Geophysical Surveys

Independence and Carlisle Creek Placer Properties
Owner: Wildwood Exploration Inc.

Whitehorse Mining District

NTS: 115J/13 & 115J/14
Latitude: 62° 52.09' N Longitude: -139° 33.55' W

Claim List:

Independence 1 - 97	P 510923 - 511019
Independence 98 - 137	P 511369 - 511408
Independence 138 – 190	P 511316 - 511368
Independence 191 – 243	P 511927 - 511979
Independence 244 – 300	P 511556 – 511612
Independence 301 – 352	P 512392 - 512443
Inca 1 – 28	P 511528 - 511555
Carlisle 1 – 53	P 510219 - 510271

Work Performed:

RES/IP Surveys: 6 – 8 August, 2019

Date of Report: March 19, 2020
Author of Report: Allison Feduk

Summary

This report summarizes the geophysical surveys, completed by GroundTruth Exploration Inc. during the field season of 2019 on the Independence Creek placer property. The geophysical surveys on the Independence placer claims traverse perpendicularly across the valley to highlight the bedrock structure to identify placer target zones.

The ground geophysical surveys included five high resolution DC resistivity and induced polarization surveys. Results from these surveys has shown a contrast at the interpreted bedrock interface. A drill program is recommended to further the understanding of the lithology on this creek and identify the areas of gold deposition.

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Y0B 1G0

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1.0 Introduction

'Nugget Creek,' a tributary of Independence Creek, located 125 km south of Dawson City, YT, has been targeted based on the discovery of the Coffee Gold hard rock deposit and the Sunrise-Sunset gold soil anomaly.

The geophysical program on Nugget Creek, undertaken by GroundTruth Exploration Inc., consisted of five high-Resolution DC Resistivity and Induced Polarization (RES/IP) surveys. The RES/IP profiles, totaling 1,119-line meters, were conducted between the 6th to 8th of August 2019.

The RES/IP work was intended to measure the depth to bedrock and to map underlying lithology thickness to determine if any paleochannels favorable to gold deposition could be detected.

2.0 Previous Investigations

A moderate amount of work has been reported on the Carlisle Creek and Independence Creek placer properties. This includes ground magnetic surveys conducted in 2012. Both ground magnetic and DC resistivity surveys were completed in 2013, 2014 and 2015. Aerial photogrammetry, ground penetrating radar and ground magnetic surveys were implemented in 2016. Resolve Frequency Domain Electromagnetic survey, DC resistivity and RAB drilling were completed in 2017. Additional RAB drilling was conducted during the field season of 2018.

3.0 Location and Access

The targeted claims are located approximately 125 km south of Dawson City within the Yukon River drainage system in west-central Yukon Territory. The claims are centered at Latitude: 62° 52.09' N, Longitude: -139º 33.55' W, and located on NTS map sheets 115J/13 and 115J/14 (Figure 1). It is accessible in winter via snowmobile on the Yukon River and by helicopter year-round. The Coffee Gold Camp has an airstrip 25 km east north east that is reachable year-round and located at the mouth of Coffee Creek.

4.0 Property Worked

Placer Prospecting Claims Tenure, Wildwood Exploration Inc. 100%:
Independence 51 – 54, P510973 – P 510976, expiry March 16, 2023

5.0 Physiography and Climate

The landscape is composed broad valleys bordered by moderately sloped, tree-covered hills ranging in elevations from 396 to 1341 meters. The area experiences typical climatic conditions for central Yukon Territory with short, warm, dry summers and cold winters. Temperatures include a summer mean of 10°C and a winter mean of -23°C reaching as high as 35°C in the summer and as low as minus 55°C in the winter. Dawson City has a daily average above 0°C for 180 days per year. Mean annual precipitation ranges from 250 to 500 mm, varying with elevation. From Mid-July to the beginning of August it is light for much of the day with a couple hours of dark in the early morning.

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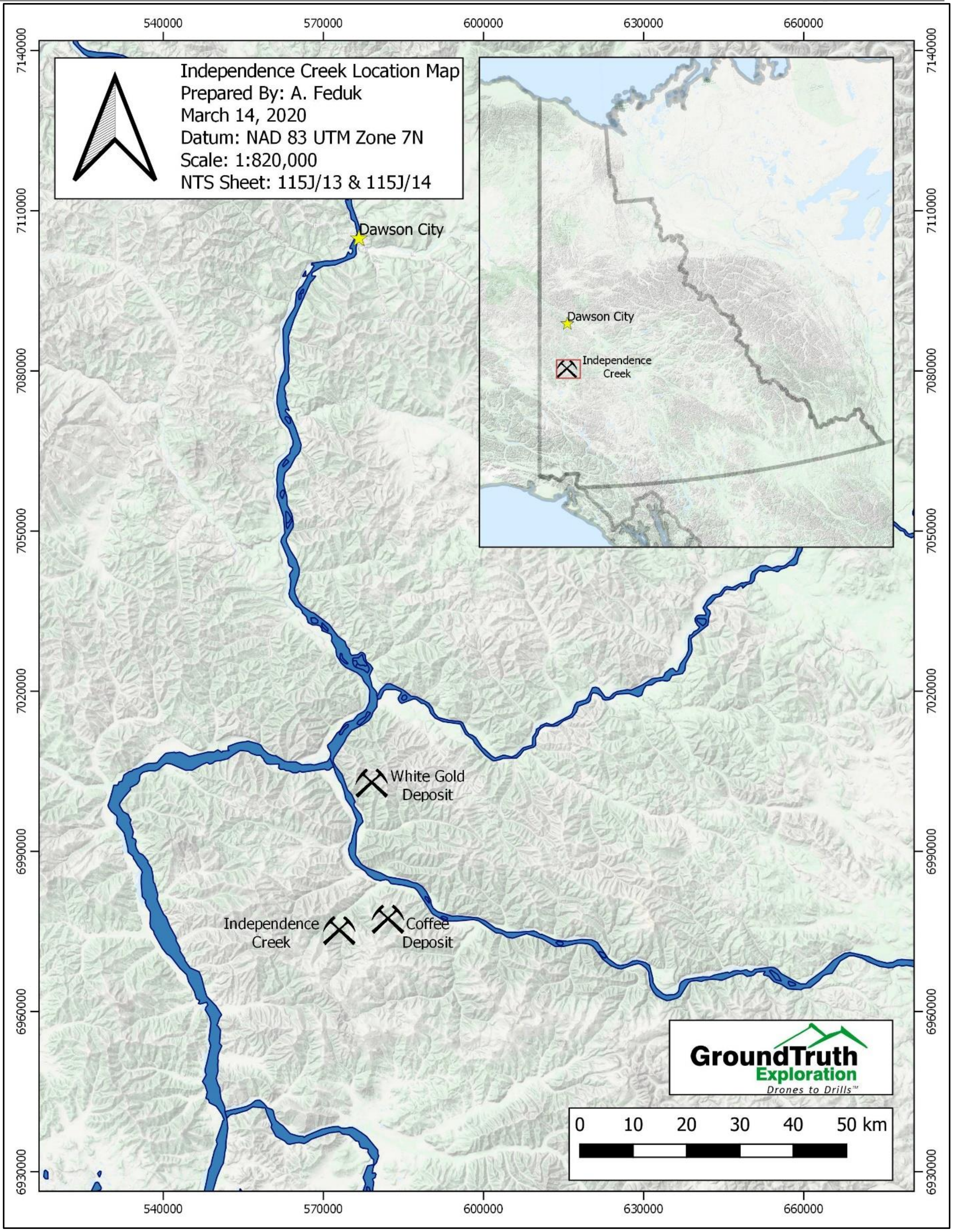

Figure 1: Property Location

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6.0 Geology

6.1 Regional Geology

Carlisle and Independence Creeks are situated in the Yukon-Tanana Terrane (YTT). The YTT is a late Devonian to middle Mississippian continental magmatic arc extending from northern British Columbia into west-central Yukon and eastern Alaska and is bounded to the northeast by the Tintina fault and to the south-west by the Denali fault (Colpron et al., 2006).

The YTT is composed of four main assemblages including the Snowcap, Finlayson, Klondike and Klinkit (Colpron et al. 2006) intruded by the Dawson Range batholith (phase of the Whitehorse Suite), Prospector Mountain plutonic suite and Casino plutonic suite (Mortensen et al., 2010).

“The Snowcap assemblage (PDS1) forms the base of the YTT consisting of quartzite, psammite, pelite and marble with minor greenstone and amphibolite. The Finlayson assemblage (DMF1) is composed of amphibolite, garnet amphibolite and schist. The Klondike assemblage (PK1, PK2) consists of muscovite-chlorite quartz phyllite, quartz-muscovite-chlorite schist, micaceous quartzite, psammite, phyllonite and schist. The Whitehorse Suite (mKqW, mKgW), a phase of the Dawson Range Batholith, consists of biotite quartz monzonite, biotite granite, leucogranite, monzogranite, granodiorite, diorite, granite and tonalite.” (Ryan et al., 2013). The Klinkit (CK1) is composed of mafic to intermediate metavolcaniclastic and metavolcanics rocks, with minor limestone and conglomerate (Colpron et al., 2006; Roots et al, 2004).

6.2 Property Geology

Carlisle Creek and Independence Creek are underlain by Neoproterozoic and Paleozoic rocks of the Snowcap assemblage (PDS1), Devonian and Mississippian intermediate to mafic volcanic to volcaniclastic rocks of the Finlayson assemblage (DMF1), middle to late Permian rocks of the Sulphur Creek suite (PqS) and Klondike assemblage (PK1), and mid-Cretaceous plutonic rocks of the Whitehorse suite (mKqW). Two of the major faults in the area include the north northeast trending Independence Creek fault and the east west trending strike slip Coffee Creek fault. Our area of study is completely underlain by PDS1, the properties bedrock geology is shown in Figure 2.

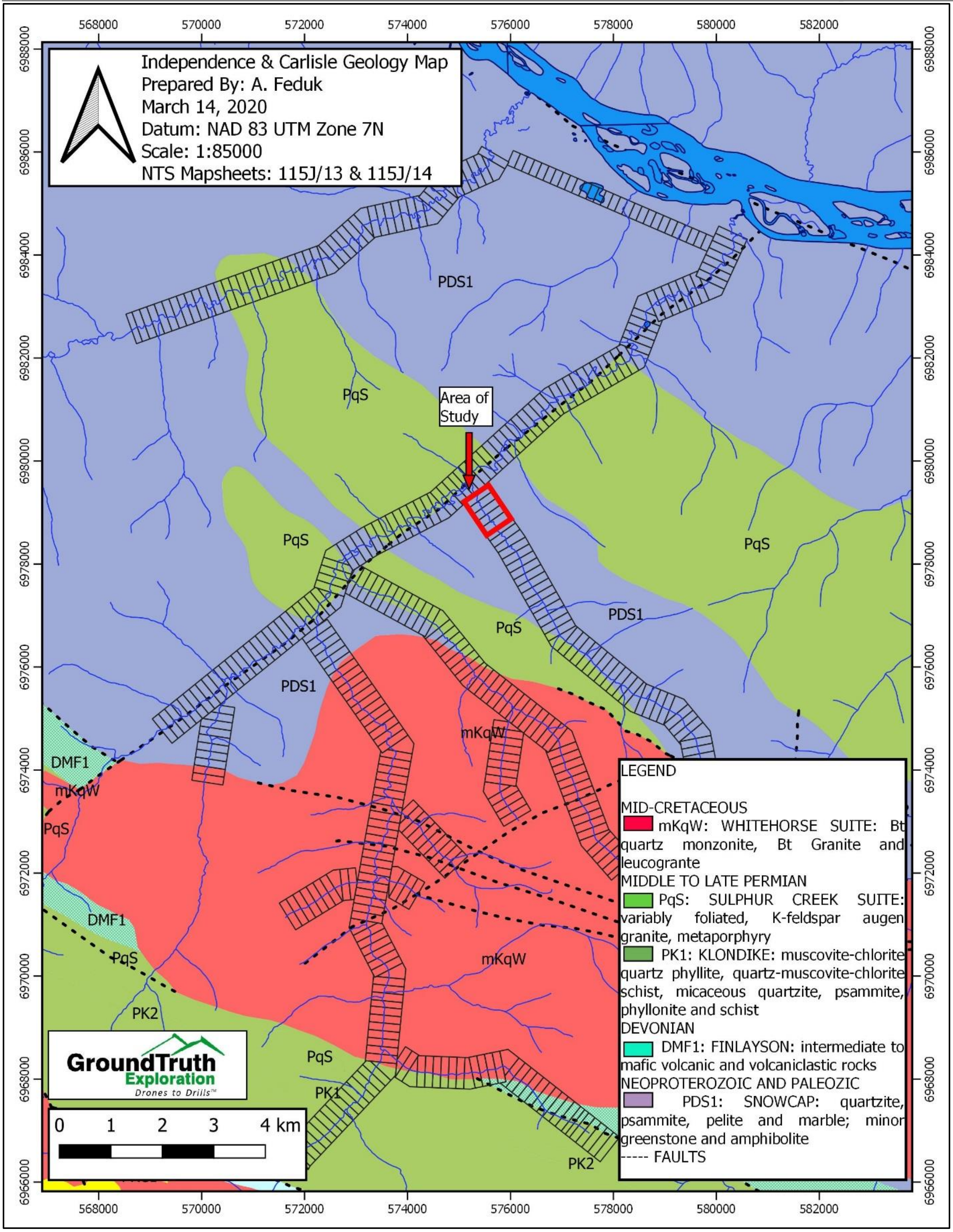

Figure 2: Property Geology

7.0 Resistivity and Induced Polarization Survey

7.1 Work Performed

The DC Resistivity and Induced Polarization (RES/IP) surveys were conducted from the 6th to 8th of August 2019, on placer claims Independence 51, 52, 53, and 54 (Figure 5). The goal of these traverses is to define the fluvial deposits such as muck, sand, and gravel, and define important contacts such as the permafrost table and bedrock surface.

A total of five traverses were completed on the Nugget Creek study: INP19-01, INP19-02, INP19-03, INP19-04 and INP19-05, four of the traverses cut perpendicularly across the valley starting downstream with INP19-01 and consecutively ran upstream to INP19-04. The fifth traverse, INP19-05 ran parallel with the valley intersecting the four other profiles (Figures 5 to 10).

Survey traverses INP19-01 to INP19-04 are composed of 84 electrodes spaced at 3 m. This electrode spacing results in a total line length of 249 ground meters, a horizontal resolution of 1.5 m and a potential depth of investigation up to 24.6 meters between electrodes 22 and 60 (Figure 3). Traverse INP19-05 is composed of 128 electrodes spaced at 3 meters which results in a total line length of 381 ground meters, a horizontal resolution of 2.5 m and a potential depth of investigation up to 24.6 m between electrodes 20 and 106 (Figure 4).

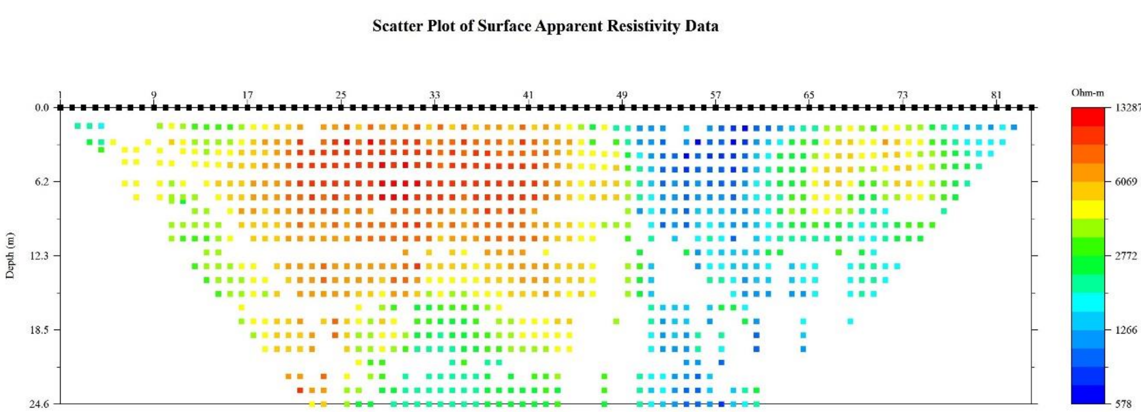

Figure 3: Array Geometry from Traverse INP19-01

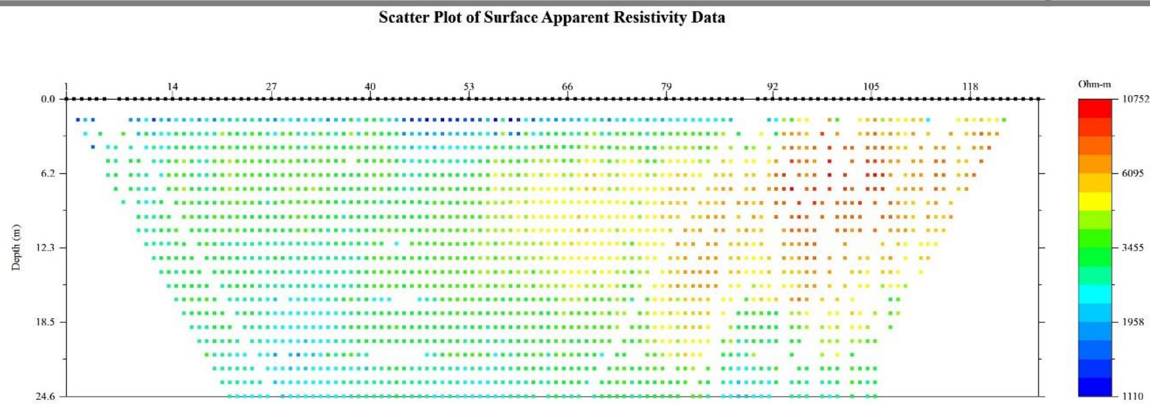

Figure 4: Array Geometry from Traverse INP19-05

The RES/IP surveys are done using Advanced Geoscience's SuperSting high-resolution resistivity meter and passive cables. A modified Schlumberger Inverse array was used on all survey lines. This array is a sounding array optimized to delineate horizontal structures such as bedrock contacts and lithological units, has the best overall signal-to-noise ratio and the most lateral coverage. It is an ideal array for finding depths to stratigraphic layers such as muck, sand, gravel, and bedrock.

The traverse location was surveyed with a differential GPS unit capable of sub-meter accuracy. This data was used to both map the traverses and to create the terrain file that models elevation within the resistivity processing.

7.2 Operating Procedure

- A crew of 4 is deployed to run survey.
- The traverse midpoint is located and the line orientation is sighted using a DGPS.
- Minimal brush is cut along line to place pickets and set up equipment.
- The crew places electrodes at either 2 or 4 m spacing using a measuring tape.
- Electrodes are hammered to a depth of either 20 cm or 40 cm (10% of electrode spacing) and soaked with Calcium Chloride solution (25%).
- Cables are laid and attached to the electrodes.
- Contact resistance test (CRT) is conducted.
- Additional Calcium Chloride (25% solution) and/or electrodes are added to electrodes that have CR > 4k ohms. The CRT is re-read and the process continues until results are satisfactory.

- The resistivity survey is read.
- The operator surveys the traverse using DGPS and places marked pickets every 10 electrodes.

7.3 Data Processing

Immediately after each survey is completed in the field, the data measurements are downloaded and reviewed for integrity. RES/IP datasets are processed daily by the lead operator using Res2DInv software created by M. Loke (2014). Noisy data is removed and the cleaned dataset is inverted. Terrain correction to the inversion mesh is applied from topographic measurements collected in the field using a differential GPS (DGPS). All raw data from the DGPS and SuperSting are archived for future consultation.

7.4 Inversion

The resistivity and induced polarization data from each traverse are inverted using the processed data set in Res2dInv. The data is inverted using a smoothness-constrained inversion algorithm that utilizes a model discretized without an extended grid and using severe reduction of side block effects. After the data sets are filtered, root-mean-square measurements of iteration model-fits are assessed to determine the most adequately fitting iteration that fits the measured data without overfitting the measurement noise. An appropriate color scale for each calculated parameter is then chosen to display the results (i.e. a logarithmic scale for resistivity and a linear scale for chargeability).

7.5 Results

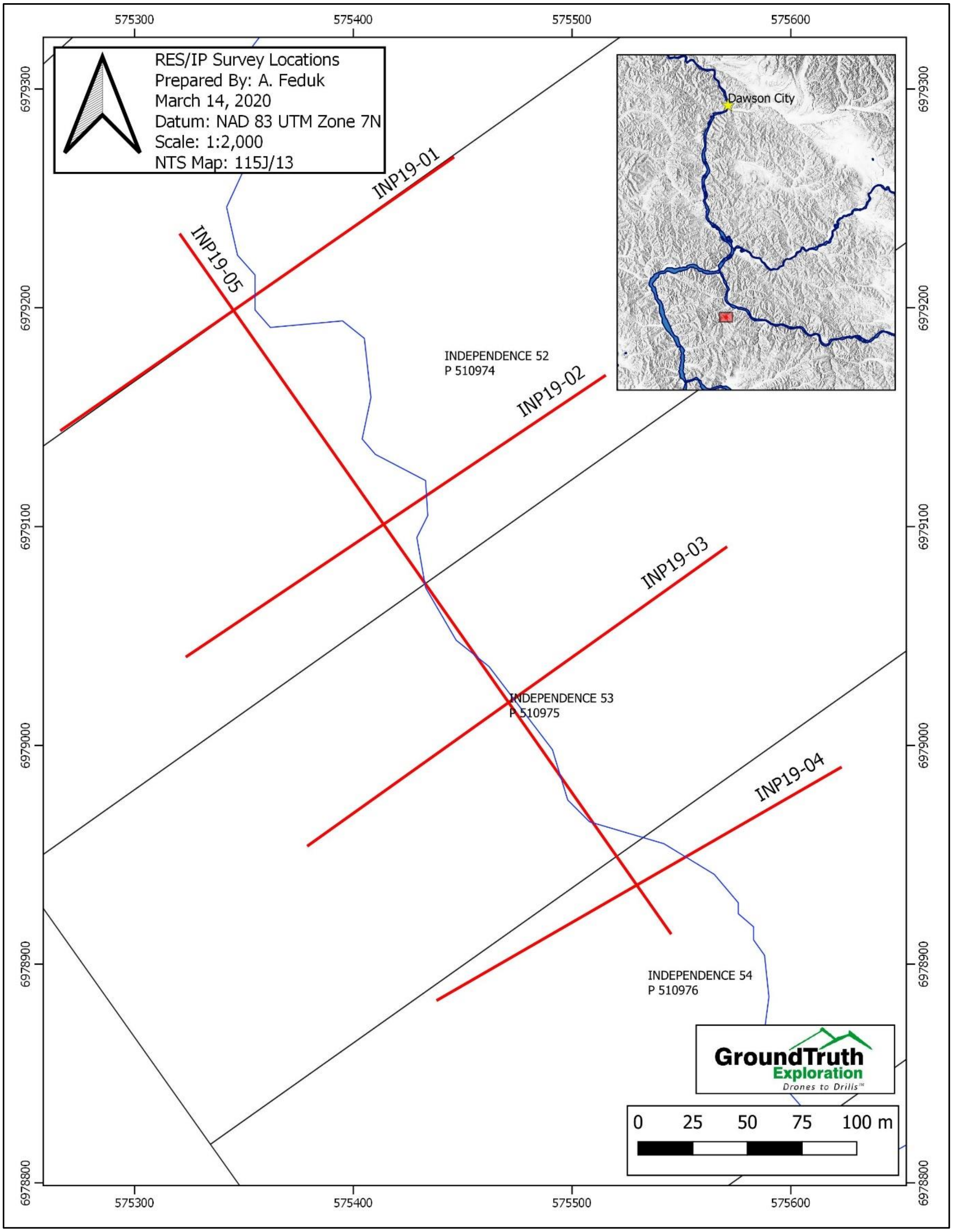

Figure 5: Location of RES/IP Profiles

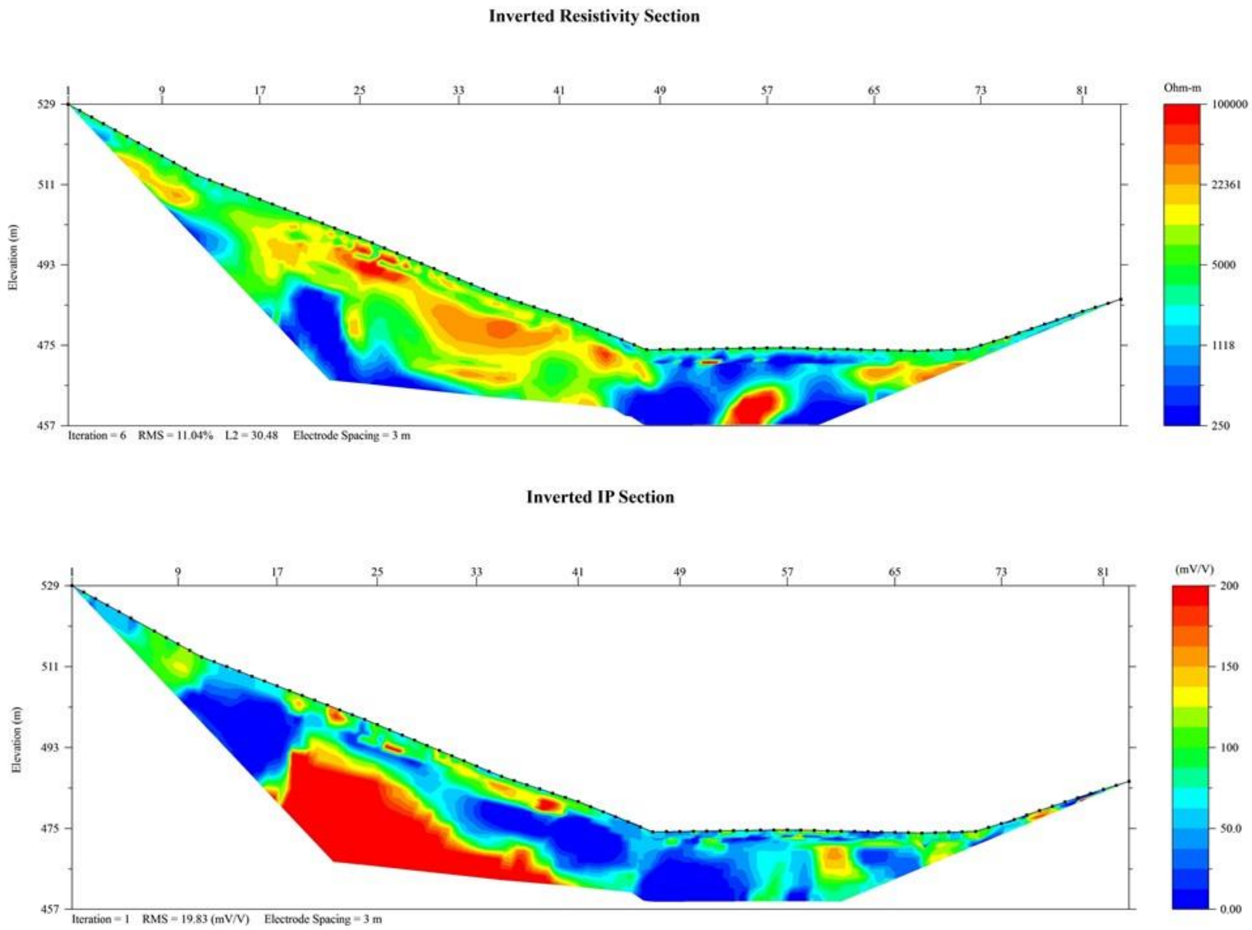

Figure 6: Resistivity and IP Profiles of Traverse INP19-01

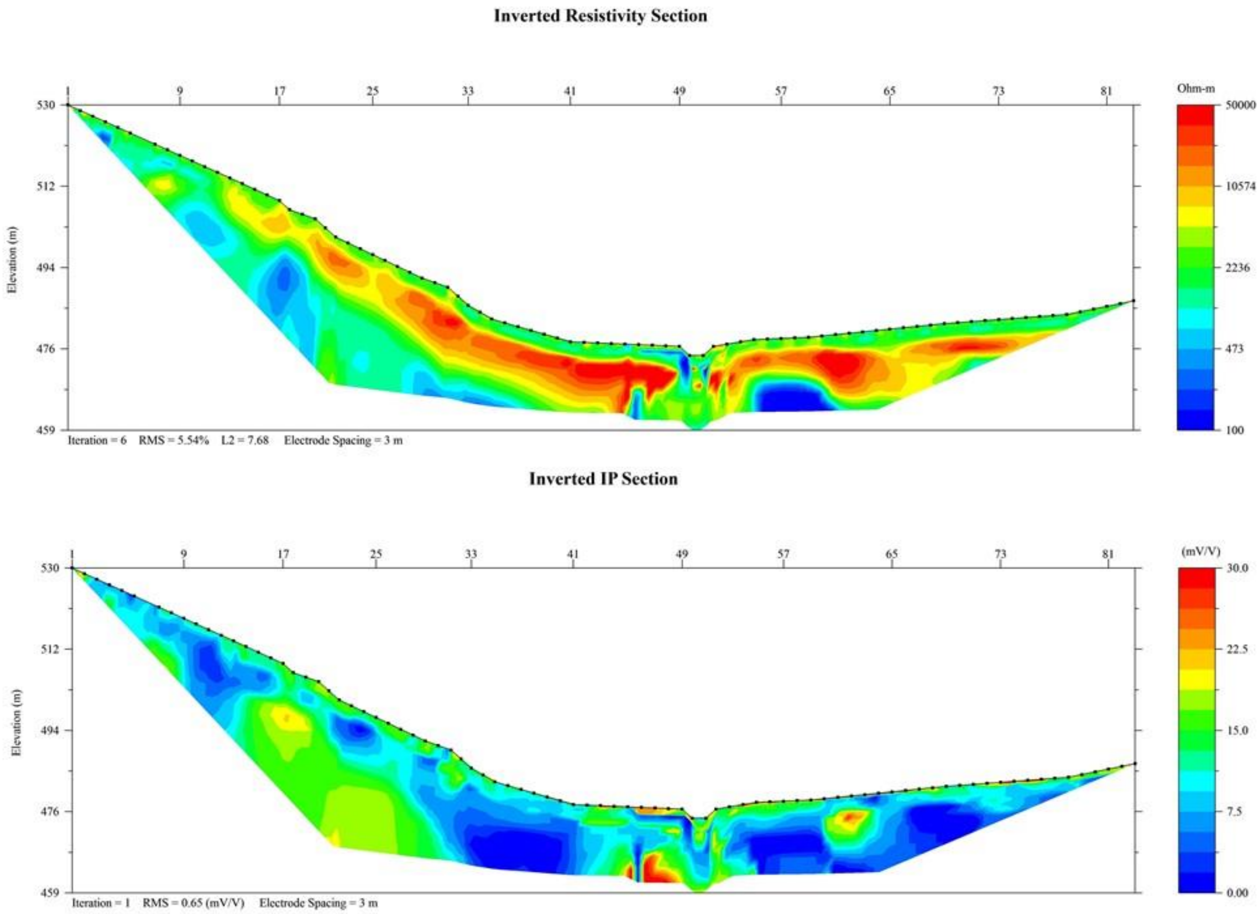

Figure 7: Resistivity and IP Profiles of Traverse INP19-02

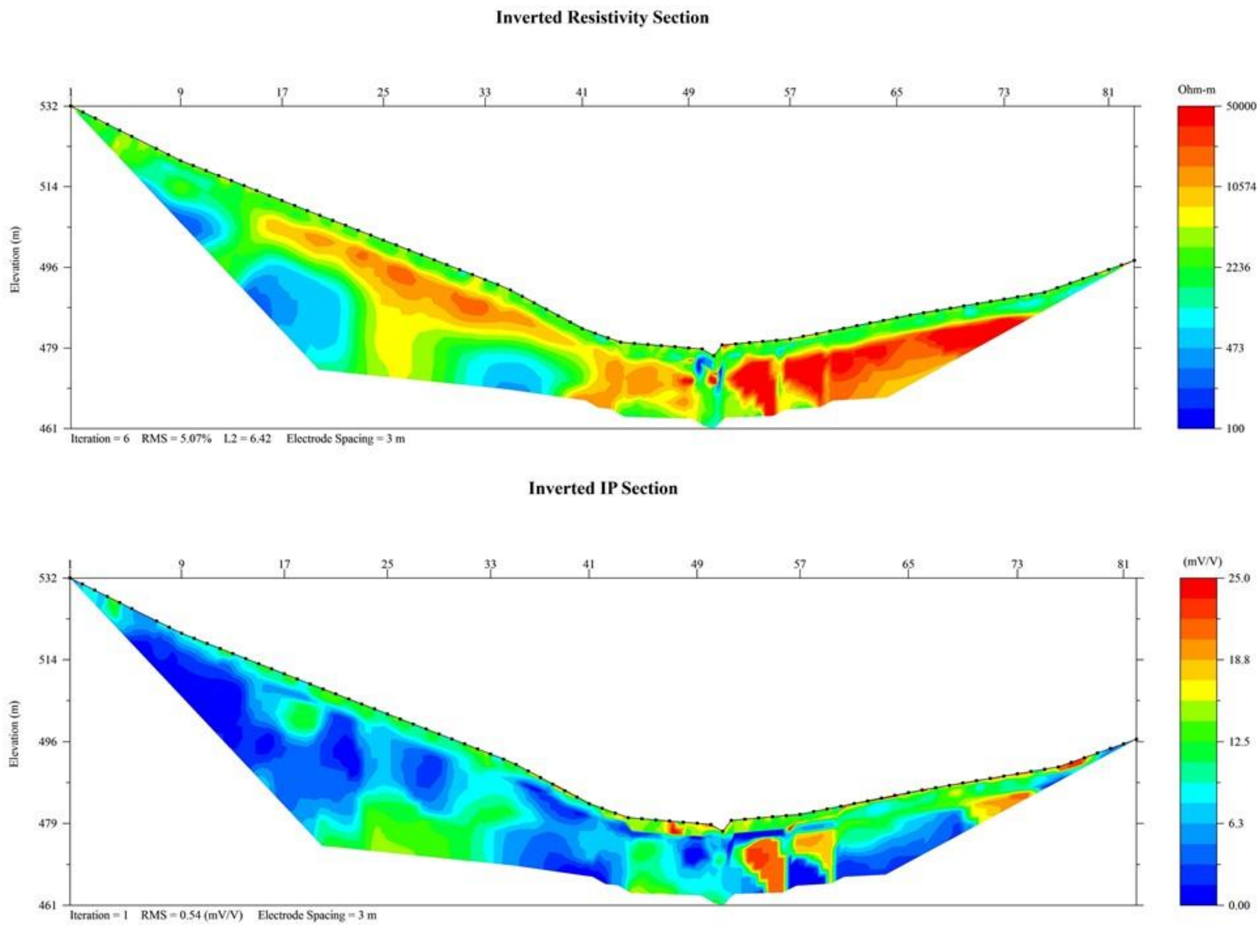

Figure 8: Resistivity and IP Profiles of Traverse INP19-03

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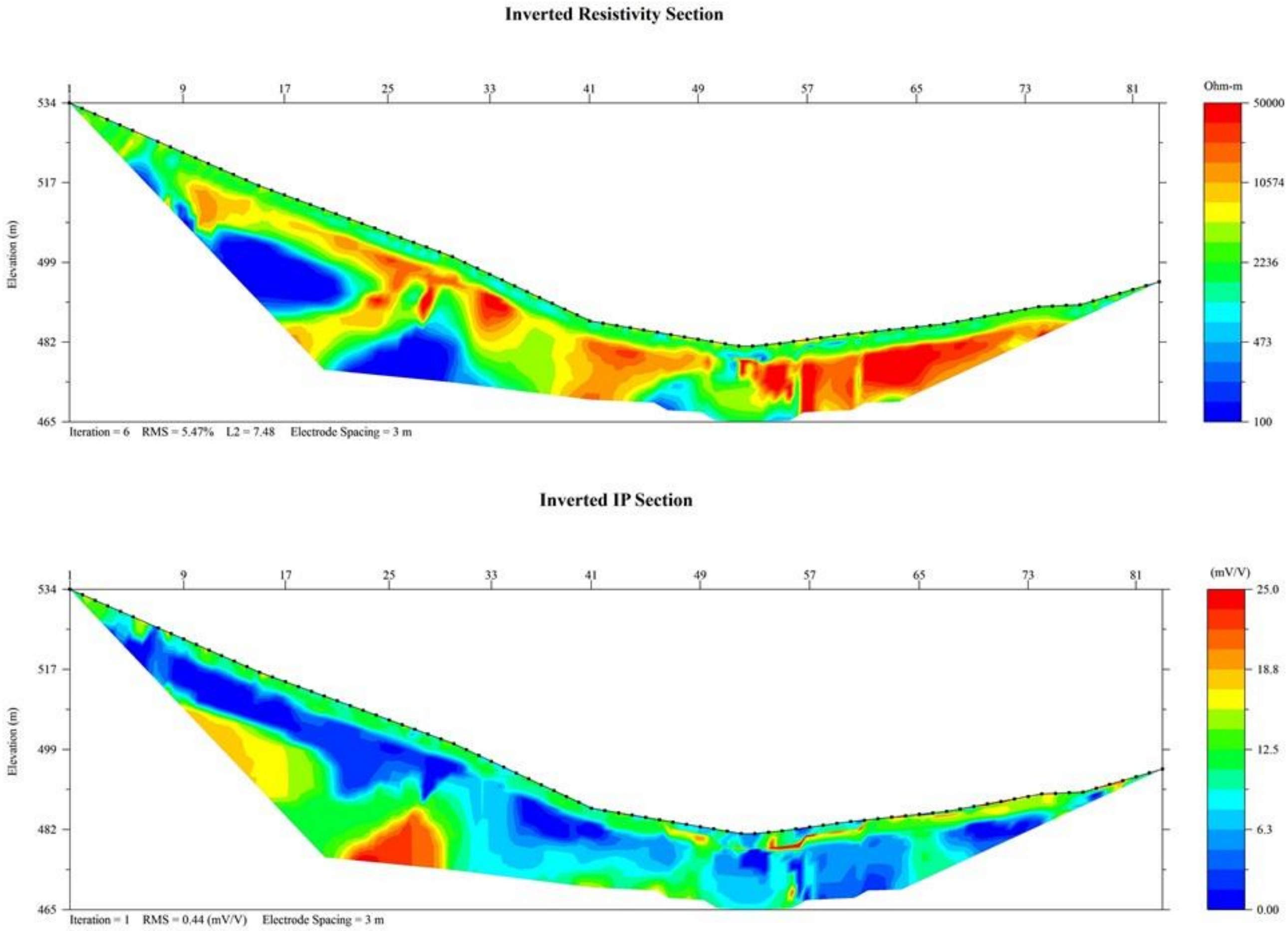

Figure 9: Resistivity and IP Profiles of Traverse INP19-04

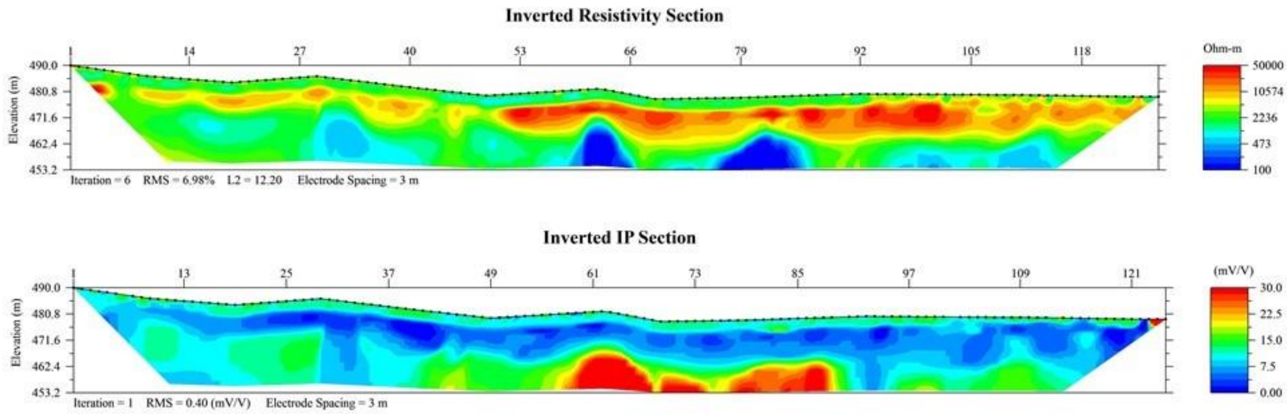

Figure 10: Resistivity and IP Profiles of Traverse INP19-05

8.0 Discussion and Interpretation

The resistivity inversion profiles show a distinct resistivity contrast at the interpreted bedrock boundary, with a moderate to high resistivity, consistent with the geology of the area (Figure 2). The depth to the interpreted bedrock interface is between 1 to 9 meters, with outcrops found on traverse INP19-02 (Figure 9). The interpreted bedrock depth increases to the southwest, as seen on INP19-01 to INP19-04. A moderate resistivity is interpreted as coarse grained fluvial deposits, a target for placer gold at the bedrock interface. The low resistivity seen on the profiles above the bedrock contact are interpreted as saturated fine-grained fluvial deposits and/or permafrost.

The chargeability section shows small changes in magnitude, associated with frozen ground near the surface in the area. The areas of the profiles that have a high IP effect and low resistivity are associated with bedrock that is potentially magnetite or sulfide rich and vice versa for the bedrock that is sulfide poor.

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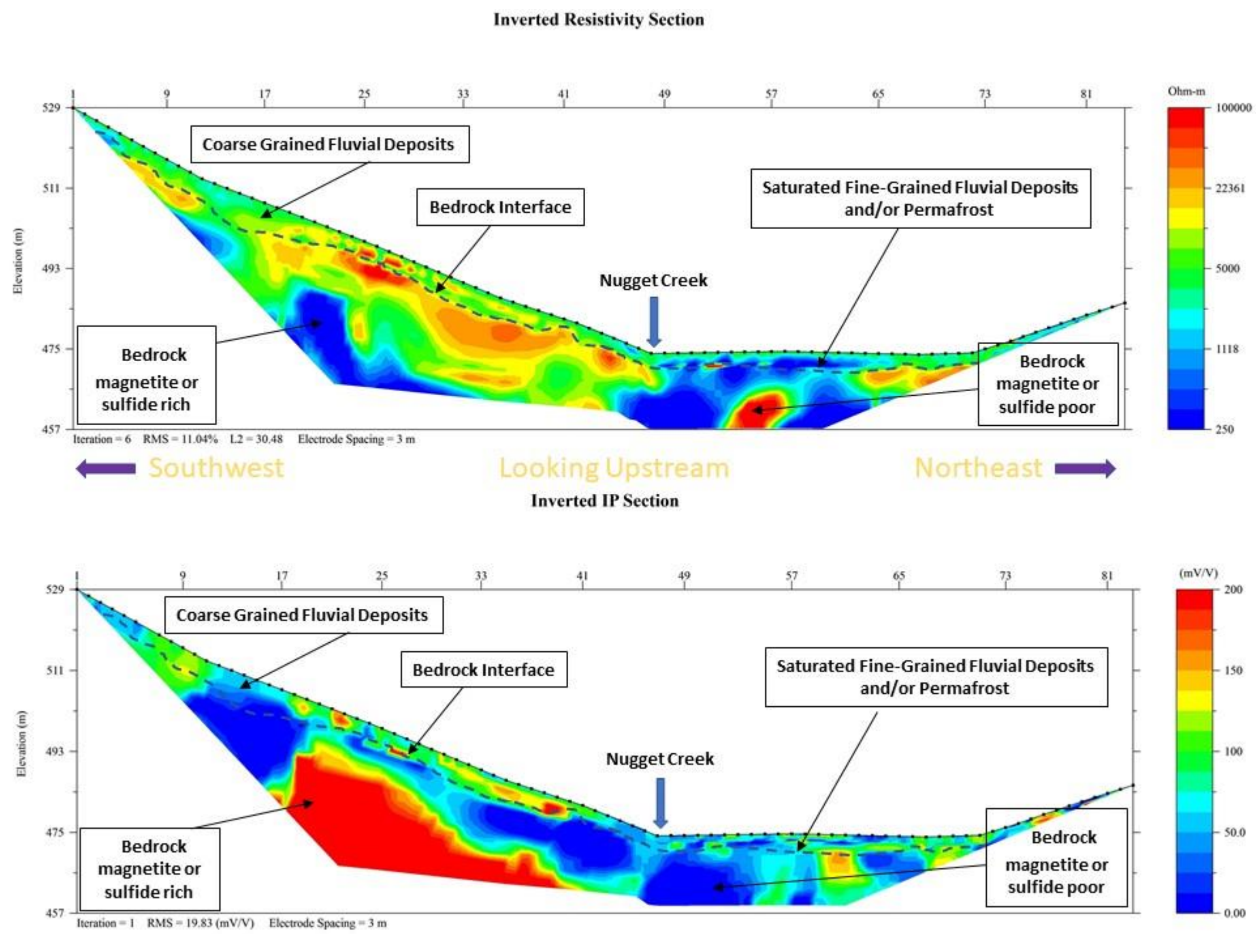

Figure 11: Interpretation of Resistivity and Chargeability Profile INP19-01

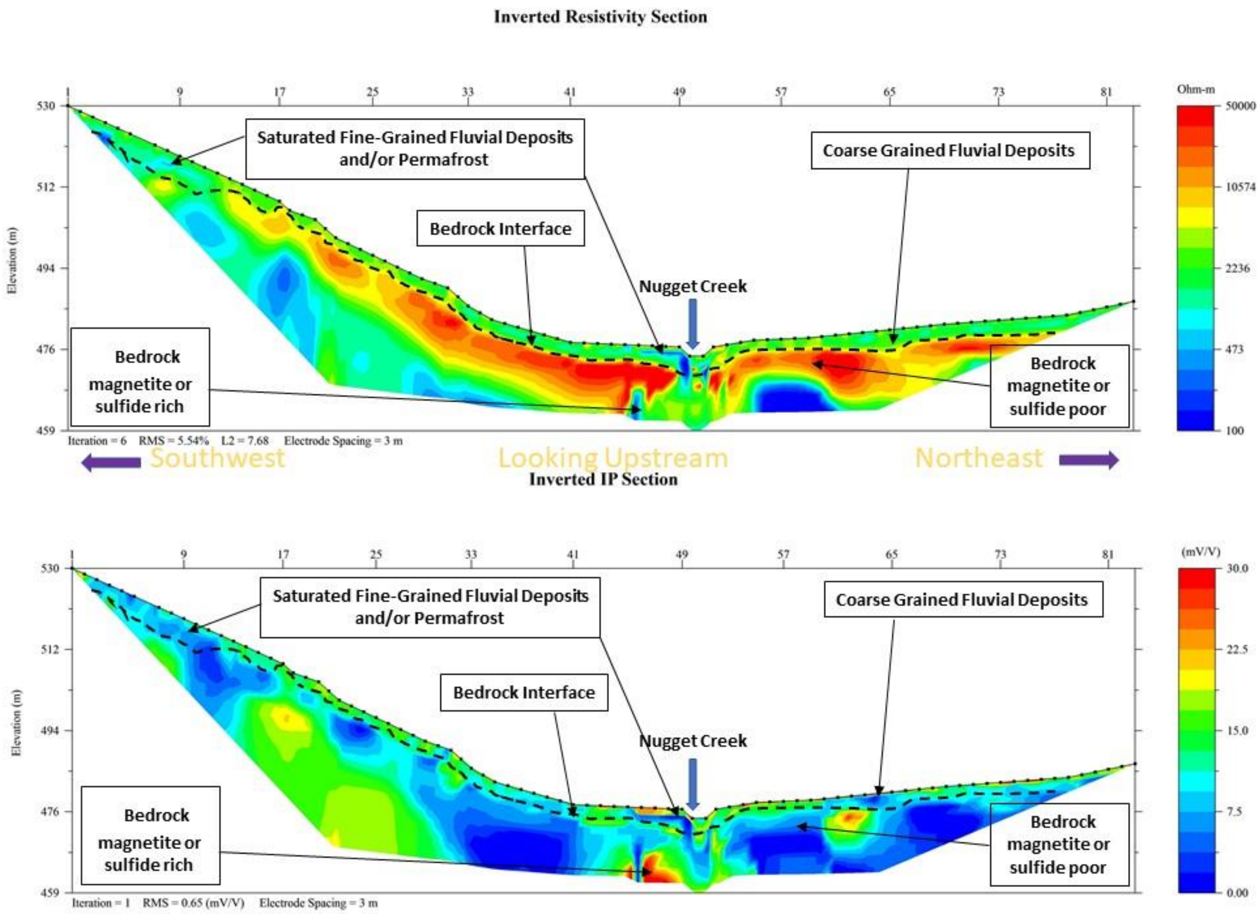

Figure 12: Interpretation of Resistivity and Chargeability Profile INP19-02

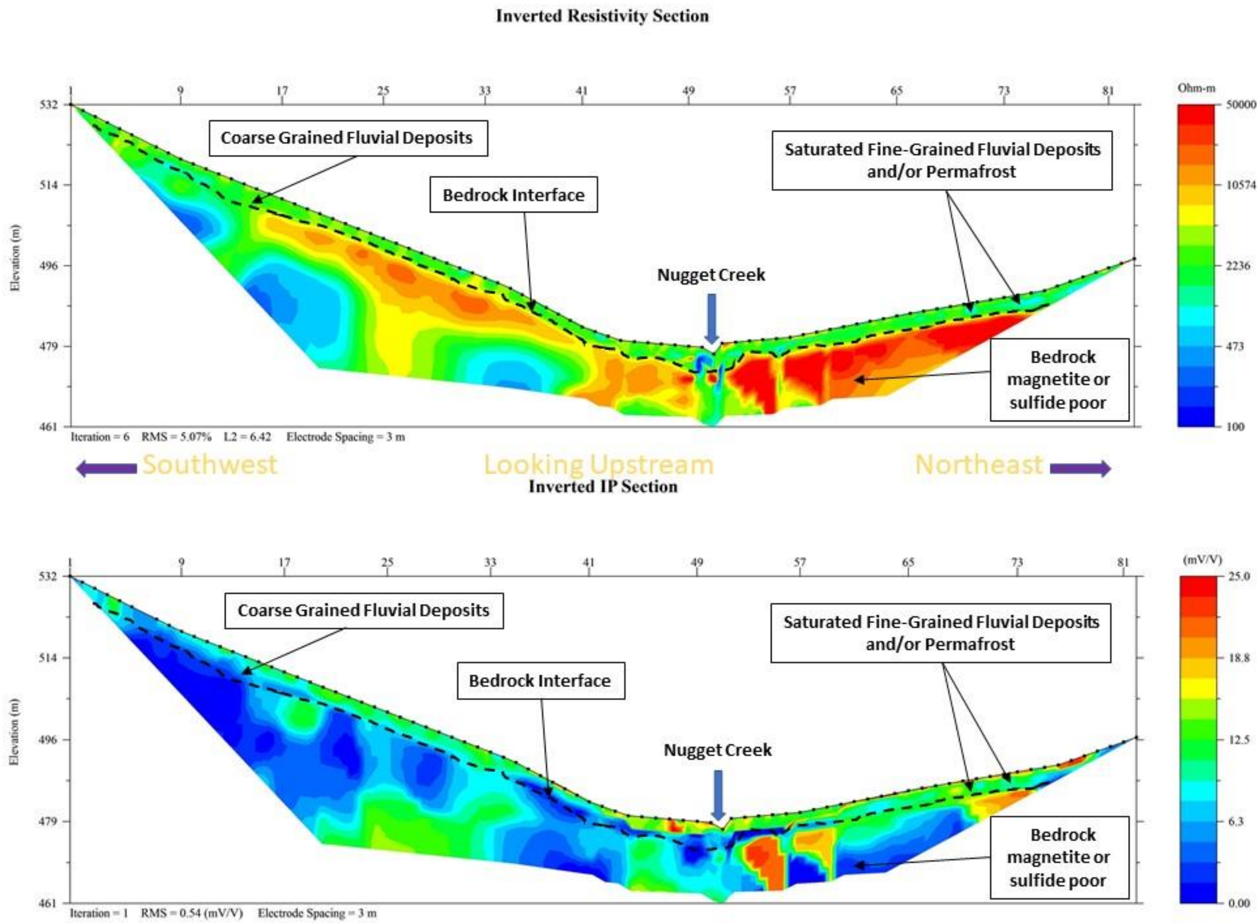

Figure 13: Interpretation of Resistivity and Chargeability Profile INP19-03

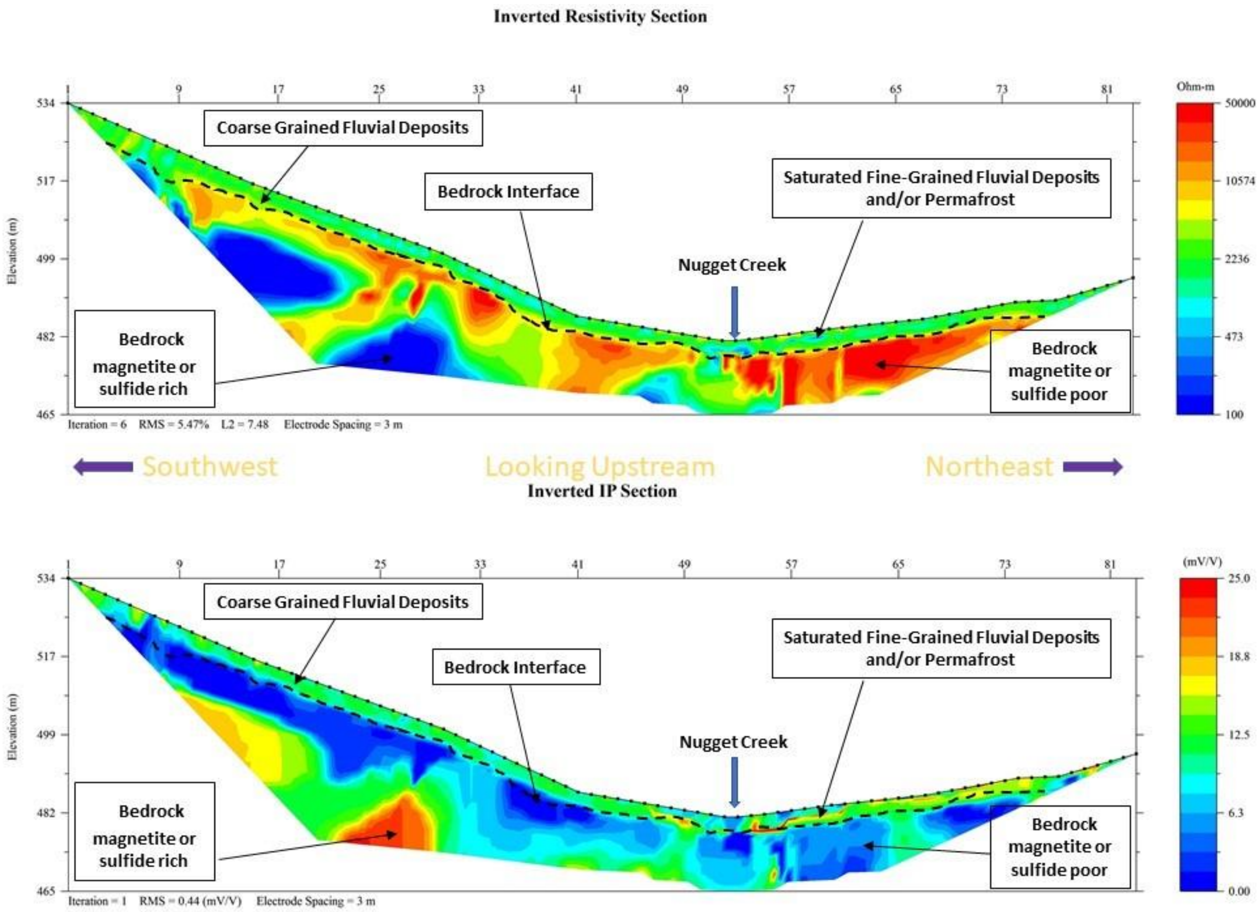

Figure 14: Interpretation of Resistivity and Chargeability Profile INP19-04

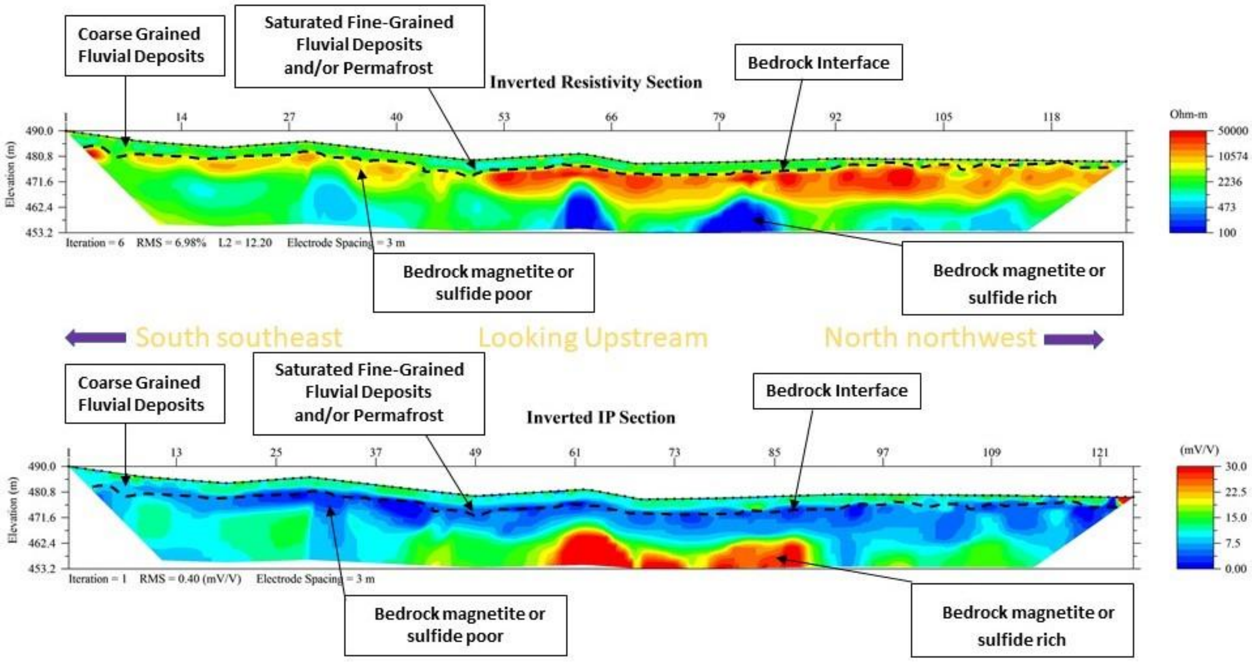

Figure 15: Interpretation of Resistivity and Chargeability Profile INP19-05

9.0 Recommendations

It is recommended to complete a drill fence on the resistivity and chargeability profiles, particularly in the areas determined to be sulfide or magnetite rich and sulfide or magnetite poor. Drilling will confirm the interpretation set forth and aid in the interpretation of the stratigraphy and depth to bedrock throughout the valley.

10.0 Statement of Expenditures

Schedule A - Independence/Carlisle/Inca Group GW01318: Expenditures

Work Performed: August 6 - 8, 2019			
Invoice #: GT-NUG-2019-01			
GroundTruth DC Resistivity-IP Survey			
GroundTruth RES-IP Survey	4 proflies surveyed w/ AGI superstring	2 days @ $3,865/d	7,730.00
	1 profile surveyed w/ AGI superstring	1 day @ $3,765	3,765.00
		Total Expenditures for Assessment	11,495.00

11.0 Statement of Qualification

I, Allison Feduk with a business address in Dawson City, Yukon, and residential address in Carlyle, Saskatchewan, do herby certify that:

1. I graduated from the University of Regina in the fall of 2011 with a Bachelor of Science in Geology.

2. From 2012 to present I have been actively engaged in mining and mineral exploration in Alberta and the Yukon Territory.

3. I have been an employee of GroundTruth Exploration Inc. since July of 2018.

4. I am not aware of any material fact or material change with respect to the subject matter of this report, the omission to disclose which makes this report misleading.

Dated this 19th day of March 2020.

Respectfully submitted,

Allison Feduk

12.0 References

Mineral Titles: Yukon Mining Recorder, Mining Claims Database – www.yukonminingrecorder.ca

Colpron, M., Israel, S., Murphy, D.C., Pigage, L.C., and Moynihan, D., 2016. Yukon Bedrock Geology Map. Yukon Geological Survey, Open File 2016-1.

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Mortensen, J.K. and Allan, M.M., 2012. Summary of the Tectonic and Magmatic Evolution of Western Yukon and Eastern Alaska. In Yukon Gold Project Final Technical Report, Edited by Allan, M.M., Hart, C.J.R., and Mortensen, J.K. Mineral Deposit Research Unit, University of British Columbia, p. 7 – 10.

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Palacky, G. J., 1988. Resistivity Characteristics of Geologic Targets. Electromagnetic Methods in Applied Geophysics. Geological Survey of Canada

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Ryan, J. J., Zagorevski, A., Williams, S. P., Roots, C., Ciolkiewicz, W., Hayward, N., and Chapman, J. B., 2013. Geology of Stevenson Ridge (northeastern part), Yukon; Geological Survey of Canada, Canadian Geoscience Map 116 and 117.

Additional review of various published scientific and reporting papers on the geology and mineral deposits of the region for indirect reference.