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# *The Dixie and Cripple Creek Study*

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# Dixie Creek Project, YMEP Focused Regional Program 2018

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*Cover Photo:* Taken from above headwaters of unlit of Cripple Creek. The center of the 2018 investigation. Kloo Lake in foreground looking towards the St Elias Range in background. Overlooking the upper Cripple Creek watershed.

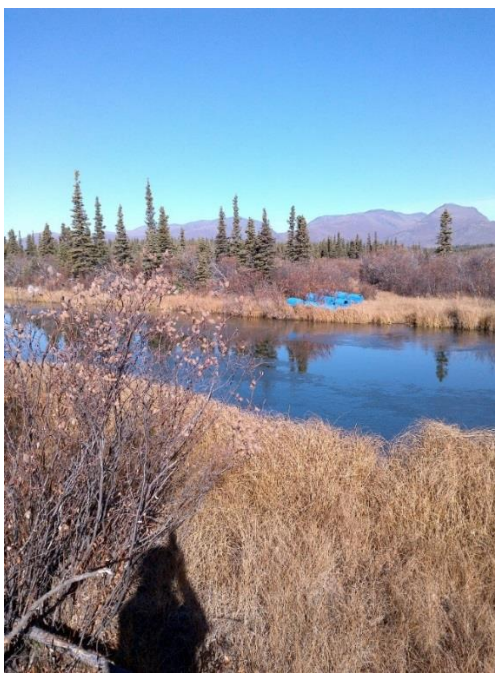
## **1.0 Forward:**

Dixie Creek property consists of 300 Quartz claims. The property falls within NTDB quads 115A13 and 115H04 and is approximately 25km due north of Haines Junction in the Shakwak Trench. The property is sandwiched in a high plateau between the St. Elias Range and the Ruby Range with an average elevation on claims of 4200 feet. There is very little historic mining & geological information on this creek. It is because of traditional knowledge that we have invested in this property.

The 2018 exploration season on Dixie Creek at the headwaters of Cripple Creek was carried out intermittently between July 1<sup>st</sup> and Oct. 19<sup>th</sup>, 2018. A total of 35-man days were invested in preparing the camp area with firewood and water for an anticipated late season exploration camp up in the alpine region. 20-man days were spent locating a good ground access route. 36-man days were utilized for soil sampling and prospecting the two mountains of interest. 16-man days for staking new 'Ruby' property. 24 man days were used in gathering and preparing claim posts for 60 new quartz claims, camp tent frame construction, and seasonal exploration clean-up. We concluded our exploration season on Oct. 19, 2018. The winter staking program concluded on the March 13<sup>th</sup>, 2019.

## **2.0 Accessibly:**

There is currently no good road access into the property, although there is a significant trail and road network throughout the property. We spend five days trying different ground access routes into the watershed. The first attempts were made from the Kloo Lake corridor following the old CAFN Heritage trail. Our 4 men crew utilized 2 ATV's and 1 side by side with a single axel ATV trailer for hauling the gear. This is by far the shortest route however crossing Jarvis Creek at the old village site is impossible without constructing a bridge or a pull barge. The river is very deep in this section at about 20 feet in late fall. The remanence of the local outfitters barge is rotting away on the far bank.



We spent an additional day trying to pick a route in from behind Bear Creek which would bring us out on the far side of Kloo Lake and Jarvis Creek at the headwaters of Dixie Creek. This route was also not feasible due to a steep valley separating the Old MacIntosh Trail and our destination. The valley walls produce a grade of approximately 50%. This route could be engineered for access using a cat and following the sidehill but is impassible at this time. Our third and final attempt for ground access into upper Cripple Creek was launched from behind Pine Lake. We located an existing trail and followed it for nearly 30km. It was a rough trip with multiple steeps and mud obstacles the entire distance. This route brought us to the headwaters of Marshall Creek. From here we attempted to access the survey area. Steep mountains and scree slopes prevented us from ground access by ATV's to the identified area of investigation in the 2018 season. We spent 1-day hiking into the property from our nearest access point and made it to the first soil sample location. Hence, land access has been located and will be used in subsequent years.

### **3.0 Work Program:**

The work program ran very late this year. We started with five days of ground access location from Oct. 1 To Oct. 5 of 2018 with a four-man crew. The soils and rock sample collection happened between Oct. 10<sup>th</sup> to Oct. 19<sup>th</sup>. We flew by helicopter into the Summit Camp at 4300 feet on Oct. 10. I had a man out preparing this location in July for our stay in the mountains above the treeline. He cut and hauled firewood and water up to the camp in preparation for our late arrival in October to this property.

The work program laid out a grid of a potential 500 soil samples to be collected and analysed in the 2018 work season plus an additional 50 rocks. The soil grid line had been computer generated within a defined perimeter which was selected because of its elevation, the rocks and scree appeared to be local in origin and was constrained within the pre-defined elevations of (4,100 ft – 5,900ft). The alpine region of these claims is steep producing a slope of 56% in our focus area hence the significant elevation range over a small area.

The tributary creek to Cripple Creek which ran alongside our camp appeared to have multiple shiny silver/gold coloured occurrences along both banks and on the creek bed. We spent a fair bit of time collecting and panning some of the material to see if we could recover any gold from the creek. We did pan two small flecks of gold from the creek.

### **4.0 Physiography, Vegetation, and Wildlife:**

The farthest south east corner of the S1 property was the focus of the 2018 investigation. There are two different mountains which I named on figures 1.3 and 1.4 as being Quartz and Ruby Mountains. Both mountains contribute to the Ruby Range. Both mountains are very active and productive in altering landslide formations. Huge boulders are being extruded from the slopes and cause terrestrial changing events. Having said that, we quickly discovered that some of the pre-determined slopes I had

selected for soil sampling were not safely accessible as the scree was very unstable and newer than other areas on the mountain. Some areas were more weathered and had developed a thick layer of organic soils and dirt contributing to their stabilization. These lines were very good to soil sample from. We soil sampled for 9 days straight in this difficult terrain. Most days we had good October weather except for two in which we faced howling winds and blowing snow which further hampered our ability to collect good rock specimens to send in for analysis.

The alpine vegetation was sparse with mostly scrub with an occasional balsam fir tree and buck brush. The scree terrain was host to picas, wolverines, porcupine, wolves, coyotes, eagles, rabbits, voles, bison, and one distant bear sighting.

## **5.0 Geological Setting:**

The topography in much of the area is strongly influenced by Pleistocene to recent valley and alpine glaciation. As a result, the Kluane area is characterized by gently undulating uplands cut by broad, north trending U-shaped valleys which are flanked by hanging valleys that terminate in cirques.

The property lies within the Kluane Schist Terrane (Figure 1.0). Kluane Schist is abundant in outcrop with many boulders also being present in the valley. Rusty angular quartz and traveled white and clear quartz are also very abundant. The surrounding mountains are predominately schist. There is some bedrock exposure in the upper zones of the property. There is much less bedrock exposure through the mid-section of the property as it is thick with glaciofluvial outwash and till. There are numerous detachment areas within the valley and the valley walls exhibit multiple mass wasting events on both sides also contributing to the depth of till on the valley floor. In the upper reaches of the property there are large round boulders existing sporadically on surface. The round quartzite type boulders seem to be a contribution from glaciation. A number of other drift deposits occur in the mid the lower sections of Cripple and Dixie creeks. The bottom of the creek at McKinley Creek is alluvial type deposit.

The high areas on the property are predominately schist with many types of quartz intrusions and sporadically deposited quartz boulders. The quartz boulders I encountered displayed varying degrees of weathering which served as a constant reminder of the slope instability we were working on.

We also encountered many rocks with very deep red garnets attached to the schist. One rock which we sent in for testing had as many as 12 small 3-5mm garnets attached to the schist. In fact, I located an entire slide area littered with these rocks, many with a single garnet or multiples attached to them. This is an interesting find for us because this property was rumored to have diamonds from as early as 1909, prospectors have reported diamonds being caught in the sluice boxes of those who have mined this creek before us. Garnet can be an indicator mineral for diamonds. We will follow this trail more in the 2019 season.

The entire lower valley on the S1 property has been glaciated and an end moraine was discovered in the upper region of Dixie Creek in summer 2017. The uppermost sections and headwaters



of Cripple and Dixie Creeks are very steep as they climb into the Ruby Range with jagged rough protruding rocks. These areas above 5000 feet may have escaped Pleistocene glaciation would have a much deeper weathering profile and therefore the mineralization and soil geochemical signature may be subdued, and therefore, could require more critical data analysis.

Orogenic gold style deposits in this part of the Ruby Range are a viable exploration target because of the area's structural and geological similarities with the Juneau Gold Belt as both areas occur near the boundary between two geological terranes – Insular and Intermontane in Alaska and Kluane Schist and Yukon Tanana in Yukon. Both areas have young intrusive centres nearby. In the Juneau Gold Belt, gold often has strong correlation with tellurium, bismuth, copper and lead.

## **6.0 Sampling Techniques:**

This was a difficult soil sample terrain. Most of the soil lines were located across scree slopes. The scree included huge boulders and unstable footings. This area was selected because of its localized origins and lack of till and glacio-fluvial outwash. We attempted to recover soils from the 'C' soil horizon although much of the time the auger samples encountered and got caught up on surrounding buried boulders and sharp edges. Most of the recovered soils were from the 'B' soil horizon layer.

Our work included:

- Mapping different geological features
- Prospecting and hiking for good ground access routes
- Panning / sluicing test materials
- Collecting some rock grab samples for assay

Since quite a few of the pre determined soil sample locations were either not accessible or had absolutely no soils to sample in the scree setting. I had to modify the sampling program to include a lower line which ran alongside the tributary creek down to the groundwater well. Quite accidentally we discovered that the two highest gold values we sampled were from that lower line which I had dismissed from the 2018 program and considered this ground to be till in composition.

Three reasons for these elevated gold values may be contributed to being able to auger deeper into the Soils 'C' horizon due to less boulders and auger obstructions. The soils may have been transported by glaciation from elsewhere. Or there may be really good gold in this location. However, these higher geochemical results correlate with the location where two gold flakes were panned right out of the surface soils.

We will further investigate this gold showing between the upper elevation of 4,100 Feet and 3,700 feet in the 2019 exploration season using geophysics and geochemical techniques.

## 7.0 Pictures:



Vertical quartz vein found on Ruby Mountain, visible portion was 8" wide and 6.2' feet in length.

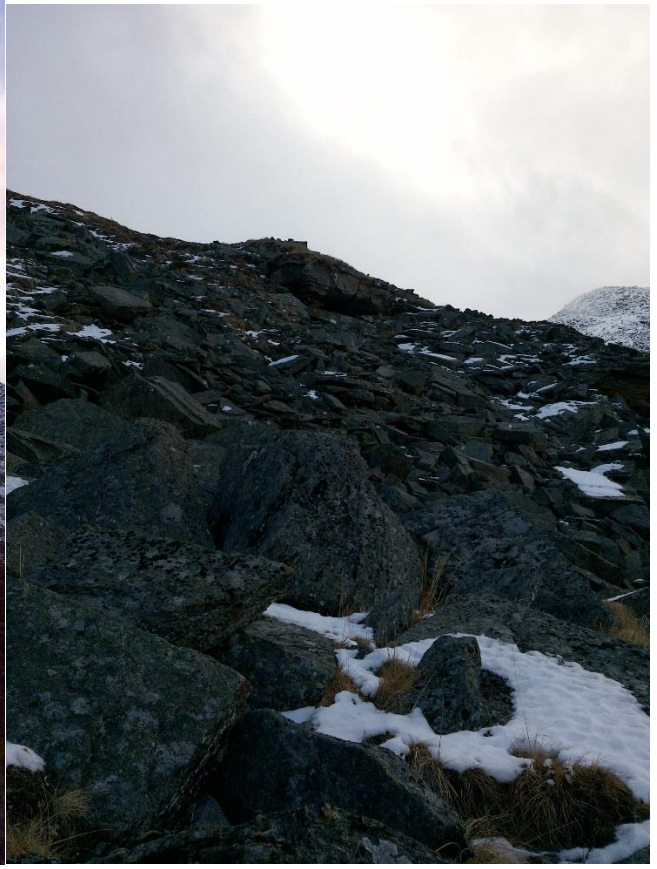


Quartz attached to schist. Commonly occurring both mountains.

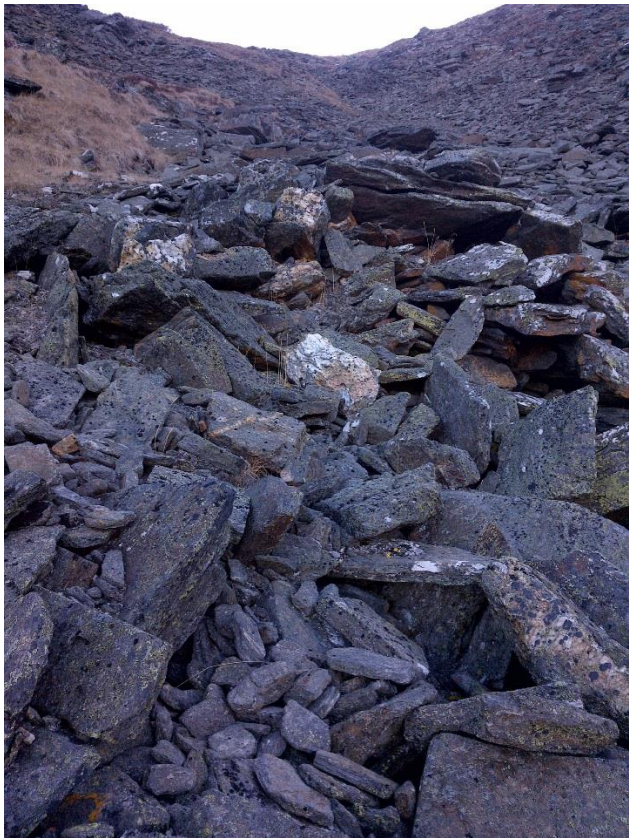




Quartz Mountain.



Ruby Mountain and scree.



Quartz boulders amongst the scree.



Quartz landslide.



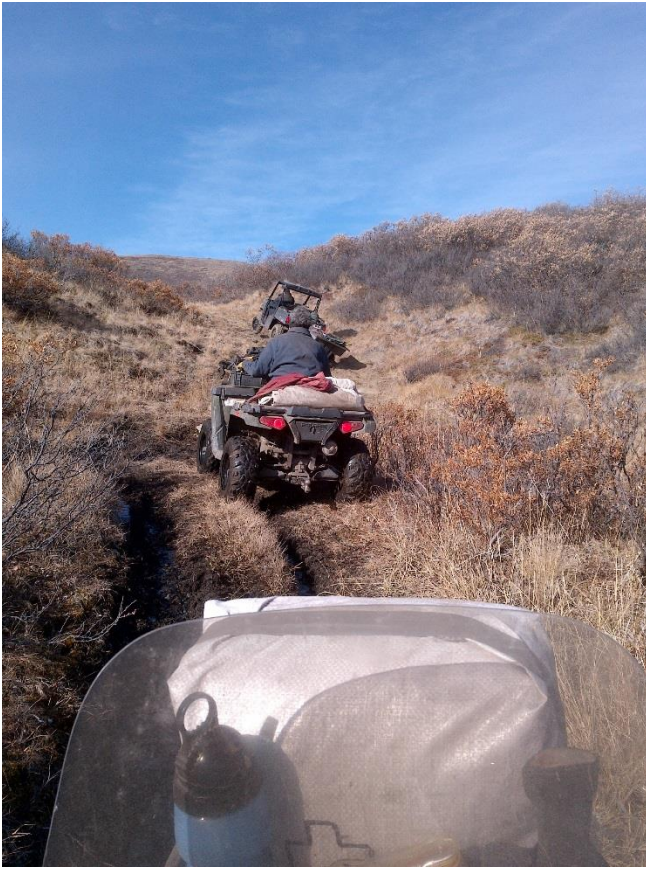


Quartz intrusions very prevalent in host rocks.



Darren collecting water and placer samples in front of Ruby Mountain.





The road into the Ruby Range and S1 Property.



Quartz on Schist extruded into scree slope.



2 gold flakes panned from lower tributary surface dirt.

## **8.0 Interpretation and Conclusions of the geochemical survey:**

It would be too premature to draw any conclusions on these findings as the sample area and assay quantity is just too small. I can offer you some observations from the lab results which really generate more questions and things we need to investigate further.

We concentrated on sampling a very small area in the 2018 exploration program for gold. We confirmed some elevated gold values but also discovered this area of the S1 property to also be compromised of copper, lithium, nickel, cobalt, manganese, arsenic, silver, & zinc. Sulphides are present in the showing of Bismuth but the Bi values we had returned on our soils and rocks were less than 0.2 ppm.

There are also some rare earth elements showing in the sample results although we didn't test for them Cerium returned a few elevated results, the highest being 42.5 ppm and the other samples were consistently over 20 ppm.

My mapped observations indicate there is a relationship between the occurrences of cobalt, lithium, arsenic, and gold. Although the minerals exist sporadically over the entire study area, there is a significant cluster of higher results on Ruby Mountain. We want to continue to follow this trend but they appear to travel off of our claims and over Ruby Mountain in the higher altitudes. We want to follow these trends and test this mountain on both sides to see if we can improve the grades of these ores. As a result of the 2018 exploration program 60 new claims were staked on and over 'Ruby Mountain.'

Most of the upper bowls of both Dixie and Cripple Creek area is extensively covered with glacial debris and marshes; the potential exists for large gold, silver, nickel, copper, cobalt, lithium, and manganese deposits in this area as well. We will have to locate a target to test these areas in the future through geophysics and imaging.



Gold and silver are also present in varying grades in the soil samples and the distribution is sporadic and random. Garnets are very prevalent in one area we found on these claims. There is an entire landslide of garnets attached to scree which we located. It is our intention to get to this property and complete our exploration program earlier in the season we will be able to find more good rock samples of these gem stones; perhaps of a jewelry quality.

In another area we found a lot of rocks which looked like chalcopyrite which we will find some good samples and send out for testing next year.

Overall it was a good exploration season and we know much more about Dixie and Cripple Creeks as a result of these assays. I have many more questions than answers following these interesting and unexpected results. We are looking forward to getting back out there and understanding this deposit and type more in 2019.