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GroundTruth Exploration Inc.

Box 70, Dawson YT, Y0B 1G0 (867) 993-5612



Geophysical Report

on the

Lower Coffee Creek and Dan Man Placer Prospecting Leases

Whitehorse Mining District

**Lower Coffee Lease No.: IW00480**

Owner: Tim Smith 100%

**Dan Man Creek Lease No.: IW00481**

Owner: Tom Bokenfohr 100%

Prepared by: Isaac Fage

GroundTruth Exploration Inc.

Lower Coffee Lease Location: 62.887° N, 139.087° W

Dan Man Lease Location: 62.945° N, 139.335° W

NTS Mapsheet: 115J/14

Surveyed on: September 26-27, 2016

Report Date: October 1, 2016



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# GroundTruth Exploration Inc.

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## 1. Summary

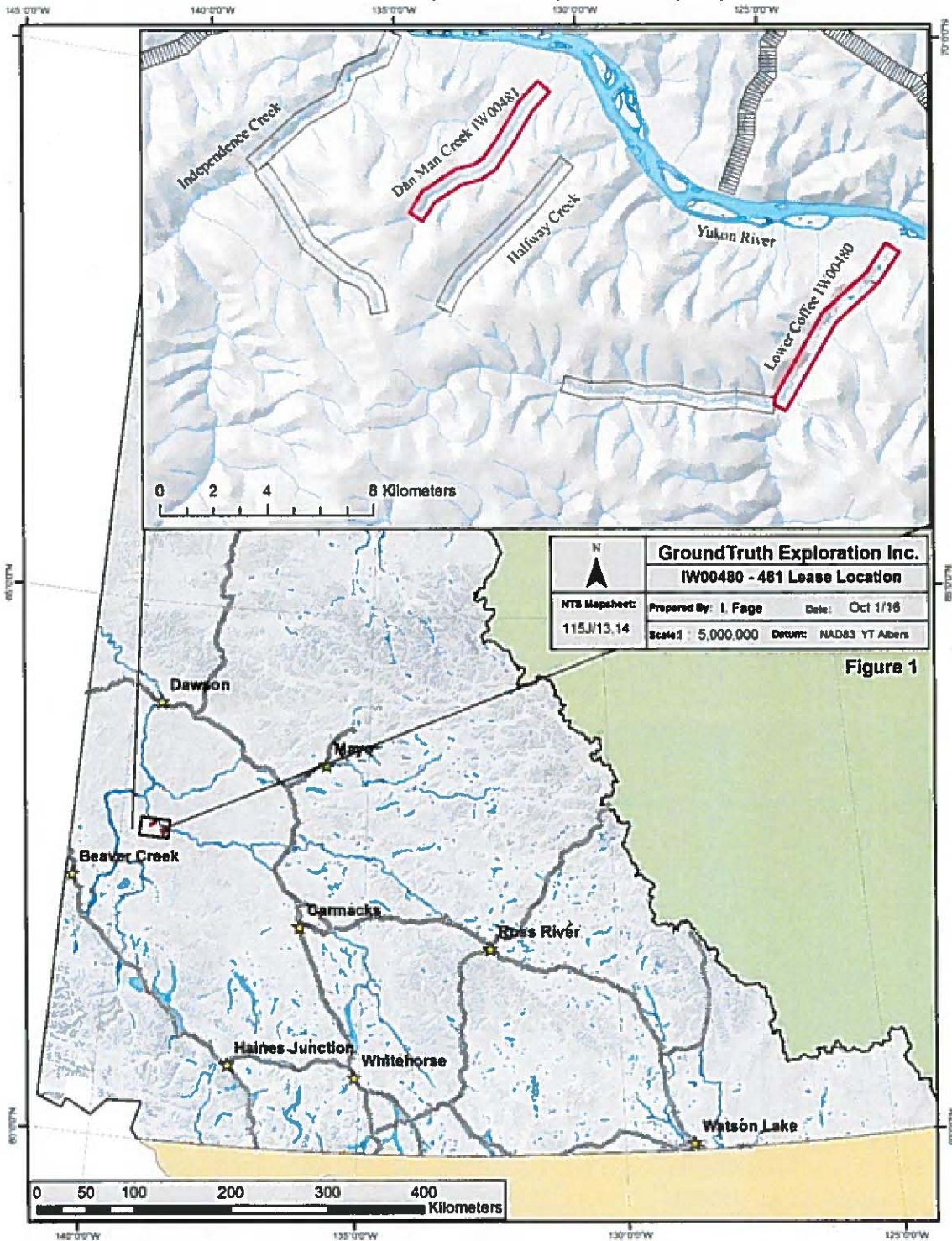
A High Resolution DC Resistivity survey with coincident Ground Magnetic and Ground Penetrating Radar surveys were conducted on the Lower Coffee and Dan Man Creek placer leases to map bedrock depth and classify overburden material. The leases are located approximately 130km South of Dawson on the bottom end of Coffee and Dan Man Creeks which both flow directly into the Yukon River (figure 1).

The Lower Coffee surveys were conducted by GroundTruth Exploration of Dawson, YT on September 26<sup>th</sup>, 2016 and Dan Man Creek Surveys were conducted on September 27, 2016. The property was accessed by helicopter based in adjacent Coffee Gold Camp. On each lease, A total of two DC resistivity arrays were set up and read on a single cross creek profile and six Ground Magnetic profiles were surveyed as well as six Ground Penetrating Radar profiles. The resulting dataset is being used to interpret depth to bedrock, depth of overburden horizons and look for potential of magnetite black sand pay channels

The DC Resistivity Survey was read using a Supersting R8 resistivity meter with 84 electrodes spaced at 3m on the Lower Coffee lease, electrode spacing was set at 2m on the narrower Dan Man creek lease. The GPR survey was done using a GroundRadar 30 MHz GPR system and Ground Magnetic survey was run using at GEM 19T Proton magnetometer. Mag and GPR profiles were run overlapping and adjacent to the DC Resistivity Survey, both in continuous read modes at a line spacing of 50m.

The resistivity survey was successful in profiling bedrock depth and detecting permafrost depth interval. The Ground Penetrating Radar survey produced complex horizontal reflector features which do not significantly clarify the contacts identified in the resistivity survey. The MAG survey is predominantly showing effects of the underlying bedrock type. This is useful in forming a general understanding of the erosional and subsequent depositional environments, especially related to the differences in erosion rates of the varying bedrock for production of gold bearing channels. Further processing of the MAG data could potentially focus the findings on the near surface layer, eliminating the bedrock effect to more accurately highlight channels of black sand.

Location of the surveys is shown on Figure 2 for IW00480 and Figure 3 for IW00481.



**Figure 1**

Figure 1: Location Map

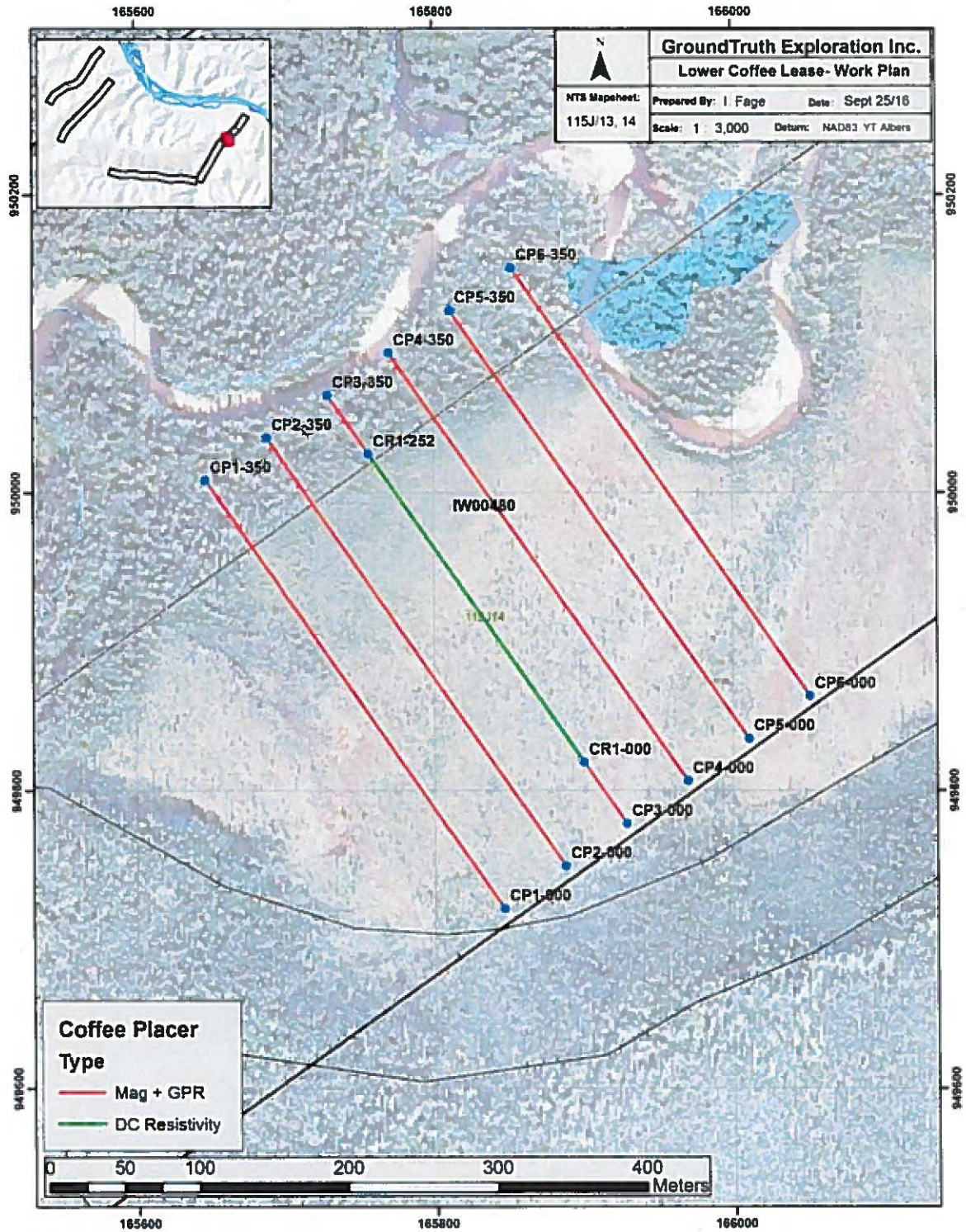


Figure 2: Work Location on Coffee Creek

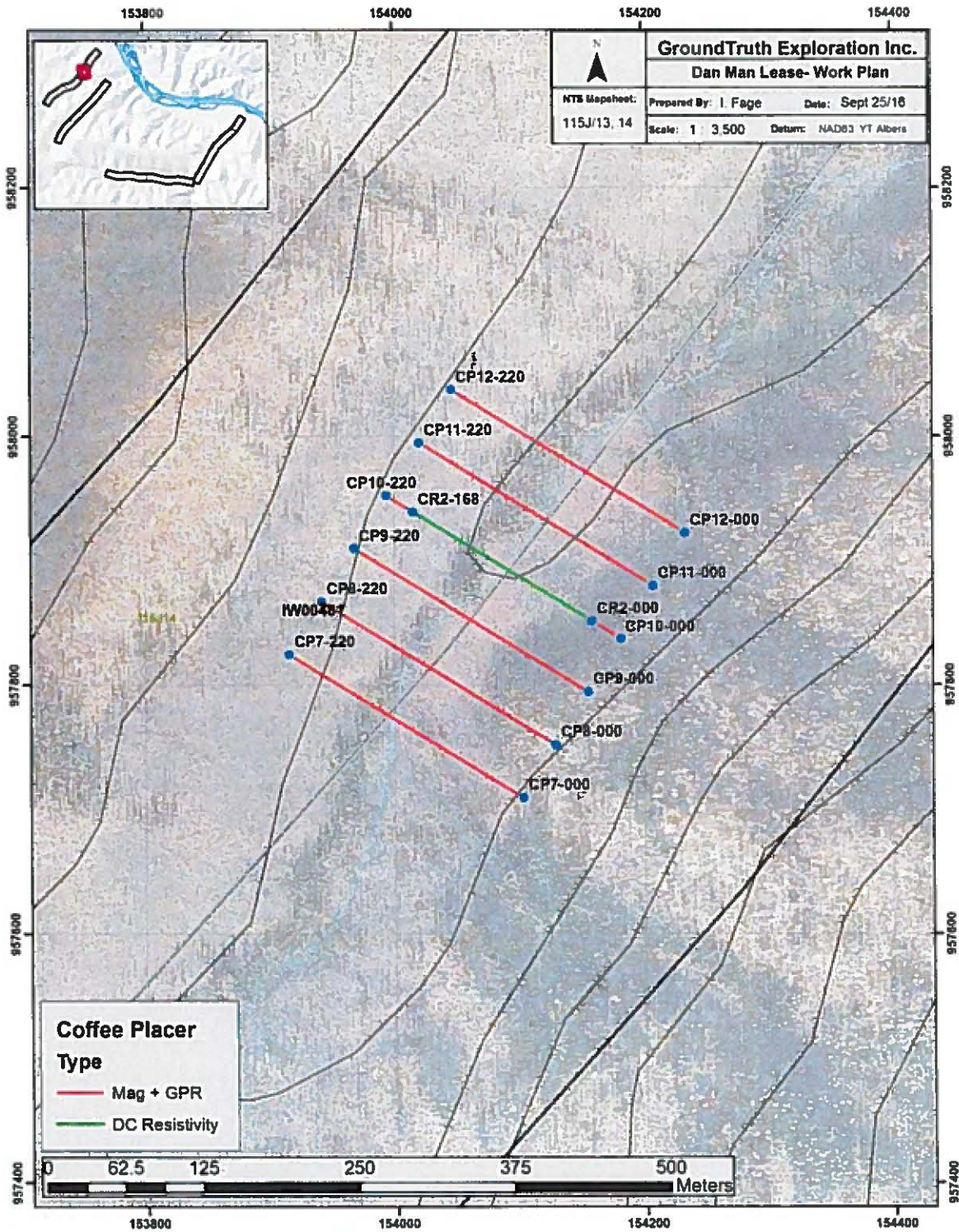


Figure 3: Work location on Dan Man Creek



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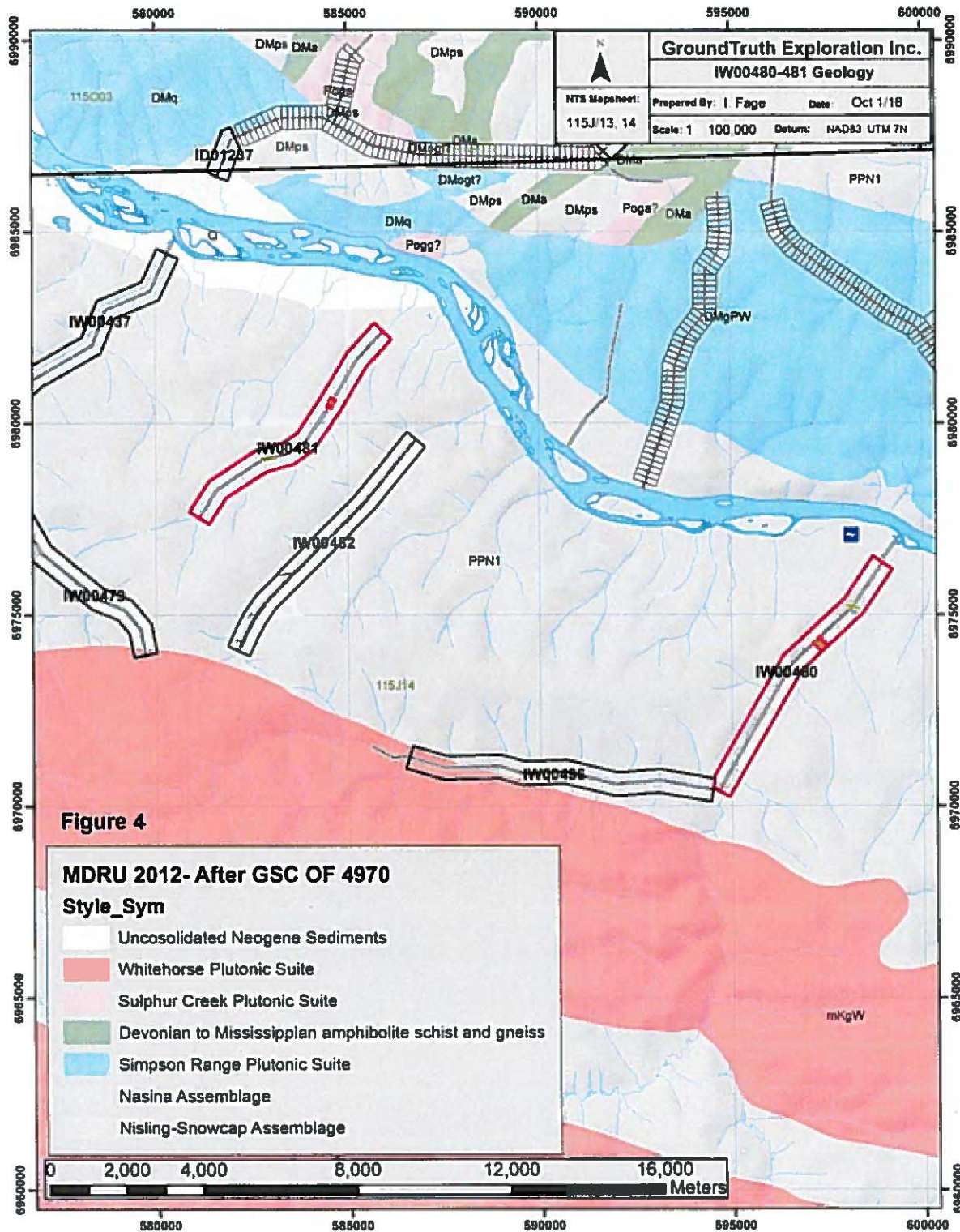
### 2. Location and Access

The prospecting leases are located approximately 130km South of Dawson City within the Yukon River drainage system in west-central Yukon Territory. The Lower Coffee Lease is centered at 62.887° N, 139.087° W, the Dan Man Creek Lease is centered at 62.945° N, 139.335° W. Both are located on NTS mapsheet 115J/14 (Figure 1). It is accessible in winter on the Yukon River via snowmobile, and accessible by helicopter year round. The adjacent Coffee Gold Camp has an airstrip that is accessible year round.

### 3. Physiology and Geology

The prospecting leases are located within the Yukon-Tanana Terrane. The landscape is composed broad valleys bordered by moderately sloped, tree covered hills ranging in elevations from 1200 to 5000 feet. The area experiences typical climatic conditions for central Yukon Territory with short, warm and dry summers and cold winters. Temperatures range from 0°C to -50°C in the winter and 0°C to +30°C in the summer.

Both drainages are characterized by incised valleys with steep hill slopes. Coffee creek has a broad valley floor 400-1000m for the extent of the lease. Dan Man creek is a smaller drainage which has a valley floor of <50m-300m. Both leases are draining from headwaters that are associated with the economically significant Coffee Gold deposits. See Figure 4.





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### 4. DC Resistivity Survey

#### 4.1. Survey Description

GroundTruth Exploration Inc., of Dawson YT conducted the resistivity survey on the Lower Coffee Lease on Sept 26/16, the Dan Man Creek lease survey was run on Sept 27/16. The crew accessed both leases by helicopter based on Gold Corp. Coffee Gold Camp. The resistivity profile on the Lower Coffee Lease was positioned 2.6km upstream from the start of the lease. The DC Resistivity survey on the Dan Man Creek Lease was conducted also 2.6km upstream from the start of the lease. Agreement between the profiles was very good and bedrock troughs are observed between the profiles.

The DC Resistivity survey was completed using Advanced Geoscience Inc., Supersting instrument (instrument specs in appendix). The instrument is placed at a center point of the traverse; referred to as electrode #42, with 42 electrodes on either side. The Supersting gathered apparent Resistivity and Induced Polarization, using the -following arrays:

1. **Inverse Schlumberger** SI Array (with expanding AB and MN dipoles) A=3m
2. **Dipole Dipole** DD Array (with expanding AB and MN)

The traverse was surveyed with a ProMark3 DGPS units and post processed using GNSS Solutions to obtain accurate horizontal and vertical position.

#### 4.2. Field Survey Operating Procedures:

- A crew of 5 is deployed to run survey.
- The midpoint of a traverse is located and the line is sighted-in using a DGPS.
- Minimal brush is cut along line to sight pickets and lay cables
- Crew places electrode at 3m spacing with measuring tape
- Electrodes are hammered to a depth of 30cm (10% of electrode spacing)
- Cables are laid and attached to the electrodes
- Contact resistance test is conducted
- Calcium Chloride (25% solution) added to all electrodes >2k ohms. CRT reread.
- Extra electrodes added to high CR electrodes. CRT reread.
- With satisfactory Contact Resistance, Resistivity survey is Read.
- Operator surveys the traverse using DGPS and marks the traverse with pickets every 10 electrodes.

### 4.3. Data Processing:

The collected data is downloaded in the field after every array and checked for integrity. This allows any field errors to be identified before moving the equipment. The RES data is processed daily by the lead operator using Earthmager2D software provided by Advanced Geosciences Inc. Resistivity data-misfits are removed and the cleaned data-set is inverted. The same process is done with the IP data. Terrain corrections collected using a differential GPS are applied to the inversions. The DGPS data is processed using GNSS Solutions software. A .csv is created containing the DGPS traverse points collected. All instrument raw data from the DGPS and SuperSting are archived. An ESRI shape file is created containing the traverse points collected.

### 4.4. Survey Results: Coffee Creek

#### *IW00480: Lower Coffee*

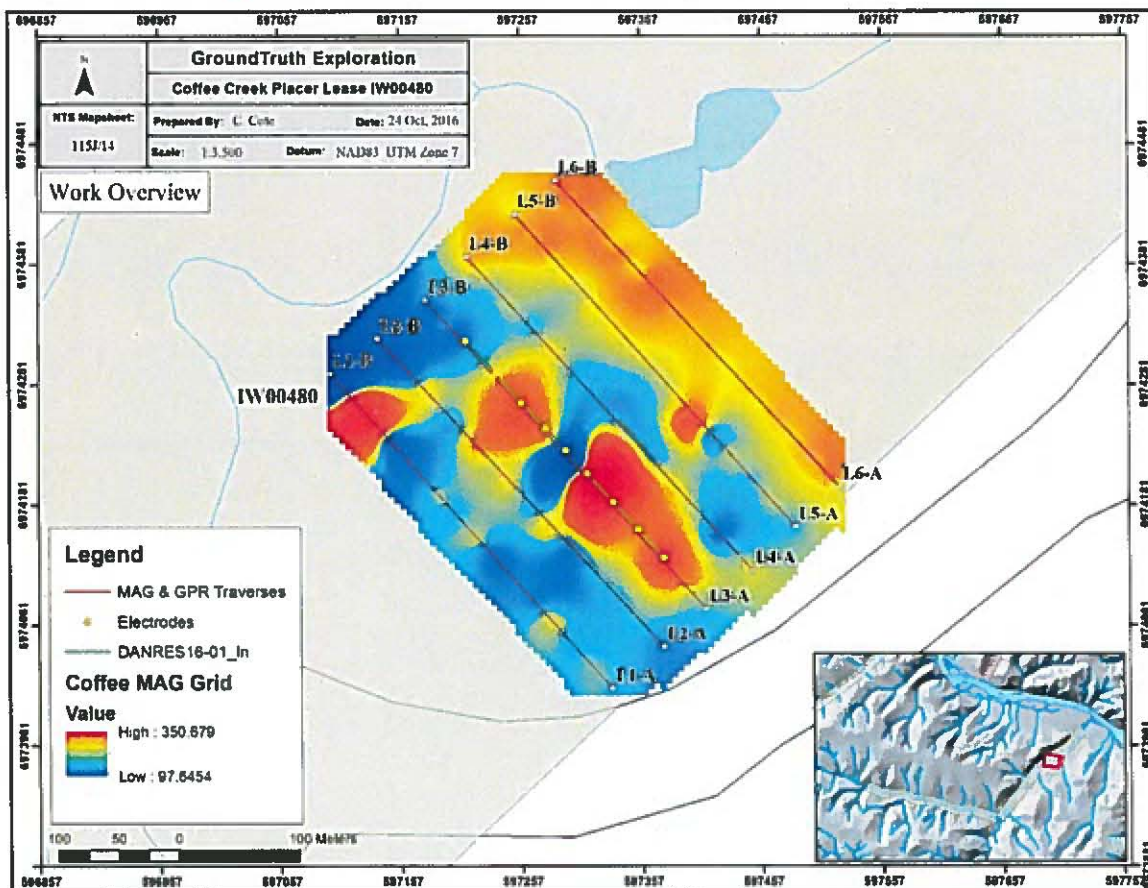


Figure 4: Location of work done on lease IW00480

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The DC Resistivity survey performed very well on the Lower Coffee Lease. Figure 5 shows location of the Resistivity Profile along with location of coincident Mag/GPR surveys. Topography in the survey area is flat, the survey was conducted in a broad swampy area with minimal tree cover. Consistent horizons are clearly visible in the Resistivity Inversions, interpreted to show a moderately conductive organic cap at surface, measured at ~1500 OhmM, generally from 0m to 4m depth. Below a resistive body of gravels, measured at >15,000 Ohm-m, from ~4m to 15m depth with localized troughs (A, B and C). Bedrock is showing as conductive at <500 Ohm-m, Figures 4, 5, and 6. The IP inversion shows good agreement with the Resistivity with no significant chargeability effect present in overburden and a chargeability effect in bedrock of >30mV/V. The IP effect indicates a potential change in bedrock type or structural feature under electrodes 33-53 and associated with the A trough.

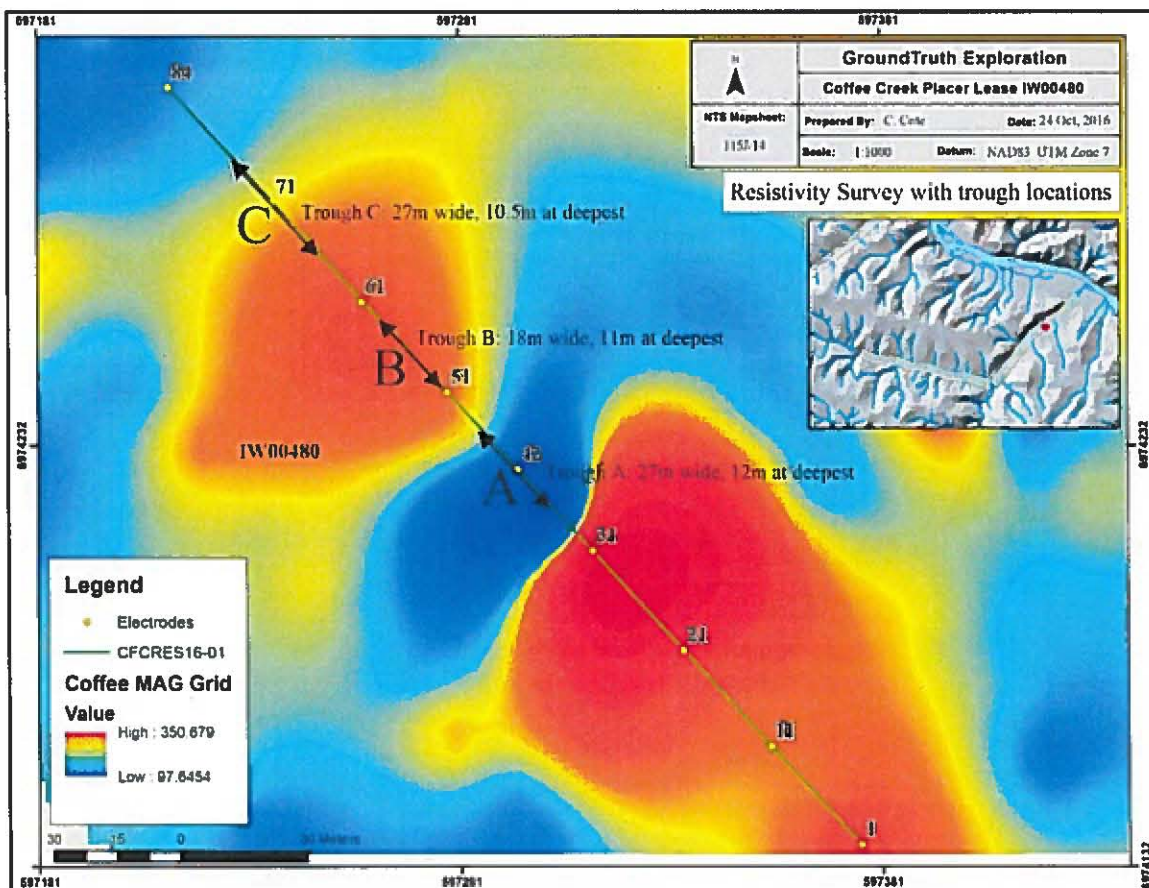
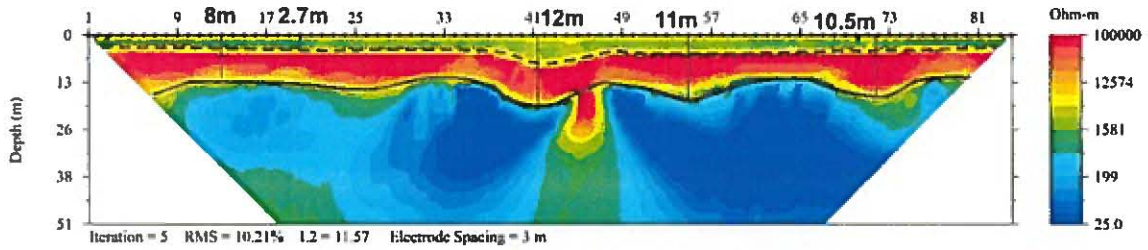


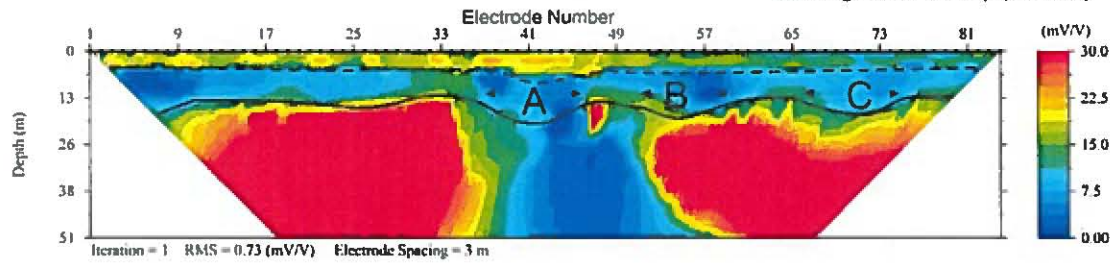
Figure 5: Resistivity Survey location with MAG in background and interpreted bedrock trough locations

**Inverted Resistivity Section**



**Inverted IP Section**

Looking South-West (Upstream)



**Coffee Creek MAG Profile over CFCRES16-01**

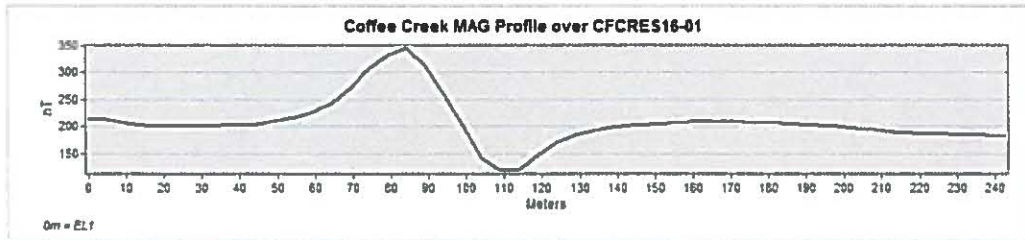


Figure 6: Resistivity and IP Interpretation with Mag profile

4.5. Survey Results: Dan Man Creek

*IW00481: Dan Man*

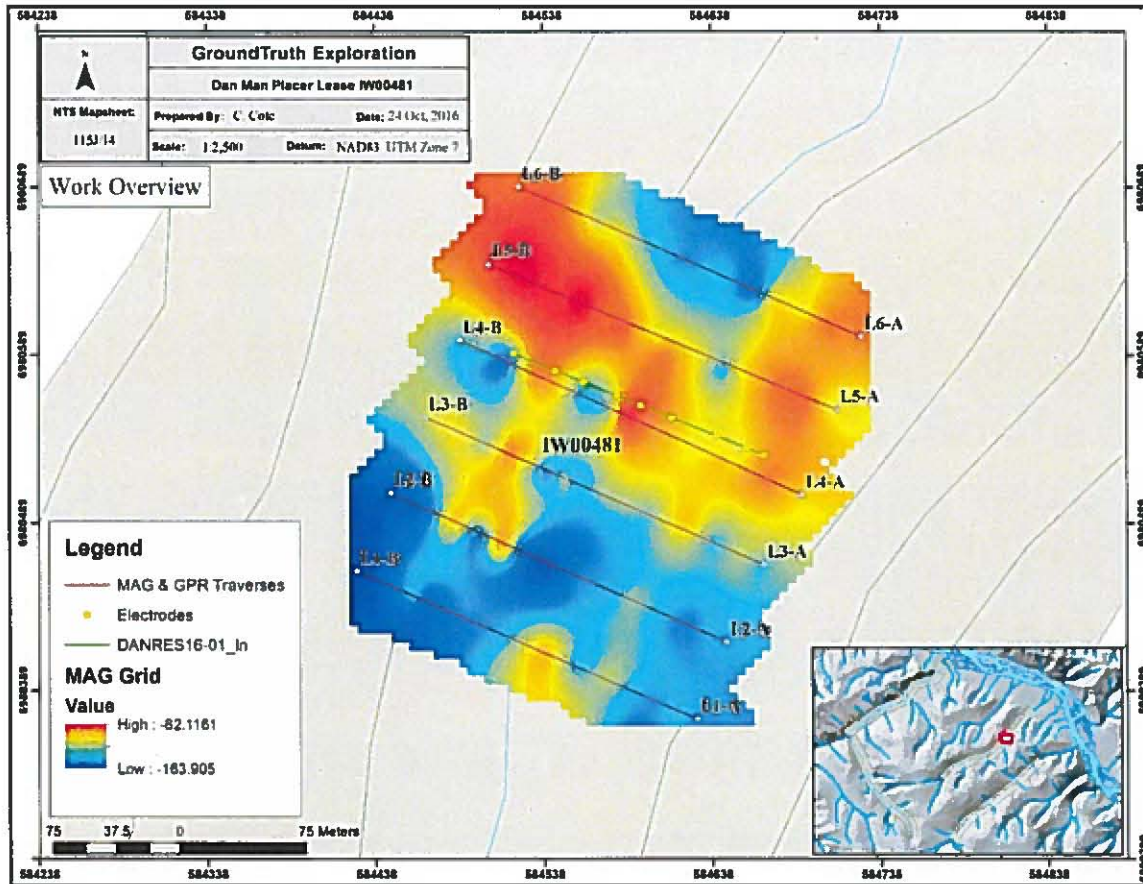


Figure 7: Location of work done on lease IW00481

DC Resistivity survey work on the Dan Man lease produced high quality inversion results. Figure 8 shows location of DC Resistivity profile and overlapping Mag/GPR coverage. The valley floor of Dan Man Creek is much narrower than the Lower Coffee lease and both ends of the resistivity survey climb in elevation. The Resistivity inversion (Figure 9) shows an active layer at surface that extends to a depth of approximately 4m, with measured resistivity values ranging within the horizon from 50 Ohm-m to 1500Ohm-m. Below a frozen layer of permafrost, potentially gravels, is interpreted to extend from 9m to 11m depth. The permafrost layer is characterized by resistivity values in the range of 15,000+/- Ohm-m. Bedrock is interpreted to be moderately conductive at 2500-7500 Ohm-m below the permafrost interface. The IP chargeability signature agrees generally with a non-chargeable overburden vs mildly chargeable bedrock interpreted interface.

Both Ip and Resistivity indicate a 16m wide trough corresponding to the lowest part of the valley between electrodes 41 and 51 and approximately 11m deep

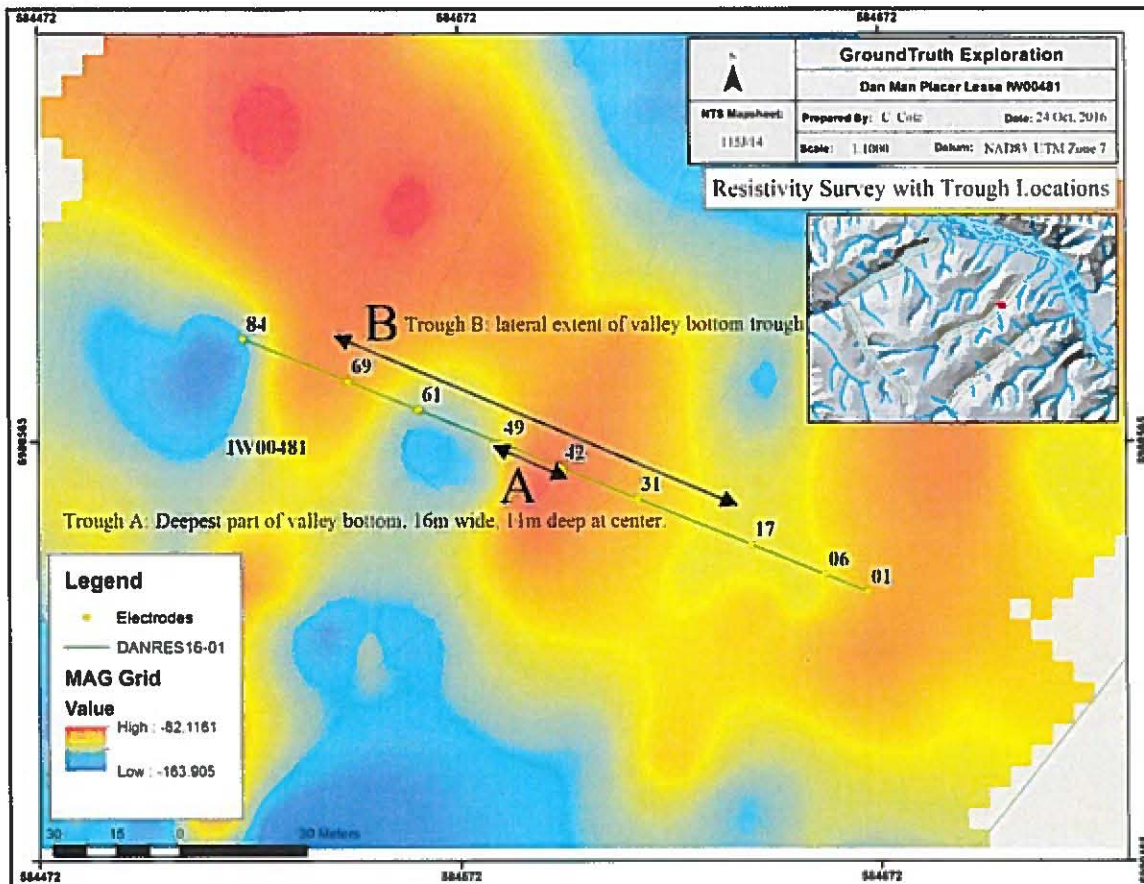


Figure 8: Detail of resistivity line with extent of interpreted bedrock troughs and MAG grid.

**DanMan Creek**

Inverted Resistivity Section

**2016 Resistivity Survey**

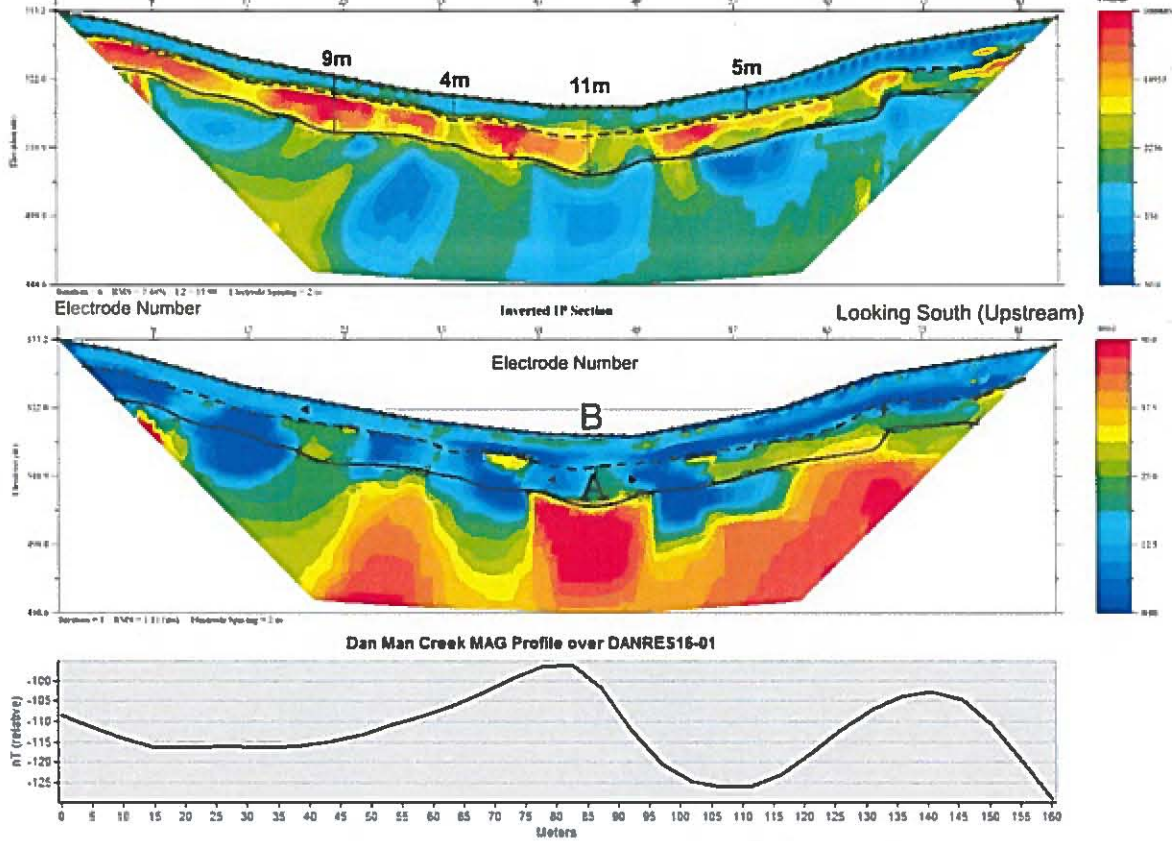


Figure 9: Dan Man Creek resistivity, IP and MAG profiles with interpreted depths and bedrock channel.

## 5. Ground Penetrating Radar Survey

GroundTruth Exploration conducted GPR surveys on September 26, 2016 on IW00480 and on September 27, 2016 on IW00481. The survey consisted of 6 cross creek profiles. The lines spacing was 50m. The overlapping GPR/DC Resistivity provides a good opportunity to evaluate agreement between the surveys.

### 5.1. GPR Survey Description

Ground penetrating radar(GPR) works like seismic, in that it is based on transmitting energy to the ground and measuring the time taken for the energy to be reflected back at geological targets, be they localised ore-bodies or geological interfaces/boundaries. Instead of seismic or shock waves, GPR transmits electromagnetic energy of high frequency compared to other geophysical methods. It is a very high resolution technique that is very site specific, for example it works very well where the target is within a host rock that has a higher electrical resistivity compared to the target itself, and where there are no conductive surficial layers to absorb radar energy before reaching the target. Another important factor is that radar energy can be scattered and not captured optimally if the reflecting geology or target is not consolidated or of a certain geometry. In conducive settings GPR is a fast high resolution method, can be operated by a single person and can supplement other geophysical methods very well. For this particular project, the 30MHz UltraGPR supplied by Groundradar (see [www.groundradar.com](http://www.groundradar.com)) was used. The system works together with a differential GPS (RTK-DGPS) for data positioning and a portable data logger.

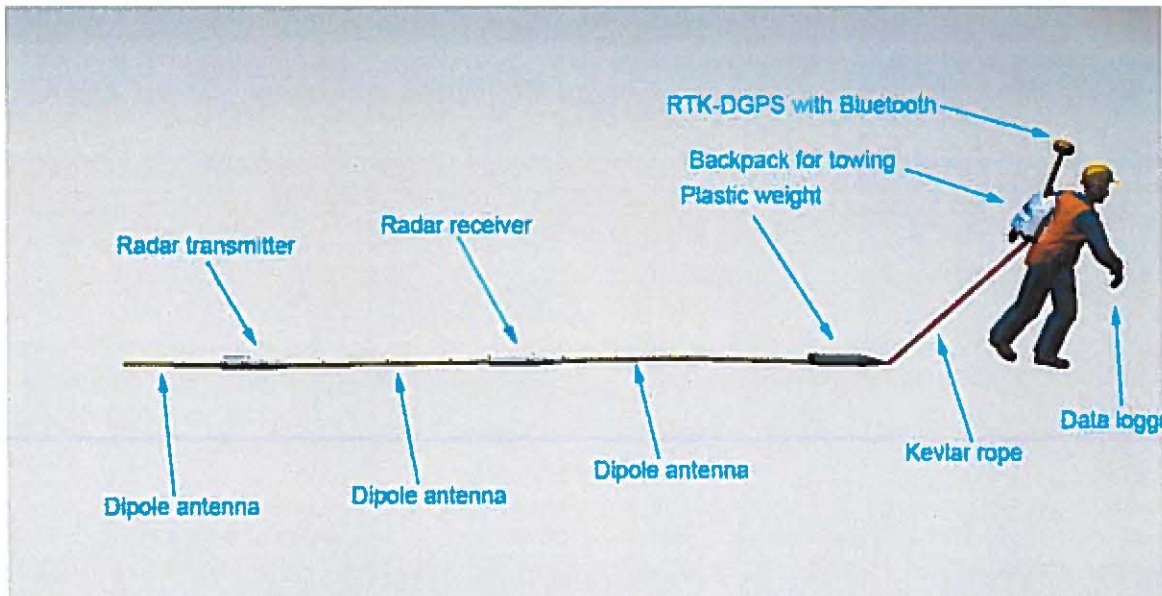


Diagram- UltraGPR 30MHz system

**5.2. GPR Results: Coffee Creek**

**IW00480: Lower Coffee**

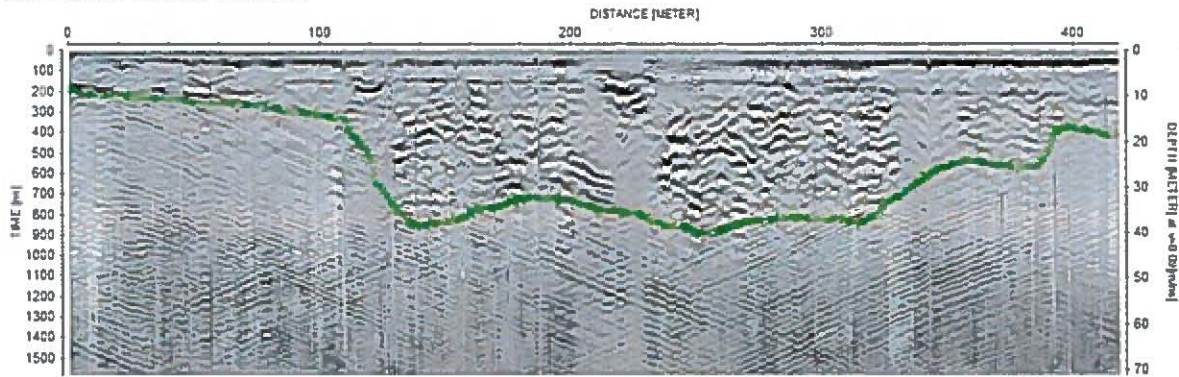


Figure 10: Line 1 (Looking South-West) with depth of penetration indicated in green.

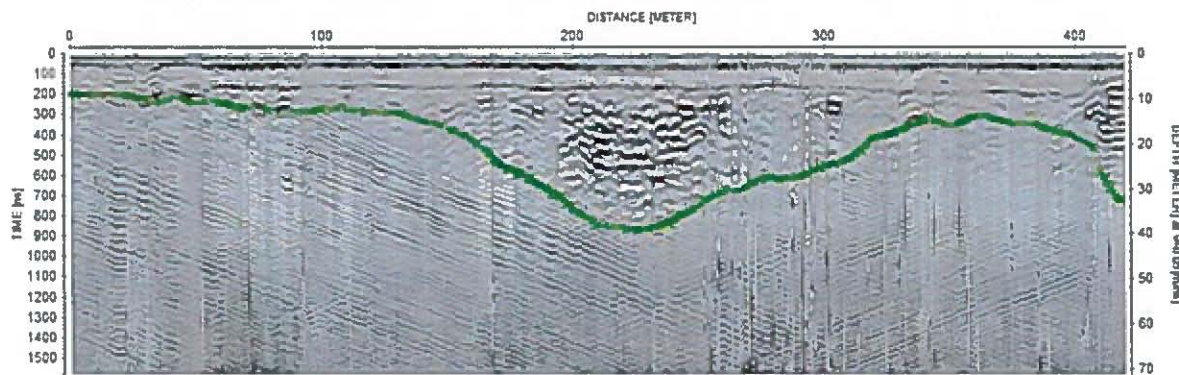


Figure 11: Line 2 (Looking South-West) with depth of penetration indicated in green.

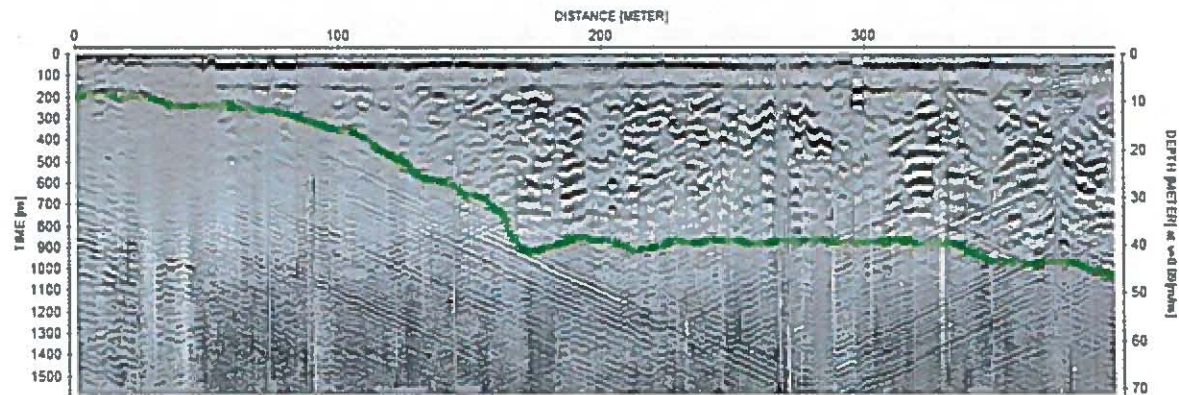


Figure 12: Line 3 (Looking South-West) with depth of penetration indicated in green.

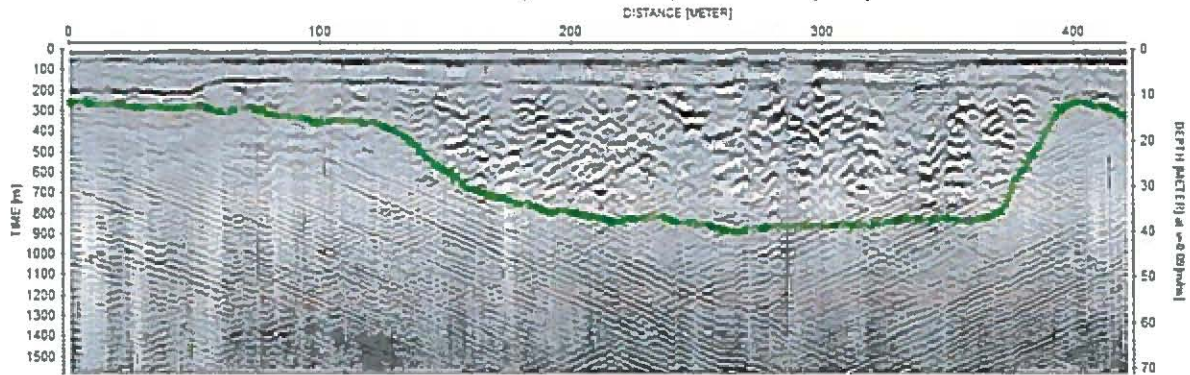


Figure 13: Line 4 (Looking South-West) with depth of penetration indicated in green.

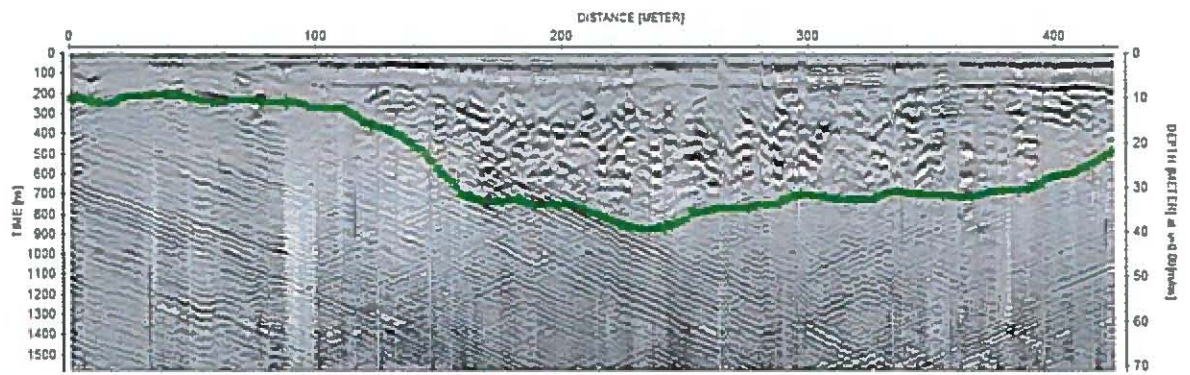


Figure 14: Line 5 (Looking South-West) with depth of penetration indicated in green.

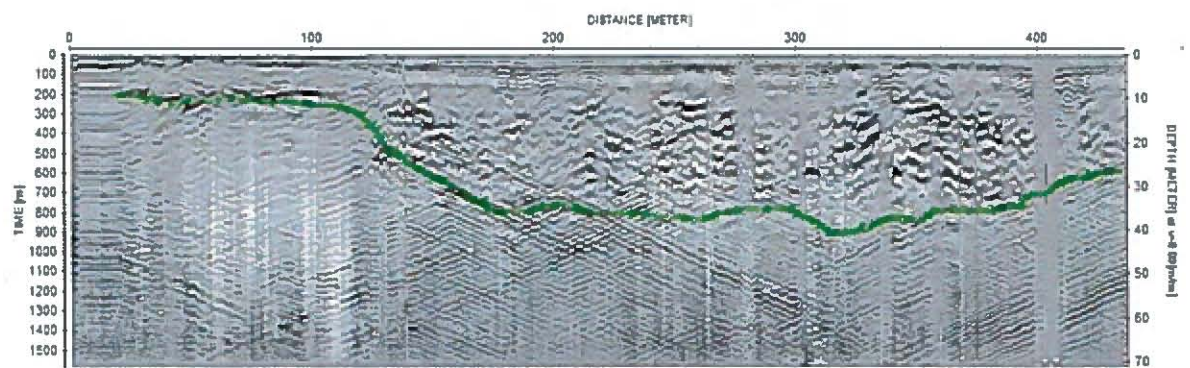


Figure 15: Line 6 (Looking South-West) with depth of penetration indicated in green.

**5.3. GPR Results: Dan Man Creek**

**IW00481: Dan Man**

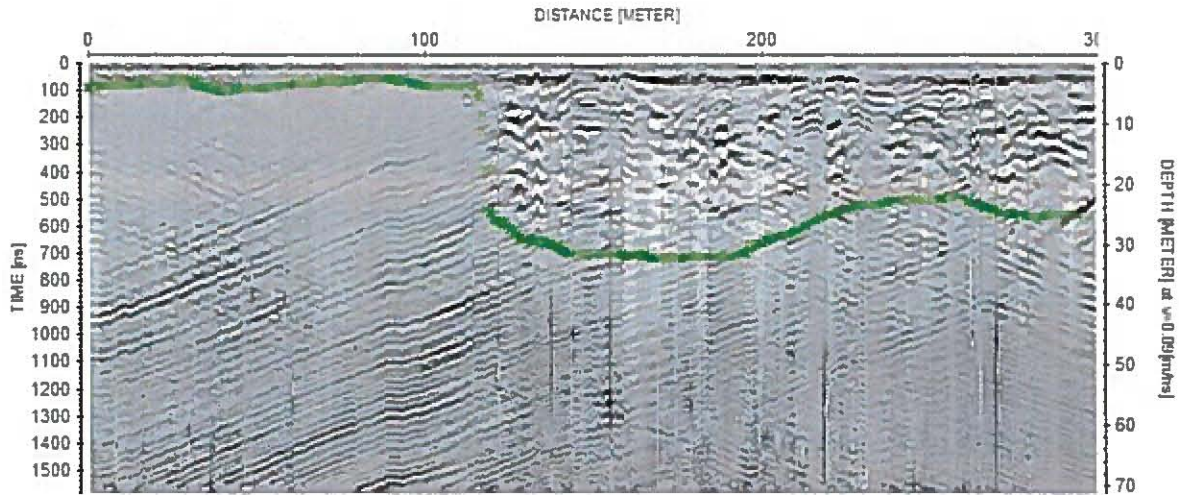


Figure 16: Line 1 (Looking South-West) with depth of penetration indicated in green.

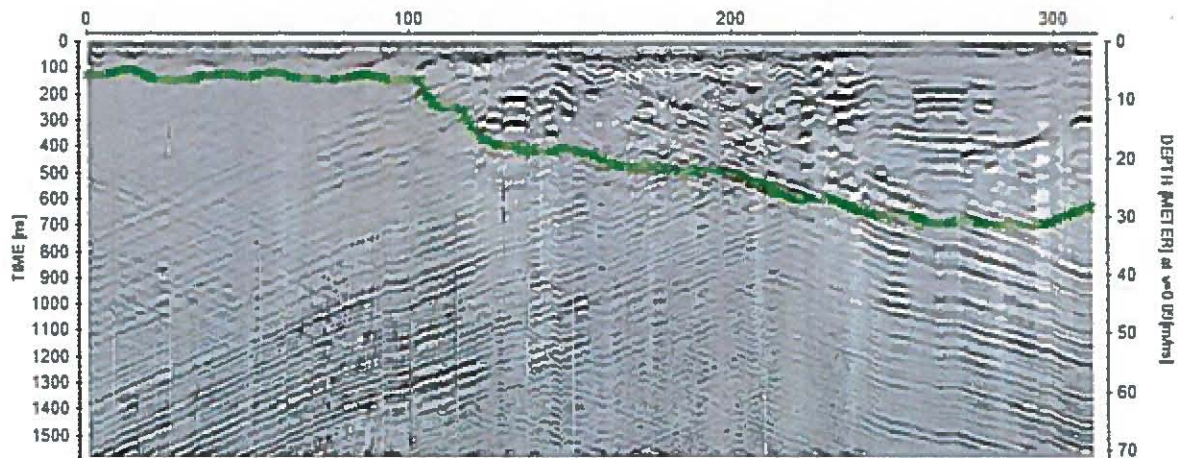


Figure 17: Line 2 (Looking South-West) with depth of penetration indicated in green.

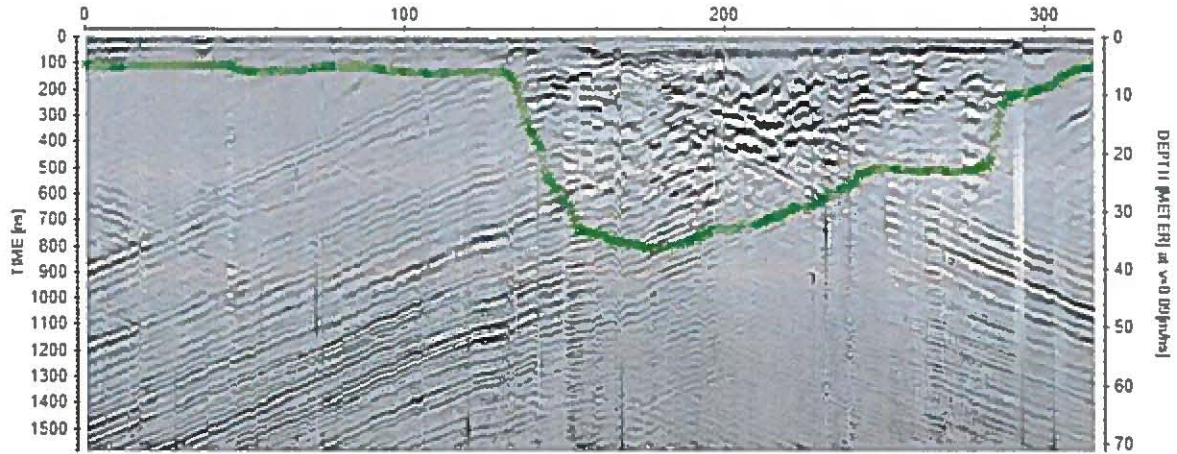


Figure 18: Line 3 (Looking South-West) with depth of penetration indicated in green.

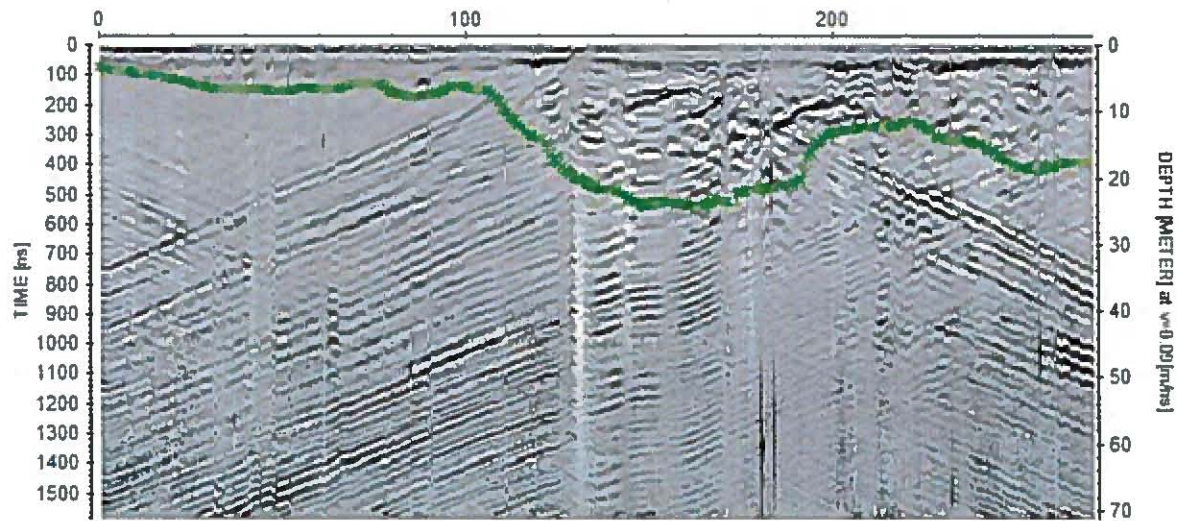


Figure 19: Line 4 (Looking South-West) with depth of penetration indicated in green.

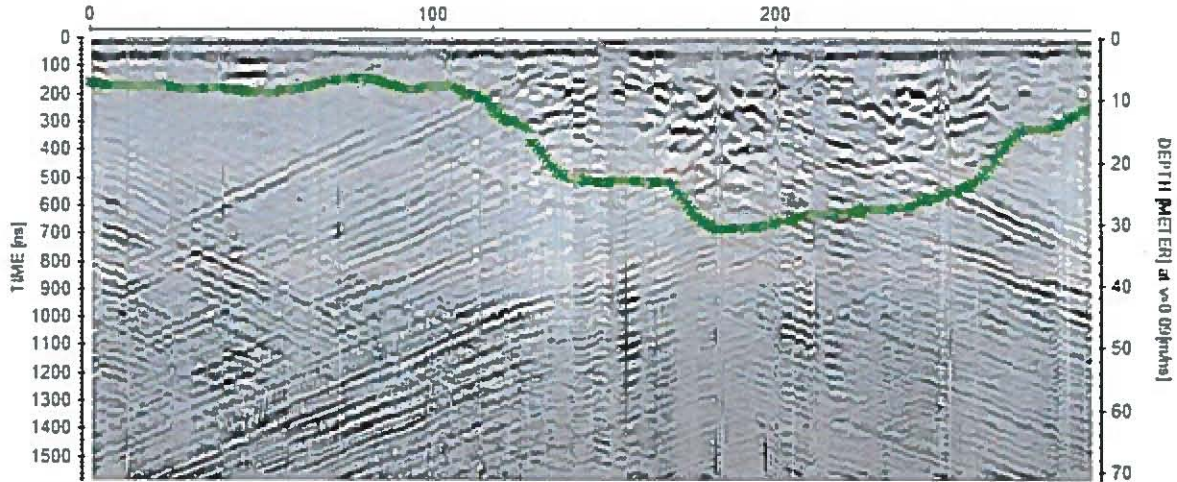


Figure 20: Line 5 (Looking South-West) with depth of penetration indicated in green.

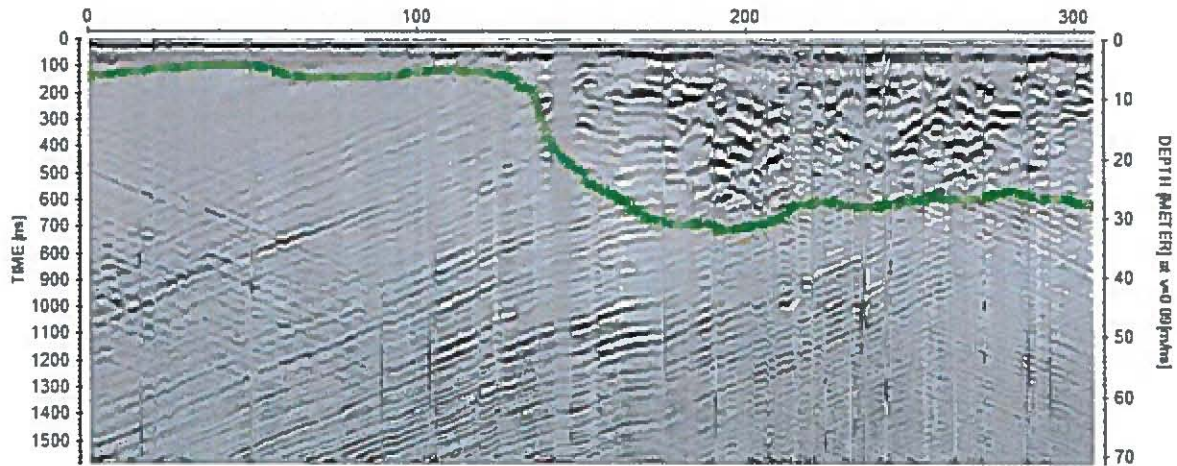


Figure 21: Line 6 (Looking South-West) with depth of penetration indicated in green.



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### 6. Proton Magnetometer Survey

#### 6.1. Survey Specifications

GroundTruth Exploration conducted ground magnetic surveys on September 26, 2016 on IW00480 and on September 27, 2016 on IW00481. The survey consisted of 6 cross creek profiles. The lines spacing was 50m. The overlapping Mag/DC Resistivity provides a good opportunity to look for correlations of mag highs with interpreted resistivity bedrock troughs.

The Total Field Ground survey is typically conducted with one operator only. No grid is required as all magnetic readings are read with corresponding GPS location. The operator is responsible for efficient operation of survey and ensuring optimal data quality. The operator downloads, corrects with base and plots all data nightly to ensure ongoing consistency throughout the survey.

The following equipment was used for the completion of the survey:

Magnetometer Field Unit:	GEM Systems GSM-19T Proton Magnetometer
Base Station:	GEM Systems GSM-19T Proton Magnetometer
Processing:	Laptop computer
Software:	GEM Link software for mag upload/download Mapinfo-Discover for diurnal correction/plotting

#### Magnetic Field Theory Applied to Placer Exploration

In a placer setting, magnetite derived from bedrock weathering is concentrated in the main channel of a creek or river where the water flow has the highest velocity and the greatest turbulence. As a result, minerals with high specific gravity (magnetite, ilmenite, gold, etc.) are preferentially concentrated in this region of the stream as material with lower specific gravity is winnowed from the sediment. High concentrations of "black sand" (magnetite, ilmenite, chromite) are often recorded in auriferous pay streaks where the stream bed has remained relatively immobile for some period, permitting hydraulic concentration to build up a significant volume of these materials.

The materials comprising black sand are magnetically susceptible. Magnetite has a very high magnetic susceptibility of  $1200-19200 \times 10^{-3}$  SI units, ilmenite ranges from  $300-3500 \times 10^{-3}$  SI units, and chromite measures from  $3-1100 \times 10^{-3}$  SI units. Average magnetic susceptibilities for sedimentary, igneous (excluding ultramafic) and metamorphic rocks are: 0-10, 3-160, and 0-70  $\times 10^{-3}$  SI units respectively. Fluvial sediments register magnetic susceptibility in the range of 0-2  $\times 10^{-3}$  SI units. There is consequently a significant susceptibility contrast between gravels enriched with black sand and average gravels/ underlying bedrock.



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### **6.2. Field Survey Operating Procedures**

The survey is completed in the field according to the following procedure:

Field Magnetometer Observation Frequency: 1 reading per 0.5 of a second.

Base Station Magnetometer: Set to record an observation every 20 seconds for the duration of the survey.

Operator uploads survey grid endpoints to Field magnetometer unit

The base station is established in an accessible location that will not be disturbed on or near the survey site.

Base station site is marked with a picket and location recorded for future use.

Operator runs survey with internal GPS recording position and navigates survey lines using internal mag GPS.

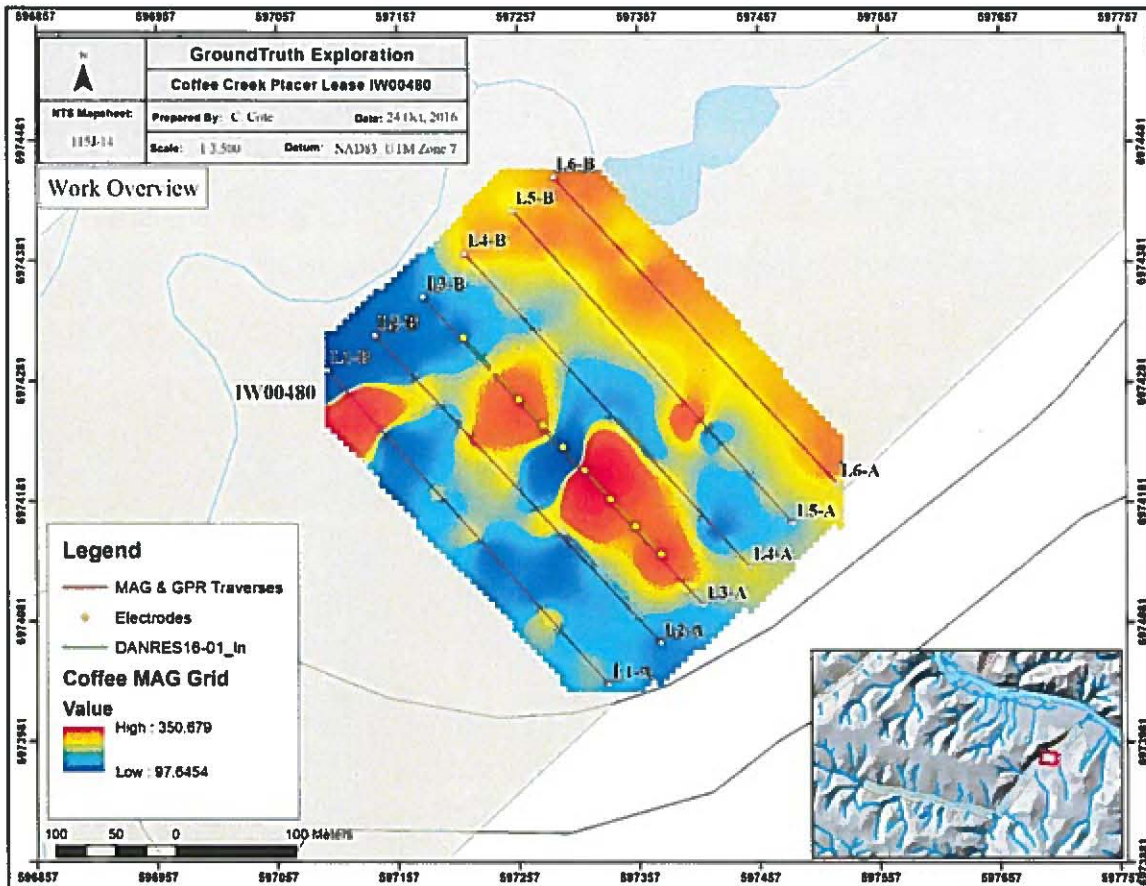
At end of day each survey day, Operator downloads Field and Base magnetometers, processes diurnal corrections and plots survey to assess data quality.

### **6.3. Data Processing**

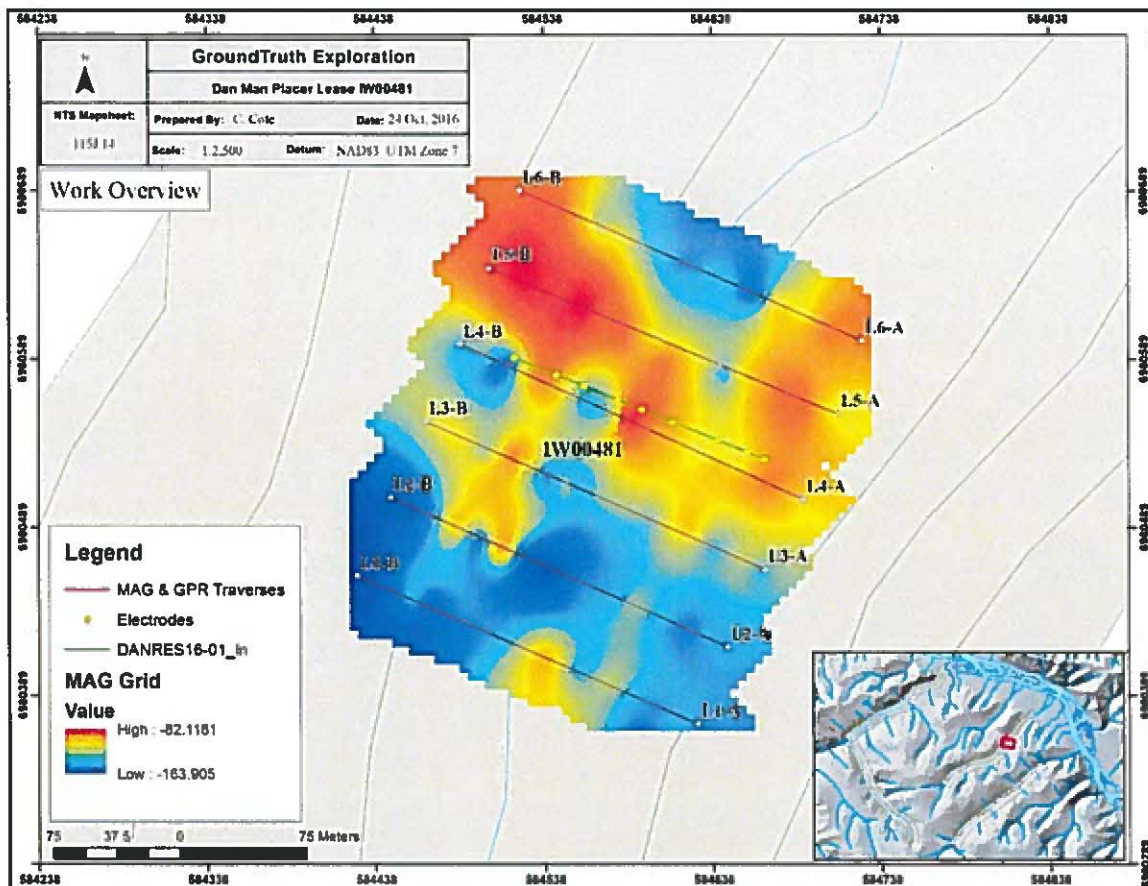
The Total Field Magnetic survey data is georeferenced to NAD83 UTM projected coordinates using the internal GPS in the field magnetometer. Base and rover magnetometers are synchronized to GPS time prior to each survey day. Temporal geomagnetic variation is removed by linear interpolation using the base station data. Corrected data is screened for noisy or erroneous values and is then plotted.

The diurnally corrected and filtered data is then Reduced to Pole (RTP) based on the International Geomagnetic Reference Field (IGRF)

**6.4. Magnetic Survey Results: Coffee Creek**



### 6.5. Magnetic Survey Results: Dan Man Creek





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## 7. Project Expenses

**DC Resistivity/GPR/Drone Surveys by GroundTruth Exploration Inc.:**

**Sept 26, 2016: IW00480**

**Sept 27, 2016: IW00481**

**Invoice per lease below: (cost identical on each lease)**

### GroundTruth Exploration Inc.: Survey Budget per Lease

**Placer Exploration - Coffee Area 5 mile Placer Leases: ID00480 (Lower Coffee), IW00481 (Dan Man)**

**Overview:**

Budget and Proposal for 1 day Placer Exploration surveys on Gold Corp. five mile placer leases. The proposal would have a crew of 5 work 1 day each on Lower Coffee and Dan Man creeks. 1 DC Resistivity profile will be surveyed along with coincident and flanking lines of ground mag and GPR. Assessment report and renewal will be prepared and filed ahead of the October 2/16 renewal date. We propose to run surveys on Sept 27 and Sept 28/16. Crew and gear are based at adjacent Ballarat Alrstrip camp. If client can provide helicopter setouts and pickups for this work, that would be preferred.

DC Resistivity - Ground Mag - GPR:	Chargeout	Units	Costs	
<b>DC Resistivity Wages</b>				
1 DC Resistivity Operator/Forman	\$ 550.00	1	\$ 550.00	
2 Geophysical Operators - Mag/GPR	\$ 475.00	2	\$ 950.00	
2 DC Resistivity Field Assistant(s)	\$ 385.00	2	\$ 770.00	\$ 2,270.00
<b>DC Resistivity Mag and GPR Survey Equipment and Processing</b>				
Supersting R8 DC Resistivity System	\$ 600.00	1	\$ 600.00	
GEM Systems 19T Proton Magnetometer (Walk and Base Units)	\$ 300.00	1	\$ 300.00	
GroundRadar 30Mhz GPR System	\$ 300.00	1	\$ 300.00	
Field Laptop/Software for nightly download	\$ 50.00	1	\$ 50.00	
Handheld data logger/GPS/Camera/nReach (per man-day)	\$ 25.00	5	\$ 125.00	
3rd Party GPR Processing at \$100/profile	\$ 100.00	6	\$ 600.00	
DC Resistivity Inversion finals 2h per surveyed profile	\$ 75.00	2	\$ 150.00	
Ground Mag Finals 2h per survey day	\$ 75.00	2	\$ 150.00	\$ 2,275.00
<b>Interpretation and Reporting:</b>				
Assessment Report (\$75/hr)	\$ 75.00	8	\$ 600.00	\$ 600.00
<b>DC Resistivity, Ground Magnetic and GPR Survey Total:</b>				<b>\$ 5,145.00</b>

*1. Fage, Sept 27/16*

## 8. Statement of Qualifications

I, Isaac Fage have been president of GroundTruth Exploration in Dawson City since May 2010. I have overseen the collection of 400,000 + soil samples, numerous geophysical, UAV drone and drill programs across numerous projects in Yukon Territory. I have worked continuously in Mineral



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Exploration since 2004. I hold an advanced diploma in Remote Sensing from the Centre of Geographic Sciences in Lawrencetown, Nova Scotia.

I have overseen the survey work described in this report on the Lower Coffee and Dan Man Creek placer leases.

Dated this 1st day of October, 2016 in Dawson, YT.

Respectfully submitted

A handwritten signature in black ink, appearing to read "Ifage", is written over a light blue horizontal line.

Isaac Fage

### **9. Conclusions and recommendations**

The surveys conducted are producing a coherent interpretation of the subsurface. DC Resistivity has been determined as an effective tool to map overburden interfaces and depth to bedrock. The combination of DC Resistivity with GPR reflectors and magnetic signature are not definitively effective in building confidence for targeting on placer potential on these leases. Acquiring full drone coverage prior to future DC Resistivity surveys will assist in evaluating placer potential with topography and precise placement of profile lines to avoid unsuitable ground or vegetation conditions. Follow-up drilling with a heliportable, track mounted drill is recommended on the targets identified in this report, and may help correlate the multiple datasets in order to learn more about their interrelationship.