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**2018 Prospecting Report**  
**Krooked Kreek Property,**  
**Snowden Township**  
**Claim ID: 518750**

**Submitted by:**  
**George Joyce**  
**February 25, 2019**

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## 1.0 EXECUTIVE SUMMARY & ENDORSEMENTS

### **Executive Summary**

*This program is designed to meet expenditure on the Krooked Kreek Claim (Claim ID: 518750 Leases; 31D15H324, 31D15H343, 31D154344, 31D1H363). The 2018 program includes ground truthing to identify future sampling locations, trail clearing and maintenance, preliminary prospecting activities, grab samples, panning and high definition aerial survey (drone). These activities were intended to meet expenditure for each tenement. Fieldwork was conducted from August to November 2018, with additional reporting and data processing from November 2018 to April 2019.*

### **Endorsement**

Claim ID : 518750

Ownership Details :

George Joyce (10000400) - 100%

Acquisition Configuration: Multiple Cell Claim

Effective Date of Acquisition: 2018-04-26

**Table 1 Document Record**

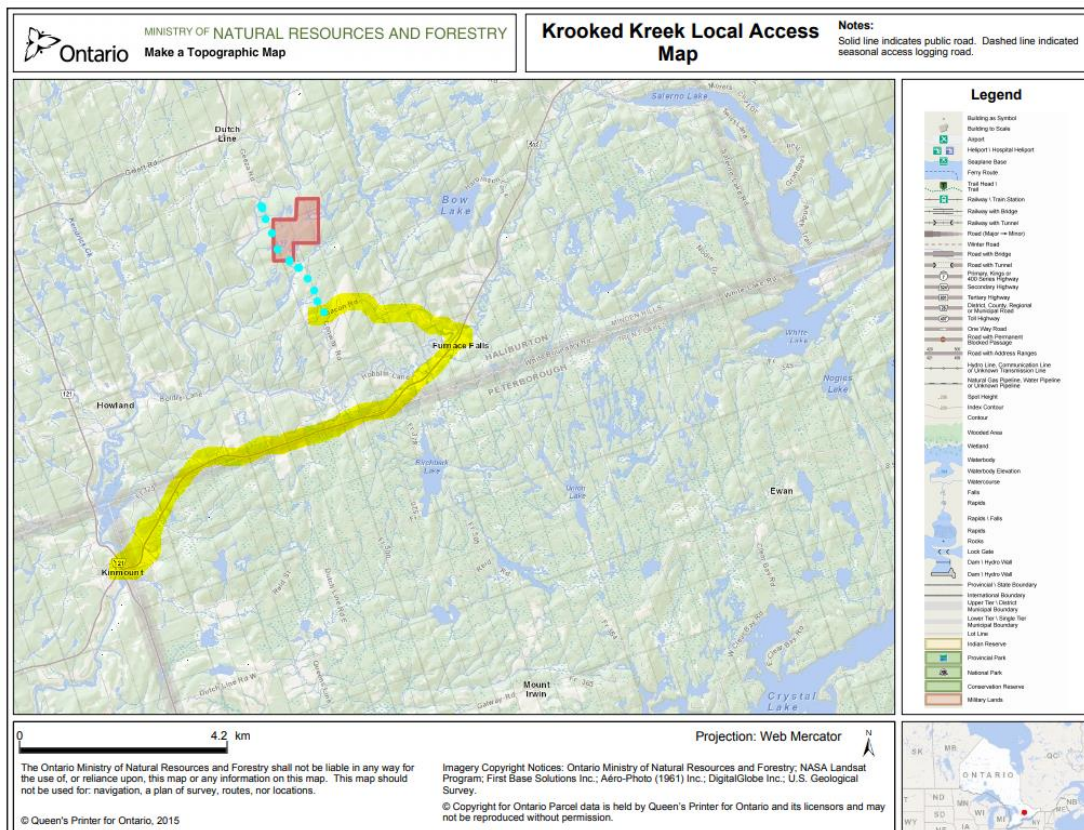
Version	Change Effected	Initials	Date of Change
1	Document creation and first draft submission	GJ	20/02/2018
2	Revised version with input from DMN	GJ	25/02/2019

## 2.0 INTRODUCTION

The Krooked Kreek property claim is held by George Joyce (Claim ID : 518750), this claim consists of four 50 acres cells. This report will include a summary of prospecting activities that have taken place from August through December 2018. The prospecting activities carried out includes; site review, trail maintenance and line cutting to establish primary sampling locations and Unmanned Aerial Vehicle (UAV) proof of concept trial to test high definition aerial imagery software to assist in identifying possible sampling locations.

## 3.0 LOCATION AND ACCESS.

**FIGURE 1 – GENERAL LOCATION MAP**



### 3.1 Access

#### Access: From Kinmount ON

1. Head south-east on Kawartha Lakes County Rd 121 towards Haliburton County Rd 503
2. Turn left onto Haliburton County Rd 503 (signs for County Road 503 E/County Road 45 E)
3. Turn left onto Bacon Rd
4. Turn Right onto Conway Rd (unmaintained logging road to lease).

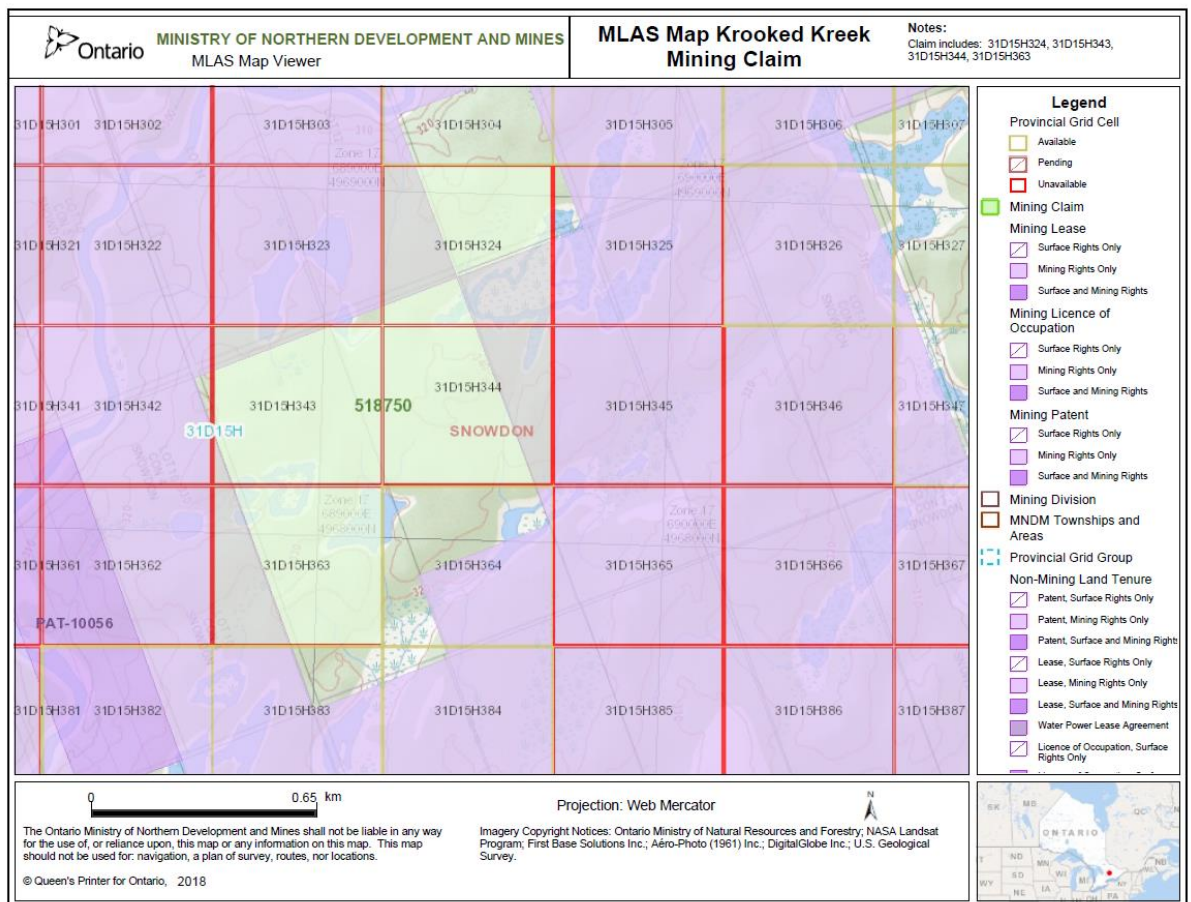
## 4.0 CLAIM DETAILS

TABLE 2: CLAIM SUMMARY

Mining Lease	Expenditure	Date of Acquisition	Comments
31D15H324	\$400.00	2018-04-26	Active
31D15H343	\$400.00	2018-04-26	Active
31D15H344	\$400.00	2018-04-26	Active
31D15H363	\$400.00	2018-04-26	Active

### 4.1 Mining Claim Overview

FIGURE 2 - CLAIMS MAP



## 5.0 PROSPECTING LOG 2018 FIELD ACTIVITIES

- May 12, 2018: Prep Meeting: May 12 (Notes in Appendix Attachment 1).
- August 2018: Gary Briggs completed a reconnaissance of the area to check status of trails and cabin. Gary cleared fallen brush and panned for gold in creek for 2-3 hrs.
- October 18, 2018: Crew (George Joyce: Geologist, Keith Brown, Brian Joyce, Cody Vickers, Mike Parris, Bearach Mole, Dave Granger) packed up food, fuel, ATV and prospecting supplies and drove from Sutton Ontario to our field camp which is a cabin located on the adjacent property to the Krooked Kreek mining claim. Arrive in camp and prepare for the upcoming week.
- October 19, 2018: Weather, -5C/5C
  - 0700 Startup meeting, discuss plan for the day brush clearing existing network of trails.
  - Crew departs camps with ATV's and saws, spent the day clearing brush from existing trails.
- October 20, 2018 : Weather 0C/16C
  - Crew departs camp to walk transects on Leases **31D15H324, 31D15H344, 31D15H343, 31D15H363** identify significant exposed outcrops in the area, possible creeks for panning locations and record any significant geological features. Part of the crew continued to clear fallen brush.
- October 21, 2018 Weather -1C/10C
  - Crew departs camp to walk transects on Lease **31D15H324, 31D15H344, 31D15H343, 31D15H363** identify significant exposed outcrops in the area, possible creeks for panning locations and record any significant geological features. Gold panning on a few creek locations to test for traces of gold.
  - Crew cuts approximately 2km of line.
- October 22, 2018 Weather -1C/10C
  - Crew departs camp to walk transects on Lease **31D15H324, 31D15H344, 31D15H343, 31D15H363**, identify significant exposed outcrops in the area, possible creeks for panning locations and record any significant geological features. Gold panning on a few creek locations to test for traces of gold.
  - Crew cuts approximately 1.5km of line.
- October 23-24, 2018 Weather -1C/10C
  - Crew remained in camp (rest/rain days), crew updated maps and reviewed data. Crew determined and prioritized future line cutting and sampling locations.
- October 25, 2018 Weather -1C/10C
  - G. Joyce spent the day verifying collective field observations; crew flagged planned cut line locations with GPS and flagging tape. Departs camp to walk Lease **31D15H363**, identify significant exposed outcrops in the area, possible creeks for panning locations. Crew packed up camp for winter and departed. Gold panning on a few creek locations to test for traces of gold.
- October 26, 2018 Weather -1C/10C
  - G. Joyce Selects an area to run trial UAV Airborne High Resolution Digital Mapping Survey (Note: "Airborne Geophysics Survey Work" was the closest option to this task). Drone: Mavic Pro, Software: Drone Deploy Digital

Elevation Mapping, High definition Digital Surface Mesh (600 photos collected), required three attempts to determine ideal flight pattern and avoid rain. G. Joyce packed up and departed.



## 7.0 DRONE UAV SUMMARY

Mavic Pro Drone was used with Drone Deploy software. Adjacent photos show significant improvement in image quality comparing existing data (drone deploy image mesh on left vs google earth on right). I plan to design and capture high-resolution imagery to identify potential sampling locations based on visible changes in vegetation, topography, outcropping bedrock. Note: Processing of data requires over 500 georeferenced photos to be stitched together, it can take up to 8 hours to attempt to process this data and it took me three attempts to get it right. I am relatively new to using this software and I have since identified a more user-friendly option (Pix4D). I will be using Pix4D to create future Digital Elevation Models (DEM) and High Resolution maps.

**Figure 3: High definition mapping comparison.**



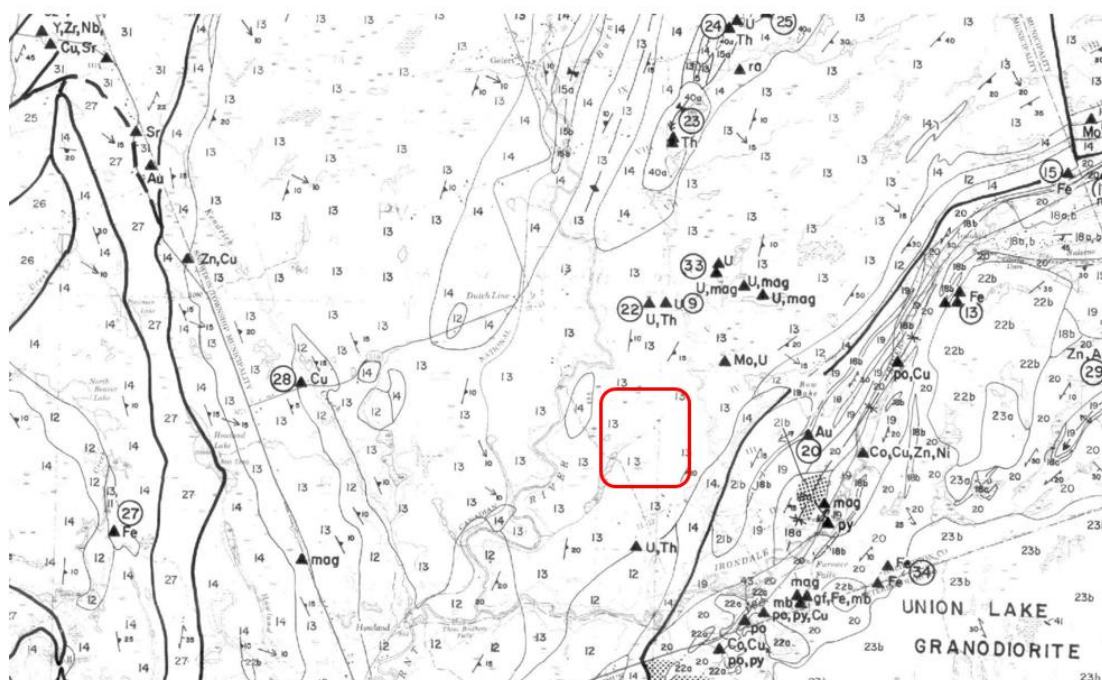
**Figure 4: View of inset comparison as shown above, can easily identify exposed uncovered bedrock outcropping, sudden changes in vegetation or topography. Can be very useful in determining future sampling locations.**



The photos represent the vast improvement in definition between the drone and google earth.

## 8.0 GEOLOGY: LOCAL

Figure 5: Krooked Kreek Project Area lies with the Glamorgan Gneiss Complex (Lease area in red).



Source: <http://www.geologyontario.mndmf.gov.on.ca/mndmfiles/pub/data/imaging/P3092/P3092.pdf>

### GENERAL GEOLOGY

The Haliburton area is underlain entirely by Precambrian rocks of Late to Middle Proterozoic age. The area straddles two major tectonic zones of the Grenville Province; the Central Metasedimentary Belt (CMB) to the southeast and the Central Gneiss Belt (COB) to the west (Wynne-Edwards 1972). In tensely deformed r-ocks of the Central Metasedimentary Belt Boundary Zone (CMBBZ) transect the central part of the area and form the boundary between the two terranes. Precambrian rocks of the area may be divided into five main groups, in order of interpreted decreasing age, these are: 1. gneisses of the Central Gneiss Belt (Fishog Subdomain) (units 1 to 8) which underlie the western third of the map area 2. the Dysart Gneiss Complex (CMB) (unit 11), which is exposed in the southeast part of the map area, and which may be roughly similar in age and origin to the Glamorgan Gneiss Complex (units 9 and 10) present in the Minden area 3. the Redstone Lake Thrust Sheet (unit 11) which may be roughly similar in age and origin to the Dysart Gneiss Complex 4. the Denna Lake Structural Complex (CMB) (units 12 to 20) which underlies the southeastern part of the map area, and which consists of disrupted Grenville Supergroup strata, including marble tectonic breccia 5. Highly deformed rock (units 21 to 24) of the Central Metasedimentary Belt Boundary Zone (CMBBZ), which are well exposed along Highway 35 Late granitic pegmatites (unit 25a), and small granitic bodies (unit 25b) intrude most units in the map area, but are particularly common in the Denna Lake Structural Complex.

### DYSART AND GLAMORGAN GNEISS COMPLEXES, AND THE REDSTONE LAKE THRUST SHEET

The Dysart Gneiss Complex (unit 11) is exposed in the southeast corner of the Haliburton

area and consists mainly of quartz diorite to tonalite gneiss. The complex extends to the east where it has been described by Culshaw (1986). Culshaw (1986) interpreted the Dysart Gneiss Complex as a thrust emplaced, possible basement complex to the Grenville Super group, it is possible that the Dysart and the Glamorgan Gneiss Complex are part of the same body, now disrupted by thrusting. The Redstone Lake Thrust Sheet has been mapped by Hanmer (1988a, 1988b), and is similar to the Dysart Gneiss Complex. Hanmer (1988b) notes that the Glamorgan Gneiss Complex is compositionally more heterogeneous than either the Dysart or Redstone Lake tonalite gneisses. The Glamorgan Gneiss Complex (units 9 and 10) has been described in detail by Easton (1908) who subdivided the complex on the basis of rock type into seven lithotomic units as defined by the revised Stratigraphic Code (North American Commission on Stratigraphic Nomenclature 1983). Only two lithodemic units of the Glamorgan Gneiss Complex are present in the Haliburton area; the Kendrick Creek Lithodeme (unit 9), and the Cargo Lake Lithodeme (unit 10).

### **METAMORPHISM AND STRUCTURAL GEOLOGY**

Metamorphic grade in the area is mainly upper amphibolite facies. Granulite facies rocks occur locally in the area. Within the Central Gneiss Belt, granulite facies monzonitic orthogneisses are present on the west shore of Kushog Lake, and yellow-green monzonites (unit 5d) in the southwest corner of the area may represent retrograde granulite facies rocks. Hanmer (1988b) reports the presence of orthopyroxene locally in the Dysart and Redstone Lake tonalites, suggesting that they reached granulite facies conditions prior to thrust emplacement. Hanmer (1908b) also reports that gedrite-cordierite-kyanite-biotite-garnet gneisses in the area suggest minimum metamorphic conditions of 650 °C and 6 kbars. The structural geology of the area is dominated by the contacts, probably all faulted, between the major rock groups in the area. Most rock units in the area dip to the southeast at between 10° and 30°. All rocks in the Haliburton area contain a shallow-plunging, southeast-trending lineation, which is best developed in the CMBBZ. Kinematic indicators within the CMBBZ in the map area are consistent with the model of north east-directed thrusting of the CMB over the CGB (e.g., Hanmer and Ciesielski 1984).



APPENDIX 1: PHOTOS OF FIELD ACTIVITIES

**1.1 Photos of August Field Activities.**





**1.2 Photos of October Field Activities: Panning, Trail Maintenance, Line Cutting, Drone UAV Survey.**







### 1.3 Map of field Activities:

This example was used to plan daily transects, mark up features of interest and plan potential work for future. Also shows existing trails in area.





31:12 40 580 2  
Minutes Hectares Images Batteries

✈ Flight Altitude  
Resolution: 2.2 cm / px 75m

🏠 Structures Mode

📱 Live Map

🔧 Advanced >

Don't own a drone? [Test the simulator](#)

HELP 🗉



Map navigation controls: zoom in (+), zoom out (-), home (house icon), and a blue save button.

## APPENDIX 2: MEETING MINUTES

# Krooked Kreek Prospecting |

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Date: May 12, 2018 | 7-9pm | Meeting location [REDACTED]

Meeting called by	George Joyce	George Joyce, Brian Joyce, Keith Brown, Gary Briggs, Cody Vickers, Bearach Mole.
Type of meeting	Prospecting Kickoff Meeting	Could not attend: Mike Parris, Tony Torreano
Facilitator	Keith Brown	
Note taker	George Joyce	
Timekeeper	Brian Joyce	

### TOPIC 1: LOGISTICS

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Time allotted | 1hr | Agenda topic *Field Camp Logistics* | Presenter *George Joyce*

Select Dates: Crew met together to schedule the best dates, October was selected because the weather is cool no bugs and leaves are down to increase visibility. We also set up a meal plan, grocery list and identified meals. We determined what equipment would be needed (ATV, Saws, Shovels, Pans, GPS, etc).

We also discussed budget, breaking down costs into consumables and hardware.

Action items	Person responsible	Deadline
Buy Food	George Joyce	Oct 12, 2018
Service Argo	Keith Brown	Oct 1, 2010

### TOPIC 2: PROSPECTING PLAN

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Time allotted | 1hr | Agenda topic *Trails/Maps/Sampling* | Presenter *George Joyce*

Crew reviewed and discussed maps and potential sampling locations, we also reviewed topographic maps to determine best access and trail locations. We discussed basic sampling protocol and reviewed GPS operation. Review geological maps and historical mining records in area.

Action items	Person responsible	Deadline
Upload Georeferenced topographic maps to GPS's	George Joyce	Oct 1 2018
Print and Laminate hard copy field Maps	George Joyce	Oct 1, 2018
o Conclusion of meeting 9pm		

### APPENDIX 3: RECEIPTS FOR EXPENSES

Withheld for client confidentiality.