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VLF-EM SURVEY REPORT

On

Claim 193254, 203630, 223125, 279115, 290946 and 326361

(Provincial grid cells 52B09A121, 52B09A101, 52B09B140, 52B09B100, 52B09A081 and 52B09B120)

Duckworth Township, Ontario

(Part of Gold Creek Property)

For

First Minerals Exploration Ltd

Submitted By:

Bruce Edgar (HBSc, P. Geo)

April 03, 2019

SUMMARY

In March 2019, the author was given the mandate by Mr. Robert Young, President- First Minerals Exploration Ltd. (FMEL), to carry out an exploration program on the "Gold Creek" property in Duckworth Township, Ontario. The property had been optioned by FMEL from co-holders Mr. Philip Escher and Mr. Michael Haveman. As part of the option deal, FMEL would be responsible for keeping the claim group in good standing. The property consists of 36 contiguous cell claims in Duckworth Township, Ontario, requiring $12,200 worth of work.

The property is positioned towards the north-central boundary of the Shebandowan Greenstone Belt, south-west of the town of Shebandowan. The Belt hosts numerous gold and other mineral occurrences, and the former producing Shebandowan nickel-copper mine of Inco (1971- 1998) which produced approximately 9.4 million tonnes of ore (Ni-Cu-Pt-Pd-Au).

From March 12 through March 23, 2019, Mr. Philip Escher (Geologist), travelled to and from the property and completed a VLF-EM survey on hypothetical north-south grid lines using a GPS for positioning. Readings were taken on a north-south grid pattern of 18 lines on 50 meter centers, with stations approximately every 25 meters. Lines varied from 300 to 700 meters in length.

Numerous, parallel, generally east-west trending VLF-EM conductors exist within the current work area of the Gold Creek property.

Two of the six conductors have historical gold showings intimately associated with the conductive area.

The other four conductors have no historical gold showings, but most of the area exhibits low, swampy topography with no outcrop, which could easily explain the lack of showings.

All of the historical showings exhibit shear zones in granodiorite containing varying amounts of quartz veining with mineralization including pyrite, galena, chalcopyrite, gold, silver and possible tellurides. The existence of these zones within two of the conductors within the work area suggests that the other conductors could potentially host similar shear zones and mineralization.

The position of conductor "E" of the current VLF-EM survey matches almost identically with the high chargeability zone indicated by the Golden Share IP/Resistivity survey (2010) south of the historical "U" showing of the current Gold Creek property. No historical showings exist in this area. The coincident conductor and high chargeability zone makes this location an important area for future exploration.

Indeed, all of the areas featuring conductors from the VLF-EM survey should be explored in greater detail. The author recommends geological mapping and stripping of areas within the observed conductor outlines that are not located within swampy ground. Any successful location of new showings would be sampled, leading to potential diamond drilling to test the possible zones at depth.

A successful program of this sort could also lead to an expansion of the VLF-EM survey over more extensive areas of the property.

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INTRODUCTION

In March 2019, the author was given the mandate by Mr. Robert Young, President- First Minerals Exploration Ltd. (FMEL), to carry out an exploration program on the "Gold Creek" property in Duckworth Township, Ontario. The property had been optioned by FMEL from co-holders Mr. Philip Escher and Mr. Michael Haveman. As part of the option deal, FMEL would be responsible for keeping the claim group in good standing. The property consists of 36 contiguous cell claims in Duckworth Township, Ontario.

The property is positioned towards the north-central boundary of the Shebandowan Greenstone Belt, south-west of the town of Shebandowan. The Belt hosts numerous gold and other mineral occurrences, and the former producing Shebandowan nickel-copper mine of Inco (1971- 1998) which produced approximately 9.4 million tonnes of ore (Ni-Cu-Pt-Pd-Au).

The Gold Creek property, consisting of 36 contiguous cell claims, requires $12,200 worth of work to remain in good standing.

In order to carry out a work program in the winter prior to the first due dates on the property, it was decided that a VLF-EM survey could be completed over the area of key gold showings. This area also had had an IP survey completed over a portion of the same general area in 2010 (Golden Share Mineral Corporation). In this manner, the two surveys could be compared.

From March 12 through March 23, 2019, Mr. Philip Escher (Geologist), travelled to and from the property and completed a VLF-EM survey on hypothetical grid lines using a GPS for positioning. Readings were taken on a north-south grid pattern of 18 lines on 50 meter centers, with stations every 25 meters.

This report summarizes the results of that work.

LOCATION and ACCESS

The Gold Creek property is located in Duckworth Township, within the Shebandowan Greenstone Belt of North-western Ontario, in the Thunder Bay Mining Division, approximately 58 kilometers west of Thunder Bay.

The property is centered at UTM coordinates 711800E and 5382800N (Nad 83, Zone 15) and can be found on NTS map sheet 52B/09S.

Access to the property is best achieved by taking Highway 11 west of Thunder Bay for 75 kilometers to the Shebandowan Mine Road. Approximately 2.7 kilometers in, the Gold Creek road is taken south, or conversely, the Peewatai Lake road 3.8 kilometers in, is taken south to access the property. Recent logging operations in the area have provided numerous bush roads and trails to access the property and the various showings.

The property is comprised of 36 contiguous cell claims, which are summarized in Table 1.

Table 1.

Gold Creek Property Claims list

Township	Claim #	Grid-Cell	Type	Anniversary Date	Work Required
DUCKWORTH	122208	52B09A061	SCMC	Monday, July 15, 2019	400
DUCKWORTH	199834	52B09A082	SCMC	Monday, July 15, 2019	200
DUCKWORTH	207142	52B09A062	SCMC	Monday, July 15, 2019	200
DUCKWORTH	279115	52B09B100	SCMC	Monday, July 15, 2019	400
DUCKWORTH	290946	52B09A081	SCMC	Monday, July 15, 2019	200
DUCKWORTH	110201	52B09B080	SCMC	Monday, July 15, 2019	400
DUCKWORTH	118596	52B09B158	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	164347	52B09B137	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	223125	52B09B140	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	223126	52B09B139	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	231096	52B09B117	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	243300	52B09B159	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	278347	52B09B138	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	279117	52B09B119	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	279118	52B09B118	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	326360	52B09B097	BCMC	Thursday, April 18, 2019	200
DUCKWORTH	326361	52B09B120	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	338760	52B09B160	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	104637	52B09B157	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	149121	52B09A144	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	167278	52B09A124	BCMC	Thursday, April 18, 2019	200
DUCKWORTH	186376	52B09A142	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	193254	52B09A121	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	203630	52B09A101	SCMC	Thursday, April 18, 2019	200
DUCKWORTH	231097	52B09A141	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	244433	52B09A102	SCMC	Thursday, April 18, 2019	200
DUCKWORTH	252450	52B09A122	SCMC	Thursday, April 18, 2019	200
DUCKWORTH	271217	52B09A123	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	132521	52B09A143	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	111350	52B09B078	BCMC	Thursday, April 18, 2019	200
DUCKWORTH	133743	52B09B060	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	133744	52B09B079	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	205909	52B09B059	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	253157	52B09B058	BCMC	Thursday, April 18, 2019	200
DUCKWORTH	279116	52B09B099	SCMC	Thursday, April 18, 2019	400
DUCKWORTH	326359	52B09B098	BCMC	Thursday, April 18, 2019	200
				Total:	$12,200

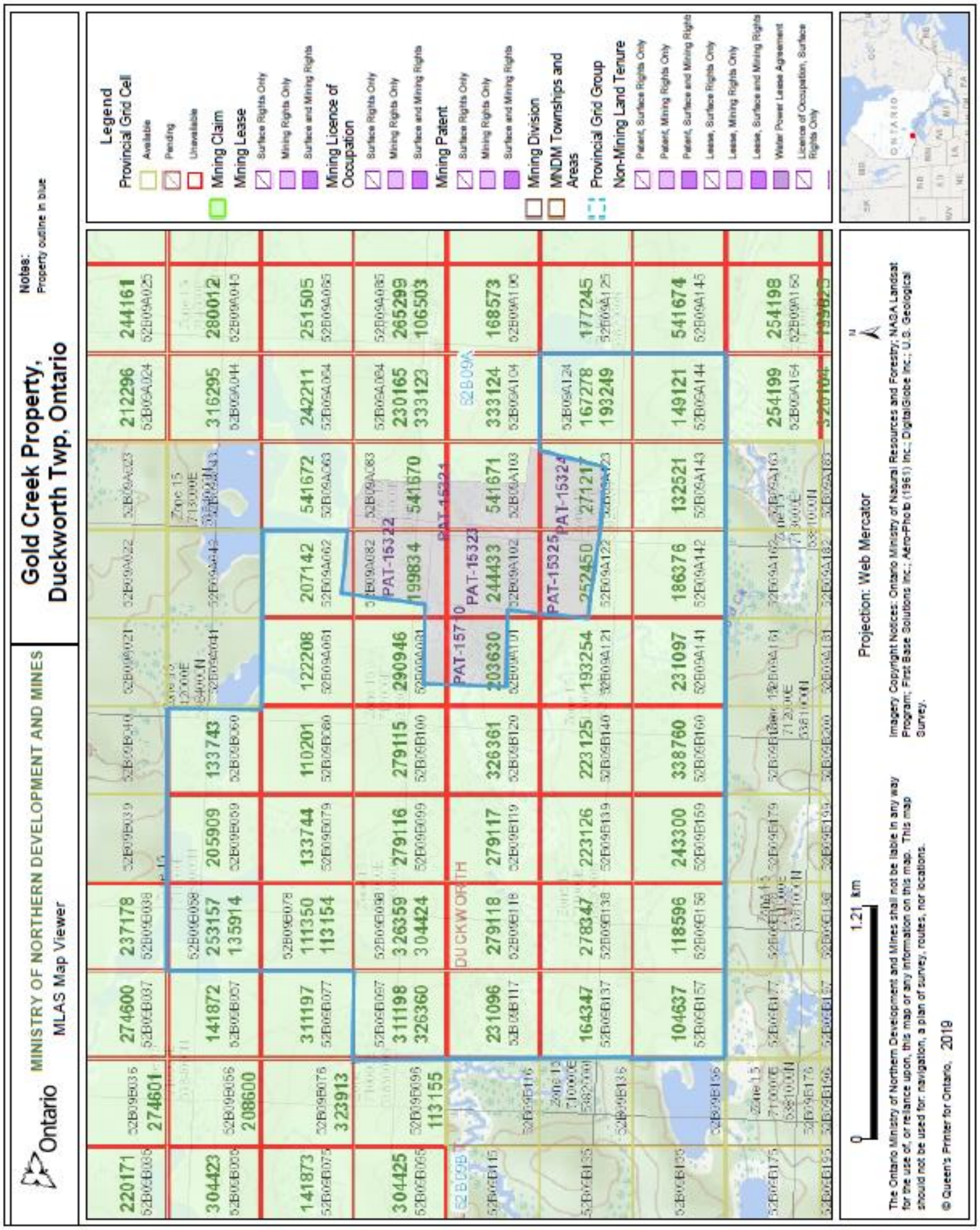


Figure 1

Gold Creek Property Location Map

HISTORY

For a comprehensive, complete history of the surrounding area including the current Gold Creek property the author suggests reading the technical report of Golden Share Mining Corporation (Poisson and Huss, 2008). The Structural Control report (Escher, 2018) gives a history of the current property area. Both report's authors searched and reviewed the assessment files in detail.

The entire comprehensive history of the property and immediate area is not presented here. The author has chosen only key historical work in relation to gold showings on the property.

The original gold showings on the property appear to have been discovered by M. Penziwol in 1967. Evidently trenching, sampling and some pack-sack drilling were performed, but no reports on the work exist. It is unknown how the various main showings on the Gold Creek Property received their names, but today they are known as the T1, S1, S3, Ah, Af, U and Ad showings. It is likely that other historical showings (S2, T2 etc.) have not been re-located.

The following is a compilation of historical data from "Structural Controls on Gold Mineralization within the Eastern Peewatai Pluton, Shebandowan Greenstone Belt" by P. Escher (2018).

1978: Umex Corporation Ltd*. completed 152.4 meters in 2 diamond drill holes in the northeastern portion of current mining claim 4282343. No assay values were reported.*

1987: Noranada *completed geological mapping at a scale of 1:2500, soil sampling, prospecting and a radiometric survey on claims now covered by the current property. Rock grab samples retuned assay values as high as 7.12 oz/t Au and 155.97 g/t Ag.*

1988 to 1990*: **Inco** staked 19 mining claims, optioned 2 additional unpatented mining claims from K. Walstein in the spring of 1988 and added more claims throughout the year to bring the total to 31 contiguous unpatented mining claims and 6 patented mining claims in 1990. Most of the unpatented mining claims are now covered by the current Gold Creek property. Inco completed line cutting and a ground magnometer survey over the core of their property in the spring of 1989. The ground magnometer survey was followed up, during the summer of 1989 by prospecting, stripping, trenching, geological mapping and sampling on at least two zones. Property scale mapping at a scale 1:2500 was carried out at the same time. In November of 1989, Inco completed at least 819 meters of drilling in 13 diamond drill holes to test the most prospective zones. Table 1.2 lists the highlights of the drill program. Additional prospecting and stripping were carried out during the summer of 1990. Two additional diamond drill holes were completed in November of 1990. A compilation map by Inco identifies several additional diamond drill holes for which no logs or reports were available in the public domain.*

Diamond drill highlights of Drill program by Inco Drill program by Inco

Drill Hole	
78441	*1.42g/t Au over 2.4m including 3.27g/t Au over 0.8m from granodiorite with quartz veining. All intersections are associated with 'mafic tuffs'.*

78442	*3.87 g/t Au over 0.35m in granodiorite with 3 % quartz veining. 1.68g/t Au over 0.4m and 0.69 g/t over 0.4m in granodiorite.*
78443	*8.06g/t Au over 0.5m; 1.69g/t Au over 0.3m; 1.3g/t Au over 0.7m. Hole started and ended in granodiorite.*
78446	*2.76g/t Au over 2m, including 4.55g/t Au over 1m and 0.97 over 1m. 17.2 m wide talcose 'mafic tuff' above noted above granodiorite.*
78447	*0.88g/t Au over 5m including. 2.3g/t Au over 1m; 0.77 g/t Au over 1m*

1997: Yanks Peak Resources *held three unpatented mining claims (48 units) that included the northern and northwestern-most portion of the current Gold Creek property. Clark-Everleigh Consulting on behalf of Yanks Peak Resources conducted a program consisting of geological mapping at a scale of 1:2500 and prospecting. Results from rock grab samples returned values of up to 2.58 g/t Au from a "felsic dike" with granodioritic composition and abundant quartz veining. Later in the year 873.46 meters of diamond drilling in seven holes were completed on current claim 4282599 (not part of the current Gold Creek property). Most drill holes were oriented in a north-south direction; these were collared to test "felsic dikes" that were discovered during geological mapping earlier in the year. Rare amounts of free gold were reported in drill hole DW-97-03 where a 5.02 meter intersection assayed 2285ppb Au, including 5362ppb Au over 1.16 meters. DW-97-02 intersected 0.41 meters of 0.98 g/t Au in a granodioritic to syenitic dyke and 0.50 meters of 4.66 g/t Au in a unit logged as weakly foliated ash tuff. This ash tuff was noted to occur above and below the granodiorite.*

1995 to 2005: *In 2000 prospector* ***Eldwood Fournier*** *carried out prospecting and trench blasting at five locations now covered by claim 4282344, reporting assay values of up to 150 g/t Au and 855 g/t Ag.*
In 2003 Fournier conducted prospecting and trench blasting on the property, which led to the discovery of seven new gold occurrences, with values ranging between 1.75 and 10.94g/t Au. Although assay certificates are available, these occurrences should be located, verified and followed up on.
During the fall of 2004 a program consisting of linecutting, prospecting and sampling was carried out on claims that straddle the northwestern corner of the current Gold Creek property. No significant results were reported. Fugro Airborne Survey Corp. completed a DIGHEM(V-DSP) electromagnetic/resistivity/magnetic survey on behalf of Ontario 1022260 Ontario Limited in October of 2004.
Fournier completed prospecting and blasting in 2005 on claims now covered by current claim 4282344, 4282343 and 4282342 (work appears to have been focused on existing showings). Sixteen (16) samples with gold values greater than 1 g/t were reported. The highest gold value obtained was 180.62 g/t from the Af- and Ah-trenches. (1 of 4 samples obtained near corner post # 3 of current claim 4282343 assayed 3.16 g/t Au; and 2 of 5 samples obtained from the southeastern corner of 4282342 returned 1.19 and 0.95 g/t Au).

2006: 653119 Canada Inc. *optioned 20 unpatented mining claims and 1 mining lease (141 claim units) from J.A. Lynn (representing Wayne Bahlieda and Eugene Starr successions), B. H. Haavalsrud that included the Inco claims and the current Gold Creek property. Two diamond drill holes totaling 450*

meters were completed on the S1-zone (current claim 4282339). Only anomalous gold intersections are reported.

2007-2008, 2010-2011: Golden Share Mineral Corp. *optioned the Eldwood property consisting of 20 unpatented and 1 patented mining claim from 6531199 Canada Inc.. Abitibi Geophysics on behalf of Golden Share carried out line-cutting and ground magnometer and IP-chargeability surveys over the central portion of the present property. In May of 2008 Golden Share staked another 10 mining claims to bring the property to a total of 31 mining claims. A program consisting of property-wide prospecting, follow-up work on geophysical anomalies and 237.3 meters of channel sampling was carried out during July of 2008. Channel samples at the Af-zone yielded results of 1 g/t Au over 14 meters, 0.42 g/t Au over 8 meters and 0.47g/t over 20 meters. Channel samples at the Ah-zone returned 2.42 g/t Au over 2 meters. Sixty-five samples from property- wide prospecting were assayed for gold, base metals and trace elements, retuning values up to 27.6 g/t Au from a quartz vein hosted within granodiorite from the Ah-trench.*

In November of 2008, Golden share conducted diamond drilling on the U-zone, which is located in the far southwest corner of TB8508, near the northern boundary of current claim 4282341. A total of 485 meters of drilling in 8 holes were completed. Six (6) scissor holes were drilled on 3 subparallel sections spaced 25 meters apart (all holes were collared with an azimuth of 330 degrees on or just north of current claim 4282341). Each section was investigated by 2 holes with dips of 45 and 60 degrees. One hole was drilled towards the southwest of the U-zone to test the extension of mineralization outside the main outcrop area. Drill holes were laid out assuming the U-zone was a simple fault plane and that holes were stepped out along strike of this plane to intersect the vein system observed at surface. EL-08-01 yielded 8.30 meters of 2.38 g/t including 1 meter of 14.97 g/t Au. EL-08-02 intersected 7.45 meters of 0.6 g/t Au. EL-08-01 to EL-08-05 intersected the U-zone between 18 to 57 meters.

One 252 meter long diamond drill hole was completed in 2011 to test mineralization below the intersects from 2008 EL-08-01 and EL-08-02. The hole was collared on current claim 4282341 at 330/60°. No significant results were reported.

Insight Geophysics completed an IP/Resistivity survey for Golden Share in December of 2010 in the immediate vicinity of the U-zone. The survey identified two distinct resistivity and chargeability trends referred to as zones A & B (see Figure below). The western extension of zone A is located on current claim 4282344 while zone B is located on current claims 4282343 and 4282341. Zone A is characterized by two ENE-striking resistivity-high lineaments that coincide with zones of weak chargeability; both lineaments appear to terminate along an ESE-striking resistivity feature. Zone B, entirely located within the current property, is characterized by an approximately 100 meter wide E20S striking zone of high resistivity that coincides with a zone of moderately high chargeability. Geophysical characteristics of this zone are similar to those of known surface showings on the property (i.e. Af-trench). This zone appears to plunge westerly and is open along strike to the east. The chargeability appears to be strongest at a depth of approximately 120 to 175 meters and is open at depth. The anomaly possibly extends to surface around 1550E and 625 to 640N and should be investigated by prospecting and drilling. No previous drilling has been identified along this anomaly. Several non-core claims lapsed between December of 2014 and February of 2015. The core claims lapsed in spring of 2016.

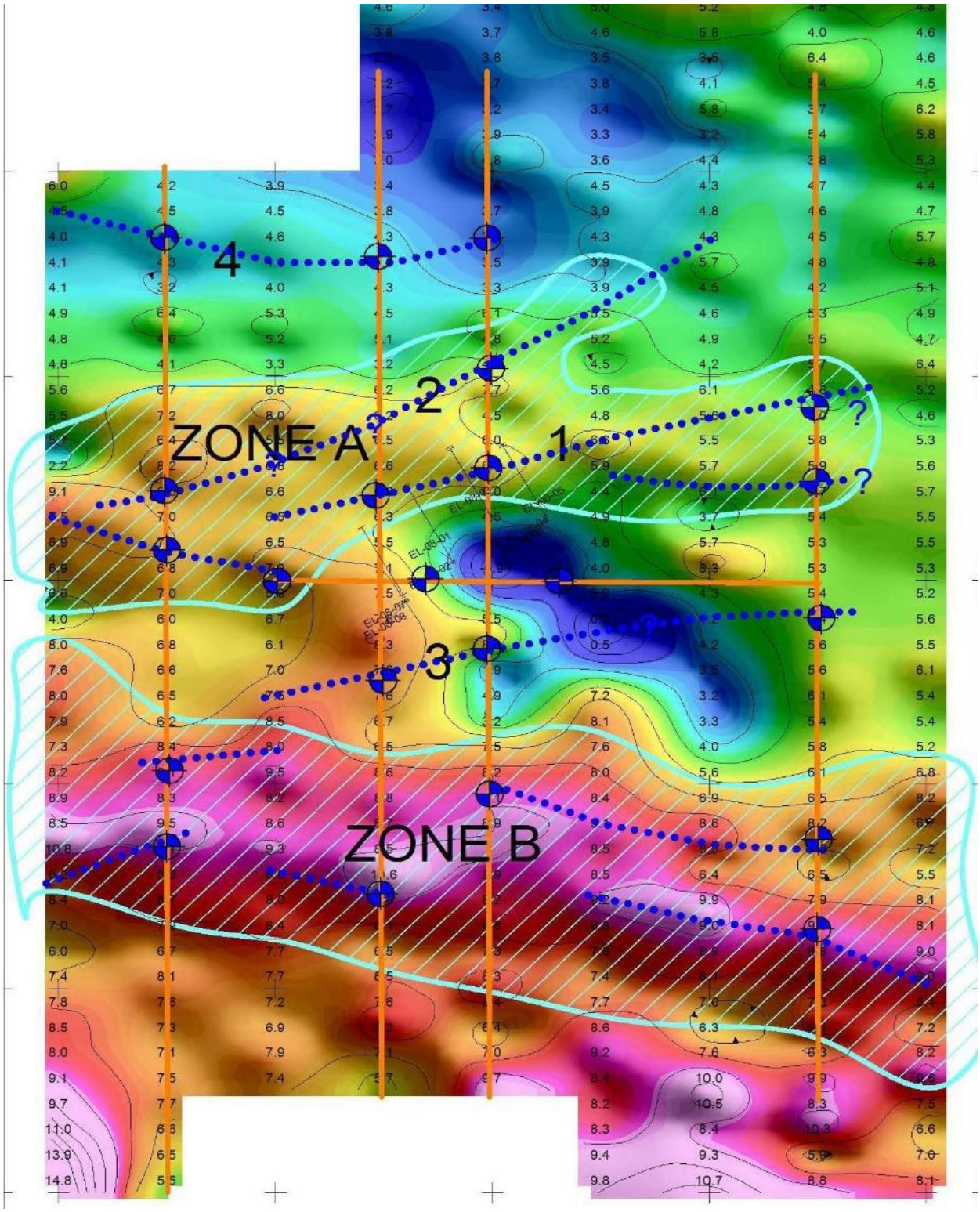


Figure 2.
IP/Resistivity Survey from Golden Share Mineral Corporation, 2010
(Diamond Drill holes drilled to test Historical “U” zone)

In April 2018, Michael Haveman (50%) and Philip Escher (50%) stake the current Gold Creek Property claims. P. Escher completes a study on the "Structural Controls on Gold Mineralization within the Eastern Peewatai Pluton , Shebandowan Greenstone Belt".

In March, 2019, P. Escher completes a VLF-EM survey over the portion of the Gold Creek property containing the historical "S3", "Ah", and "Af" zones, and just below the "U" zone. This report summarizes the results of that work.

GEOLOGICAL SETTING

REGIONAL GEOLOGY

The Gold Creek Property is located within the Shebandowan greenstone belt of the western Wawa subprovince . The Wawa subprovince extends for over 1,000 kilometers from the Kapuskasing structural zone in the east to the Vermillion district of Minnesota in the west and comprises several greenstone belts separated by plutonic domains (Williams et al., 1991). To the north, the Wawa subprovince lies in shear contact with the poly-deformed metasedimentary rocks of the Quetico subprovince. Intrusive rocks of the Southern province and the Midcontinent Rift form the southern boundary of the Wawa subprovince (Williams et al., 1991).

The following description of the Regional geology is taken from the Ontario Geological Survey report 295 " Precambrian Geology Adrian, Marks, Sackville, Aldina and Duckworth Townships" (Rogers and Berger, 1995).

The map area is mainly underlain by Neoarchean rocks of the Wawa Subprovince of the Superior Province.
The Neoarchean units consist of supracrustal rocks,which are part of the Shebandowan greenstone belt, and granitic rocks, which are largely external to the belt (Williams et al. 1991). The supracrustal rocks are composed of ultramafic, mafic, intermediate and felsic metavolcanic rocks; related intrusive rocks composed of peridotite, gabbro and feldspar and quartz-feldspar porphyries; and clastic and chemical metasedimentary rocks.
Regional metamorphism of lower to middle greenschist facies affected the Neoarchean supracrustal rocks. Extensive contact-metamorphic halos proximal to the granitoid intrusions upgrade the metamorphism to upper greenschist and lower amphibolite facies
The supracrustal rocks of the Shebandowan greenstone belt can be divided into 2 assemblages, based on morphology, composition, structure and metamorphism. These rock units are correlated with the older, Keewatintype Greenwater assemblage and the younger, Timiskaming-type Shebandowan assemblage previously described by Carter (1985, 1986, 1990a, 1990b) and Williams et al. (1991).
The granitoid intrusions in the region belong to the Northern Light–Perching Gull lakes batholithic complex. The Kekekuab Lake pluton, which consists of alkalic, mafic to felsic intrusive rocks, lies along the southern margin of Duckworth Township and underlies western Sackville and northwestern Aldina townships. A similar intrusion, the Peewatai Lake pluton, is internal to the greenstone belt in west-central Duckworth Township. Neoarchean lamprophyre dikes, usually biotite porphyritic, occur rarely throughout the map area. There are 2 sets of dikes; the younger set may be related to the alkalic plutons.
Two periods of regional deformation affected the area. The earliest deformation event (D1) appears to have affected only the Greenwater assemblage rocks. The second event (D2) deformed rocks of both the Greenwater and Shebandowan assemblages.

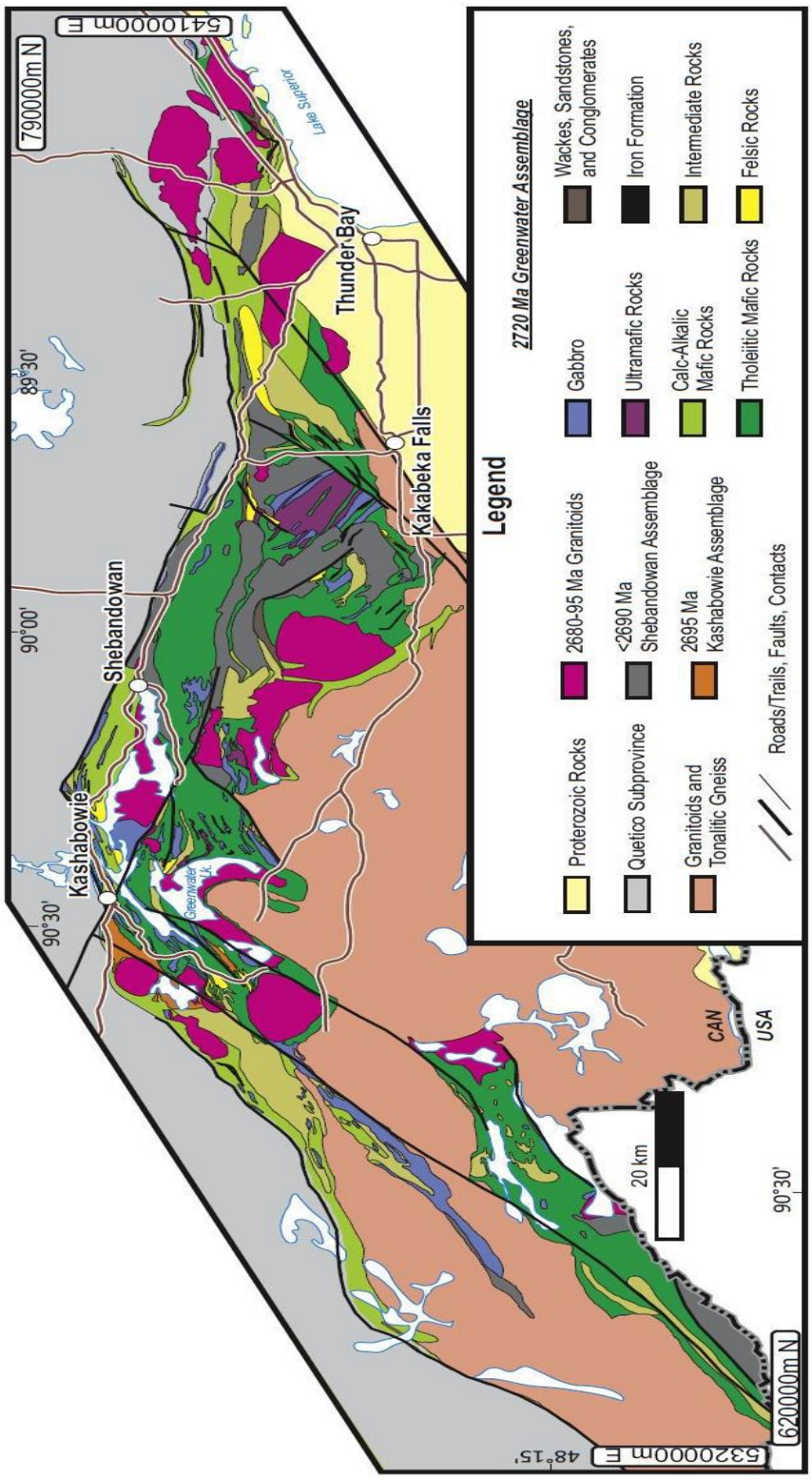


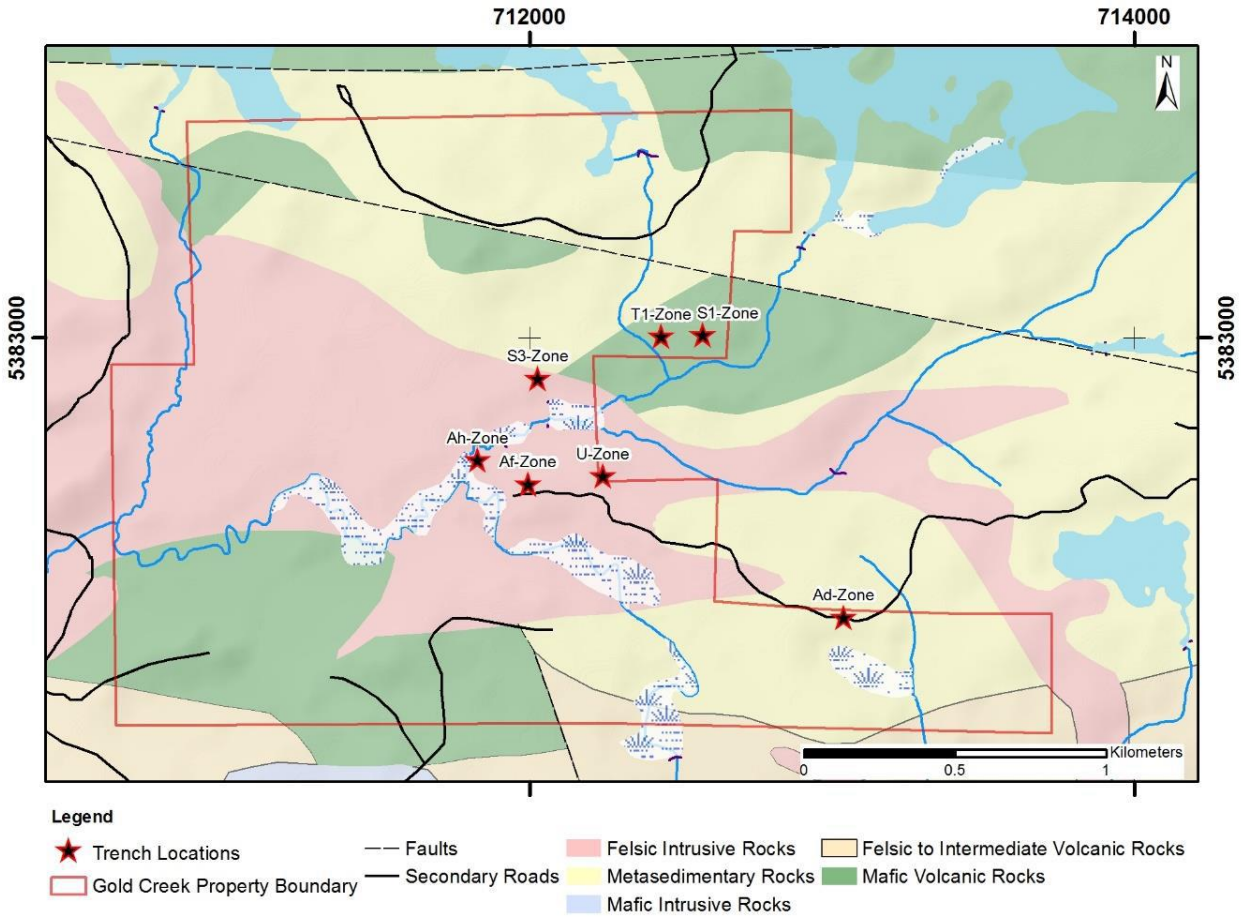
Figure 3

Regional Geological Map of the Shebandowan Greenstone Belt (after Lodge, 2016)

PROPERTY GEOLOGY

The author visited the property with geologist P. Escher during July, 2017 in order to visit the Ah and Af showings. The author has not worked extensively in the area. The following description of the property geology is taken from "Structural Controls on Gold Mineralization within the Eastern Peewatai Pluton, Shebandowan Greenstone Belt" by P. Escher (2018).

The Gold Creek property is centered on the eastern extremity of the Peewatai stock, an alkali intrusive which is monzonite-syenite-granite in composition (Osmani, 1997). The northern and southern portion of the property are underlain by mafic metavolcanic rocks of the Greenwater assemblage. Minor amounts of intermediate to felsic metavolcanics rocks occur in the southwestern portion of the property. Chemical and clastic metasedimentary rocks of the Shebandowan assemblage occur as a linear 'belt' in the northern and eastern portions of the property (Figure 1.4). The regional-scale Crayfish Creek fault occurs in the northeastern portion of the property. It is a northwesterly trending brittle-ductile shear zone with dextral transcurrent displacement (Osmani, 1997) that is spatially associated with Shebandowan



assemblage sedimentary rocks. Previous workers of the Gold Creek property noted that the Peewatai stock is affected by dominantly brittle deformation (faults and fractures; Mooney, 1990), while mafic metavolcanics and metasedimentary rocks in the area exhibit a foliation of average orientation

100°/90°. A deviation of foliation from this average orientation is observed within close proximity to the intrusion (Stott, 1986).
Known gold mineralization occurs in extensional vein systems along the eastern margin of the Peewatai stock and related dykes (Mooney, 1990). These extensional veins range in width from several centimeters to greater than one meter. Extensional veins display an average orientation of 180°/30°. Several narrow northwest- to northeast-trending fault zones appear to offset mineralized zones at the Af-trench. These faults generally exhibit displacements on the centimeter to meter scale.
Gold mineralization is typically accompanied by pyrite, tellurides and minor amounts of galena. Associated alteration consists of silicification, carbonization and local hematization (Mooney, 1990).

WORK COMPLETED

From March 12 through March 23, 2019, Mr. Philip Escher (Geologist), travelled to and from the property and completed a VLF-EM survey on hypothetical north-south grid lines using a GPS for positioning. Readings were taken on a north-south grid pattern of 18 lines on 50 meter centers, with stations approximately every 25 meters.

A Geonics EM-16 was employed to measure the components of the EM field using NAA at Cutler, MD., U.S.A. as a signal source.

A GPS waypoint was marked for each station; the EM-16 was faced north, and was operated by measuring in-phase (percent slope of the dip angles) and quadrature. Measurements were recorded in a tablet along with the GPS location.

Geonics EM-16 Specifications:

Measured Quantity - In-phase and quad-phase components of vertical magnetic field as a percentage of horizontal primary field (Tangent of the tilt angle and ellipticity).
Sensitivity - In-phase : +- 150%
Resolution Output - Nulling by audio tone. In-phase indication from mechanical inclinometer and quad-phase from graduated dial.
Operating Frequency - 17.8 kHZ radio band.
Operating Controls - On/Off switch, battery test push button, station selector switch, audio volume control, quadrature dial and inclinometer.
Power Supply - 6 Duracell 'AA' batteries
Dimensions - 42 x 14 x 9cm
Weight - Instrument: 1.6kg

A total of 18 lines on 50 meter centers were completed, varying in length from 300 to 700 meters. The grid pattern covered portions of claims 193254, 203630, 223125, 279115, 290946 and 326361, which represented the area of the “S3”, “Ah”, “Af” and “U” historical gold showings.

The In-phase data was collected and plotted by Mr. Escher resulting in a Fraser-filtered (in-phase %) contour map, and Karous-Hjelt filtered profiles.

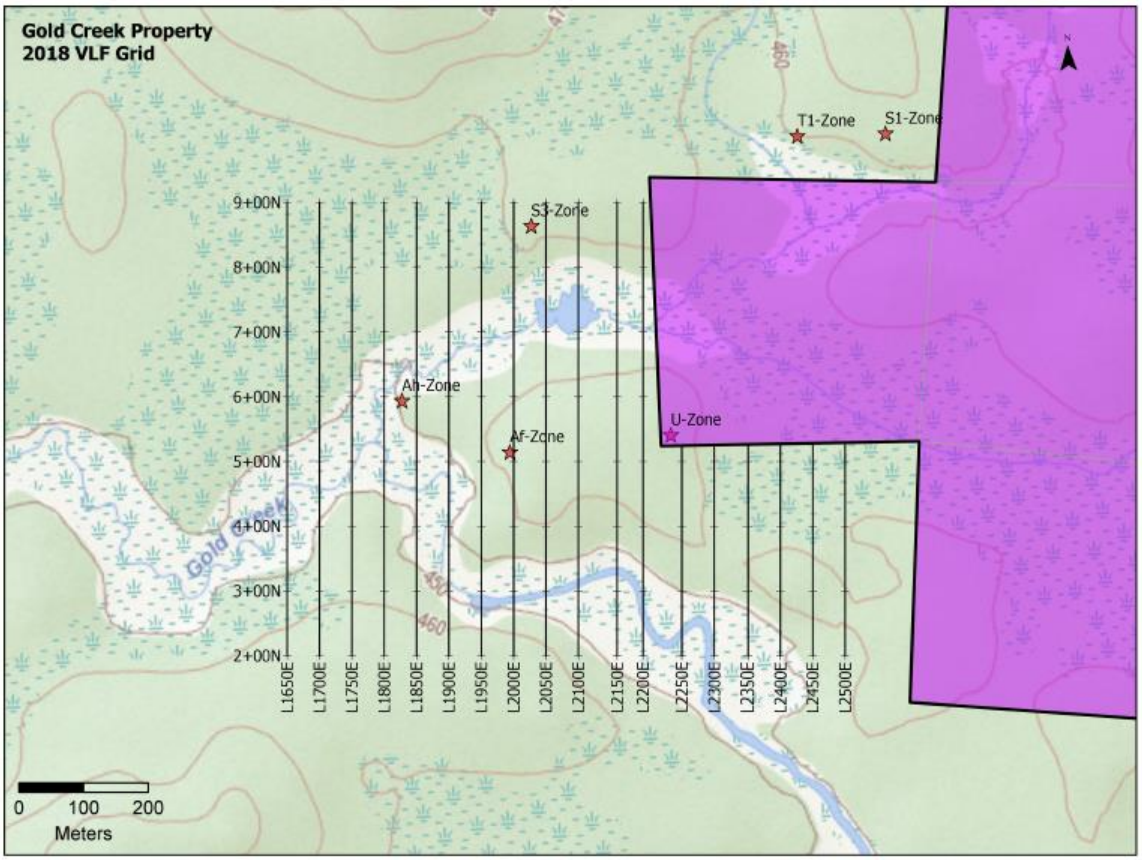


Figure 4.

Gold Creek Property VLF-EM grid location in relation to historical gold showings.

RESULTS

The VLF-EM survey on a portion of the Gold Creek property in the vicinity of a number of historic gold showings appears to indicate six main east-west conductors with a minimum of 175 meters in length, and a shorter conductor of 100 meters in length (See Figure 4).

In the north-east portion of the grid, conductor “A” runs from Line 1950 E through the end of the grid at Line 2200 E, centered about 8+50 N, and appears to continue east of the grid.

Conductor “B” is positioned from Line 1650 E through Line 2000 E, and is centered around 7+50 N, where it appears to abruptly end.

From Line 2025 E through the end of the grid at Line 2200 E, Conductor “C” is present at approximately 6+50 N, and continues east past the last grid line.

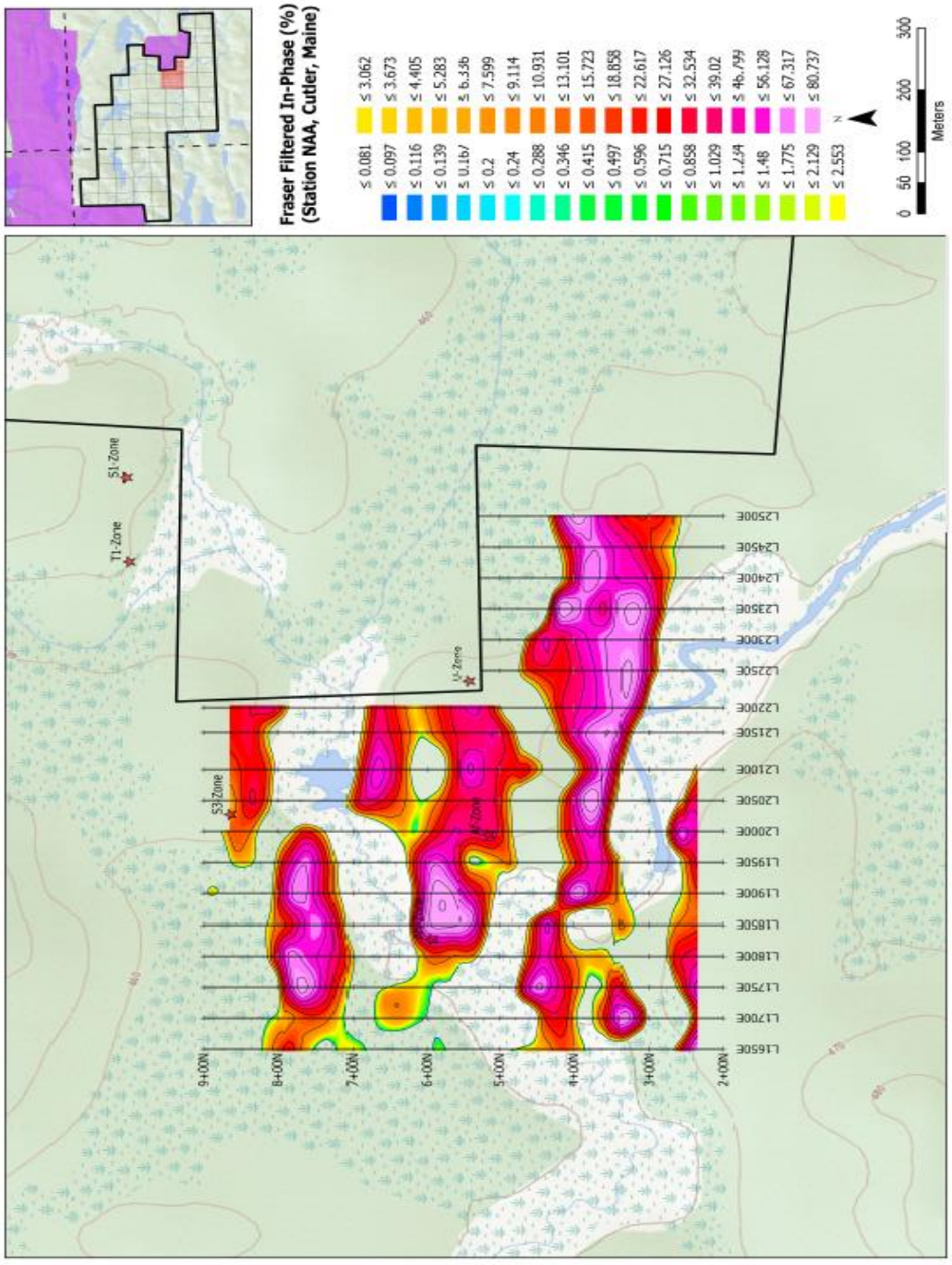


Figure 5
VLF-EM Survey Fraser-filtered In-Phase (%) Contours

Across the center of the grid from Line 1700 E through Line 2200 E, Conductor “D” is present centered about 6+50 N in the west to 5+25 N in the east and appears to continue past the last grid line to the east.

Conductor “E” stretches across the entire grid from Line 1650 E through Line 2500 E, appearing to continue both east and west. It is centered about 4+50 N in the west, and 3+50 N in the east.

An apparently short conductor “E1” runs from Line 1675 E through Line 1775 E and is centered at 3+25 N.

Conductor “F” appears in the south of the grid and appears to trend off the grid to the south. It runs from Line 1650 E through Line 2100 E where it runs off the grid. As a result it is unknown where the conductor may be centered, and how long the conductor may be.

Discussion

The recently completed work program consisting of a VLF-EM Survey over a portion of the Gold Creek Property was conceived by Mr. Philip Escher after reviewing past work and visiting numerous areas on the property. Mr. Escher noted a high chargeability zone running across the entire historical Golden Share IP grid to the south of the known historic “U” zone showing, where no other historical showings existed. Mr. Escher wished to discover 1), if historical gold showing areas would demonstrate VLF-EM conductive zones due to the mineral content of the geology of the showings and, 2) whether any conductive zones on the property would align with the high chargeability zone discovered south of the historic “U” showing with the Golden Share IP/Resistivity Survey (2010).

The recent VLF-EM survey has seemingly demonstrated a number of generally east-west conductors across the grid area which contains the historic gold showings.

The gold showings so far discovered in the area are found related to mineralized shear zones within granodiorite containing en-echelon/sigmoidal/tension/ladder and extensional quartz veining and breccia exhibiting pyrite, chalcopyrite, galena, gold, silver and possible tellurides. It is suspected the mineral content of the shear zones is primarily responsible for the conductive responses of the VLF-EM survey.

In the case of Conductor “A”, the historic “S-3” showing may be found within the conductor. Historical showings “Af”, “Ah” and “U” may all be found within Conductor “D”. Conductors “B”, “C”, “E”, “E1” and “F” have no historical showings associated with them. It must be noted however, that much of the property where those conductors appear displays low, swampy ground with a lack of outcrop. It is possible that the lack of discovery of gold showings in those areas is intimately related to the topography.

It is possible that Conductor “E1” is a splay of Conductor “E”, due to its position and angle which makes it appear to branch off Conductor “E”.

Of great interest is the fact that Conductor “E” appears to inhabit a space that appears to perfectly overlap the high chargeability area of the Golden Share IP survey (2010) covering the area south of the historic “U” showing. No historical showings appear in this area, but the coincident conductor and chargeability anomalies suggest that this would be an important area for further exploration.

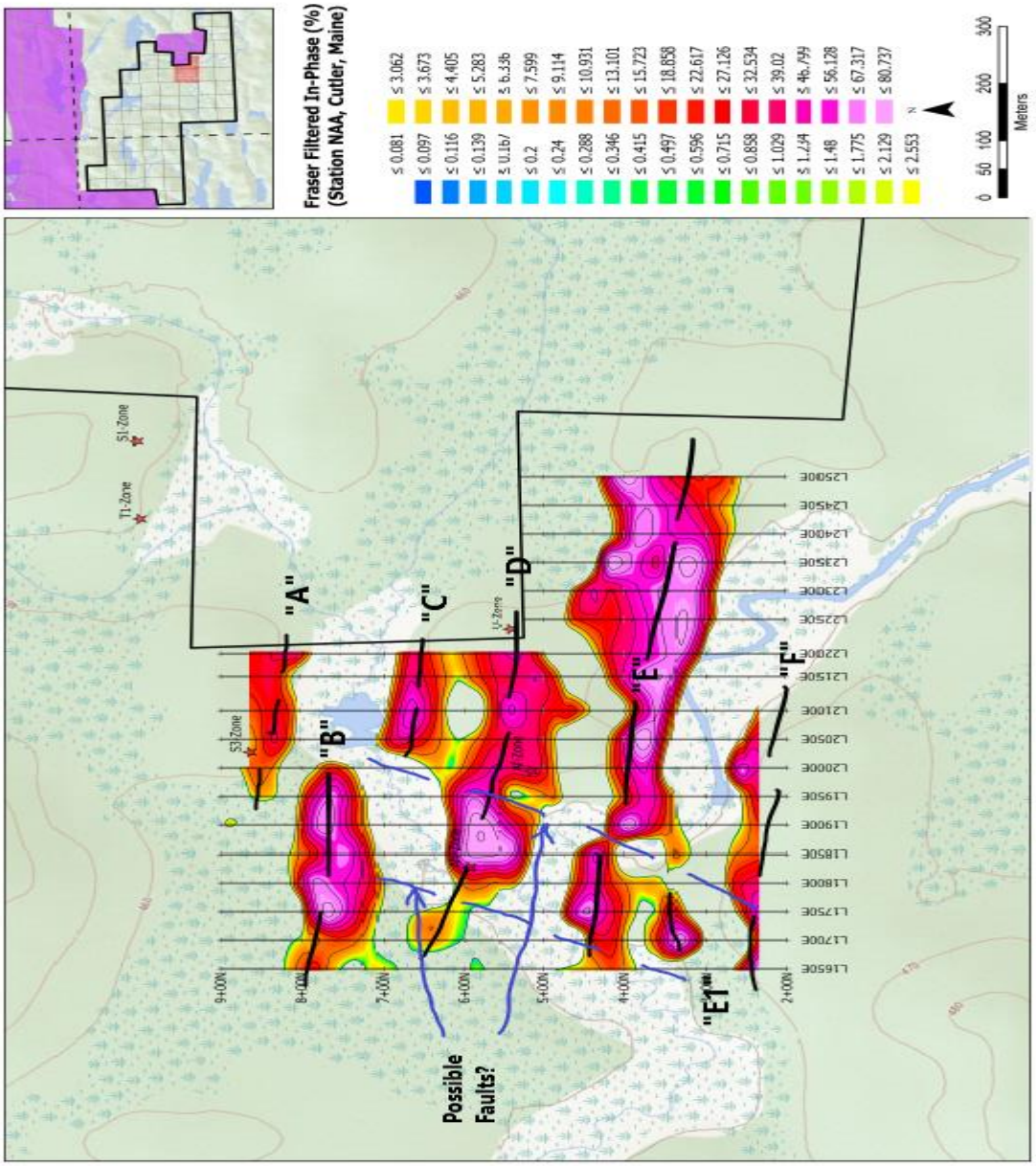


Figure 6
VLF-EM Fraser-filtered (%) Contours showing Conductors and Possible Faults

Indeed, all of the conductors demonstrated with the VLF-EM survey, which do not have historic showings associated with them, represent areas of great interest for further exploration.

Though no faulting has been witnessed in the immediate area of the historic showings, breaks and apparent abrupt cut offs of some of the conductors could be an indication of faulting in the area.

CONCLUSIONS and RECOMMENDATIONS

Numerous, parallel, generally east-west trending VLF-EM conductors exist within the current work area of the Gold Creek property.

Two of the six conductors have historical gold showings intimately associated with the conductive area.

The other four conductors have no historical gold showings, but most of the area exhibits low, swampy topography with no outcrop, which could easily explain the lack of showings.

All of the historical showings exhibit shear zones in granodiorite containing varying amounts of quartz veining with mineralization including pyrite, chalcopyrite, galena, gold, silver and possible tellurides. The existence of these zones within two of the conductors within the work area suggests that the other conductors could potentially host similar shear zones and mineralization.

The position of conductor “E” of the current VLF-EM survey matches almost identically with the high chargeability zone indicated by the Golden Share IP/Resistivity survey (2010) south of the historical “U” showing of the current Gold Creek property. No historical showings exist in this area. The coincident conductor and high chargeability zone makes this location an important area for future exploration.

Indeed, all of the areas featuring conductors from the VLF-EM survey should be explored in greater detail. The author recommends geological mapping and stripping of areas within the observed conductor outlines that are not located within swampy ground. Any successful location of new showings would be sampled, leading to potential diamond drilling to test the possible zones at depth.

A successful program of this sort could also lead to an expansion of the VLF-EM survey over more extensive areas of the property.

REFERENCES

Corfu, F., Stott, G. 1998. Shebandowan greenstone belt, western Superior Province: U-Pb ages, tectonic implications, and correlations. Geological Society of America. Bulletin 110, p. 1467-1484.

De Quadros, A. M. 1983. Report on the Penziwol Gold-Silver Property, Gold Creek Area, Duckworth Township, Thunder Bay Mining Division, Ontario, for Mr. John Woynarski.

Escher, P. 2018. Structural Controls on Gold Mineralization within the Eastern Peewatai Pluton, Shebandowan Greenstone Belt.

Fournier, Elwood 1995. Untitled prospecting Report on Zone “A”, “B” and “C”, Gold Creek Property.

Fournier, Elwood 2003. Gold Creek Property, Duckworth and Lamport Townships, Thunder Bay Mining Division, Summer 2003 Program.

Giaro, Philippe 2007. Geological Evaluation Report, Elwood Property, Duckworth and Lamport Townships, Ontario, Canada, NTS 52B/9.

Huss, L and Poisson, P 2008. Elwood Project Technical Report, Golden Share Mining Corporation.

Lodge, W.D., 2016. Petrogenesis of intermediate volcanic assemblages from the Shebandowan greenstone belt, Superior Province: Evidence for subduction during the Neoarchean. Precambrian Research 272, 1-264.

Mackey, Bruce 1988. Noranda Exploration Company Limited, Report on Geological, Geochemical and Radiometric Surveys, Penziwol option, N. T. S. 52B/9E, North-western Ontario Division.

Mooney S.J. 1990. Assessment Report Gold Creek West Project, Duckworth Township, Thunder Bay Mining Division, Inco Exploration and Technical Services Inc. Ministry of Northern Development and Mines. AFRI# 52B09SE0005.

Osmani, I.A., 1997. Geology and mineral potential: Greenwater Lake area, West-Central Shebandowan Greenstone Belt; Ontario Geological Survey, Report 296, 135p.

Pawluk, Craig 2010. Geophysical Survey Logistics Report, Gradient and Insight Section Array Induced Polarization/Resistivity Surveys, Elwood Project, Shebandowan, Ontario, Canada, Golden Share Mining Corporation.

Rogers, M.C. and Berger, B.R. 1995. Precambrian geology, Adrian, Marks, Sackville, Aldina and Duckworth townships; Ontario Geological Survey, Report 295, 66p.

Sharpley, S. J. 2001. Report on Prospecting, Trenching and Sampling Gold Creek Property, Shebandowan Area, Duckworth Township, Thunder Bay Mining Division, Ontario for Elwood Fournier.

Theberge, Alain 2007. Rapport Technique, Coupe de Ligne et Geophysique, 6531199 Canada Inc., Propriete Gold Creek, Cantons Duckworth et Lamport, District Miniere de Thunder Bay Sud, Ontario.

Williams, H.R., Stott, G.M., Heather, K.B., Muir, T.L. and Sage, R.P. 1991. Wawa Subprovince; in Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, p.485—542.

CERTIFICATE OF AUTHOR

I, Bruce Alexander Edgar, Honors BSc., P. Geo, do hereby certify that:
I am currently employed as a Consulting Geologist residing at:
5782 Highland Avenue, Niagara Falls, Ontario, L2G-4X4

I graduated with an Honors Bachelor of Science Degree in Geological Sciences from Brock University in 1981.

I am a practising member of the Association of Professional Geoscientists of Ontario (Registration Number 2018).

I have worked as a geologist for over 30 years since graduation from Brock University. My experience includes conception, planning/budgeting, implementation and completion of numerous surface geological, geophysical, geochemical programs, and underground programs on many properties for numerous Exploration and Mining companies. The work has included the writing of project reports and technical reports.

This report is not an NI 43-101 technical report. This Report has been completed for First Minerals Exploration Ltd., to provide summary data on the VLF-EM survey of the Gold Creek Property in Duckworth Township, Ontario, and to act as a tool to plan future exploration activities.

I have had prior involvement with the property having visited the Ad and Af showings in July, 2017.

I have received no compensation for this report other than normal consulting fees.

Dated this 3rd day of April, 2019.

Bruce Edgar, Honors BSc, P. Geo.

Appendix I

VLF-EM Raw In-Phase and Quadrature Readings

FID	Line	X_N83Z16	Y_N83Z16	Inphase	Quadrature	Elevation
1	2175 E	682172	5347340	15	11	389 m
2	2175 E	682178	5347315	6	9	389 m
3	2175 E	682176	5347310	2	6	390 m
4	2175 E	682178	5347288	-4	2	391 m
5	2175 E	682176	5347273	-5	2	392 m
6	2175 E	682175	5347261	-12	-5	392 m
7	2175 E	682174	5347244	-25	-10	390 m
8	2175 E	682172	5347230	-5	1	390 m
9	2175 E	682180	5347214	11	8	391 m
10	2175 E	682177	5347198	18	11	390 m
11	2175 E	682184	5347186	25	18	390 m
12	2175 E	682181	5347168	13	10	393 m
13	2175 E	682175	5347159	5	8	394 m
14	2225 E	682226	5347148	0	6	393 m
15	2225 E	682225	5347164	0	5	395 m
16	2225 E	682218	5347182	-1	4	393 m
17	2225 E	682215	5347191	0	6	392 m
18	2225 E	682217	5347204	4	6	392 m
19	2225 E	682222	5347223	2	2	392 m
20	2225 E	682227	5347241	-15	-4	392 m
21	2225 E	682219	5347254	-9	-2	393 m
22	2225 E	682224	5347271	-5	1	394 m
23	2225 E	682224	5347285	-2	1	395 m
24	2225 E	682223	5347304	-2	2	396 m
25	2225 E	682226	5347315	-2	4	396 m
26	2225 E	682222	5347330	2	4	393 m
27	2225 E	682222	5347342	2	6	395 m
28	2225 E	682226	5347360	6	8	396 m
29	2275 E	682274	5347380	4	4	401 m
30	2275 E	682277	5347364	2	4	402 m
31	2275 E	682280	5347350	0	4	401 m
32	2275 E	682278	5347334	-1	2	402 m
33	2275 E	682272	5347319	-1	3	401 m
34	2275 E	682267	5347304	-1	0	400 m
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36	2275 E	682275	5347277	-6	0	397 m
37	2275 E	682272	5347256	-10	-2	392 m
38	2275 E	682270	5347244	0	4	392 m
39	2275 E	682269	5347228	15	12	393 m
40	2275 E	682273	5347213	7	10	395 m
41	2275 E	682278	5347199	2	6	394 m
42	2275 E	682280	5347186	5	8	395 m

43	2275 E	682279	5347172	4	10	396 m
44	2275 E	682276	5347151	0	7	403 m
45	2325 E	682325	5347149	-1	4	388 m
46	2325 E	682327	5347165	1	8	390 m
47	2325 E	682327	5347180	1	8	388 m
48	2325 E	682328	5347192	-1	6	388 m
49	2325 E	682324	5347210	3	4	389 m
50	2325 E	682324	5347223	-3	2	388 m
51	2325 E	682323	5347242	-6	-4	388 m
52	2325 E	682323	5347252	-5	-1	389 m
53	2325 E	682324	5347269	0	4	389 m
54	2325 E	682327	5347282	5	12	388 m
55	2325 E	682324	5347298	5	7	389 m
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58	2325 E	682327	5347345	-5	0	391 m
59	2325 E	682319	5347358	-3	1	395 m
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62	2325 E	682327	5347409	0	5	396 m
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84	2425 E	682423	5347214	-1	5	398 m
85	2425 E	682424	5347232	1	7	399 m

86	2425 E	682417	5347246	1	4	398 m
87	2425 E	682419	5347262	0	3	395 m
88	2425 E	682420	5347261	2	6	395 m
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97	2425 E	682425	5347413	5	10	379 m
98	2425 E	682426	5347426	4	4	381 m
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100	2475 E	682476	5347419	5	4	394 m
101	2475 E	682475	5347401	4	2	394 m
102	2475 E	682473	5347387	4	2	394 m
103	2475 E	682474	5347371	2	2	397 m
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105	2475 E	682475	5347343	2	2	400 m
106	2475 E	682475	5347325	2	2	398 m
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210	2725 E	682726	5347275	1	1	394 m
211	2725 E	682729	5347288	3	2	394 m
212	2725 E	682722	5347302	2	2	398 m
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221	2725 E	682729	5347434	5	0	394 m
222	2725 E	682731	5347447	10	2	394 m
223	2725 E	682727	5347466	3	0	392 m
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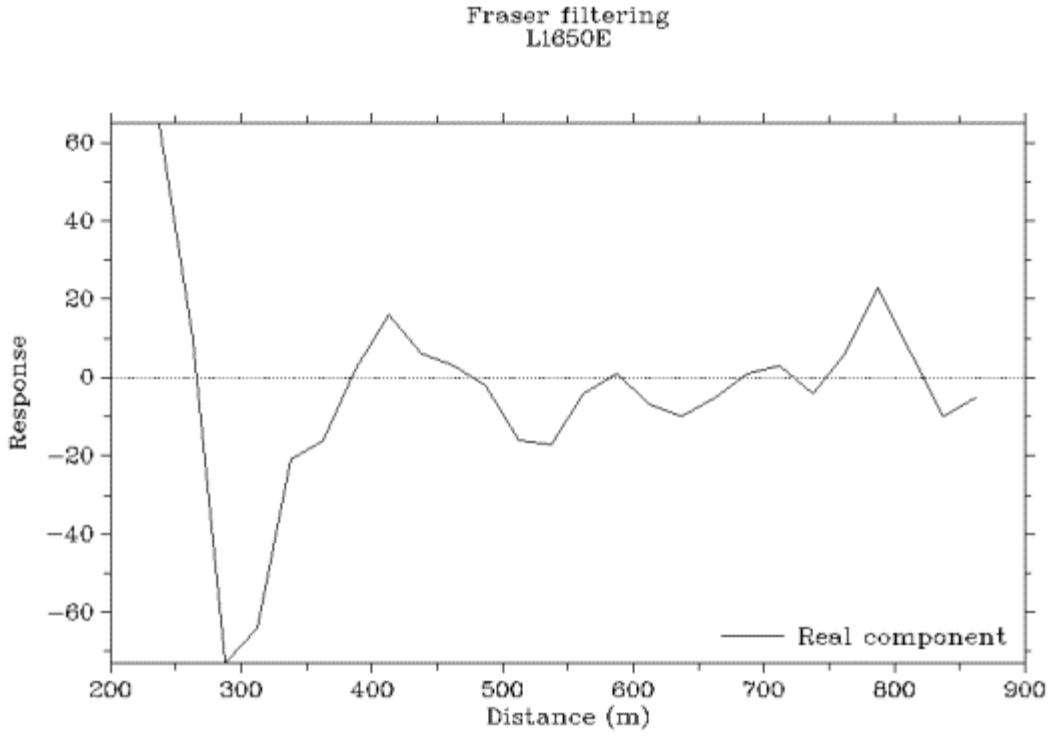
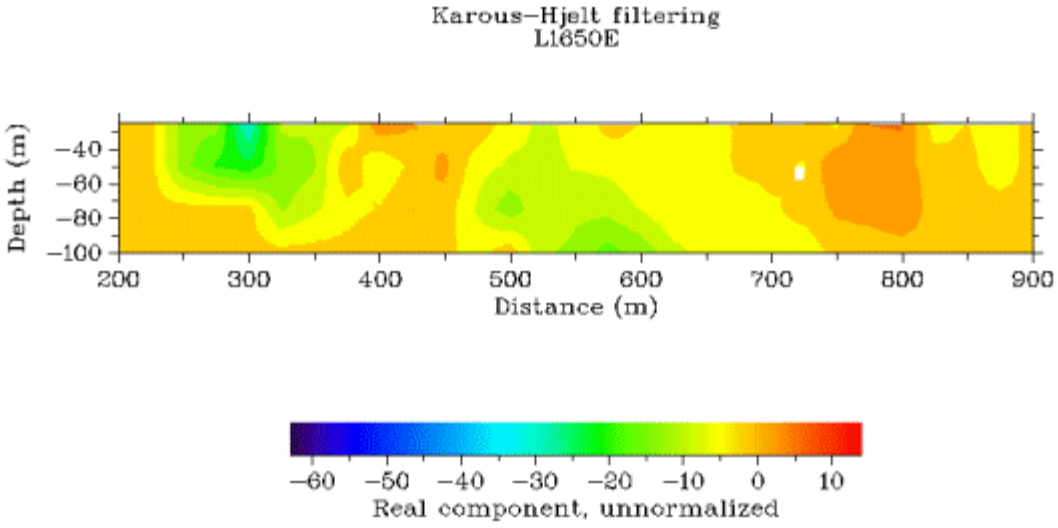
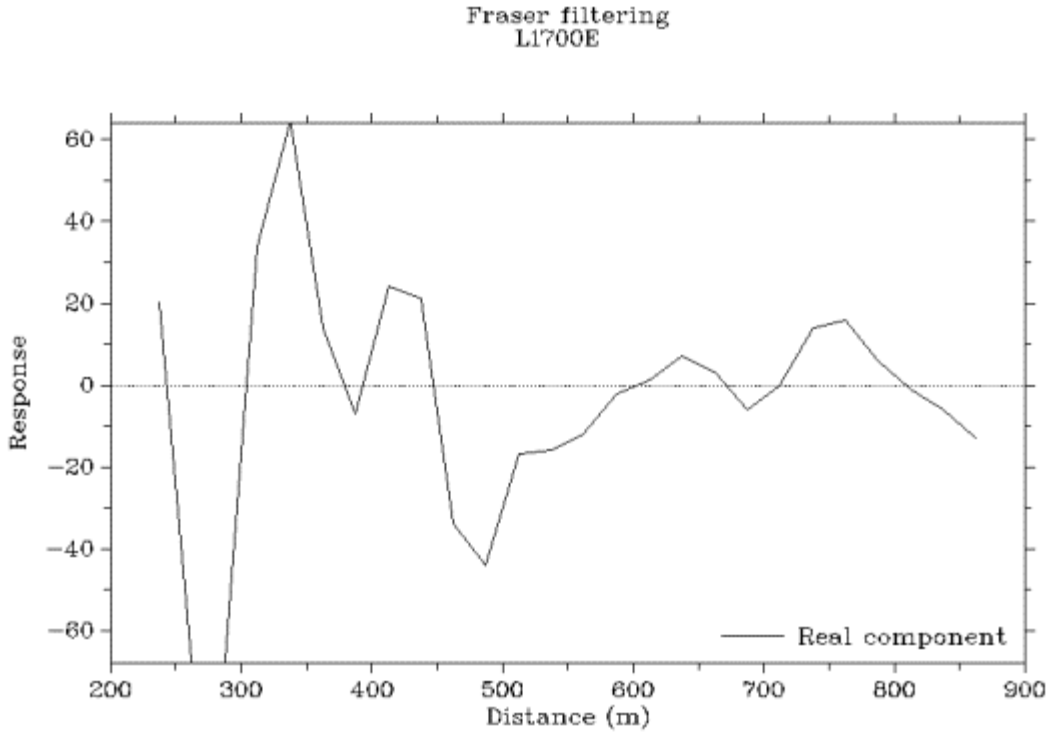
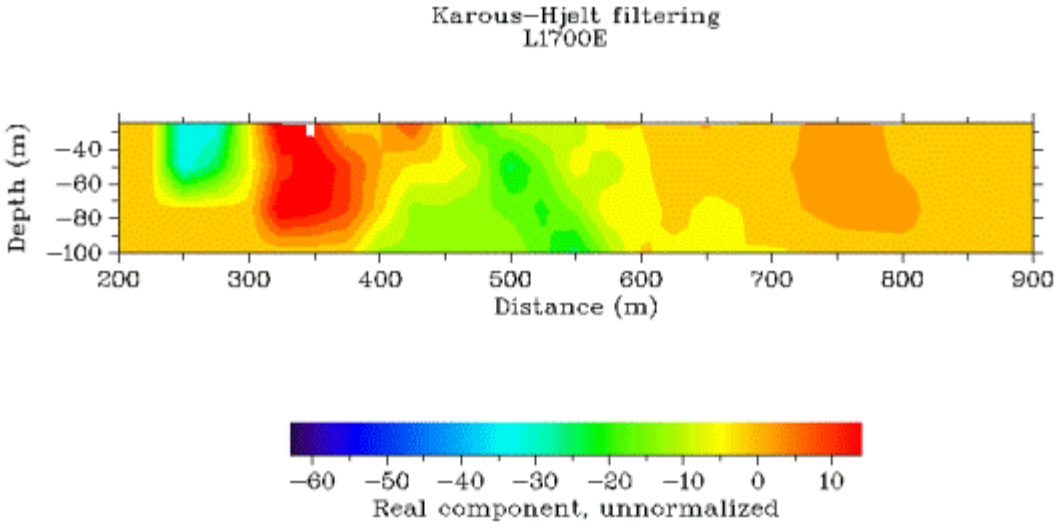
APPENDIX II

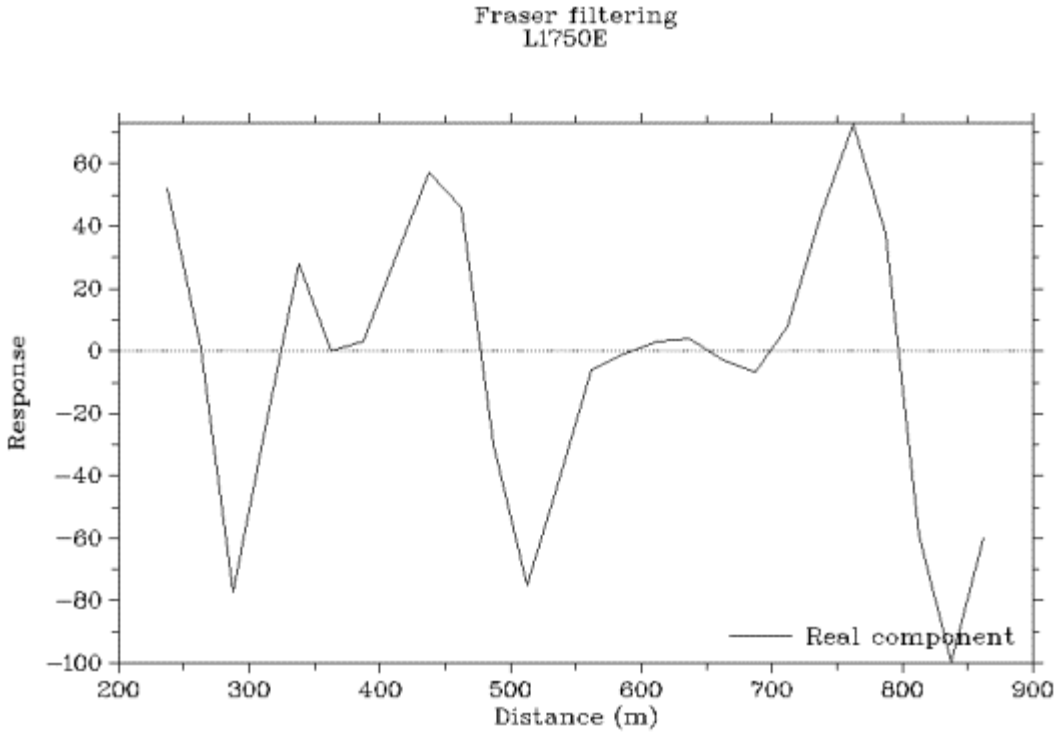
Fraser and Karous-Hjelt Filtered profiles


Fraser filtering
L1650E
Response
60
40
20
0
−20
−40
−60
200
300
400
500
600
700
800
900
Distance (m)
Real component


Karous−Hjelt filtering
L1650E
Depth (m)
−40
−60
−80
−100
200
300
400
500
600
700
800
900
Distance (m)
−60
−50
−40
−30
−20
−10
0
10
Real component, unnormalized


Fraser filtering
L1700E
Response
60
40
20
0
−20
−40
−60
200
300
400
500
600
700
800
900
Distance (m)
Real component


Karous−Hjelt filtering
L1700E
Depth (m)
−40
−60
−80
−100
200
300
400
500
600
700
800
900
Distance (m)
−60
−50
−40
−30
−20
−10
0
10
Real component, unnormalized


Fraser filtering
L1750E
Response
60
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−60
−80
−100
200
300
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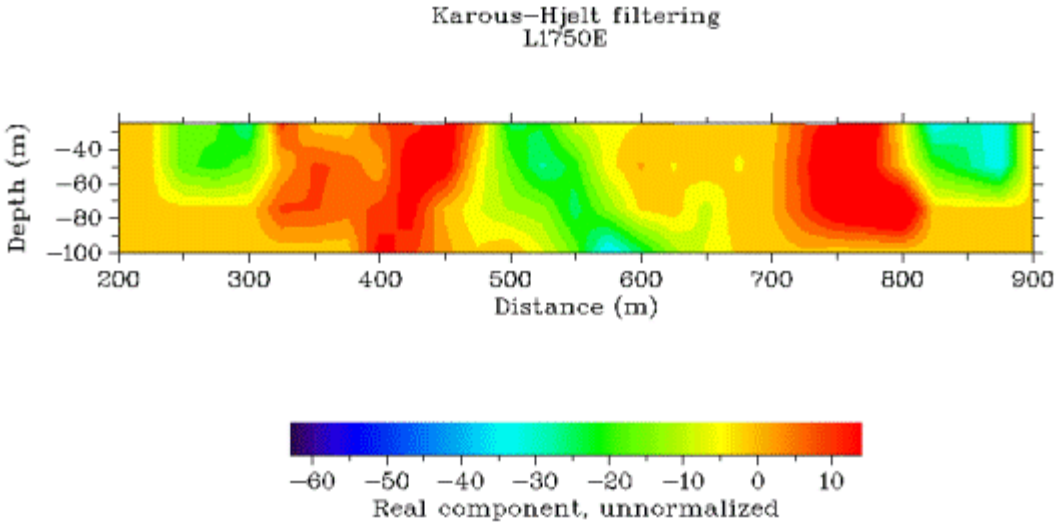
500
600
700
800
900
Distance (m)
Real component


Karous−Hjelt filtering
L1750E
Depth (m)
−40
−60
−80
−100
200
300
400
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600
700
800
900
Distance (m)
−60
−50
−40
−30
−20
−10
0
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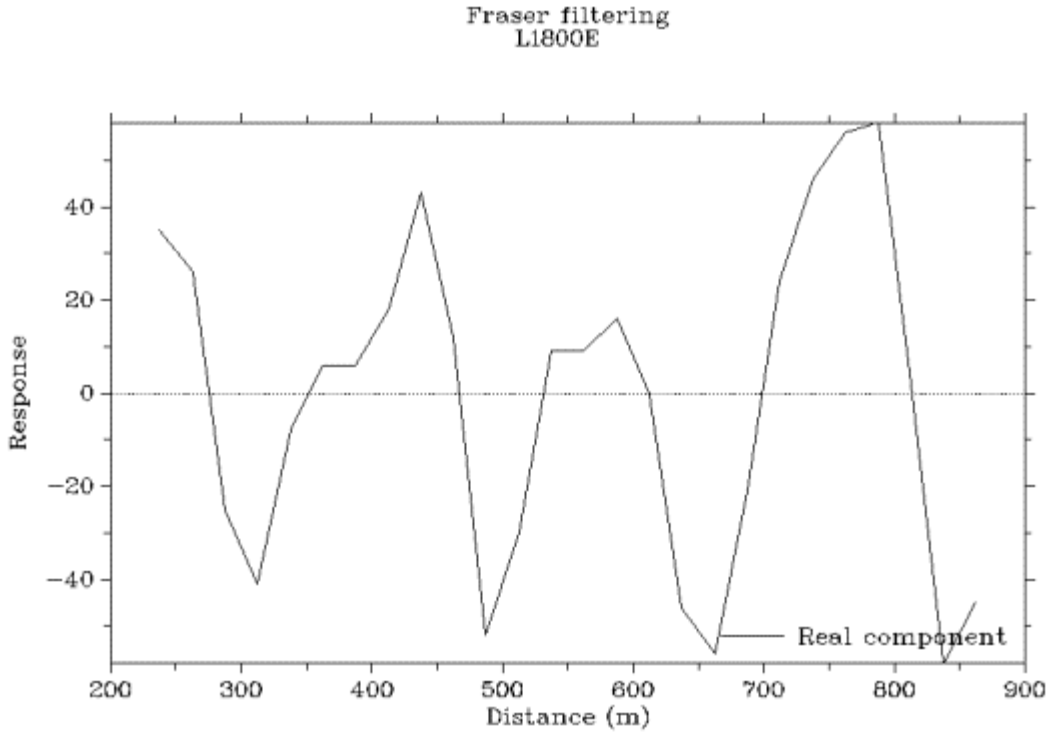
Real component, unnormalized


Fraser filtering
L1800E
Response
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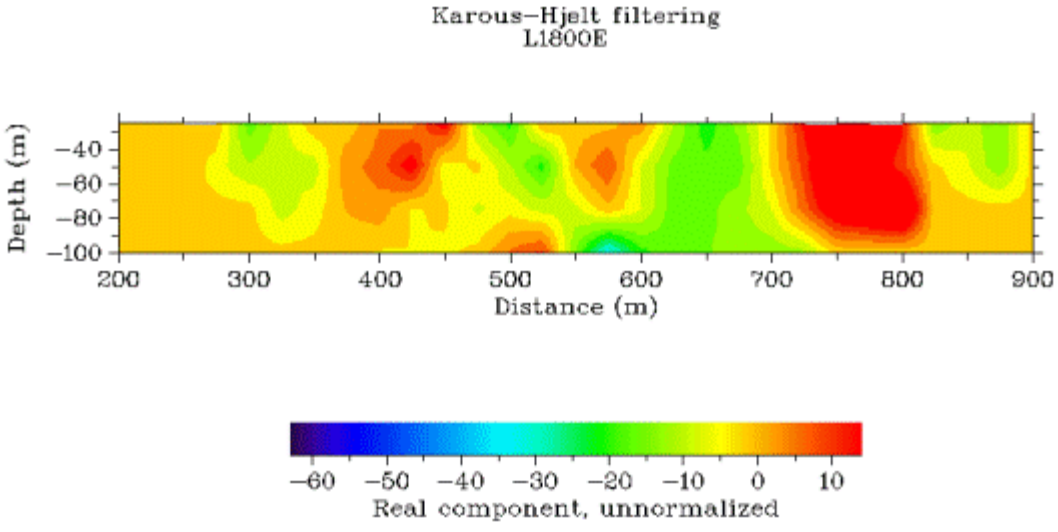
0
−20
−40
Real component
200
300
400
500
600
700
800
900
Distance (m)


Karous−Hjelt filtering
L1800E
Depth (m)
−40
−60
−80
−100
200
300
400
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600
700
800
900
Distance (m)
−60
−50
−40
−30
−20
−10
0
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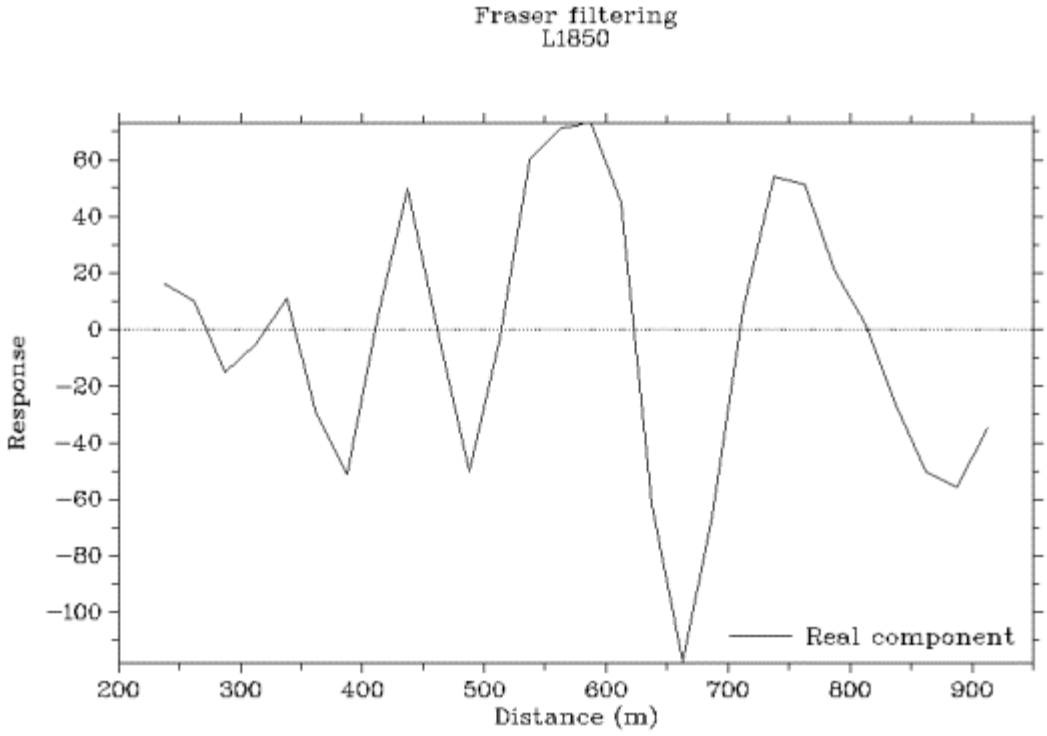
Real component, unnormalized


Fraser filtering
L1850
Response
60
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20
0
−20
−40
−60
−80
−100
Real component
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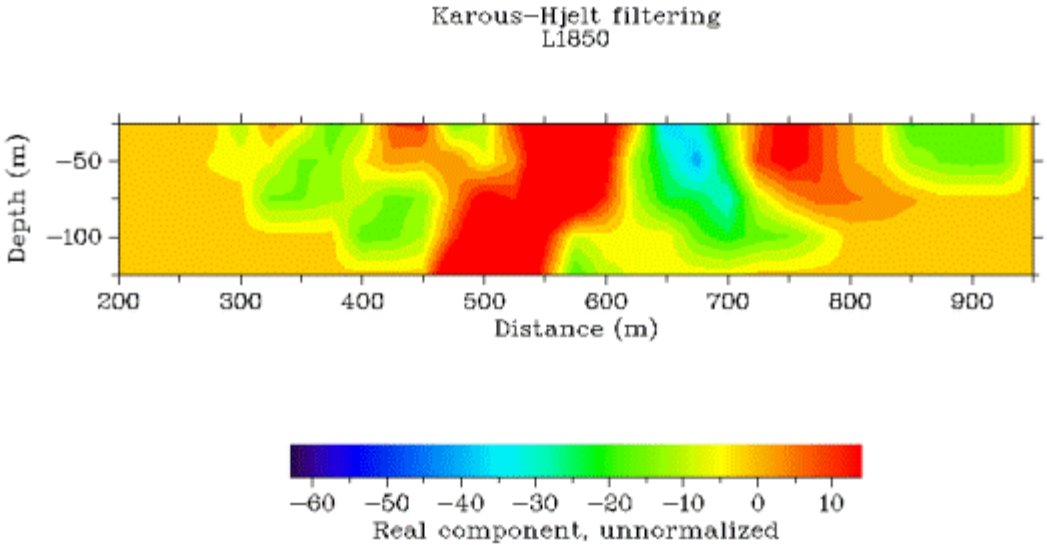
300
400
500
600
700
800
900
Distance (m)


Karous−Hjelt filtering
L1850
Depth (m)
−50
−100
200
300
400
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600
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800
900
Distance (m)
−60
−50
−40
−30
−20
−10
0
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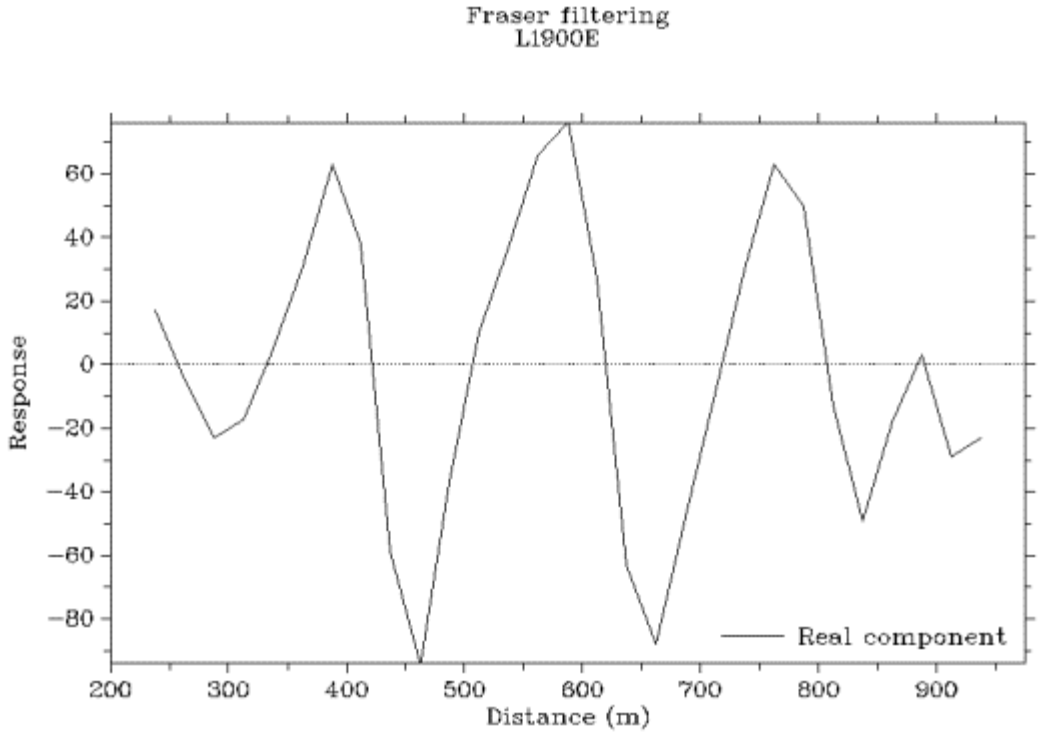
Real component, unnormalized


Fraser filtering
L1900E
Response
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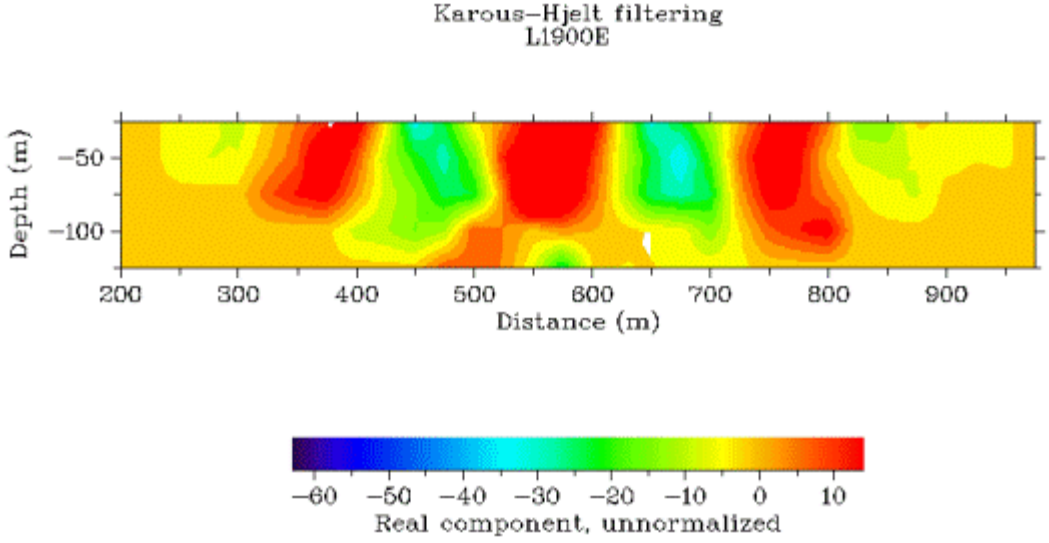
−20
−40
−60
−80
Real component
200
300
400
500
600
700
800
900
Distance (m)


Karous−Hjelt filtering
L1900E
Depth (m)
−50
−100
200
300
400
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600
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900
Distance (m)
−60
−50
−40
−30
−20
−10
0
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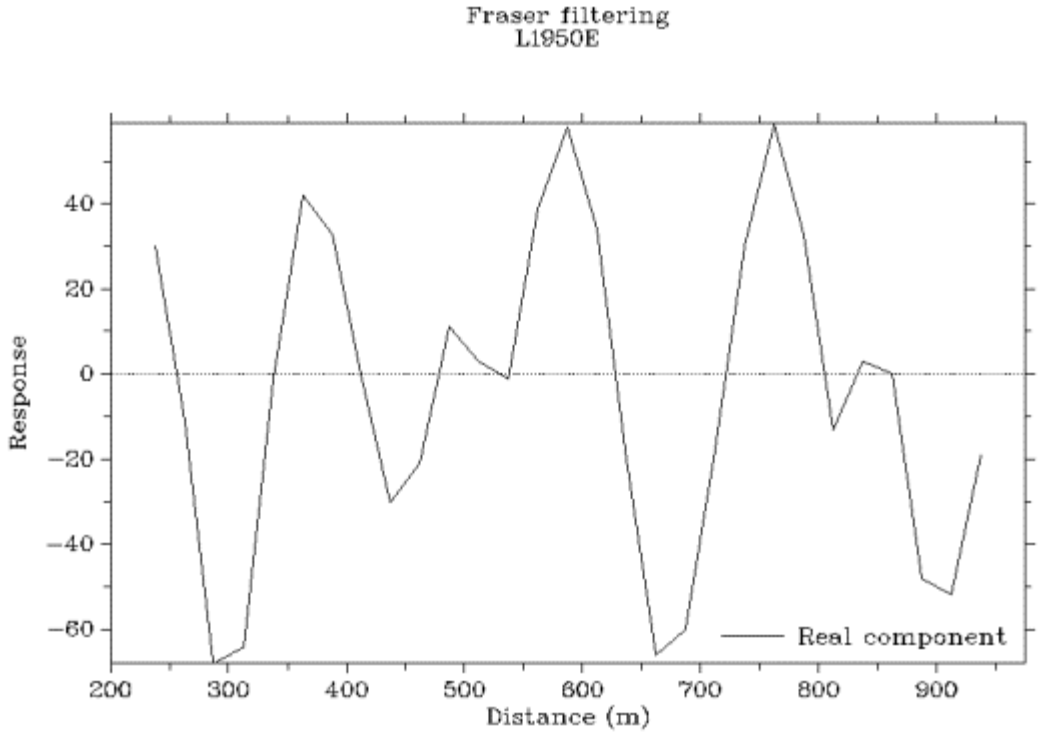
Real component, unnormalized


Fraser filtering
L1950E
Response
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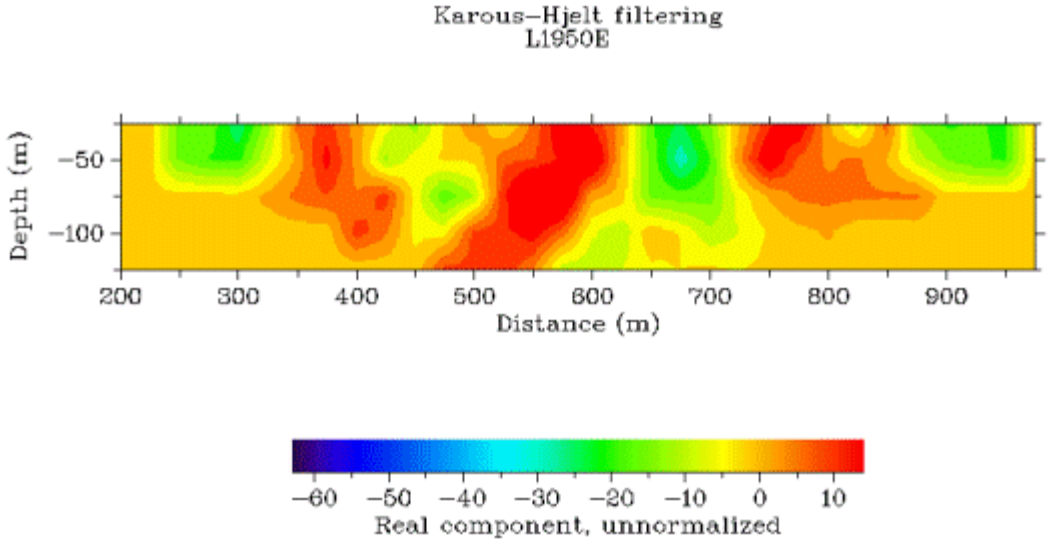
0
−20
−40
−60
200
300
400
500
600
700
800
900
Distance (m)
Real component


Karous−Hjelt filtering
L1950E
Depth (m)
−50
−100
200
300
400
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600
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800
900
Distance (m)
−60
−50
−40
−30
−20
−10
0
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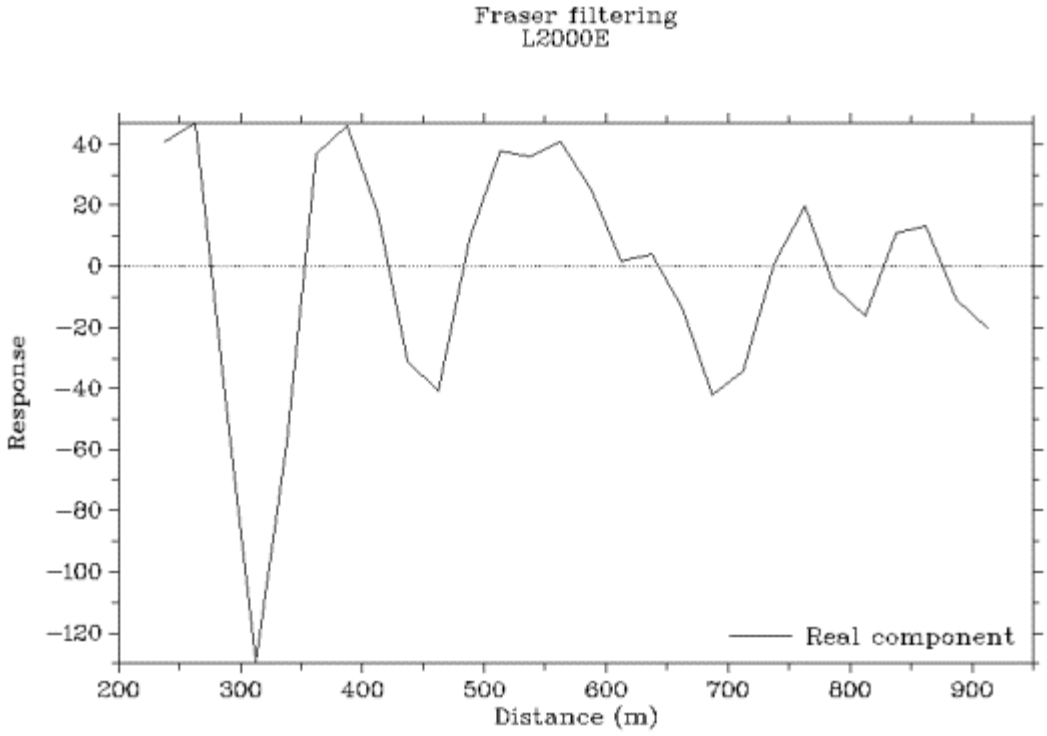
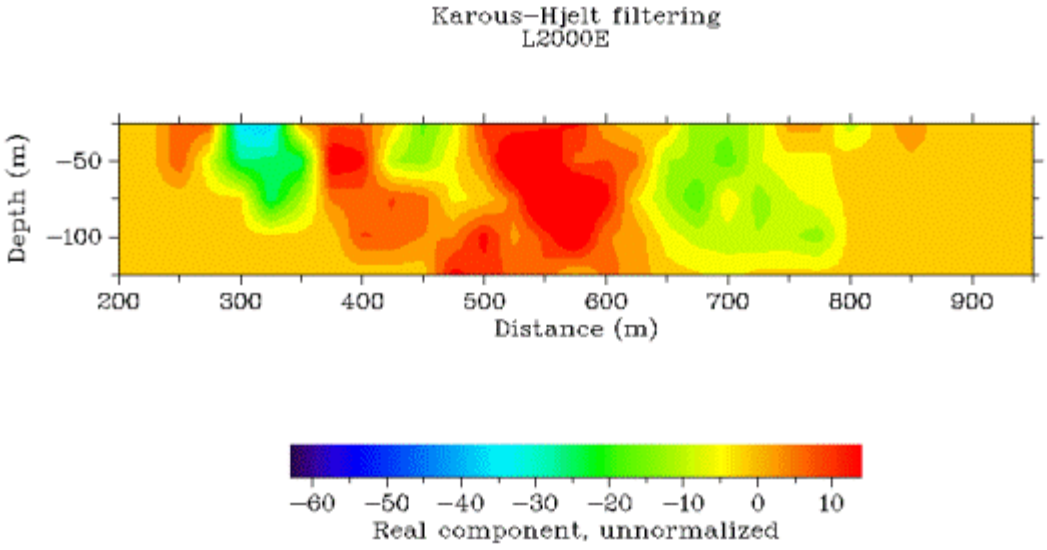
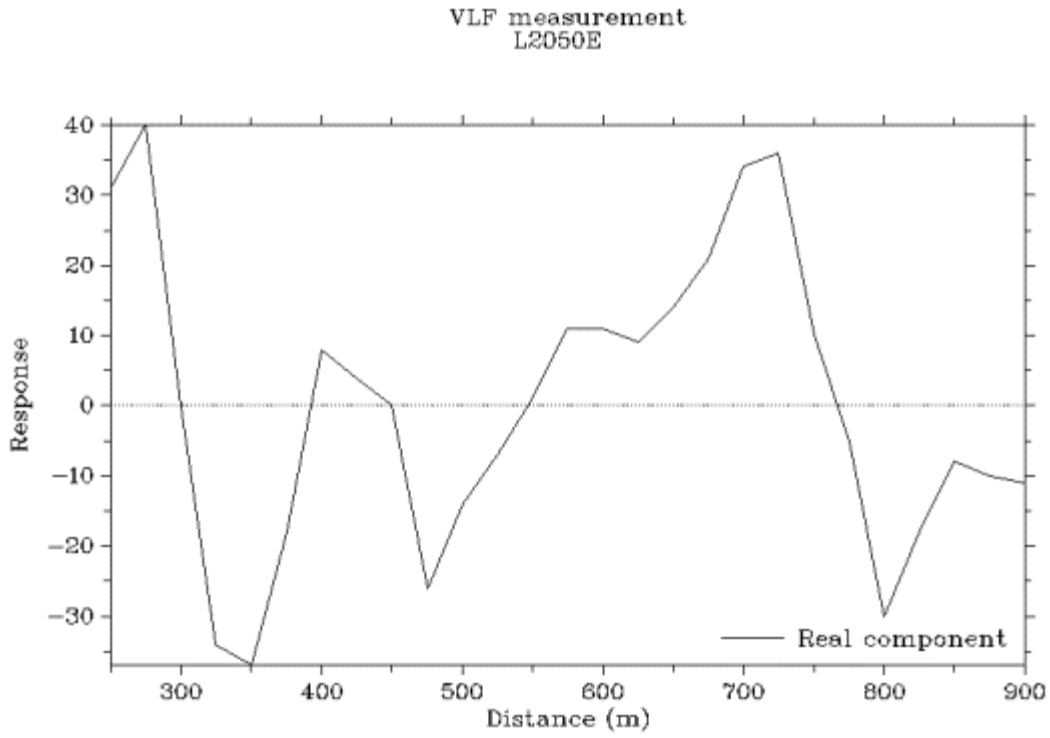
Real component, unnormalized


Fraser filtering
L2000E
Response
40
20
0
−20
−40
−60
−80
−100
−120
Real component
200
300
400
500
600
700
800
900
Distance (m)


Karous−Hjelt filtering
L2000E
Depth (m)
−50
−100
200
300
400
500
600
700
800
900
Distance (m)
−60
−50
−40
−30
−20
−10
0
10
Real component, unnormalized


VLF measurement
L2050E
Response
40
30
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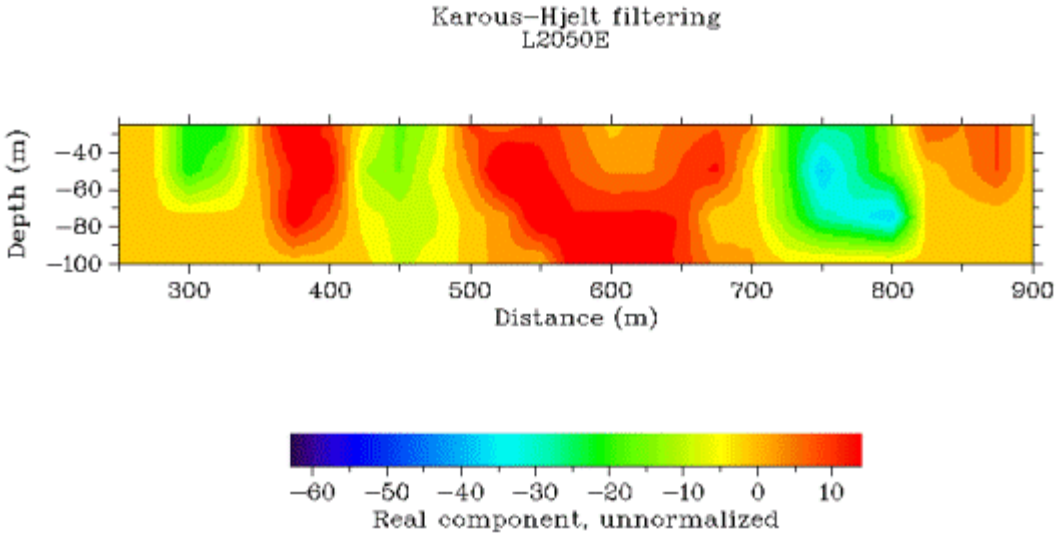
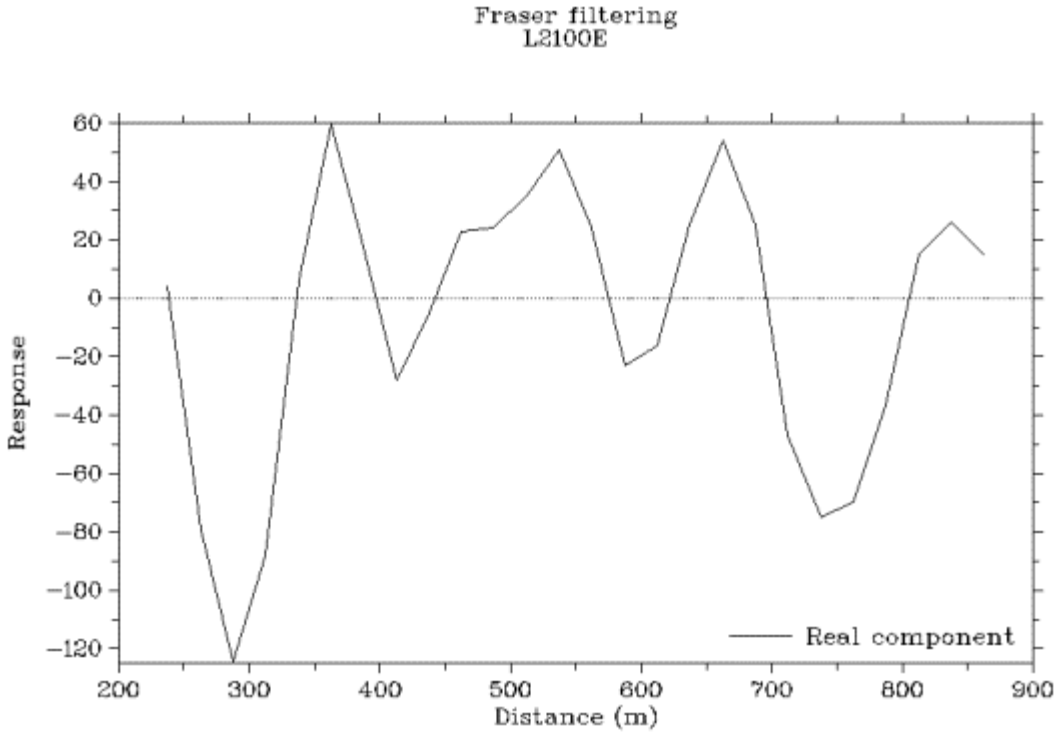
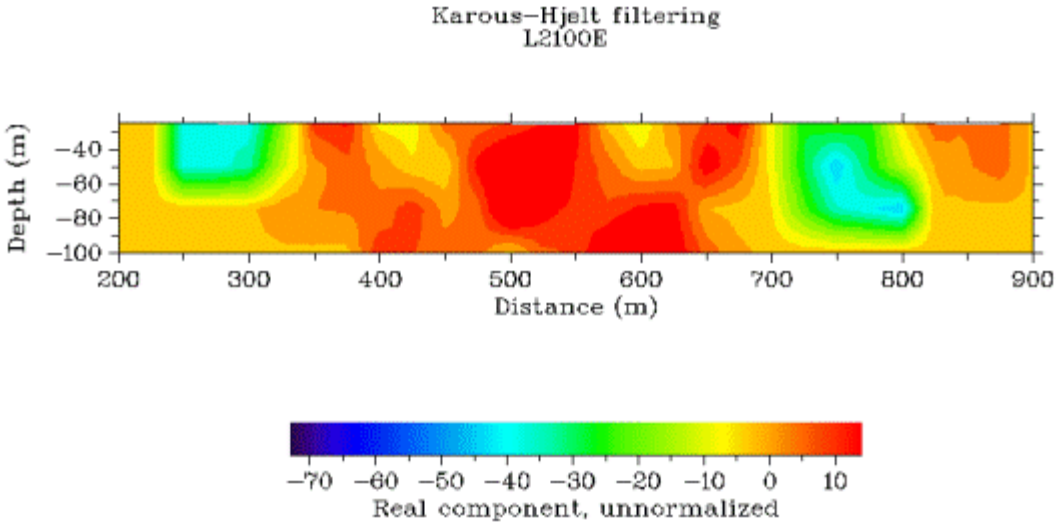
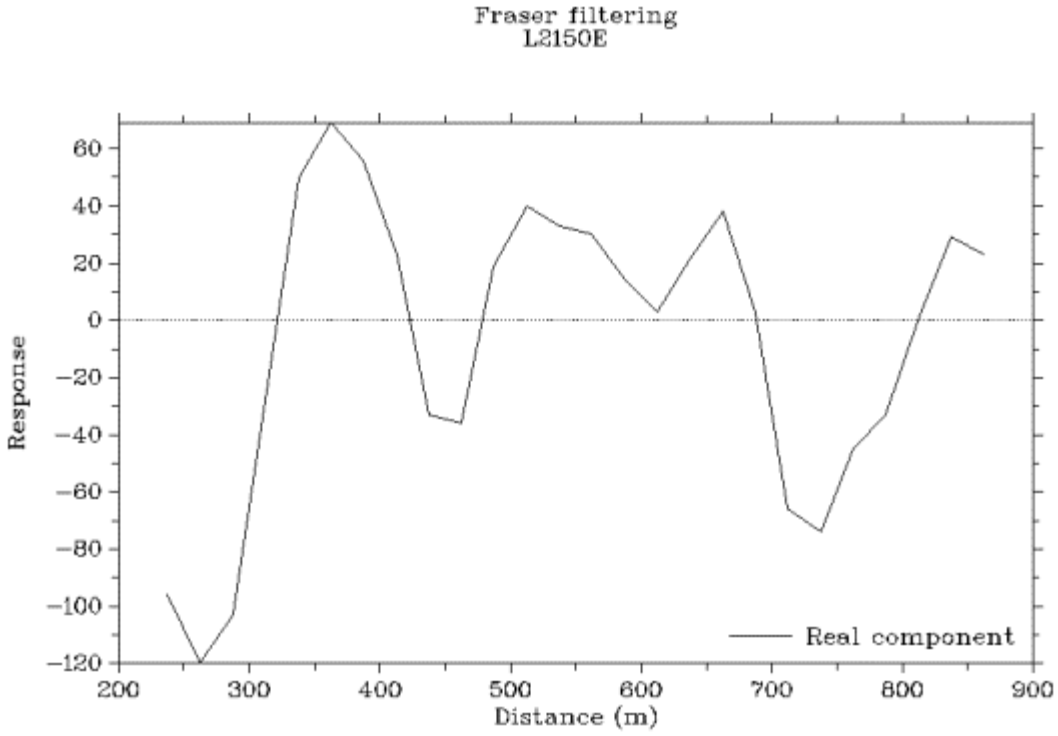
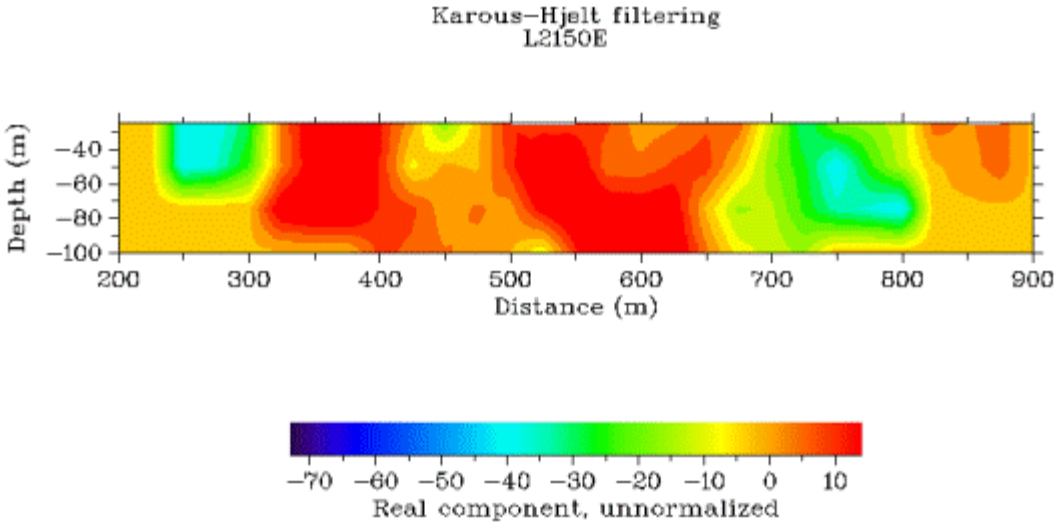
10
0
−10
−20
−30
Real component
300
400
500
600
700
800
900
Distance (m)

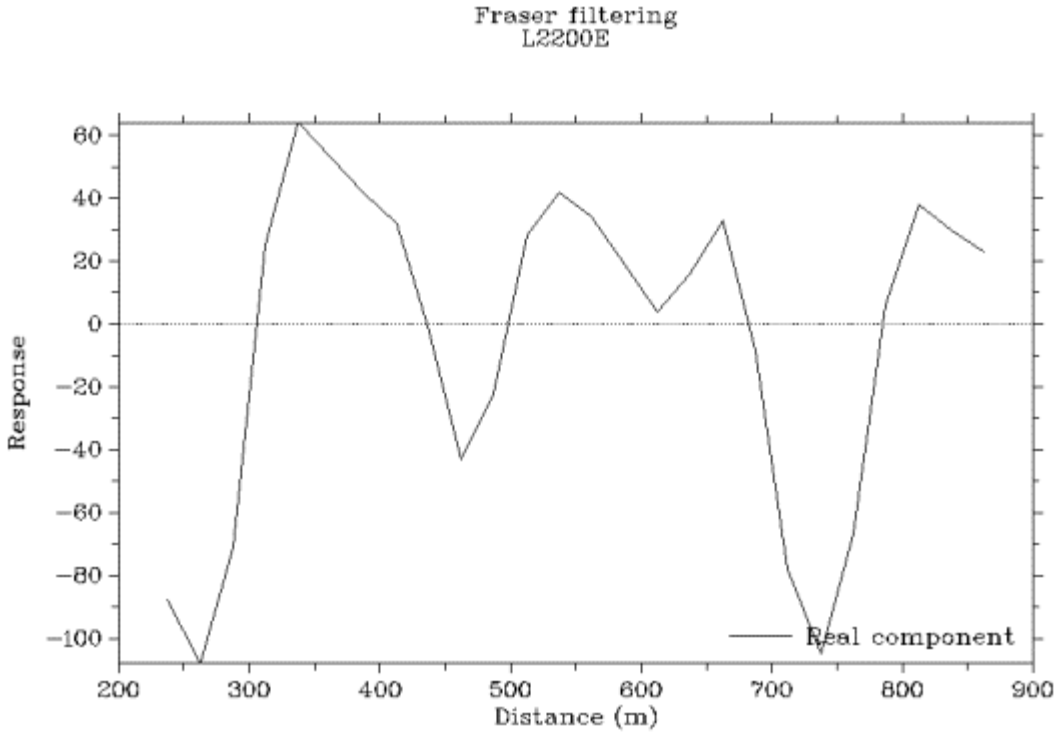

Karous−Hjelt filtering
L2050E
Depth (m)
−40
−60
−80
−100
300
400
500
600
700
800
900
Distance (m)
−60
−50
−40
−30
−20
−10
0
10
Real component, unnormalized

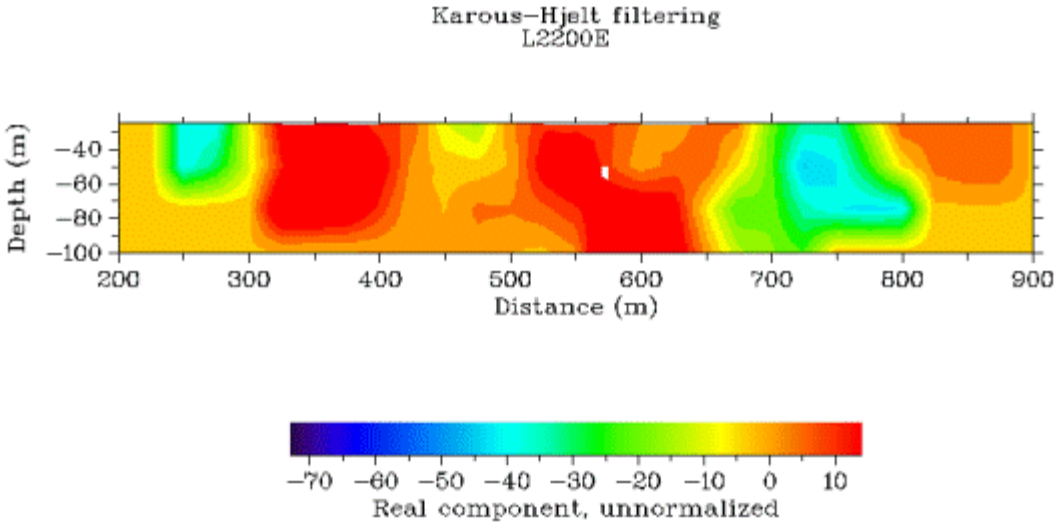

Fraser filtering
L2100E
Response
60
40
20
0
−20
−40
−60
−80
−100
−120
200
300
400
500
600
700
800
900
Distance (m)
Real component

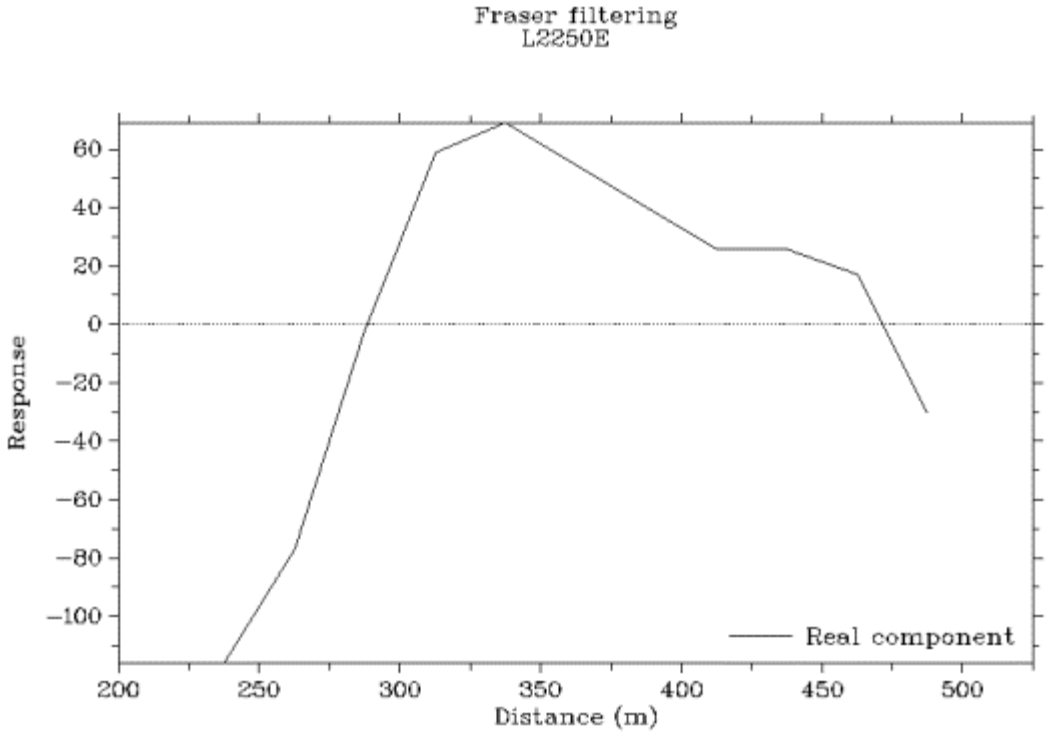

Karous−Hjelt filtering
L2100E
Depth (m)
−40
−60
−80
−100
200
300
400
500
600
700
800
900
Distance (m)
−70
−60
−50
−40
−30
−20
−10
0
10
Real component, unnormalized


Fraser filtering
L2150E
Response
60
40
20
0
−20
−40
−60
−80
−100
−120
200
300
400
500
600
700
800
900
Distance (m)
Real component


Karous−Hjelt filtering
L2150E
Depth (m)
−40
−60
−80
−100
200
300
400
500
600
700
800
900
Distance (m)
−70
−60
−50
−40
−30
−20
−10
0
10
Real component, unnormalized


Fraser filtering
L2200E
Response
60
40
20
0
−20
−40
−60
−80
−100
200
300
400
500
600
700
800
900
Distance (m)
Real component


Karous−Hjelt filtering
L2200E
Depth (m)
−40
−60
−80
−100
200
300
400
500
600
700
800
900
Distance (m)
−70
−60
−50
−40
−30
−20
−10
0
10
Real component, unnormalized


Fraser filtering
L2250E
Response
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40
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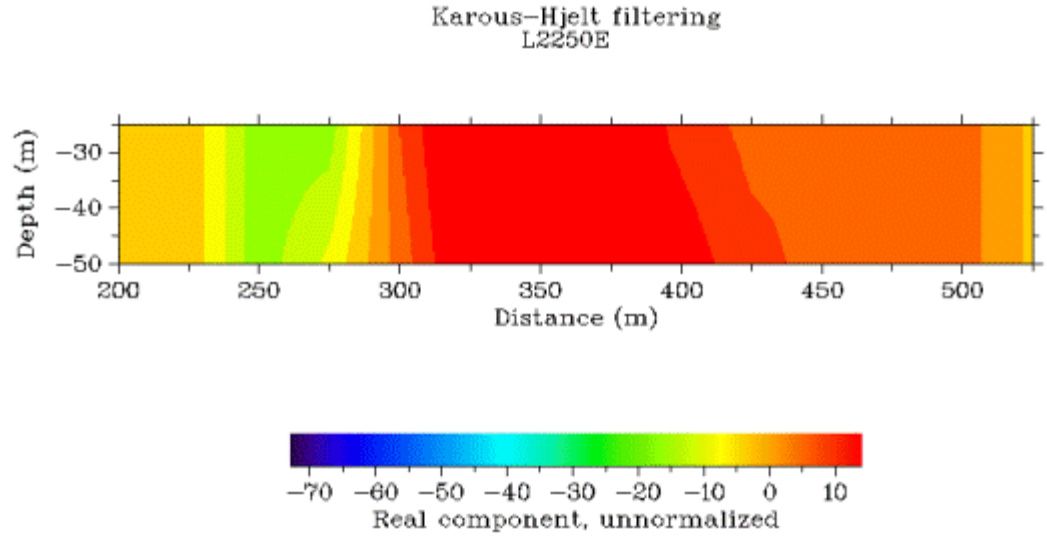
−20
−40
−60
−80
−100
Real component
200
250
300
350
400
450
500
Distance (m)


Karous−Hjelt filtering
L2250E
Depth (m)
−30
−40
−50
200
250
300
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500
Distance (m)
−70
−60
−50
−40
−30
−20
−10
0
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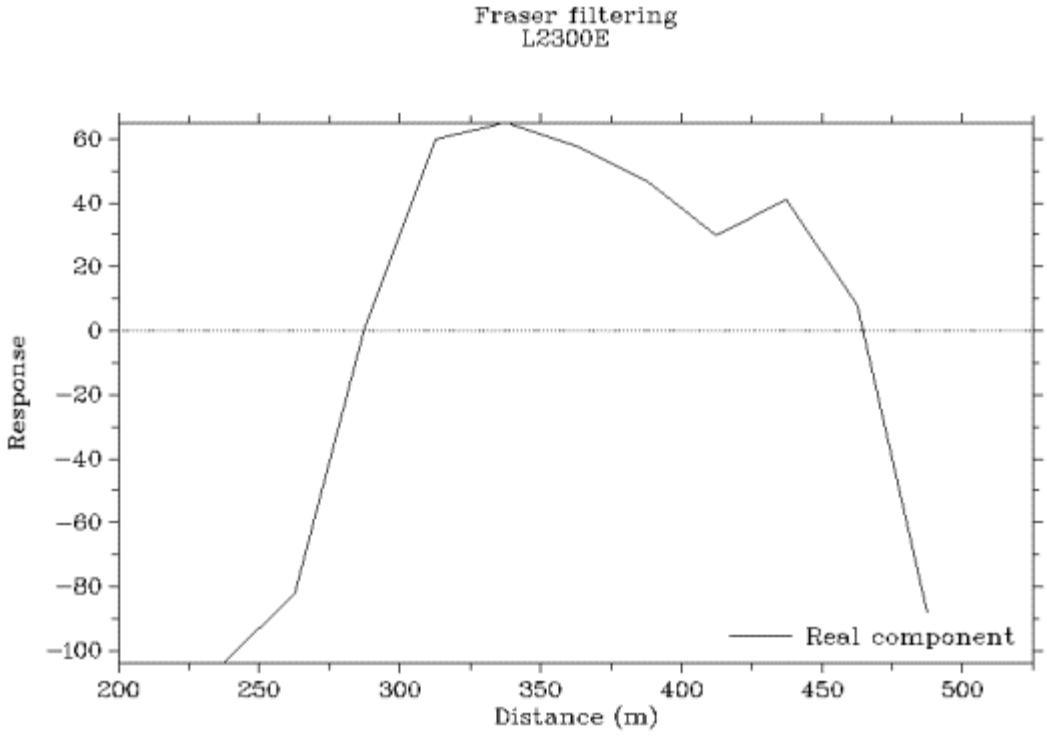
Real component, unnormalized


Fraser filtering
L2300E
Response
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−20
−40
−60
−80
−100
200
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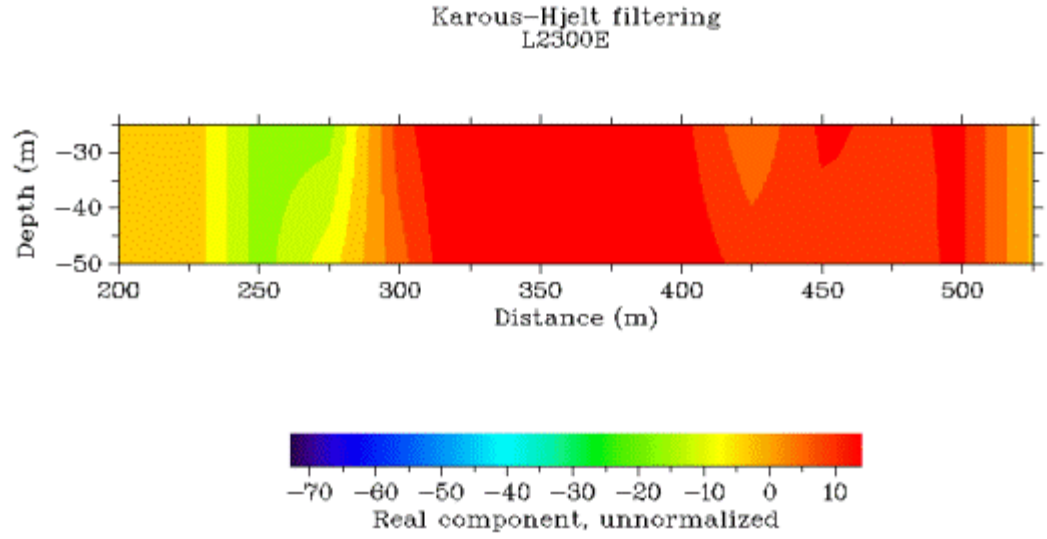
300
350
400
450
500
Distance (m)
Real component


Karous−Hjelt filtering
L2300E
Depth (m)
−30
−40
−50
200
250
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Distance (m)
−70
−60
−50
−40
−30
−20
−10
0
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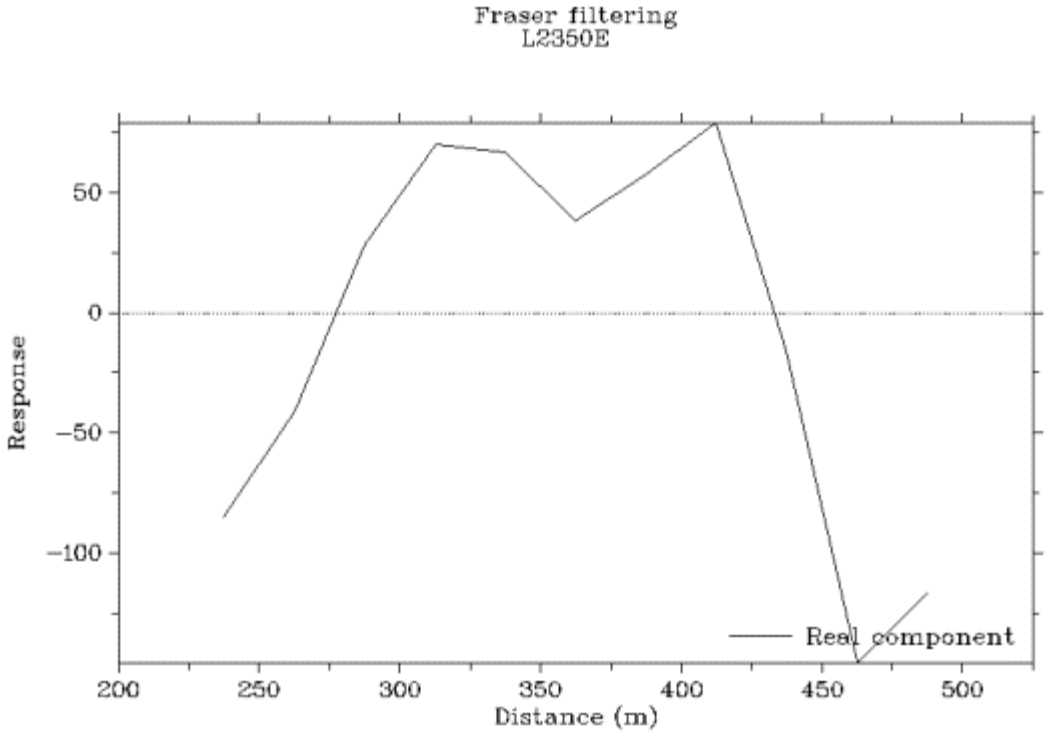
Real component, unnormalized


Fraser filtering
L2350E
Response
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−100
Real component
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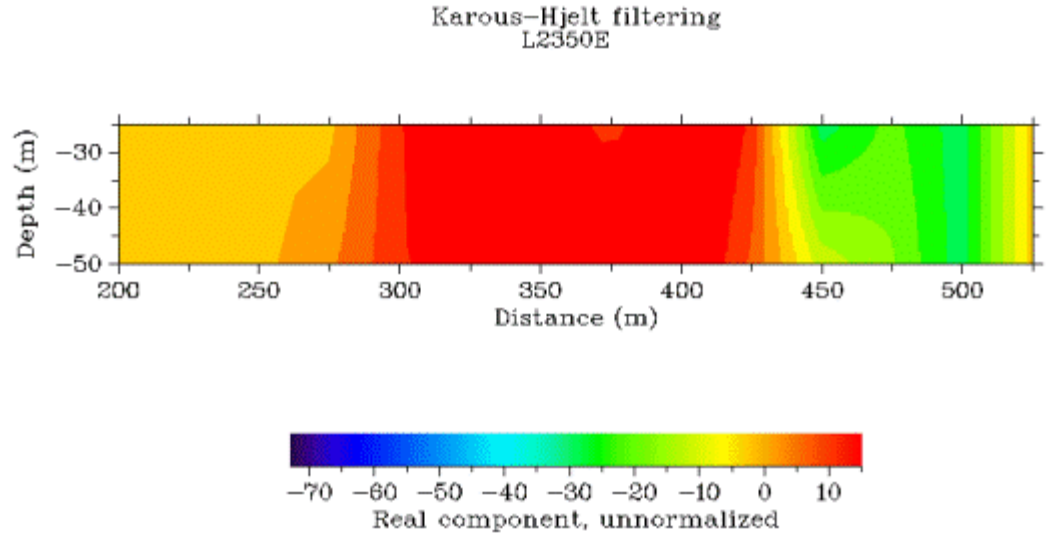
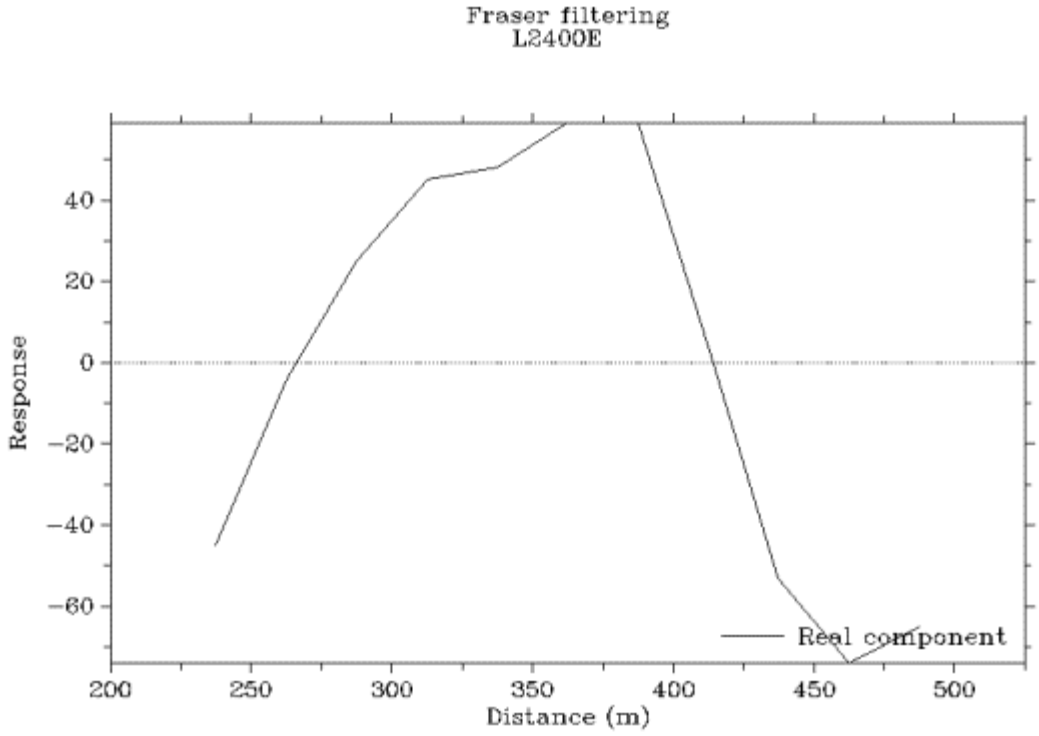
250
300
350
400
450
500
Distance (m)


Karous−Hjelt filtering
L2350E
Depth (m)
−30
−40
−50
200
250
300
350
400
450
500
Distance (m)
−70 −60 −50 −40 −30 −20 −10 0 10
Real component, unnormalized


Fraser filtering
L2400E
Response
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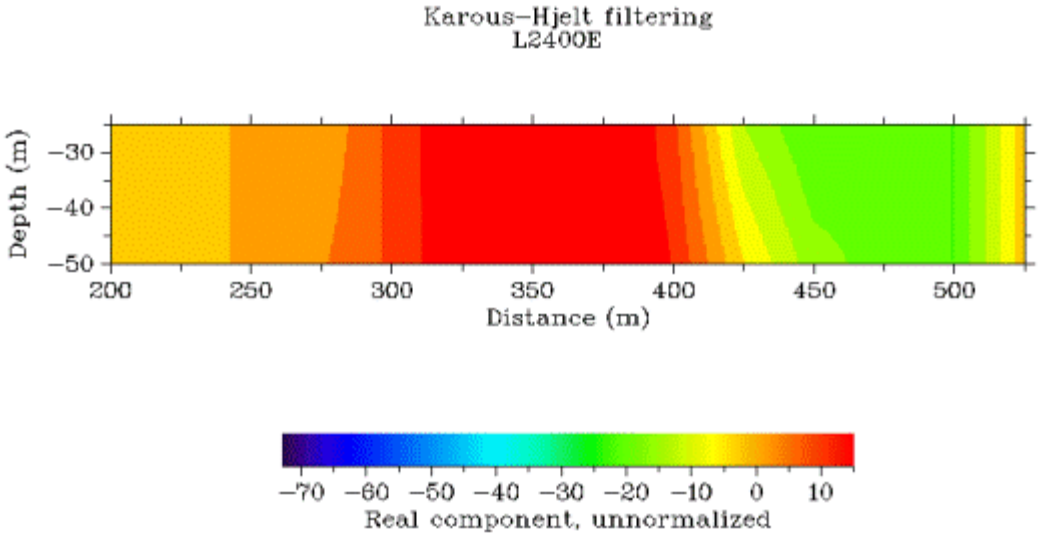
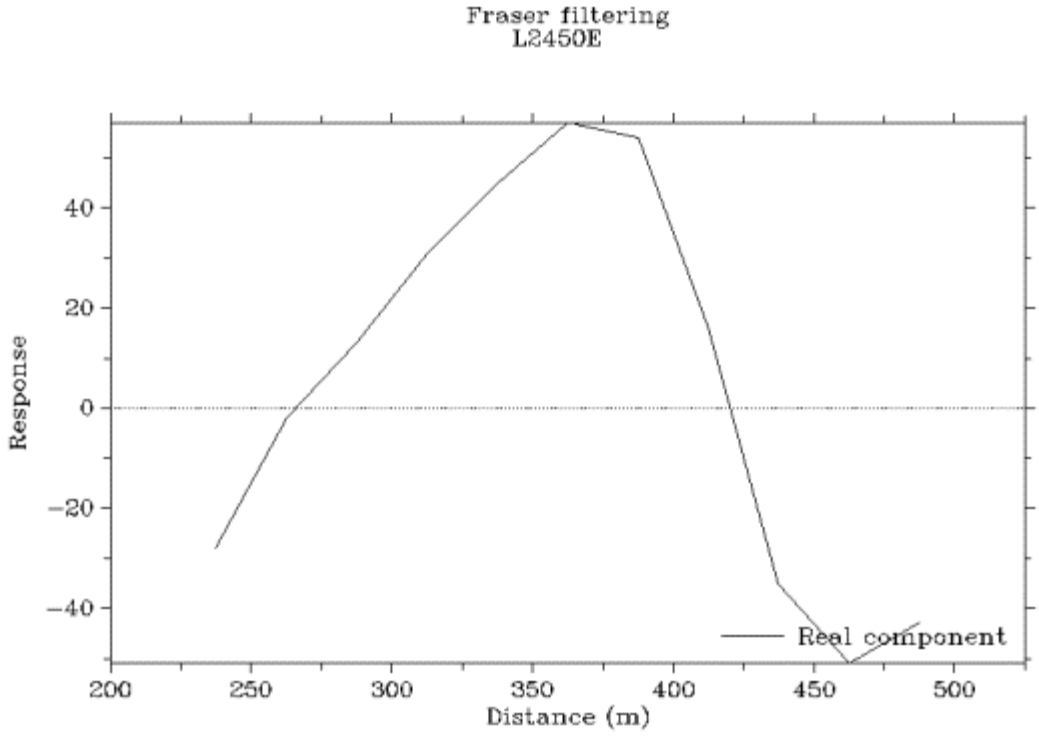
20
0
−20
−40
−60
Real component
200
250
300
350
400
450
500
Distance (m)


Karous−Hjelt filtering
L2400E
Depth (m)
−30
−40
−50
200
250
300
350
400
450
500
Distance (m)
−70 −60 −50 −40 −30 −20 −10 0 10
Real component, unnormalized


Fraser filtering
L2450E
Response
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−20
−40
Real component
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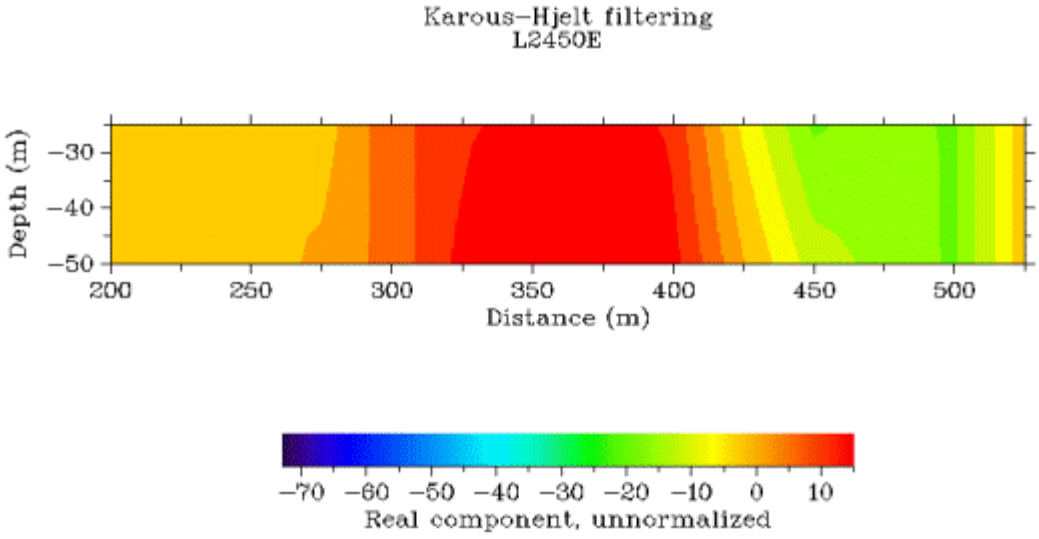
400
450
500
Distance (m)


Karous−Hjelt filtering
L2450E
Depth (m)
−30
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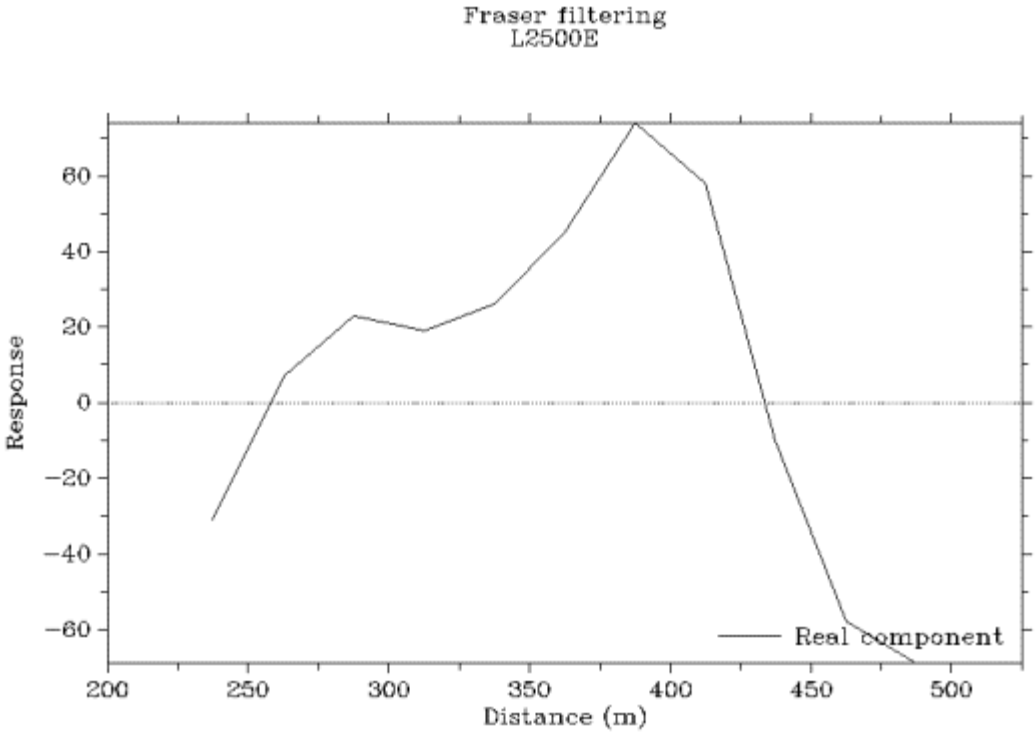
500
Distance (m)
−70 −60 −50 −40 −30 −20 −10 0 10
Real component, unnormalized


Fraser filtering
L2500E
Response
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40
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0
−20
−40
−60
200
250
300
350
400
450
500
Distance (m)
Real component