

*Dawson City, 10 October 2017*

-Geological and Geophysical survey-

## **Three Kings Creek**

**-Prospecting for placer deposits with Ground Penetrating Radar-**

on

**Lease ID 01511**

(maps 115O03-06)



*Satellite view of prospecting lease ID 01511  
(scale 1:100,000)*

*Report and GPR survey done by Sandro Frizzi, geologist and prospector*

## **Introduction:**

*The 7<sup>th</sup> of September of 2017, geologist Sandro Frizzi, engineer Joerg Lotz and field helper Vlad Bondarchuk, flew with an helicopter to Three Kings Creek to perform a geophysical/geological campaign along two miles of prospecting lease (ID 01511) staked on the lower section of the creek (see maps 115003-06).*

*This geophysical survey followed two preliminary prospecting campaigns conducted by Yukon Exploration Green Gold Inc. along the Three Kings Valley, aimed to locate areas with good potential for placer gold.*

*The GPR investigation was planned to determine the thickness of two different alluvial deposits and their possible suitability for placer gold mining. The first one is represented by an older/higher bench belonging to the Stewart River; the second one regards a lower bench, definitely younger and related with a depositional phase of Three Kings Creek.*

*Our creek is located in an area historically known for hosting valuable gold deposits (between Maisy May, Tenderfoot and the Stewart) and with the proper geological and structural features to encourage an investigation.*

*Both the benches are located along the lower part of the creek, close to its mouth.*

*We chose this area after founding, during a first expedition, signs of old-timer mining activities concentrated around the second bench, few meters away from an old cabin located by the mouth of the creek.*

*Conspicuous piles of materials appear to have been processed by early miners right beside this cabin.*

*Within the cabin's remains we recovered a wood board with three names and a date engraved: "CA\_D MCM O'Neill - Aug 17 1900" (see pictures below).*

*Are those the initials of the "Three Kings"?*

*(According with R.C.Coutts, a party of three miners conducted here a successful operation, at the very beginning of 1900. By the end of the season they celebrate the lucky strike with an expensive party which gave them the nickname of "The Three Kings").*

*We will find it out the real story by the end of next summer after digging that creek!*

*Sandro Frizzi*



## Location of Three Kings Creek

The 2 mile lease ID 01511 was staked along the lower part of Three Kings Creek, which is a right tributary of the Stewart River.

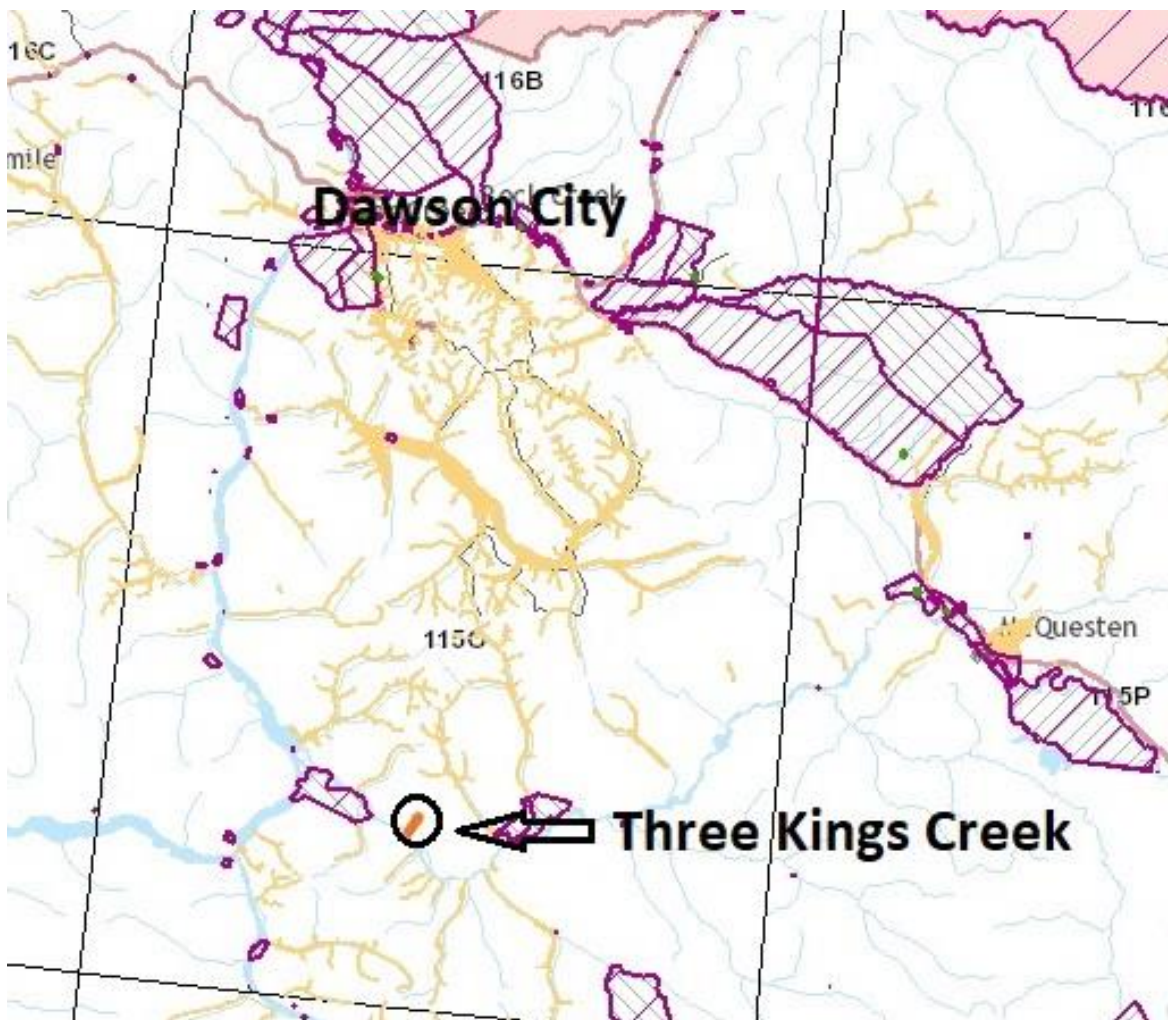
This creek is located  $\approx 90$  km South of Dawson City (on a straight line) and  $\approx 120$  km West of Stewart Crossing.

Three Kings Creek is not reachable by roads and is accessible only by boat or helicopter.

A bunch of old man-made trails are running along the valley and on the upper benches located in the lower part of the creek.

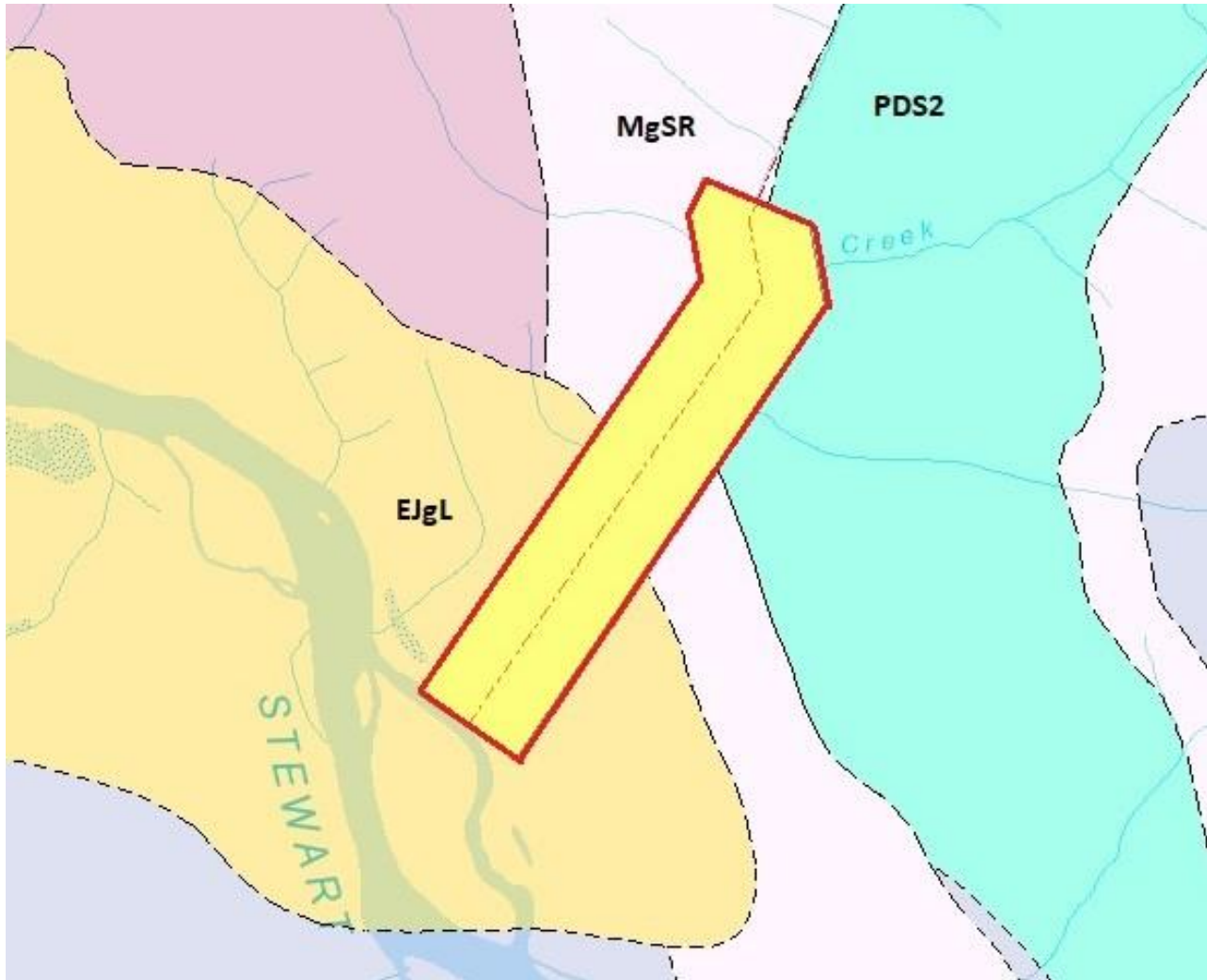
The existing road which runs from Dawson City through Hunker and Dominion Creek, Indian River, Black Hill Creek, Henderson and Maisy May Creek, for a total length of 180 km, is passing fairly close ( $\pm 5$ km) to the upper part of Three Kings Creek.

From that road it will be possible to build a drivable access to the creek, just by crossing the dividing ridge.



*location of lease ID 01511*

## Bedrock geology



Geological map scale 1:40,000

### Legend:

- **PDS2:** Yukon Tanana, Ediacaran - Devonian (635 - 375).  
Metamorphosed carbonatic (marble).
- **MgSR:** Yukon Tanana, Carboniferous (355).  
Metadiorite, metatonalite,  
metagranodiorite.

- **EJgL:** EJgL Terrane, Jurassic (192 – 180)

Felsic Plutonic (granodiorite, monzogranite, monzonite).

Three Kings Creek lies in the southern part of the Klondike Plateau, right in the heart of the Yukon Tanana Terrane.

“The Yukon-Tanana is a tectonic terrane that extends from central Alaska through central Yukon and into northern British Columbia.

Extending over 2000 km, the YTT is the largest tectonostratigraphic terrane in the northern North American Cordillera.

The Yukon-Tanana Upland is a physiographic province mostly underlain polymetamorphosed and polydeformed metasedimentary, metavolcanic, and metaplutonic rocks of Upper Paleozoic and older ages were deposited or emplaced near the edge of the North American continental margin.

Rocks in the terrane record a variety of tectonic settings and have experienced varying amounts of tectonic transport, both before and after amalgamation of the YTT with North America.

Sequences of mainly parautochthonous quartz-rich sedimentary rocks derived from the North American continent also include meta-igneous rocks with mostly continental geochemical and isotopic signatures.

Structurally higher sequences contain meta-igneous rocks with arc and back-arc characteristics. The Slide Mountain/Seventymile terrane, composed of volcanic rocks typical of seafloor and of typical seafloor sediments, is recognized as an ocean basin that divided parts of the Yukon-Tanana Terrane before amalgamation with the continental margin”.

## Surficial geology

The morphology of Three Kings Valley is clearly showing its fluvial origins: no glacial activities have affected this area which is 'V' shaped with steep hill sides and a creek deeply carved into a narrow valley, mostly with medium gradient.

Three Kings is a relatively short watercourse ( $\approx 9$  km) with a narrow floodplain along the majority of its length.

In the last kilometer of its run, right before flowing into an abandoned meander of the Stewart River, the creek was deeply eroding through an ancient bench belonging to the river, carving a canyon into packs of alluvial materials and bedrock more than 30 meters deep.

The remains of a second bench are visible on a lower level located between the higher bench and the actual riverbed. This bench is belonging to a younger phase of the Three Kings Creek and seems to be the area where the attention of the old timers was mostly concentrated.

Why this second bench has been the main target for the old-timers who mined this area? The explanation could be simple:

- The long section (180 km) of Stewart River mostly enclosed between Moose Creek (right tributary of the river located at km 559 of Klondike Highway and visible on map 115P10) and the mouth of Stewart River (map 115O06) has been targeted since 1860 for been hosting several gravel-bars with high content of fine and ultrafine gold. Some of these bars have proven a gold content up to 1-3 ounce per < 10 cubic yards (Chapman Bar, Steamboat Bar and others).

This lower part of the Stewart River was targeted for fine float gold in gravel bar as well, and the scarves made by old-timers activities are still visible along both sides of the river, mostly concentrated on the upper/older benches.

- The highest bench present by the mouth of Three Kings Creek represents an older depositional phase of the Stewart River and lately has been carved by the creek, which successively deposited the eroded material along a lower/younger bench.

This processes of depositing-eroding-and depositing again are causing re-concentration and gold enrichment in pockets distributed along the newer benches.

Those enriched deposits were probably the main target of these old miners.

*Note: during this exploration campaign of 2017 we dedicated our attention to these benches. The next season will test them, before start exploring the upper part of the creek.*

## Geophysical survey

The geophysical survey conducted on the lower portion of lease ID 01455, staked along a two miles portion of Three Kings Creek, has been performed by geologist Sandro Frizzi, during a surveying campaign done with the help of engineer Joerg Lotz and field-helper Vlad Bondarchuk.

At Three Kings Sandro used two ground penetrating radars of Bulgarian fabrication: EasyRad “Scudo 500”, especially calibrate for the Yukon terrains and equipped with an antenna of 300 MHz, and “Dipole 300” with antenna of 100 MHz for more depth.

Each one of the surveyed line has been prospected multiple times with both devices and only the most reliable achieved data have been collected and elaborated with the use of Prizm 2.5 software. Then analyzed and converted in a simple graphic by the geologist.

Our previous exploration GPR campaigns conducted at Big, Clear, Excelsior and Flat Creek proved the reliability of the information produced by these electronic devices. The accuracy in predicting the bedrock depths, within 1 meter of span, has been confirmed by successive digging campaigns performed with excavators along those same prospected areas.



*Sandro with his GPR on the high bench of Three Kings Creek*

**Yukon Exploration Green Gold Inc. is an exploration company with a strong ‘green ethical code’ and deeply committed in developing and promoting non-invasive prospecting and mining techniques.**

**The efficiency of our exploration campaigns has been proven in the past years on our properties staked on the virgin grounds of new areas, which are today successfully mined.**

**Area explored in 2017**



## UTM and locations of GPR lines (Nad83):

**line 1:** start 596487 - 7013115      length: 272 m  
end 596270 - 7013273



**line 2:** start 596496 - 7013364      length: 160 m  
end 596594 - 7013483



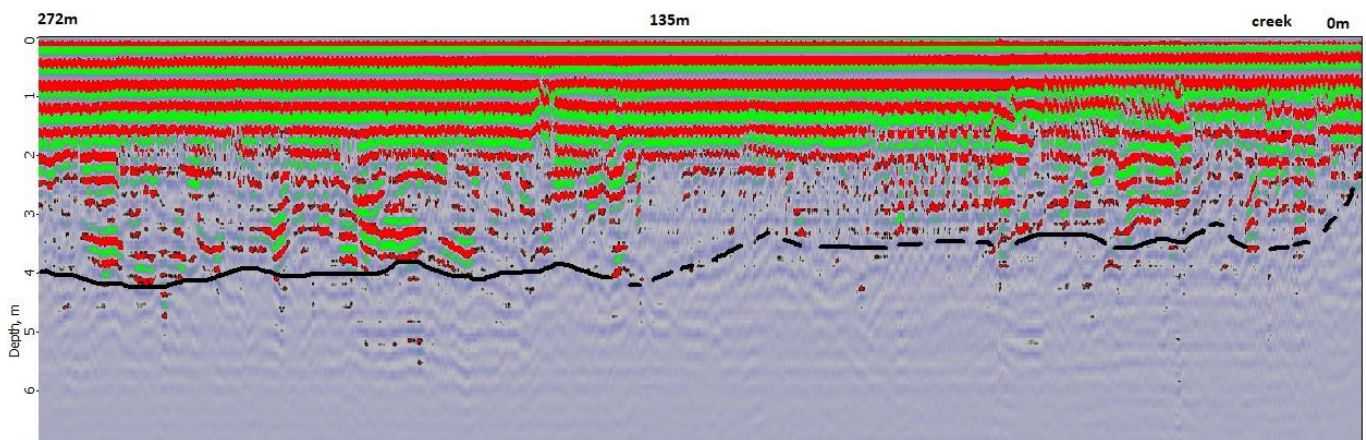
**line 3:** start 596484 – 7013270  
end 596437 – 7013179

length: 110 m



# Surficial elevation and bedrock profiles along the surveyed lines

## line 1



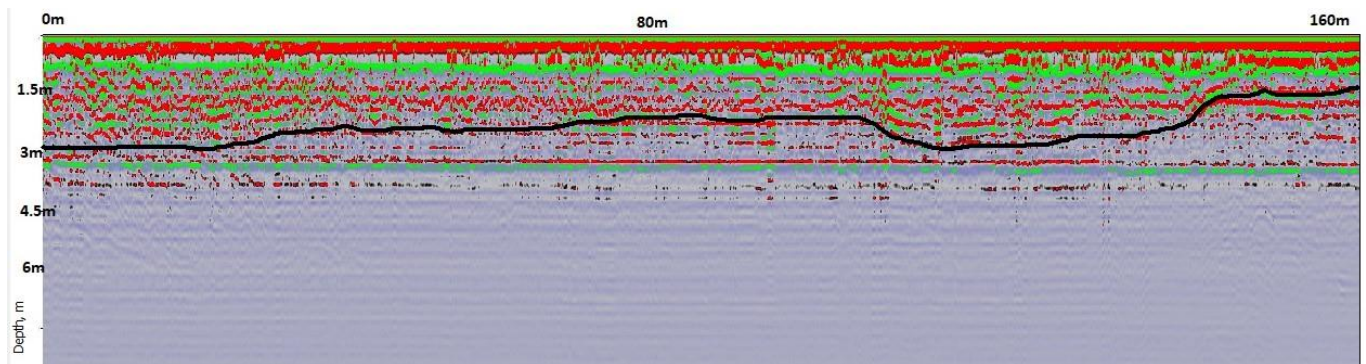
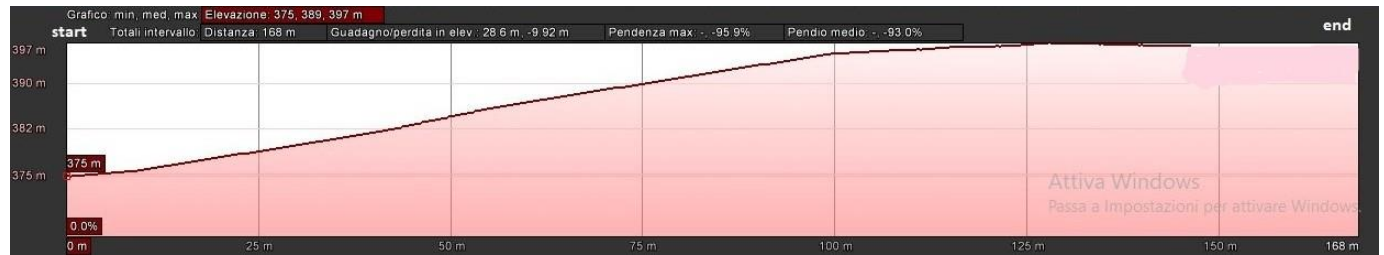
**Note:** this line is crosscutting the mouth of Three Kings Creek where it flows into an abandoned meander of the Stewart River. The top layers of this meander are mostly composed of fine and ultrafine materials (sand and silt mixed with few pebbles and cobbles) which are negatively affecting the penetration of the GPR signals. The result is represented by sequences of nonreflecting flat lines, visible on the top.

At bigger depth instead, there is coarser loose material (alluvial) which allows to better results. This data have been produced by “Scudo 300” equipped with 100MHz antenna and with 75ns of frequency, for a more detailed ground penetration.

This line has been planned with the intention to check the depth of the original channel carved by Three Kings Creek at its confluence with the Stewart River.

It looks like the bedrock of the creek lies at higher level than the Stewart’s one.

## line 2

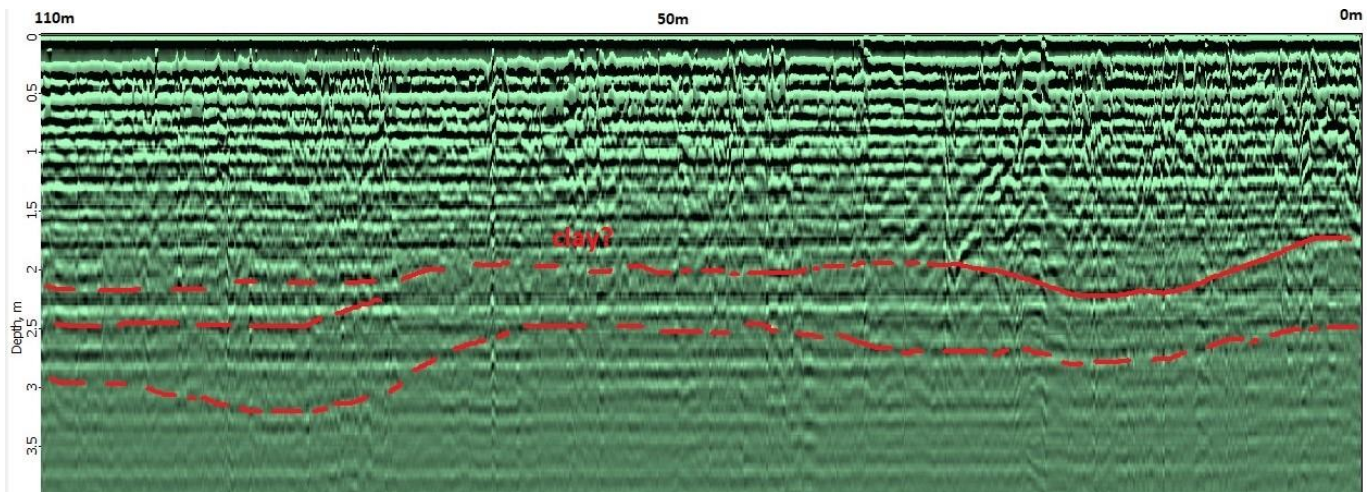
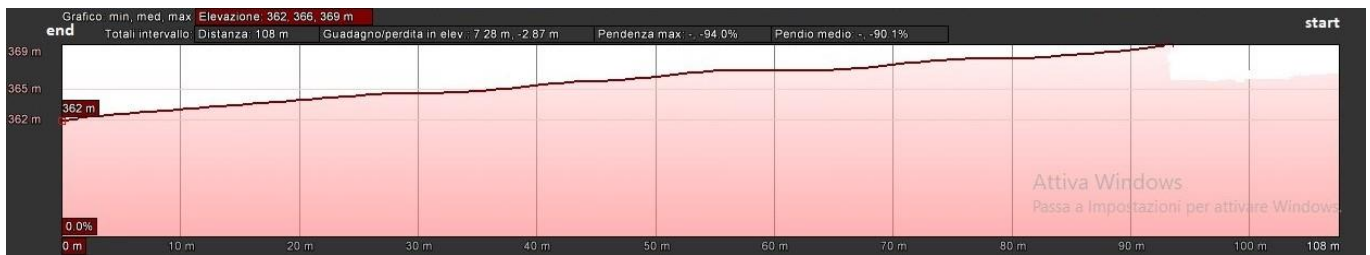


**Note:** this line runs along an upper right limit bench located along Three Kings Creek but belonging to the Stewart River during an ancient high water event, and most probably related with glacial melting phases. Under a couple of feet of organic soil is well visible the layer of alluvial materials covering the original bedrock, which lies to a depth of  $\pm$  3m and could be easily dug and tested for gold with a small excavator.

The best data have been here achieved by using the “Scudo 300” with 150ns frequency.

During this prospecting campaign we recorded the presence of several test hand-pits dug by other prospectors in different years. The pits are mostly concentrated around the two benches, the upper and the lower.

### line 3



**Note:** this GPR line is running parallel to the creek, along the lower/younger bench located 15 meters below the upper one (where line 2 is).

The ground along this bench is deeply frozen and the results of it is a fade signal returned to the GPR receiver, with consequent reproduction of and a weak graphic representation, hard to interpret. The package of loose materials (certainly alluvial, according with the gravel exposed in the hand pits dug by old-timers) seems to have a maximum thickness of  $\approx 3$  meters.

Few meters away from the old cabin remains located by the creek's mouth are still (barely) visible the signs of serious hand digging, together with piles of processed tailings.

Mining attempts seems to have been conducted only on this lower bench, which was possibly been enriched by the gold been eroded during the carving action of Three Kings Creek into the upper bench, later re-deposited and concentrated.

## Conclusions

This geophysical survey has been conducted with two Ground Penetrating Radars along the lower part of Three Kings Creek (lease ID 01511) by geologist Sandro Frizzi, civil engineer Joerg Lotz and field-helper Vlad Bondarchuk. The purpose of it was to locate depth and profile of the bedrock under the alluvial coverage along two different benches and by the mouth of the creek. Previous prospects conducted by us along this creek induced us to focus this exploration campaign toward the lower part of the creek, where old-timers activities seems to have been mostly concentrated around the benches.

This early phase of exploration is aimed to help us to choose the right areas where to perform an extended digging and bulk-sampling campaign, already planned for the next summer.

Due to the difficult accessibility to this area and to the necessity of using helicopters, we decided to employ GPRs: small geophysical devices easy to carry and quick to operate, which are nowadays more and more efficient and reliable.

There are still several limitation to the use of georadars: clay and silt are impenetrable to the transmitted signals, groundwater and ice could reduce the depth of prospection and a weathered bedrock is sometime hard to interpret.

Nevertheless, the ground penetrating radar could be considered today one of the most helpful tool to rapidly locate the bedrock along the best areas to successively dig with excavators.

After using different GPRs during most of our early-stage explorations, we can confirm their efficiency which in more than 60% of the cases has been accurate within  $\pm 1\text{m}$  (verified by successive digging).

Definitely a great result for a small tool, quick to use, economical and noninvasive!

During this first geophysical surveying campaign of September 2017, we managed to locate the areas where we intend dig and test for gold during the next summer: definitely a successful expedition.

Sandro Frizzi, geologist and prospector

Yukon Exploration Green Gold Inc.

[yukonexploration.ca](http://yukonexploration.ca)

### **List of expenses**

|  |   |                   |
|--|---|-------------------|
| Field expenses:                                  | 1 Geologist for 1 day (at \$400/day)    | = \$ 400          |
|  | 1 Technician for 1 day (at \$350/day)   | = \$ 350          |
|  | 1 Field-helper for 1 day (at \$275/day) | = \$ 275          |
|  | <b>TOTAL</b>                            | <b>= \$ 1,025</b> |
| Data interpretation and report:                  | 1 Geologist for 3 (at \$400/day)        | = \$ 1,200        |
| GPR rental:                                      | “Scudo 500” for 1 day (at \$500/day)    | = \$500           |
|  | “Dipole 300” for 1 day (at \$500/day)   | = \$500           |
|  | <b>GRAND TOTAL</b>                      | <b>= \$3,225</b>  |
| Expenses not recognized for assessment purposes: | Helicopter                              | = \$2,300         |



