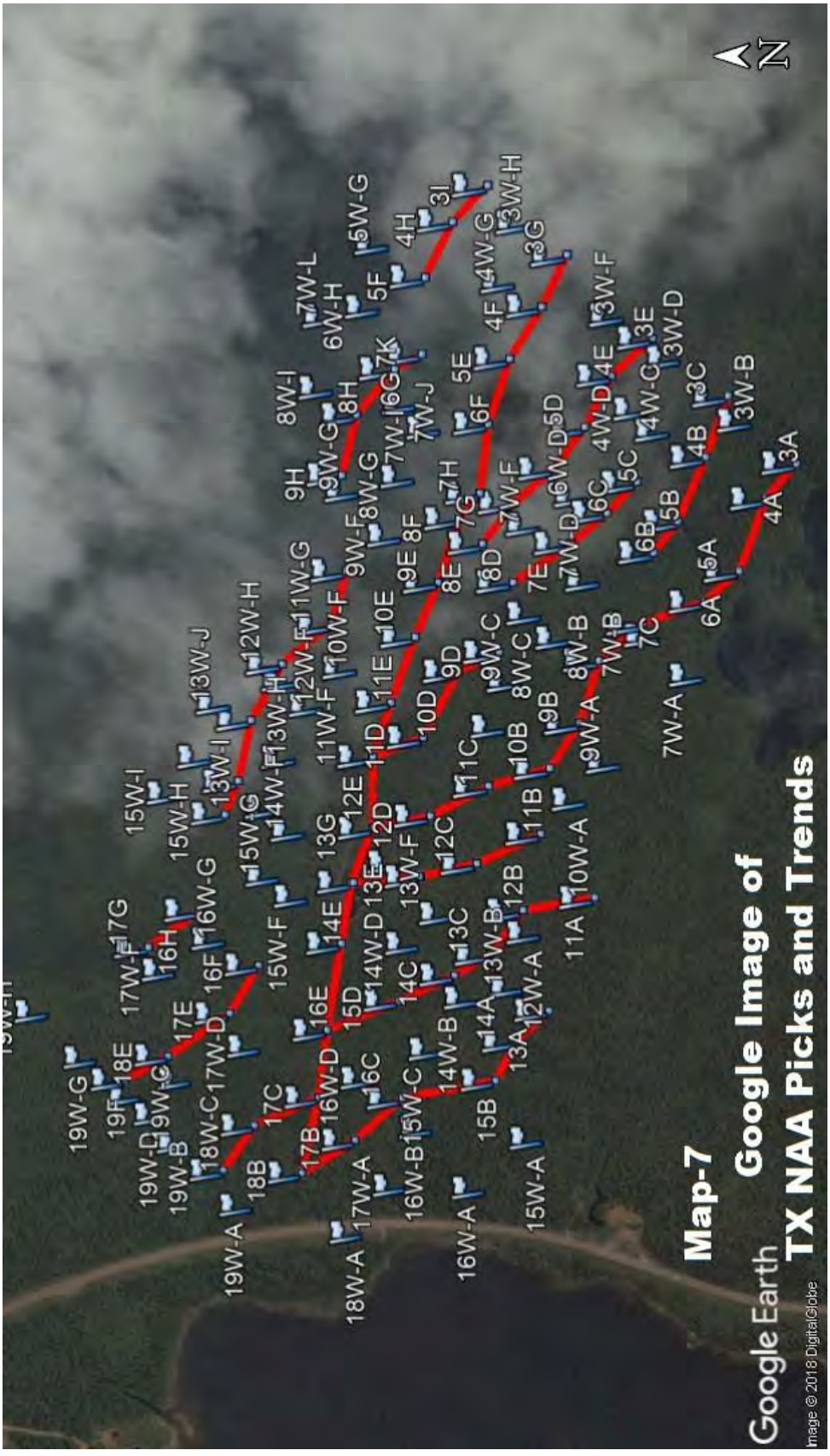
Map 5 TX NAA Quadrature Fraser Contours with Picks & Trends



Map 6 TX NAA Resistivity Contours with Picks & Trends



Map 7 Google Image of TX NAA Picks & Trends



TX NML Maps & Trends

Map 8 Fraser Filter In-Phase Contours with NML Picks and Trends

Map 9 Fraser Filter Quadrature Contours with NML Picks and Trends

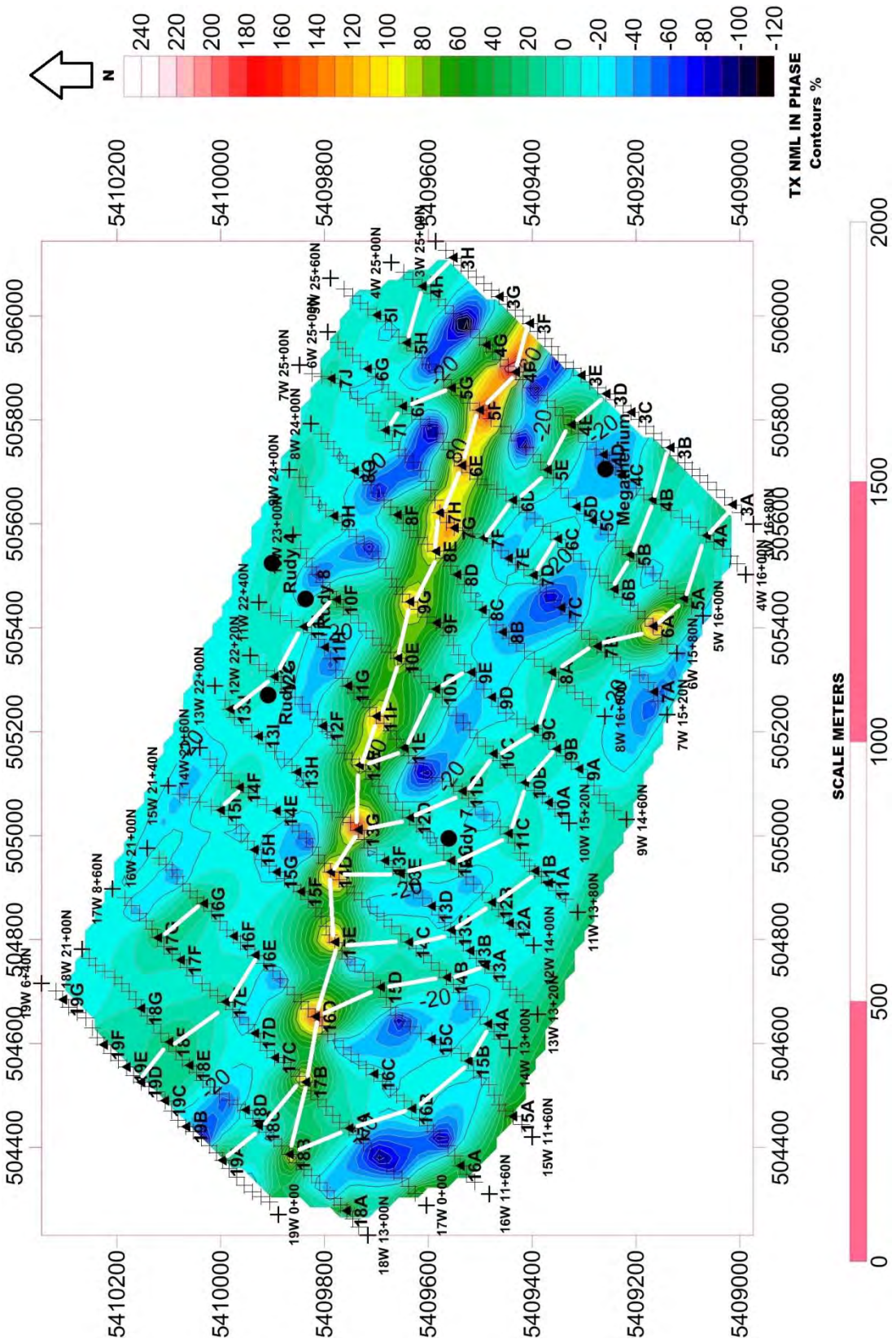
Map 10 Resistivity Contours with NML Picks and Trends

Map 11 Google Image showing the location of NML Picks and Trends between lines

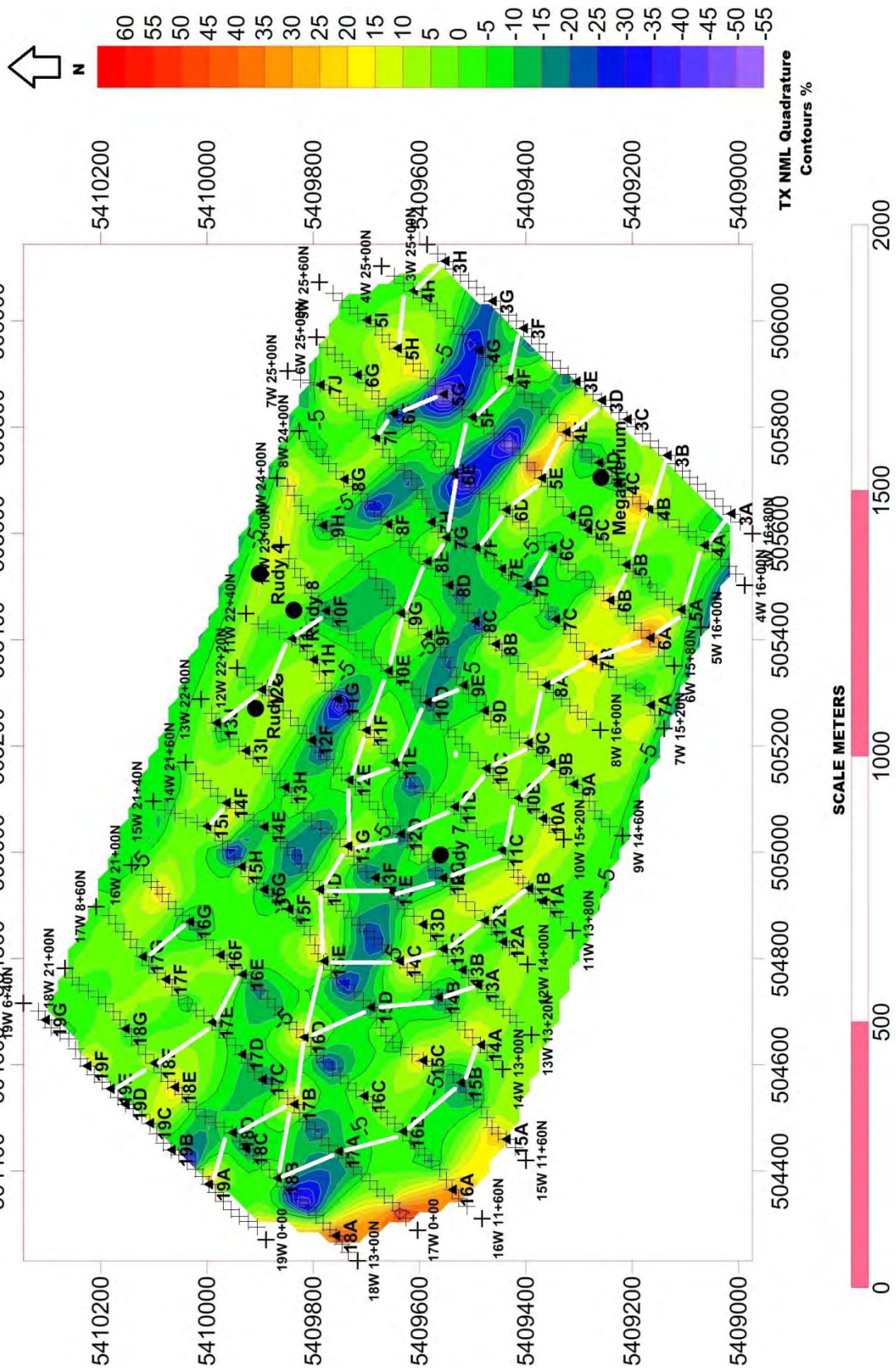
TX NML Trends (with Main Trend 9 highlighted in **Blue**)

1. 3A-4A-5A-6A-7B-8A-9C-10C-11D-12D-13G
2. 3B-4B-5B-6B
3. 11B-12B-13C-14C-15E
4. 13A-14B-15D-16D
5. 9B-10B-11C-12C-13E-14D
6. 14A-15B-16B-17A-18B
7. 6C-7D
8. 3D-4E-5E-6D-7F
9. **3F-4F-5F-6E-7H-8E-9G-10E-11F-12E-13G-14D-15E-16D-17B-18B**
10. 5G-6F-7I
11. 9E-10D-11E-12E
12. 3H-5H-5H
13. 16E-17E-18F-19E
14. 17B-18D-19A
15. 16G-17G
16. 14F-15I
17. 10F-11I-12G-13J

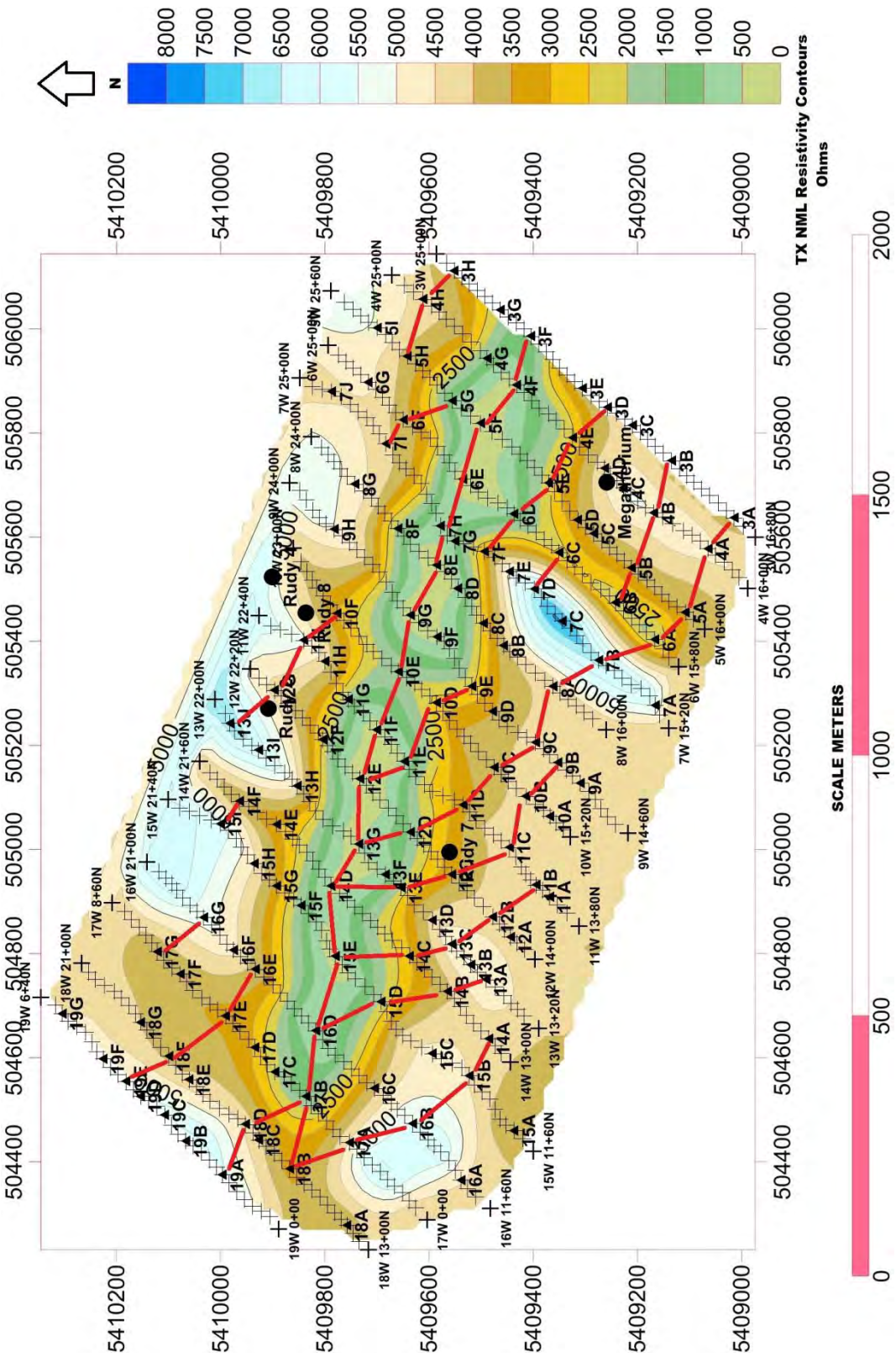
Map 8 TX NML In-Phase Fraser Contours with Picks & Trends



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:

- Defining a strong VLF conductor across the Rudy Block from Line 3W to Line 18W.
  TX NAA Trend 9 (3G-4F-5E-6F-7H-8F-9E-10E-11E-12E-13G-14E-15E-16E-17C-18B)
  TX NML Trend 9 (3F-4F-5F-6E-7H-8E-9G-10E-11F-12E-13G-14D-15E-16D-17B-18B)

- Defining several weaker trends that feed into the main trend from the south at an oblique angle and ending at the Main Trend 9.

  TX NAA

Trend 1	(3A-4A-5A-6A-7C-8A-9B-10B-11C-12D-13C)
Trend 3	(11A-12B-13C-14C-15D-16E)
Trend 4	(9D-10D-11D-12E)
Trend 5	(13A-14A-15B-16C-17B-18B)
Trend 6	(11B-12C-13E-14E)
Trend 8	(3E-4E-5D-6E-7G-8E)

  TX NML

Trend 1	(3A-4A-5A-6A-7B-8A-9C-10C-11D-12D-13G)
Trend 4	(13A-14B-15D-16D)
Trend 5	(9B-10B-11C-12C-13E-14D)
Trend 8	(3D-4E-5E-6D-7F)
Trend 11	(9E-10D-11E-12E)

- Defining several weak trends on the north side of the Main Trend 9.

  TX NAA

Trend 10	(3I-4H-5F)
Trend 11	(6G-7K-8H-9H)
Trend 12	(10F-11G-12H-13I-14H-15H)
Trend 13	(17C-18C-19B)
Trend 14	(16H-17G)
Trend 15	(16F-17E-18E-19F)

  TX NML

Trend 10	(5G-6F-7I)
Trend 12	(3H-5H-5H)
Trend 13	(16E-17E-18F-19E)
Trend 14	(17B-18D-19A)
Trend 15	(16G-17G)
Trend 16	(14F-15I)
Trend 17	(10F-11I-12G-13J)

- Defining a resistivity low across the Rudy Block from Line 7W to Line 17W.
  TX NAA Trend 9 (3G-4F-5E-6F-7H-8F-9E-10E-11E-12E-13G-14E-15E-16E-17C-18B)
  TX NML Trend 9 (3F-4F-5F-6E-7H-8E-9G-10E-11F-12E-13G-14D-15E-16D-17B-18B)

Recommendations

a) Prospect along Trend 9 for both TX NAA and TX NML

b) Prospect along the southern TX NAA and TX NML Trends that intersect the Main Trend 9.

c) Produce KH Plan maps at different depths in order to determine the best VLF Bedrock responses and filter out surficial shallow responses.

d) Produce Model Plans maps at different depths in order to determine the best conductive horizons and filter out surficial and shallow responses.

e) Extend the VLF Grid east of line 3W and west of line 18E @ 100 meter spaced lines in order to follow the main NAA and NML Trend 9.

f) Prospect along the trends in areas where they pass near the known Rudy showings (# 2, #7 & #8) which are marked on the plan maps.

g) Prospect along the 2 trends that occur on both sides of the Megatherium showing which is marked on the plan maps.

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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.

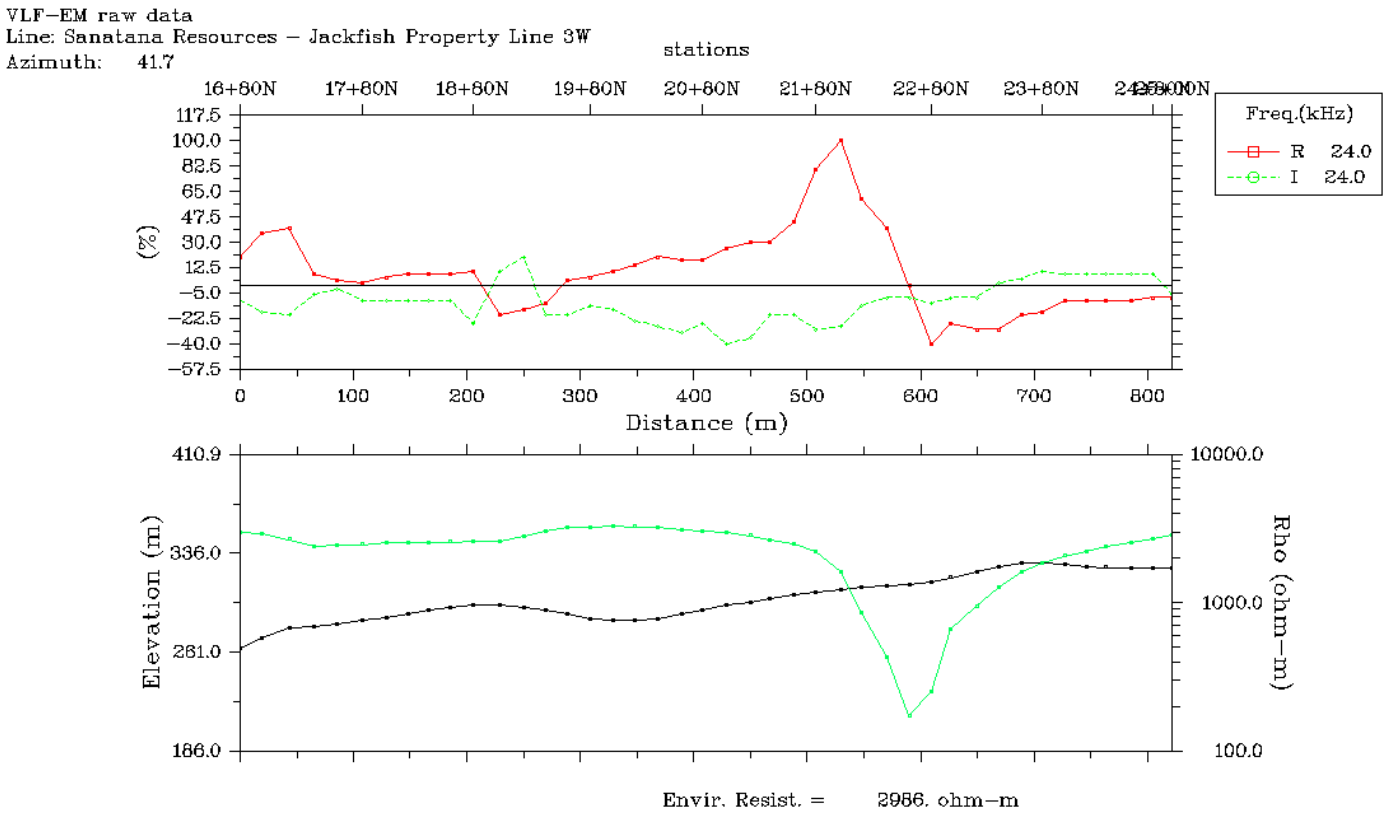
Dated this 9th day of October 2018

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

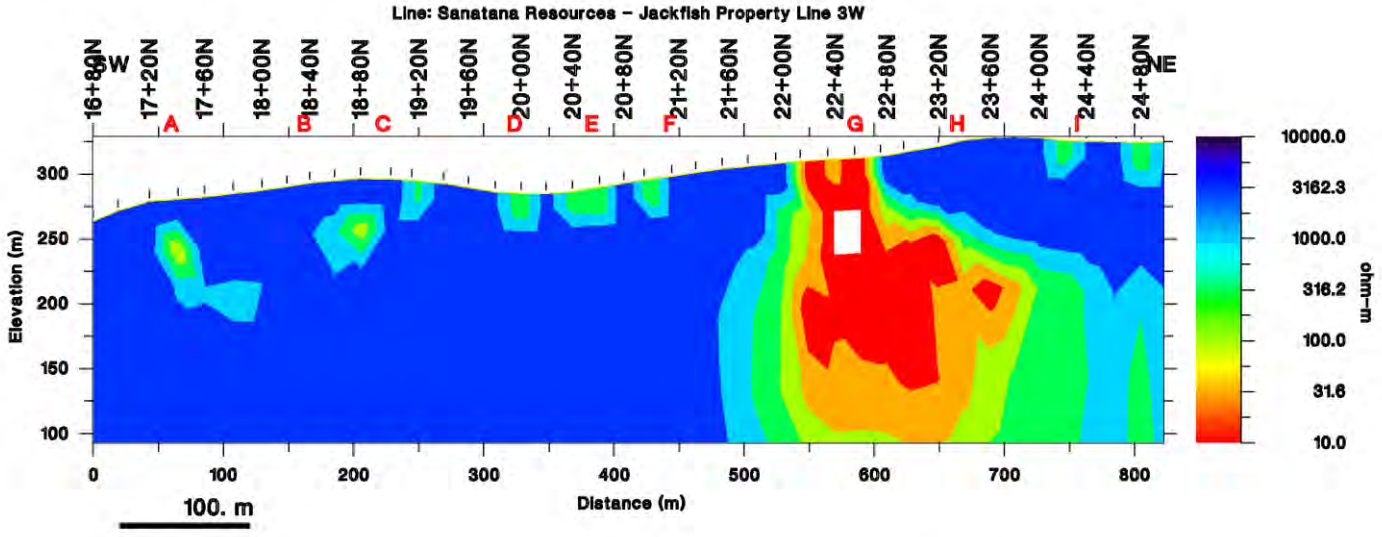
APPENDIX A

TX NAA Figures

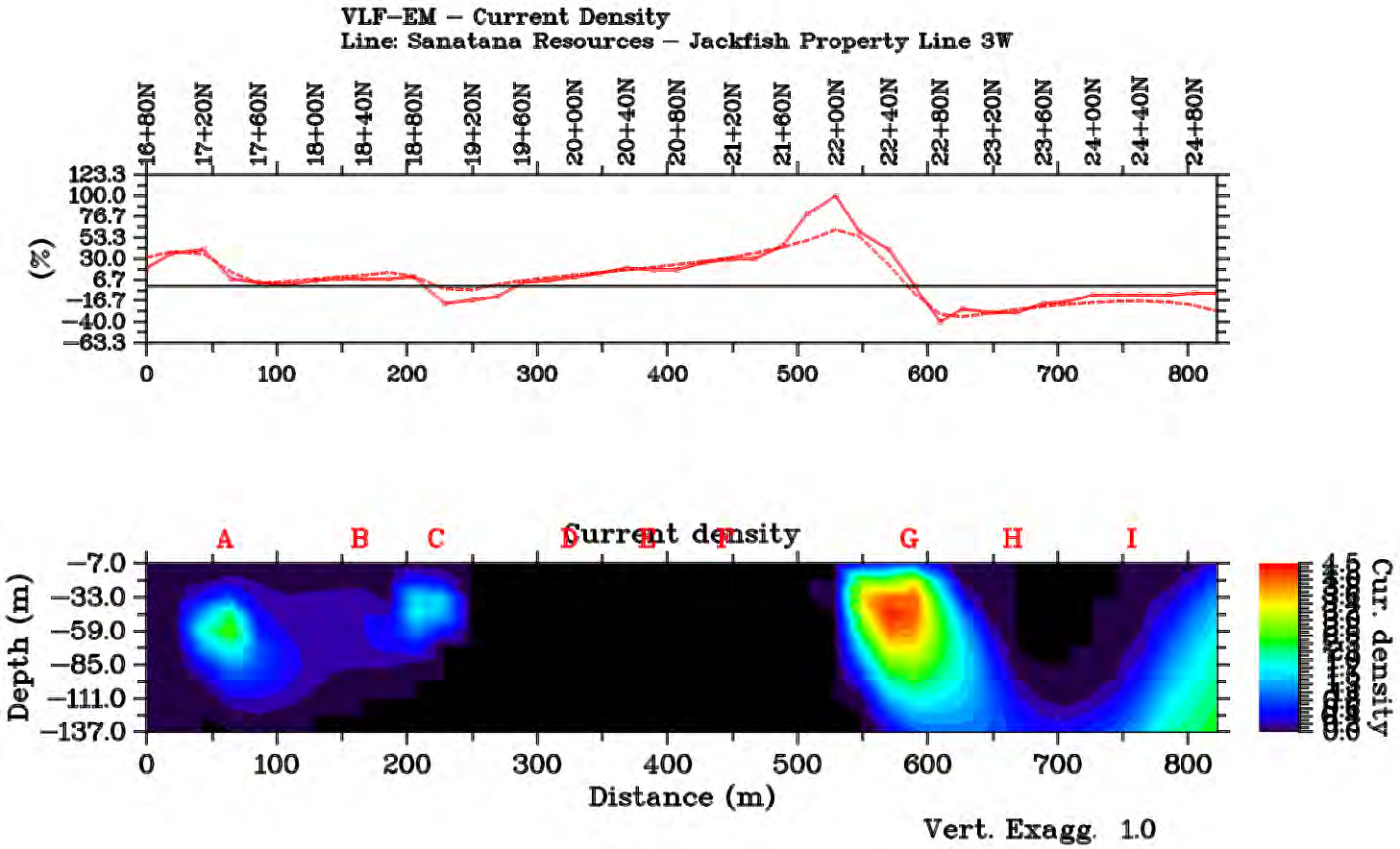
NAA Figure 1 Line 3W Raw Data Profile



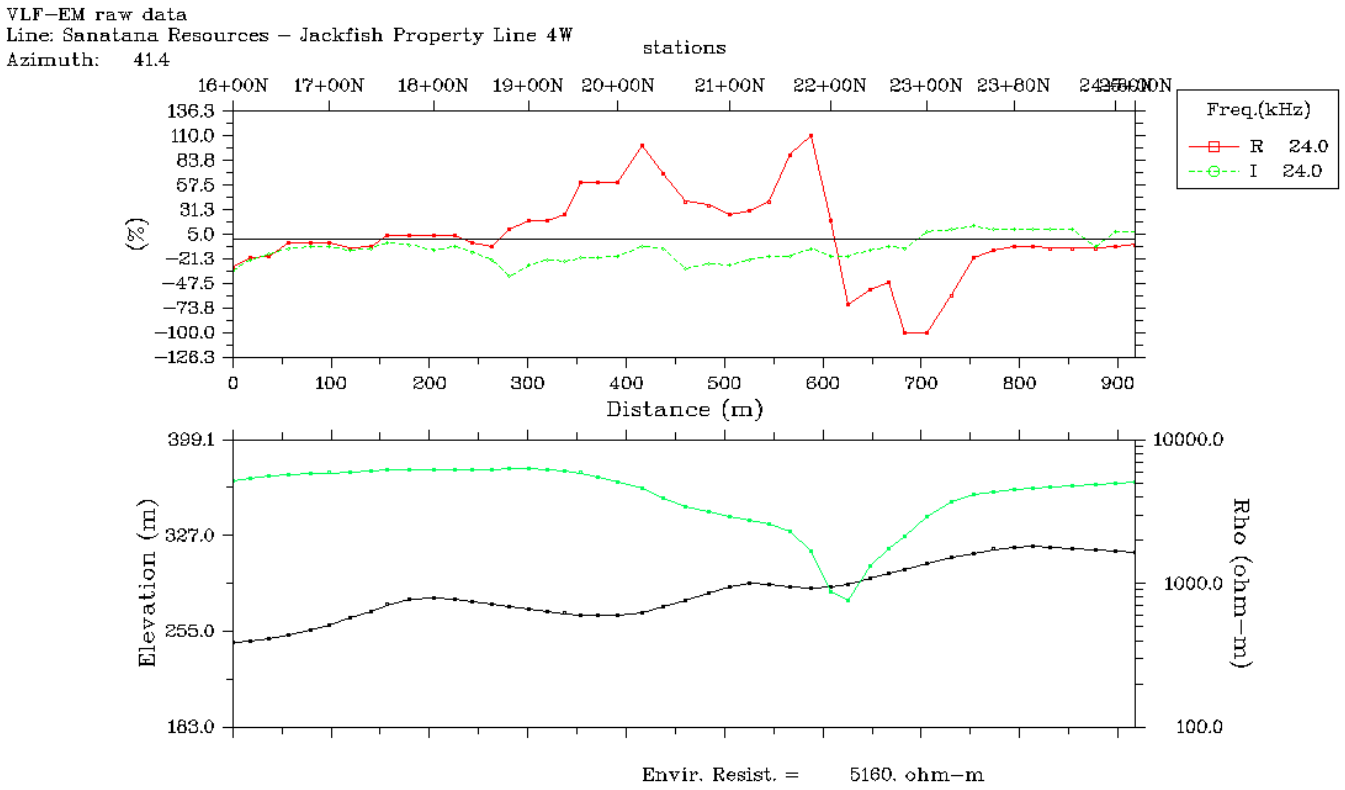
NAA Figure 2 Line 3W Model 4000 Ohm with Fraser Picks



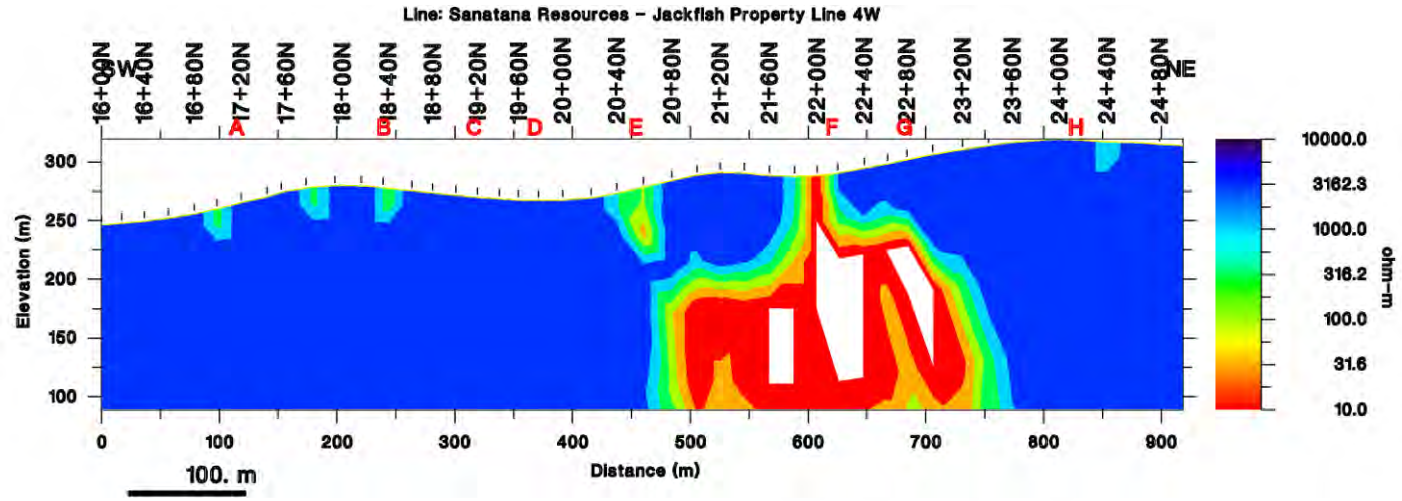
NAA Figure 3 Line 3W JY Model with Fraser Picks



NAA Figure 4 Line 4W Raw Data Profile



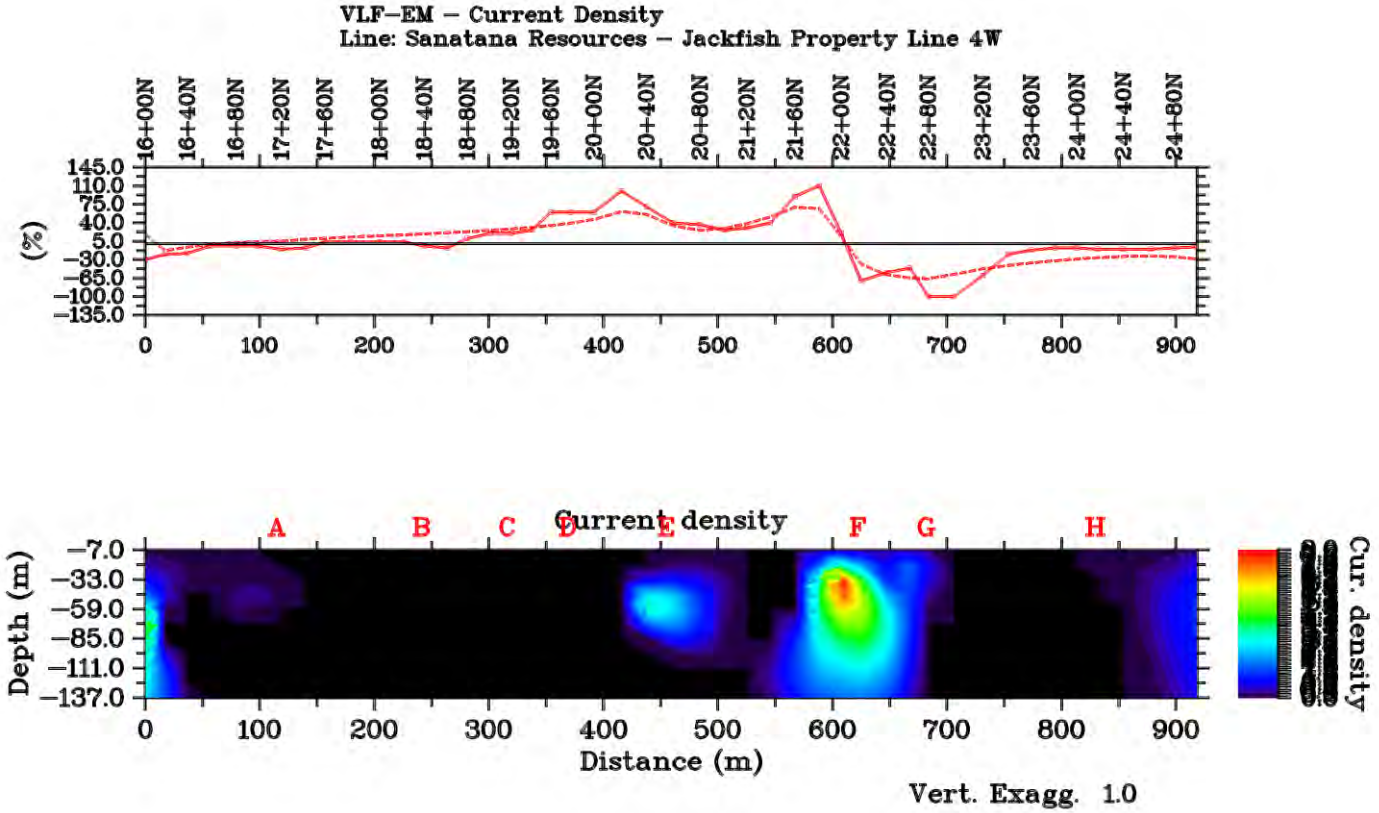
NAA Figure 5 Line 4W Model 4000 Ohm with Fraser Picks



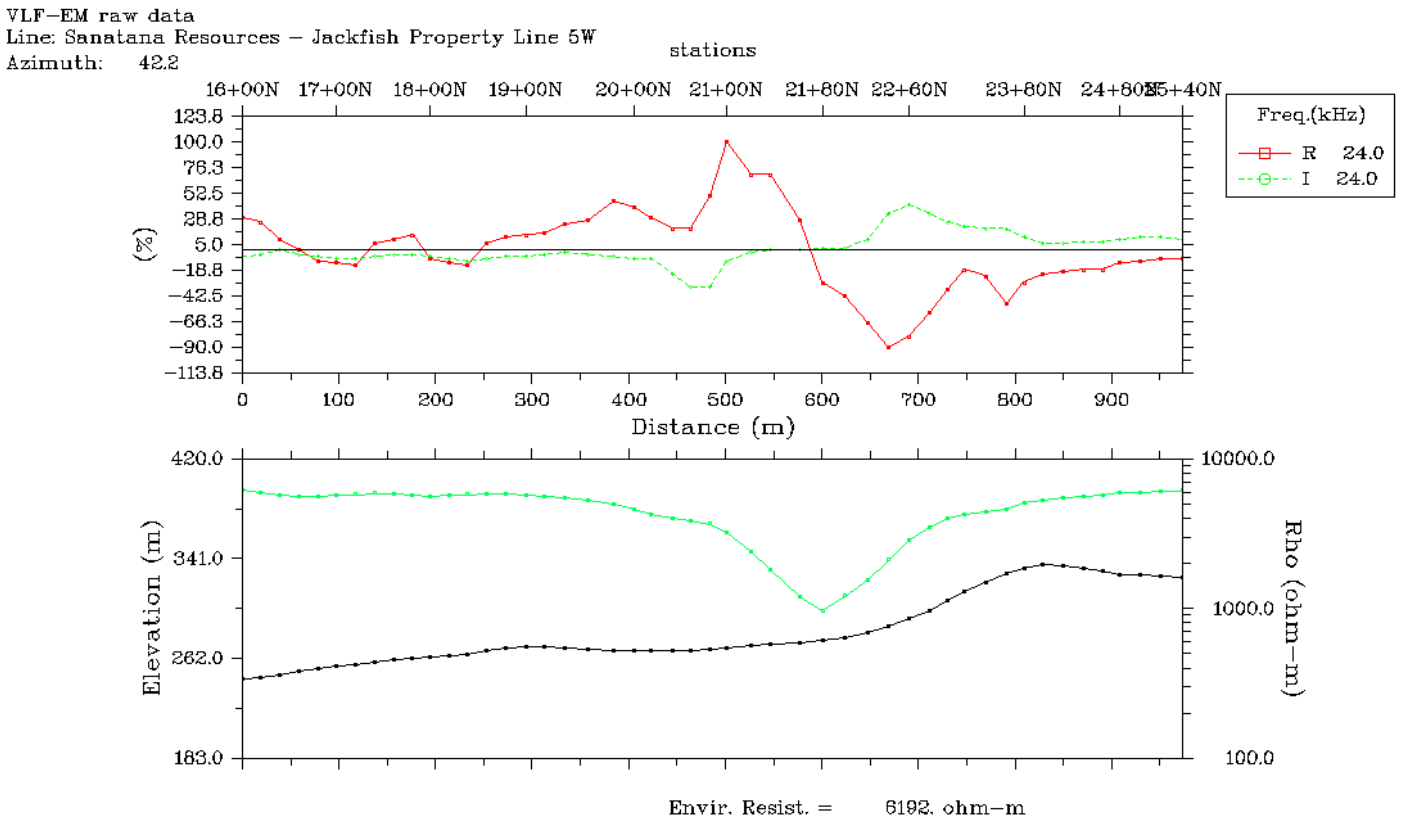
Transmitter: NAA

Vertical Exaggeration: 1.0

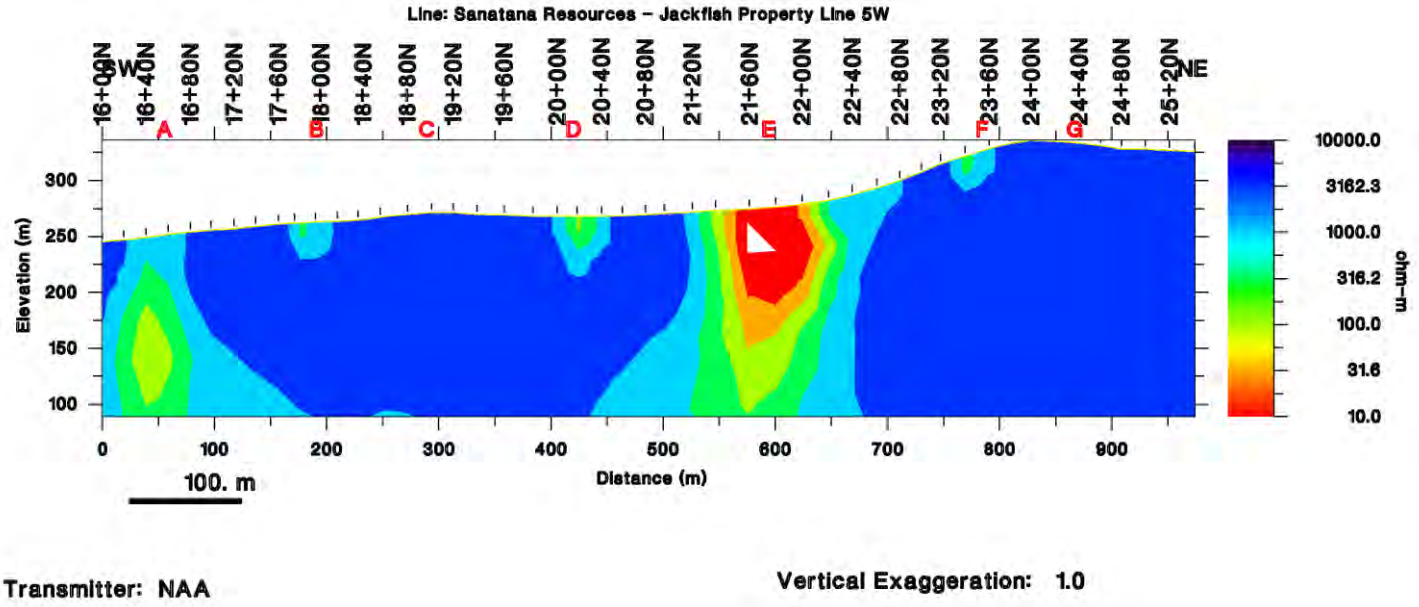
NAA Figure 6 Line 4W JY Model with Fraser Picks



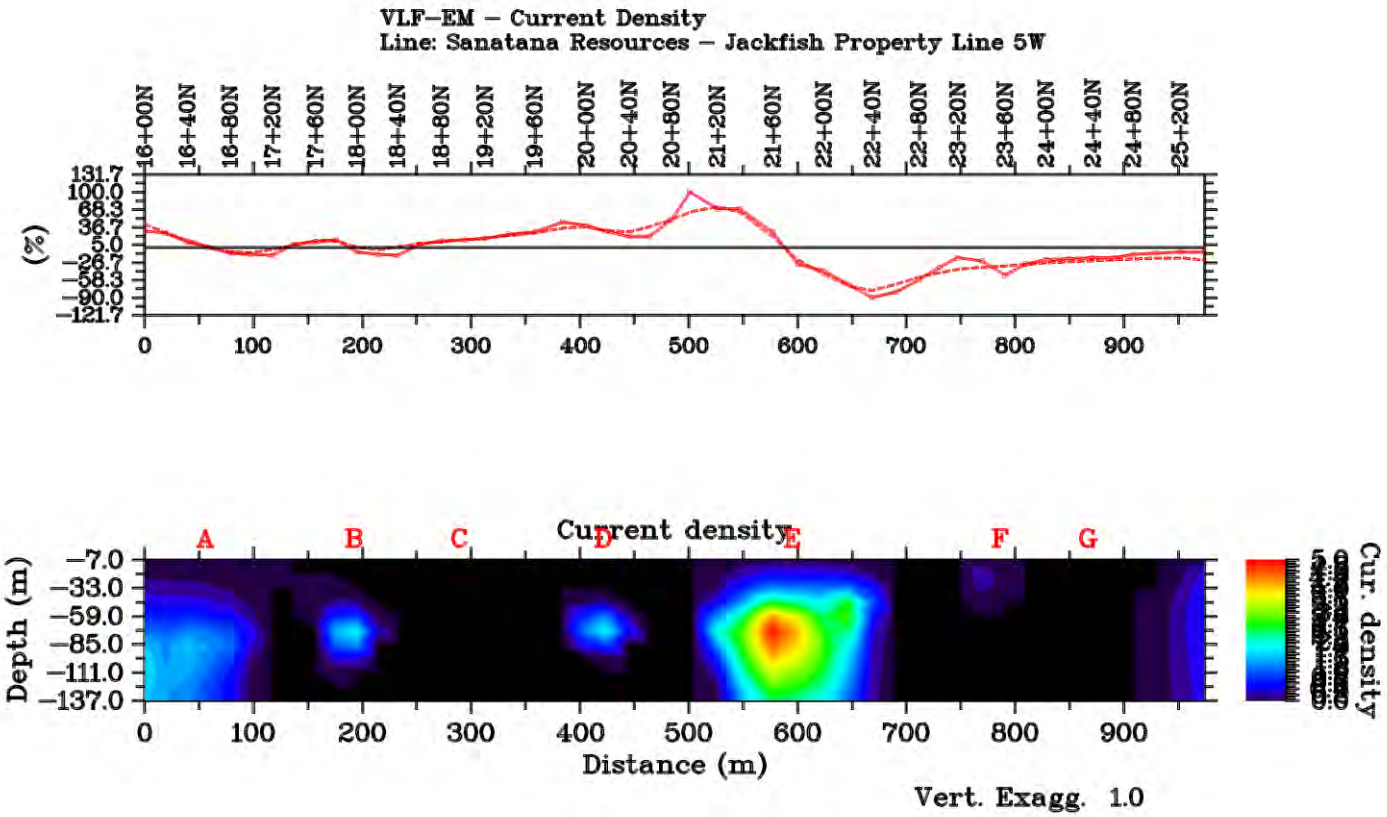
NAA Figure 7 Line 5W Raw Data Profile



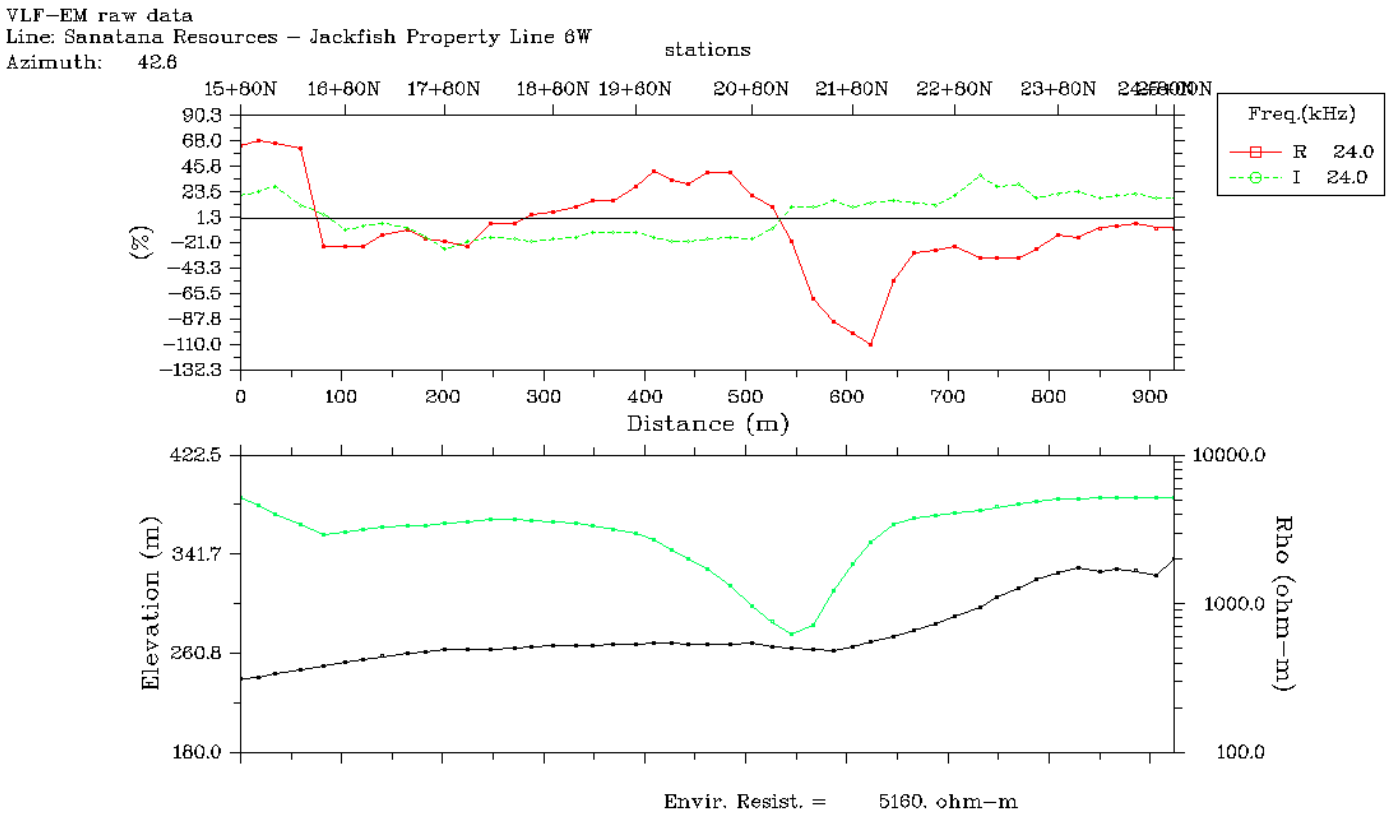
NAA Figure 8 Line 5W Model 4000 Ohm with Fraser Picks



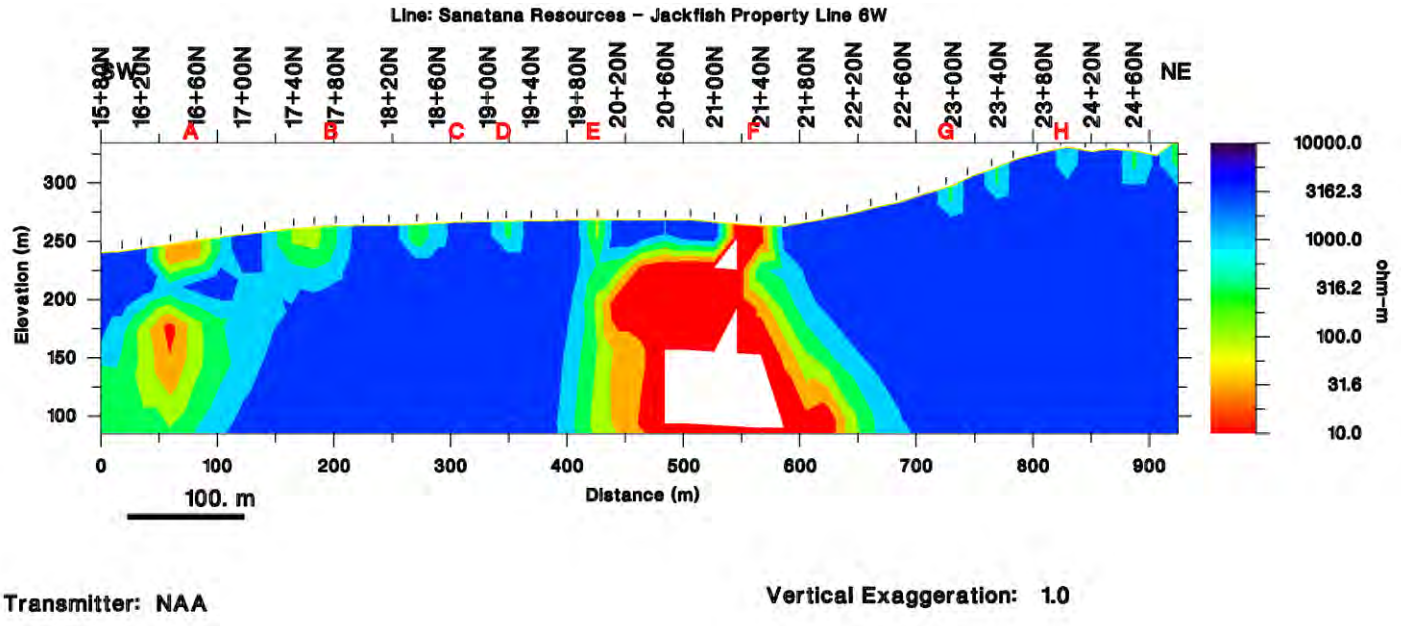
NAA Figure 9 Line 5W JY Model with Fraser Picks



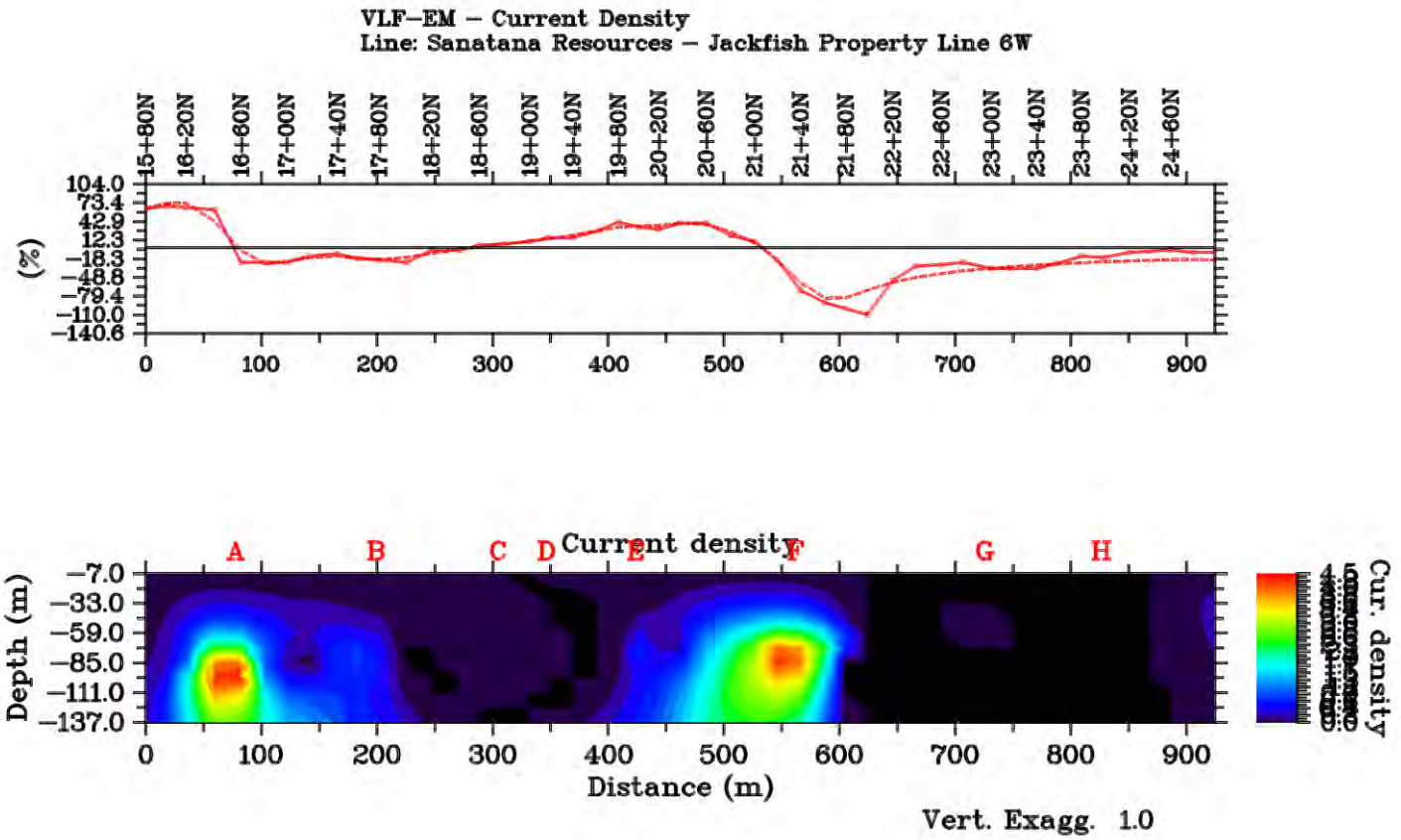
NAA Figure 10 Line 6W Raw Data Profile



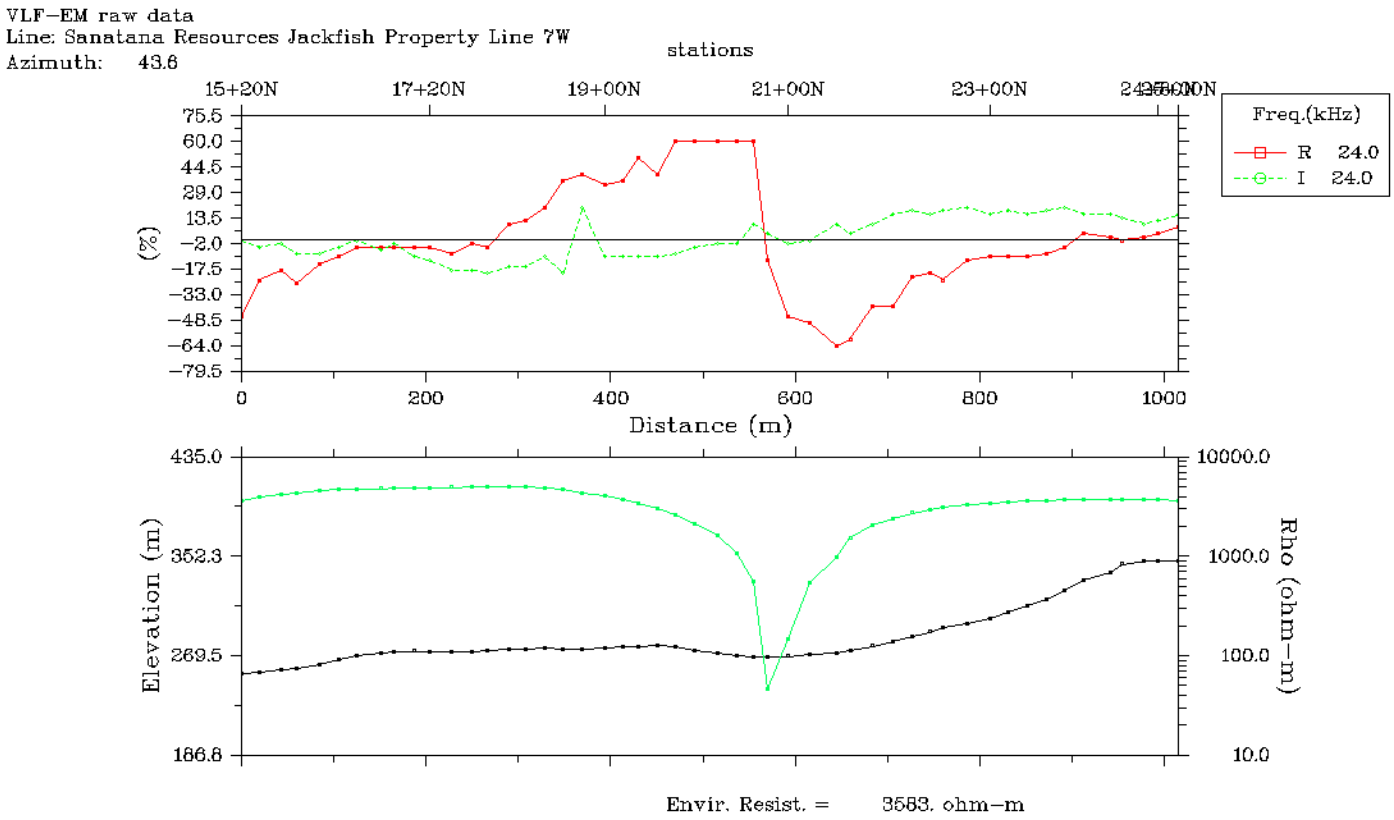
NAA Figure 11 Line 6W Model 2000 Ohm with Fraser Picks



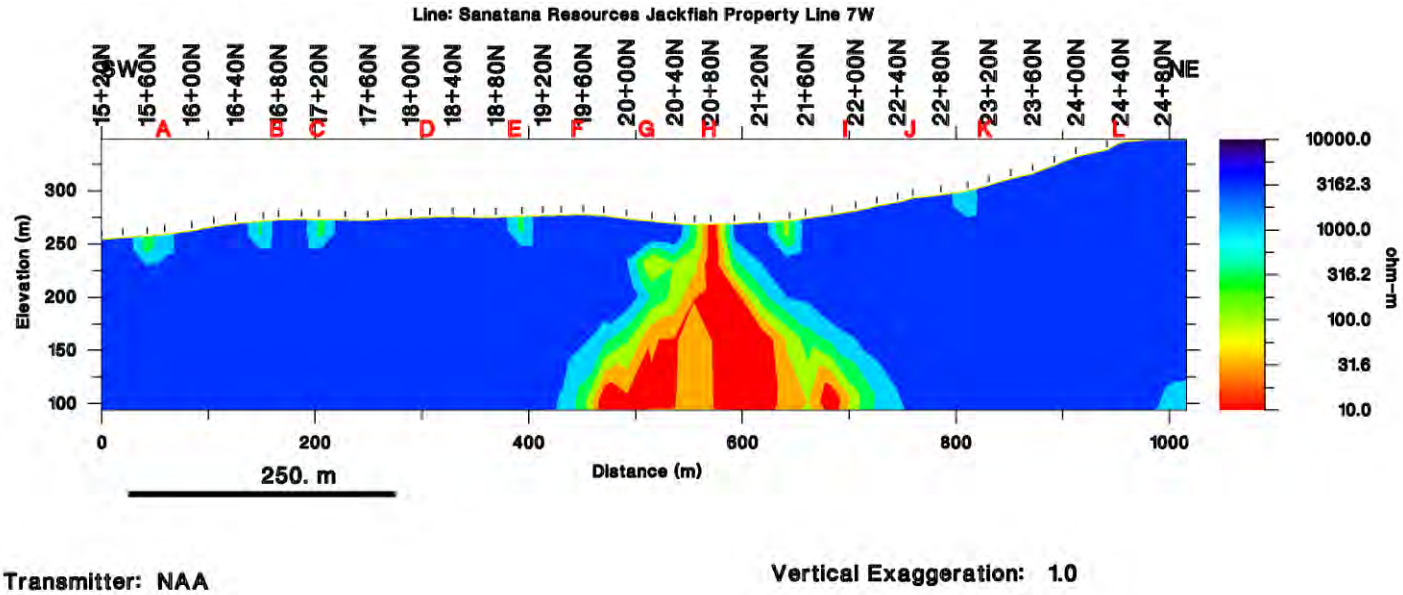
NAA Figure 12 Line 6W JY Model with Fraser Picks



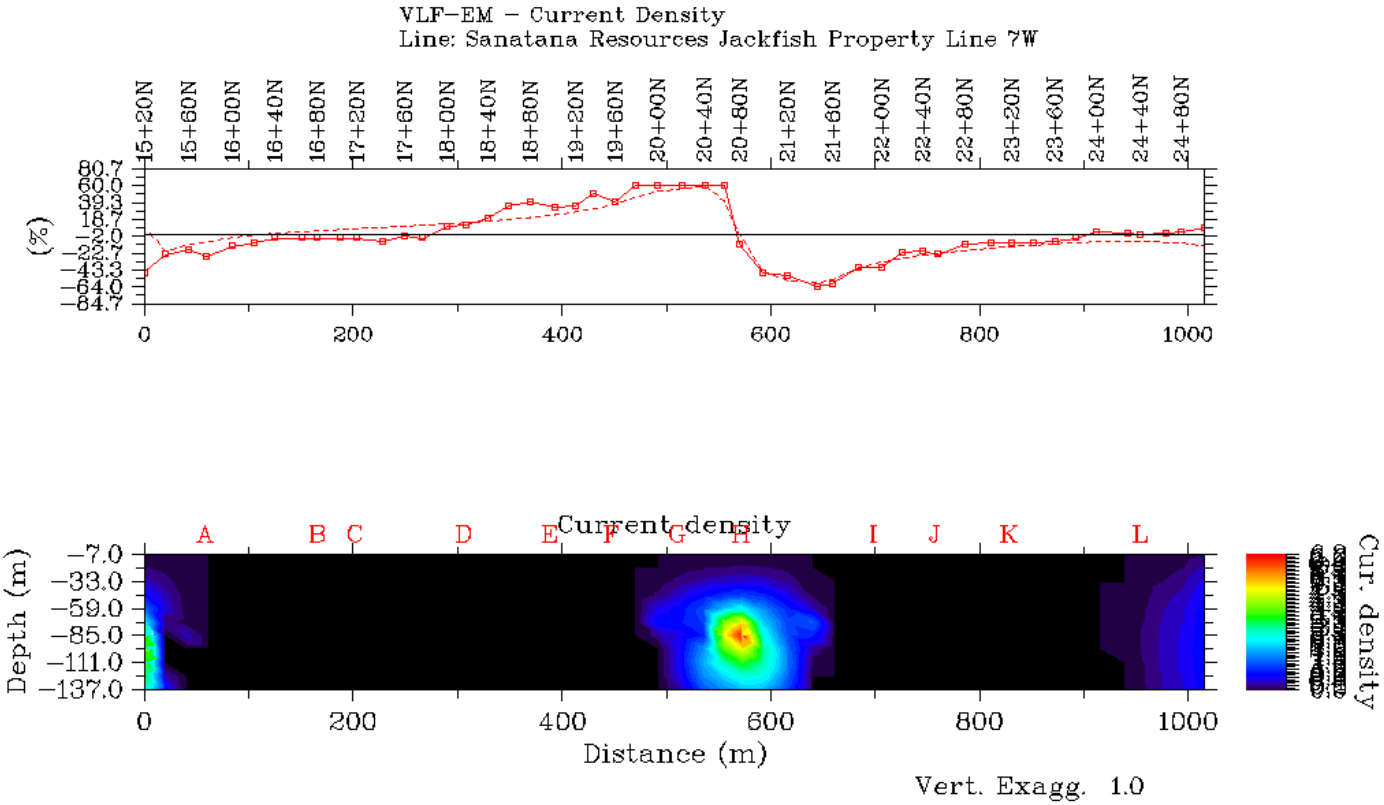
NAA Figure 13 Line 7W Raw Data Profile



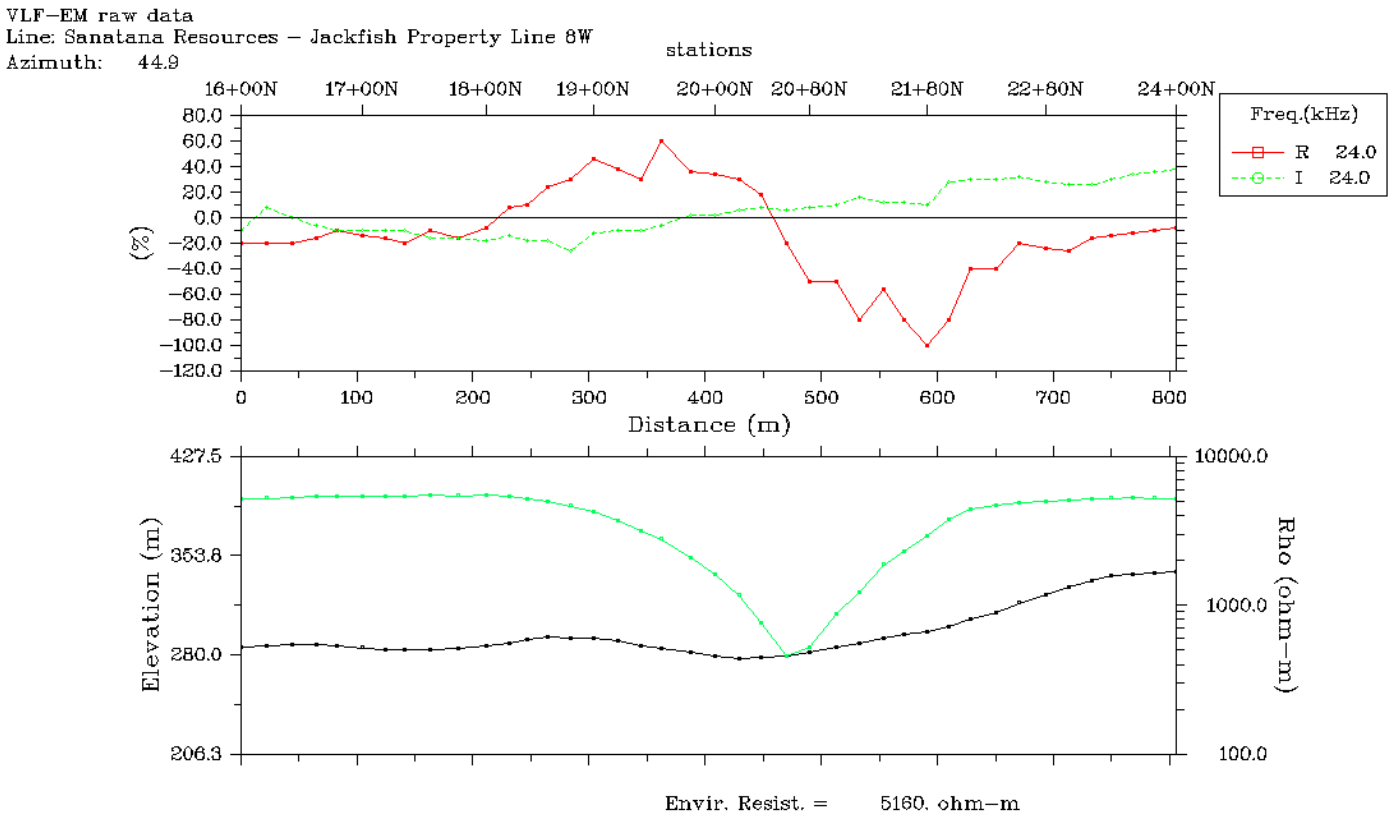
NAA Figure 14 Line 7W Model 4000 Ohm with Fraser Picks



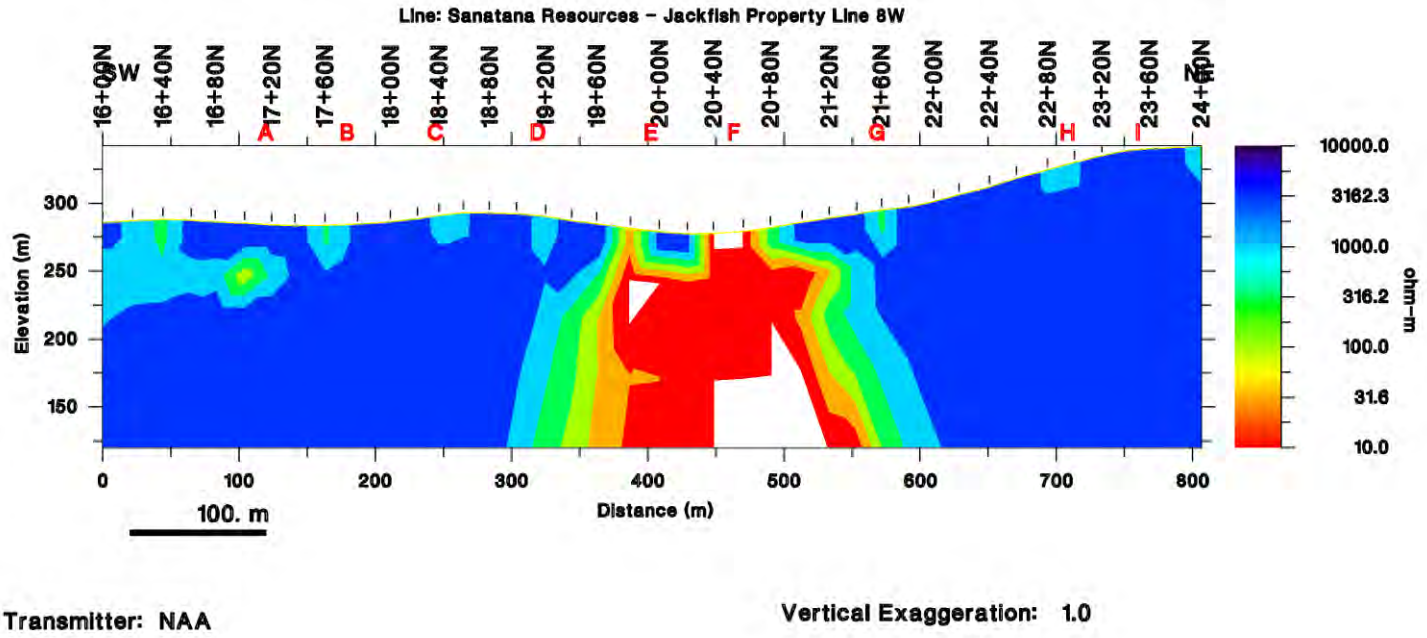
NAA Figure 15 Line 7W JY Model with Fraser Picks



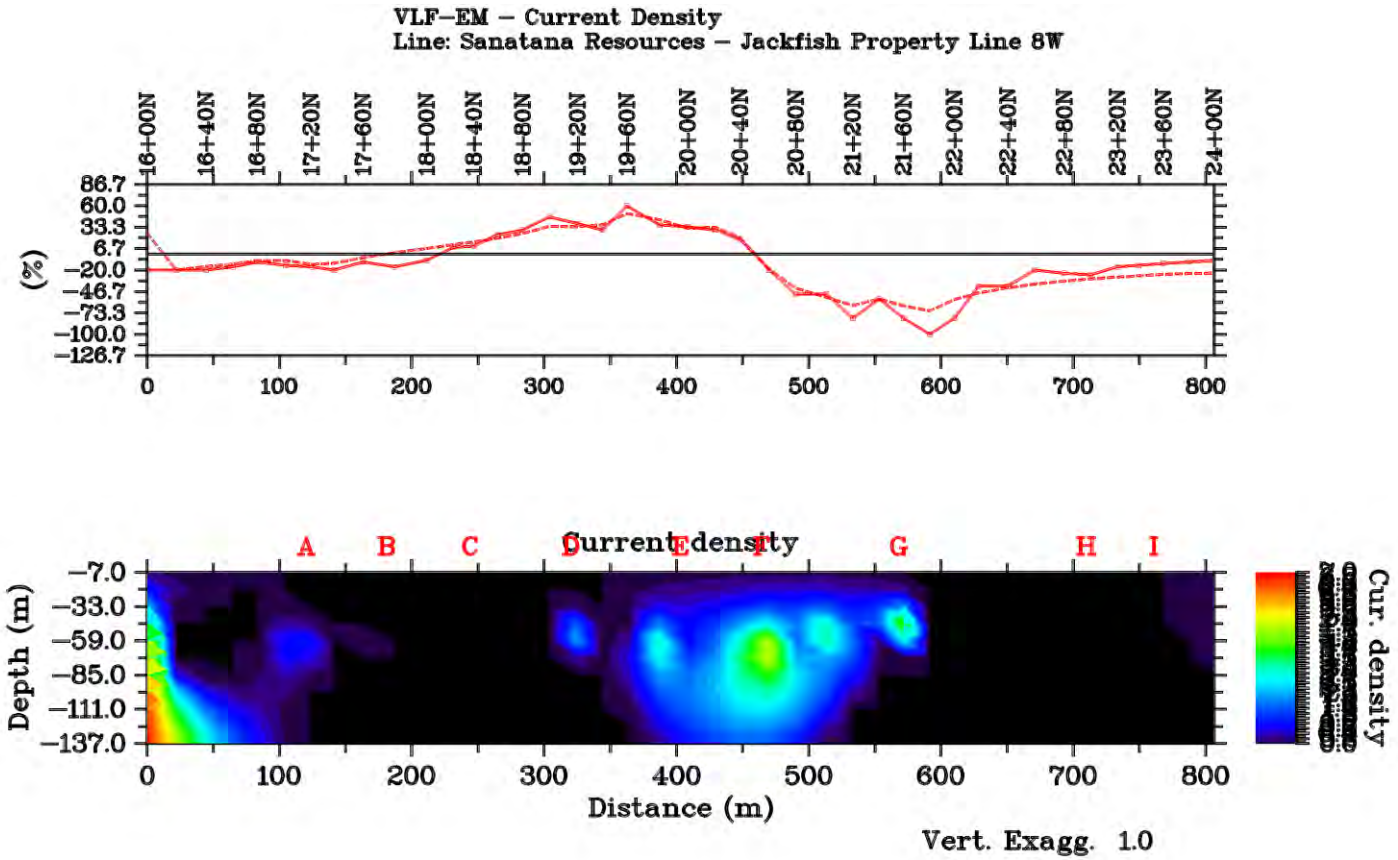
NAA Figure 16 Line 8W Raw Data Profile



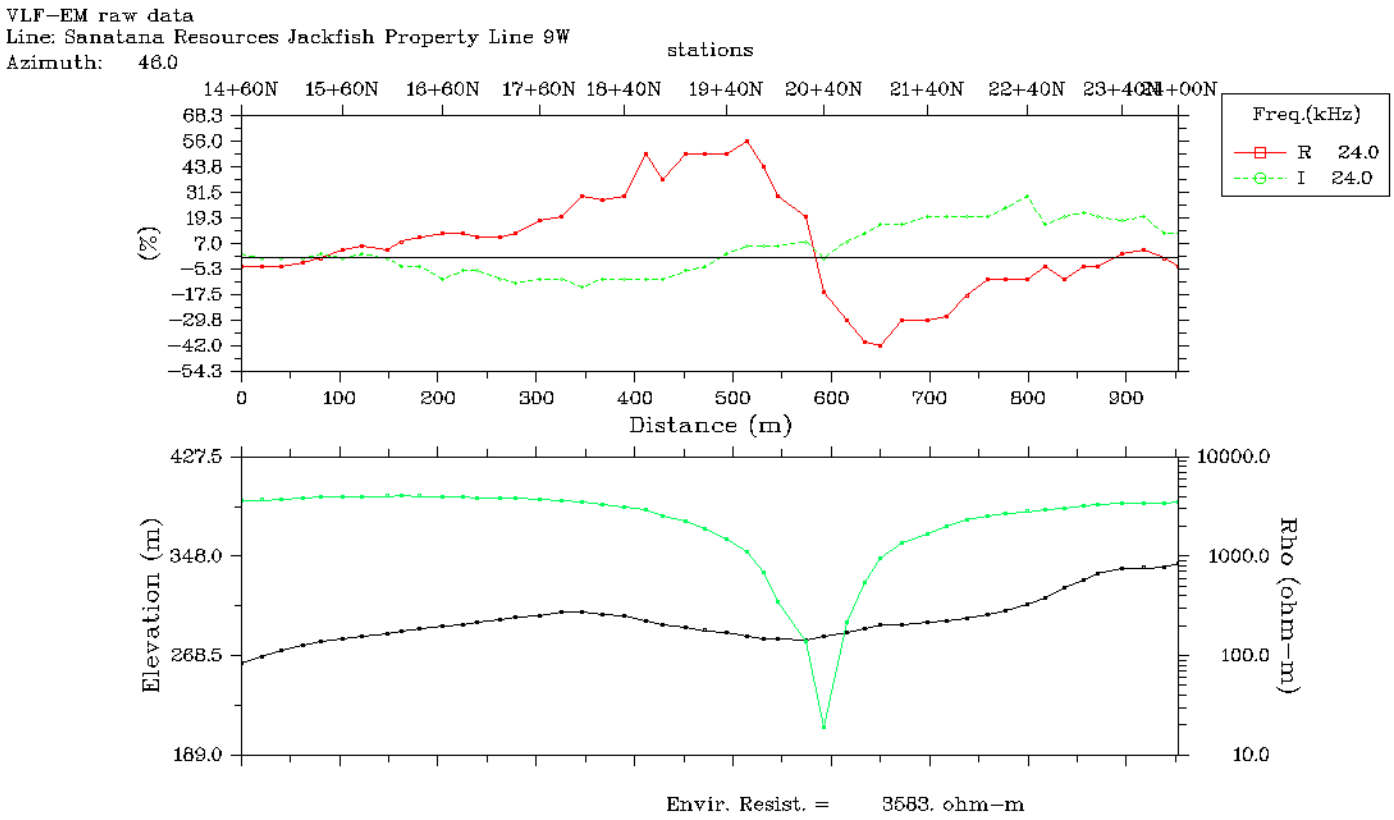
NAA Figure 17 Line 8W Model 4000 Ohm with Fraser Picks



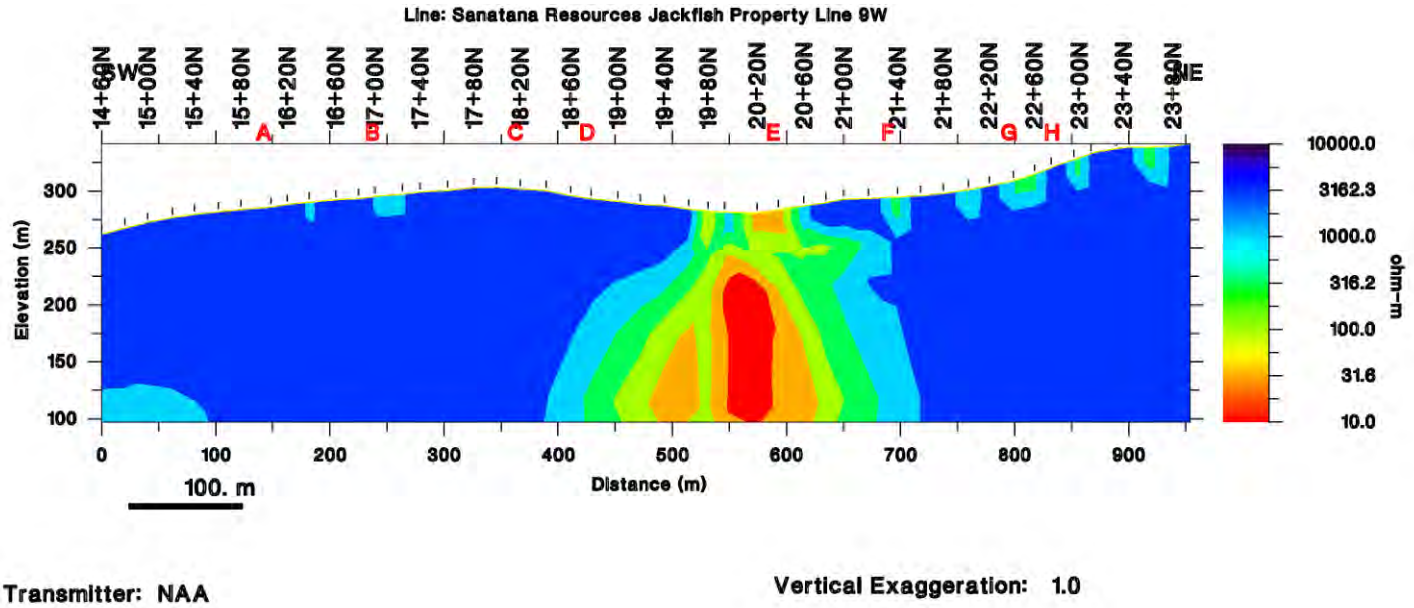
NAA Figure 18 Line 8W JY Model with Fraser Picks



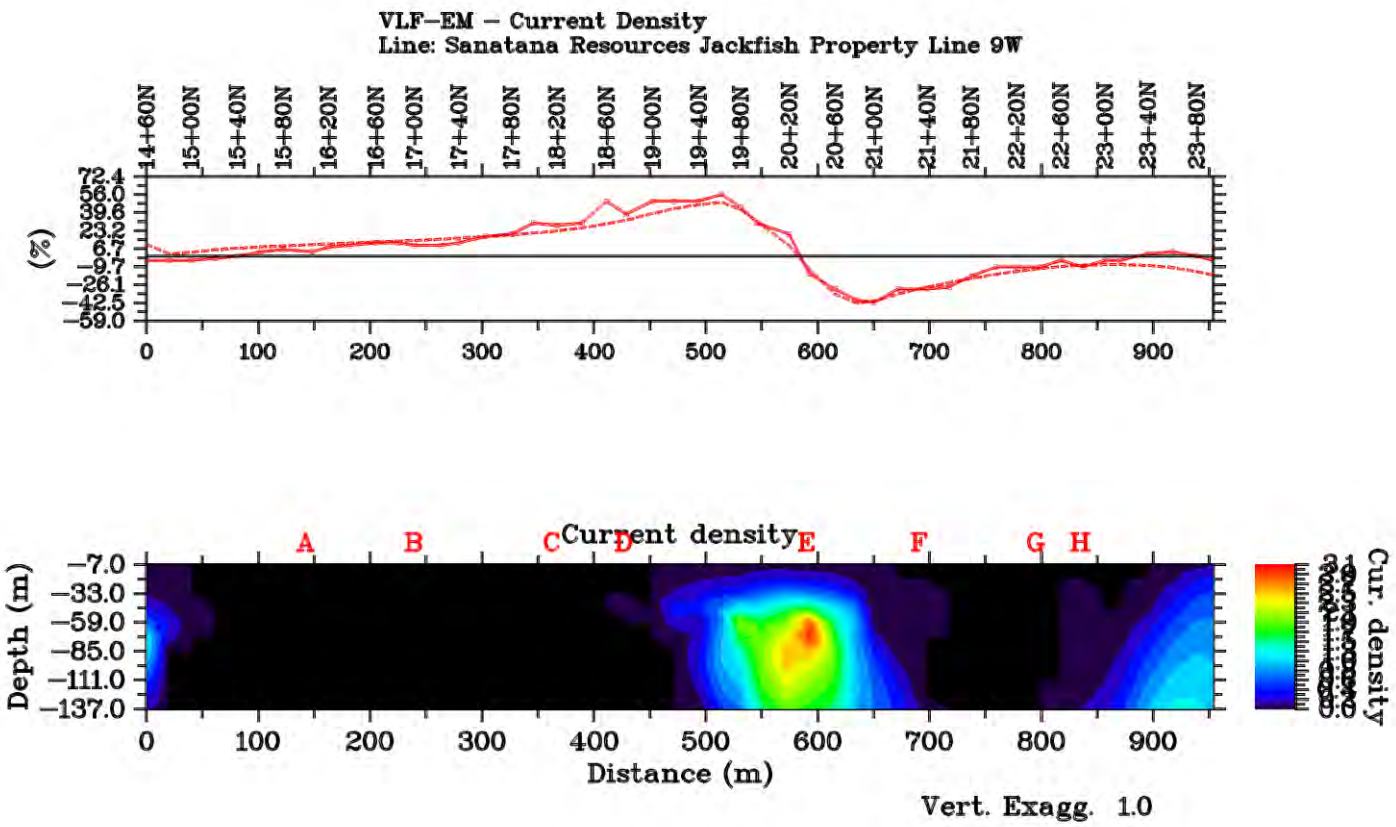
NAA Figure 19 Line 9W Raw Data Profile



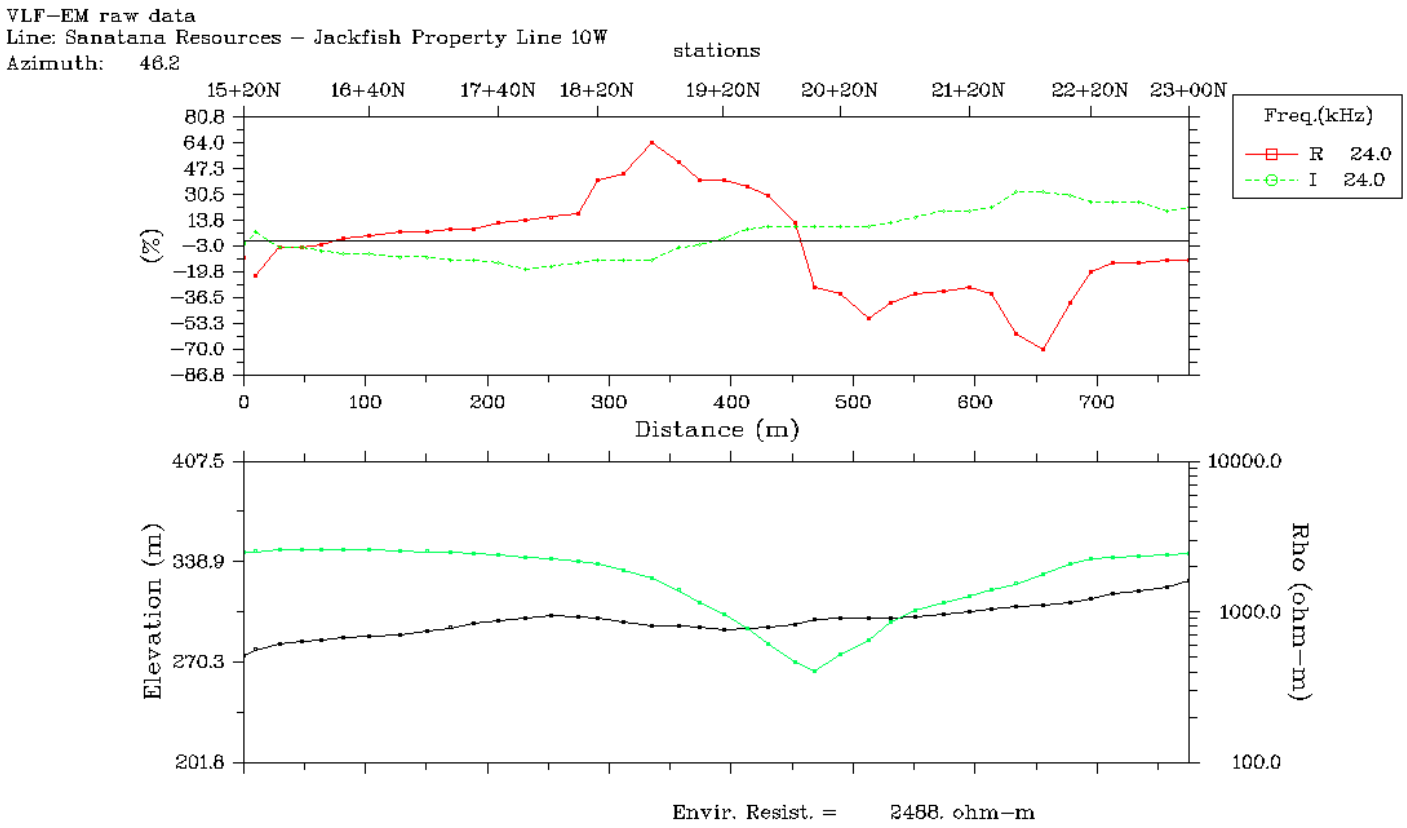
NAA Figure 20 Line 9W Model 4000 Ohm with Fraser Picks



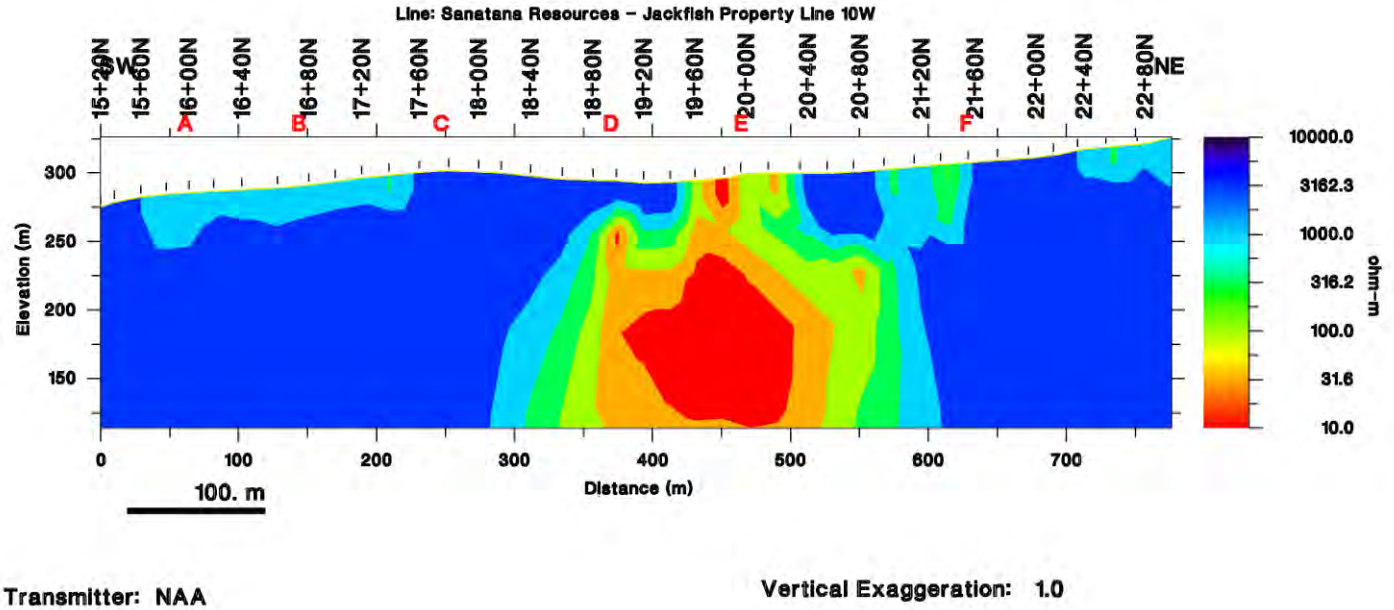
NAA Figure 21 Line 9W JY Model with Fraser Picks



NAA Figure 22 Line 10W Raw Data Profile



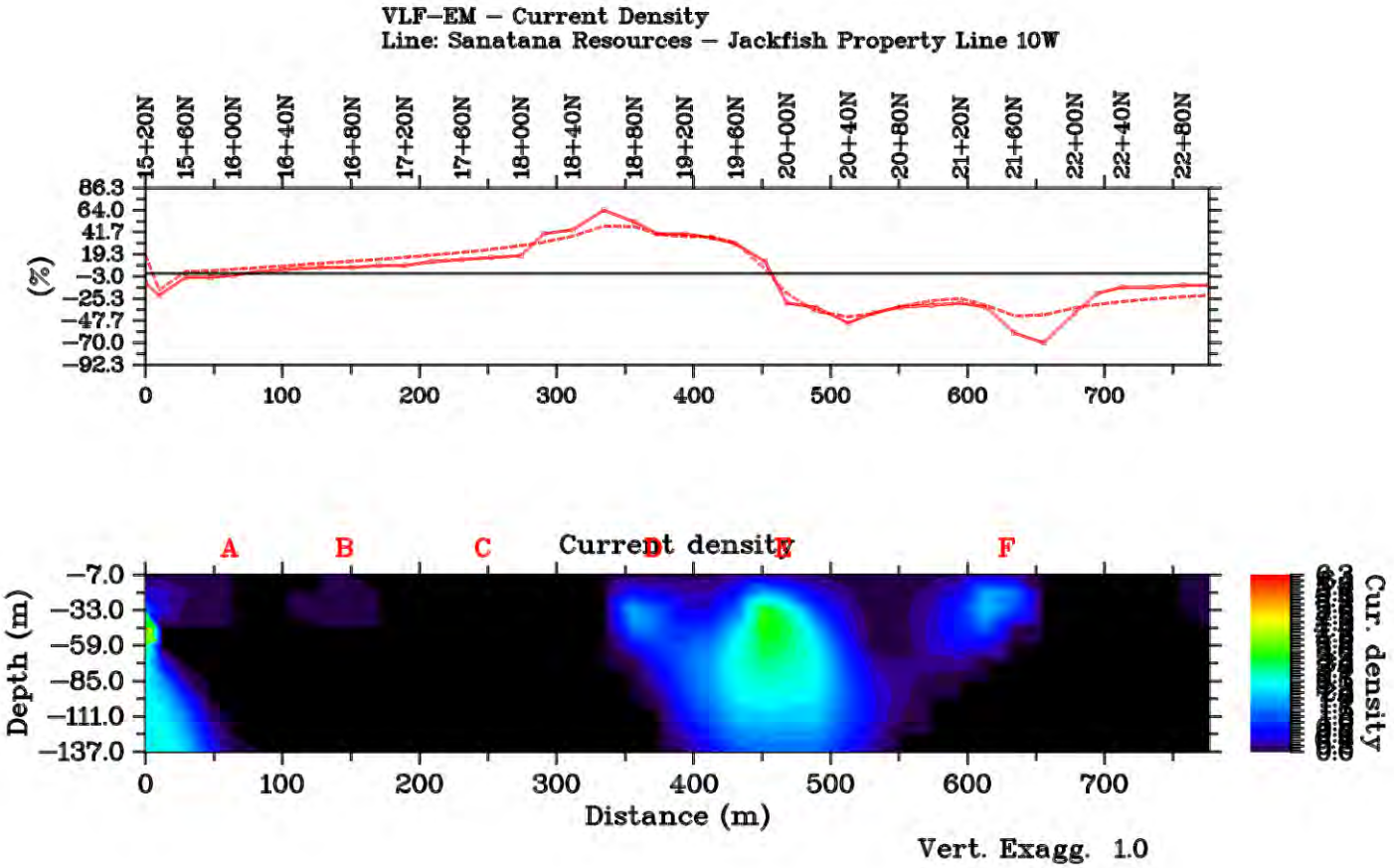
NAA Figure 23 Line 10W Model 4000 Ohm with Fraser Picks



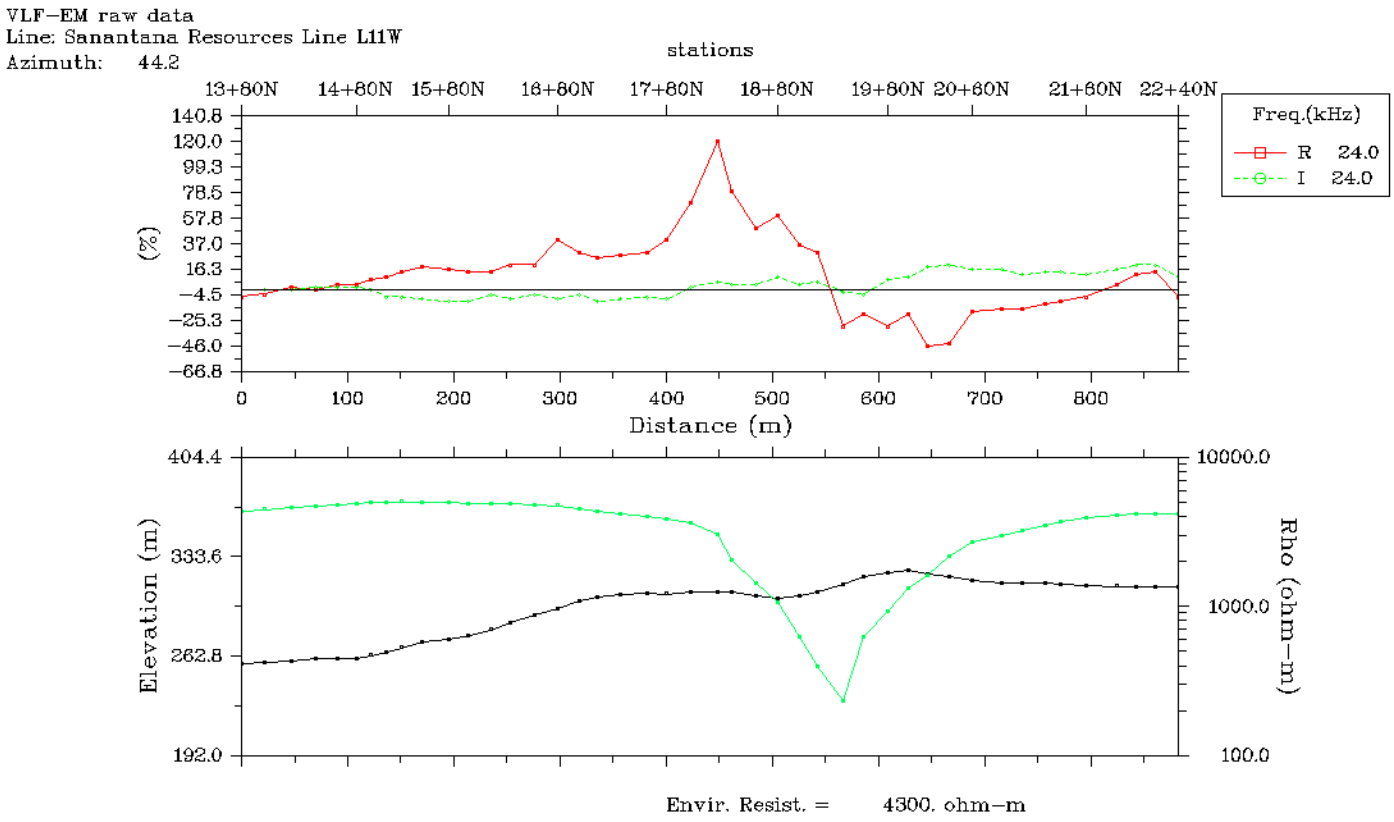
Transmitter: NAA

Vertical Exaggeration: 1.0

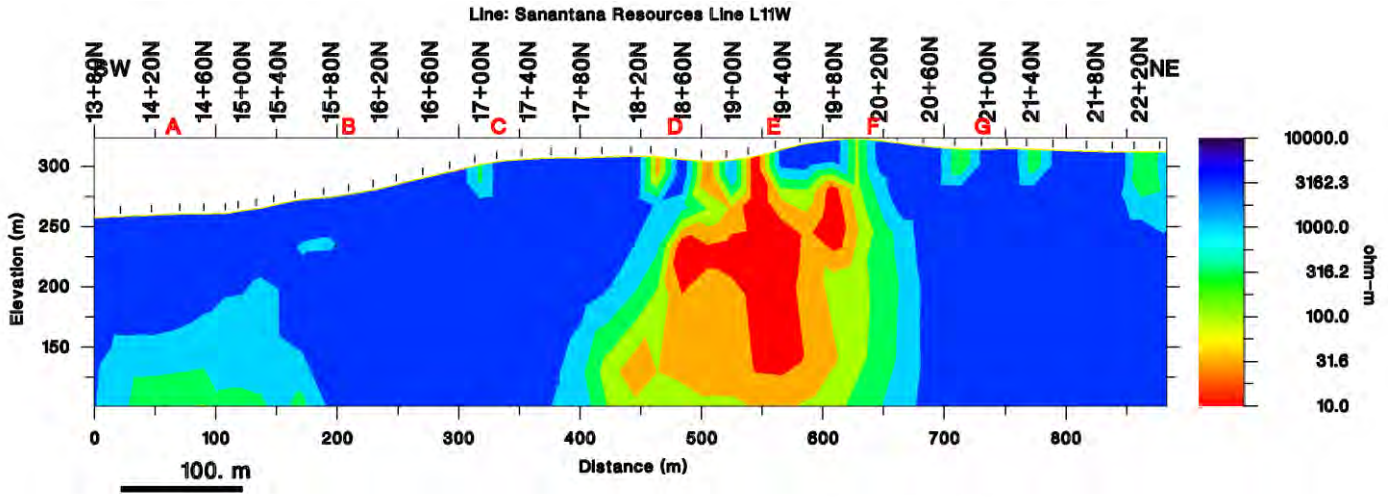
NAA Figure 24 Line 10W JY Model with Fraser Picks



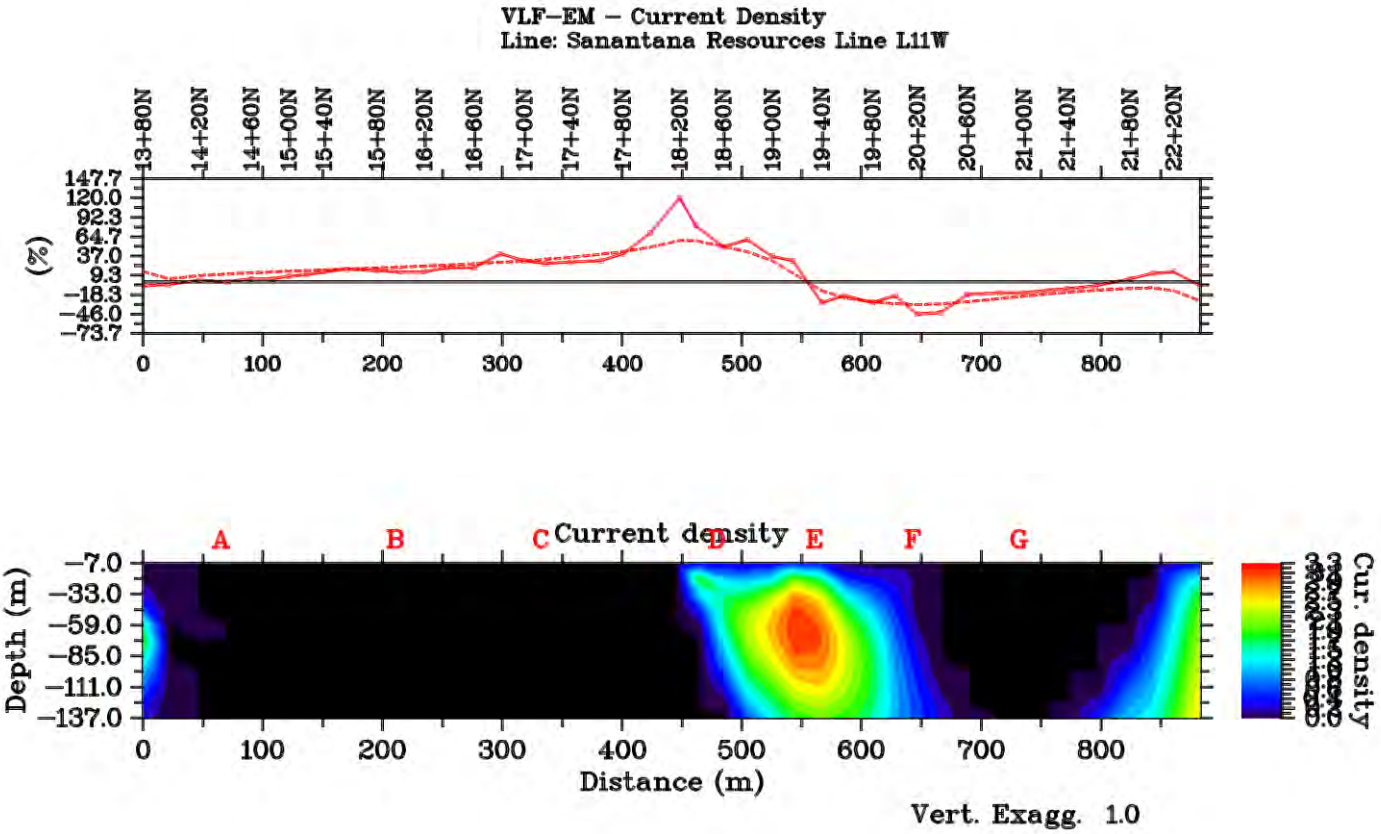
NAA Figure 25 Line 11W Raw Data Profile



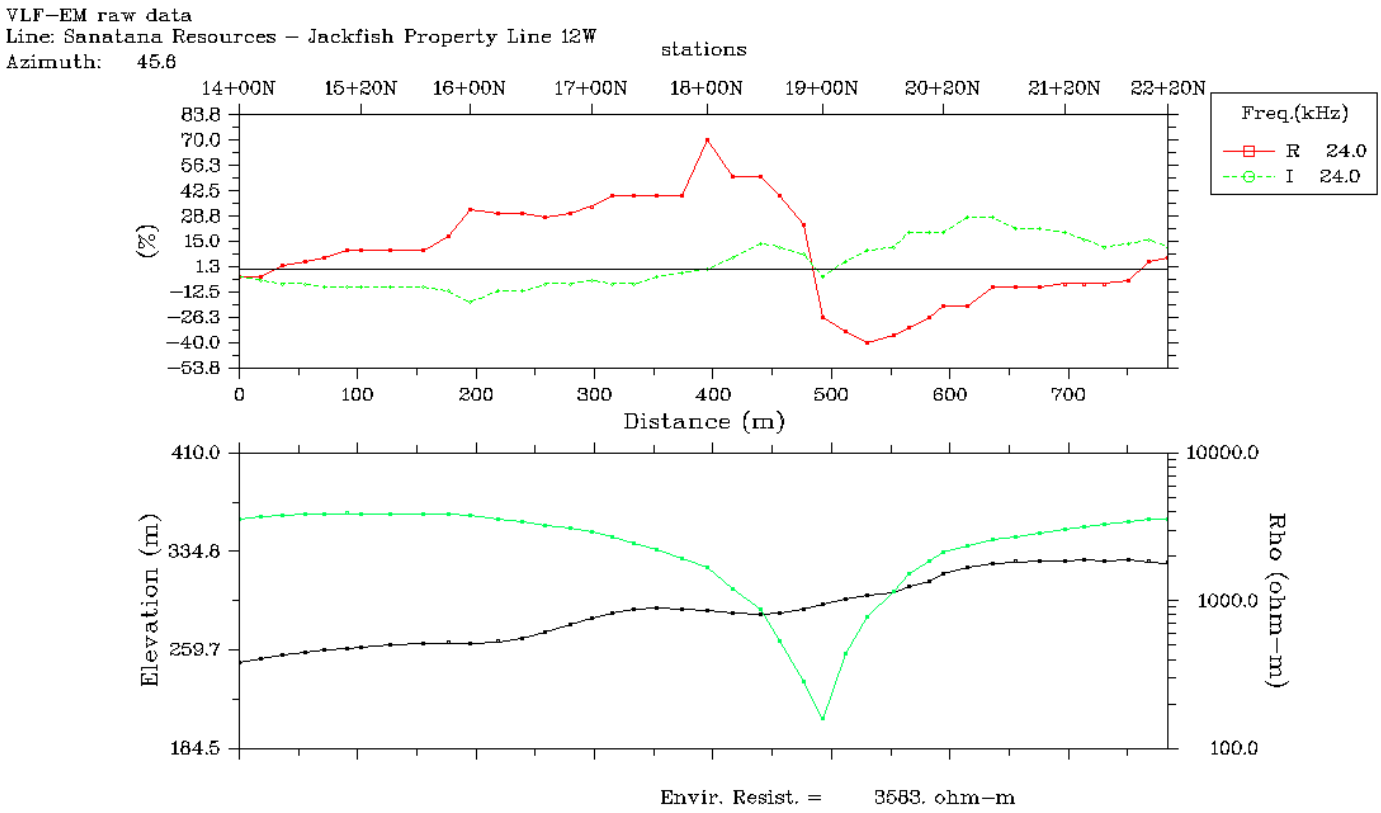
NAA Figure 26 Line 11W Model 4000 Ohm with Fraser Picks



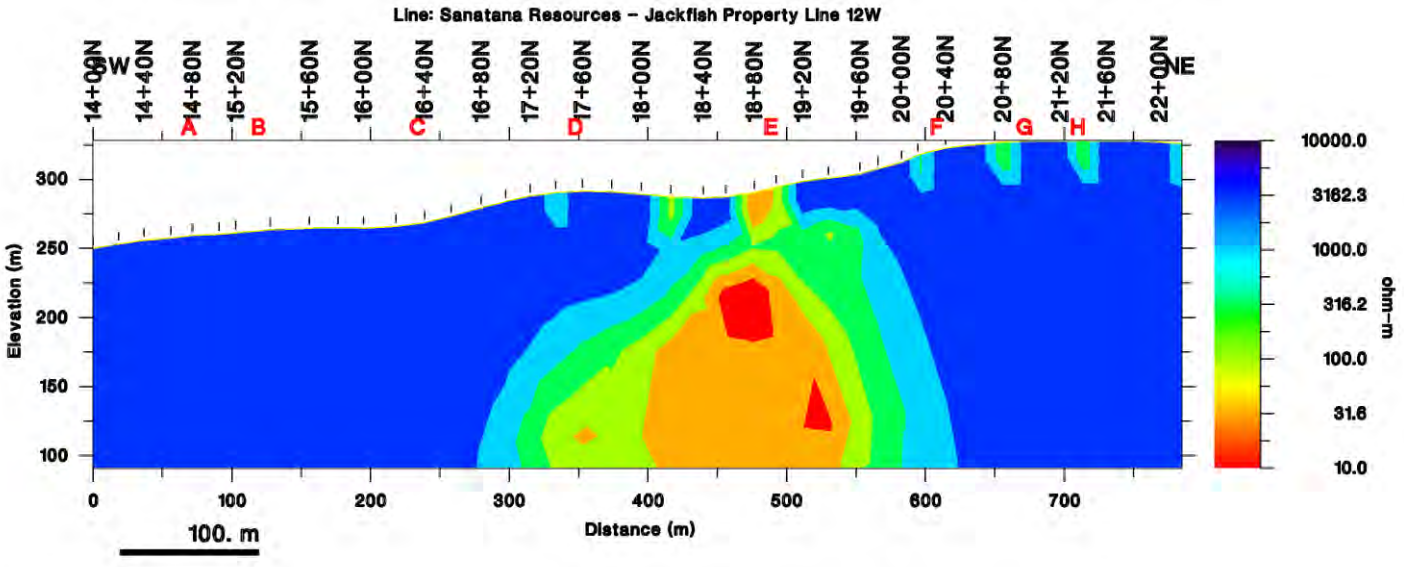
NAA Figure 27 Line 11W JY Model with Fraser Picks



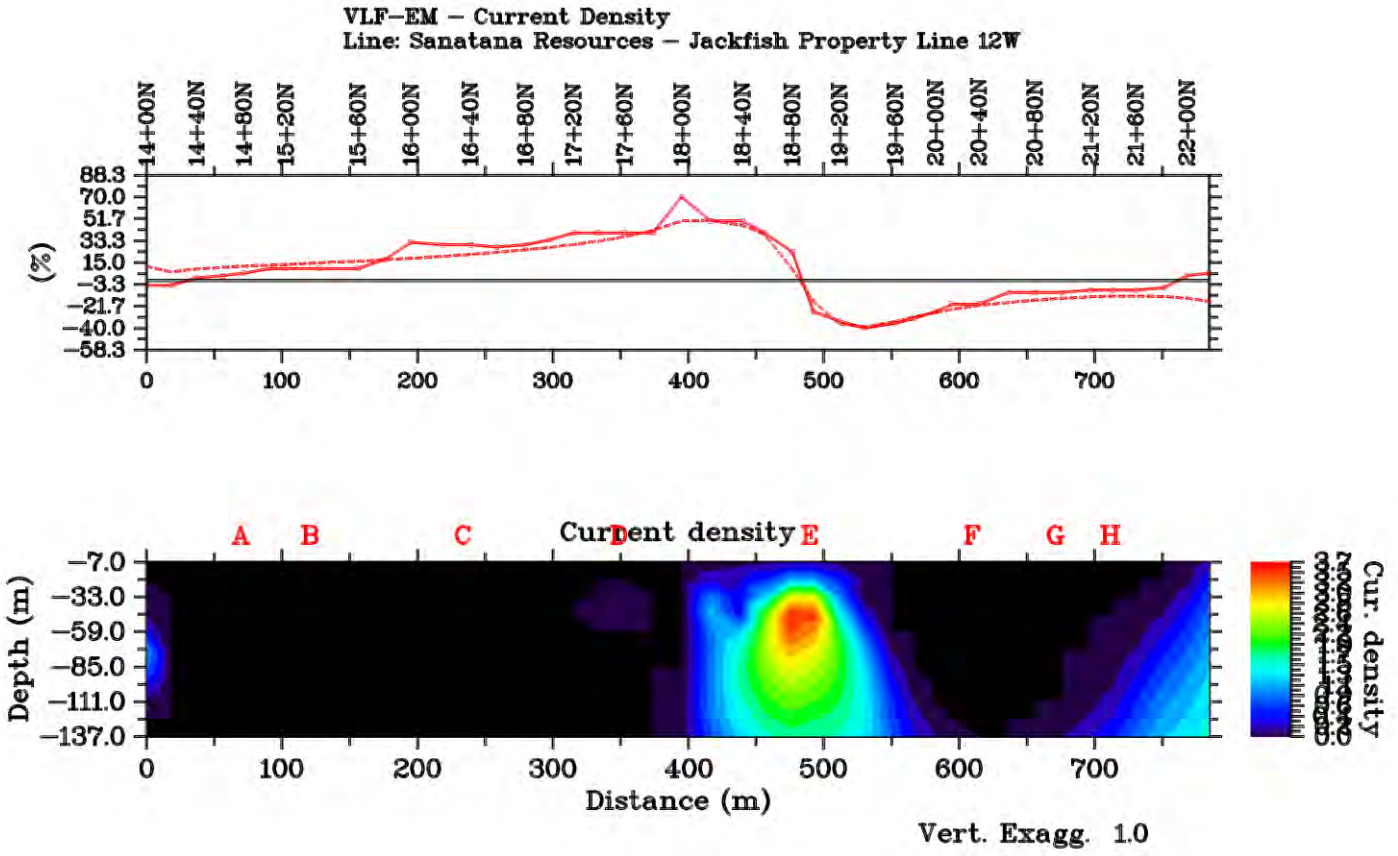
NAA Figure 28 Line 12W Raw Data Profile



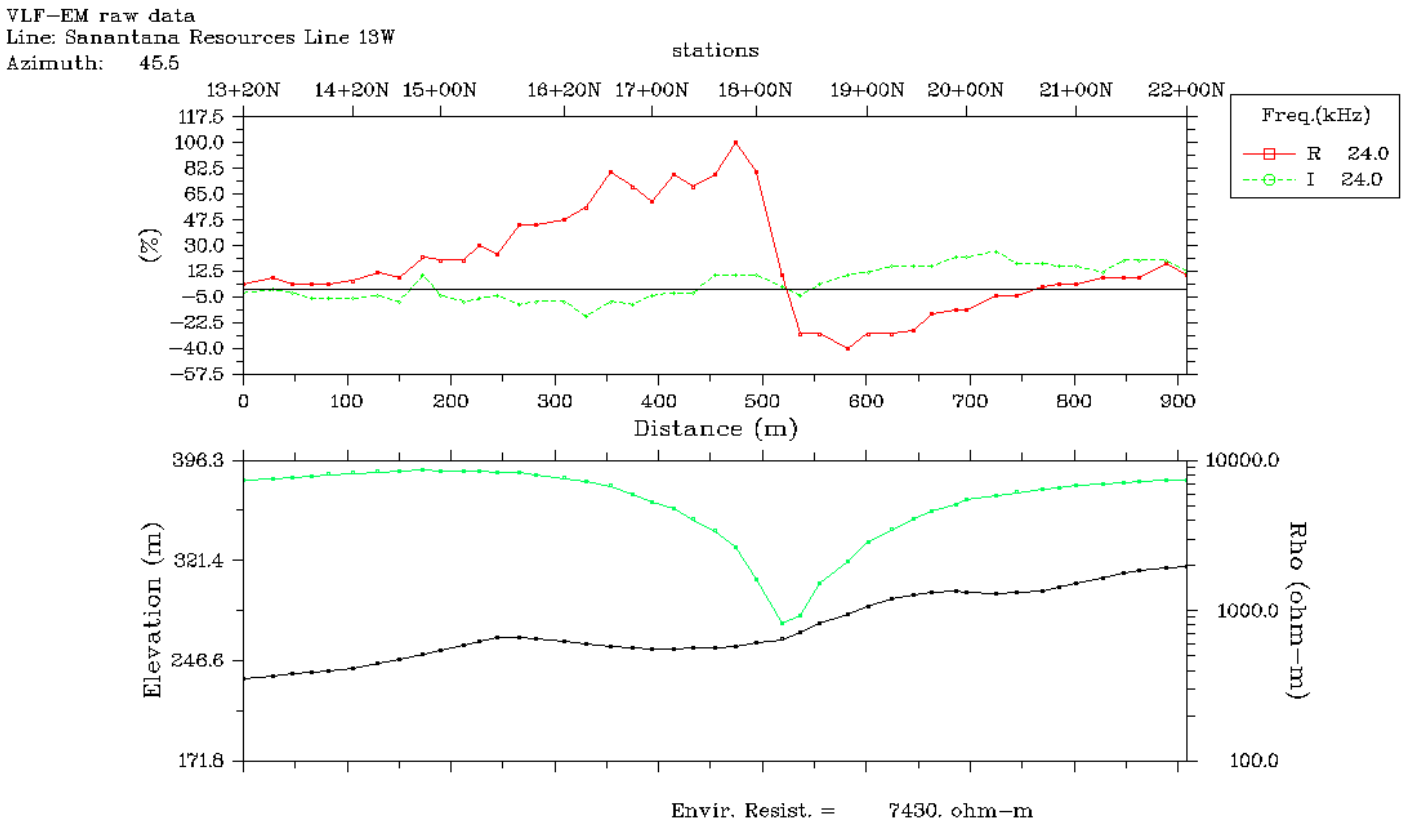
NAA Figure 29 Line 12W Model 4000 Ohm with Fraser Picks



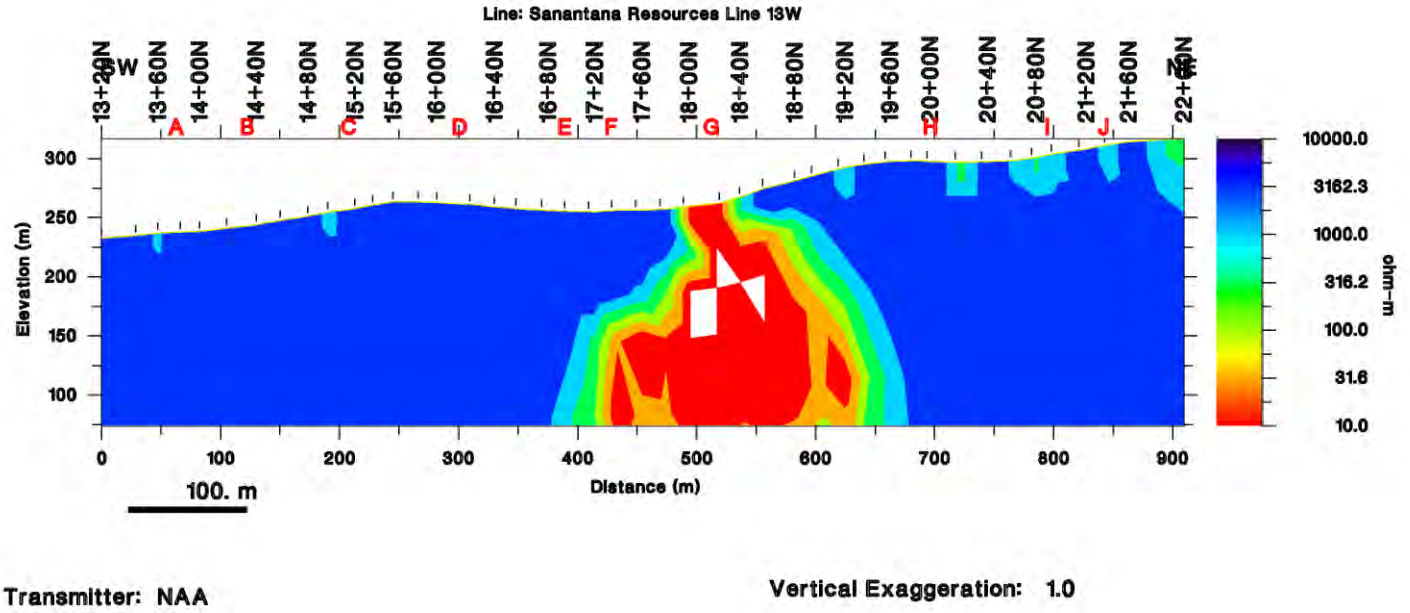
NAA Figure 30 Line 12W JY Model with Fraser Picks



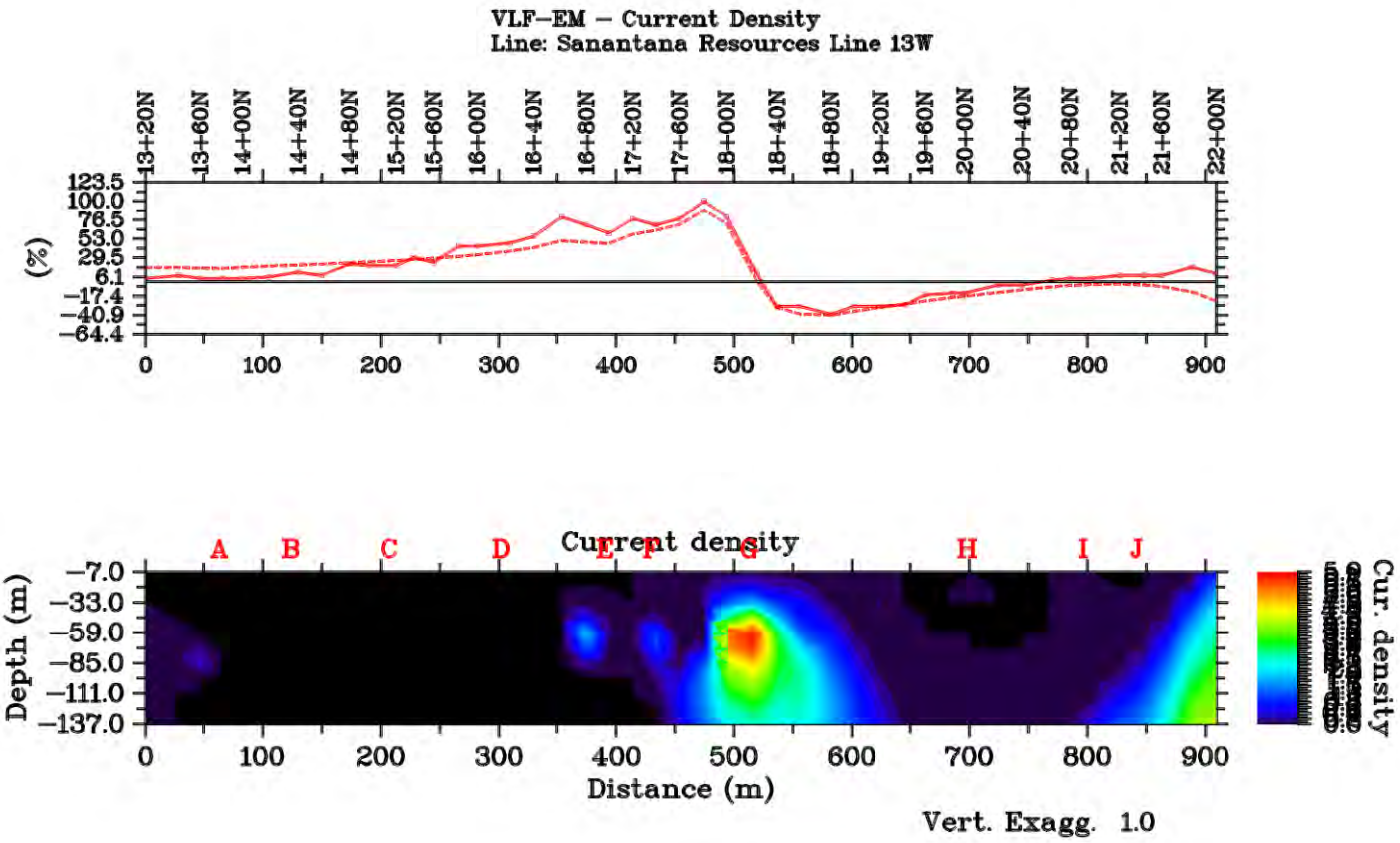
NAA Figure 31 Line 13W Raw Data Profile



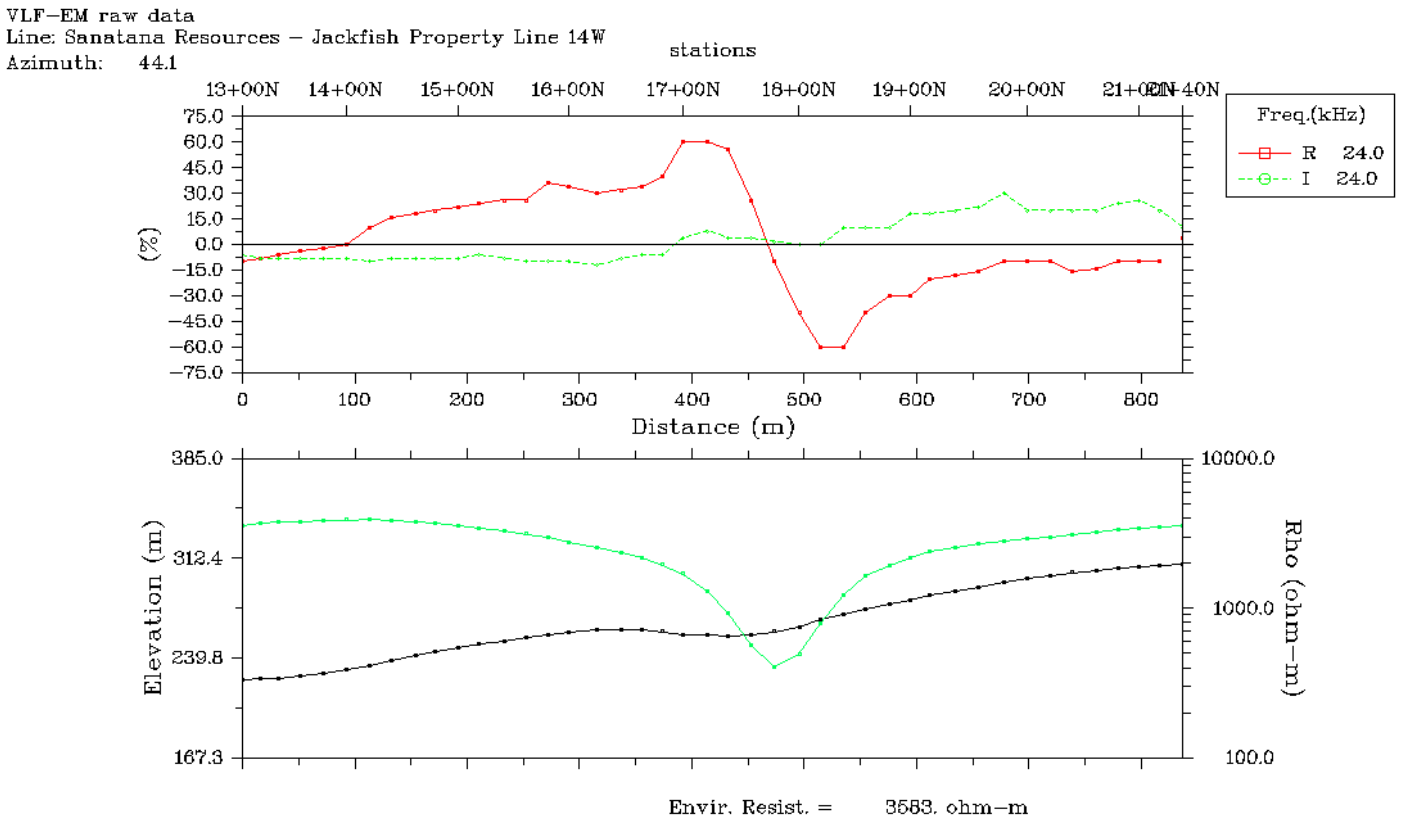
NAA Figure 32 Line 13W Model 4000 Ohm with Fraser Picks



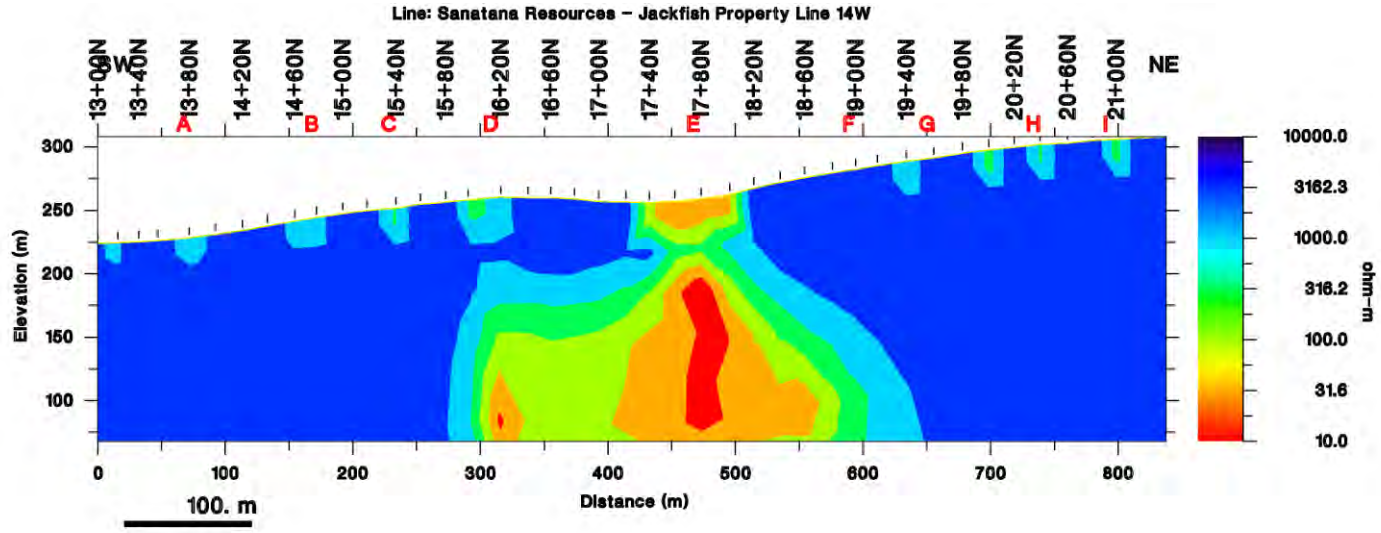
NAA Figure 33 Line 13 JY Model with Fraser Picks



NAA Figure 34 Line 14W Raw Data Profile



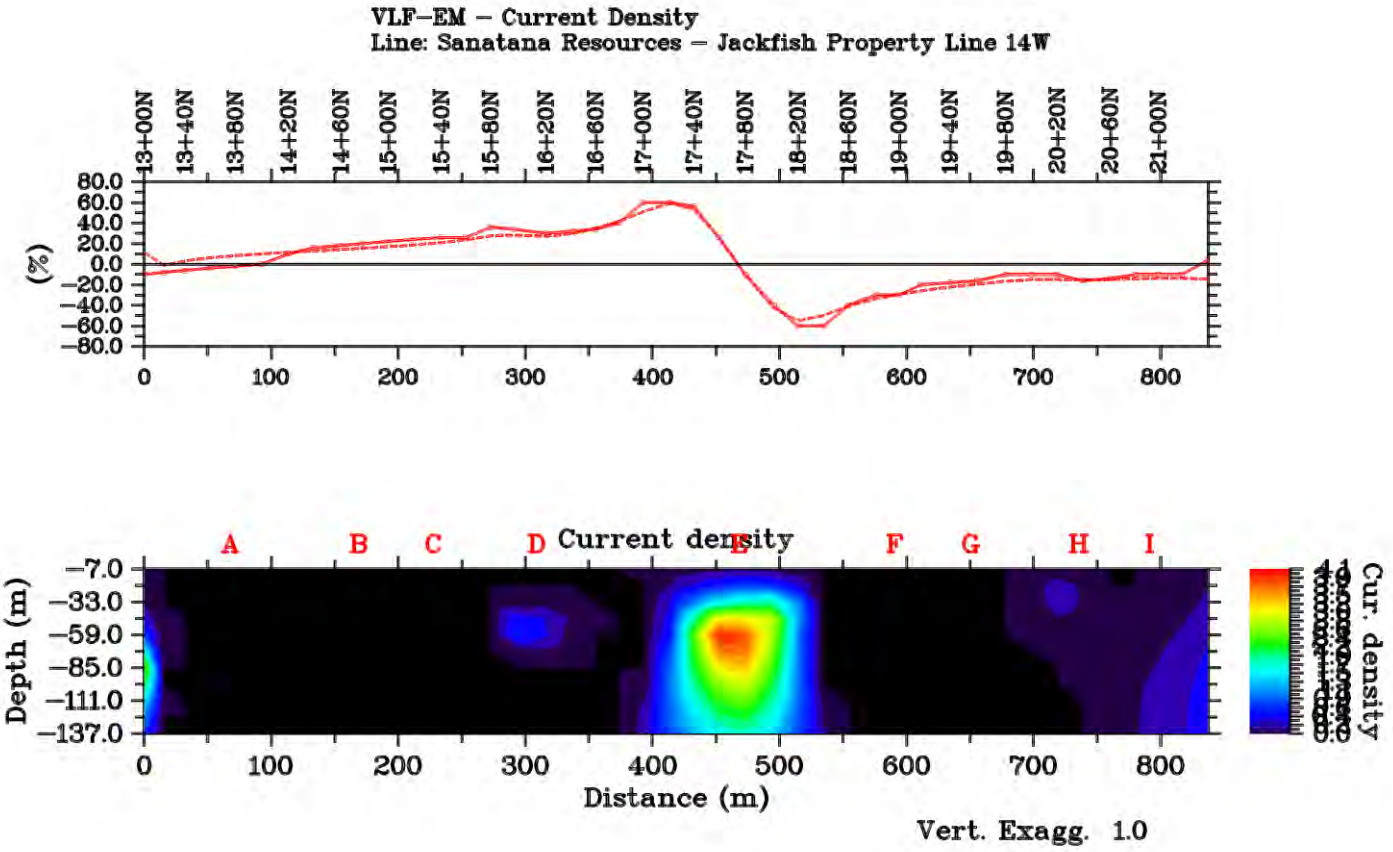
NAA Figure 35 Line 14W Model 4000 Ohm with Fraser Picks



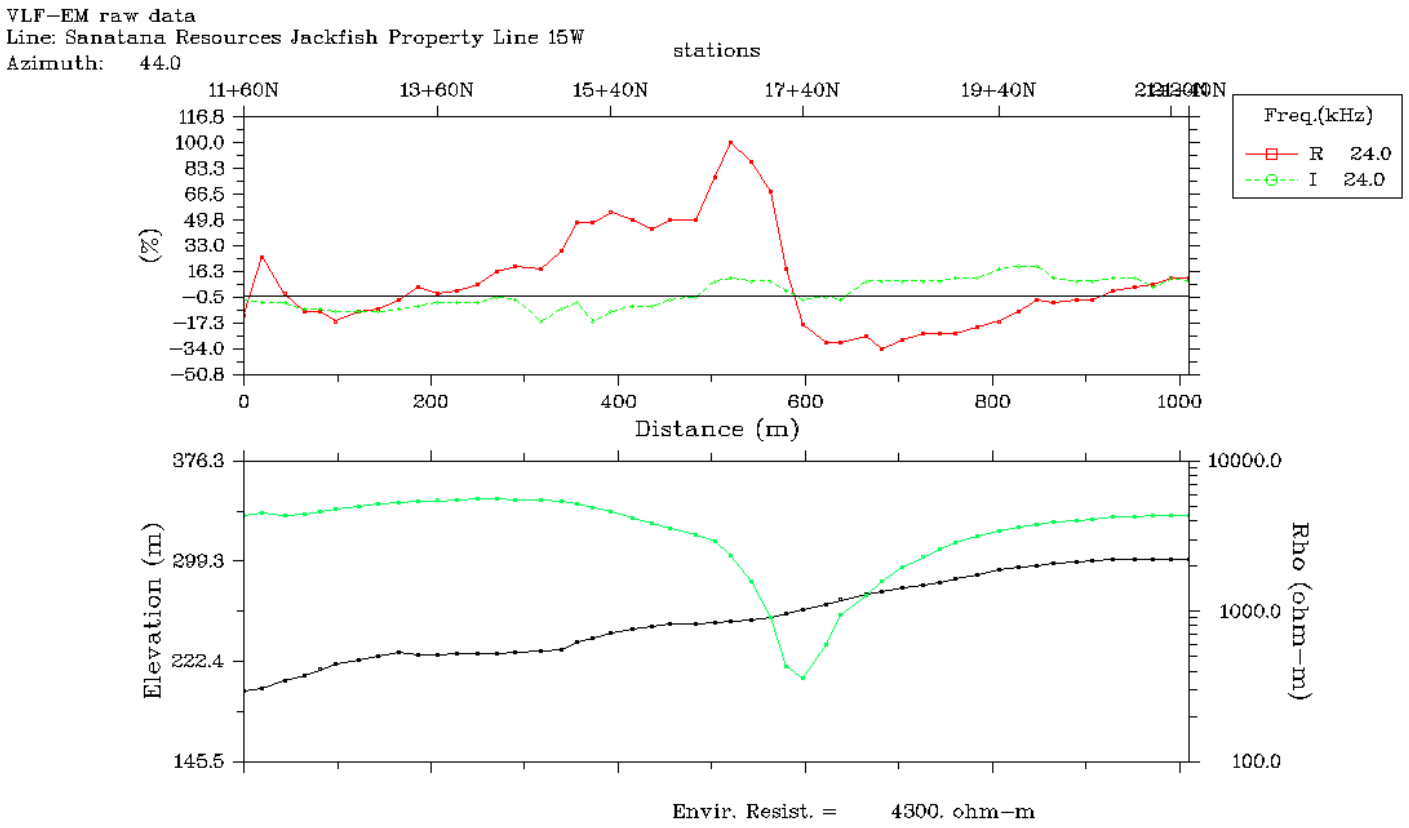
Transmitter: NAA

Vertical Exaggeration: 1.0

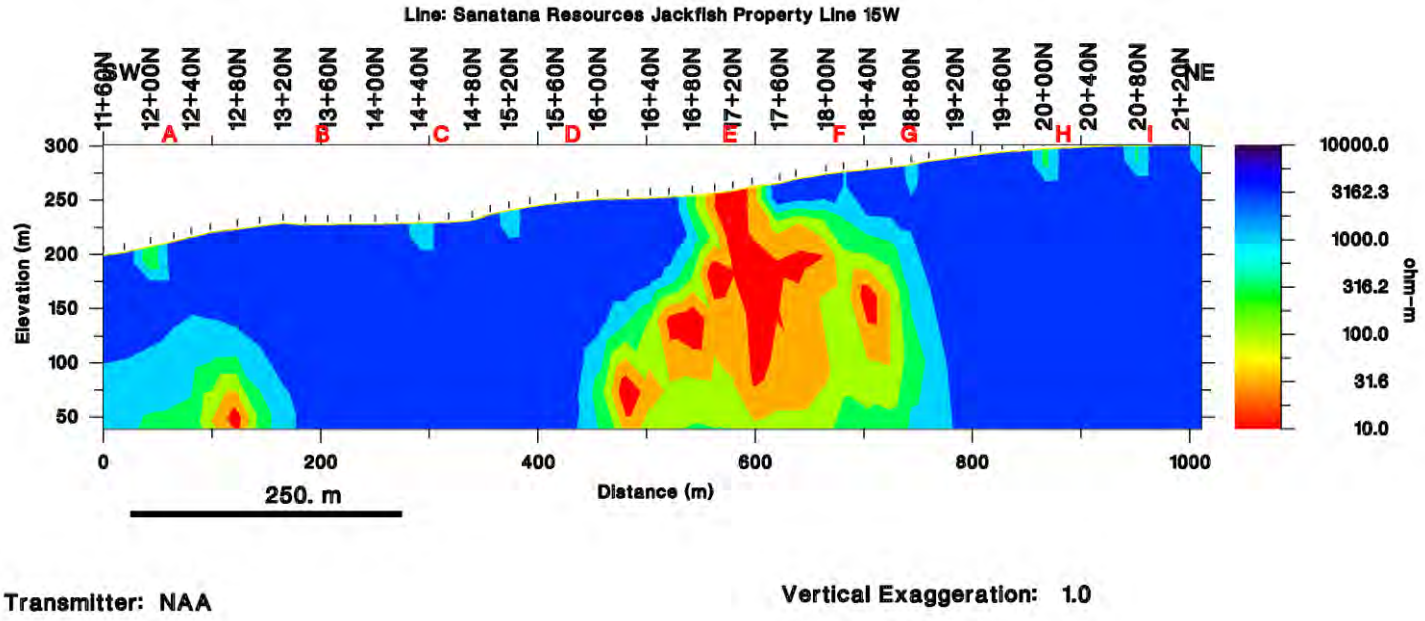
NAA Figure 36 Line 14W JY Model with Fraser Picks



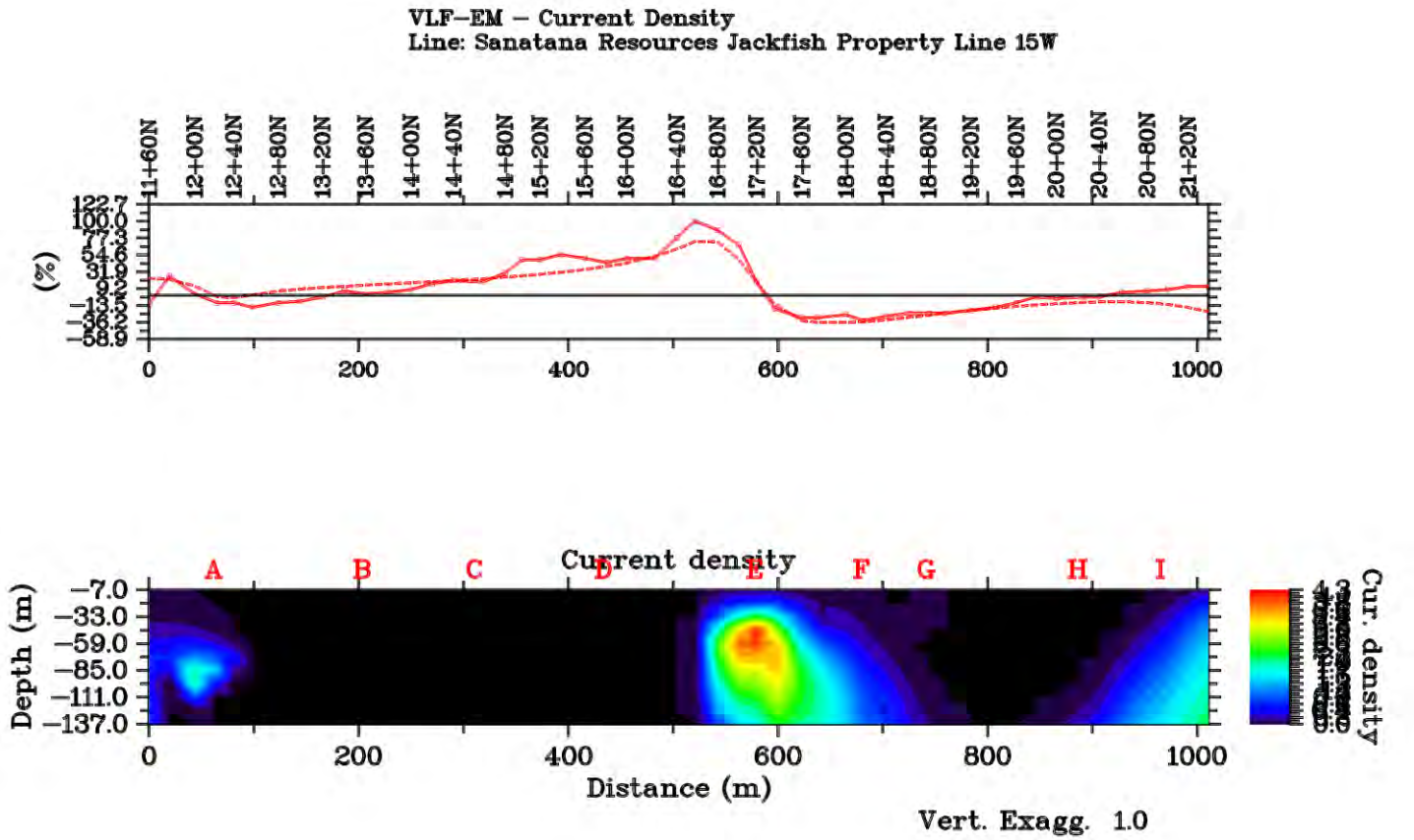
NAA Figure 37 Line 15W Raw Data Profile



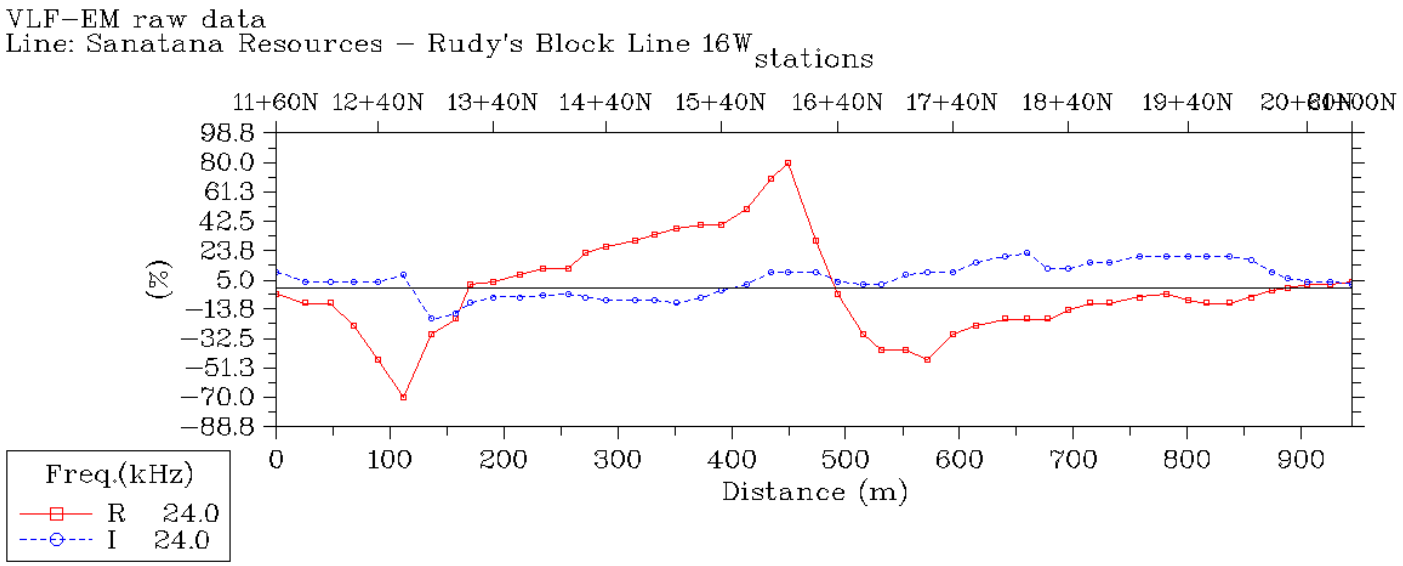
NAA Figure 38 Line 15W Model 2000 Ohm with Fraser Picks



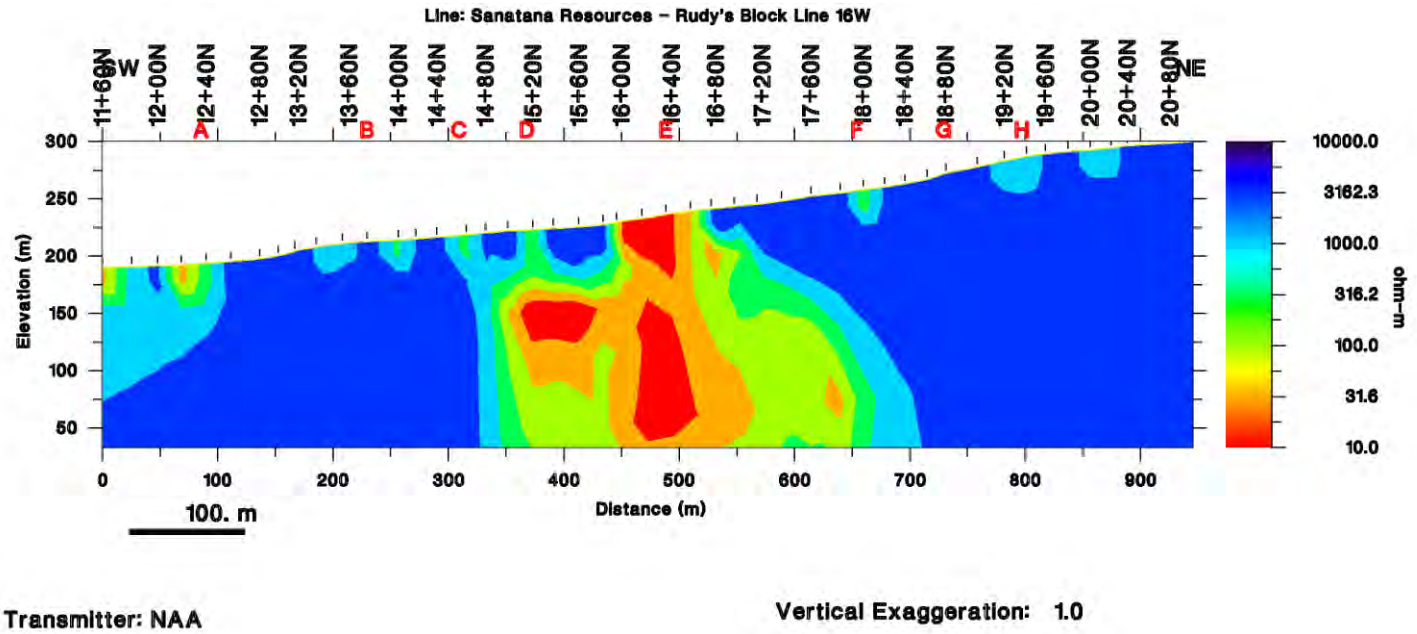
NAA Figure 39 Line 15W JY Model with Fraser Picks



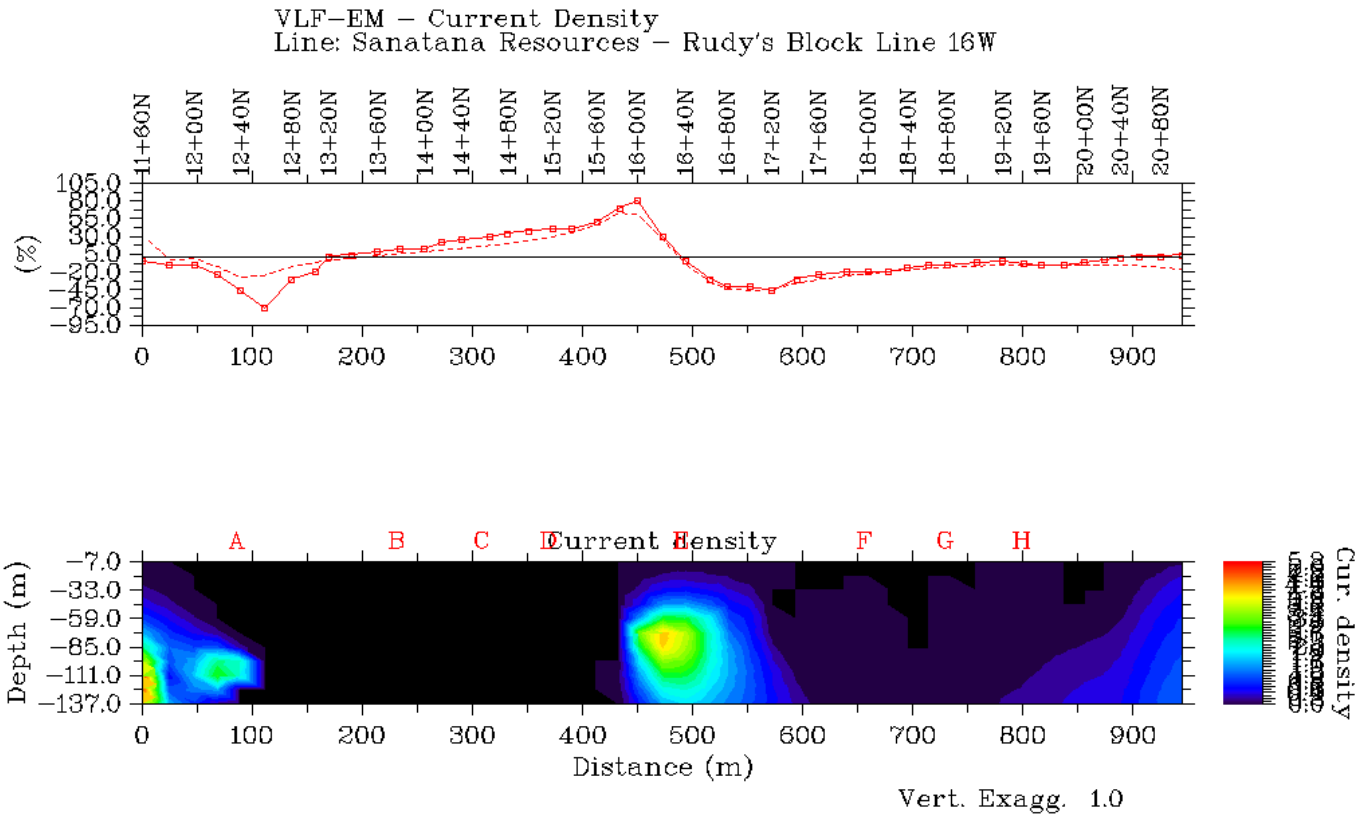
NAA Figure 40 Line 16W Raw Data Profile



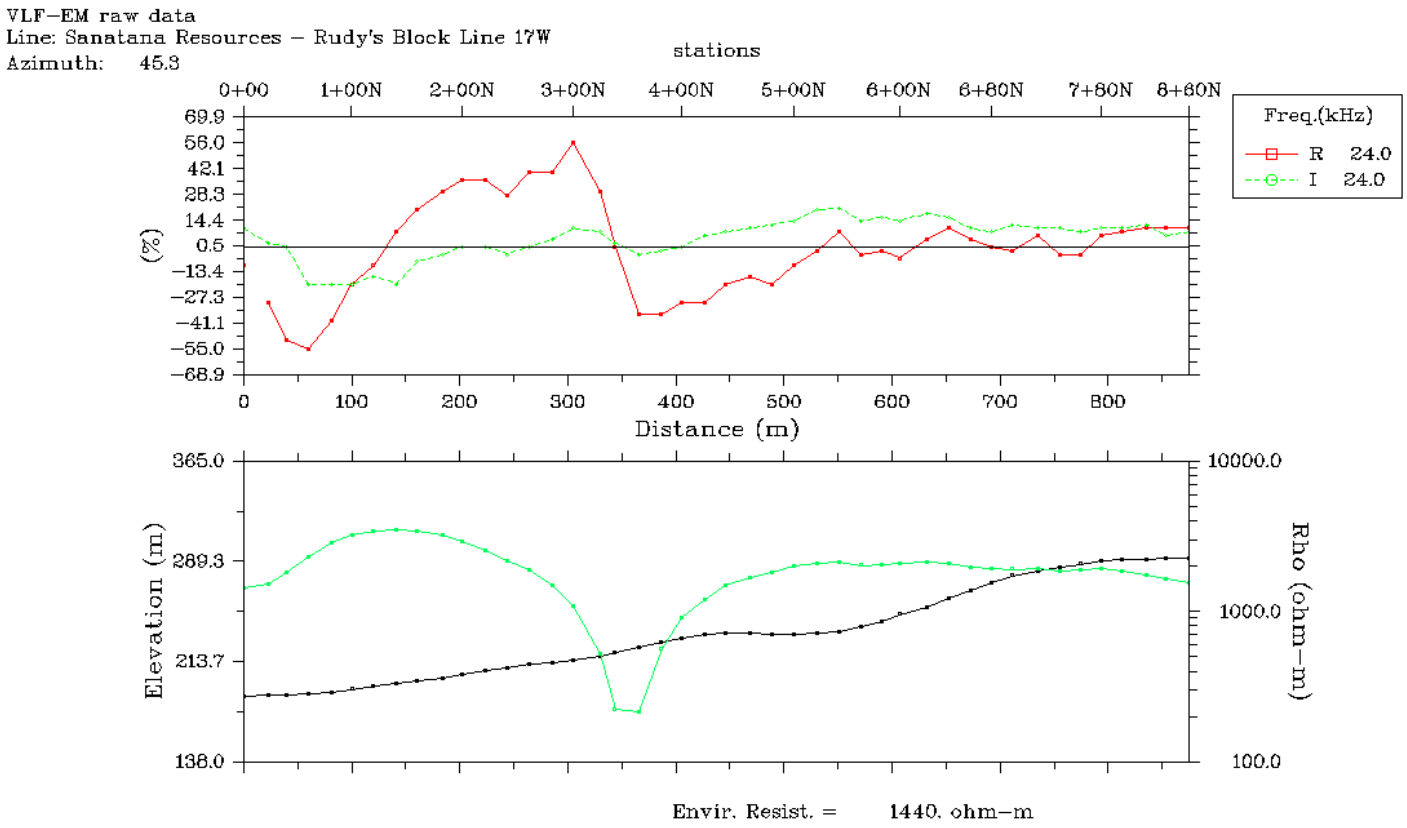
NAA Figure 41 Line 16W Model 4000 Ohm with Fraser Picks



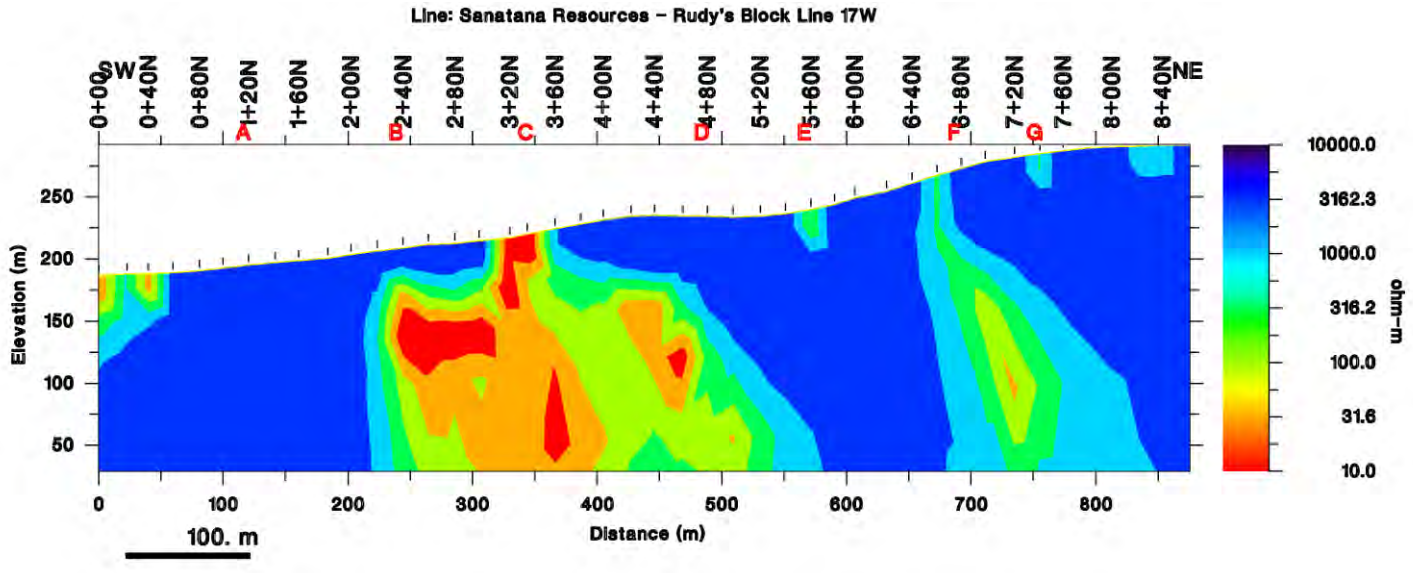
NAA Figure 42 Line 16W JY Model with Fraser Picks



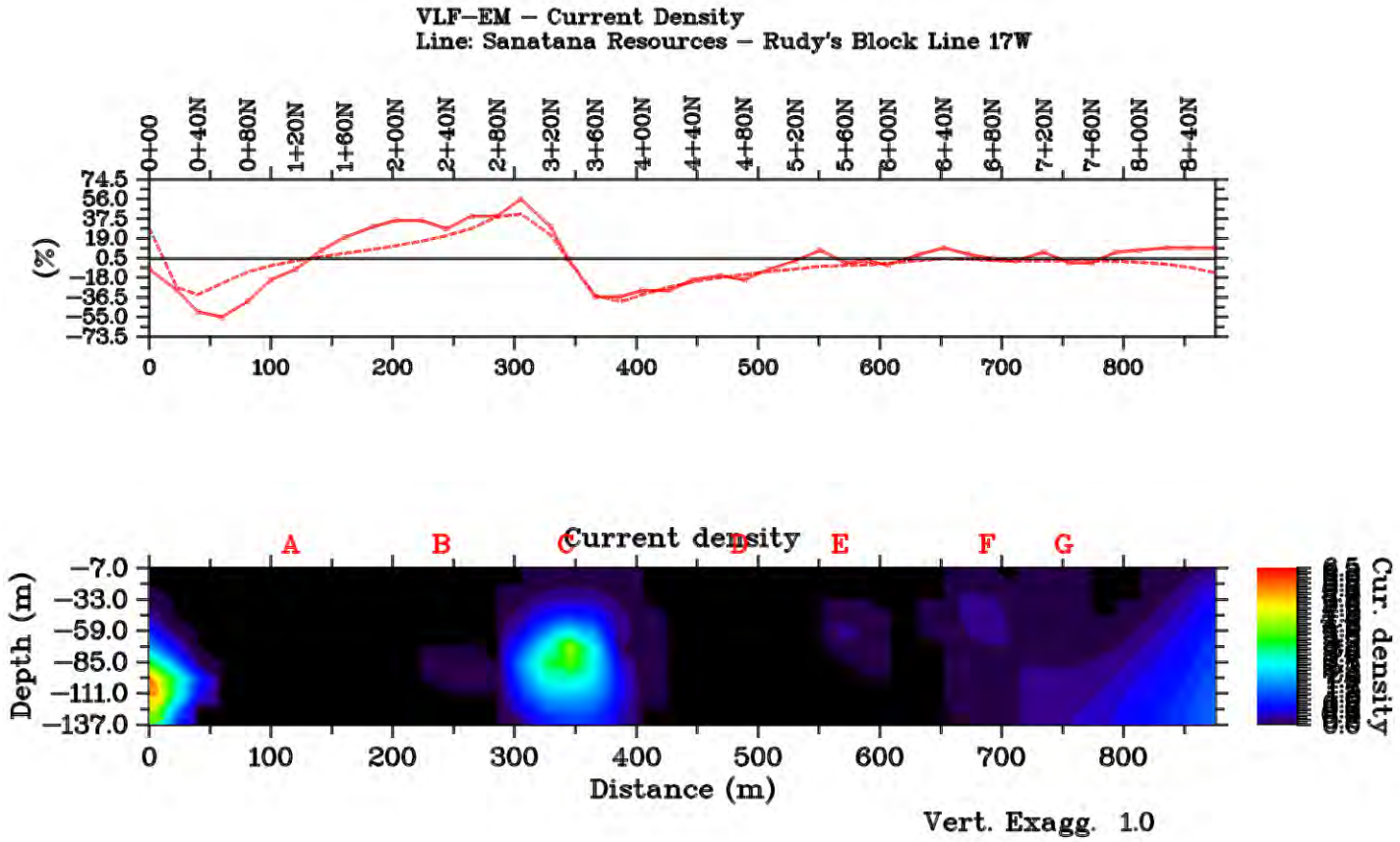
NAA Figure 43 Line 17W Raw Data Profile



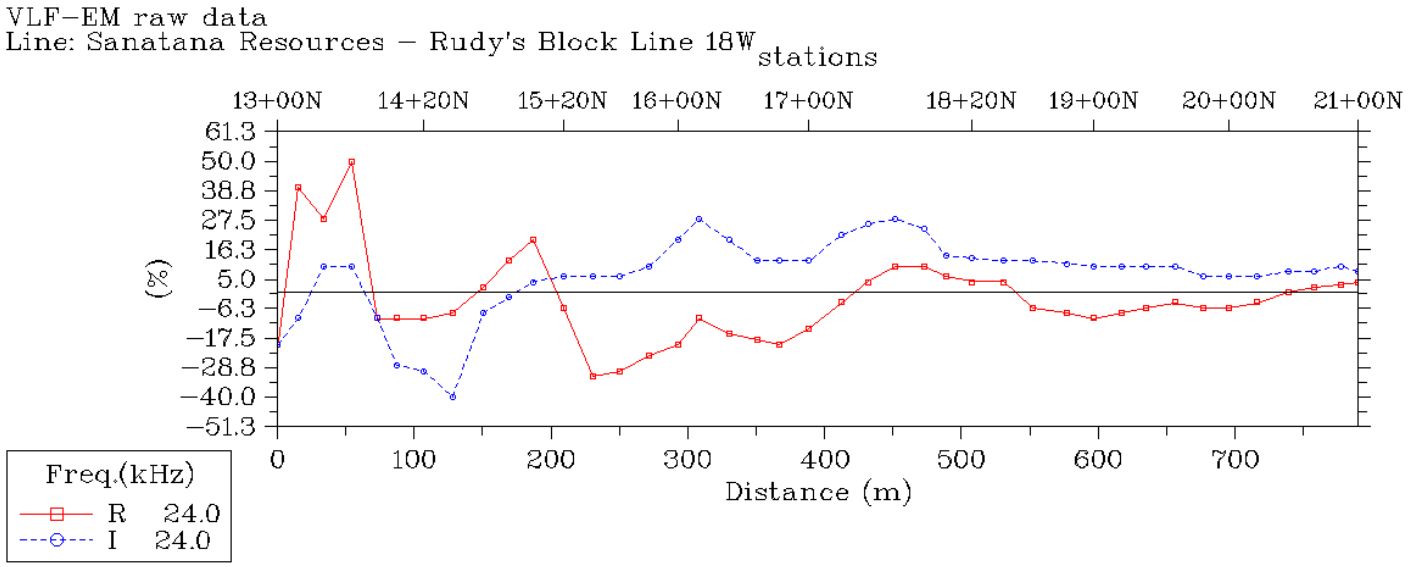
NAA Figure 44 Line 17W Model 4000 Ohm with Fraser Picks



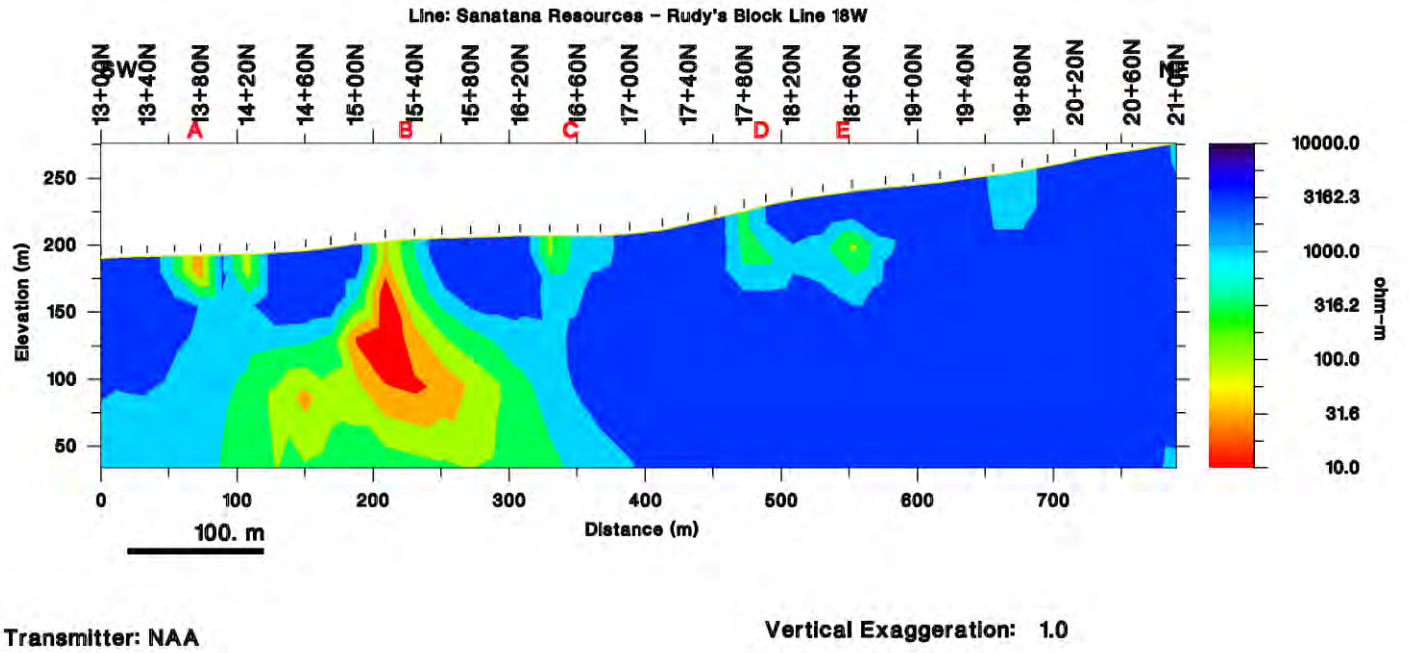
NAA Figure 45 Line 17W JY Model with Fraser Picks



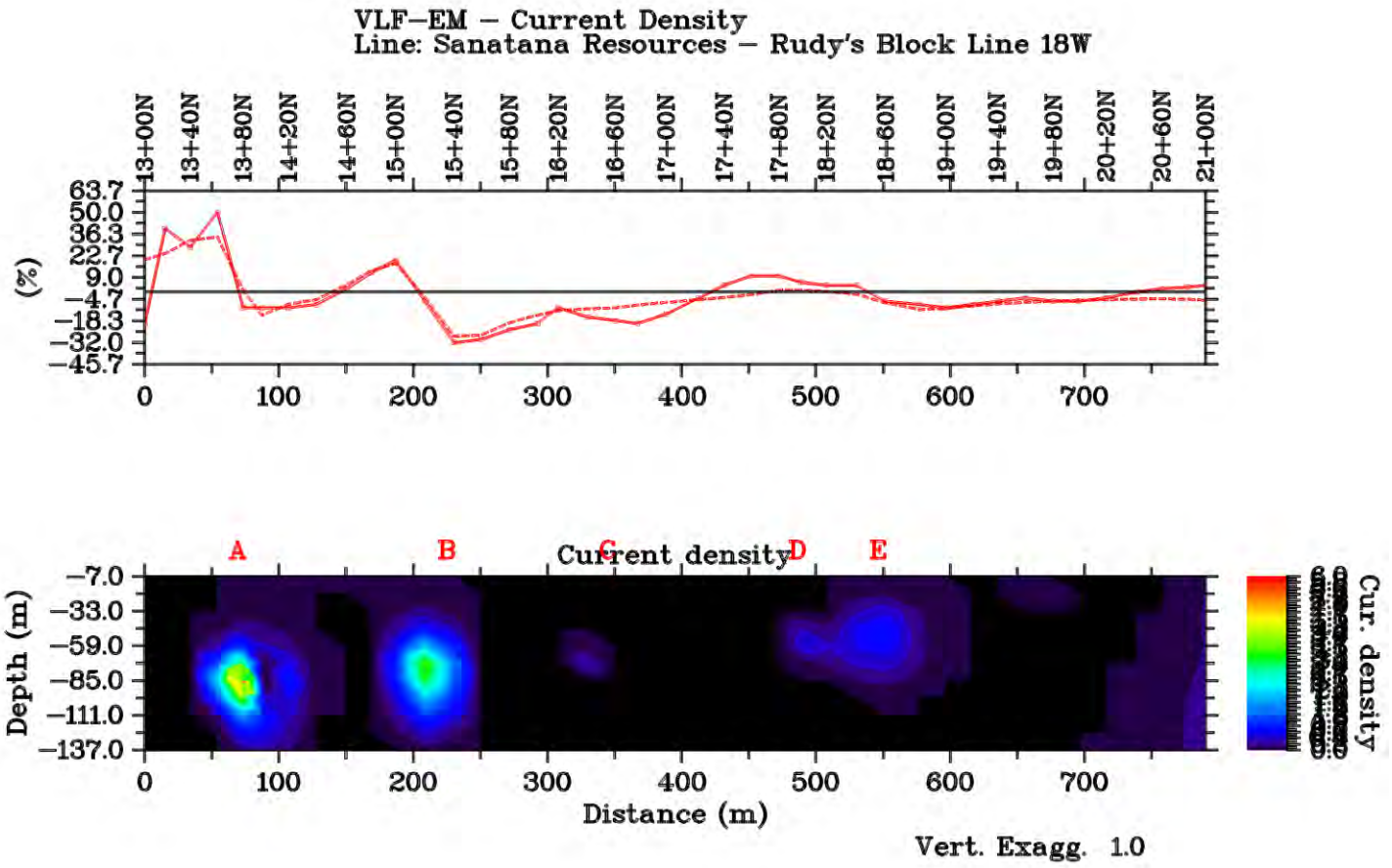
NAA Figure 46 Line 18W Raw Data Profile



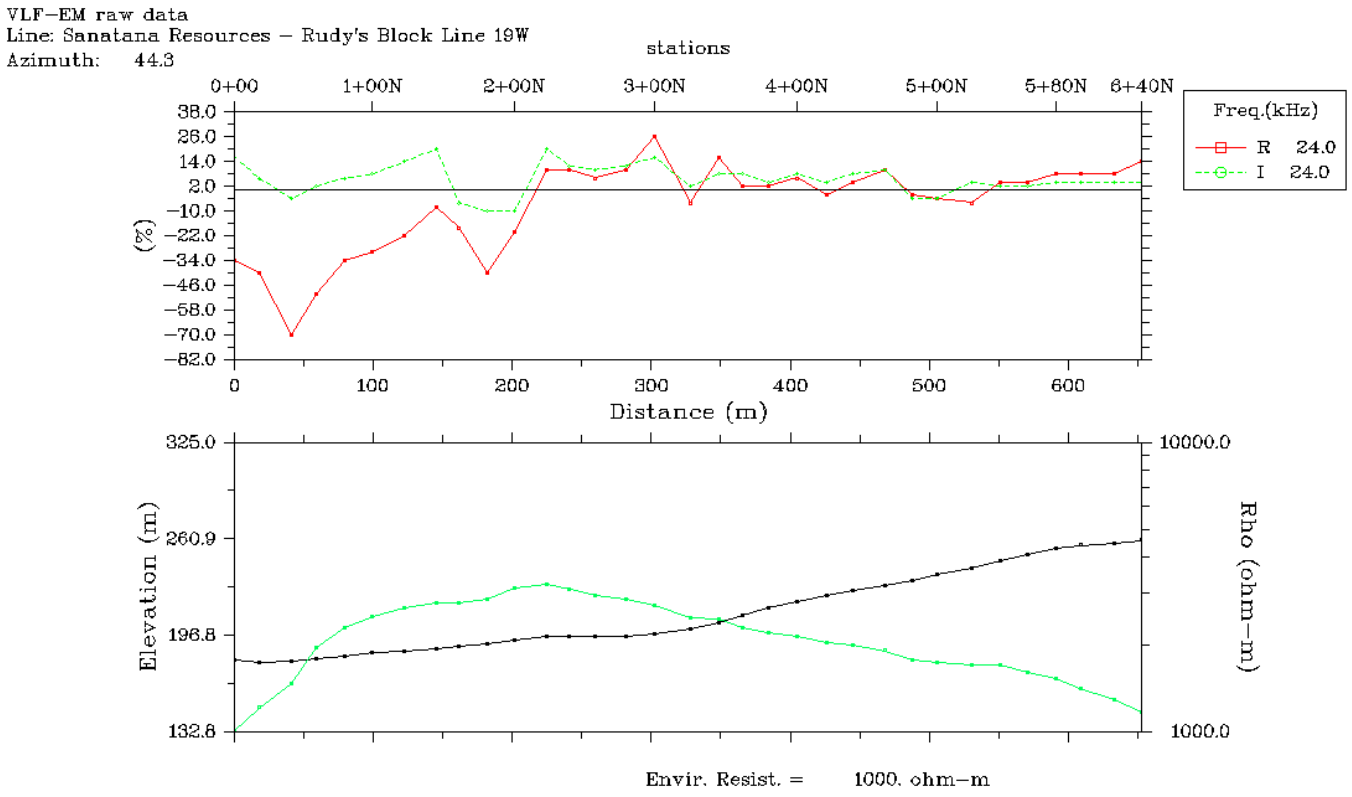
NAA Figure 47 Line 18W Model 4000 Ohm with Fraser Picks



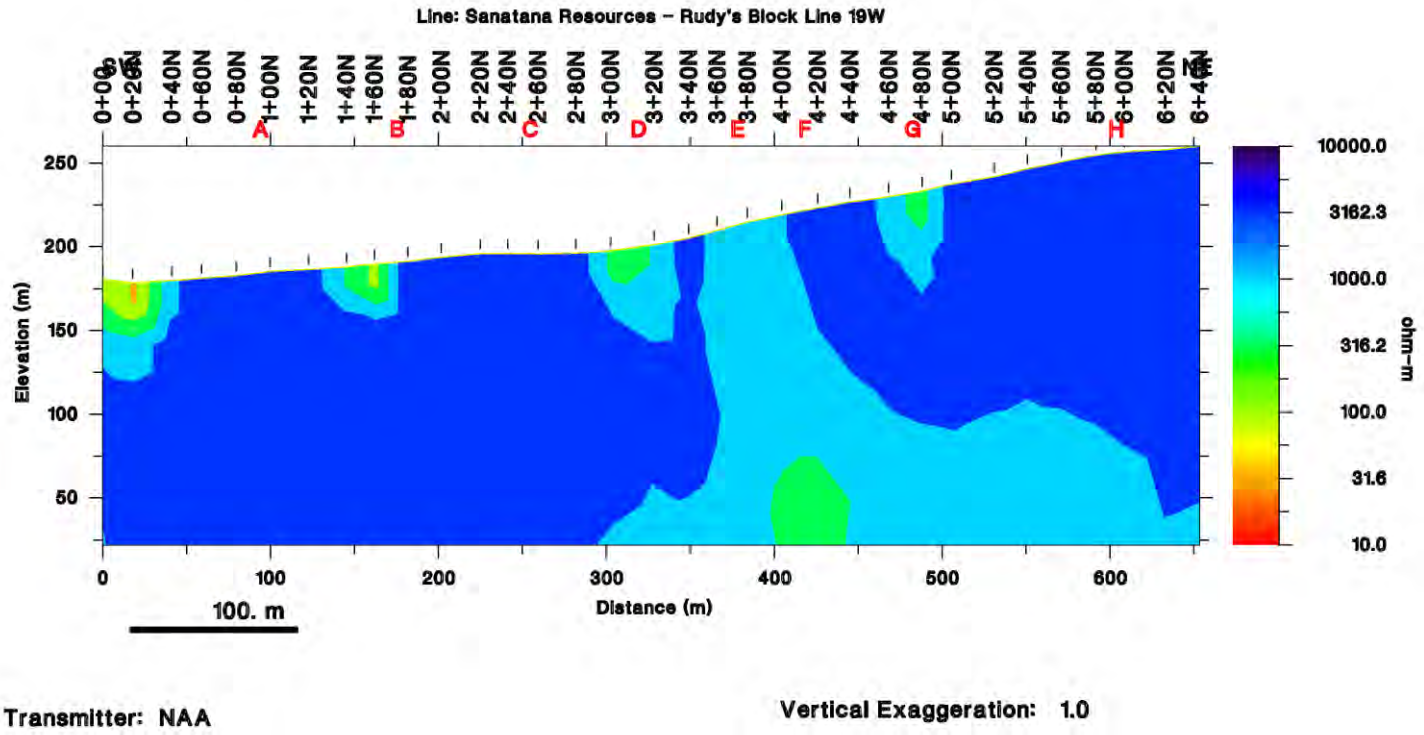
NAA Figure 48 Line 18W JY Model with Fraser Picks



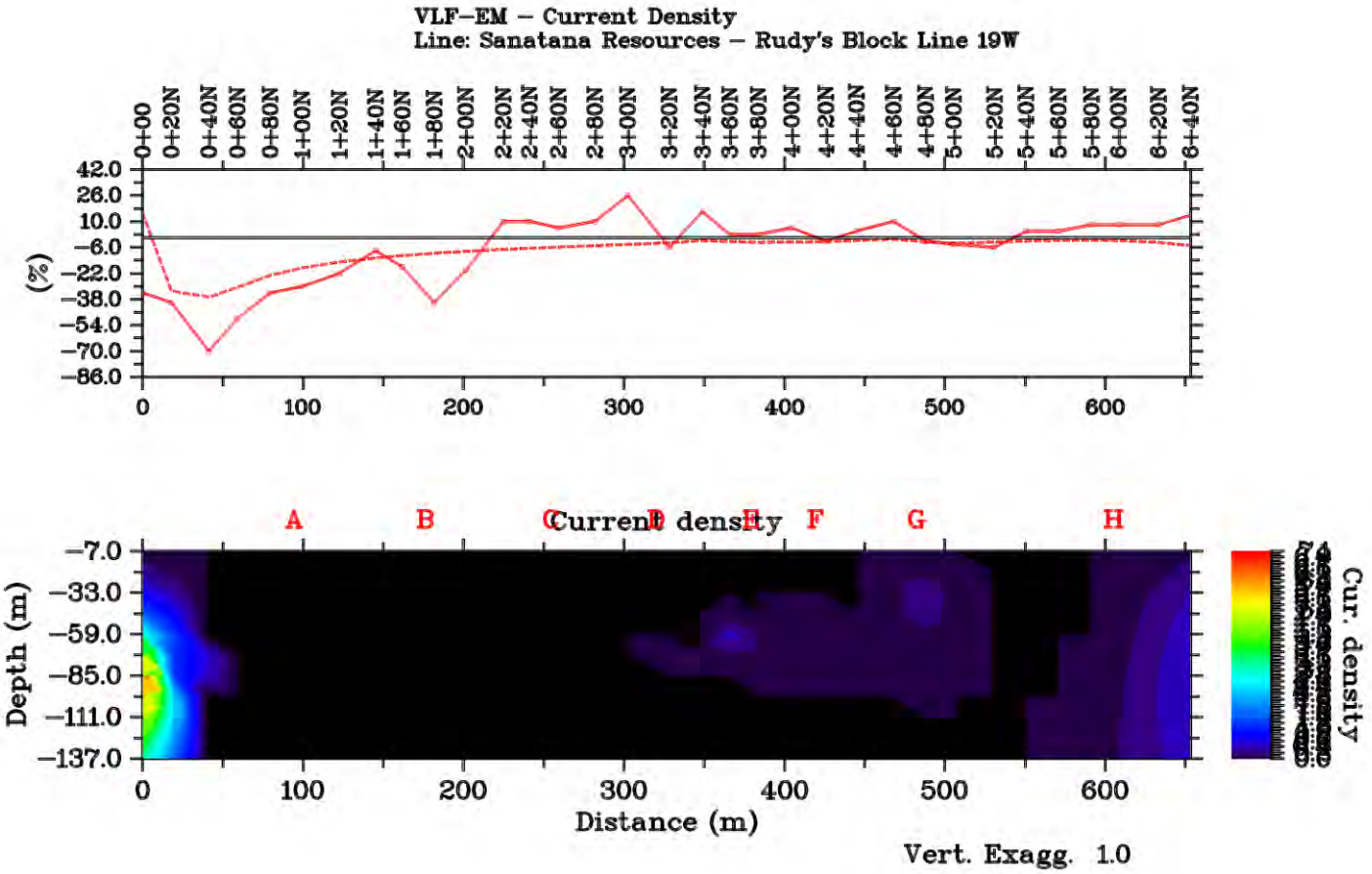
NAA Figure 49 Line 19W Raw Data Profile



NAA Figure 50 Line 19W Model 4000 Ohm with Fraser Picks



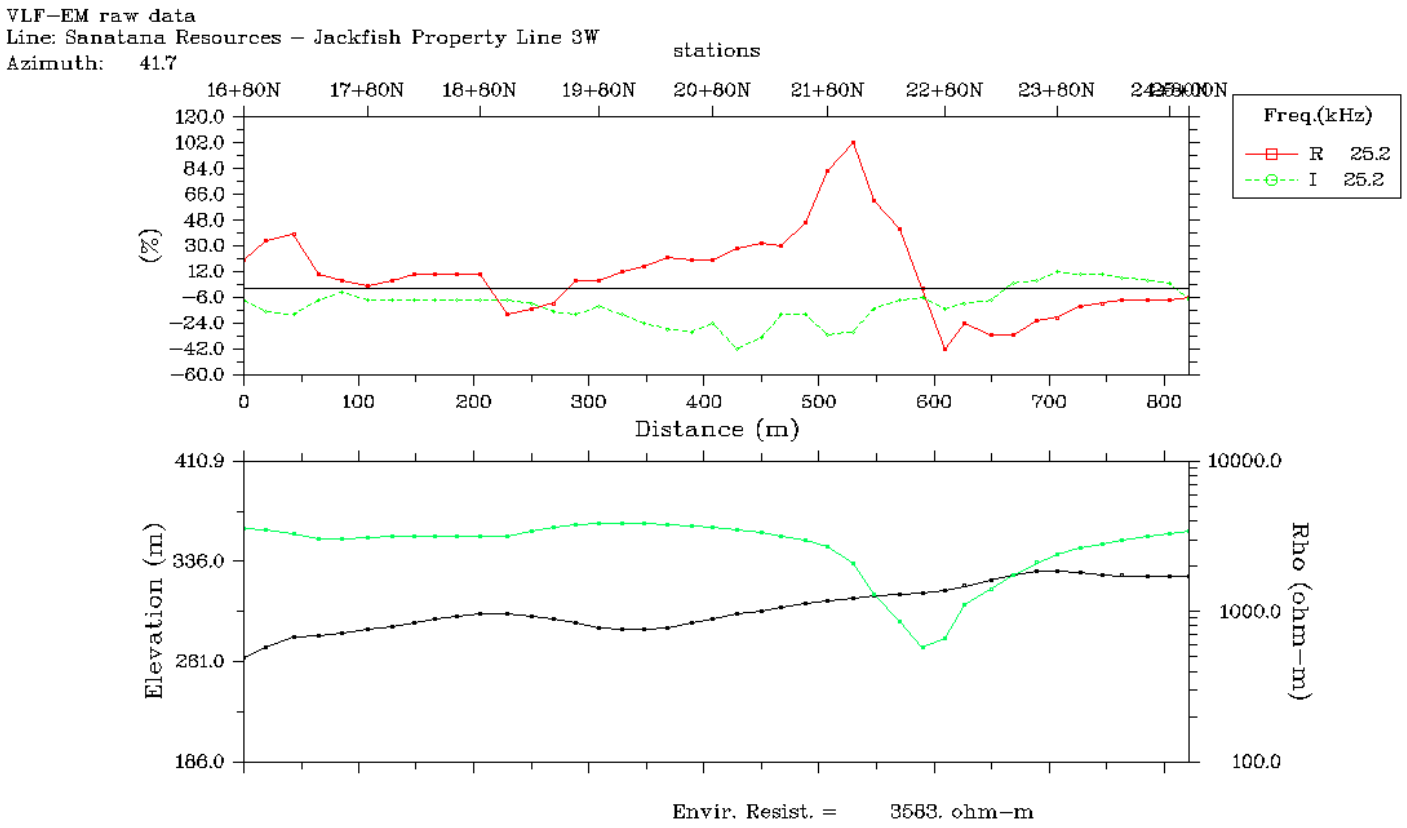
NAA Figure 51 Line 19W JY Model with Fraser Picks



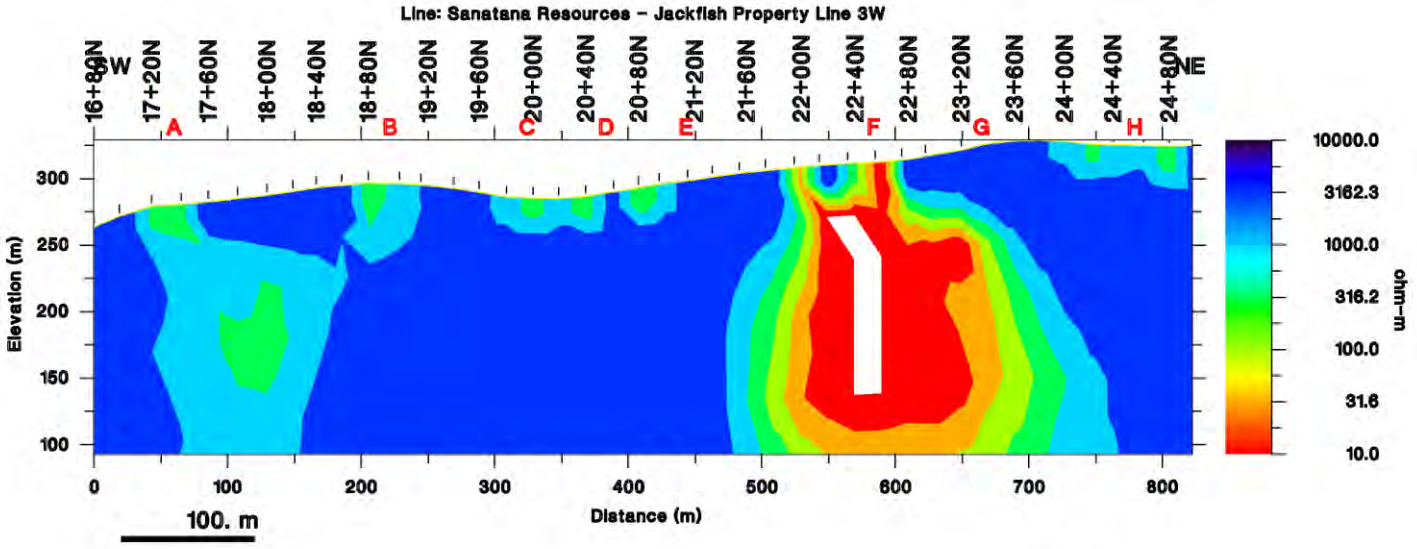
APPENDIX B

TX NML Figures

NML Figure 1 Line 3W Raw Data Profile



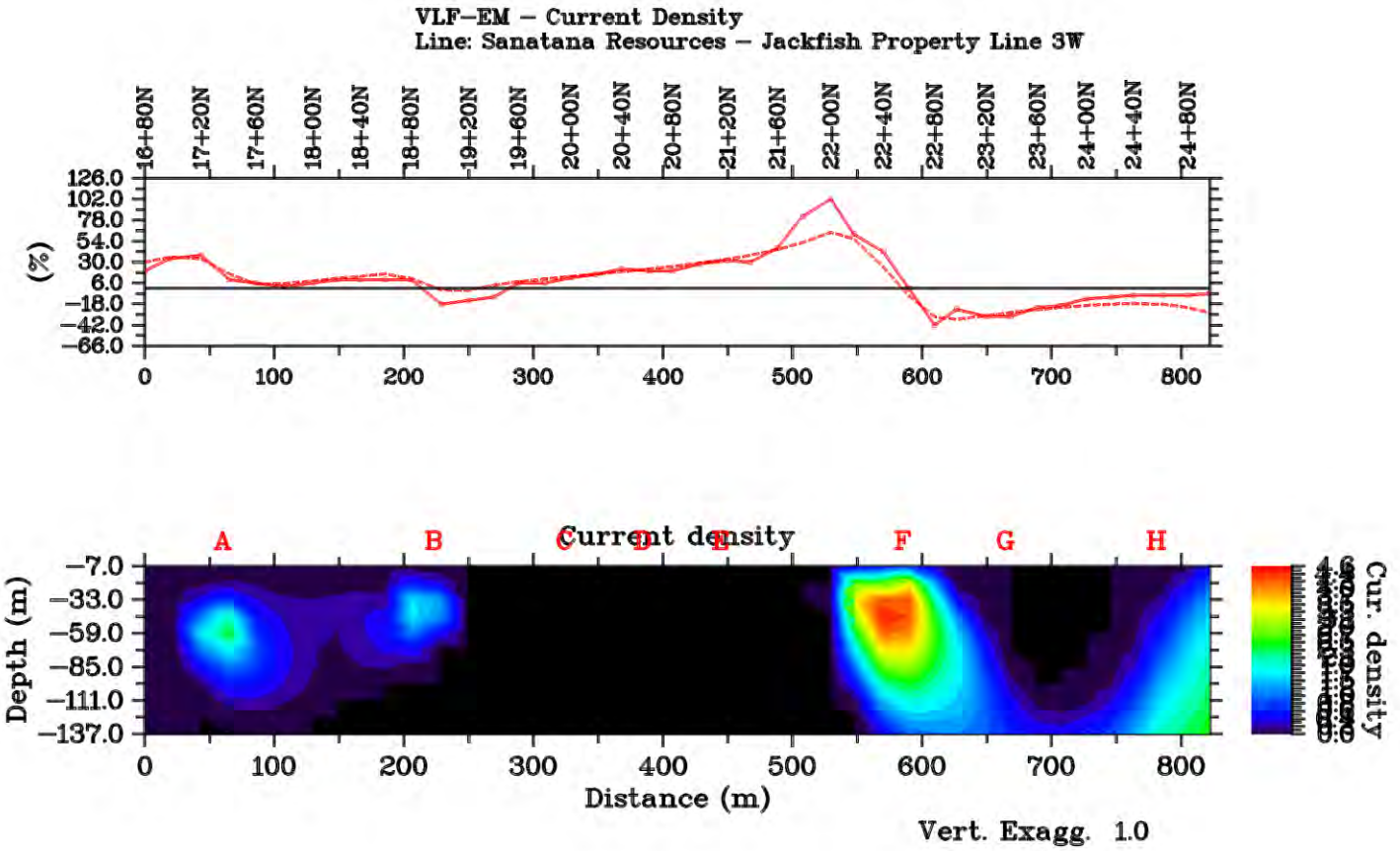
NML Figure 2 Line 3W Model 4000 Ohm with Fraser Picks



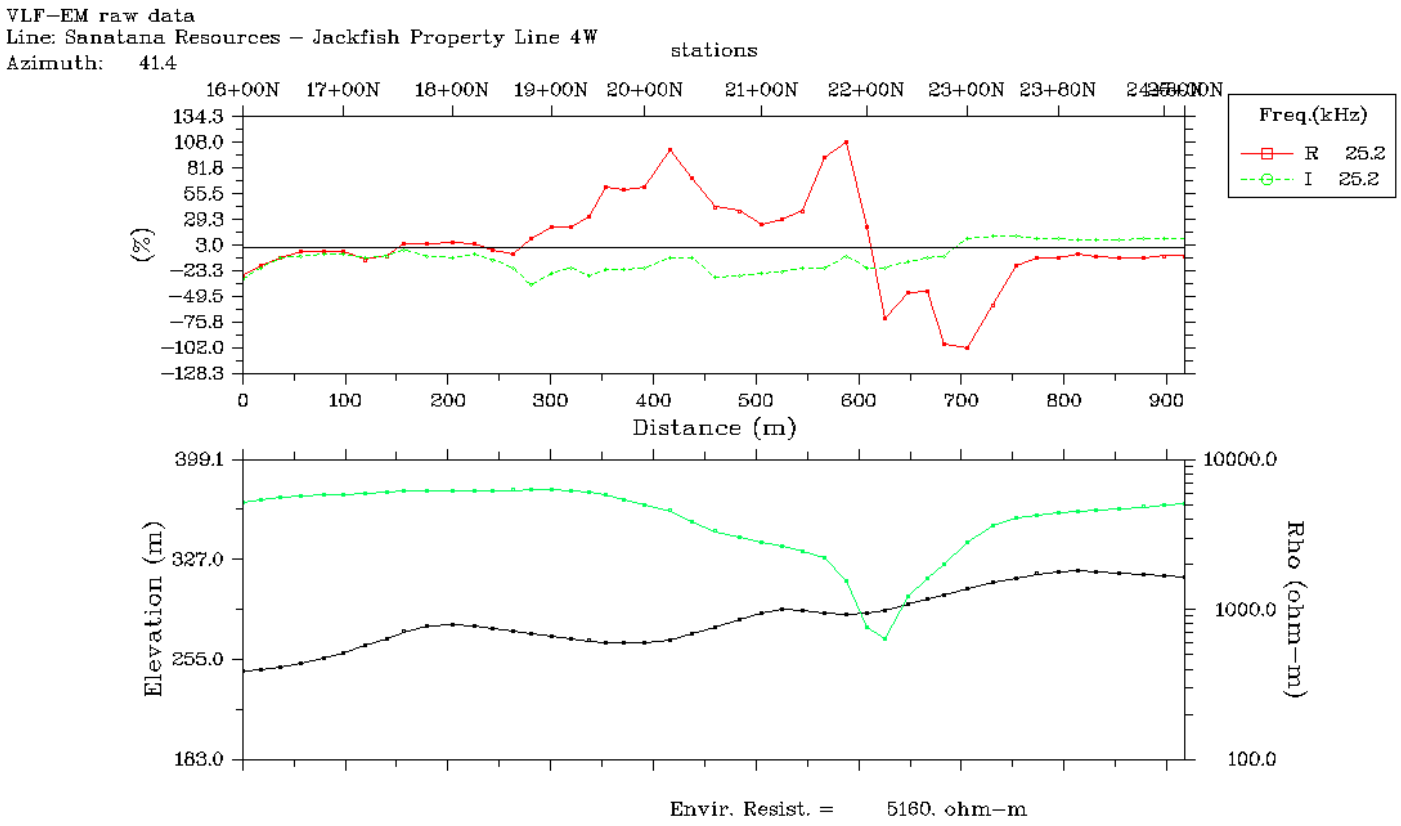
Transmitter: NML

Vertical Exaggeration: 1.0

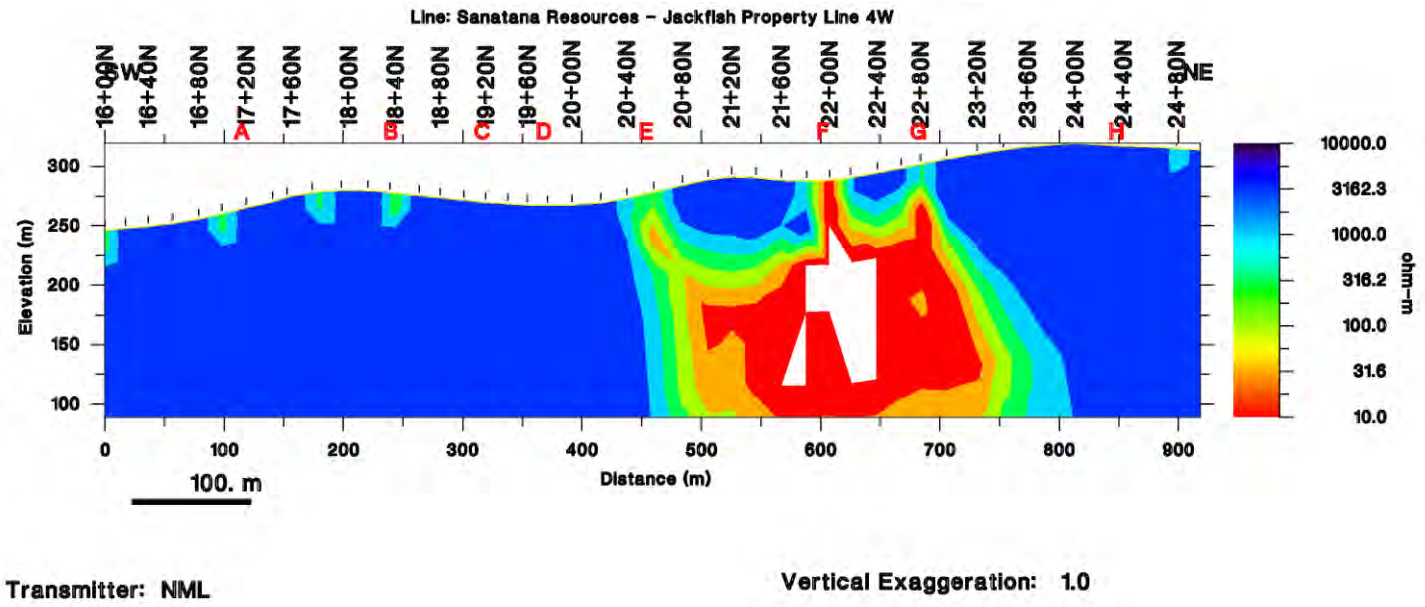
NML Figure 3 Line 3W JY Model with Fraser Picks



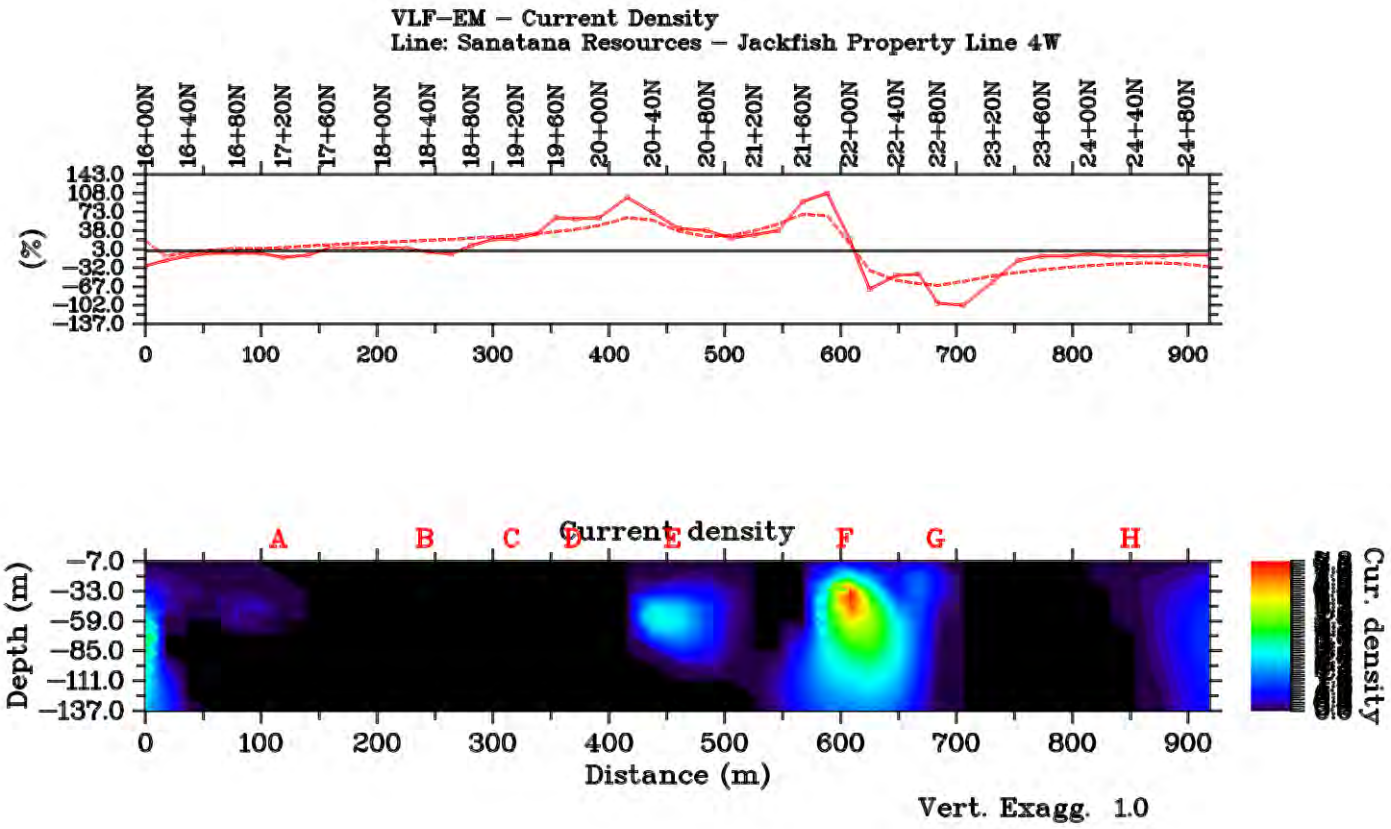
NML Figure 4 Line 4W Raw Data Profile



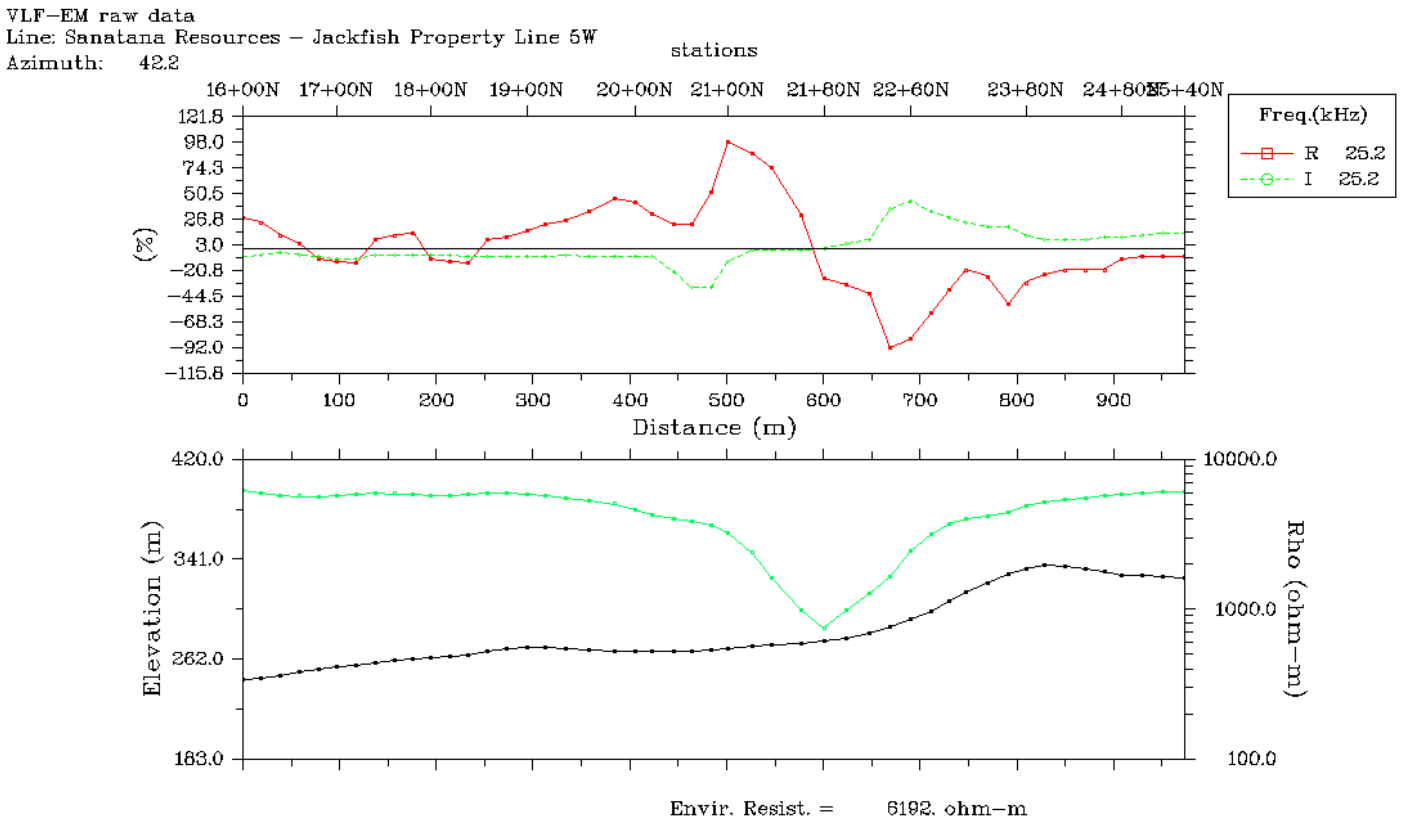
NML Figure 5 Line 4W Model 4000 Ohm with Fraser Picks



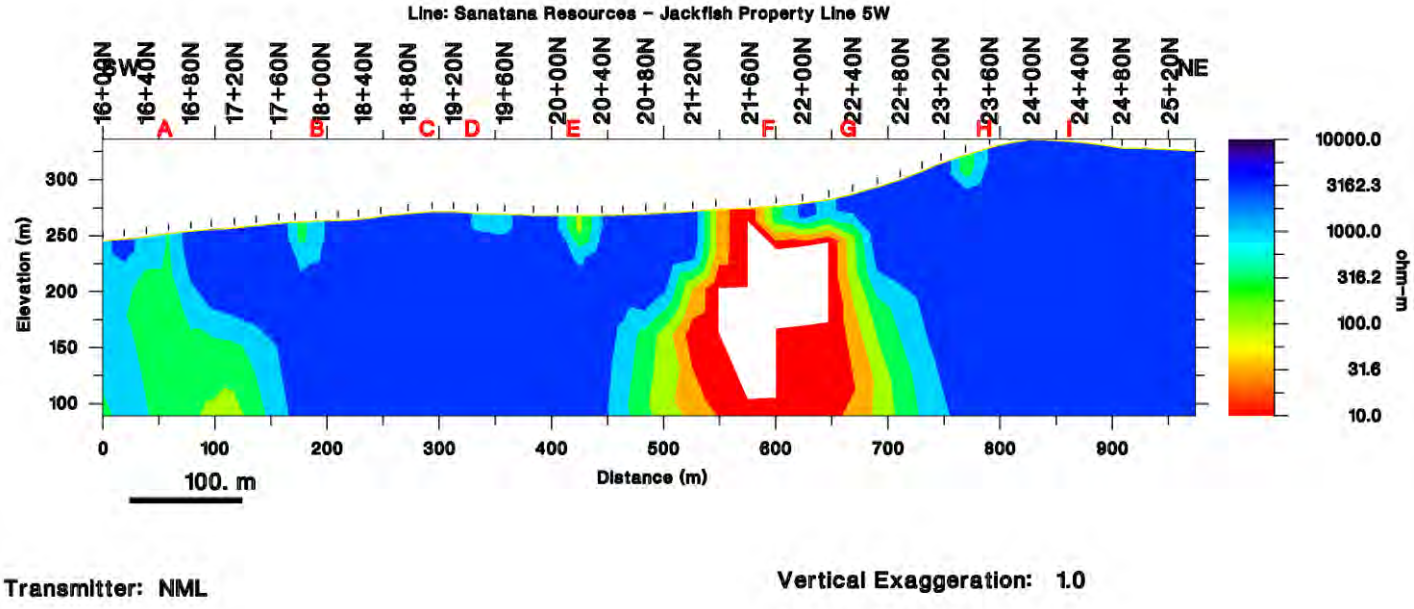
NML Figure 6 Line 4W JY Model with Fraser Picks



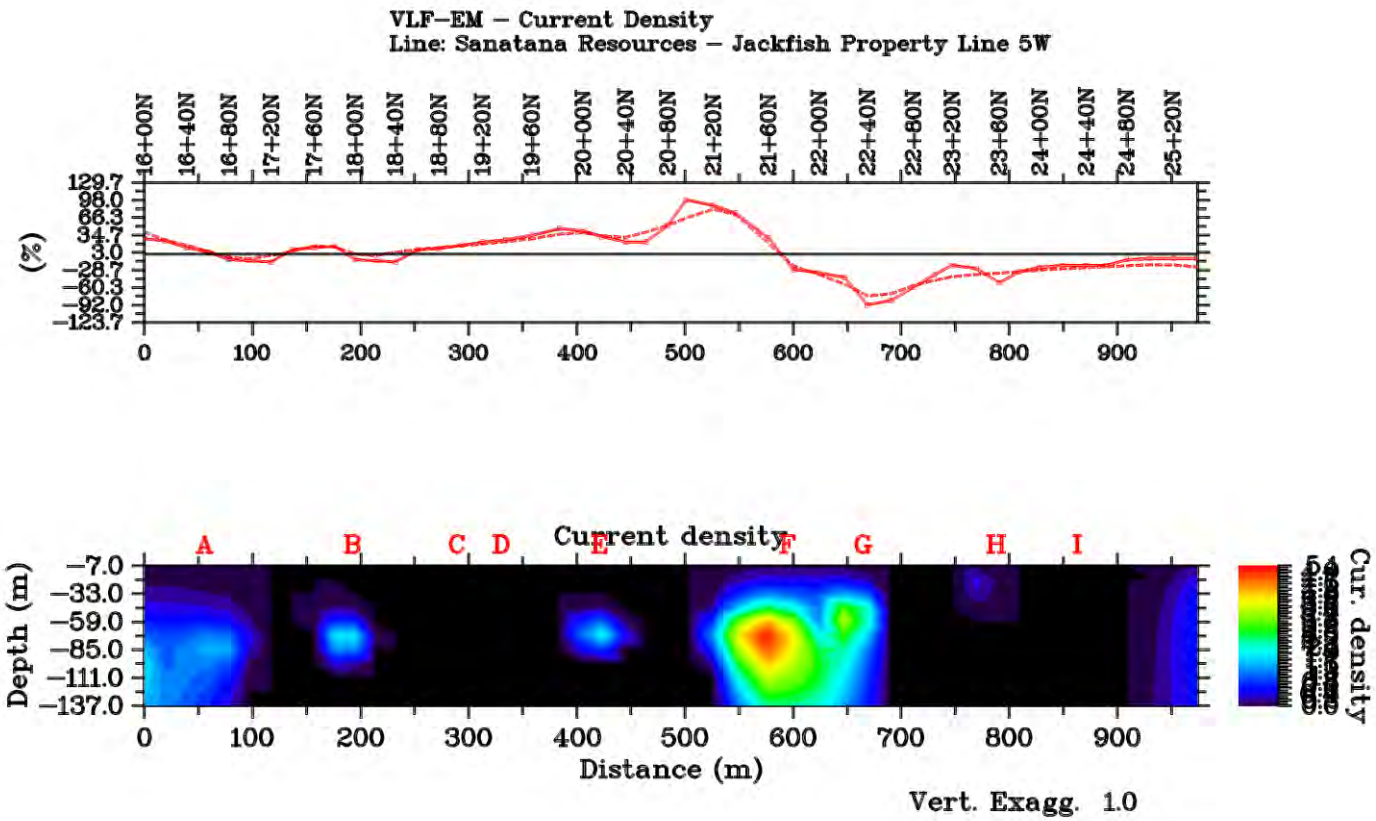
NML Figure 7 Line 5W Raw Data Profile



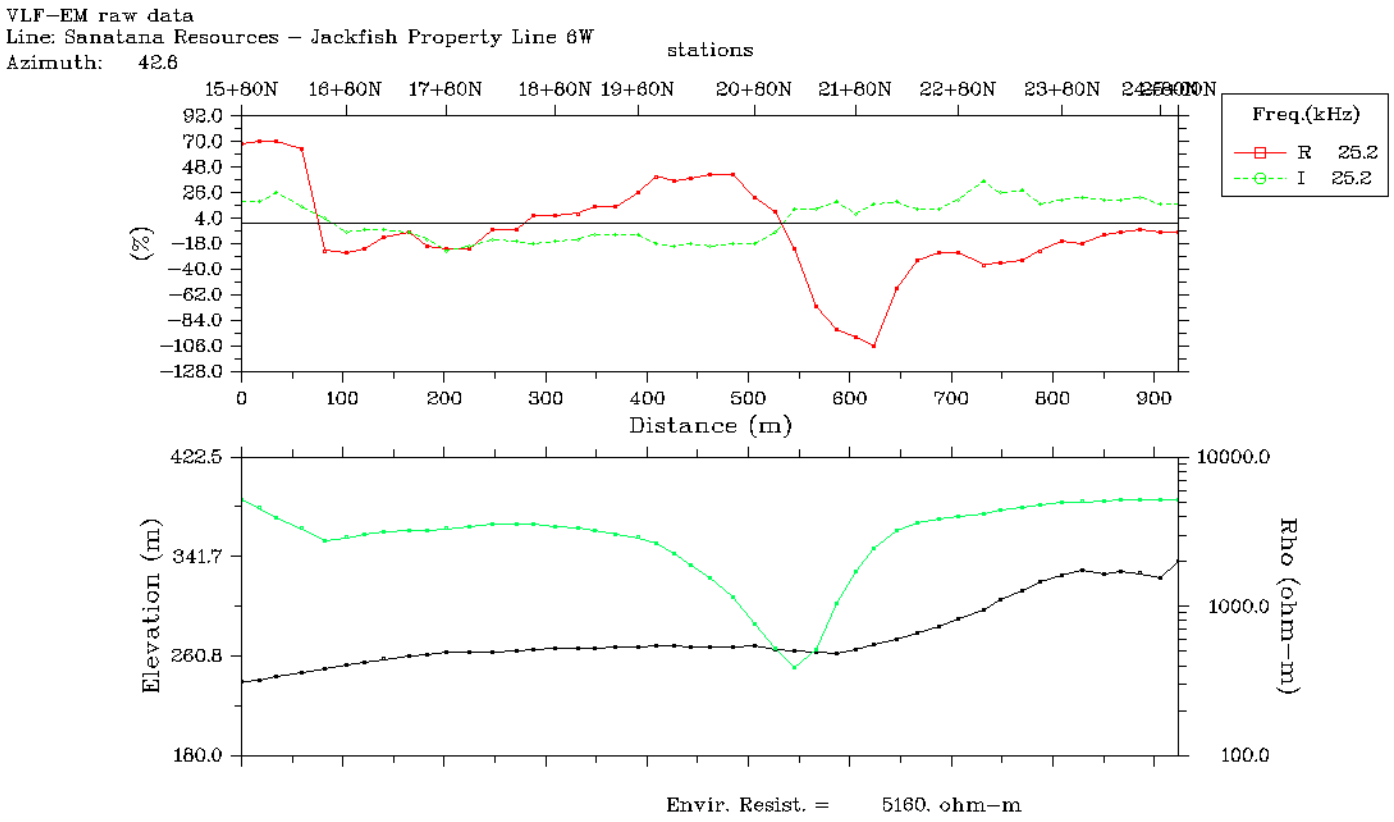
NML Figure 8 Line 5W Model 4000 Ohm with Fraser Picks



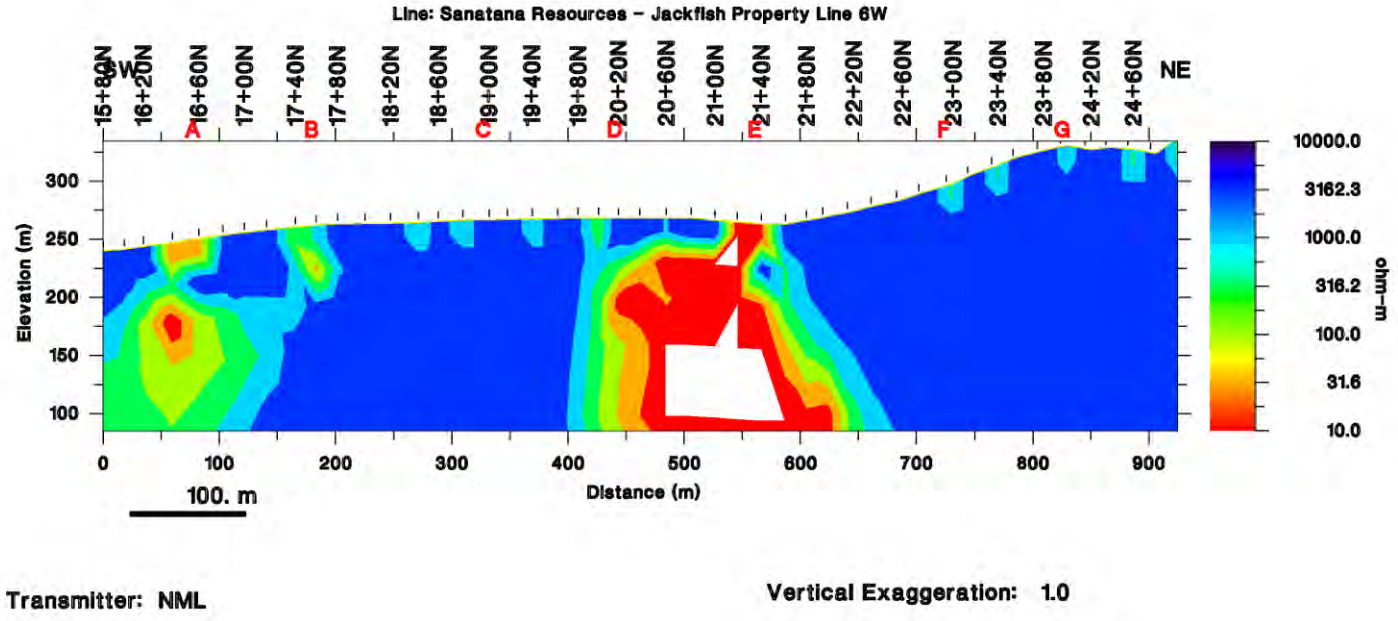
NML Figure 9 Line 5W JY Model with Fraser Picks



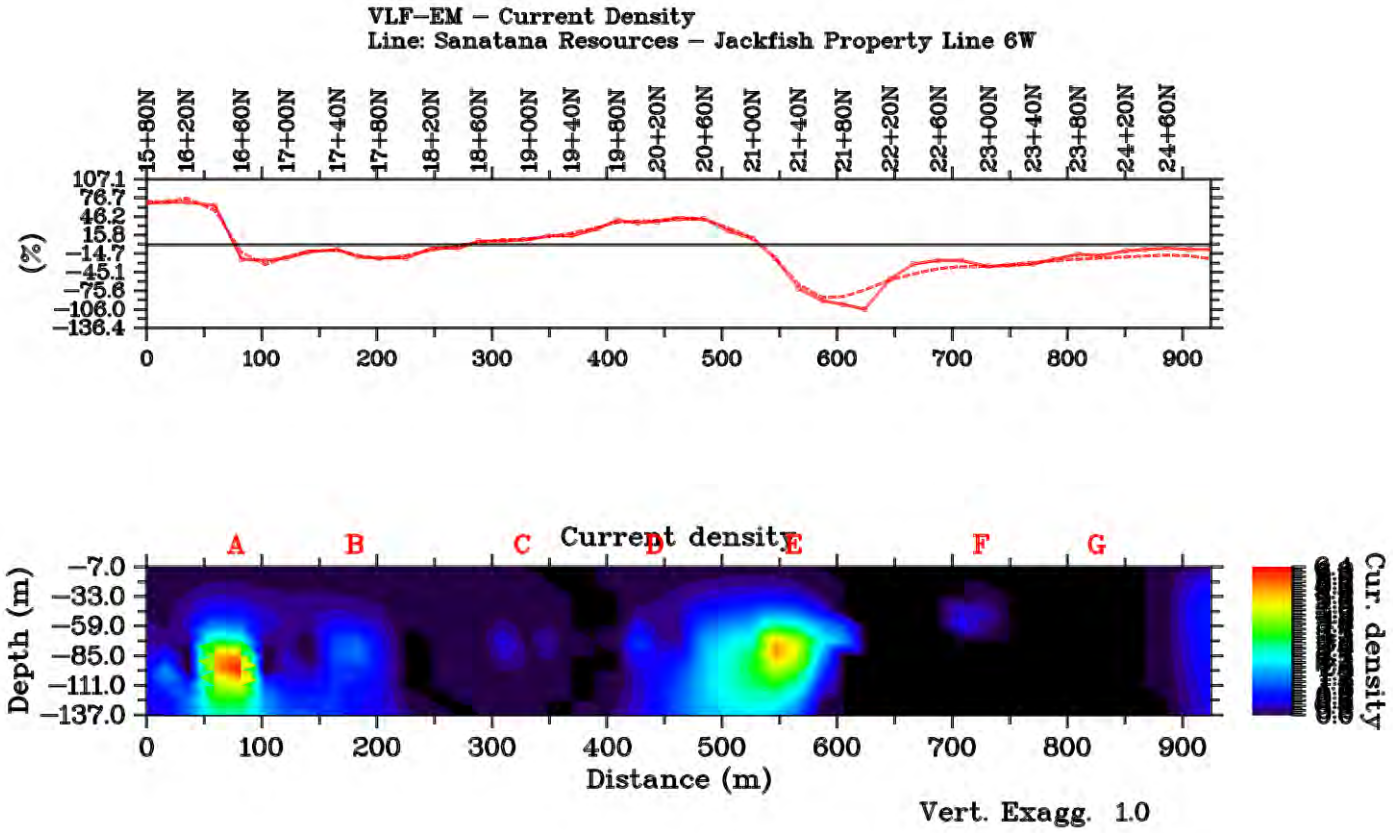
NML Figure 10 Line 6W Raw Data Profile



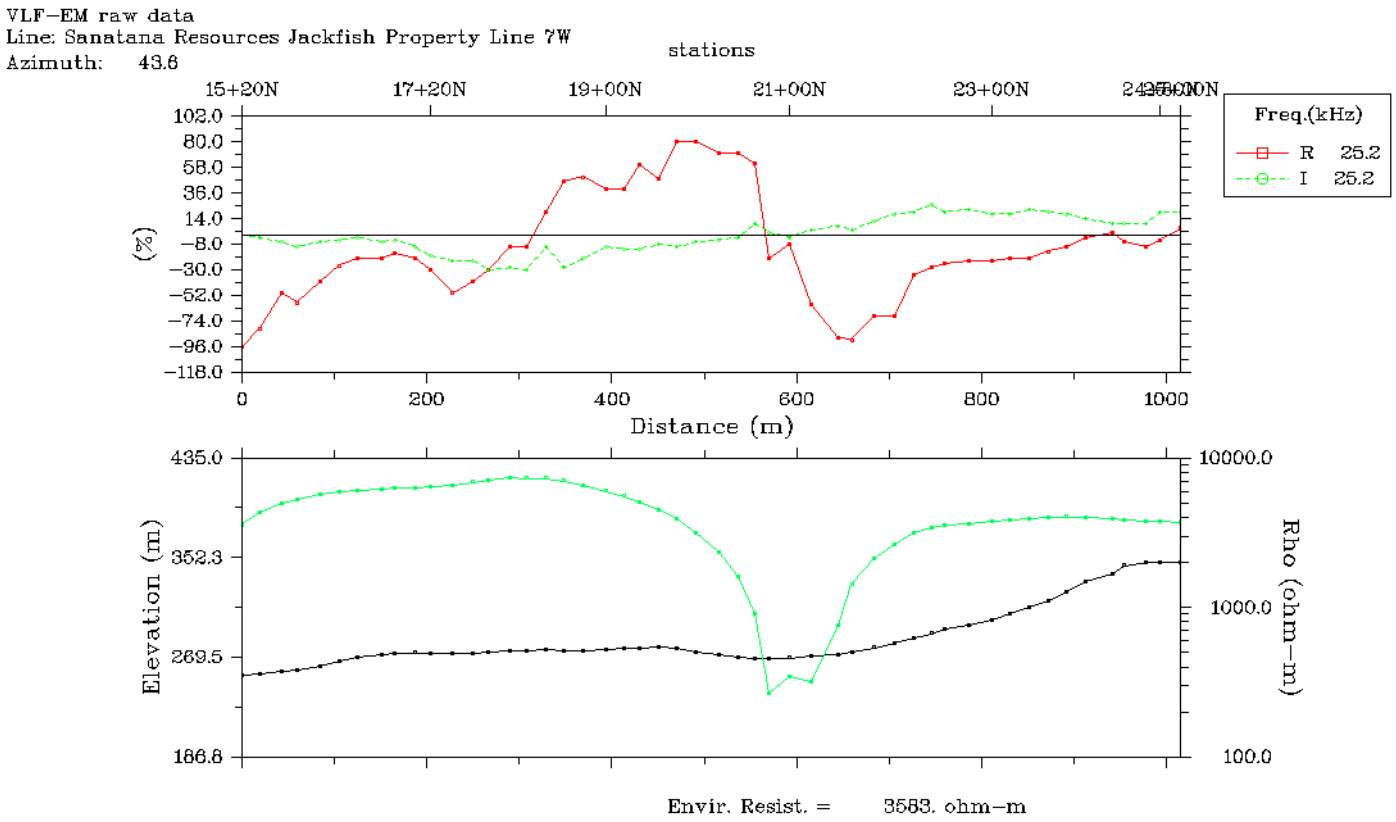
NML Figure 11 Line 6W Model 4000 Ohm with Fraser Picks



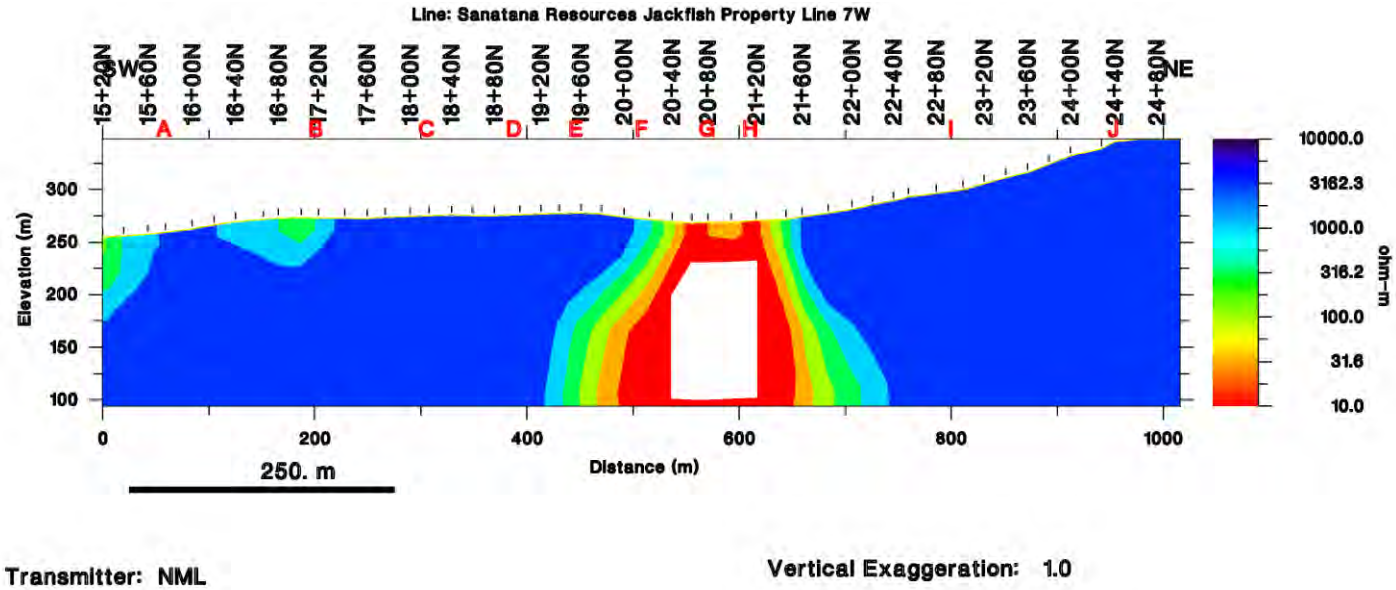
NML Figure 12 Line 6W JY Model with Fraser Picks



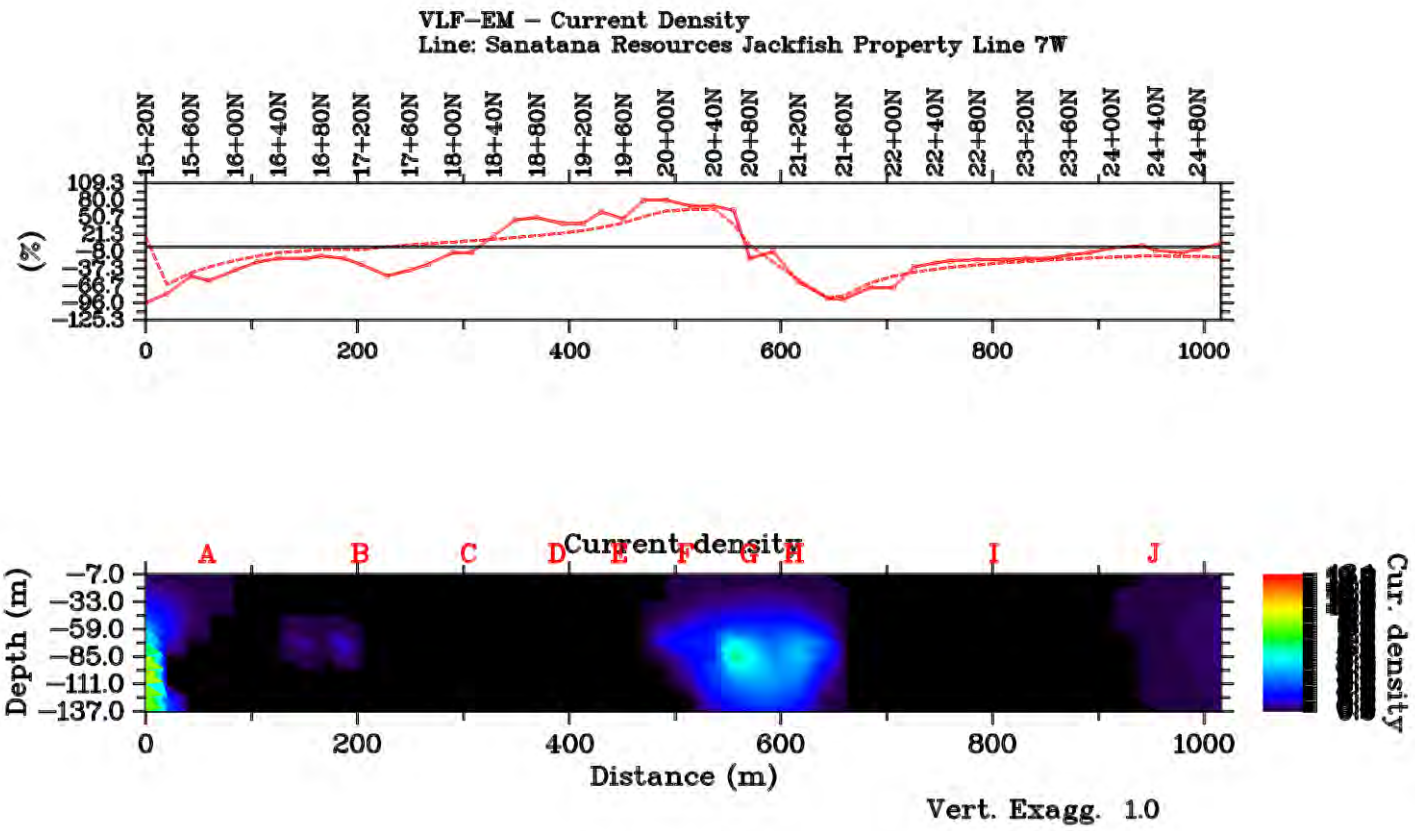
NML Figure 13 Line 7W Raw Data Profile



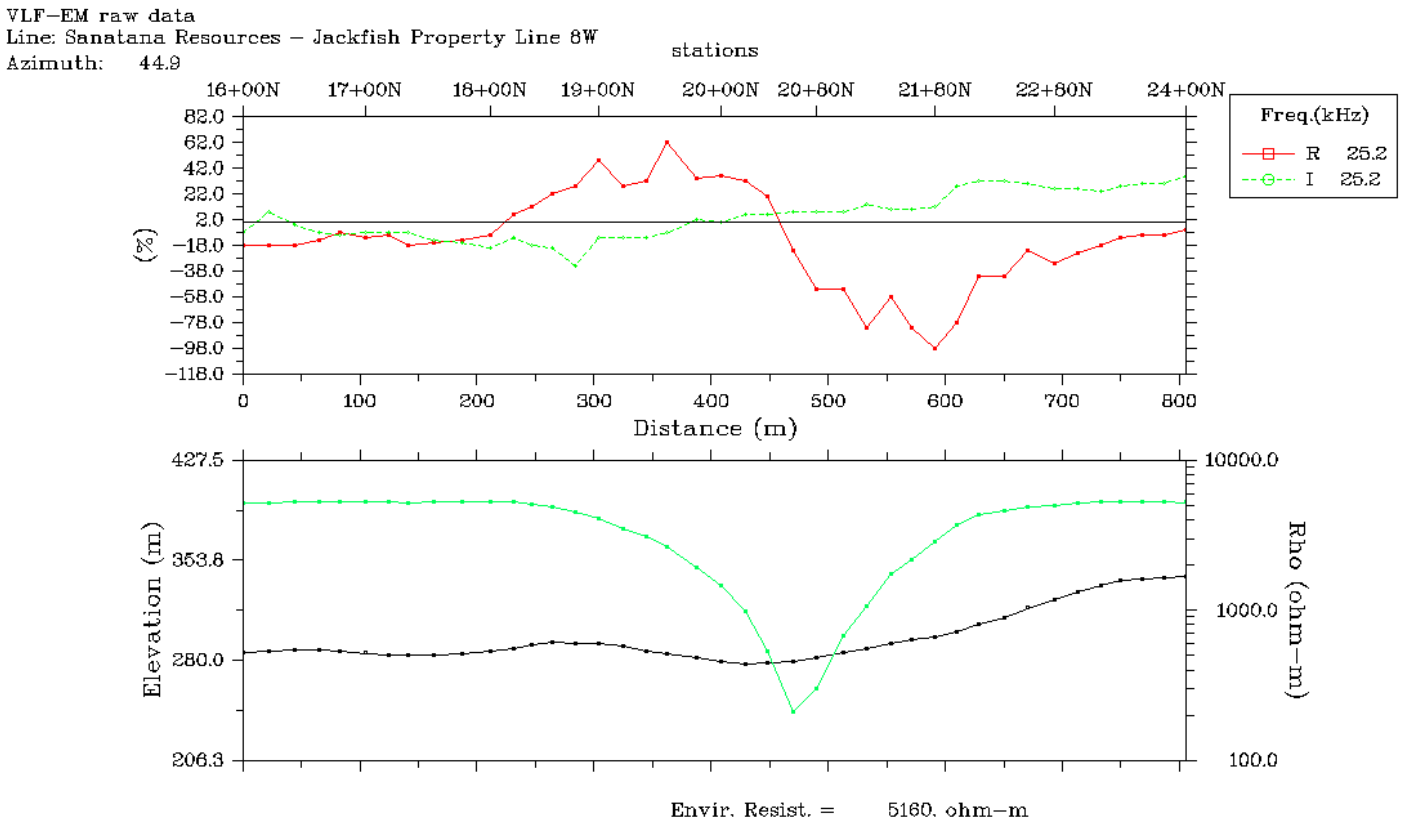
NML Figure 14 Line 7W Model 4000 Ohm with Fraser Picks



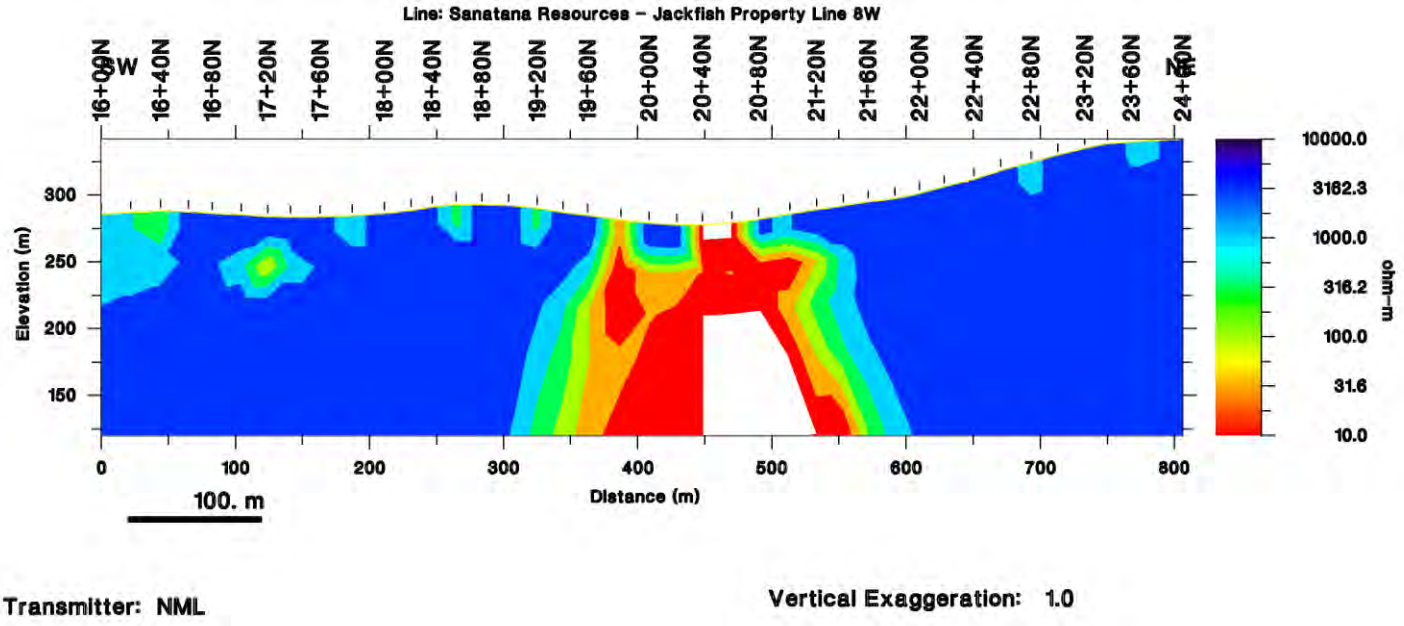
NML Figure 15 Line 7W JY Model with Fraser Picks



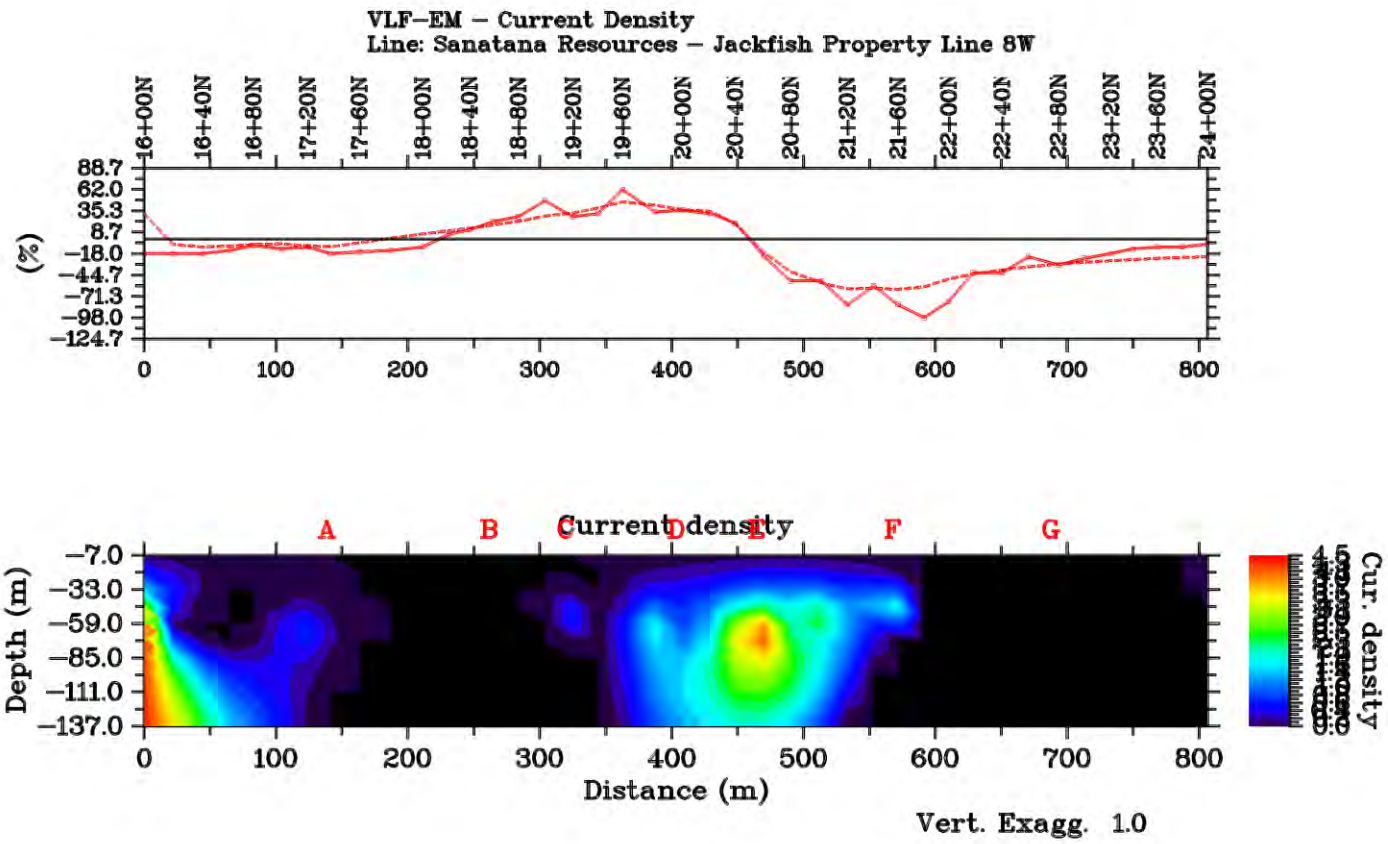
NML Figure 16 Line 8W Raw Data Profile



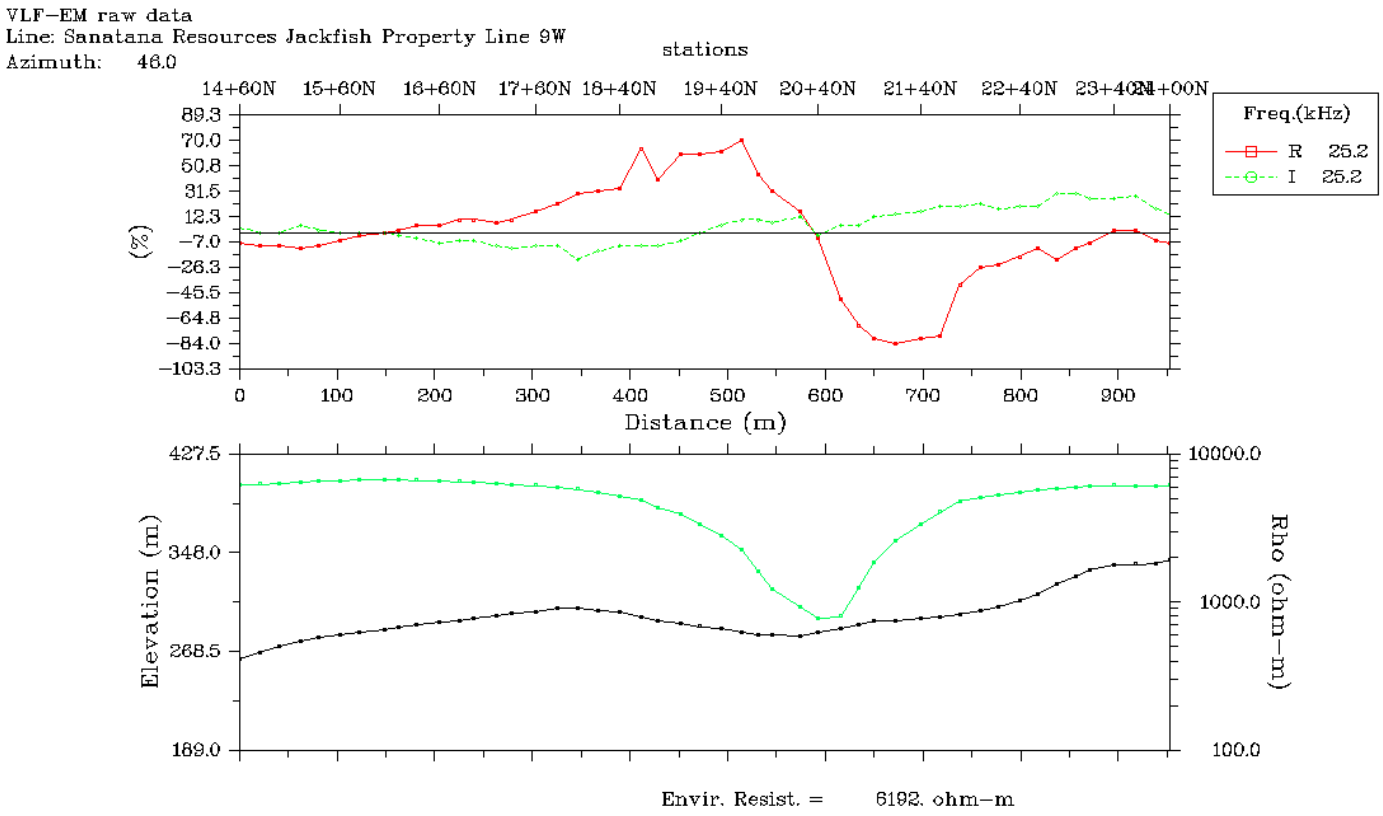
NML Figure 17 Line 8W Model 4000 Ohm with Fraser Picks



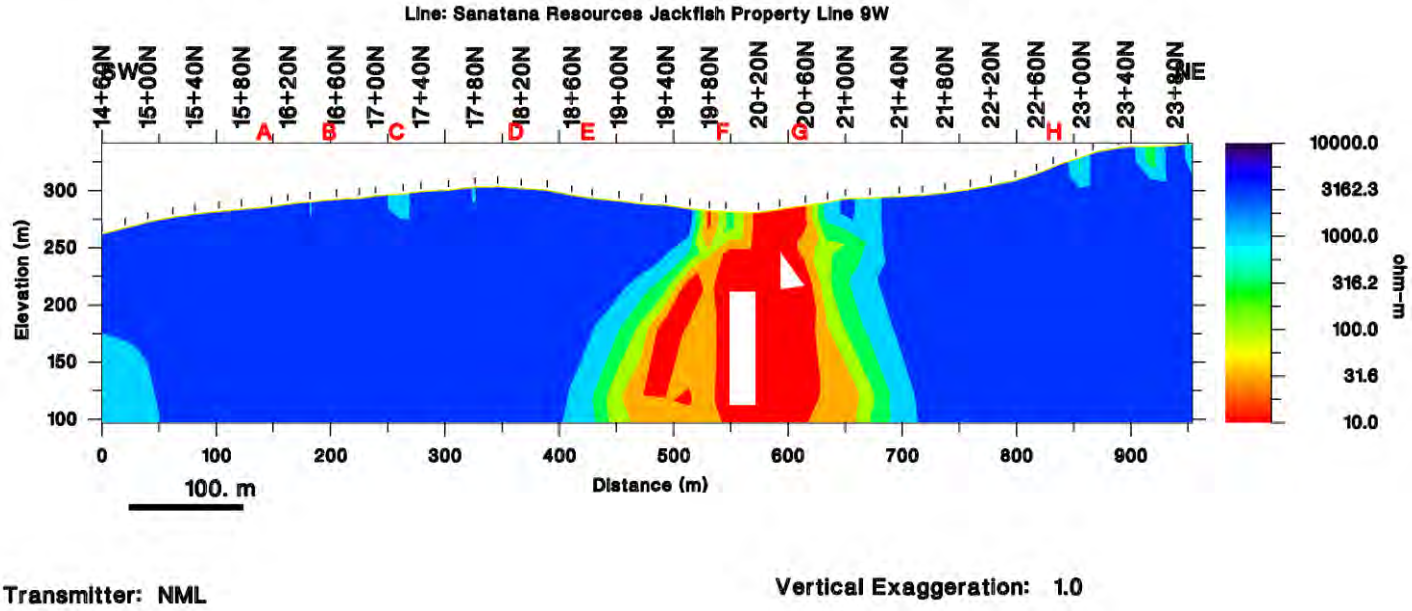
NML Figure 18 Line 8W JY Model with Fraser Picks



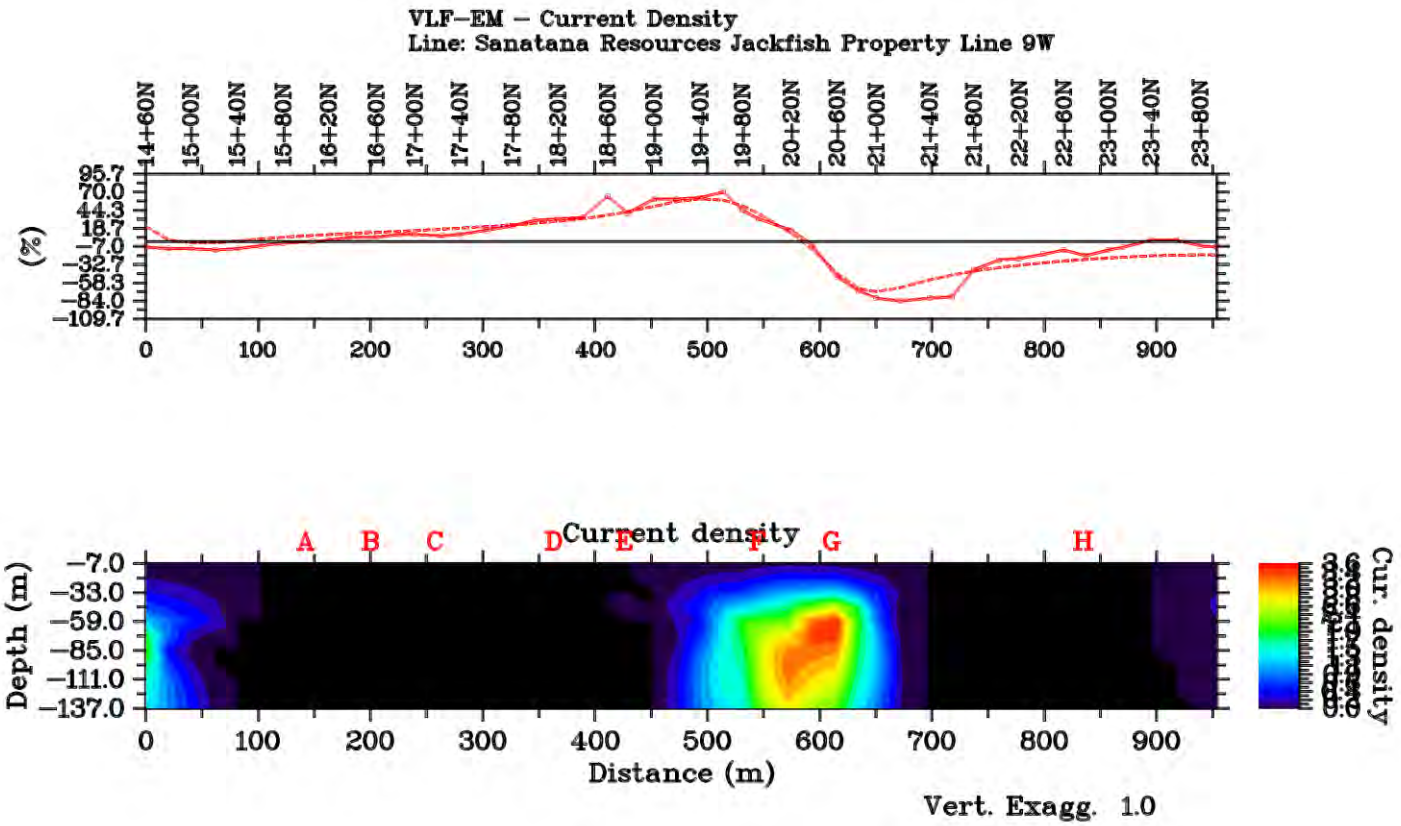
NML Figure 19 Line 9W Raw Data Profile



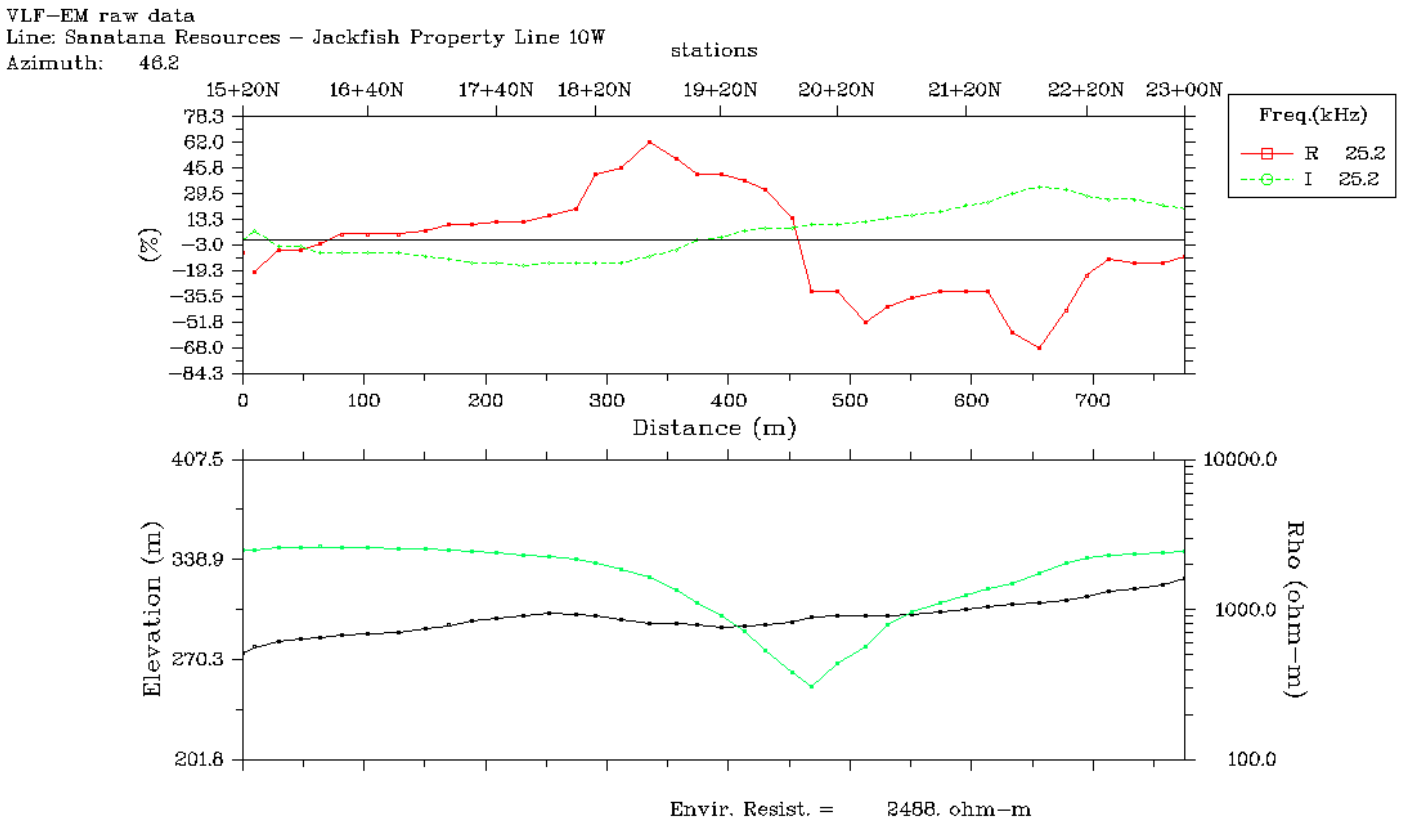
NML Figure 20 Line 9W Model 4000 Ohm with Fraser Picks



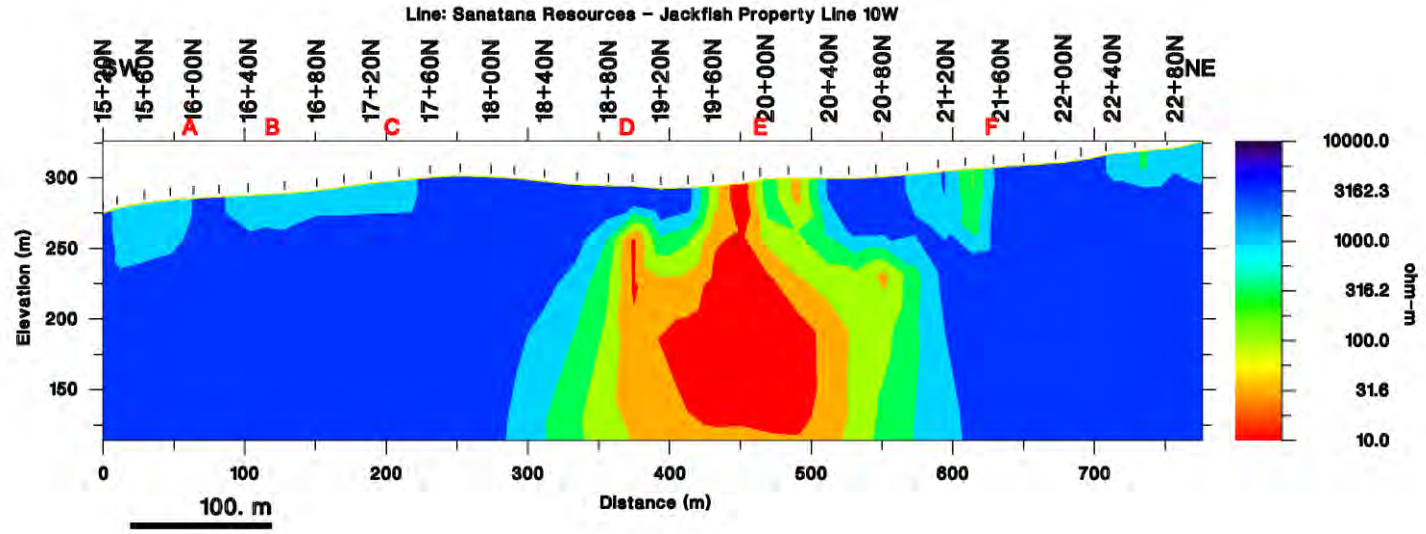
NML Figure 21 Line 9W JY Model with Fraser Picks



NML Figure 22 Line 10W Raw Data Profile



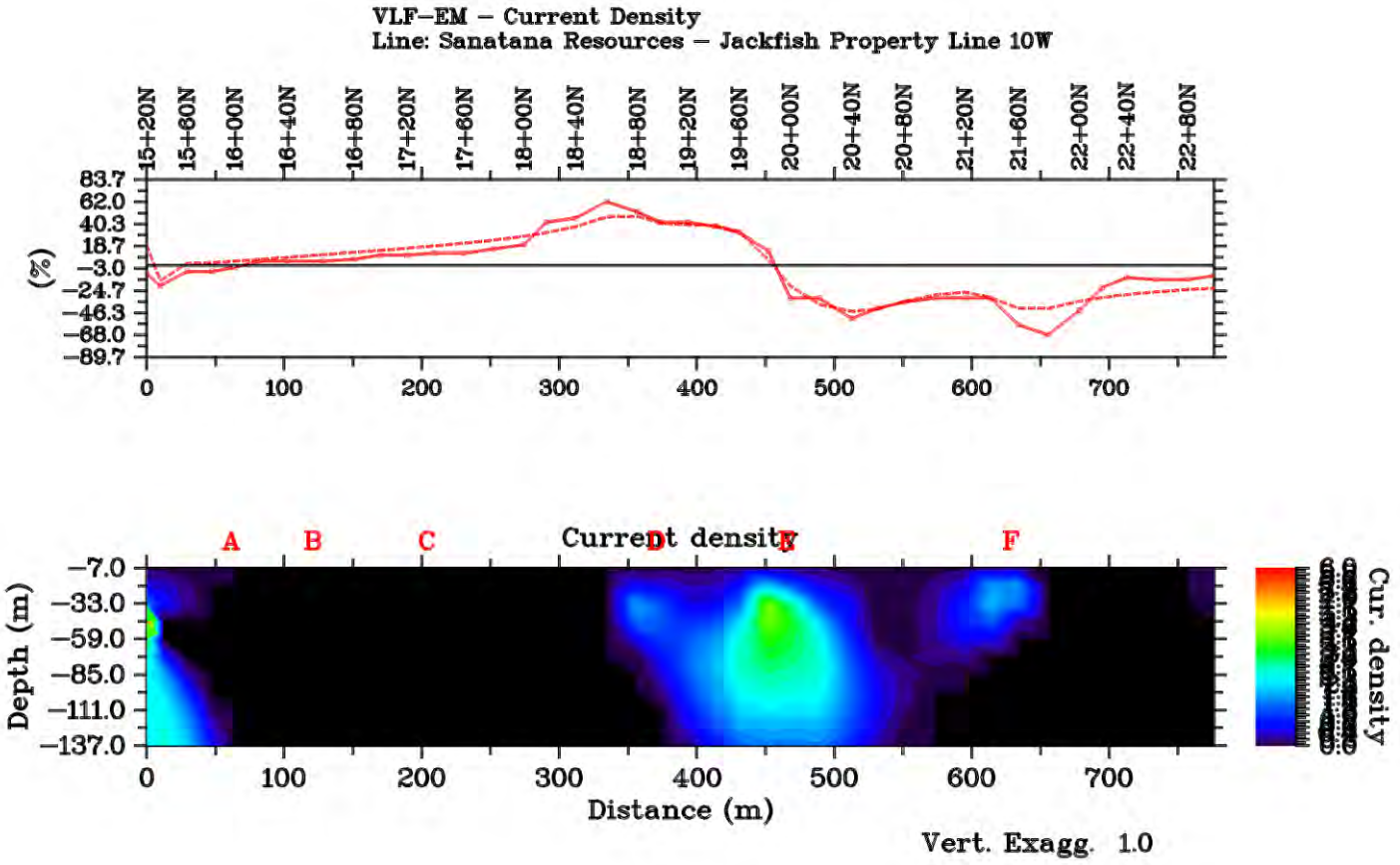
NML Figure 23 Line 10W Model 4000 Ohm with Fraser Picks



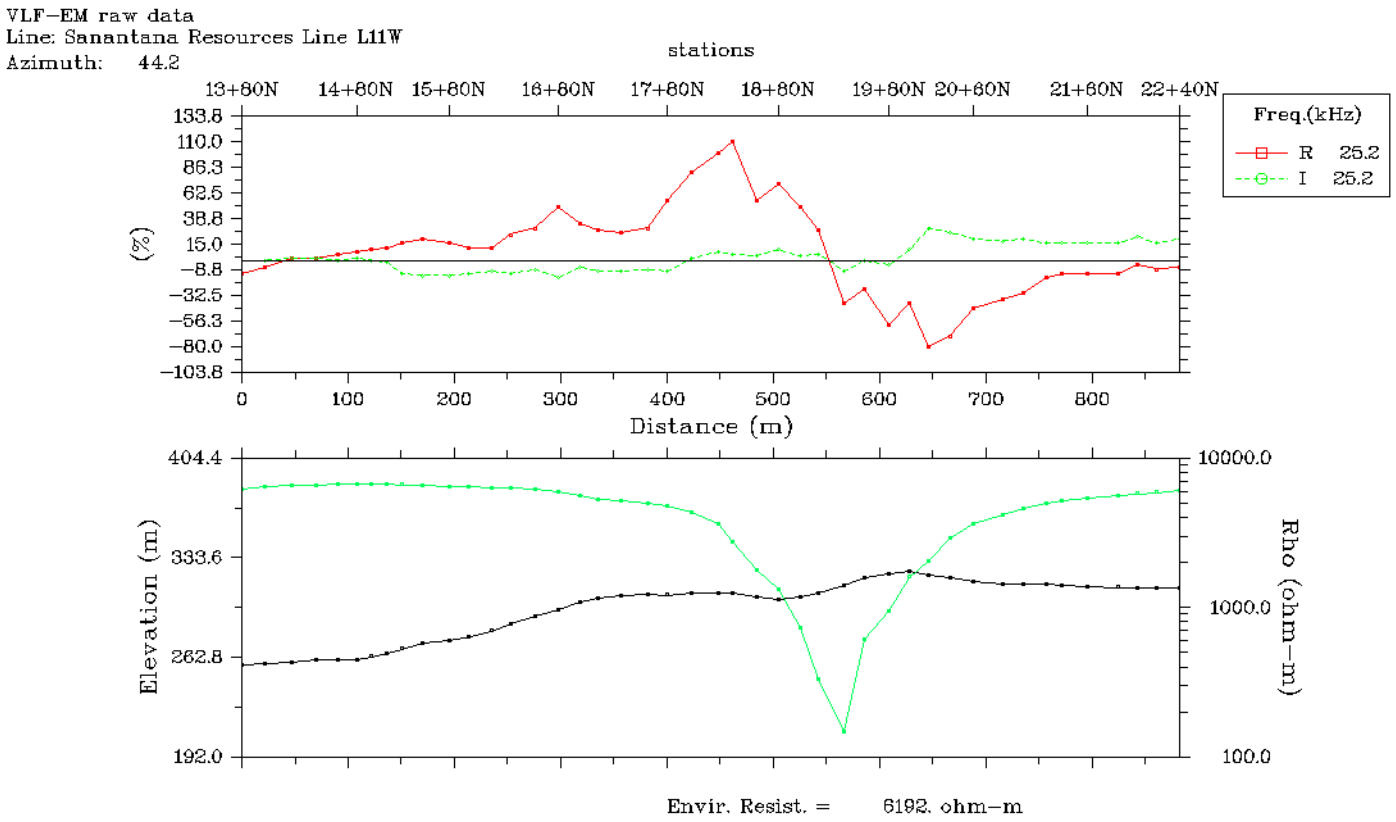
Transmitter: NML

Vertical Exaggeration: 1.0

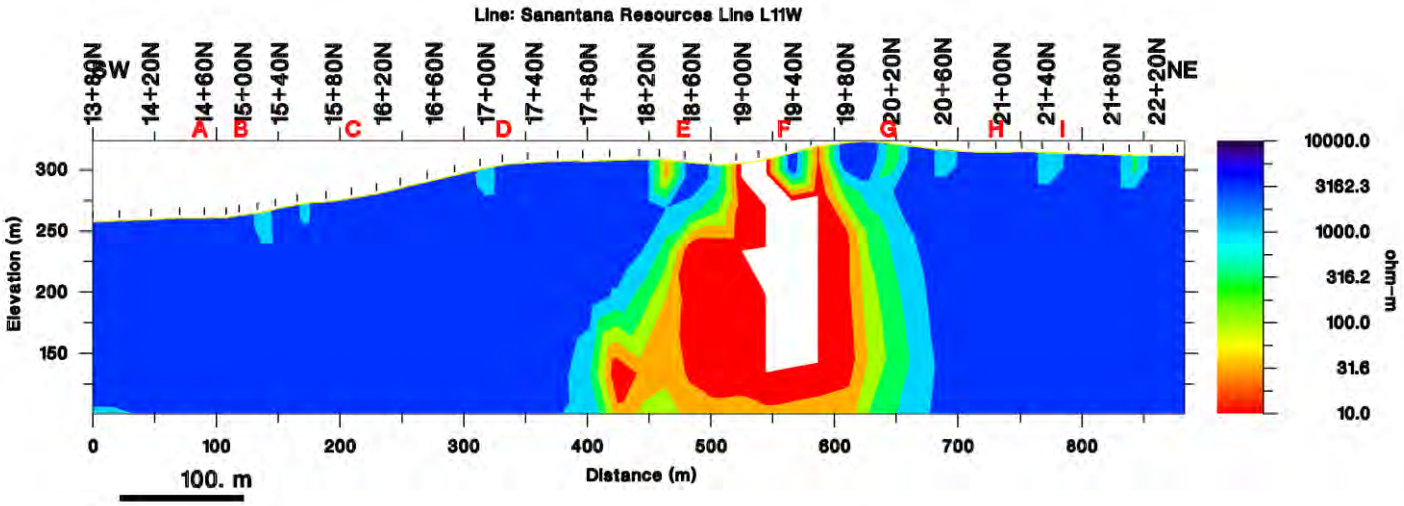
NML Figure 24 Line 10W JY Model with Fraser Picks



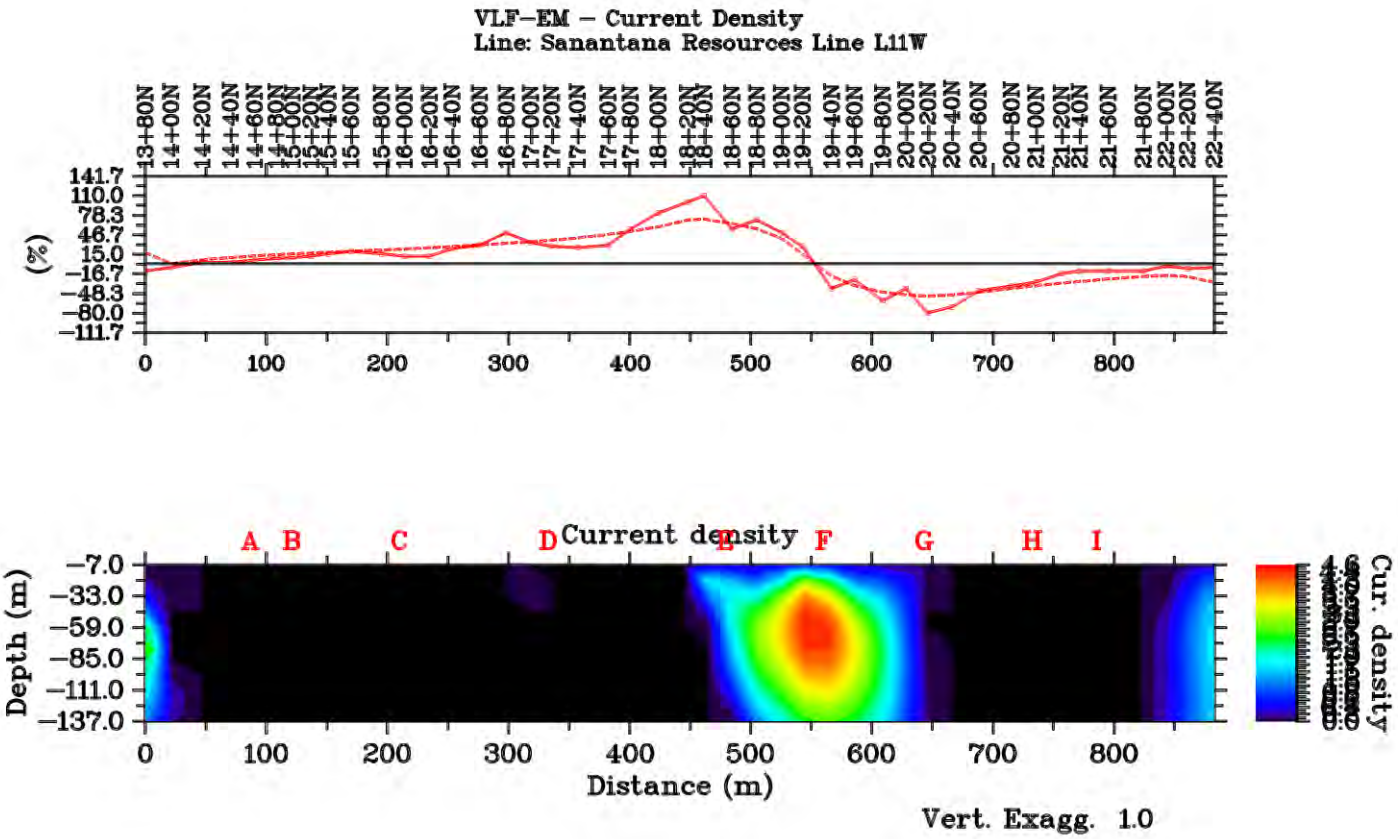
NML Figure 25 Line 11W Raw Data Profile



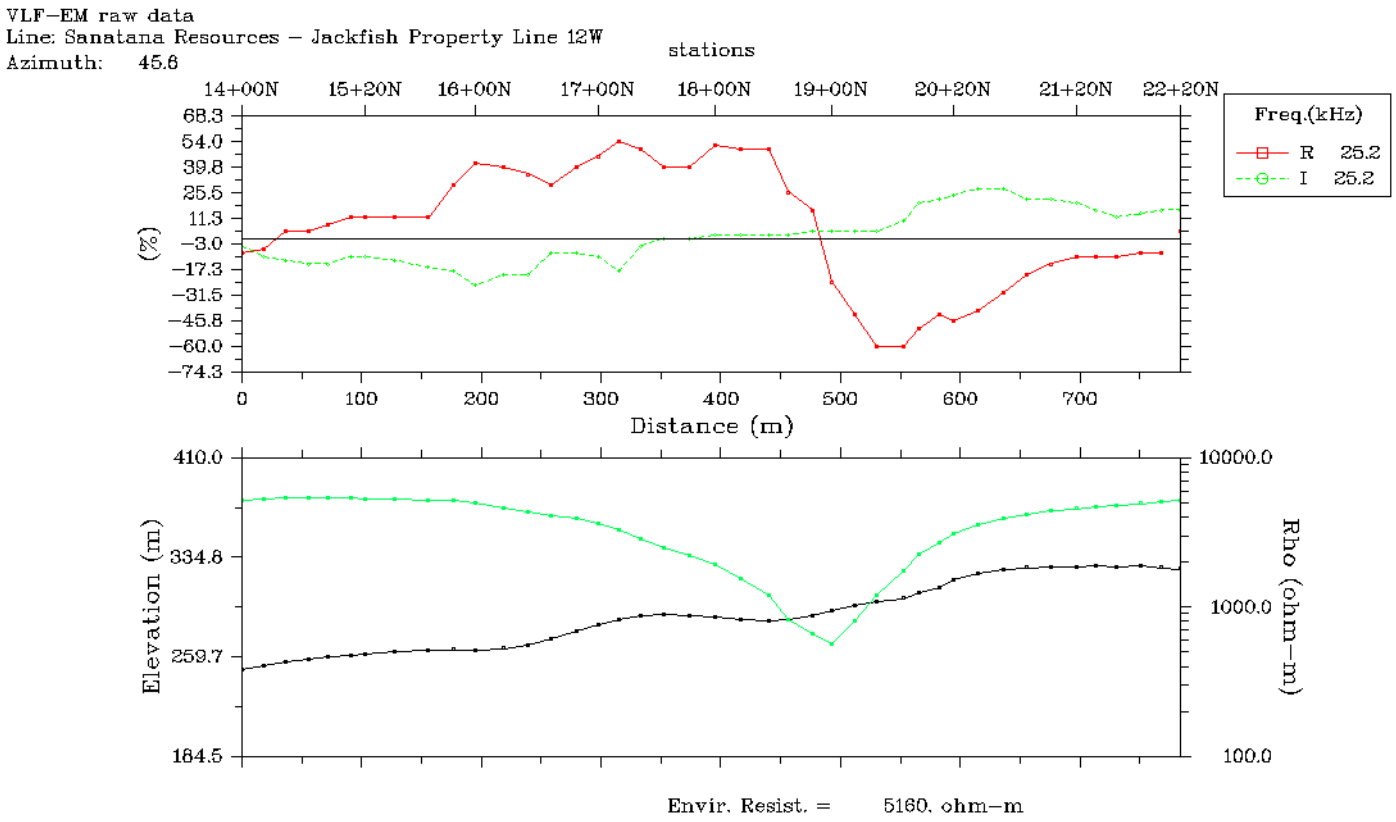
NML Figure 26 Line 11W Model 4000 Ohm with Fraser Picks



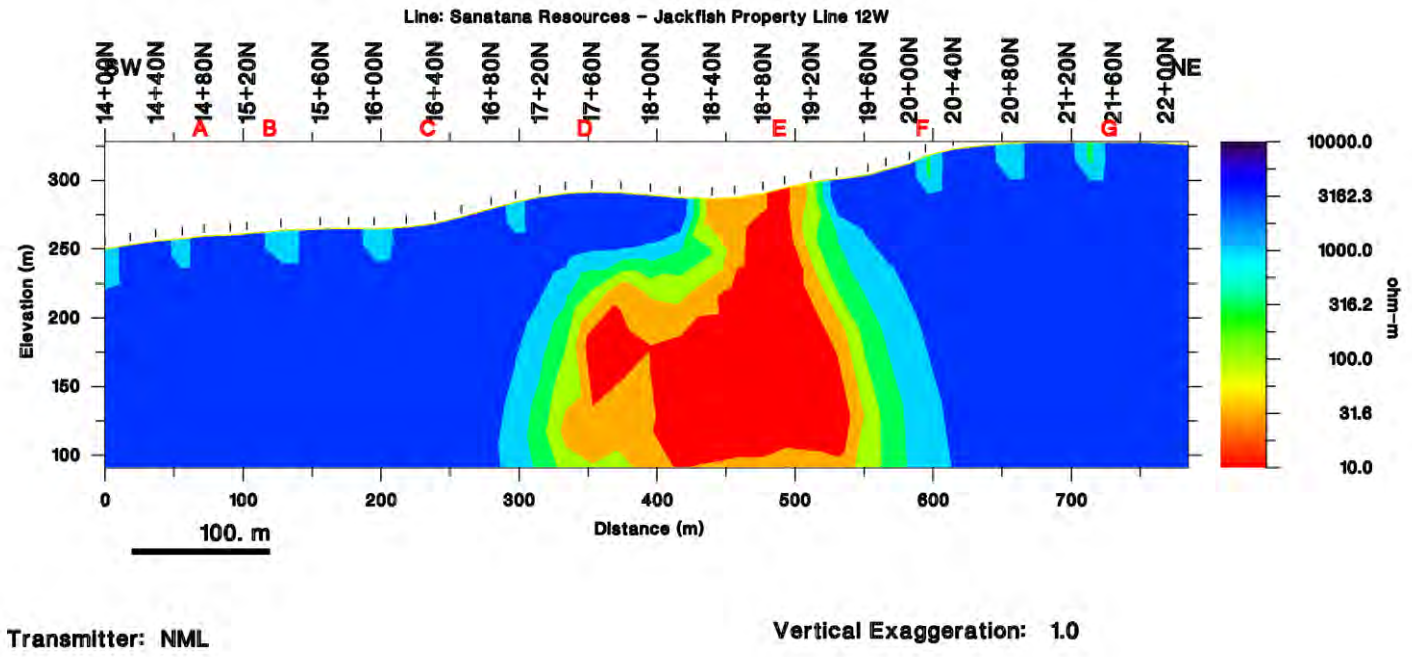
NML Figure 27 Line 11W JY Model with Fraser Picks



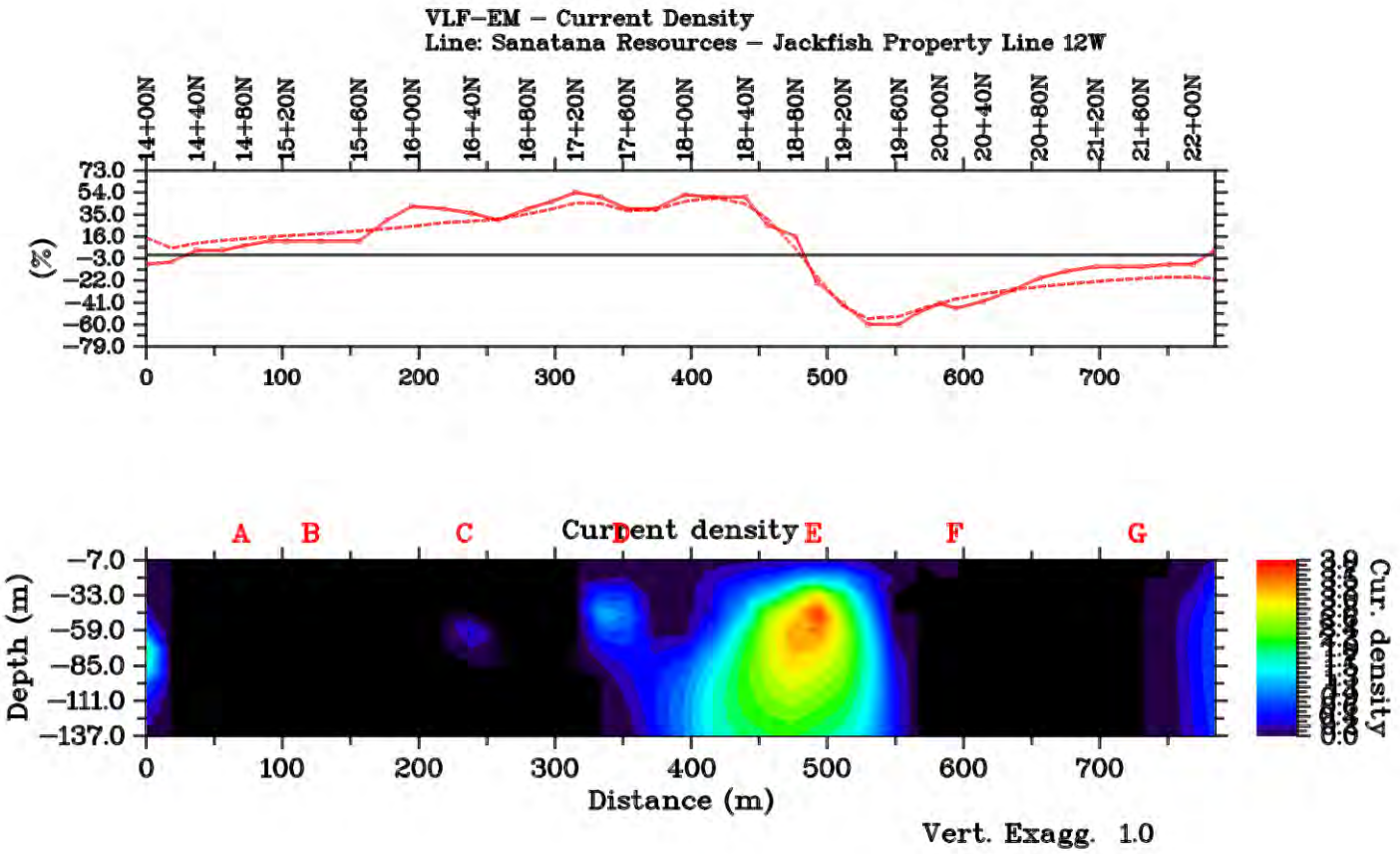
NML Figure 28 Line 12W Raw Data Profile



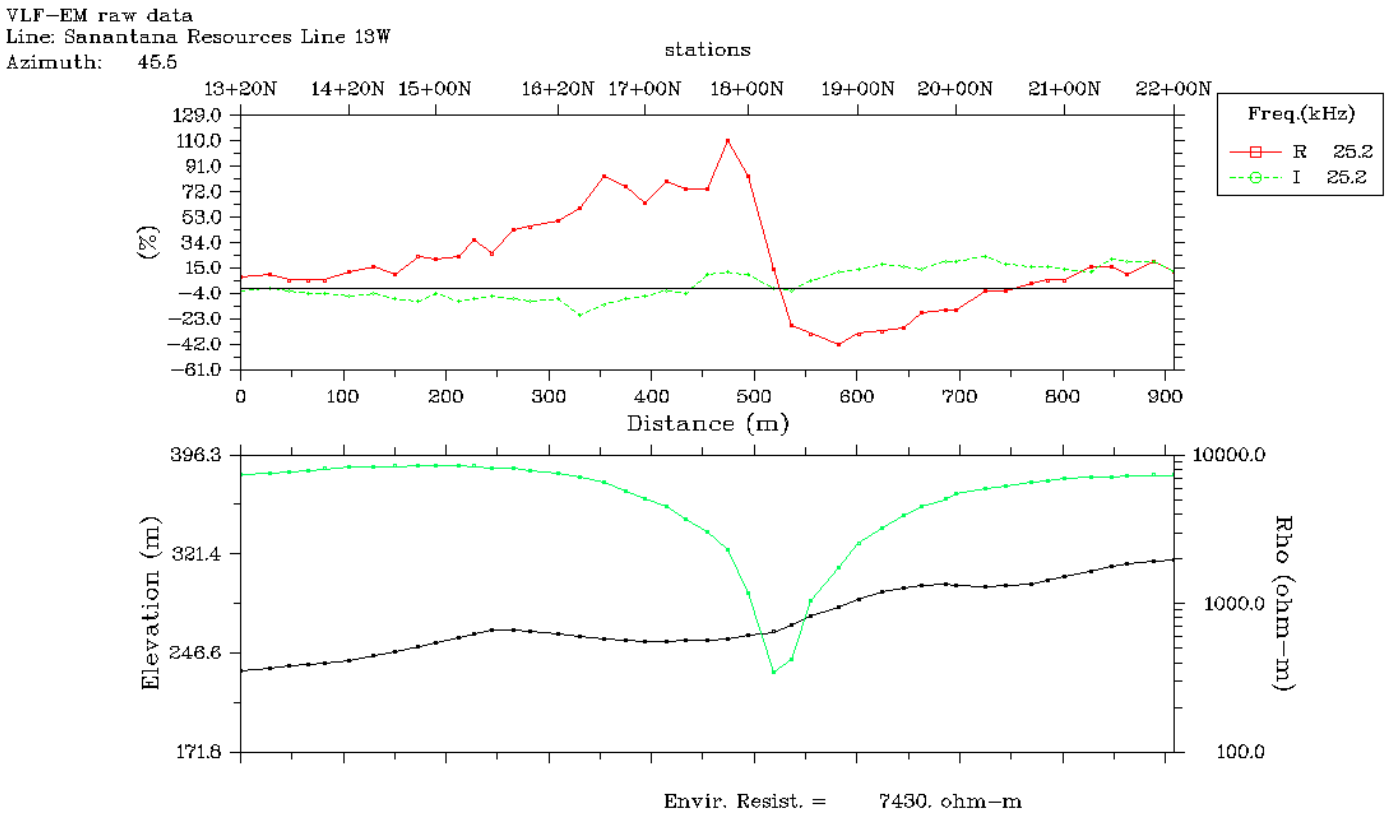
NML Figure 29 Line 12W Model 4000 Ohm with Fraser Picks



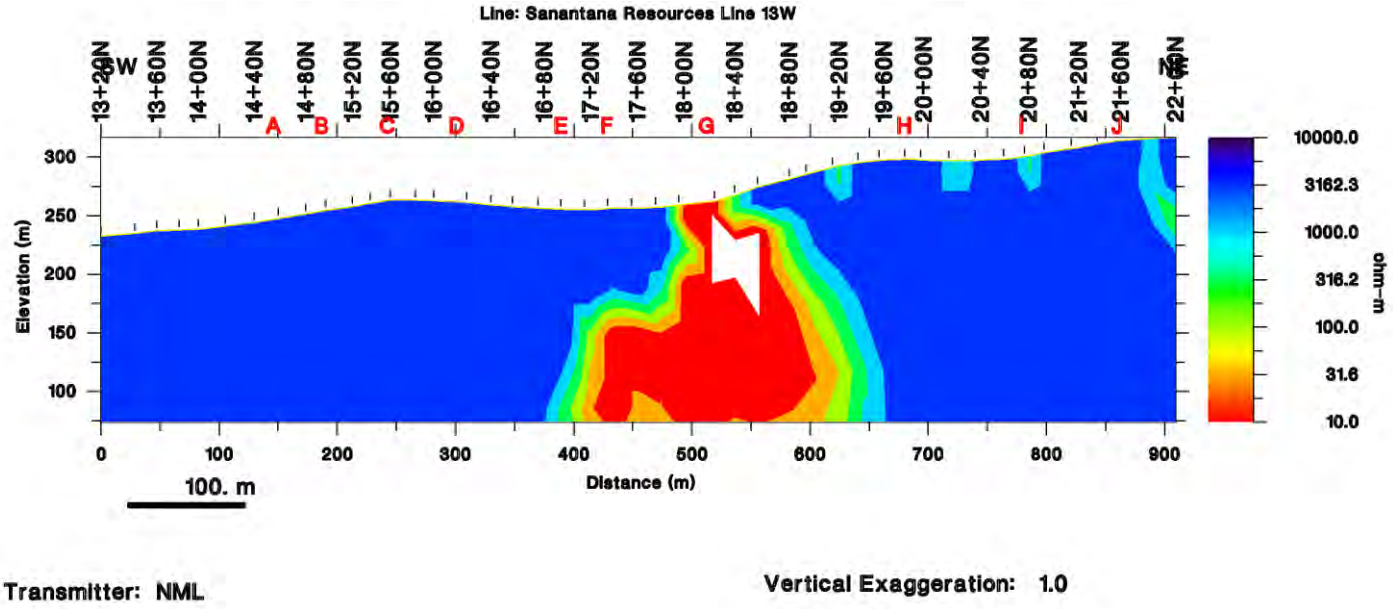
NML Figure 30 Line 12W JY Model with Fraser Picks



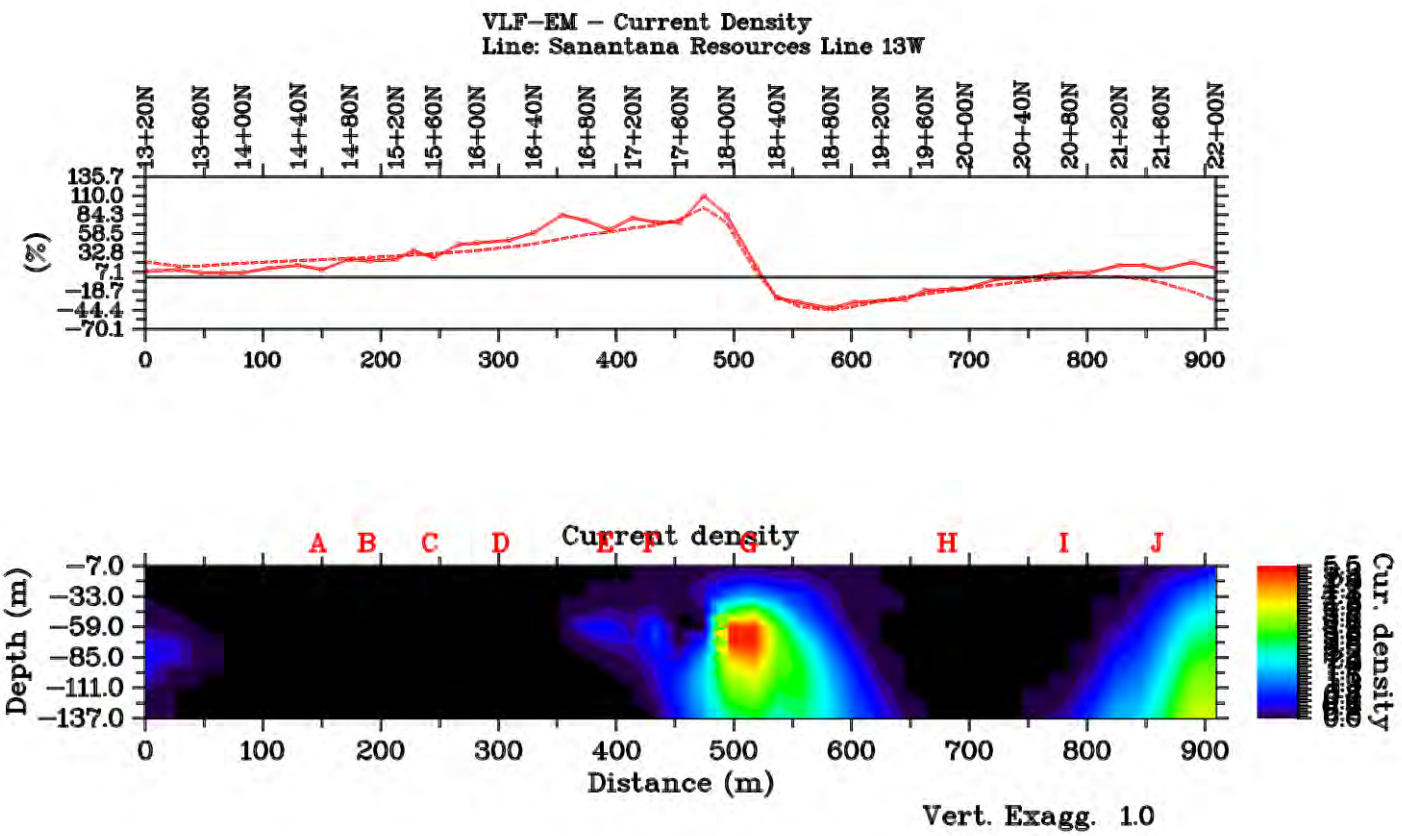
NML Figure 31 Line 13W Raw Data Profile



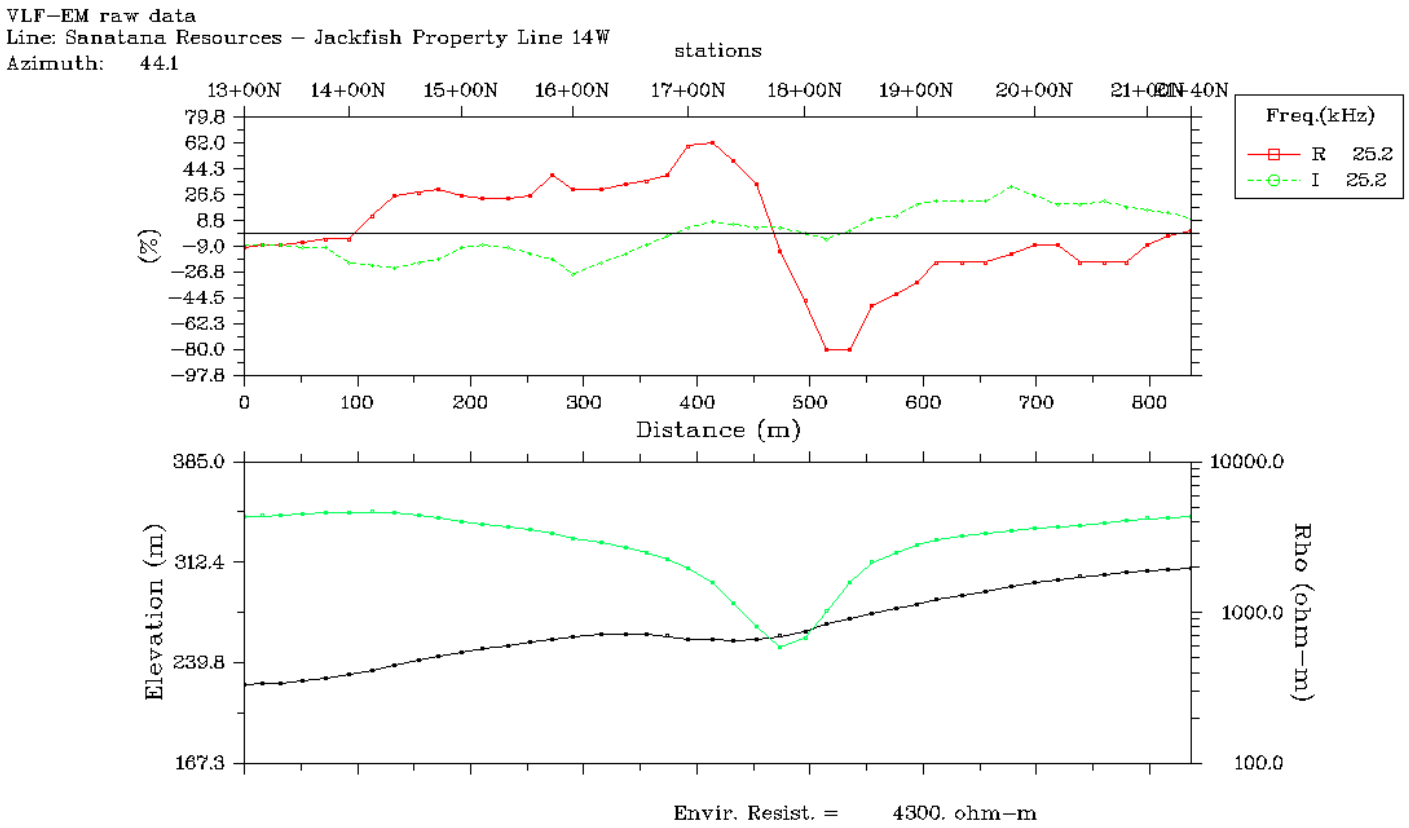
NML Figure 32 Line 13W Model 4000 Ohm with Fraser Picks



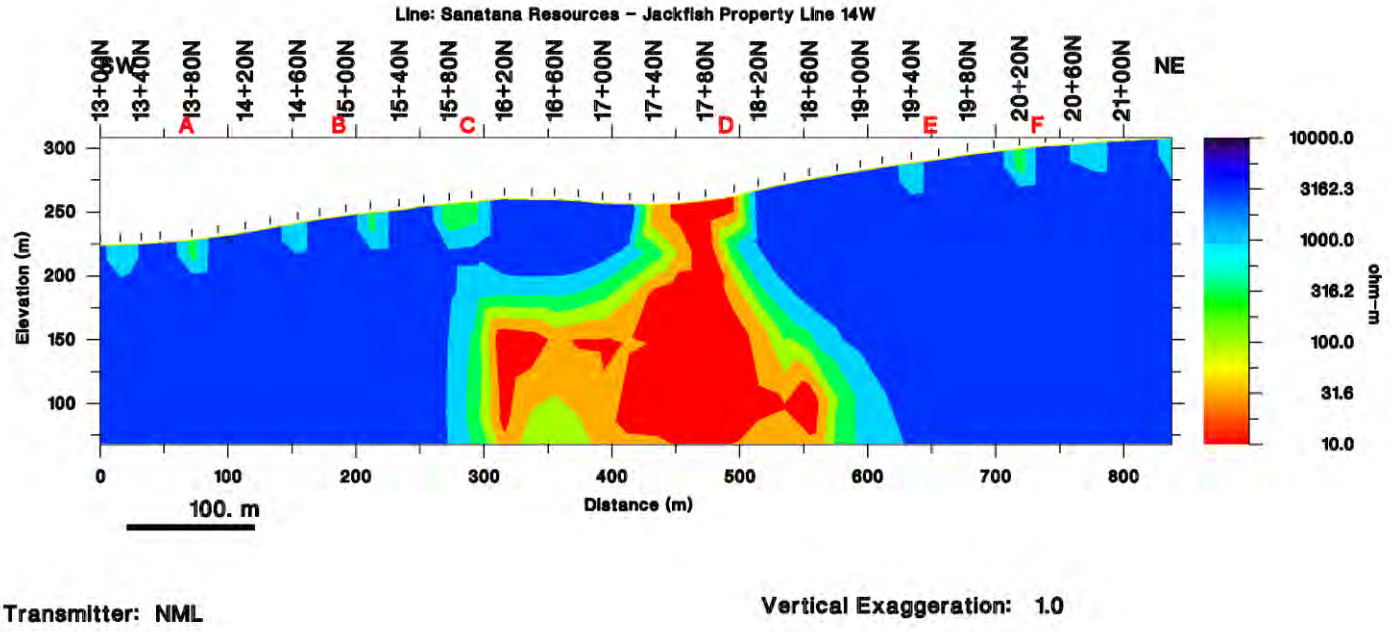
NML Figure 33 Line 13W JY Model with Fraser Picks



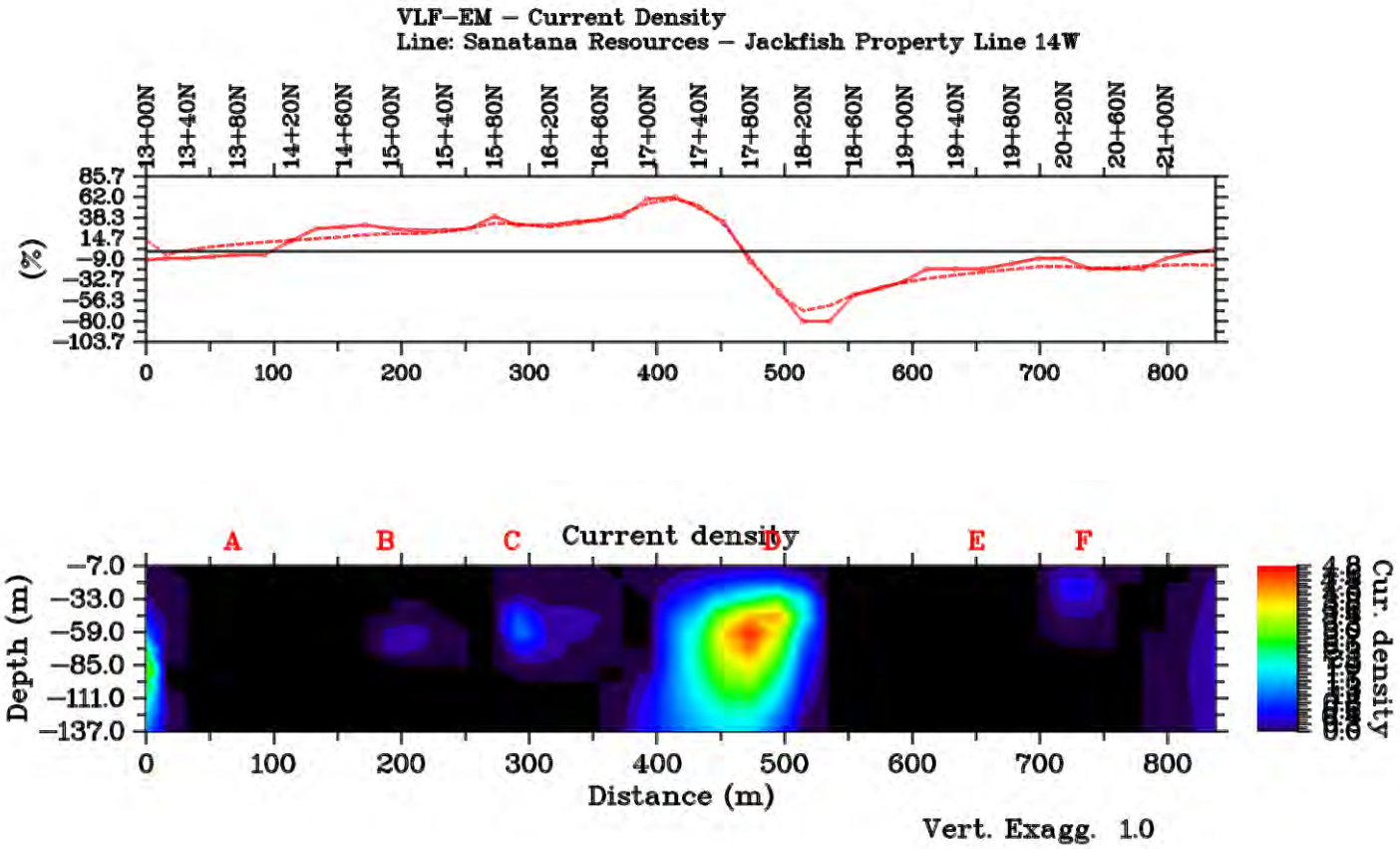
NML Figure 34 Line 14 Raw Data Profile



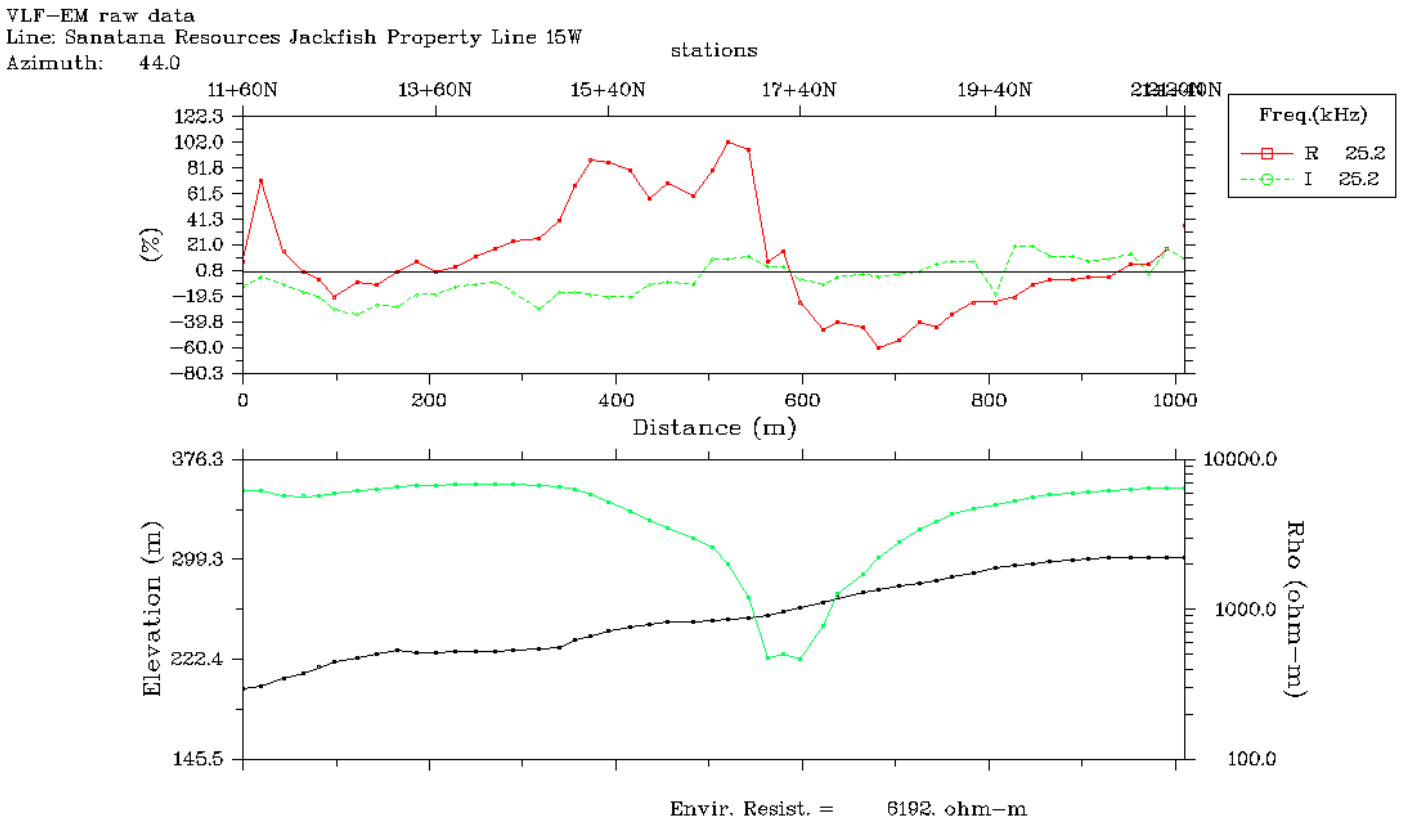
NML Figure 35 Line 14W Model 4000 Ohm with Fraser Picks



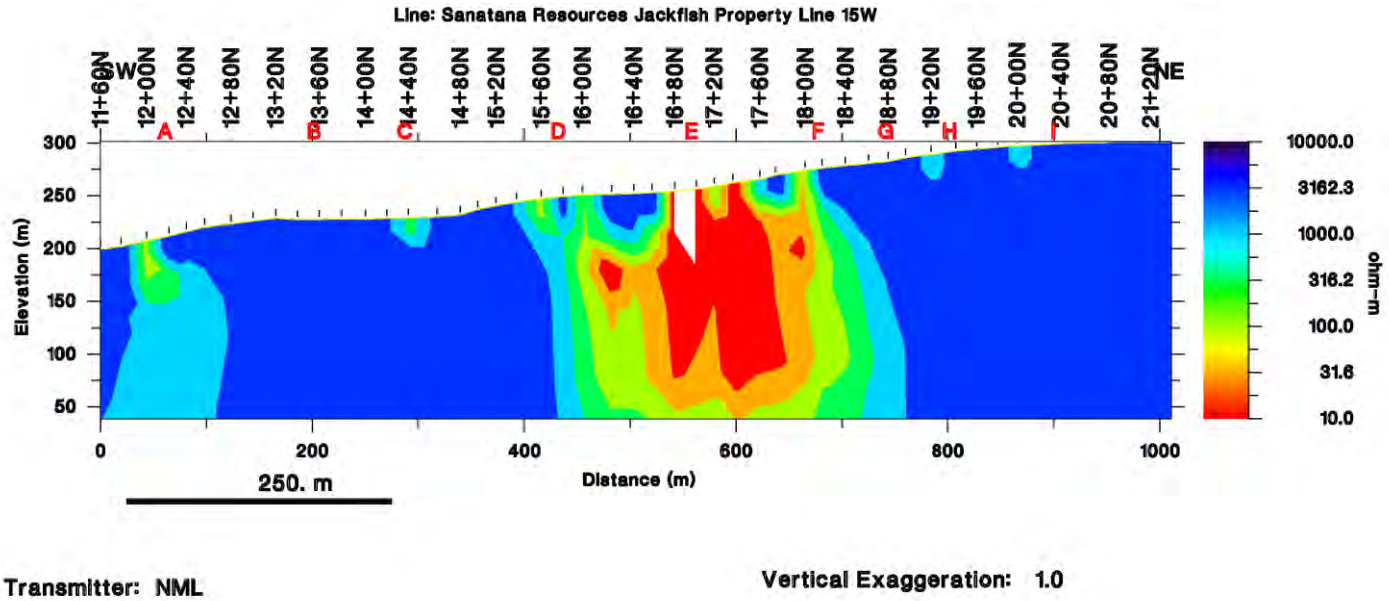
NML Figure 36 Line 14W JY Model with Fraser Picks



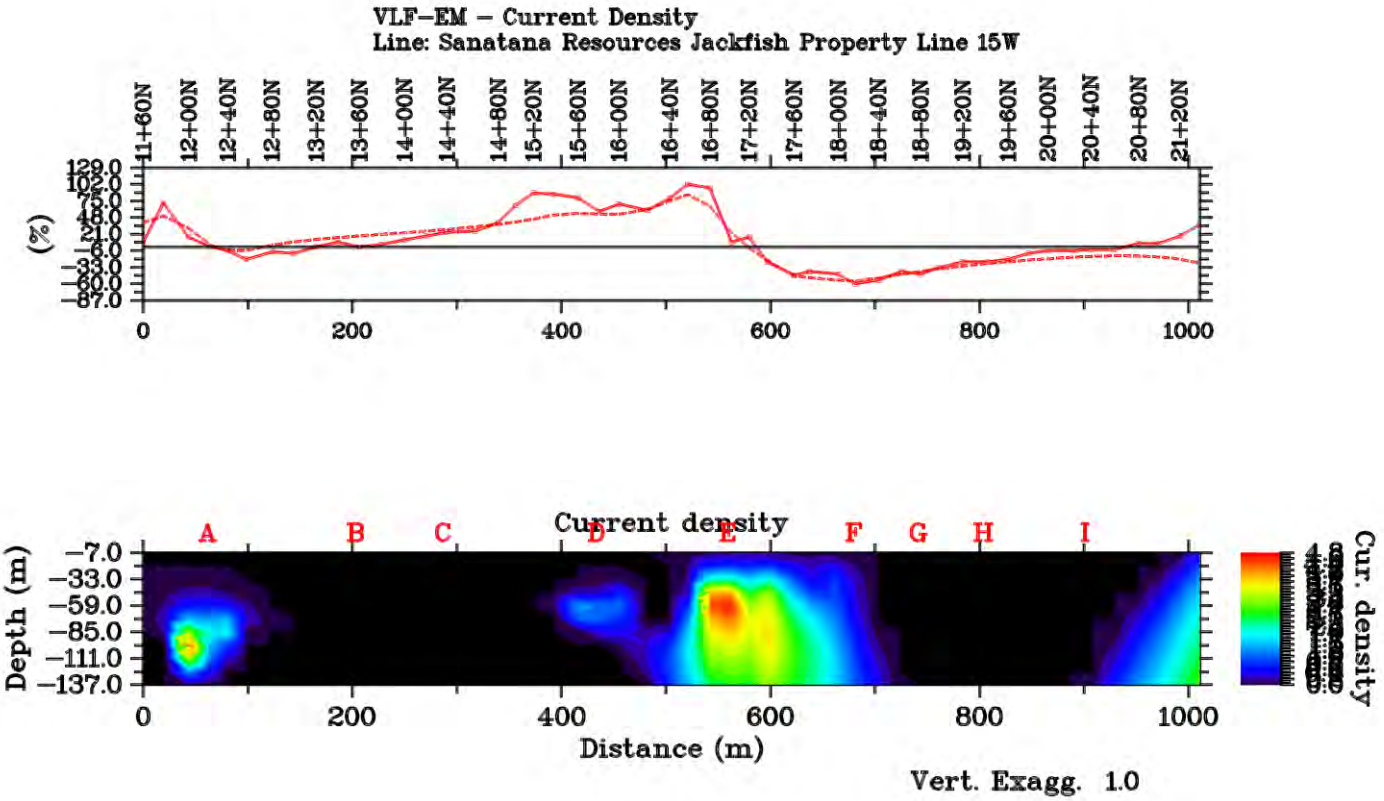
NML Figure 37 Line 15W Raw Data Profile



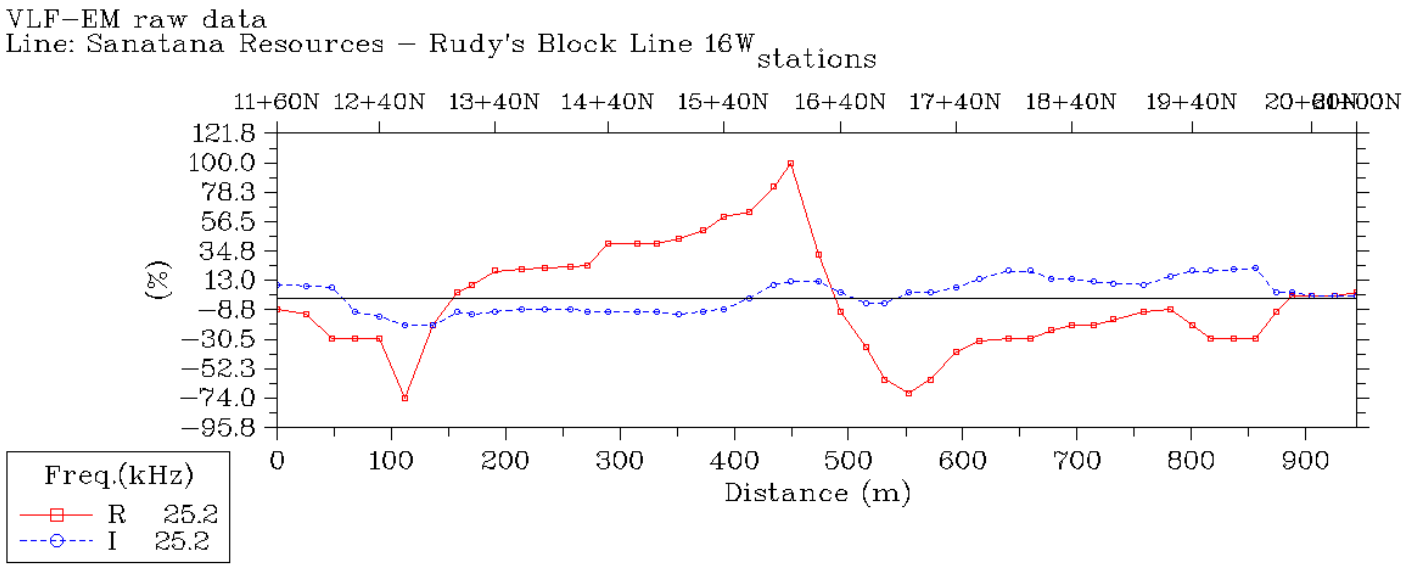
NML Figure 38 Line 15W Model 4000 Ohm with Fraser Picks



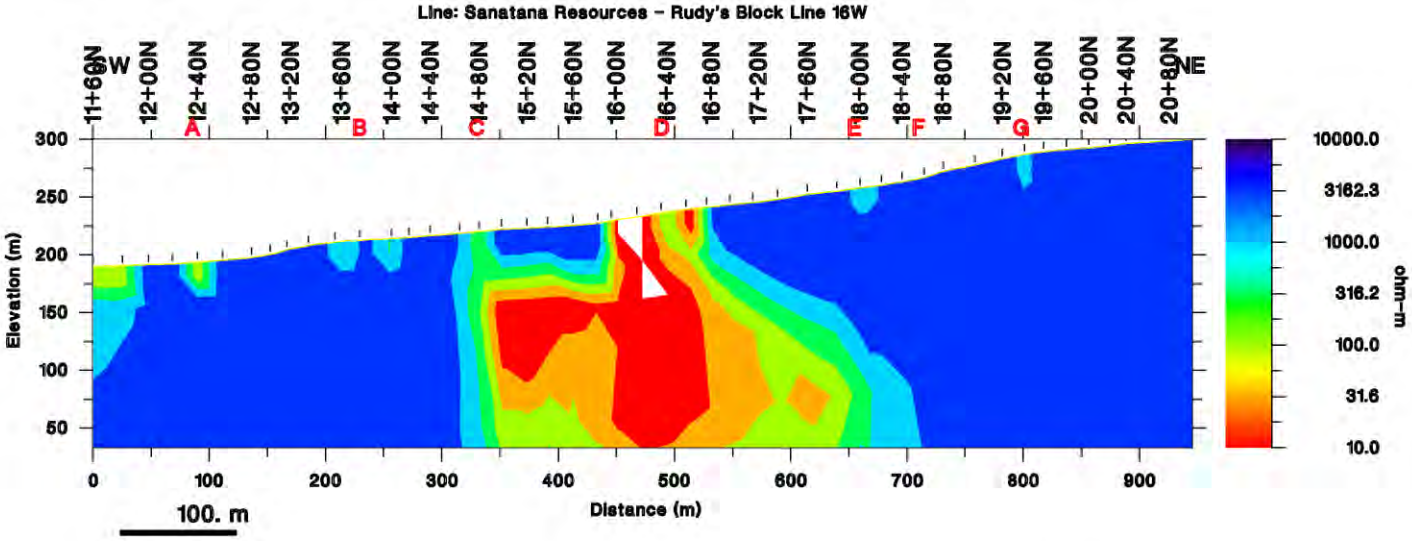
NML Figure 39 Line 15W JY Model with Fraser Picks



NML Figure 40 Line 16W Raw Data Profile



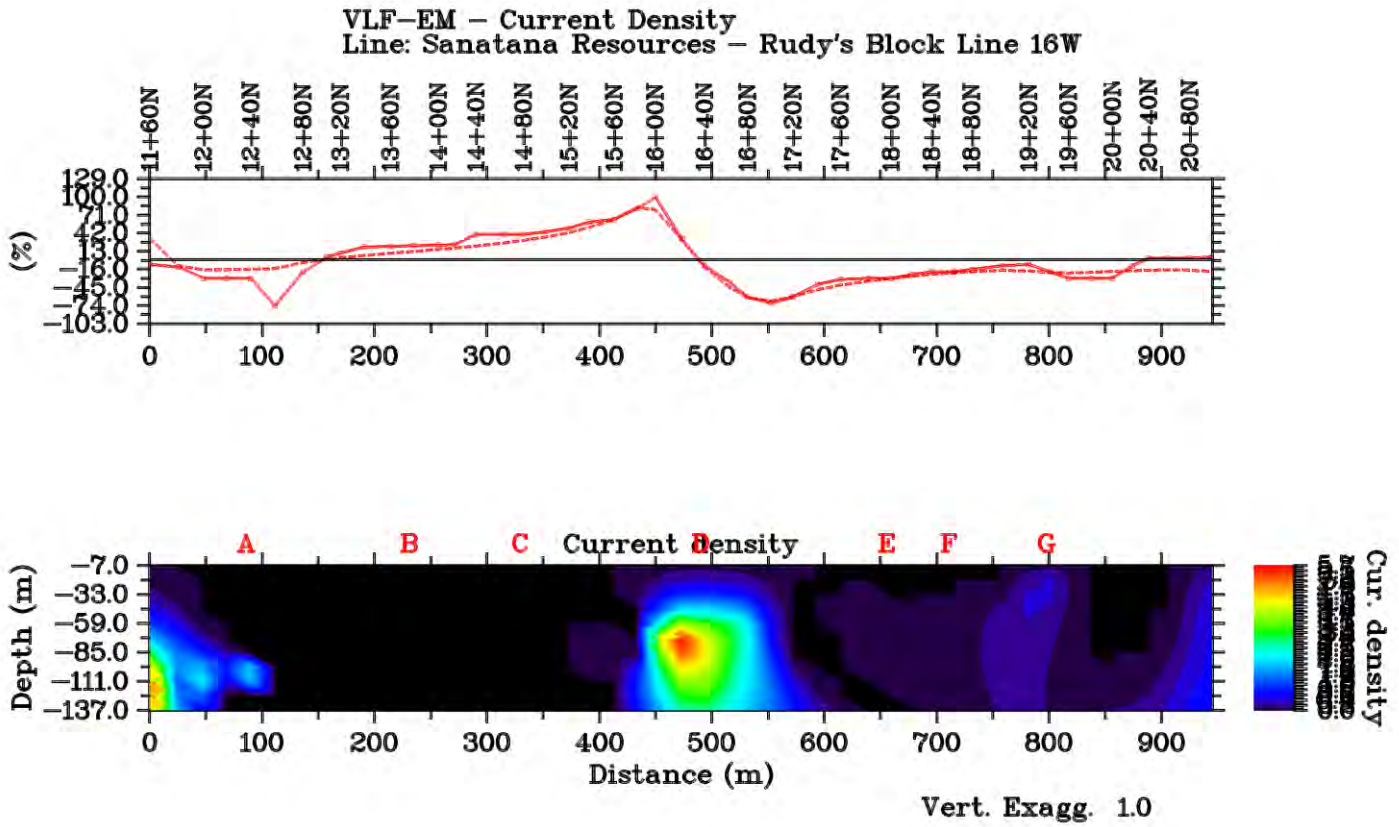
NML Figure 41 Line 16W Model 4000 Ohm with Fraser Picks



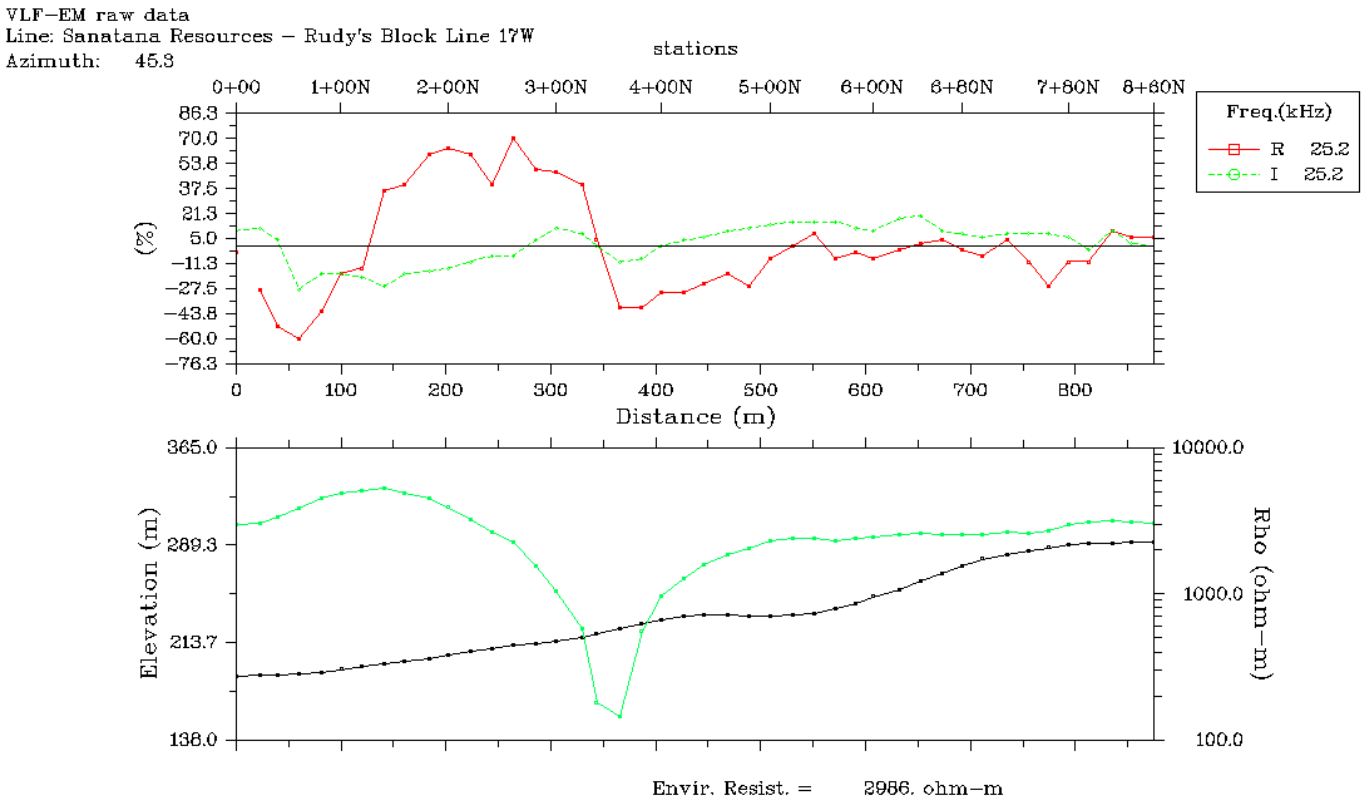
Transmitter: NML

Vertical Exaggeration: 1.0

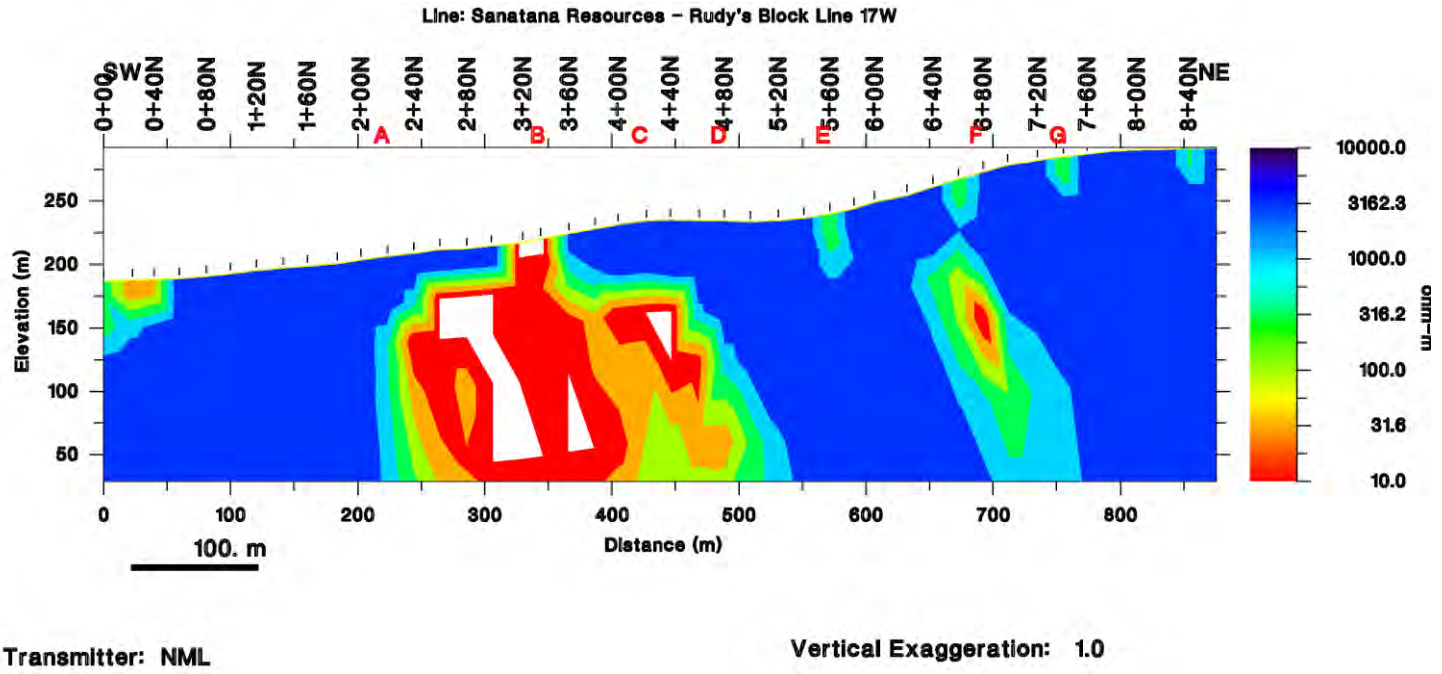
NML Figure 42 Line 16W JY Model with Fraser Picks



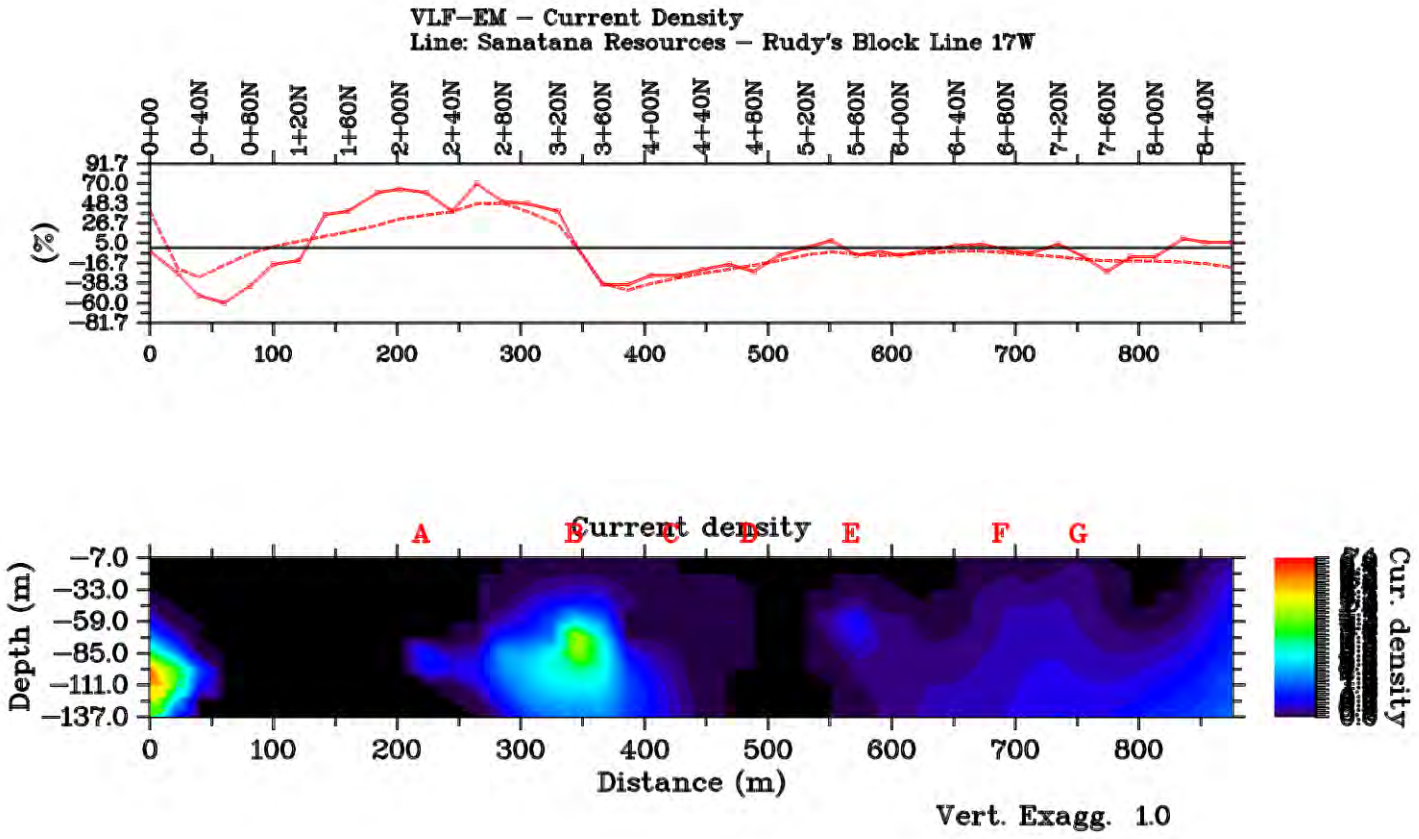
NML Figure 43 Line 17W Raw Data Profile



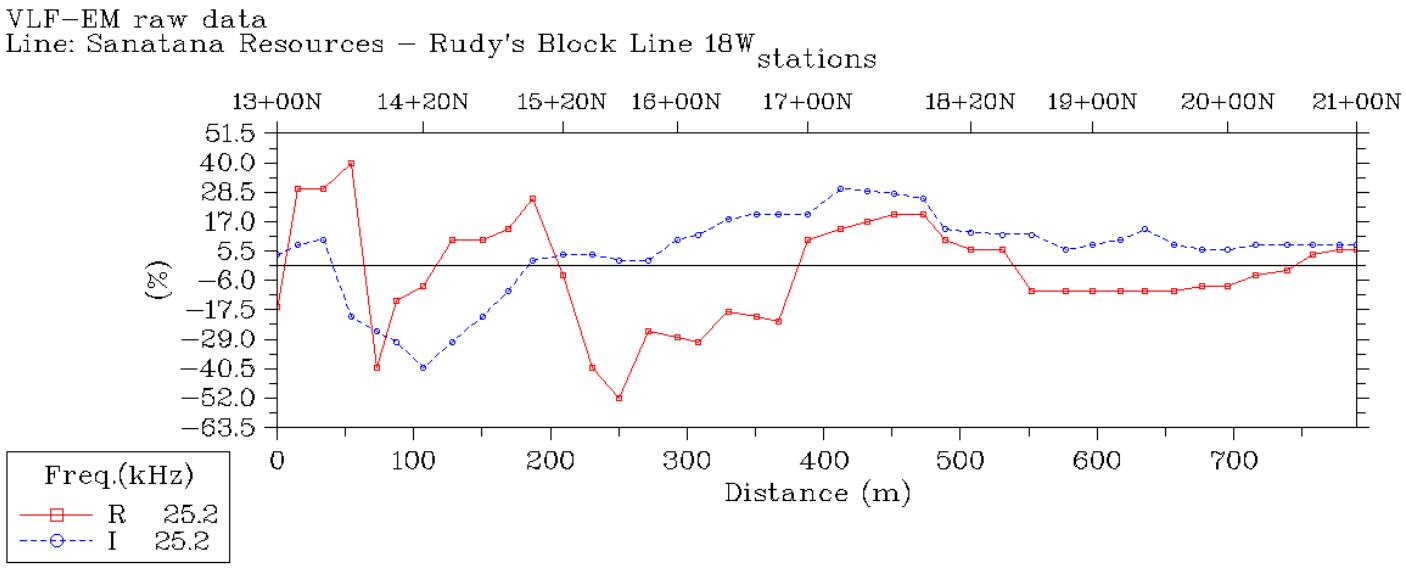
NML Figure 44 Line 17W Model 4000 Ohm with Fraser Picks



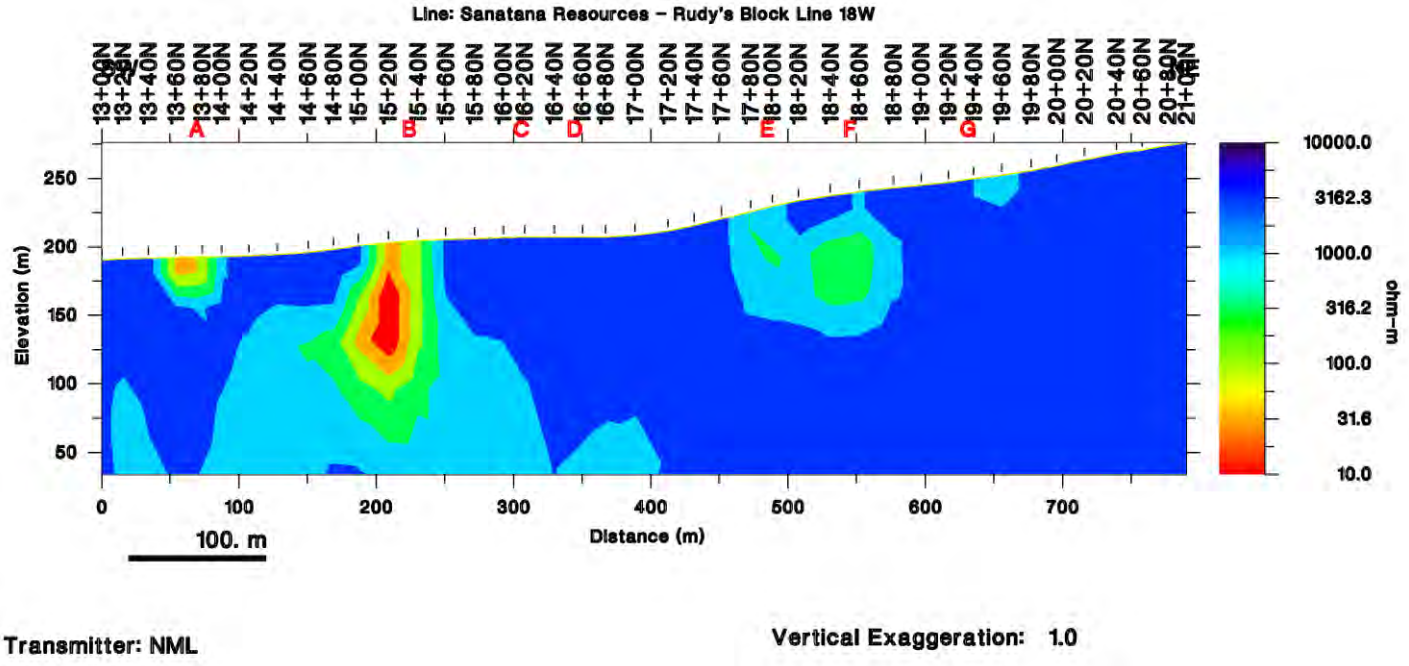
NML Figure 45 Line 17W JY Model with Fraser Picks



NML Figure 46 Line 18W Raw Data Profile



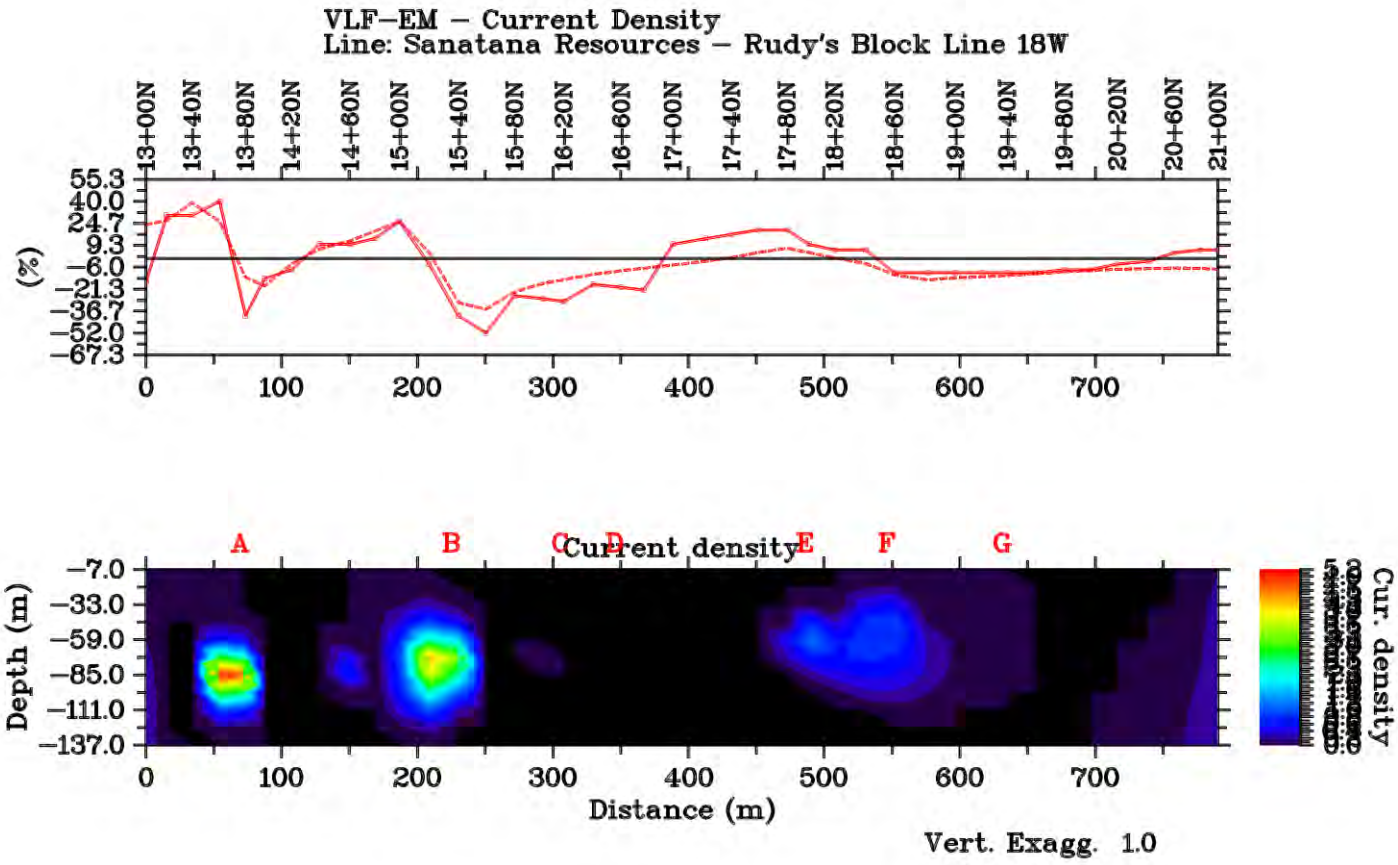
NML Figure 47 Line 18W Model 4000 Ohm with Fraser Picks



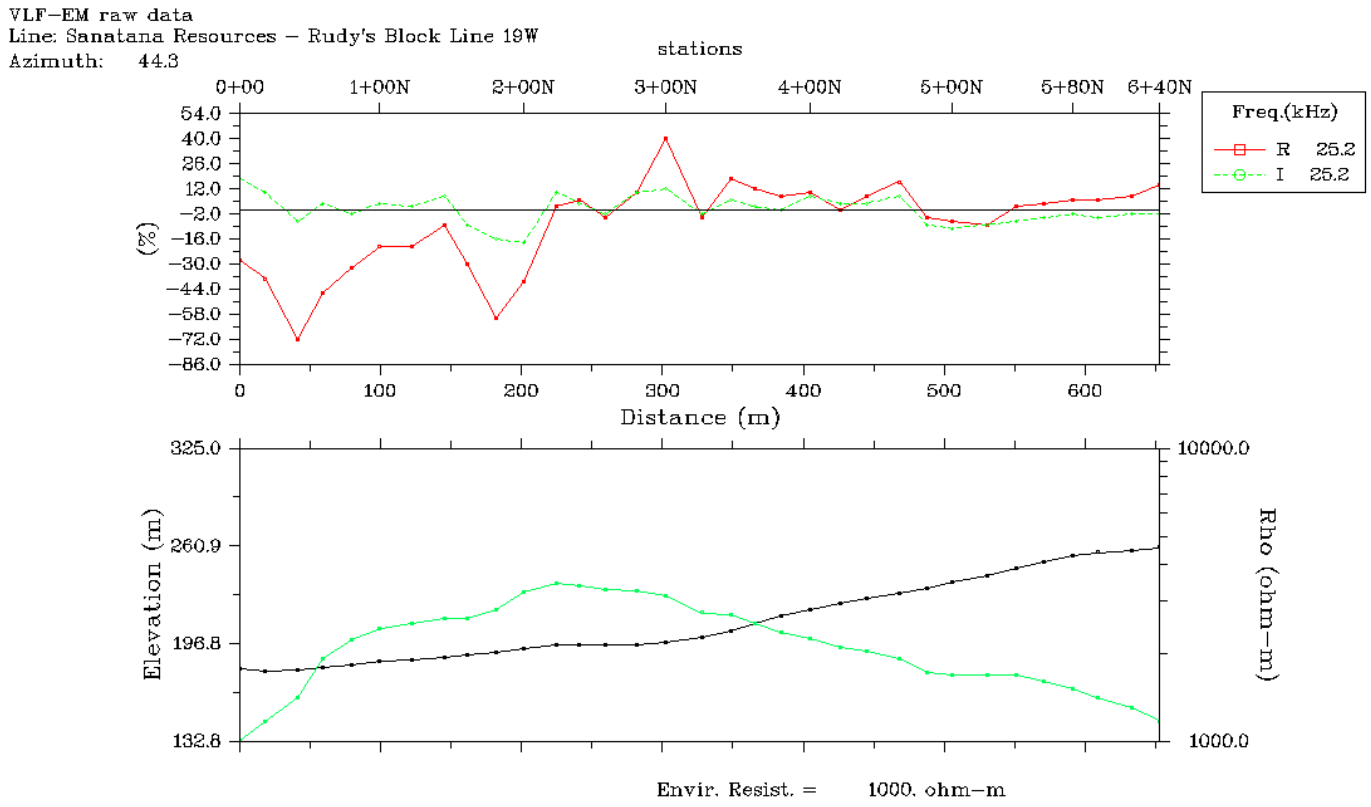
Transmitter: NML

Vertical Exaggeration: 1.0

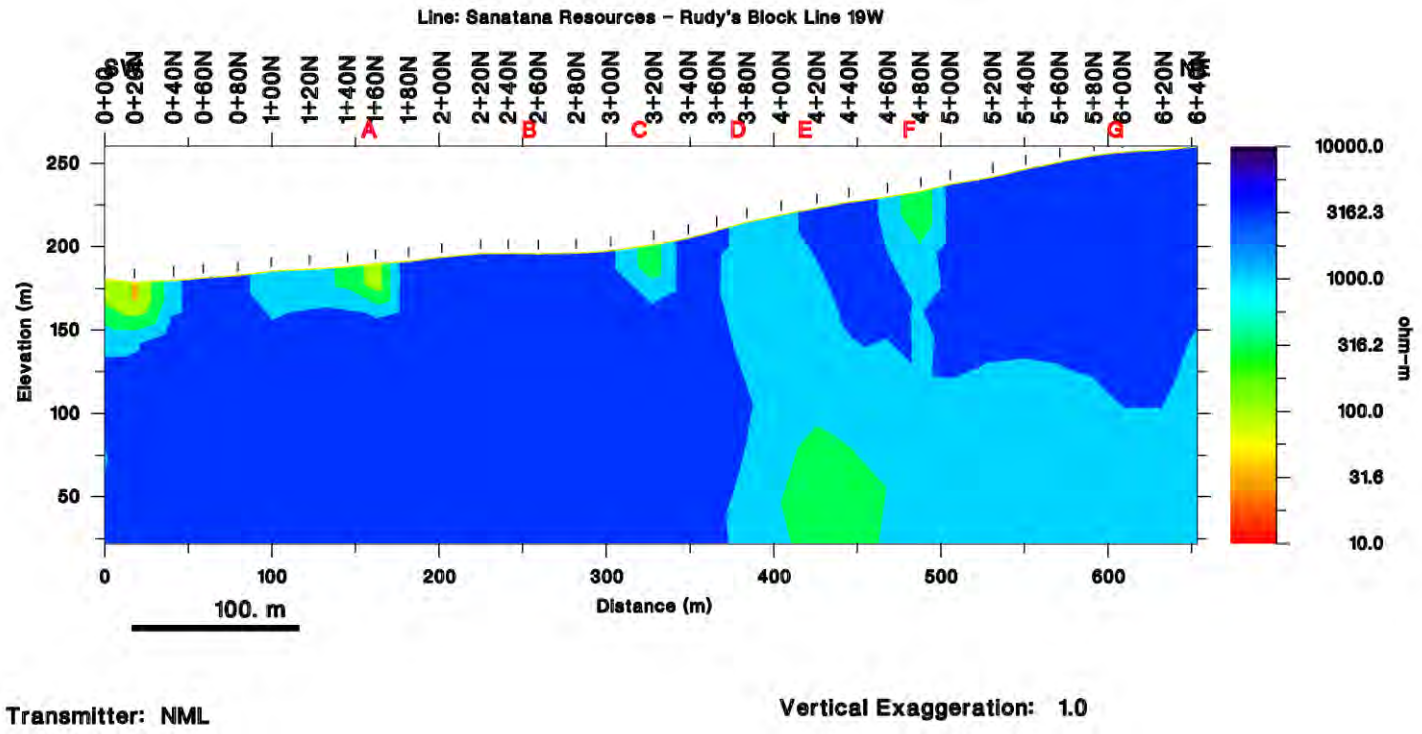
NML Figure 48 Line 18W JY Model with Fraser Picks



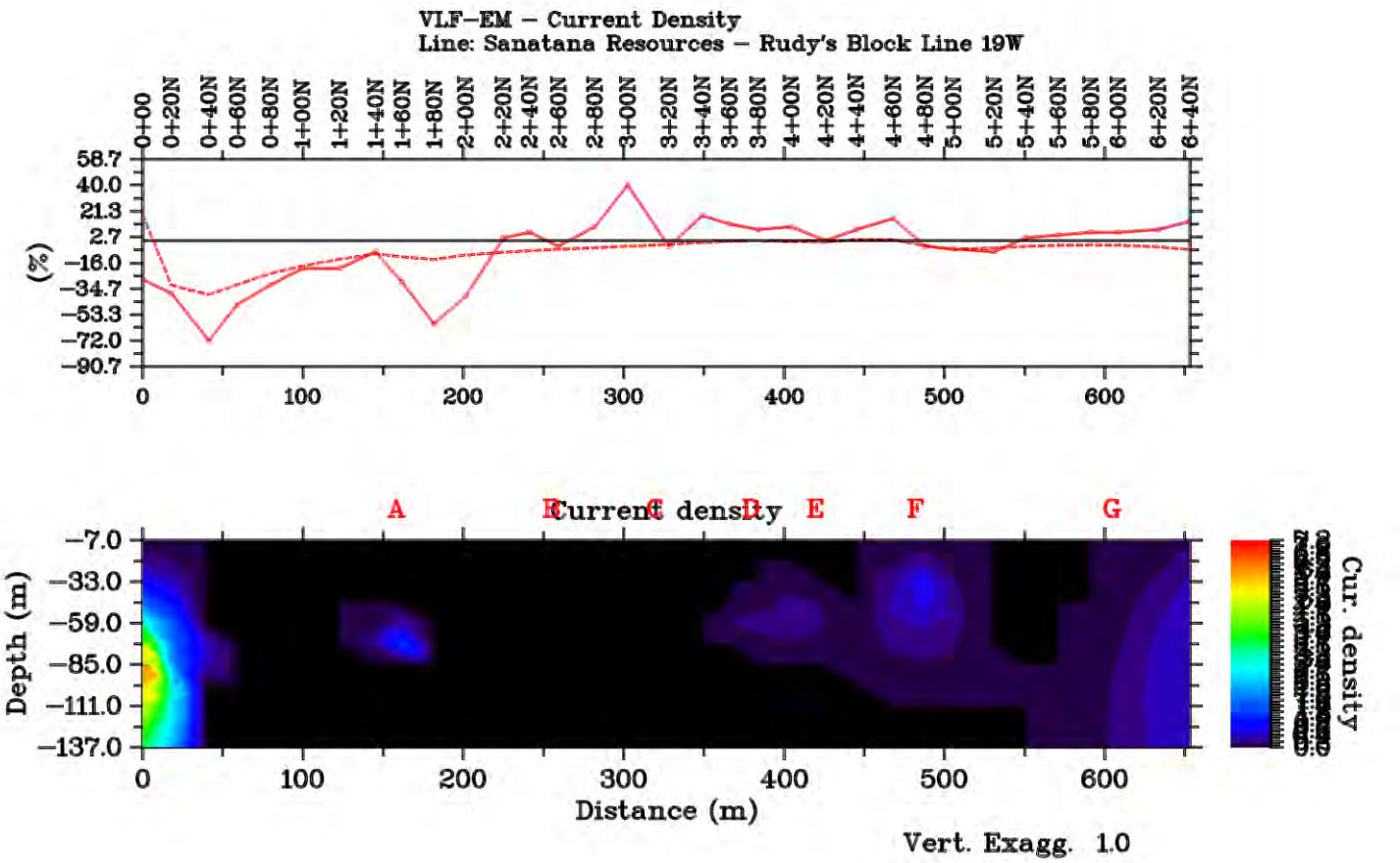
NML Figure 49 Line 19W Raw Data Profile



NML Figure 50 Line 19W Model 4000 Ohm with Fraser Picks



NML Figure 51 Line 19W JY Model with Fraser Picks



Appendix 3: VLF-EM Data

Sanatana Resources - Jackfish Property

Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L3W	16+80N	505600	5408974	248	20	-10	20	-8
L3W	17+00N	505613	5408988	253	36	-18	34	-16
L3W	17+20N	505629	5409006	276	40	-20	38	-18
L3W	17+40N	505644	5409022	278	8	-6	10	-8
L3W	17+60N	505658	5409037	280	4	-2	6	-2
L3W	17+80N	505673	5409053	282	2	-10	2	-8
L3W	18+00N	505687	5409070	283	6	-10	6	-8
L3W	18+20N	505699	5409085	285	8	-10	10	-8
L3W	18+40N	505711	5409098	290	8	-10	10	-8
L3W	18+60N	505724	5409112	292	8	-10	10	-8
L3W	18+80N	505738	5409126	294	10	-26	10	-8
L3W	19+00N	505755	5409142	297	-20	10	-18	-8
L3W	19+20N	505768	5409159	297	-16	20	-14	-10
L3W	19+40N	505781	5409173	298	-12	-20	-10	-16
L3W	19+60N	505794	5409187	294	4	-20	6	-18
L3W	19+80N	505808	5409202	290	6	-14	6	-12
L3W	20+00N	505821	5409217	289	10	-16	12	-18
L3W	20+20N	505833	5409232	286	14	-24	16	-24
L3W	20+40N	505844	5409249	280	20	-28	22	-28
L3W	20+60N	505856	5409266	286	18	-32	20	-30
L3W	20+80N	505867	5409281	288	18	-26	20	-24
L3W	21+00N	505879	5409298	292	26	-40	28	-42
L3W	21+20N	505893	5409314	294	30	-36	32	-34
L3W	21+40N	505905	5409327	298	30	-20	30	-18
L3W	21+60N	505917	5409344	302	44	-20	46	-18
L3W	21+80N	505933	5409355	302	80	-30	82	-32
L3W	22+00N	505950	5409369	306	100	-28	102	-30
L3W	22+20N	505963	5409381	308	60	-14	62	-14
L3W	22+40N	505978	5409398	310	40	-8	42	-8
L3W	22+60N	505993	5409411	311	0	-8	0	-6
L3W	22+80N	506007	5409425	312	-40	-12	-42	-14
L3W	23+00N	506015	5409440	313	-26	-8	-24	-10
L3W	23+20N	506031	5409456	314	-30	-8	-32	-8
L3W	23+40N	506043	5409471	319	-30	2	-32	4
L3W	23+60N	506057	5409486	324	-20	5	-22	6
L3W	23+80N	506068	5409500	329	-18	10	-20	12
L3W	24+00N	506081	5409515	332	-10	8	-12	10
L3W	24+20N	506092	5409531	328	-10	8	-10	10

Sanatana Resources - Jackfish Property

Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L3W	24+40N	506104	5409543	326	-10	8	-8	8
L3W	24+60N	506119	5409560	326	-10	8	-8	6
L3W	24+80N	506134	5409572	324	-8	8	-8	4
L3W	25+00N	506144	5409586	325	-8	-6	-6	-8
L4W	16+00N	505502	5408988	244	-30	-34	-28	-32
L4W	16+20N	505516	5408998	246	-20	-22	-18	-20
L4W	16+40N	505530	5409011	248	-18	-16	-10	-10
L4W	16+60N	505545	5409025	248	-4	-10	-4	-8
L4W	16+80N	505559	5409042	249	-4	-8	-4	-6
L4W	17+00N	505571	5409057	253	-4	-8	-4	-6
L4W	17+20N	505585	5409072	258	-10	-12	-12	-10
L4W	17+40N	505601	5409087	263	-8	-10	-8	-8
L4W	17+60N	505607	5409102	266	4	-4	4	-2
L4W	17+80N	505618	5409122	274	4	-6	4	-8
L4W	18+00N	505633	5409142	278	4	-12	6	-10
L4W	18+20N	505643	5409161	282	4	-8	4	-6
L4W	18+40N	505650	5409177	281	-4	-14	-2	-12
L4W	18+60N	505662	5409193	279	-8	-22	-6	-20
L4W	18+80N	505675	5409205	276	10	-40	10	-38
L4W	19+00N	505688	5409220	274	20	-28	22	-26
L4W	19+20N	505701	5409233	273	20	-22	22	-20
L4W	19+40N	505715	5409245	271	26	-24	32	-28
L4W	19+60N	505726	5409257	268	60	-20	62	-22
L4W	19+80N	505739	5409268	267	60	-20	60	-22
L4W	20+00N	505749	5409286	268	60	-18	62	-20
L4W	20+20N	505766	5409303	267	100	-8	100	-10
L4W	20+40N	505781	5409319	267	70	-10	72	-10
L4W	20+60N	505800	5409331	268	40	-32	42	-30
L4W	20+80N	505816	5409349	275	36	-26	38	-28
L4W	21+00N	505833	5409362	283	26	-28	24	-26
L4W	21+20N	505841	5409380	288	30	-22	30	-24
L4W	21+40N	505854	5409396	290	40	-18	38	-20
L4W	21+60N	505870	5409410	294	90	-18	92	-20
L4W	21+80N	505885	5409425	292	110	-10	108	-8
L4W	22+00N	505899	5409438	286	20	-18	22	-20
L4W	22+20N	505908	5409453	281	-70	-18	-72	-20
L4W	22+40N	505924	5409469	292	-54	-12	-46	-14
L4W	22+60N	505938	5409483	294	-46	-8	-44	-10

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L4W	22+80N	505950	5409494	294	-100	-10	-98	-8
L4W	23+00N	505966	5409509	299	-100	8	-102	10
L4W	23+20N	505983	5409528	306	-60	10	-58	12
L4W	23+40N	505998	5409544	308	-20	14	-18	12
L4W	23+60N	506012	5409559	312	-12	10	-10	10
L4W	23+80N	506026	5409574	316	-8	10	-10	10
L4W	24+00N	506039	5409588	319	-8	10	-6	8
L4W	24+20N	506049	5409603	320	-10	10	-9	8
L4W	24+40N	506064	5409620	318	-10	10	-10	8
L4W	24+60N	506078	5409639	320	-10	-8	-10	10
L4W	24+80N	506090	5409656	316	-8	8	-8	10
L4W	25+00N	506103	5409671	314	-6	8	-8	10
L5W	16+00N	505423	5409071	245	30	-6	28	-8
L5W	16+20N	505435	5409086	246	26	-4	24	-6
L5W	16+40N	505449	5409100	244	10	0	12	-4
L5W	16+60N	505462	5409115	246	0	-4	4	-6
L5W	16+80N	505470	5409133	252	-10	-6	-10	-8
L5W	17+00N	505483	5409146	254	-12	-8	-12	**-10**
L5W	17+20N	505497	5409161	256	-14	-8	-14	-10
L5W	17+40N	505512	5409173	254	6	-6	8	-6
L5W	17+60N	505523	5409190	258	10	-4	12	-6
L5W	17+80N	505534	5409206	260	14	-4	14	-6
L5W	18+00N	505548	5409218	264	-8	-6	-10	-6
L5W	18+20N	505561	5409233	263	-12	-8	-12	-6
L5W	18+40N	505574	5409245	262	-14	-10	-14	-8
L5W	18+60N	505586	5409262	264	6	-8	8	-8
L5W	18+80N	505600	5409275	266	12	-6	10	-8
L5W	19+00N	505613	5409292	268	14	**-6**	16	**-8**
L5W	19+20N	505625	5409307	274	16	-4	22	-8
L5W	19+40N	505640	5409322	271	24	-2	26	-6
L5W	19+60N	505659	5409337	272	28	-4	34	-8
L5W	19+80N	505679	5409353	268	46	-6	46	**-8**
L5W	20+00N	505697	5409365	268	40	-8	42	-8
L5W	20+20N	505711	5409376	269	30	-8	32	-8
L5W	20+40N	505727	5409391	268	20	-22	22	-22
L5W	20+60N	505740	5409404	268	20	-34	22	-36
L5W	20+80N	505754	5409419	268	50	-34	52	-36
L5W	21+00N	505766	5409431	269	100	-10	98	-12

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L5W	21+20N	505781	5409451	269	70	-2	**88**	-2
L5W	21+40N	505794	5409467	272	70	0	74	-2
L5W	21+60N	505811	5409492	272	28	0	30	-2
L5W	21+80N	505826	5409510	274	-30	**2**	-28	0
L5W	22+00N	505840	5409529	276	-42	2	-34	4
L5W	22+20N	505855	5409547	276	**-67**	10	-42	8
L5W	22+40N	505869	5409563	279	-90	34	-92	36
L5W	22+60N	505885	5409578	284	-80	42	-84	44
L5W	22+80N	505900	5409592	290	**-58**	**34**	**-60**	**34**
L5W	23+00N	505914	5409605	296	-36	26	-38	28
L5W	23+20N	505925	5409618	304	-18	**22**	-20	**24**
L5W	23+40N	505941	5409633	310	-24	**20**	-26	**20**
L5W	23+60N	505954	5409650	320	-50	**20**	-52	**20**
L5W	23+80N	505966	5409664	326	-30	12	-32	12
L5W	24+00N	505981	5409676	332	**-22**	6	**-24**	8
L5W	24+20N	505997	5409690	337	**-20**	6	**-20**	**8**
L5W	24+40N	506007	5409709	337	**-18**	8	**-20**	8
L5W	24+60N	506019	5409724	338	-18	8	-20	10
L5W	24+80N	506031	5409738	329	-12	10	-10	10
L5W	25+00N	506045	5409754	330	-10	12	-8	12
L5W	25+20N	506058	5409771	328	-8	12	**-8**	14
L5W	25+40N	506073	5409788	326	-8	10	-8	14
L6W	15+80N	505351	5409121	240	64	20	68	18
L6W	16+00N	505361	5409136	240	68	**24**	70	18
L6W	16+20N	505376	5409143	240	**66**	28	70	26
L6W	16+40N	505396	5409158	241	62	12	64	14
L6W	16+60N	505410	5409176	245	**-24**	4	-24	4
L6W	16+80N	505426	5409189	250	-24	-10	-26	-8
L6W	17+00N	505437	5409204	254	-24	**-6**	-22	**-6**
L6W	17+20N	505451	5409217	254	-14	-4	-12	-6
L6W	17+40N	505467	5409236	257	-10	-8	-8	-8
L6W	17+60N	505480	5409248	259	**-18**	-16	**-20**	-14
L6W	17+80N	505494	5409260	263	-20	-26	-22	-24
L6W	18+00N	505505	5409281	264	-24	-20	-22	-20
L6W	18+20N	505520	5409297	263	-4	-16	**-6**	-14
L6W	18+40N	505537	5409314	264	-4	**-18**	-6	-16
L6W	18+60N	505548	5409327	264	4	-20	6	-18
L6W	18+80N	505562	5409343	265	6	-18	6	-16

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L6W	19+00N	505579	5409358	266	10	-16	8	-14
L6W	19+20N	505589	5409370	268	16	-12	14	-10
L6W	19+40N	505602	5409387	268	16	**-12**	14	**-10**
L6W	19+60N	505617	5409403	266	28	-12	26	-10
L6W	19+80N	505626	5409418	268	42	**-16**	40	**-18**
L6W	20+00N	505638	5409431	269	34	-20	36	-20
L6W	20+20N	505651	5409442	269	30	-20	**38**	-18
L6W	20+40N	505662	5409457	269	40	-18	42	-20
L6W	20+60N	505670	5409478	268	40	-16	42	-18
L6W	20+80N	505680	5409497	268	20	-18	22	-18
L6W	21+00N	505693	5409513	269	10	-8	10	-8
L6W	21+20N	505705	5409528	269	-20	10	-22	12
L6W	21+40N	505718	5409544	269	-70	10	-72	12
L6W	21+60N	505735	5409556	259	-90	16	-92	18
L6W	21+80N	505750	5409566	263	**-100**	10	**-98**	8
L6W	22+00N	505765	5409577	263	-110	14	-106	16
L6W	22+20N	505783	5409590	268	-54	16	-56	18
L6W	22+40N	505796	5409605	272	-30	14	-32	12
L6W	22+60N	505806	5409625	277	-28	12	-26	12
L6W	22+80N	505818	5409639	281	-24	20	-26	20
L6W	23+00N	505833	5409659	288	-34	38	-36	36
L6W	23+20N	505846	5409669	292	**-34**	28	**-34**	26
L6W	23+40N	505861	5409685	302	-34	30	-32	28
L6W	23+60N	505876	5409694	312	-26	18	-24	16
L6W	23+80N	505891	5409710	319	-14	22	-16	20
L6W	24+00N	505905	5409723	324	-16	24	-18	22
L6W	24+20N	505919	5409740	330	-8	18	-10	20
L6W	24+40N	505930	5409752	334	**-6**	20	**-8**	20
L6W	24+60N	505944	5409766	336	-4	22	-6	22
L6W	24+80N	505955	5409782	310	-8	18	-8	16
L6W	25+00N	505969	5409794	338	-8	18	-8	16
L7W	10+20N	504889	5408782	240	4	2	4	4
L7W	10+40N	504907	5408789	239	-2	4	-6	4
L7W	10+60N	504923	5408801	236	-2	8	2	4
L7W	10+80N	504937	5408818	238	-10	2	-8	4
L7W	11+00N	504949	5408828	240	-12	0	-12	0
L7W	11+20N	504969	5408842	245	-12	0	-10	0
L7W	11+40N	504981	5408855	245	-14	2	-12	2

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L7W	11+60N	504991	5408875	245	-8	2	-4	2
L7W	11+80N	505004	5408889	243	-12	2	-2	2
L7W	12+00N	505016	5408905	244	-10	2	-4	2
L7W	12+20N	505030	5408917	245	-10	4	-6	4
L7W	12+40N	505044	5408927	247	-16	6	-10	8
L7W	12+60N	505067	5408939	245	-10	6	-6	4
L7W	12+80N	505078	5408957	245	-10	6	-10	4
L7W	13+00N	505087	5408977	244	-16	6	-18	6
L7W	13+20N	505094	5409003	245	-14	2	-16	2
L7W	13+40N	505096	5409024	242	-10	6	-4	4
L7W	13+60N	505105	5409043	235	-8	8	-12	8
L7W	13+80N	505118	5409058	236	16	24	18	4
L7W	14+00N	505136	5409069	238	-20	0	-18	0
L7W	14+20N	505156	5409074	239	-70	-12	-88	-6
L7W	14+40N	505176	5409084	243	-46	-12	-90	-10
L7W	14+60N	505196	5409093	246	-30	-6	-70	-8
L7W	14+80N	505209	5409104	247	-30	-8	-70	-6
L7W	15+00N	505224	5409127	248	-26	-40	-60	-6
L7W	15+20N	505233	5409140	249	-46	0	-96	0
L7W	15+40N	505248	5409153	255	-24	-4	-80	-2
L7W	15+60N	505269	5409162	258	-18	-2	-50	-6
L7W	15+80N	505284	5409169	256	-26	-8	-58	-10
L7W	16+00N	505305	5409183	255	-14	-8	-40	-6
L7W	16+20N	505313	5409202	261	-10	-4	-26	-4
L7W	16+40N	505320	5409221	265	-4	0	-20	-2
L7W	16+60N	505339	5409239	269	-4	-6	-20	-6
L7W	16+80N	505348	5409250	271	-4	-2	-16	-4
L7W	17+00N	505358	5409269	273	-4	-10	-20	-10
L7W	17+20N	505369	5409281	273	-4	-12	-30	-18
L7W	17+40N	505387	5409298	275	-8	-18	-50	-22
L7W	17+60N	505403	5409312	272	-2	-18	-40	-22
L7W	17+80N	505418	5409320	272	-4	-20	-30	-30
L7W	18+00N	505433	5409338	272	10	-16	-10	-28
L7W	18+20N	505445	5409351	274	12	-16	-10	-30
L7W	18+40N	505461	5409365	277	20	-10	20	-10
L7W	18+60N	505474	5409380	275	36	-20	46	-28
L7W	18+80N	505493	5409388	275	40	20	50	-20
L7W	19+00N	505508	5409407	276	34	-10	40	-10

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L7W	19+20N	505516	5409425	275	36	-10	40	-12
L7W	19+40N	505526	5409439	275	50	-10	60	-12
L7W	19+60N	505542	5409452	278	40	-10	48	-8
L7W	19+80N	505555	5409466	279	60	-8	80	-10
L7W	20+00N	505568	5409483	277	60	-4	80	-6
L7W	20+20N	505577	5409505	277	60	-2	70	-4
L7W	20+40N	505585	5409525	274	60	-2	70	-2
L7W	20+60N	505589	5409543	267	60	10	62	10
L7W	20+80N	505595	5409557	268	-12	4	-20	2
L7W	21+00N	505611	5409572	268	-46	-2	-8	-2
L7W	21+20N	505632	5409583	270	-50	0	-60	4
L7W	21+40N	505659	5409591	269	-64	10	-88	8
L7W	21+60N	505671	5409600	269	-60	4	-90	4
L7W	21+80N	505694	5409609	274	-40	10	-70	12
L7W	22+00N	505712	5409622	275	-40	16	-70	18
L7W	22+20N	505726	5409636	279	-22	18	-34	20
L7W	22+40N	505737	5409652	282	-20	16	-28	26
L7W	22+60N	505748	5409661	289	-24	18	-24	20
L7W	22+80N	505768	5409678	293	-12	20	-22	22
L7W	23+00N	505791	5409688	293	-10	16	-22	18
L7W	23+20N	505805	5409702	298	-10	18	-20	18
L7W	23+40N	505823	5409712	301	-10	16	-20	22
L7W	23+60N	505837	5409727	308	-8	18	-14	20
L7W	23+80N	505846	5409745	315	-4	20	-10	18
L7W	24+00N	505863	5409756	322	4	16	-2	14
L7W	24+20N	505878	5409781	320	2	16	2	10
L7W	24+40N	505882	5409793	339	0	14	-6	10
L7W	24+60N	505886	5409817	348	2	10	-10	10
L7W	24+80N	505892	5409831	348	4	12	-4	20
L7W	25+00N	505906	5409848	348	8	16	6	20
L8W	16+00N	505230	5409260	281	-20	-10	-18	-8
L8W	16+20N	505245	5409276	285	-20	8	-18	8
L8W	16+40N	505257	5409295	288	-20	0	-18	-2
L8W	16+60N	505270	5409311	288	-16	-6	-14	-8
L8W	16+80N	505282	5409324	287	-10	-10	-8	-10
L8W	17+00N	505294	5409342	289	-14	-10	-12	-8
L8W	17+20N	505308	5409356	286	-16	-10	-10	-8
L8W	17+40N	505320	5409368	283	-20	-10	-18	-8

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L8W	17+60N	505331	5409387	283	-10	-16	-16	-14
L8W	17+80N	505347	5409405	284	-16	-16	-14	-16
L8W	18+00N	505363	5409423	284	-8	-18	-10	-20
L8W	18+20N	505376	5409438	284	8	-14	6	-12
L8W	18+40N	505385	5409451	286	10	-18	12	-18
L8W	18+60N	505399	5409462	291	24	-18	22	-20
L8W	18+80N	505412	5409476	293	30	-26	28	-34
L8W	19+00N	505428	5409488	294	46	-12	48	-12
L8W	19+20N	505442	5409504	294	38	-10	28	-12
L8W	19+40N	505459	5409513	290	30	-10	32	-12
L8W	19+60N	505475	5409522	291	60	-6	62	-8
L8W	19+80N	505493	5409539	286	36	2	34	2
L8W	20+00N	505511	5409550	281	34	2	36	0
L8W	20+20N	505527	5409563	281	30	6	32	6
L8W	20+40N	505540	5409577	278	18	8	20	6
L8W	20+60N	505554	5409594	276	-20	6	-22	8
L8W	20+80N	505567	5409609	275	-50	8	-52	8
L8W	21+00N	505579	5409629	282	-50	10	-52	8
L8W	21+20N	505594	5409642	284	-80	16	-82	14
L8W	21+40N	505610	5409654	286	-56	12	-58	10
L8W	21+60N	505624	5409666	292	-80	12	-82	10
L8W	21+80N	505639	5409679	294	-100	10	-98	12
L8W	22+00N	505653	5409691	296	-80	28	-78	28
L8W	22+20N	505666	5409704	298	-40	30	-42	32
L8W	22+40N	505684	5409717	301	-40	30	-42	32
L8W	22+60N	505693	5409735	310	-20	32	-22	30
L8W	22+80N	505710	5409750	316	-24	28	-32	26
L8W	23+00N	505723	5409765	320	-26	26	-24	26
L8W	23+20N	505739	5409777	328	-16	26	-18	24
L8W	23+40N	505751	5409788	334	-14	30	-12	28
L8W	23+60N	505766	5409799	338	-12	34	-10	30
L8W	23+80N	505779	5409813	340	-10	36	-10	30
L8W	24+00N	505793	5409826	342	-8	38	-6	36
L9W	10+20N	504741	5408912	229	-10	2	-10	2
L9W	10+40N	504751	5408920	231	-12	-2	-8	-2
L9W	10+60N	504757	5408930	232	-12	0	-8	0
L9W	10+80N	504765	5408948	234	-14	2	-12	0
L9W	11+00N	504772	5408963	234	-10	4	-8	4

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L9W	11+20N	504784	5408986	234	-6	4	-4	4
L9W	11+40N	504801	5409008	235	-8	8	-4	8
L9W	11+60N	504821	5409017	238	-20	0	-24	2
L9W	11+80N	504833	5409020	244	-18	4	-22	2
L9W	12+00N	504854	5409030	246	-12	6	-10	6
L9W	12+20N	504870	5409043	246	-4	6	-6	6
L9W	12+40N	504886	5409059	245	-4	10	-6	10
L9W	12+60N	504895	5409077	244	4	12	10	14
L9W	12+80N	504906	5409091	244	-4	6	4	6
L9W	13+00N	504917	5409097	242	-12	-2	-18	-4
L9W	13+20N	504939	5409112	243	-8	6	-10	6
L9W	13+40N	504947	5409126	246	-4	6	-6	6
L9W	13+60N	504962	5409144	244	8	10	4	12
L9W	13+80N	504981	5409159	244	-10	2	-14	0
L9W	14+00N	504995	5409176	245	-20	-8	-30	-12
L9W	14+20N	505009	5409187	246	-16	-8	-40	-14
L9W	14+40N	505024	5409198	246	-10	-2	-16	-4
L9W	14+60N	505031	5409218	252	-4	2	-8	4
L9W	14+80N	505042	5409235	260	-4	0	-10	0
L9W	15+00N	505055	5409250	265	-4	0	-10	0
L9W	15+20N	505070	5409266	271	-2	0	-12	6
L9W	15+40N	505087	5409275	274	0	2	-10	2
L9W	15+60N	505105	5409286	280	4	0	-6	0
L9W	15+80N	505119	5409300	282	6	2	-2	0
L9W	16+00N	505136	5409320	282	4	0	0	0
L9W	16+20N	505147	5409329	283	8	-4	2	-2
L9W	16+40N	505159	5409344	288	10	-4	6	-4
L9W	16+60N	505174	5409362	291	12	-10	6	-8
L9W	16+80N	505189	5409375	291	12	-6	10	-6
L9W	17+00N	505198	5409386	291	10	-6	10	-6
L9W	17+20N	505213	5409405	296	10	-10	8	-10
L9W	17+40N	505217	5409420	296	12	-12	10	-12
L9W	17+60N	505232	5409439	298	18	-10	16	-10
L9W	17+80N	505241	5409460	299	20	-10	22	-10
L9W	18+00N	505257	5409472	303	30	-14	30	-20
L9W	18+20N	505274	5409484	302	28	-10	32	-14
L9W	18+40N	505289	5409501	308	30	-10	34	-10
L9W	18+60N	505306	5409514	301	50	-10	64	-10

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L9W	18+80N	505322	5409522	296	38	-10	40	-10
L9W	19+00N	505339	5409538	296	50	-6	60	-6
L9W	19+20N	505357	5409546	291	50	-4	60	0
L9W	19+40N	505376	5409556	290	50	2	62	6
L9W	19+60N	505395	5409565	287	56	6	70	10
L9W	19+80N	505406	5409578	286	44	6	44	10
L9W	20+00N	505412	5409591	286	30	6	32	8
L9W	20+20N	505429	5409614	278	20	8	16	12
L9W	20+40N	505442	5409627	279	-16	0	-4	-2
L9W	20+60N	505457	5409644	283	-30	8	-50	6
L9W	20+80N	505472	5409656	283	-40	12	-70	6
L9W	21+00N	505484	5409666	289	-42	16	-80	12
L9W	21+20N	505504	5409674	293	-30	16	-84	14
L9W	21+40N	505525	5409689	294	-30	20	-80	16
L9W	21+60N	505541	5409701	295	-28	20	-78	20
L9W	21+80N	505554	5409716	292	-18	20	-40	20
L9W	22+00N	505569	5409732	298	-10	20	-26	22
L9W	22+20N	505582	5409745	299	-10	24	-24	18
L9W	22+40N	505597	5409760	302	-10	30	-18	20
L9W	22+60N	505609	5409774	305	-4	16	-12	20
L9W	22+80N	505620	5409790	311	-10	20	-20	30
L9W	23+00N	505632	5409806	318	-4	22	-12	30
L9W	23+20N	505642	5409815	325	-4	20	-8	26
L9W	23+40N	505662	5409830	337	2	18	2	26
L9W	23+60N	505682	5409840	337	4	20	2	28
L9W	23+80N	505697	5409855	337	0	12	-6	18
L9W	24+00N	505704	5409868	342	-4	12	-8	14
L9W	24+20N	505719	5409886	341	-2	12	-2	12
L9W	24+40N	505733	5409904	352	8	16	6	14
L9W	24+60N	505751	5409915	357	8	10	10	10
L9W	24+80N	505768	5409925	358	10	12	12	12
L9W	25+00N	505782	5409936	358	14	16	14	14
L10W	15+20N	505024	5409329	269	-10	-2	-8	0
L10W	15+40N	505032	5409335	271	-22	6	-20	6
L10W	15+60N	505044	5409350	278	-4	-4	-6	-4
L10W	15+80N	505058	5409362	282	-4	-4	-6	-4
L10W	16+00N	505070	5409373	284	-2	-6	-2	-8
L10W	16+20N	505080	5409388	286	2	-8	4	-8

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L10W	16+40N	505094	5409403	286	4	-8	4	-8
L10W	16+60N	505109	5409424	287	6	-10	4	-8
L10W	16+80N	505125	5409440	288	6	-10	6	-10
L10W	17+00N	505137	5409455	290	8	-12	10	-12
L10W	17+20N	505151	5409468	292	8	-12	10	-14
L10W	17+40N	505165	5409482	295	12	-14	12	-14
L10W	17+60N	505180	5409498	298	14	-18	12	-16
L10W	17+80N	505196	5409512	301	16	-16	16	-14
L10W	18+00N	505212	5409527	300	18	-14	20	-14
L10W	18+20N	505223	5409539	303	40	-12	42	-14
L10W	18+40N	505238	5409554	303	44	-12	46	-14
L10W	18+60N	505257	5409567	298	64	-12	62	-10
L10W	18+80N	505275	5409580	296	52	-4	52	-6
L10W	19+00N	505288	5409591	294	40	-2	42	0
L10W	19+20N	505301	5409606	294	40	2	42	2
L10W	19+40N	505313	5409621	295	36	8	38	6
L10W	19+60N	505324	5409635	295	30	10	32	8
L10W	19+80N	505337	5409652	287	12	10	14	8
L10W	20+00N	505346	5409665	296	-30	10	-32	10
L10W	20+20N	505360	5409681	300	-34	10	-32	10
L10W	20+40N	505374	5409700	302	-50	10	-52	12
L10W	20+60N	505386	5409714	300	-40	12	-42	14
L10W	20+80N	505401	5409726	298	-34	16	-36	16
L10W	21+00N	505418	5409742	300	-32	20	-32	18
L10W	21+20N	505433	5409757	302	-30	20	-32	22
L10W	21+40N	505447	5409769	304	-34	22	-32	24
L10W	21+60N	505461	5409784	306	-60	32	-58	30
L10W	21+80N	505479	5409796	308	-70	32	-68	34
L10W	22+00N	505496	5409811	308	-40	30	-44	32
L10W	22+20N	505509	5409821	310	-20	26	-22	28
L10W	22+40N	505526	5409827	312	-14	26	-12	26
L10W	22+60N	505542	5409841	315	-14	26	-14	26
L10W	22+80N	505563	5409851	317	-12	20	-14	22
L10W	23+00N	505579	5409861	326	-12	22	-10	20
L11W	10+00N	504588	5409031	212	-34	1	-71	2
L11W	10+20N	504590	5409043	212	-28	-3	-29	-4
L11W	10+40N	504599	5409055	212	-24	-6	-21	-4
L11W	10+60N	504605	5409065	215	-22	-6	-20	-2

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L11W	10+80N	504624	5409081	217	-20	-4	-16	-2
L11W	11+00N	504644	5409094	219	-18	2	-16	0
L11W	11+20N	504662	5409116	220	-26	2	-54	2
L11W	11+40N	504682	5409130	222	-24	0	-50	0
L11W	11+60N	504696	5409151	225	-18	6	-36	4
L11W	11+80N	504715	5409168	227	-16	4	-22	4
L11W	12+00N	504727	5409183	229	-10	6	-12	0
L11W	12+20N	504737	5409197	232	-6	4	-2	4
L11W	12+40N	504751	5409207	234	-6	4	-2	4
L11W	12+60N	504764	5409220	237	-6	2	-6	0
L11W	12+80N	504777	5409234	239	-4	4	-2	4
L11W	13+00N	504791	5409246	242	0	4	4	4
L11W	13+20N	504807	5409260	243	4	2	4	4
L11W	13+40N	504821	5409276	254	4	4	6	4
L11W	13+60N	504842	5409291	254	8	8	10	10
L11W	13+80N	504853	5409312	256	-6	0	-12	0
L11W	14+00N	504870	5409325	257	-4	0	-6	0
L11W	14+20N	504886	5409345	258	2	0	2	2
L11W	14+40N	504902	5409362	259	0	2	2	2
L11W	14+60N	504916	5409376	260	4	2	6	0
L11W	14+80N	504928	5409389	261	4	2	8	2
L11W	15+00N	504935	5409401	263	8	0	10	0
L11W	15+20N	504948	5409409	259	10	-6	12	-2
L11W	15+40N	504958	5409419	261	14	-6	16	-12
L11W	15+60N	504975	5409427	270	18	-8	20	-14
L11W	15+80N	504997	5409439	271	16	-10	16	-14
L11W	16+00N	505010	5409453	273	14	-10	12	-12
L11W	16+20N	505023	5409469	276	14	-4	12	-10
L11W	16+40N	505034	5409484	278	20	-8	24	-12
L11W	16+60N	505048	5409502	283	20	-4	30	-8
L11W	16+80N	505063	5409518	289	40	-8	50	-16
L11W	17+00N	505081	5409527	295	30	-4	34	-6
L11W	17+20N	505090	5409542	300	26	-10	28	-10
L11W	17+40N	505100	5409561	303	28	-8	26	-10
L11W	17+60N	505108	5409585	309	30	-6	30	-8
L11W	17+80N	505115	5409602	306	40	-8	56	-10
L11W	18+00N	505133	5409616	307	70	2	82	2
L11W	18+20N	505147	5409636	307	120	6	100	8

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L11W	18+40N	505160	5409640	308	80	4	110	6
L11W	18+60N	505178	5409654	310	50	4	56	4
L11W	18+80N	505193	5409668	309	60	10	71	10
L11W	19+00N	505211	5409678	306	36	4	50	4
L11W	19+20N	505221	5409692	298	30	6	28	6
L11W	19+40N	505238	5409709	303	-30	-2	-40	-10
L11W	19+60N	505255	5409717	314	-20	-4	-26	0
L11W	19+80N	505270	5409735	317	-30	8	-60	-4
L11W	20+00N	505279	5409752	323	-20	10	-40	10
L11W	20+20N	505296	5409758	322	-46	18	-80	30
L11W	20+40N	505309	5409773	326	-44	20	-70	26
L11W	20+60N	505329	5409782	323	-18	16	-44	20
L11W	20+80N	505353	5409795	315	-16	16	-36	18
L11W	21+00N	505371	5409804	312	-16	12	-30	20
L11W	21+20N	505386	5409819	315	-12	14	-16	16
L11W	21+40N	505396	5409830	316	-10	14	-12	16
L11W	21+60N	505407	5409851	315	-6	12	-12	16
L11W	21+80N	505420	5409877	314	4	16	-12	16
L11W	22+00N	505425	5409895	312	12	20	-4	22
L11W	22+20N	505433	5409911	312	14	20	-8	16
L11W	22+40N	505449	5409926	312	-6	10	-6	20
L11W	22+60N	505462	5409935	316	6	12	8	18
L11W	22+80N	505481	5409946	327	8	10	4	20
L11W	23+00N	505497	5409970	330	4	10	4	12
L11W	23+20N	505500	5409982	338	4	12	0	16
L11W	23+40N	505513	5409998	344	10	10	10	20
L11W	23+60N	505524	5410013	348	30	20	34	24
L11W	23+80N	505545	5410031	350	4	6	12	16
L11W	24+00N	505558	5410040	358	14	12	18	12
L11W	24+20N	505581	5410051	362	10	8	12	14
L11W	24+40N	505594	5410063	363	16	10	26	16
L11W	24+60N	505613	5410069	370	20	10	26	14
L11W	24+80N	505626	5410083	376	18	10	24	20
L11W	25+00N	505638	5410099	380	18	10	20	10
L11W	25+20N	505647	5410118	379	20	8	22	12
L11W	25+40N	505650	5410131	381	18	10	20	10
L12W	14+00N	504789	5409397	246	-4	-4	-8	-4
L12W	14+20N	504802	5409410	248	-4	-6	-6	-10

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L12W	14+40N	504814	5409424	252	2	-8	4	-12
L12W	14+60N	504826	5409439	254	4	-8	4	-14
L12W	14+80N	504838	5409449	259	6	-10	8	-14
L12W	15+00N	504853	5409461	259	10	-10	12	-10
L12W	15+20N	504862	5409469	258	10	-10	12	-10
L12W	15+40N	504880	5409486	262	10	-10	12	-12
L12W	15+60N	504901	5409505	262	10	-10	12	-16
L12W	15+80N	504914	5409521	263	18	-12	30	-18
L12W	16+00N	504927	5409534	267	32	-18	42	-26
L12W	16+20N	504944	5409550	267	30	-12	40	-20
L12W	16+40N	504960	5409563	263	30	-12	36	-20
L12W	16+60N	504972	5409578	262	28	-8	30	-8
L12W	16+80N	504990	5409590	272	30	-8	40	-8
L12W	17+00N	505002	5409603	278	34	-6	46	-10
L12W	17+20N	505014	5409616	282	40	-8	54	-18
L12W	17+40N	505027	5409629	286	40	-8	50	-4
L12W	17+60N	505041	5409642	290	40	-4	40	0
L12W	17+80N	505057	5409656	294	40	-2	40	0
L12W	18+00N	505073	5409670	292	70	0	52	2
L12W	18+20N	505087	5409686	290	50	6	50	2
L12W	18+40N	505103	5409703	288	50	14	50	2
L12W	18+60N	505115	5409714	287	40	12	26	2
L12W	18+80N	505131	5409727	285	24	8	16	4
L12W	19+00N	505141	5409739	286	-26	-4	-24	4
L12W	19+20N	505153	5409754	292	-34	4	-42	4
L12W	19+40N	505165	5409768	299	-40	10	-60	4
L12W	19+60N	505183	5409782	301	-36	12	-60	10
L12W	19+80N	505194	5409789	302	-32	20	-50	20
L12W	20+00N	505206	5409801	302	-26	20	-42	22
L12W	20+20N	505216	5409807	310	-20	20	-46	24
L12W	20+40N	505232	5409819	317	-20	28	-40	28
L12W	20+60N	505245	5409837	320	-10	28	-30	28
L12W	20+80N	505260	5409849	324	-10	22	-20	22
L12W	21+00N	505273	5409864	330	-10	22	-14	22
L12W	21+20N	505290	5409877	327	-8	20	-10	20
L12W	21+40N	505300	5409890	327	-8	16	-10	16
L12W	21+60N	505311	5409903	327	-8	12	-10	12
L12W	21+80N	505323	5409920	330	-6	14	-8	14

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L12W	22+00N	505335	5409932	328	4	16	-8	16
L12W	22+20N	505347	5409943	326	6	12	4	16
L13W	10+00N	504431	5409169	213	16	2	14	2
L13W	10+20N	504454	5409182	207	80	18	80	20
L13W	10+40N	504473	5409188	206	20	2	22	2
L13W	10+60N	504486	5409202	204	16	4	14	4
L13W	10+80N	504500	5409216	207	-50	-10	-48	-12
L13W	11+00N	504513	5409228	209	-30	-4	-36	-4
L13W	11+20N	504527	5409239	213	-4	4	-4	2
L13W	11+40N	504545	5409248	220	-10	4	-8	4
L13W	11+60N	504563	5409266	218	-8	0	-8	2
L13W	11+80N	504575	5409280	217	-4	0	-6	0
L13W	12+00N	504587	5409295	219	-6	4	-4	4
L13W	12+20N	504602	5409311	221	2	2	4	2
L13W	12+40N	504611	5409325	222	4	2	4	2
L13W	12+60N	504628	5409344	223	-2	0	-2	2
L13W	12+80N	504643	5409354	223	8	4	12	4
L13W	13+00N	504649	5409365	224	-4	-2	-4	0
L13W	13+20N	504656	5409389	229	4	-2	8	-2
L13W	13+40N	504672	5409413	230	8	0	10	0
L13W	13+60N	504688	5409422	235	4	-2	6	-2
L13W	13+80N	504698	5409438	237	4	-6	6	-4
L13W	14+00N	504711	5409448	238	4	-6	6	-4
L13W	14+20N	504727	5409464	239	6	-6	12	-6
L13W	14+40N	504744	5409482	238	12	-4	16	-4
L13W	14+60N	504755	5409499	239	8	-8	10	-8
L13W	14+80N	504772	5409515	249	22	10	24	-10
L13W	15+00N	504786	5409524	251	20	-4	22	-4
L13W	15+20N	504800	5409542	252	20	-8	24	-10
L13W	15+40N	504810	5409553	254	30	-6	36	-8
L13W	15+60N	504825	5409561	262	24	-4	26	-6
L13W	15+80N	504841	5409575	263	44	-10	44	-8
L13W	16+00N	504853	5409585	264	44	-8	46	-10
L13W	16+20N	504875	5409602	265	48	-8	50	-8
L13W	16+40N	504885	5409620	262	56	-18	60	-20
L13W	16+60N	504902	5409637	261	80	-8	84	-12
L13W	16+80N	504921	5409646	258	70	-10	76	-8
L13W	17+00N	504932	5409661	256	60	-4	64	-6

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L13W	17+20N	504946	5409676	255	78	-2	80	-2
L13W	17+40N	504958	5409691	256	70	-2	74	-4
L13W	17+60N	504968	5409709	255	78	10	74	10
L13W	17+80N	504983	5409723	255	100	10	110	12
L13W	18+00N	505002	5409725	260	80	10	84	10
L13W	18+20N	505019	5409744	256	10	2	14	0
L13W	18+40N	505032	5409755	259	-30	-4	-28	-2
L13W	18+60N	505039	5409773	264	-30	4	-34	6
L13W	18+80N	505051	5409797	271	-40	10	-42	12
L13W	19+00N	505065	5409810	276	-30	12	-34	14
L13W	19+20N	505083	5409825	287	-30	16	-32	18
L13W	19+40N	505102	5409834	291	-28	16	-30	16
L13W	19+60N	505111	5409848	293	-16	16	-18	14
L13W	19+80N	505132	5409858	300	-14	22	-16	20
L13W	20+00N	505137	5409867	300	-14	22	-16	20
L13W	20+20N	505157	5409887	298	-4	26	-2	24
L13W	20+40N	505166	5409905	296	-4	18	-2	18
L13W	20+60N	505186	5409921	296	2	18	4	16
L13W	20+80N	505195	5409933	298	4	16	6	16
L13W	21+00N	505205	5409947	300	4	16	6	14
L13W	21+20N	505220	5409967	301	8	12	16	12
L13W	21+40N	505236	5409980	306	8	20	16	22
L13W	21+60N	505250	5409985	311	8	20	10	20
L13W	21+80N	505273	5409997	315	18	20	20	20
L13W	22+00N	505288	5410011	317	10	12	12	12
L13W	22+20N	505297	5410030	317	14	16	16	18
L13W	22+40N	505306	5410053	316	20	16	16	16
L13W	22+60N	505313	5410070	315	18	18	26	16
L13W	22+80N	505321	5410082	317	28	16	34	16
L13W	23+00N	505339	5410096	320	50	20	52	20
L13W	23+20N	505366	5410105	321	60	20	62	18
L13W	23+40N	505383	5410114	322	46	16	52	16
L13W	23+60N	505401	5410131	325	30	12	34	14
L13W	23+80N	505404	5410145	332	24	12	26	12
L13W	24+00N	505415	5410160	338	20	10	22	10
L13W	24+20N	505427	5410176	344	24	10	24	8
L13W	24+40N	505440	5410190	349	26	8	50	8
L13W	24+60N	505456	5410197	358	18	4	20	4

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L13W	24+80N	505475	5410215	367	16	4	18	4
L13W	25+00N	505494	5410230	375	16	8	16	6
L14W	13+00N	504592	5409444	223	-10	-6	-10	-8
L14W	13+20N	504602	5409456	224	-8	-8	-8	-8
L14W	13+40N	504615	5409466	224	-6	-8	-8	-8
L14W	13+60N	504630	5409479	225	-4	-8	-6	-10
L14W	13+80N	504644	5409493	225	-2	-8	-4	-10
L14W	14+00N	504659	5409507	227	0	-8	-4	-20
L14W	14+20N	504673	5409523	229	10	-10	12	-22
L14W	14+40N	504689	5409534	232	16	-8	26	-24
L14W	14+60N	504707	5409546	236	18	-8	28	-20
L14W	14+80N	504720	5409557	239	20	-8	30	-18
L14W	15+00N	504734	5409572	244	22	-8	26	-10
L14W	15+20N	504747	5409586	247	24	-6	24	-8
L14W	15+40N	504763	5409602	248	26	-8	24	-10
L14W	15+60N	504776	5409616	251	26	-10	26	-14
L14W	15+80N	504789	5409631	253	36	-10	40	-18
L14W	16+00N	504801	5409644	255	34	-10	30	-28
L14W	16+20N	504820	5409661	260	30	-12	30	-20
L14W	16+40N	504832	5409679	258	32	-8	34	-14
L14W	16+60N	504844	5409692	260	34	-6	36	-8
L14W	16+80N	504857	5409705	264	40	-6	40	-2
L14W	17+00N	504870	5409719	258	60	4	60	4
L14W	17+20N	504883	5409736	258	60	8	62	8
L14W	17+40N	504895	5409750	256	56	4	50	6
L14W	17+60N	504909	5409764	256	26	4	34	4
L14W	17+80N	504922	5409780	256	-10	2	-12	4
L14W	18+00N	504938	5409796	256	-40	0	-46	0
L14W	18+20N	504955	5409804	260	-60	0	-80	-4
L14W	18+40N	504970	5409818	264	-60	10	-80	2
L14W	18+60N	504987	5409827	270	-40	10	-50	10
L14W	18+80N	505003	5409842	276	-30	10	-42	12
L14W	19+00N	505013	5409857	278	-30	18	-34	20
L14W	19+20N	505027	5409867	279	-20	18	-20	22
L14W	19+40N	505043	5409883	285	-18	20	-20	22
L14W	19+60N	505053	5409902	287	-16	22	-20	22
L14W	19+80N	505065	5409921	290	-10	30	-14	32
L14W	20+00N	505078	5409937	293	-10	20	-8	26

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L14W	20+20N	505087	5409955	295	-10	20	-8	20
L14W	20+40N	505098	5409972	302	-16	20	-20	20
L14W	20+60N	505113	5409987	300	-14	20	-20	22
L14W	20+80N	505128	5410000	302	-10	24	-20	18
L14W	21+00N	505141	5410013	304	-10	26	-8	16
L14W	21+20N	505153	5410027	306	-10	20	-2	14
L14W	21+40N	505169	5410040	308	4	10	2	10
L15W	10+00N	504283	5409292	197	-30	12	-32	6
L15W	10+20N	504295	5409312	193	-15	8	-10	4
L15W	10+40N	504314	5409331	193	10	8	15	4
L15W	10+60N	504338	5409343	194	56	4	58	2
L15W	10+80N	504349	5409356	196	30	-2	40	-2
L15W	11+00N	504362	5409375	196	-36	-2	-44	-4
L15W	11+20N	504376	5409382	195	-90	2	-86	4
L15W	11+40N	504400	5409392	197	-40	6	-60	6
L15W	11+60N	504420	5409400	198	-12	-2	8	-12
L15W	11+80N	504436	5409411	194	26	-4	72	-4
L15W	12+00N	504453	5409428	200	2	-4	16	-10
L15W	12+20N	504466	5409445	205	-10	-8	0	-16
L15W	12+40N	504474	5409459	209	-10	-8	-6	-20
L15W	12+60N	504489	5409468	216	-16	-10	-20	-30
L15W	12+80N	504512	5409477	218	-10	-10	-8	-34
L15W	13+00N	504529	5409489	221	-8	-10	-10	-26
L15W	13+20N	504539	5409508	226	-2	-8	0	-28
L15W	13+40N	504557	5409518	229	6	-6	8	-18
L15W	13+60N	504575	5409528	229	2	-4	0	-18
L15W	13+80N	504587	5409545	232	4	-4	4	-12
L15W	14+00N	504593	5409567	220	8	-4	12	-10
L15W	14+20N	504602	5409585	230	16	0	18	-8
L15W	14+40N	504613	5409602	231	20	-2	24	-16
L15W	14+60N	504626	5409626	231	18	-16	26	-30
L15W	14+80N	504638	5409644	223	30	-8	40	-16
L15W	15+00N	504647	5409658	232	48	-4	68	-16
L15W	15+20N	504661	5409668	234	48	-16	88	-18
L15W	15+40N	504678	5409677	238	55	-10	86	-20
L15W	15+60N	504700	5409685	244	50	-6	80	-20
L15W	15+80N	504715	5409699	246	44	-6	58	-10
L15W	16+00N	504727	5409713	249	50	-2	70	-8

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L15W	16+20N	504747	5409732	250	50	0	60	-10
L15W	16+40N	504756	5409751	252	78	10	80	10
L15W	16+60N	504769	5409762	253	100	12	102	10
L15W	16+80N	504788	5409772	251	88	10	96	12
L15W	17+00N	504801	5409788	253	68	10	8	4
L15W	17+20N	504817	5409793	255	18	4	16	4
L15W	17+40N	504833	5409800	259	-18	-2	-24	-6
L15W	17+60N	504855	5409813	259	-30	0	-46	-10
L15W	17+80N	504868	5409820	262	-30	-2	-40	-4
L15W	18+00N	504885	5409842	270	-26	10	-44	-2
L15W	18+20N	504899	5409850	272	-34	10	-60	-4
L15W	18+40N	504910	5409869	274	-28	10	-54	-2
L15W	18+60N	504924	5409886	281	-24	10	-40	0
L15W	18+80N	504936	5409900	278	-24	10	-44	6
L15W	19+00N	504947	5409912	281	-24	12	-34	8
L15W	19+20N	504962	5409931	283	-20	12	-24	8
L15W	19+40N	504983	5409941	289	-16	18	-24	-18
L15W	19+60N	504996	5409956	292	-10	20	-20	20
L15W	19+80N	505013	5409966	293	-2	20	-10	20
L15W	20+00N	505029	5409975	296	-4	12	-6	12
L15W	20+20N	505045	5409994	297	-2	10	-6	12
L15W	20+40N	505053	5410008	298	-2	10	-4	8
L15W	20+60N	505060	5410029	299	4	12	-4	10
L15W	20+80N	505069	5410051	300	6	12	6	14
L15W	21+00N	505077	5410069	301	8	6	6	-2
L15W	21+20N	505082	5410088	301	12	12	18	18
L15W	21+40N	505096	5410101	301	12	10	36	10
L15W	21+60N	505113	5410114	301	12	10	20	10
L15W	21+80N	505131	5410126	303	12	10	14	8
L15W	22+00N	505149	5410142	301	16	6	12	-4
L15W	22+20N	505160	5410159	304	28	12	40	16
L15W	22+40N	505168	5410170	306	24	12	26	10
L15W	22+60N	505192	5410183	310	28	12	40	10
L15W	22+80N	505214	5410194	319	26	10	30	4
L15W	23+00N	505225	5410204	325	22	8	20	8
L15W	23+20N	505240	5410220	335	20	10	16	2
L15W	23+40N	505246	5410238	341	34	12	38	12
L15W	23+60N	505259	5410256	345	34	10	34	10

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L15W	23+80N	505272	5410276	347	34	10	42	10
L15W	24+00N	505283	5410295	355	44	10	58	10
L15W	24+20N	505295	5410304	361	38	8	42	8
L15W	24+40N	505316	5410316	359	30	4	40	8
L15W	24+60N	505328	5410326	360	30	4	42	8
L15W	24+80N	505339	5410337	369	20	4	26	4
L15W	25+00N	505351	5410350	372	20	8	24	8
L16W	11+60N	504311	5409482	188	-4	10	-8	10
L16W	11+80N	504325	5409503	190	-10	4	-12	9
L16W	12+00N	504341	5409519	192	-10	4	-30	8
L16W	12+20N	504355	5409534	189	-24	4	-30	-10
L16W	12+40N	504374	5409544	192	-46	4	-30	-14
L16W	12+60N	504393	5409554	193	-70	8	-74	-20
L16W	12+80N	504413	5409569	194	-30	-20	-20	-20
L16W	13+00N	504426	5409586	196	-20	-16	4	-10
L16W	13+20N	504436	5409593	198	2	-10	10	-12
L16W	13+40N	504449	5409609	202	4	-6	20	-10
L16W	13+60N	504465	5409626	209	8	-6	21	-8
L16W	13+80N	504482	5409638	212	12	-5	22	-8
L16W	14+00N	504496	5409655	212	12	-4	23	-8
L16W	14+20N	504506	5409666	214	22	-6	24	-10
L16W	14+40N	504519	5409679	214	26	-8	40	-10
L16W	14+60N	504536	5409698	216	30	-8	40	-10
L16W	14+80N	504545	5409712	216	34	-8	40	-10
L16W	15+00N	504558	5409726	220	38	-10	44	-12
L16W	15+20N	504572	5409743	222	40	-6	50	-10
L16W	15+40N	504585	5409755	223	40	-2	60	-8
L16W	15+60N	504600	5409771	223	50	2	64	0
L16W	15+80N	504611	5409789	224	70	10	82	10
L16W	16+00N	504624	5409798	226	80	10	100	12
L16W	16+20N	504644	5409811	228	30	10	32	12
L16W	16+40N	504659	5409824	231	-4	4	-10	4
L16W	16+60N	504675	5409839	236	-30	2	-36	-4
L16W	16+80N	504686	5409851	239	-40	2	-60	-4
L16W	17+00N	504702	5409865	243	-40	8	-70	4
L16W	17+20N	504715	5409879	241	-46	10	-60	4
L16W	17+40N	504733	5409892	243	-30	10	-40	8
L16W	17+60N	504746	5409907	248	-24	16	-32	14

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L16W	17+80N	504763	5409926	250	-20	20	-30	20
L16W	18+00N	504776	5409941	254	-20	22	-30	20
L16W	18+20N	504788	5409955	257	-20	12	-24	14
L16W	18+40N	504800	5409968	259	-14	12	-20	14
L16W	18+60N	504813	5409982	261	-10	16	-20	12
L16W	18+80N	504823	5409995	264	-10	16	-16	11
L16W	19+00N	504847	5410008	268	-6	20	-10	10
L16W	19+20N	504862	5410026	274	-4	20	-8	16
L16W	19+40N	504876	5410039	283	-8	20	-20	20
L16W	19+60N	504886	5410052	286	-10	20	-30	20
L16W	19+80N	504900	5410066	289	-10	20	-30	21
L16W	20+00N	504914	5410079	290	-6	18	-30	22
L16W	20+20N	504929	5410089	292	-2	10	-10	4
L16W	20+40N	504939	5410099	293	0	6	2	4
L16W	20+60N	504951	5410111	295	2	4	2	2
L16W	20+80N	504964	5410126	297	2	4	2	2
L16W	21+00N	504976	5410142	300	4	2	4	2
L17W	0+00	504289	5409604	184	-10	10	-4	10
L17W	0+20N	504306	5409619	187	-30	2	-28	12
L17W	0+40N	504317	5409632	189	-50	0	-52	4
L17W	0+60N	504333	5409644	188	-55	-20	-60	-28
L17W	0+80N	504349	5409658	188	-40	-20	-42	-18
L17W	1+00N	504357	5409675	188	-20	-20	-18	-18
L17W	1+20N	504375	5409685	192	-10	-16	-14	-20
L17W	1+40N	504389	5409701	195	8	-20	36	-26
L17W	1+60N	504399	5409717	196	20	-8	40	-18
L17W	1+80N	504417	5409732	198	30	-4	60	-16
L17W	2+00N	504431	5409744	200	36	0	64	-14
L17W	2+20N	504442	5409762	201	36	0	60	-10
L17W	2+40N	504454	5409779	204	28	-4	40	-6
L17W	2+60N	504471	5409790	210	40	0	70	-6
L17W	2+80N	504487	5409804	211	40	4	50	4
L17W	3+00N	504498	5409820	211	56	10	48	12
L17W	3+20N	504519	5409833	215	30	8	40	8
L17W	3+40N	504532	5409838	213	0	2	4	0
L17W	3+60N	504542	5409858	220	-36	-4	-40	-10
L17W	3+80N	504558	5409871	221	-36	-2	-40	-8
L17W	4+00N	504568	5409886	227	-30	0	-30	0

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L17W	4+20N	504578	5409906	230	-30	6	-30	4
L17W	4+40N	504594	5409916	235	-20	8	-24	6
L17W	4+60N	504611	5409931	234	-16	10	-18	10
L17W	4+80N	504629	5409939	239	-20	12	-26	12
L17W	5+00N	504643	5409954	233	-10	14	-8	14
L17W	5+20N	504657	5409971	233	-2	20	0	16
L17W	5+40N	504674	5409982	233	8	21	8	16
L17W	5+60N	504685	5409999	236	-4	14	-8	16
L17W	5+80N	504698	5410013	237	-2	16	-4	12
L17W	6+00N	504706	5410027	240	-6	14	-8	10
L17W	6+20N	504723	5410046	247	4	18	-2	18
L17W	6+40N	504737	5410061	252	10	16	2	20
L17W	6+60N	504755	5410070	258	4	10	4	10
L17W	6+80N	504766	5410086	261	0	8	-2	8
L17W	7+00N	504778	5410101	274	-2	12	-6	6
L17W	7+20N	504795	5410117	277	6	10	4	8
L17W	7+40N	504813	5410127	280	-4	10	-10	8
L17W	7+60N	504828	5410138	283	-4	8	-26	8
L17W	7+80N	504843	5410150	288	6	10	-10	6
L17W	8+00N	504858	5410163	289	8	10	-10	-2
L17W	8+20N	504873	5410180	289	10	12	10	10
L17W	8+40N	504889	5410188	292	10	6	6	2
L17W	8+60N	504898	5410208	292	10	8	6	0
L17W	8+80N	504911	5410223	297	12	6	14	6
L17W	9+00N	504922	5410237	301	12	6	12	6
L17W	9+20N	504935	5410255	300	16	6	18	6
L17W	9+40N	504948	5410273	304	14	6	16	6
L17W	9+60N	504959	5410284	306	16	2	20	2
L17W	9+80N	504974	5410301	310	18	4	20	2
L17W	10+00N	504990	5410318	315	36	6	60	12
L17W	10+20N	505006	5410326	320	36	10	50	8
L17W	10+40N	505024	5410338	320	30	8	40	2
L17W	10+60N	505033	5410353	322	28	8	38	4
L17W	10+80N	505053	5410367	327	36	6	50	6
L17W	11+00N	505066	5410379	330	36	10	60	10
L17W	11+20N	505083	5410389	340	30	10	40	10
L17W	11+40N	505102	5410398	345	60	12	80	8
L17W	11+60N	505115	5410410	345	30	8	42	8

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L17W	11+80N	505129	5410430	345	16	0	12	-4
L17W	12+00N	505136	5410440	346	16	4	16	-2
L17W	12+20N	505150	5410464	354	24	4	50	0
L17W	12+40N	505159	5410477	357	30	4	42	0
L17W	12+60N	505182	5410492	368	12	2	24	-6
L17W	12+80N	505191	5410497	376	10	0	12	-8
L17W	13+00N	505210	5410513	377	4	-2	4	-10
L17W	13+20N	505222	5410534	380	10	-4	18	-10
L17W	13+40N	505243	5410550	379	8	-2	16	-10
L17W	13+60N	505260	5410560	378	8	-2	16	-10
L17W	13+80N	505273	5410568	375	8	-2	8	-10
L17W	14+00N	505289	5410580	377	10	0	16	-4
L17W	14+20N	505298	5410598	374	4	0	8	-4
L17W	14+40N	505315	5410612	382	4	-2	4	-4
L17W	14+60N	505325	5410627	381	8	-2	14	-2
L17W	14+80N	505334	5410644	385	8	-2	14	-2
L17W	15+00N	505352	5410655	389	18	0	18	-8
L18W	13+00N	504231	5409716	189	-20	-20	-16	4
L18W	13+20N	504239	5409729	190	40	-10	30	8
L18W	13+40N	504254	5409740	191	28	10	30	10
L18W	13+60N	504271	5409751	191	50	10	40	-20
L18W	13+80N	504285	5409764	193	-10	-10	-40	-26
L18W	14+00N	504295	5409774	192	-10	-28	-14	-30
L18W	14+20N	504309	5409788	193	-10	-30	-8	-40
L18W	14+40N	504325	5409801	193	-8	-40	10	-30
L18W	14+60N	504340	5409818	194	2	-8	10	-20
L18W	14+80N	504352	5409832	194	12	-2	14	-10
L18W	15+00N	504362	5409847	197	20	4	26	2
L18W	15+20N	504378	5409862	199	-6	6	-4	4
L18W	15+40N	504396	5409874	203	-32	6	-40	4
L18W	15+60N	504408	5409890	205	-30	6	-52	2
L18W	15+80N	504424	5409904	205	-24	10	-26	2
L18W	16+00N	504436	5409921	205	-20	20	-28	10
L18W	16+20N	504447	5409932	207	-10	28	-30	12
L18W	16+40N	504465	5409944	207	-16	20	-18	18
L18W	16+60N	504478	5409960	208	-18	12	-20	20
L18W	16+80N	504487	5409974	207	-20	12	-22	20
L18W	17+00N	504495	5409994	207	-14	12	10	20

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L18W	17+20N	504511	5410012	207	-4	22	14	30
L18W	17+40N	504521	5410028	208	4	26	17	29
L18W	17+60N	504537	5410040	212	10	28	20	28
L18W	17+80N	504553	5410054	219	10	24	20	26
L18W	18+00N	504562	5410067	224	6	14	10	14
L18W	18+20N	504576	5410080	227	4	13	6	13
L18W	18+40N	504595	5410093	232	4	12	6	12
L18W	18+60N	504611	5410107	236	-6	12	-10	12
L18W	18+80N	504629	5410124	240	-8	11	-10	6
L18W	19+00N	504646	5410135	241	-10	10	-10	8
L18W	19+20N	504660	5410149	244	-8	10	-10	10
L18W	19+40N	504676	5410158	247	-6	10	-10	14
L18W	19+60N	504694	5410168	248	-4	10	-10	8
L18W	19+80N	504707	5410185	249	-6	6	-8	6
L18W	20+00N	504722	5410196	255	-6	6	-8	6
L18W	20+20N	504733	5410213	257	-4	6	-4	8
L18W	20+40N	504745	5410233	261	0	8	-2	8
L18W	20+60N	504756	5410248	264	2	8	4	8
L18W	20+80N	504772	5410258	272	3	10	6	8
L18W	21+00N	504782	5410267	276	4	8	6	8
L19W	0+00	504271	5409889	188	-34	16	-28	18
L19W	0+20N	504287	5409897	177	-40	6	-38	10
L19W	0+40N	504303	5409914	177	-70	-4	-72	-6
L19W	0+60N	504308	5409931	180	-50	2	-46	4
L19W	0+80N	504321	5409947	180	-34	6	-32	-2
L19W	1+00N	504333	5409963	182	-30	8	-20	4
L19W	1+20N	504352	5409976	183	-22	14	-20	2
L19W	1+40N	504368	5409992	186	-8	20	-8	8
L19W	1+60N	504382	5410001	190	-18	-6	-30	-8
L19W	1+80N	504397	5410014	187	-40	-10	-60	-16
L19W	2+00N	504411	5410028	189	-20	-10	-40	-18
L19W	2+20N	504426	5410046	193	10	20	2	10
L19W	2+40N	504436	5410059	196	10	12	6	4
L19W	2+60N	504444	5410075	197	6	10	-4	-2
L19W	2+80N	504461	5410090	198	10	12	10	10
L19W	3+00N	504479	5410100	193	26	16	40	12
L19W	3+20N	504500	5410115	195	-6	2	-4	-2
L19W	3+40N	504513	5410131	199	16	8	18	6

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L19W	3+60N	504521	5410146	203	2	8	12	2
L19W	3+80N	504531	5410161	208	2	4	8	0
L19W	4+00N	504546	5410175	210	6	8	10	8
L19W	4+20N	504563	5410188	218	-2	4	0	4
L19W	4+40N	504572	5410205	223	4	8	8	4
L19W	4+60N	504591	5410218	225	10	10	16	8
L19W	4+80N	504604	5410233	227	-2	-4	-4	-8
L19W	5+00N	504619	5410242	232	-4	-4	-6	-10
L19W	5+20N	504642	5410253	235	-6	4	-8	-8
L19W	5+40N	504656	5410267	239	4	2	2	-6
L19W	5+60N	504663	5410286	244	4	2	4	-4
L19W	5+80N	504677	5410301	249	8	4	6	-2
L19W	6+00N	504692	5410309	254	8	4	6	-4
L19W	6+20N	504710	5410326	256	8	4	8	-2
L19W	6+40N	504716	5410345	260	14	4	14	-2
L19W	6+60N	504732	5410358	264	16	4	14	-2
L19W	6+80N	504755	5410367	270	16	4	16	-10
L19W	7+00N	504766	5410372	278	30	4	28	-10
L19W	7+20N	504787	5410390	291	26	4	30	-10
L19W	7+40N	504797	5410405	291	18	4	24	-10
L19W	7+60N	504812	5410420	297	18	2	16	-6
L19W	7+80N	504826	5410436	297	20	2	22	-8
L19W	8+00N	504837	5410450	299	24	6	24	-4
L19W	8+20N	504847	5410469	301	20	4	22	-4
L19W	8+40N	504859	5410487	306	26	4	30	-2
L19W	8+60N	504871	5410506	311	28	4	28	0
L19W	8+80N	504884	5410519	314	30	6	20	-2
L19W	9+00N	504902	5410527	315	32	6	54	2
L19W	9+20N	504918	5410547	319	36	4	58	-10
L19W	9+40N	504929	5410555	321	28	4	36	-4
L19W	9+60N	504944	5410570	320	40	4	48	-2
L19W	9+80N	504962	5410578	327	50	4	56	0
L19W	10+00N	504982	5410587	330	24	6	24	-4
L19W	10+20N	504996	5410605	333	18	0	20	-4
L19W	10+40N	505009	5410618	334	20	-2	18	-6
L19W	10+60N	505026	5410628	334	16	-2	16	-10
L19W	10+80N	505035	5410648	331	12	-4	8	-6
L19W	11+00N	505043	5410667	332	16	-4	10	-4

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L19W	11+20N	505049	5410688	325	18	2	14	0
L19W	11+40N	505067	5410700	320	18	2	18	-2
L19W	11+60N	505080	5410717	332	10	2	8	-2
L19W	11+80N	505097	5410729	337	4	0	6	-6
L19W	12+00N	505111	5410740	335	6	-2	10	-4
L19W	12+20N	505129	5410753	337	4	0	6	-4
L19W	12+40N	505137	5410771	345	6	0	10	-2
L19W	12+60N	505148	5410785	349	8	2	10	-2
L19W	12+80N	505168	5410795	358	10	4	14	-4
L19W	13+00N	505182	5410805	362	12	2	18	-4
L19W	13+20N	505199	5410824	372	8	4	14	0
L19W	13+40N	505210	5410841	376	10	2	12	0
L19W	13+60N	505229	5410857	377	12	2	12	-2
L19W	13+80N	505238	5410869	382	8	2	12	0
L19W	14+00N	505246	5410883	386	8	4	12	0
L21W	0+00	504234	5410126	201	-22	26	-22	24
L21W	0+20N	504249	5410130	201	-12	20	-14	14
L21W	0+40N	504266	5410138	208	0	16	20	6
L21W	0+60N	504285	5410150	210	4	14	8	10
L21W	0+80N	504294	5410167	212	8	12	16	10
L21W	1+00N	504309	5410188	217	14	12	20	12
L21W	1+20N	504321	5410198	220	26	22	40	14
L21W	1+40N	504338	5410210	217	26	20	36	12
L21W	1+60N	504351	5410221	215	26	18	26	10
L21W	1+80N	504368	5410239	216	-4	-2	0	-4
L21W	2+00N	504375	5410256	220	-10	-2	2	-8
L21W	2+20N	504389	5410270	222	-2	8	2	0
L21W	2+40N	504402	5410281	223	16	12	20	14
L21W	2+60N	504415	5410297	221	36	30	74	34
L21W	2+80N	504437	5410306	222	40	28	70	26
L21W	3+00N	504450	5410319	222	26	14	34	12
L21W	3+20N	504464	5410333	221	14	6	26	4
L21W	3+40N	504481	5410349	221	-8	2	4	2
L21W	3+60N	504495	5410361	220	2	2	12	-2
L21W	3+80N	504510	5410376	224	-14	-10	-6	-10
L21W	4+00N	504520	5410394	228	-4	-2	8	-2
L21W	4+20N	504536	5410408	236	-2	0	10	-2
L21W	4+40N	504550	5410424	242	8	0	12	0

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L21W	4+60N	504563	5410436	247	8	2	12	-2
L21W	4+80N	504574	5410454	251	14	2	18	-2
L21W	5+00N	504585	5410473	254	12	4	20	-2
L21W	5+20N	504594	5410489	254	18	4	32	0
L21W	5+40N	504609	5410505	255	26	6	46	-6
L21W	5+60N	504626	5410515	260	28	4	34	-10
L21W	5+80N	504644	5410522	265	20	4	22	-6
L21W	6+00N	504664	5410536	269	20	6	30	-8
L21W	6+20N	504675	5410552	270	16	4	16	-2
L21W	6+40N	504686	5410570	274	24	6	28	-4
L21W	6+60N	504702	5410582	279	30	4	46	-6
L21W	6+80N	504717	5410592	282	20	4	26	-2
L21W	7+00N	504734	5410610	288	26	4	26	-2
L21W	7+20N	504748	5410619	290	24	2	30	-4
L21W	7+40N	504759	5410635	295	24	4	20	0
L21W	7+60N	504772	5410650	302	22	6	20	2
L21W	7+80N	504783	5410667	314	22	6	20	0
L21W	8+00N	504799	5410684	321	44	6	60	-2
L21W	8+20N	504813	5410696	321	42	8	60	0
L21W	8+40N	504830	5410706	326	30	6	32	0
L21W	8+60N	504846	5410717	328	20	2	22	-2
L21W	8+80N	504867	5410727	339	16	2	12	-2
L21W	9+00N	504877	5410741	342	16	2	10	-2
L21W	9+20N	504895	5410755	345	12	2	12	0
L21W	9+40N	504904	5410777	344	16	4	14	0
L21W	9+60N	504913	5410797	340	20	2	20	2
L21W	9+80N	504920	5410815	339	20	4	24	4
L21W	10+00N	504931	5410831	333	24	8	30	8
L21W	10+20N	504945	5410846	330	28	4	30	4
L21W	10+40N	504956	5410856	327	30	8	40	4
L21W	10+60N	504966	5410863	325	30	6	34	4
L21W	10+80N	504995	5410878	325	2	-2	8	-4
L21W	11+00N	505012	5410888	327	6	-2	10	-2
L21W	11+20N	505032	5410901	325	10	0	14	0
L21W	11+40N	505048	5410908	327	12	2	14	0
L21W	11+60N	505062	5410925	327	12	4	20	6
L21W	11+80N	505075	5410943	329	8	4	12	4
L21W	12+00N	505092	5410953	336	10	4	14	2

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L21W	12+20N	505106	5410969	347	10	6	12	6
L21W	12+40N	505119	5410986	360	12	6	18	6
L21W	12+60N	505132	5410998	365	12	4	16	6
L21W	12+80N	505143	5411020	370	6	6	8	6
L21W	13+00N	505145	5411030	374	8	4	8	4
L23W	0+00	504156	5410356	202	-34	22	-30	26
L23W	0+20N	504168	5410363	201	-6	14	-4	18
L23W	0+40N	504185	5410363	204	-12	6	-14	6
L23W	0+60N	504201	5410374	212	-10	6	-14	6
L23W	0+80N	504220	5410384	217	-8	10	-10	10
L23W	1+00N	504237	5410402	224	-8	8	-6	4
L23W	1+20N	504245	5410415	228	-6	6	-8	6
L23W	1+40N	504264	5410427	229	-6	8	-6	4
L23W	1+60N	504279	5410440	230	-6	6	-4	6
L23W	1+80N	504286	5410459	231	-2	10	-4	4
L23W	2+00N	504300	5410470	229	4	10	4	4
L23W	2+20N	504318	5410482	231	4	6	2	0
L23W	2+40N	504333	5410496	231	2	8	-4	2
L23W	2+60N	504344	5410515	232	6	10	4	2
L23W	2+80N	504356	5410529	233	0	4	-2	-2
L23W	3+00N	504377	5410539	235	6	4	-2	0
L23W	3+20N	504394	5410554	233	10	6	6	0
L23W	3+40N	504404	5410569	230	6	6	0	2
L23W	3+60N	504417	5410575	228	6	8	-2	0
L23W	3+80N	504435	5410593	230	8	2	0	0
L23W	4+00N	504446	5410610	233	10	6	6	2
L23W	4+20N	504455	5410629	233	20	12	14	4
L23W	4+40N	504466	5410649	234	16	4	18	4
L23W	4+60N	504482	5410661	236	-4	-8	0	-4
L23W	4+80N	504498	5410670	240	4	-2	6	-4
L23W	5+00N	504512	5410685	243	8	-2	10	0
L23W	5+20N	504526	5410700	248	12	2	12	2
L23W	5+40N	504543	5410716	251	14	4	16	4
L23W	5+60N	504556	5410728	252	20	4	40	0
L23W	5+80N	504569	5410742	255	16	2	10	2
L23W	6+00N	504585	5410757	260	20	4	18	4
L23W	6+20N	504600	5410767	264	14	4	12	0
L23W	6+40N	504617	5410782	269	16	6	12	6

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					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L23W	6+60N	504624	5410800	275	24	6	24	8
L23W	6+80N	504639	5410815	282	30	10	46	10
L23W	7+00N	504657	5410827	284	30	8	30	6
L23W	7+20N	504672	5410837	285	14	2	8	0
L23W	7+40N	504686	5410855	292	14	4	16	4
L23W	7+60N	504695	5410871	296	14	4	16	0
L23W	7+80N	504705	5410885	299	18	4	20	4
L23W	8+00N	504720	5410902	302	18	2	14	2
L23W	8+20N	504733	5410918	311	28	2	38	-6
L23W	8+40N	504750	5410931	318	-4	2	-6	4
L23W	8+60N	504768	5410939	322	18	0	12	-4
L23W	8+80N	504786	5410952	323	12	-2	4	0
L23W	9+00N	504797	5410971	325	6	-2	-4	-2
L23W	9+20N	504808	5410984	324	8	2	-4	0
L23W	9+40N	504822	5410997	325	12	2	10	2
L23W	9+60N	504836	5411008	321	14	0	6	4
L23W	9+80N	504862	5411022	316	6	2	0	-2
L23W	10+00N	504880	5411035	327	4	4	-6	0
L23W	10+20N	504886	5411050	333	-4	2	-6	-4
L23W	10+40N	504892	5411068	341	-2	2	-6	-2
L23W	10+60N	504899	5411089	350	8	4	4	-2
L23W	10+80N	504912	5411110	354	8	2	6	0
L23W	11+00N	504928	5411124	351	12	2	-2	0
L23W	11+20N	504942	5411130	353	8	2	8	0
L23W	11+40N	504955	5411148	356	8	4	8	0
L23W	11+60N	504972	5411161	357	6	2	-2	-2
L23W	11+80N	504982	5411178	361	10	2	6	-2
L23W	12+00N	504992	5411190	363	10	4	8	4
L25W	0+00	504069	5410525	198	-30	20	-26	18
L25W	0+20N	504087	5410535	200	-26	20	-40	8
L25W	0+40N	504104	5410547	202	-12	10	-18	6
L25W	0+60N	504114	5410559	207	0	8	40	14
L25W	0+80N	504128	5410575	213	-2	10	18	10
L25W	1+00N	504140	5410594	218	-4	10	20	10
L25W	1+20N	504154	5410613	220	8	16	36	20
L25W	1+40N	504168	5410624	218	34	30	60	20
L25W	1+60N	504188	5410630	220	24	20	50	18
L25W	1+80N	504202	5410646	222	-10	0	-8	-2

Sanatana Resources - Jackfish Property

Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L25W	2+00N	504213	5410661	229	-4	8	10	6
L25W	2+20N	504225	5410679	230	8	10	10	10
L25W	2+40N	504238	5410691	228	8	8	12	8
L25W	2+60N	504249	5410710	230	6	8	6	8
L25W	2+80N	504263	5410724	229	8	8	10	10
L25W	3+00N	504275	5410740	231	10	10	12	10
L25W	3+20N	504293	5410756	235	20	12	40	20
L25W	3+40N	504311	5410762	237	16	12	24	14
L25W	3+60N	504324	5410774	237	16	12	18	12
L25W	3+80N	504342	5410790	239	18	12	18	12
L25W	4+00N	504354	5410806	237	14	10	10	8
L25W	4+20N	504368	5410819	238	16	10	10	10
L25W	4+40N	504380	5410835	240	4	4	-10	10
L25W	4+60N	504396	5410845	239	-10	-4	-38	-4
L25W	4+80N	504416	5410853	240	-14	-4	-40	-10
L25W	5+00N	504436	5410863	242	-4	-2	-16	-8
L25W	5+20N	504446	5410880	247	8	4	0	4
L25W	5+40N	504454	5410901	252	12	6	8	6
L25W	5+60N	504461	5410925	255	16	6	14	6
L25W	5+80N	504473	5410940	256	18	8	14	10
L25W	6+00N	504485	5410955	255	26	16	28	20
L25W	6+20N	504505	5410961	251	10	6	8	12
L25W	6+40N	504521	5410975	255	4	4	6	20
L25W	6+60N	504541	5410982	255	8	6	6	10
L25W	6+80N	504555	5411000	259	8	8	12	20
L25W	7+00N	504570	5411009	261	26	12	32	14
L25W	7+20N	504589	5411022	265	8	4	6	6
L25W	7+40N	504595	5411041	279	10	6	8	6
L25W	7+60N	504602	5411061	280	14	4	10	10
L25W	7+80N	504615	5411080	285	16	8	18	12
L25W	8+00N	504627	5411095	287	16	8	18	12
L25W	8+20N	504648	5411106	291	16	8	16	8
L25W	8+40N	504663	5411112	292	6	2	2	20
L25W	8+60N	504682	5411124	296	4	2	-6	12
L25W	8+80N	504691	5411143	304	6	4	6	6
L25W	9+00N	504708	5411160	310	4	2	-8	4
L25W	9+20N	504717	5411178	313	4	2	-10	4
L25W	9+40N	504731	5411188	319	2	2	-4	2

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Raw VLF Data - Merged 2017 and 2018 Rudy Block Surveys

					NAA		NML	
Line Number	StationID	Northing	Easting	Elevation	In-Phase	Out-Phase	In-Phase	Out-Phase
L25W	9+60N	504745	5411203	320	4	4	-4	4
L25W	9+80N	504759	5411219	323	2	2	-6	2
L25W	10+00N	504765	5411238	324	4	4	-2	2
L25W	10+20N	504779	5411256	328	6	2	2	2
L25W	10+40N	504797	5411263	335	6	4	-8	4
L25W	10+60N	504818	5411269	341	8	6	-8	6
L25W	10+80N	504837	5411281	346	4	4	-14	2
L25W	11+00N	504848	5411296	347	8	4	-2	-2
L25W	11+20N	504860	5411314	352	4	2	-6	2
L25W	11+40N	504866	5411332	353	4	2	0	2
L25W	11+60N	504883	5411351	358	8	6	6	2
L25W	11+80N	504900	5411362	356	8	4	6	2
L25W	12+00N	504918	5411374	359	8	4	6	4

Appendix 4: Invoices Supporting Expenditure