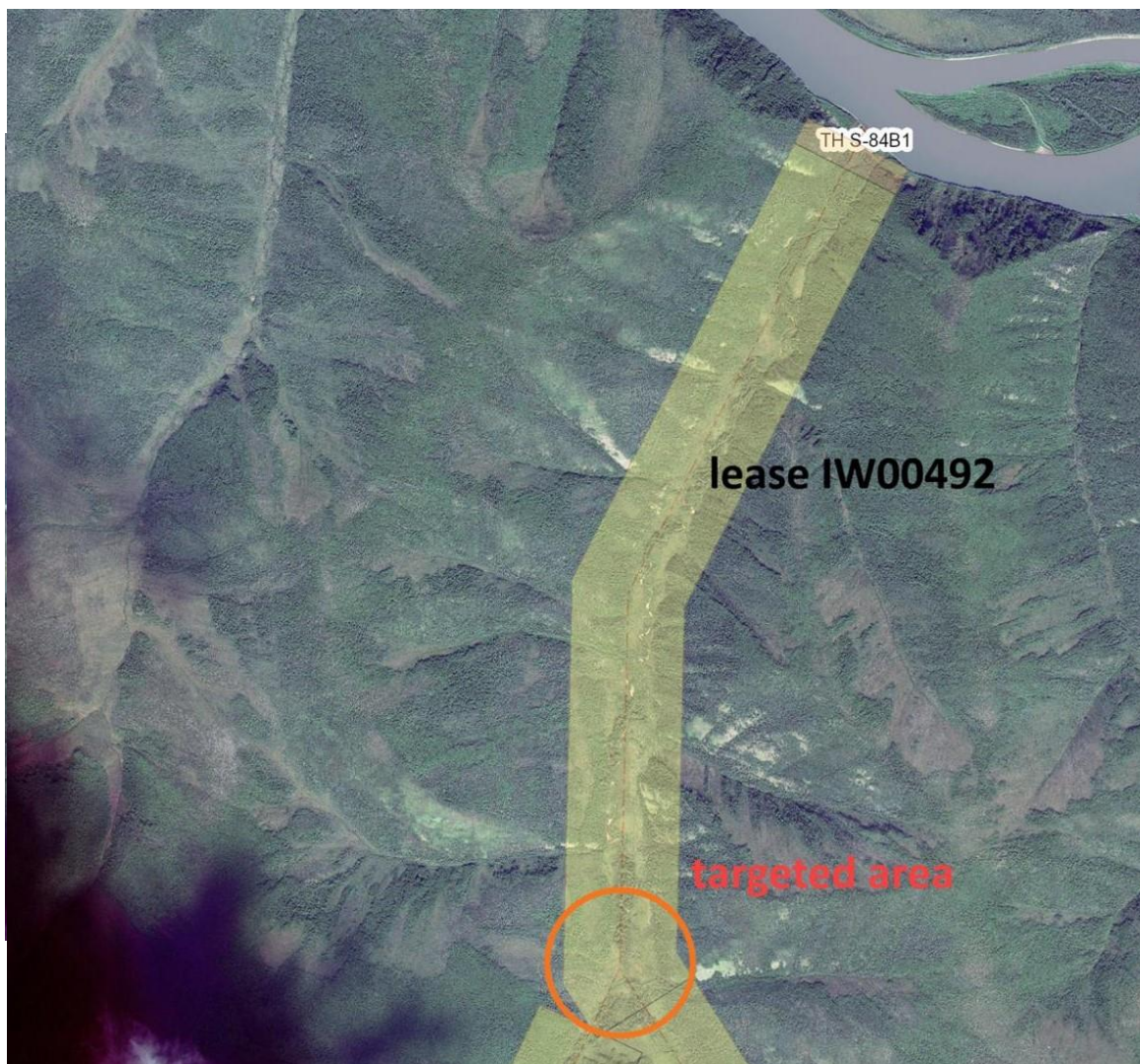


Second geophysical survey at Excelsior Creek:

“Detecting the depth of bedrock with a Ground Penetrating Radar”

on prospecting Lease IW 00492

(map 115J15)



by geologist Sandro Frizzi

Introduction:

Between the 30th of August and the 2nd of September 2018, Yukon Exploration Green Gold Inc organized a second geophysical survey on the upper part of lease IWO0492, located along the Excelsior Creek (map 115J15).

The members of the expedition were this time: Sandro Frizzi (geologist), Andres Rojas (field helper) and Joerg Lotz (engineer, technician and field helper).

To get to the creek, which is located 132 km straight south of Dawson City (185 km on boat ride), the team used a fast river-boat.

This geophysical campaign follows previous expeditions conducted by geologist Sandro Frizzi and his crews along Excelsior Creek in 2014 (first prospecting), 2015 (second prospecting and testing some expose bedrock), 2016 (first geophysical survey with GPR), 2017 (trenching with an excavator and sluicing on site).

The geophysical survey of 2016 showed us the good potential of this electronic devices in placer exploration: the trenching campaign of 2017 confirmed its reliability, with the bedrock reached within a margin of error of 0.5 - 1 meter.

In 2016 the exploration campaigns was performed along the lower part of the creek, close to its mouth.

For 2018 we decided to extend our geophysical survey to the upper section of prospecting lease IWO0492, almost three miles upstream and close to the confluence with its main tributary (see map). That will be our main targeting area in 2019.

In spite of several complications occurred during this campaign (heavy rain with flooding along some creek section which compromised and limited the performance of this delicate electronic devices and long walk through rough trails with heavy loads on the shoulders), we managed to accomplish our mission and to perform our survey along three successful lines illustrated in this report.

Along these lines, on the most promising locations, during the next mining season (2019) we will dig shafts to reach and to test the bedrock.

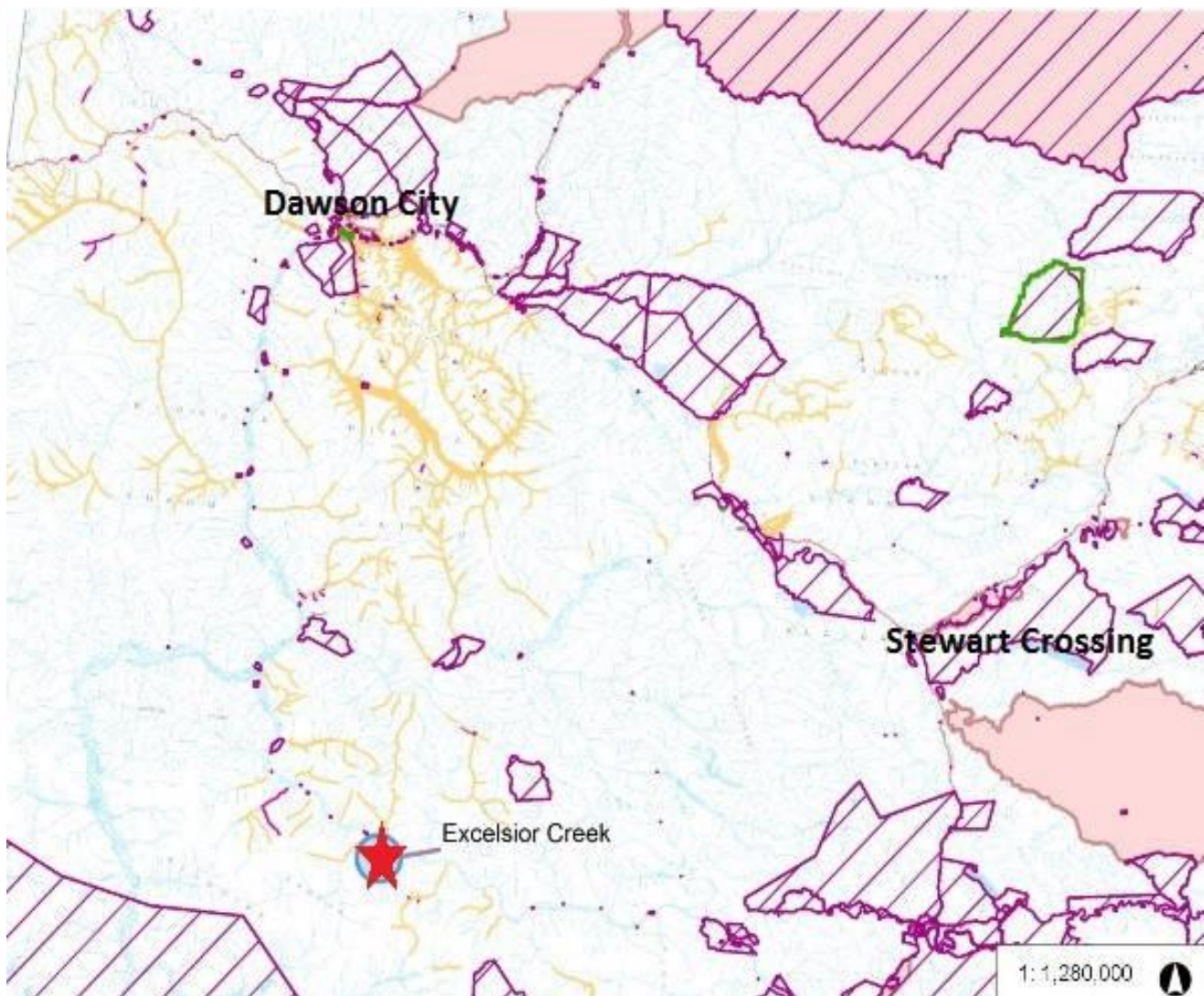
Sandro Frizzi

Location of Excelsior Creek

The 3 mile of lease IW 00492 have been staked along the lower part of Excelsior Creek, a left limit tributary of Yukon River located 134 km south of Dawson City (on a straight line) and 123 km west of Pelly Crossing. The creek is not accessible by any road or trail; the only way to reach it is by boat: 185 km upstream the Yukon River from Dawson City, or 152 km downstream from Pelly Crossing (52 km down the Pelly River until the junction with the Yukon River and then 100 km downstream the Yukon).

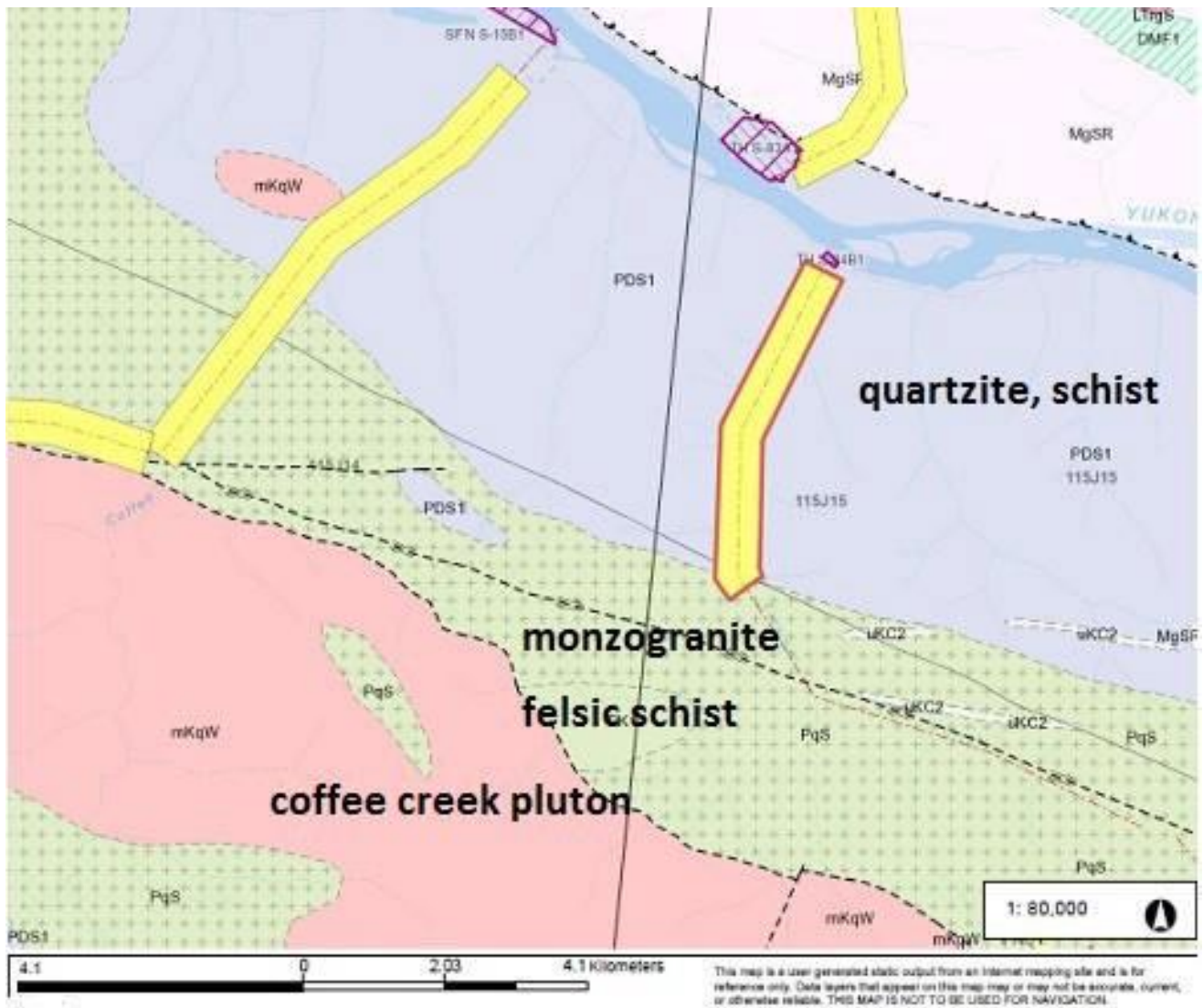
At this time the area is extremely remote, however, a new road from Dawson City to Coffe Creek (located 5 km downstream from Excelsior) has already been planned and approved by Yukon government, on request of Gold Corp. (hard-rock mining enterprise which owns the “Coffee Property”).

The work for the new road should start within few years and will open new areas to placer mining industry as well. In our case this new access will solve the problematic mobilization of heavy equipment on our mining site.



location of Excelsior Creek on government map 115J15

Bedrock geology



Legend:

- **PDS1:** Yukon Tanana (Ediacaran to Devonian; 635-375).
Quartzite, psammite, schist.
Metamorphic rocks.

- **PqS:** Yukon Tanana (Permian; 264-252).
Monzogranite, augen gneiss.
Intrusive, metamorphic.
- **PK1:** Yukon Tanana (Permian; 271-251).
Felsic schist, phyllonite.
Metamorphic.
- **MkqW:** Coffee Creek Pluton (Cretaceous; 105-90).
Monzogranite.
Intrusive (felsic).

Several outcrops of these different rock-types are well exposed all along the valley sides and on the hills located in the southern part of map.

The area is also interested by an important, deep system of structures oriented SSE-NNW (Coffee Creek fault, Yukon River Trust, Big Creek fault, etc.).

According with the most recent researches done by several equips of geologists employed by different companies during many years of hard-rock exploration , along Coffee Creek and its surrounding, the gold mineralization seems to have hydrothermal origin and it's structurally controlled. It's also often associated with pyrite, silica-sericite and small quartz veins.

Surficial geology

The morphology of Excelsior's Valley is clearly revealing its fluvial origin: every cross section analyzed along the valley shows an unmistakable, open "V" shape (included the valleys of the tributaries). The floodplain is well flattened and, along the 3 mile portion where lease IW 00492 has been staked (on the lower portion of Excelsior Creek) the alluvial deposition is for the most part more than 100 meters wide across the valley.

The morphology is favourable to host a medium-size mechanical placer mining operation. At this time we didn't record the presence of extended upper benches, beside few small ones located along the external curve of the existing meanders (easy to test).

The gravel is well exposed here and there along the floodplain, showing a scattered lack of overburden; the moss is directly covering the alluvium. It's mostly composed by well rounded fluvial-related rocks of different size, predominately cobbles and boulders. Large part of these rocks are of intrusive origins (see picture below). A selection of angular and sub-angular material, belonging to colluvium, is mostly exposed along the valley-sides.

The vegetation of the lower mile and half of lease, toward the mouth of the creek, is made by very large trees, predominately white spruce, to indicate the absence of shallow permafrost.

On the contrary, small black spruce trees are populating the upper section of the creek and few peripheral patches scattered along the borders, to indicate the existence of shallow permafrost, as confirmed by hand dug excavations done by our crew.



gravel along the floodplain

Geophysical survey of 2018

This geophysical survey has been performed by geologist Sandro Frizzi with a Bulgarian made GPR: EasyRad Dipole 300 equipped with antennas of 100MHz.

During the winter of 2016 Sandro collaborated with an expert GPR engineer, Anton Doychev of Plovdiv (Bulgaria), to customize two different geo-radars according with the characteristics inherent to the surficial geology of the Yukon. During summer of 2016 Sandro tested several placer properties of the Yukon with the two GPRs: Dipole 300 (with antenna of 100, 300 and 500 MHz) and Scudo 500 (with antenna of 300 MHz).

The depths of bedrock indicated by the devices have been successively verified by trenching with heavy equipment along the surveyed lines: in more than 50% of the cases (where the GPR could 'see through') the indicated depth was correct within 1-3 ft.



Characteristics of the two GPRs:

Dipole 300: equipped with 3 changeable antennas: 100, 300, 500 MHz (best depth with 100 MHz). In the typical Klondike's environment (frozen muck, coarse gravel mixed with sand and silt, weathered bedrock of clay) it can reach depths of 6-10 meters, but it has poor resolution on first 0.5 – 1.5 meters. It's good for detecting bedrock depths.

Scudo 500: equipped with a fixed internal antenna of 300 MHz, is more compact and much easy to drag through the bush. It has better resolution close to the surface, but less depth power (4-6 meters in the same type of ground). It's excellent for evaluate the thickness of overburden and for shallow areas.

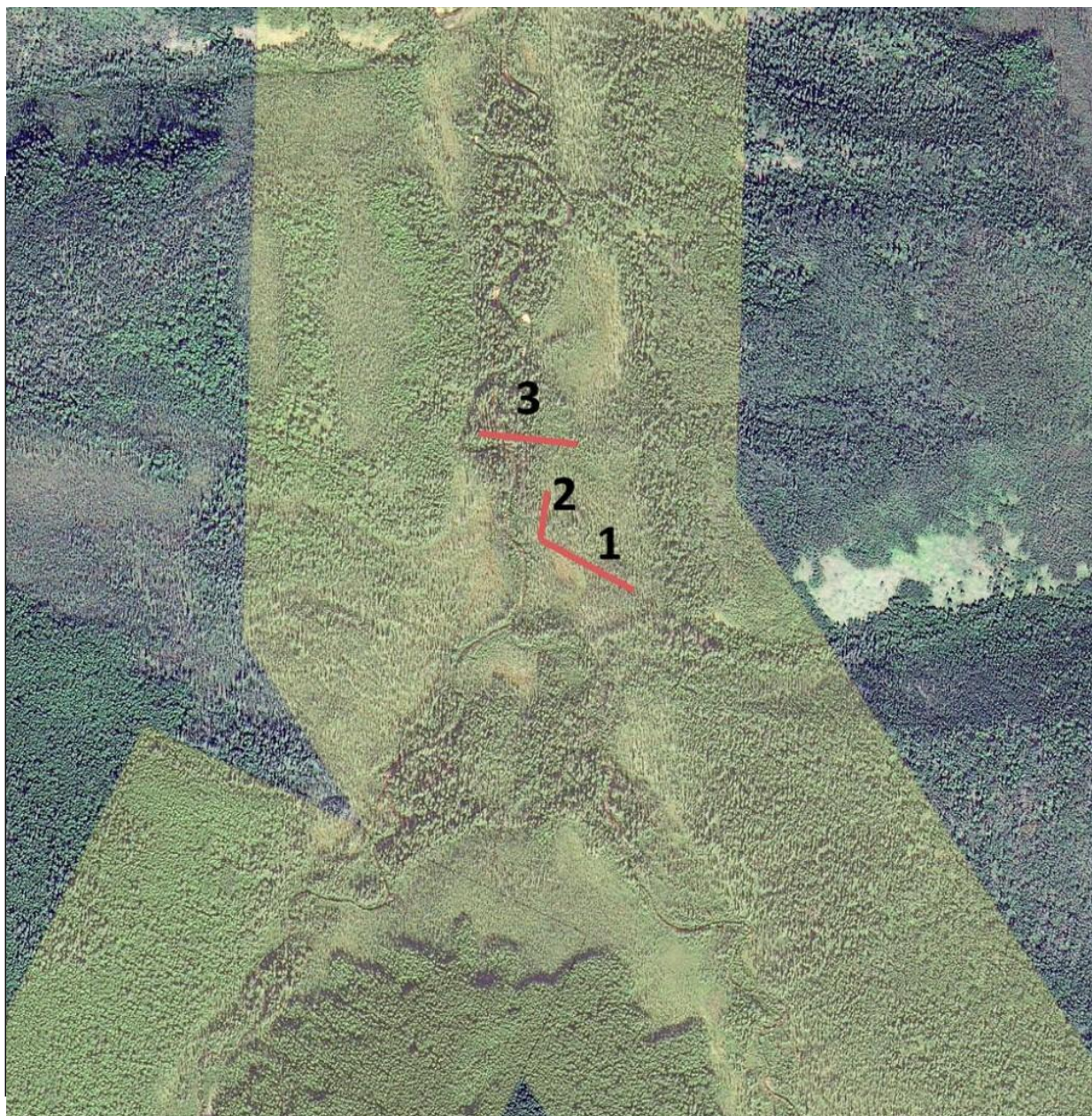
"Dipole 300" (above) and "Scudo 500" (below).

For the geophysical campaign of 2018 at Excelsior Creek we chose to use the model "Dipole 300" with 100 MHz antenna, because we needed depth: our main target was the bedrock, not the upper layers: the floodplain shows lack or modest coverage of overburden.

As already mentioned in the introduction, our survey has been limited by unusual weather conditions occurred in the Klondike during the month of August, with extremely heavy rains. The soil soaked of water is substantially reducing the ability of ultra-wideband frequencies to penetrate the ground.

In spite of everything, we managed to produce useful data.

Locations of the three surveyed lines on upper lease IW 00492



GPR lines marked in red and numbered

UTM of surveyed lines:

**line 1: start 603109 – 6969868
end 603232 – 6969822**

length: 140 m

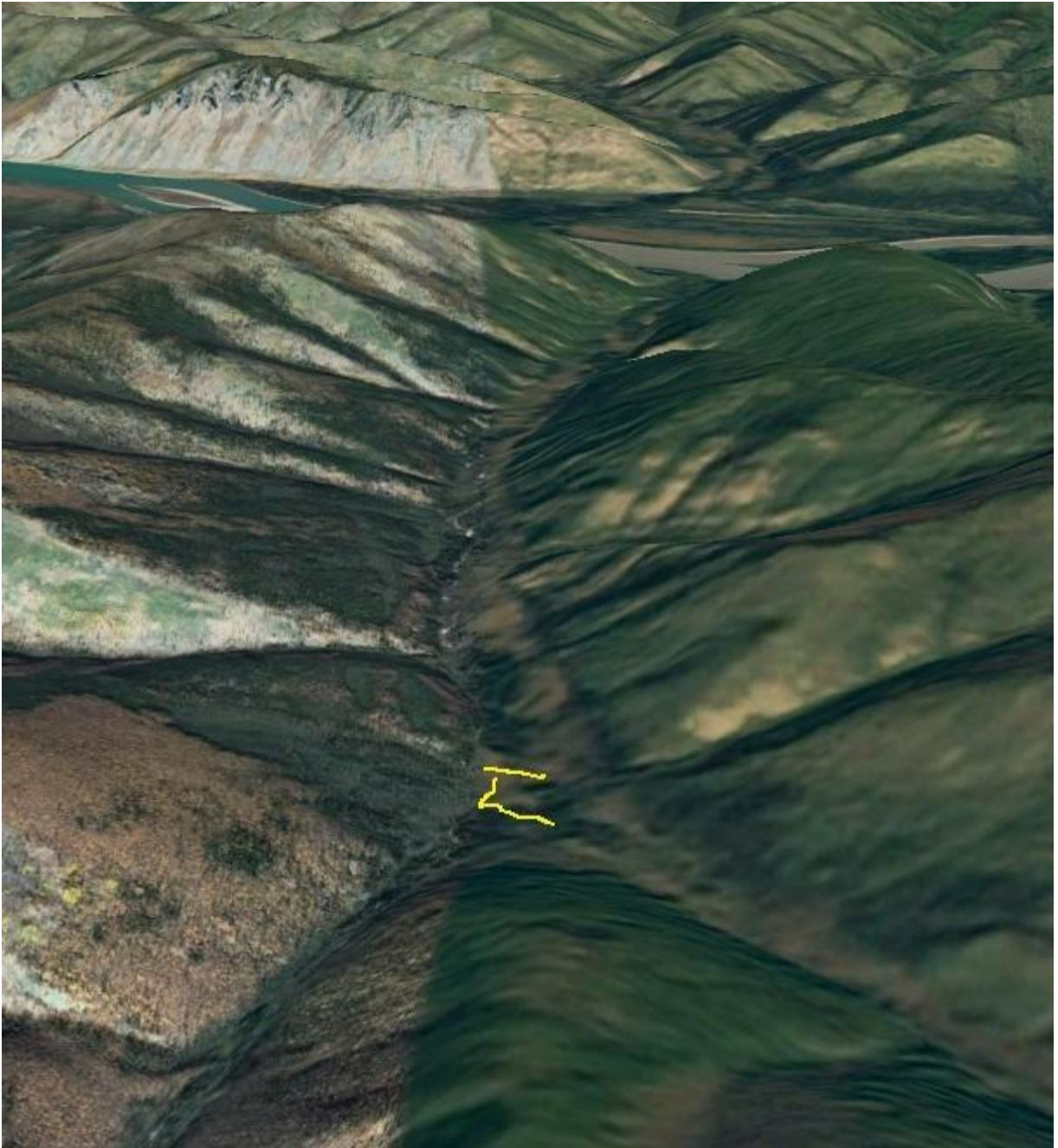
**line 2: start 603109 – 6969868
end 603160 – 6969929**

length: 100 m

**line 3: start 603015 – 6969989
end 603137 – 6969992**

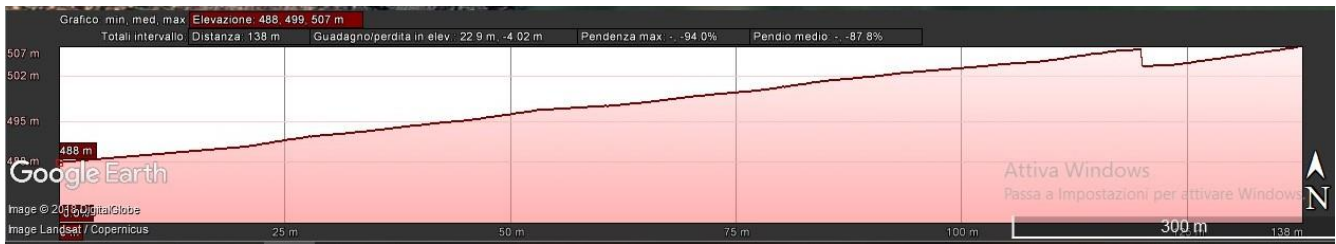
length: 110 m

3D view of GPR lines

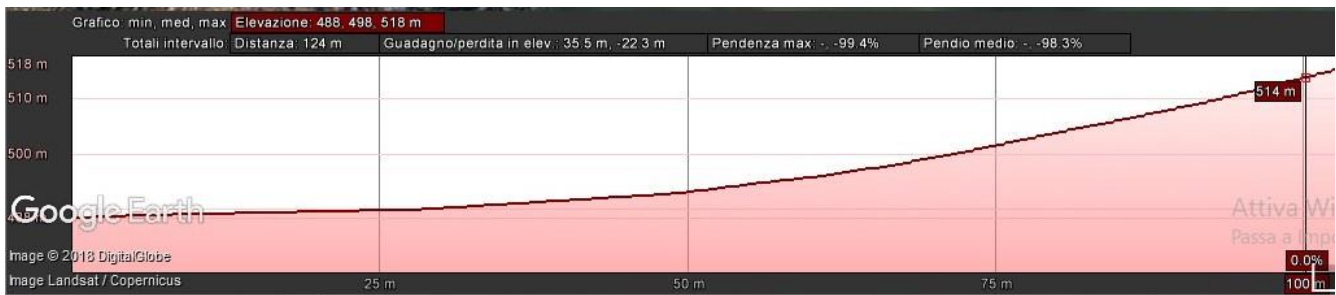


Elevations along the surveyed lines

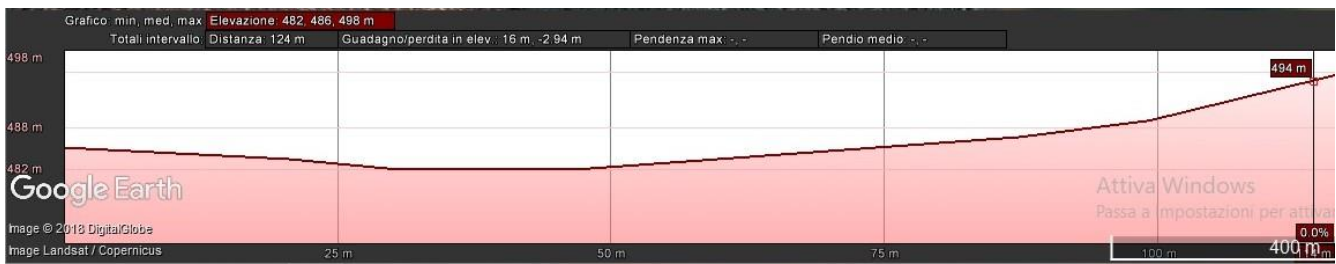
Line 1:



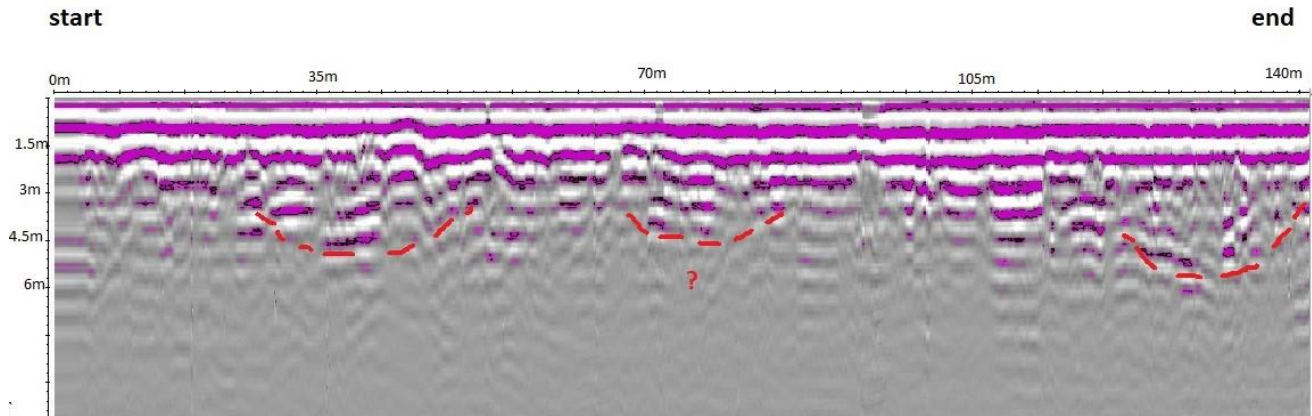
Line 2:



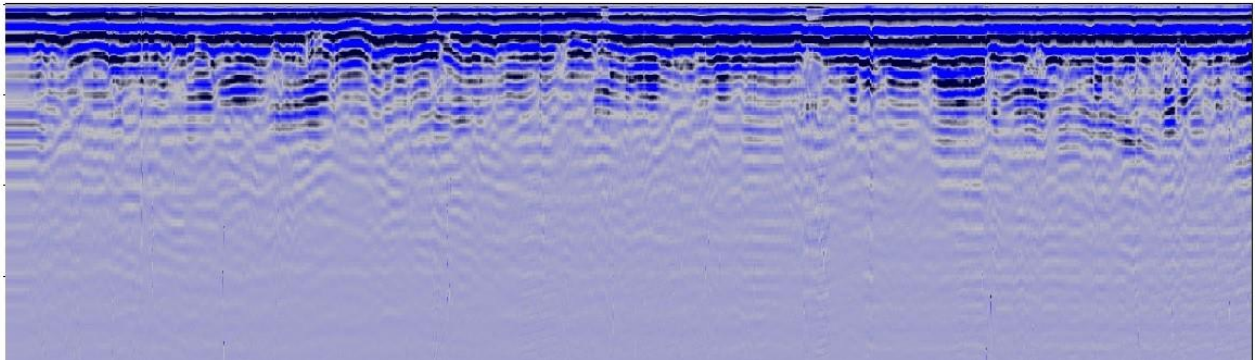
Line 3:



GPR line 1



Seg-y image processed with Reflex 2D Quick software



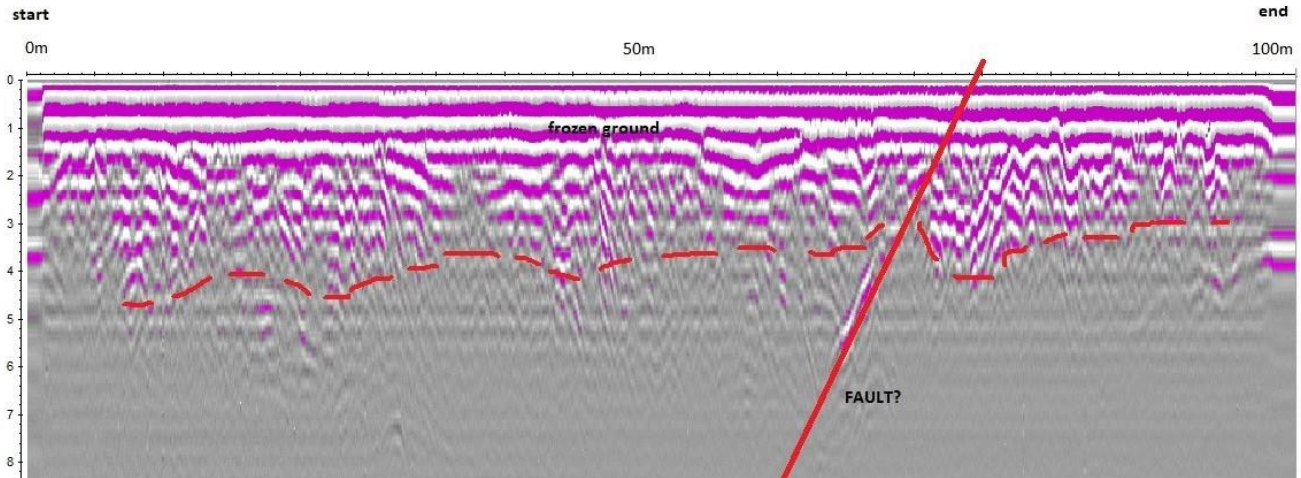
Seg-y image processed with Prism 2.5 software

The number 1 is the most important among the surveyed lines, because it's located at the confluence between the main creek and its bigger tributary (left limit). This large section of floodplain will be our main target during the next mining season (2019).

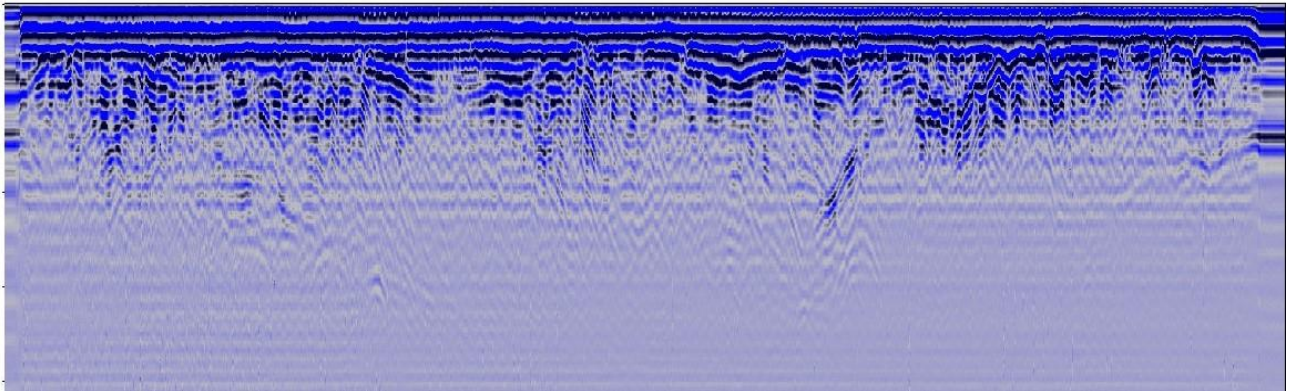
The bedrock seems to have an average depth of 3 meters and a maximum depth (4.5 meters) on three different sections: at 35m, at 70m (this one is uncertain) and at 125m.

These three depressions in the bedrock are possibly representing the old locations of the main creek (especially the ones at 35m and at 125m) and in 2019 we will dig 2 shafts right in the middle of them.

GPR line 2



Seg-y image processed with Reflex 2D Quick software

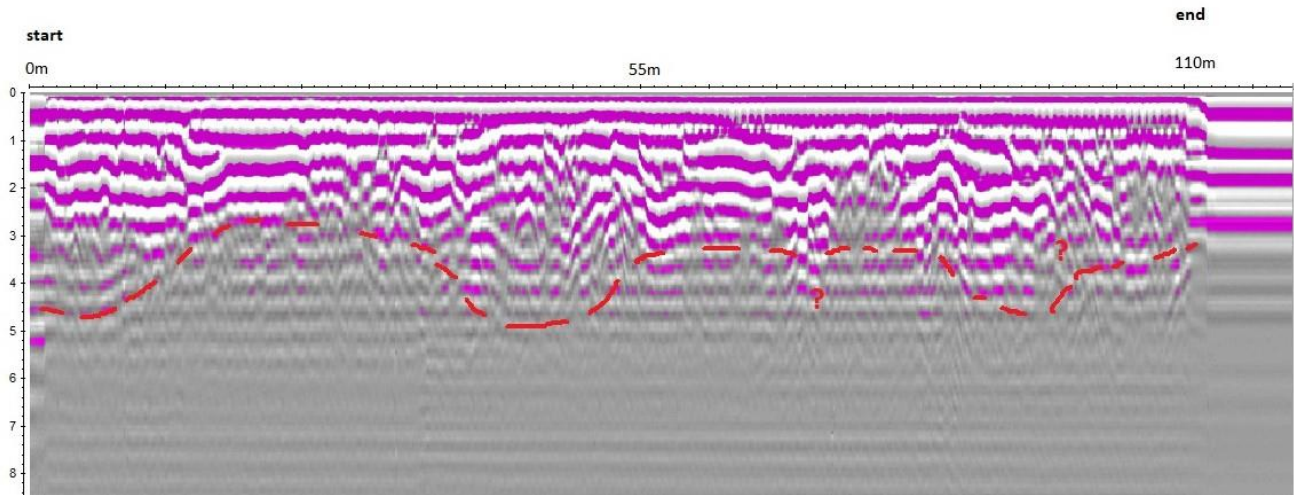


Seg-y image processed with Prism 2.5 software

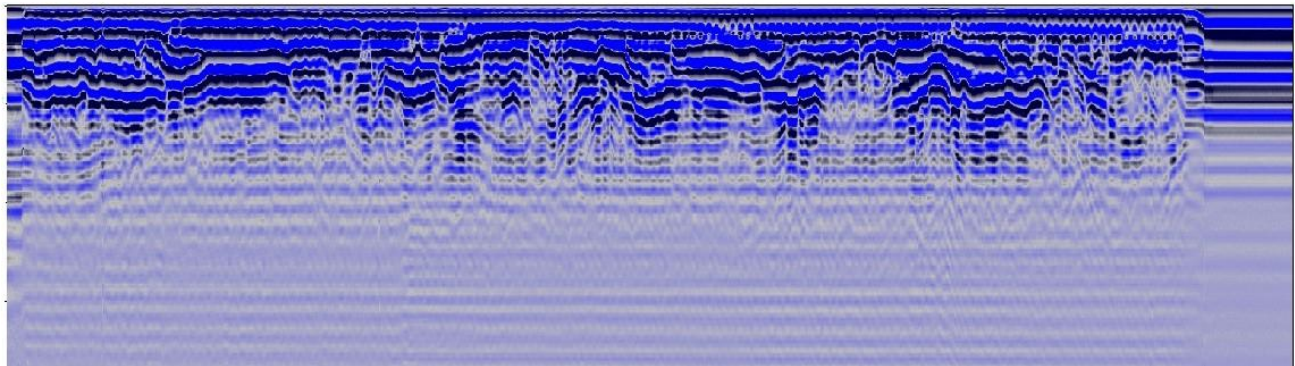
This line is longitudinal to the valley and almost parallel and close to the actual creek. The ground in the first 2 meters seems to be deeply frozen (also confirmed by the little black spruces scattered here and there). The only note of interest could be represented by what appears to be a deep fracture (fault?) with a depression in the bedrock right behind it.

No appealing areas where to locate a shaft have been spotted at this time along line #2.

GPR line 3



Seg-y image processed with Reflex 2D Quick software



Seg-y image processed with Prism 2.5 software

This line is cut-crossing the floodplain and is clearly showing the presence of a paleochannel around 40-45m and a possible one at the margin of the valley around 85m from the starting point (which is at the modern creek bed).

The paleochannel at 45m seems to be a major one and the deepest, and it will more probably become the location of one of our shafts planned for next year.

Conclusions

The geophysical prospecting campaign of summer 2018 performed between the 30th of August and the 2nd of September 2018 by geologist Sandro Frizzi with the help of civil engineer Joerg Lotz and Andres Rojas, has been limited by an unusual bad weather occurred in the central Yukon during the second half of August. Heavy rains and extremely high water level prevented us by using our ground penetrating radar for most of the time spent in the field. In spite of these poor weather conditions, we managed to protect and use our electronic device during the breaks between showers.

In 4 days of expedition, mainly spent in long hiking trips toward the end of prospecting lease IW 00492 (4,7 km from camp on a straight line!) we managed to produce the 3 surveyed lines illustrated in this report.

The prospected lines have been done for the purpose to locate areas where to sink three or four shafts during the next mining season (2019).

Some potentially good location has been spotted: two along surveyed line #1 and one (maybe two) along line #3.

Next year we will know if the conditions encountered while shafting will be matching the what indicated by our ground penetrating radar.

Professional qualification of Sandro Frizzi

I'm an Italian citizen and permanent resident of Canada since 2009, born in Italy the 28th of August 1961. I work and live in Dawson City since 2011 (1342, 4th Ave.).

In 1993 I obtained the University degree in Geological Sciences at the "Universita' di Bologna" with specialization in hydrogeology, aquifers and alluvial deposits.

As geologist he worked as a consultant for several companies in Italy (1993-2004), in Canada (1997-2017), in Bolivia and Argentina (2009), and in Mexico (2010-11).

Since 2005 I'm operating in Yukon, as geological consultant in hard-rock exploration (2005-2009) and successively self-employed in placer mining industry (2009-2017).

Since 2013 I'm co-founder and director of Yukon Exploration Green Gold Inc., a placer exploration and mining enterprise. The company at this time is holding several fully licensed properties, some of those already in production (Big Creek, California Creek, Bruin Creek and 12 Mile Creek).

Since 2009 I dedicated part of my time to test and to promote non-invasive/eco-friendly exploration techniques (ground penetrating radars, magnetometers, gravimeters, etc.).

In 2013-14-15 I conducted a successful exploration along the floodplain of Big Creek (Map 115P15) also by using a ground penetrating radar of Russian fabrication (Zonda-Python3). That radar exploration revealed the correct bedrock's profile of the area and led to an important discovery (since 2016 the "Oz Property" is in active production).

During the winter of 2016-17, I went to Plovdiv (Bulgaria) to work together with electronic engineer Anton Doychev to customized GPRs: EasyRad Scudo 500 and Dipole 300, calibrated for the specific characteristics of the Yukon placer ground.

Dawson City, 26 September 2018

