Dawson City, 9 October 2017

-Geological and Geophysical survey-

Simmons Creek

"Prospecting for placer deposits with a Ground Penetrating Radar"

on

lease ID 01512

-map 115O03-

Satellite view of prospecting lease ID 01512
(scale 1:50,000)

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

Introduction:

The 13th of September of 2017 geologist Sandro Frizzi with engineer Joerg Lotz and field helper Vlad Bondarchuk conducted an expedition on lease ID 01512 to perform a geophysical/geological survey.
The lease is located along the lower end of Simmons Creek, a left tributary of Stewart River, visible on map 115O03.

This was the third campaign organized by Yukon Exploration Green Gold Inc along the Simmons Creek Valley, aimed to locate valuable depositions of placer gold.

This GPR survey has been specifically planned to determine depths and profiles of the bedrock across several sections of the floodplain, to prepare a successive bulk-sampling campaign to be conducted with conventional heavy equipment.

The results achieved by this geophysical prospect will help us to locate areas with shallow bedrock to dig and test for gold.

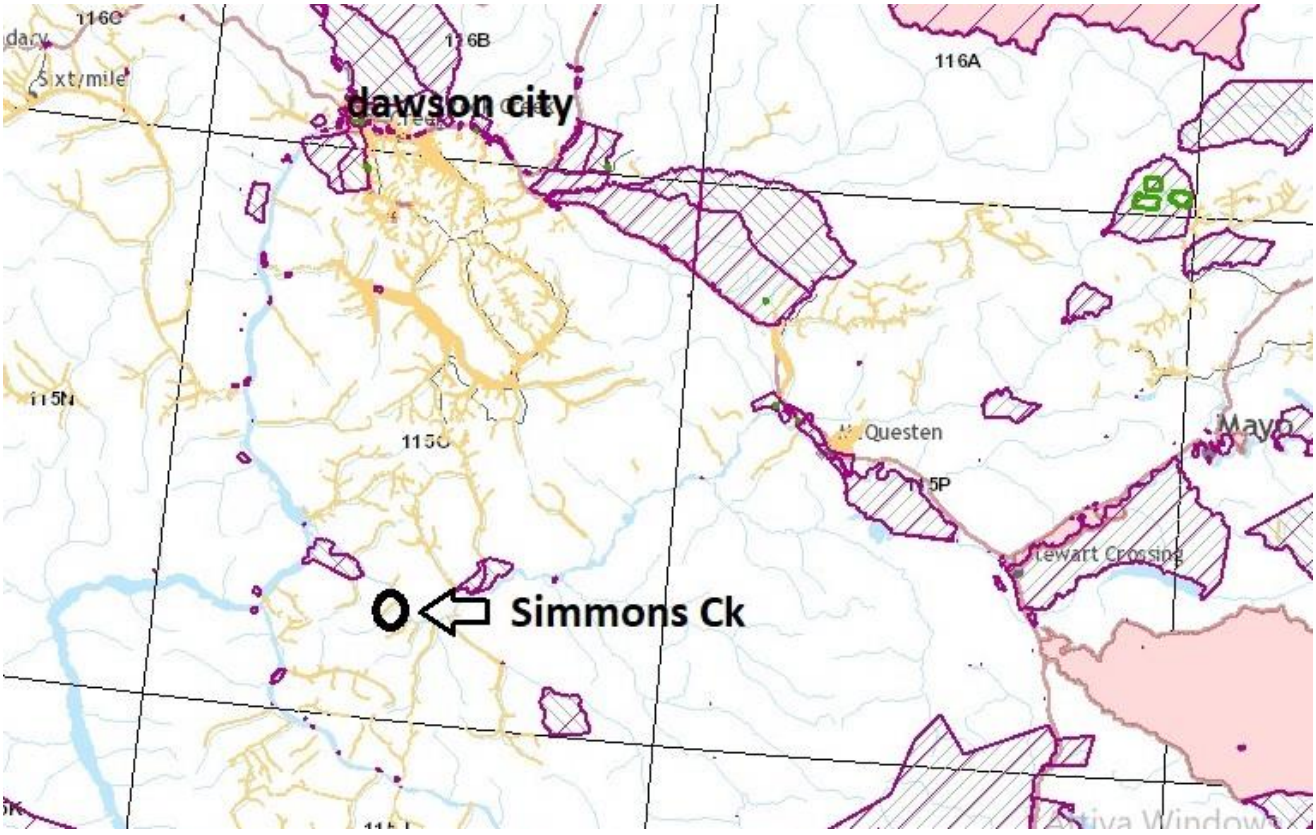
Previous GPR campaigns performed by us during the last four years along different properties produced mostly reliable results, and the accuracy of more than 60% of our data has been confirmed by the successive digging to bedrock.
In the optimal cases the GPR calculations of bedrock's depths have been confirmed within 1 m of accuracy.
The ground penetrating radar proved its efficiency as a preliminary geophysical tool, with some limitations: clay layers are impermeable to the ultra-wideband frequencies, groundwater slows them down and the depth range is still limited to 10-15 meters (in average soil conditions).
Nevertheless this modern electronic device confirmed its efficiency in the early stage of placer exploration.
It's also economical, easy to pack (excellent for remote areas) and noninvasive. It also produces fast results.

Sandro Frizzi

P.S.: At this time Mr. Anton Doychev, electronic engineer and CEO of Easyrad (Plovdiv, Bulgaria), is working with his team to a new model of GPR based on our placer experience: the new "Prospector 100" with augmented capacity of depth, especially calibrate for geological exploration. It should be ready for summer 2018.

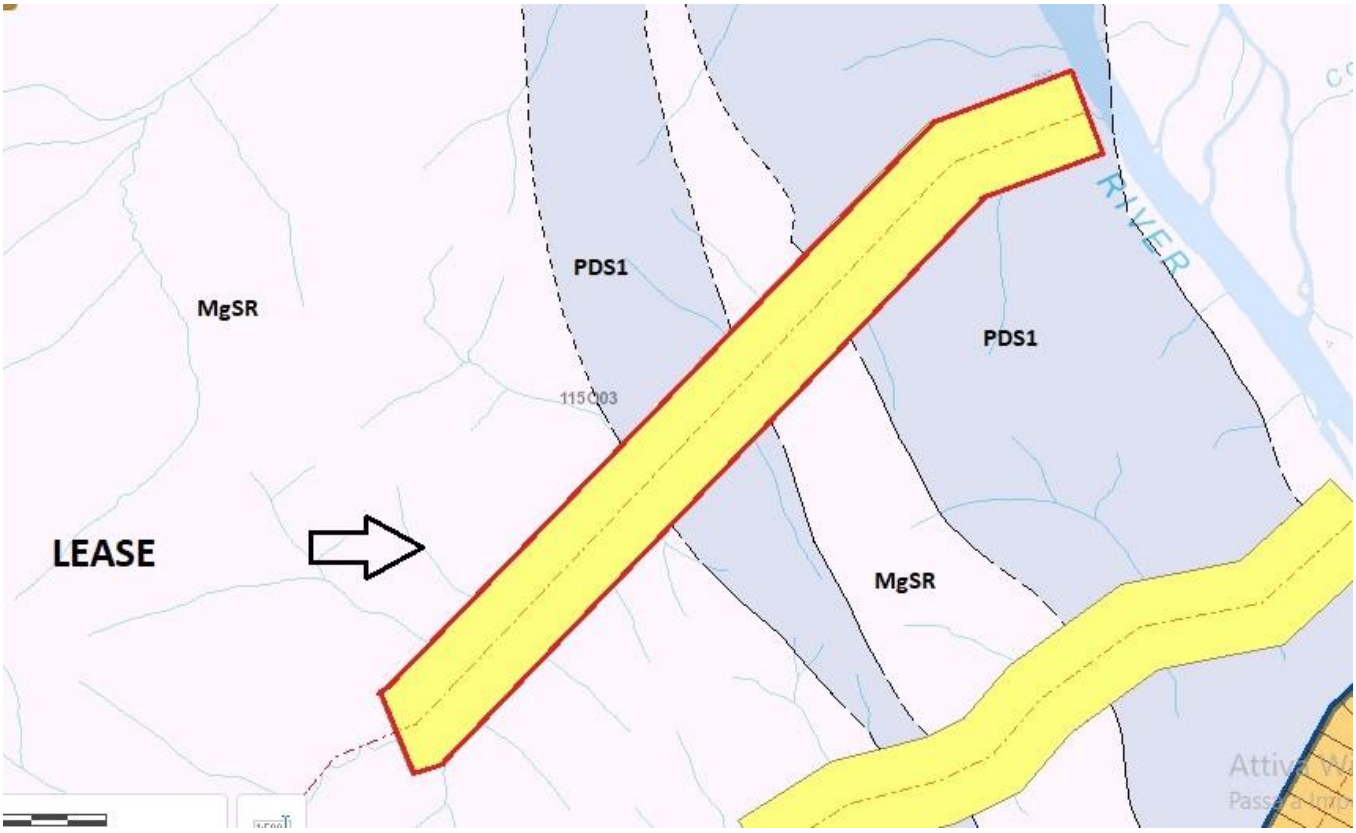
Location of Simmons Creek

The 4 miles of lease ID 01512 have been staked along the mid-lower part of Simmons Creek, a left tributary of the Stewart River located (on a straight line) 90 km South of Dawson City and 120 km west of Stewart Crossing.
The creek is accessible only by boat or helicopter.
Several game trails are presents along the entire valley and they can be drivable with a good ATV (Argo 8x8 revealed to be the best one for this purpose).



location of lease ID 01512

Bedrock geology



Geological map *Scale 1:50,000*

Legend:

- **PDS1**: Yukon Tanana, Ediacaran to Devonian (635 - 375).

  Schist, quartzite, marble, greenstone, amphibolite.

- **MgSR**: Yukon Tanana, Carboniferus (355).

  Tonalite, orthogneiss,diorite.

"*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".

Simmons Creek lies inside the Yukon Tanana geological region and it shows all the typical geological features of this particular area, included the presence of several felsic structural-related intrusions which seems to be the major responsible for the placer gold distribution along the surroundings creeks.

Gold anomalies have been recorded in the surroundings during decades of hard-rock exploration along these extended areas:

http://data.geology.gov.yk.ca/Search?q=thistle%20creek.

The watershed of Simmons Creek is also bordering with the one of Thistle Creek, which has been one of the strongest placer gold producer of the entire Klondike.

Surficial geology

The morphology of Simmons Creek Valley and its surrounding is the perfect representation of all those features typical of the Klondike Plateau: an extension of well-rounded hills crossed by fluvial valleys with mild gradients.
The perfect example of an old orographic region, where ages of persistent gravity and meteoric-related erosion carved this smooth landscape from an original higher mountain range (more than 1000 meters of erosion occurred above these hills!).

This geological region also escaped from the action of glacial activities thanks to the particularly dry conditions of its weather.

High grade of erosion, lack of glacial activities and presence of 'mature' watercourses with low gradient are the perfect combination for placer gold depositions.

The network of structurally-related felsic and hydrothermal intrusions typical of the heavily metamorphosed Yukon Tanana Terrane, enriched the surrounding host-rocks with gold, which has been successfully eroded during the younger/aggressive phase of those creeks and then re-concentrated along the alluvium.

During our prospecting conducted on the central/lower portion of Simmons Creek, we recorded the presence of boulders, cobbles and pebbles which are well representing the entire lithology of the surroundings: tonalite, diorite and granodiorite mixed with the typical Klondike's mica-schis, amphibolite and 'greenstone'. Quartz and quartzite are also quite common.

During the next exploration campaign, already planned for summer of 2018, we will dig test pits to the bedrock in order to test the heavy minerals deposited and hopefully find valuable concentrations of gold.

Geophysical survey

The geophysical survey conducted along the four miles of prospecting lease ID 01512 staked along the mid-lower portion of Simmons Creek, has been performed by geologist Sandro Frizzi, during a geophysical campaign done with the help of engineer Joerg Lotz and field helper Vlad Bondarchuk.
At Simmons Creek Sandro in order to produce reliable data, surveyed each line multiple time by using two different models of ground penetrating radar of Bulgarian fabrication: the "EasyRad Scudo 500", customized for the Yukon terrains and equipped with an antenna of 300 MHz, and "Dipole 300", with antenna of 100 MHz.
These devices are able to reach depths of up to 15 meters, in favorable conditions.

The data produced by these two different electronic devices have been carefully selected and only the best ones have been elaborated with the use of Prizm 2.5 software and carefully analyzed by Sandro.

Previous exploration campaigns (at Big Creek, Clear Creek, Excelsior Creek and Flat Creek) proved to us the validity of the information produced by the ground penetrating radar. The accuracy in the determination of the bedrock depths has been confirmed by successive digging campaigns performed by Yukon Exploration Green Gold Inc.

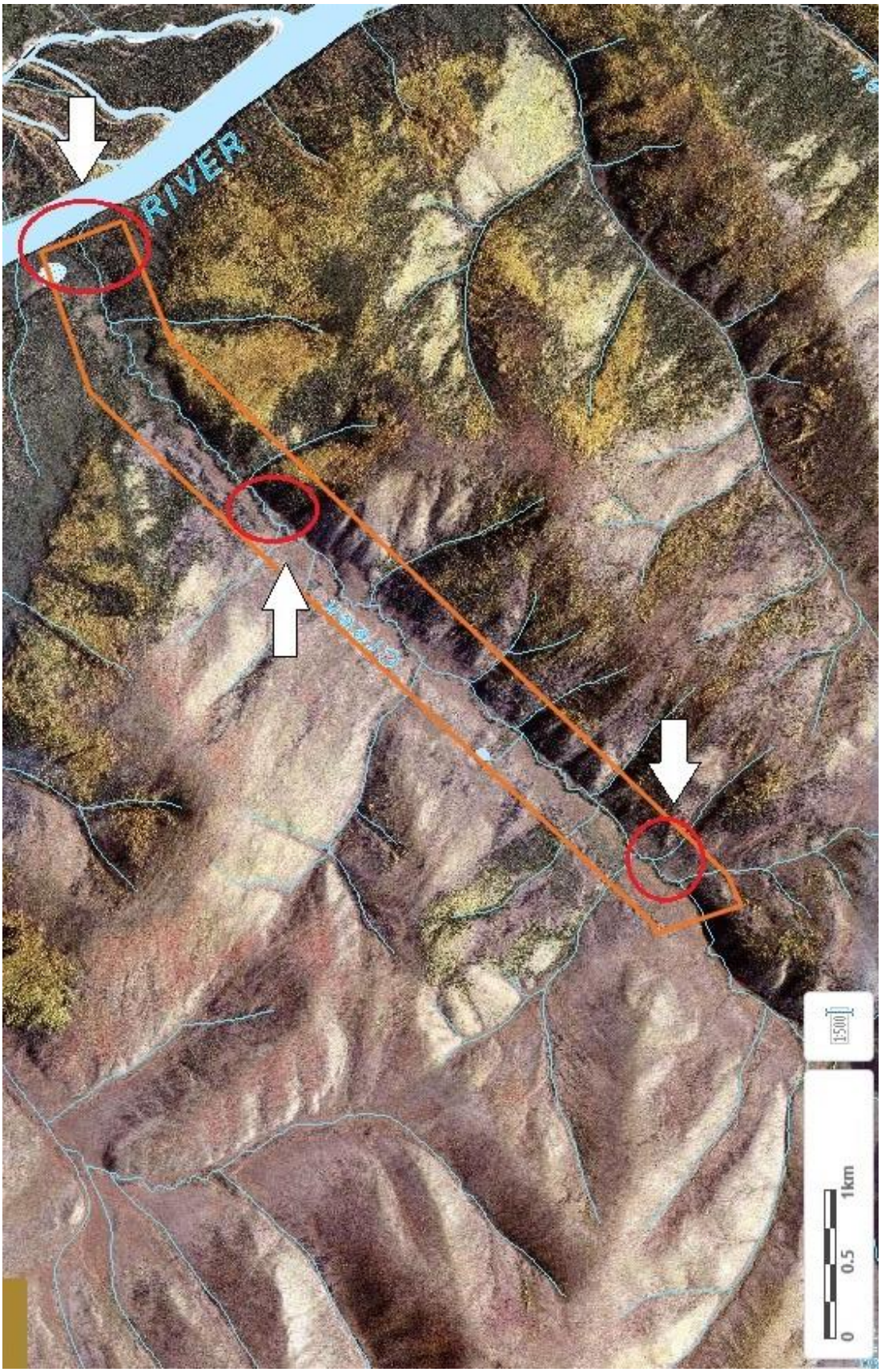
The two georadars used at Simmons Creek: "Scudo 500" (left) and "Dipole 300" (right)

"Yukon Exploration Green Gold Inc. is an exploration company with a strong 'green ethical code' and seriously committed in developing and promoting low-invasive prospecting and mining techniques.
The efficiency of our exploration campaigns has been proven in the past years on our properties staked on virgin grounds of new areas, which are today successfully mined."

In the next pages are published the results (cross-sections of GPR lines and elevations) of this geophysical survey. The graphical representation has been converted in simplified drawings of the bedrock-profile, without modifying it and without using filters (ground noise-reduction or other), in order to consent an interpretation to other geophysicists.

Surveyed areas

Scale 1:40,000



North ‹–

UTM of GPR lines:

line 1, 1a: start 594080 - 7006084 length: 225 m
end 594249 – 7005940

North Δ

line 2, 2a, 2b: start 596373 – 7008862 length: 75m
end 596338 – 7008900

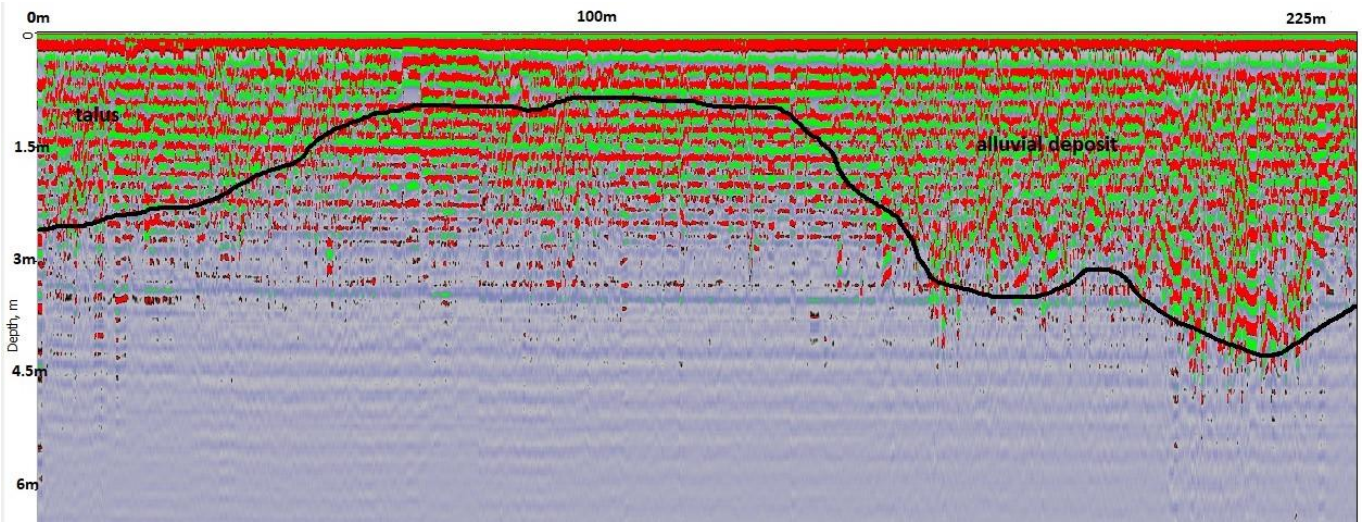
North Δ

line 3: start 598041 – 7010515 length: 250 m
end 597888 – 7010702

North Δ

Surficial elevation and bedrock profiles along the surveyed lines

line 1

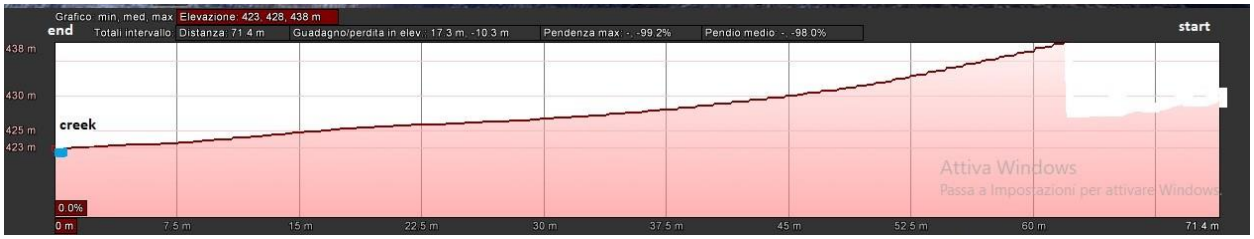


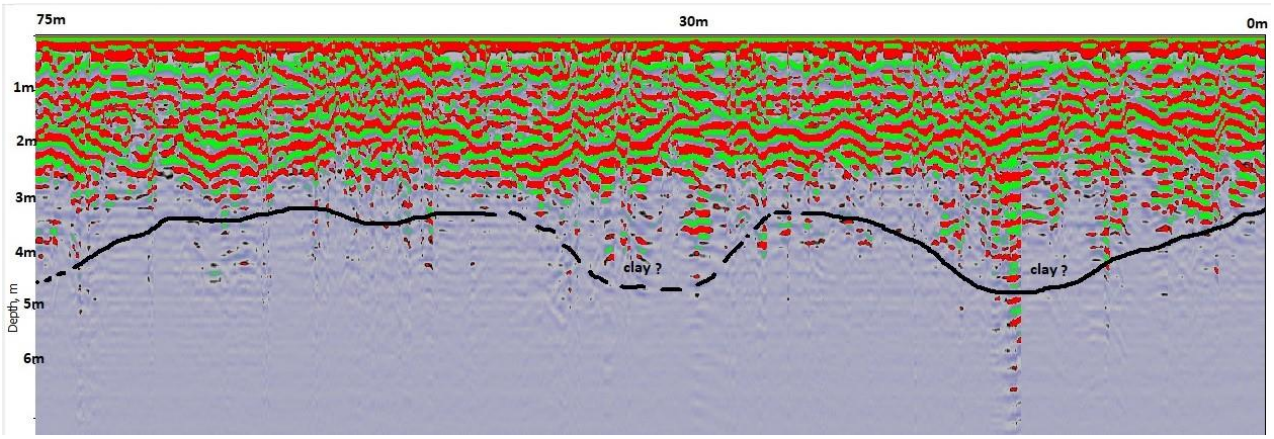
Note: the vertical proportion has been strongly exaggerate for better visualization of depth. The alluvial deposition seems to be distributed only in the lower half of valley (to the right), while the rest of loose material (to the left) appears to be constituted by loose rock debris.

The best data along this line have been obtained from “Scudo 500” with a 300 MHz antenna and a frequency of 75*ns*.

Permafrost is visible on the upper layers (horizontal, well-marked line at the top) and its reducing the penetration of GPR waves.

line 2





Note: this line is crosscutting a narrowing section of the valley. These bottlenecks of the floodplain are usually good traps for gold deposits.

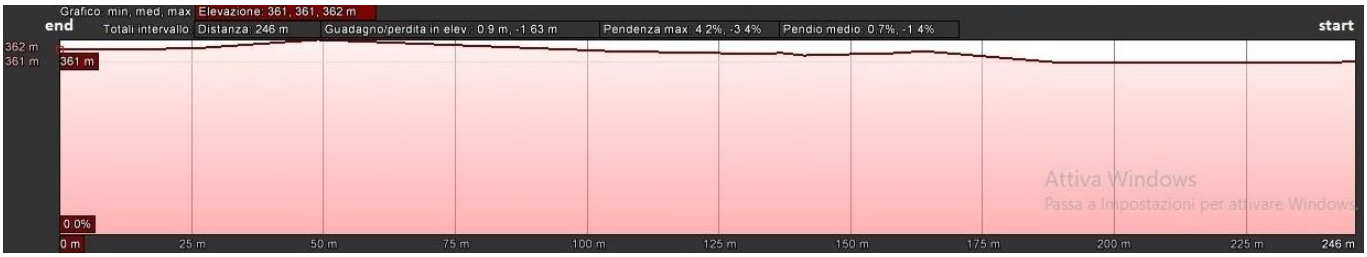
The graphic representation above is showing a well-developed paleo-channel located toward the right limit, 15 meters away from the hillside (extreme left on picture).

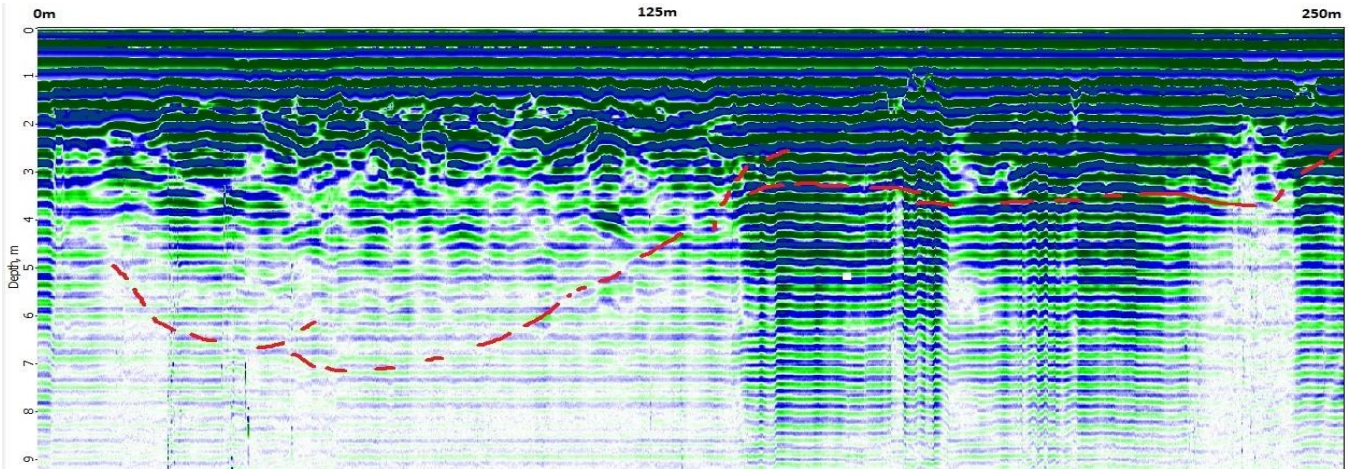
The creek is currently running on the opposite side of the valley (right on picture).

According with the well carved profile of this paleochannell revealed by GPR ("Dipole 300" with 100 MHz antenna and 75*ns* of frequency), Simmons Creek was originally running on the right limit, for long time. During next year this old, buried channel will be dug and tested for gold.

In the middle of the valley the GPR showed also the possible existence of another old channel (dashed line). Unfortunately here the received GPR signals wasn't clear, possibly for presence of a clayey weathered bedrock.

line 3





Note: the two graphics (elevation and bedrock profile) are reversed: “start” on the upper one correspond to “0m” on the lower one.

The proposal of this line, located right at the mouth of the creek along the bank of the Stewart River, was to determine the depth of the channel carved by Simmons Creek where it flows into the main Stewart Valley, in order to have an idea about the ‘age’ of this creek.

The depth of the bedrock and the presence of fine sediments in the lower part of this channel (probably silt and clay) were reducing the power of penetration of GPR signals.

The best results obtained by our survey are coming from “Dipole 300” equipped with 100 MHz antenna and with 150*ns* of frequency.

Our interpretation of data shows a deep channel (more than 7 meters below the current Stewart water level!) carved by Simmons Creek into the river bank.

Simmons Creek is indubitably an old watercourse, with an appealing ‘mature’ depositional history.

Conclusions

The geophysical survey conducted during September 2017 along the 4 miles of prospecting lease ID 01512 by geologist Sandro Frizzi with the help of civil engineer Joerg Lotz and Vlad Bondarchuk, was planned to locate the depth and profile of bedrock under the alluvial coverage, along three different sections of the floodplain: upper, middle and lower.

Our goal was to trace the bedrock's profile and to locate the presence of eventual buried paleo-channels to dig and test for gold with heavy equipment during the next exploration season.

This survey was successfully performed and produced the results contained in this report, in short time and with a relatively small expenses.

Electronic technologies and new software are becoming today more sophisticated and are busting the geophysical exploration, making it more reliable and easier to use.

Disputing the fact that there are still several limitation connected with the use of georadars (clay and silt are 'blocking' the signals, groundwater is reducing the depth of prospection, weathered bedrock is sometime difficult to interpret, depth penetration is still limited, etc.), this technology is quite accurate and the GPR could be considered by far the smallest tool to rapidly locate (shallow) bedrock's profiles in remote areas.

It's easy to transport and economical to operate: excellent in early-stages exploration.

In our last years of placer mining exploration, the use of GPR provided us with realistic results in more than 60% of cases, as lately confirmed by successive digging campaigns.

To augment the reliability of data, we are using two devices to survey each line multiple times: "Scudo 500" with antenna of 300 MHz and "Dipole 300" with antenna of 100 MHz.

At Simmons Creek we were able to confirm the good potential of this area for placer exploration and we successfully located areas to dig and test during the next summer.

Sandro Frizzi, geologist and prospector
Yukon Exploration Green Gold Inc.
yukonexploration.ca

List of expenses

Field expenses:	1 Geologist for 2 days (at $400/day)	= $ 800
	1 Technician for 2 days (at $350/day)	= $ 700
	1 Field-helper for 2 days ($ 275/day)	= $ 550
	TOT:	= $ 2,050
Data interpretation and report compilation:		= $ 2,000
GPR rental:	"Scudo 500" with 300 MHz antenna (500/day)	= $ 500
	"Dipole 300" with 100 MHz antenna (500/day)	= $ 500
	TOTAL	= $ 1,000
	GRAND TOTAL	**= $ 5,050**
Expenses not recognizable for assessment work: Helicopter		= $ 2,360