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# **Report on Mechanical Stripping and Pitting & Trenching on the Gunnard West Project (LEA-109841)**

McTavish Township

Permit #PR-20-000087 Thunder Bay District

July 8<sup>th</sup> 2022 to September 24<sup>th</sup> 2022



## **Table of Contents**

<b>TEXT</b>	<b>PAGE</b>
Summary & Introduction	1
Geology	1
Historical Work	4
2022 Field Program	4
Conclusions	10
Costs	16
References	17
<b>FIGURES</b>	
Figure 1 – Gunnard Project Location & Geology	3
Figure 2 – Gunnard Project Location, Tenure and Access	5
Figure 3 – Gunnard Project Location, Tenure and Work Locations	6
Figure 4 – Gunnard Project Stripping/Excavation Work	9
<b>PHOTOS</b>	
Photo 1 – Amethyst vein west looking south east to amethyst vein east	10
Photo 2 – Stripped area amethyst vein west looking from the south east.	11
Photo 3 – Exploration work area lay down and stock piles. Looking west.	11
Photo 4 – Access trail to quartz zone.	12
Photo 5 – Stripping and trenching of quartz zone area.	12
Photo 6 – Stripping and trenching of quartz zone area.	13
Photo 7 – Deep Red colour Amethyst discovered at Amethyst vein west	13
Photo 8 – Various different colour samples of amethyst mixed quartz discovered at amethyst vein west	14
Photo 9 – Photo of Actual GPS coordinates near amethyst vein west work area.	14
Photo 10 – Photo of Actual GPS coordinates at Amethyst Vein South.	15
Photo 11 – of Actual GPS coordinates at Amethyst Vein East.	15
Photo 12 – Photo of Actual GPS coordinates at Quartz Zone	16

## Summary & Introduction

To access the exploration work area known as the Gunnard project west you will travel for approximately 52 kilometers east of Thunder Bay on the TransCanada highway to the community of Pearl. Turning left off the highway onto road 5 north you will cross a set of railroad tracks. Shortly after that making a left turn onto what is known as the Amethyst Mine Road. Continuing along this road for about 2 km you will come to a small bridge and then making another left turn just after that. This is a gated private road. Follow that road for about another 3km heading in a Northwest direction. The road starts to get rough and turns into mostly a trail as it climbs to higher ground. Once reaching the project area you will see a high granite outcrop and access trails throughout the property. See Figure 1 & 2.

Coordinates of Gunnard project west exploration work area are in NAD 83 Zone 16: 375121E 5394454N.

## Geology

The geology of the area is summarized by McIlwaine (1971) and shown on Figure 2.

*“The area was previously mapped by Hawley (1929). The oldest -rocks in the area are amphibolite and migmatitic metasediments. The amphibolite is fine grained greenish grey and weakly foliated. It is composed of quartz, amphibole, and plagioclase. The migmatitic rocks appear to be the injection type composed of layers of biotite schist and muscovite quartz monzonite with local pegmatite zones. Much of this unit is in a sub-rectangular area bounded by faults.*

*Most of the map-area is underlain by plutonic rocks of granitic composition. Four main phases were recognized in the field and these range from quartz monzonite to trondhjemite in composition. The rocks range from massive to weakly foliated and equigranular to porphyritic. Most of the rocks are biotite-bearing with a muscovite phase less common. No amphibole-bearing phases were recognized. Inclusion-rich zones are common; xenoliths are mainly biotite schist and local are rotated. Simple pegmatite dikes are ubiquitous.*

*Preliminary observations indicate the following intrusive relationships. An early fine-grained equigranular biotite-bearing quartz monzonite to granodiorite was intruded by a sill-like body of muscovite-bearing quartz monzonite. The early biotite-bearing rocks, which are the most abundant of the granitic rocks, may consist of several discrete plutons of similar composition. Further work should help delineate these features.*

*Two late phases are a porphyritic quartz monzonite to granodiorite and an equigranular trondhjemite; both of these are biotite-bearing. The age relationship between the two is not known.*

*The mafic content of all the granitic rocks is very low commonly 5 percent or less with local variations to 20 percent.*

*The granitic rocks are overlain by the Sibley Group of sedimentary rocks. The term "group" is used here as it is well known in the literature and it is anticipated that future detailed work will see the Sibley divided into formations. Two lithostratigraphic units are recognized in the map-area. The lower unit*

*consists of a localized basal conglomerate or breccia and overlying sandstone; this is overlain by a unit consisting of interbedded muddy sandstone, siltstone, and intraformational conglomerate and breccia.*

*The conglomerate clasts are nearly all granitic and range from pebbles to boulders which are angular to rounded. Locally there is little or no matrix, but where matrix is present it is commonly red and sandy. About 2 miles (3.2 km) north of the hamlet of Pearl, the conglomerate reaches a thickness of 30 feet (9.1 m), which is the thickest found.*

*The overlying sandstone is fine grained, feldspathic, and grey to buff; the cement is commonly carbonate with local barite. The estimated thickness of the conglomerate-sandstone unit is 100 feet (30.5 m).*

*The three rock-types of the overlying unit are all interbedded. They are all hematitic and therefore red. The sandstone is very fine grained and red with yellow spots up to 1 inch (2.5 cm), indicating areas of non-oxidation. The intraformational breccia and conglomerate is chaotic in appearance and contains angular sandstone blocks up to 2 feet (60 cm) in diameter. This rock-type is more common in the south half of the township. The thickness of this unit is not yet known.*

*Dolomite and limestone are few but occur locally with or without chert fragments.*

*Intruding these older rocks are sheets and dikes of Logan-type diabase. The rocks mapped to date consist of fine- to medium-grained gabbro.*

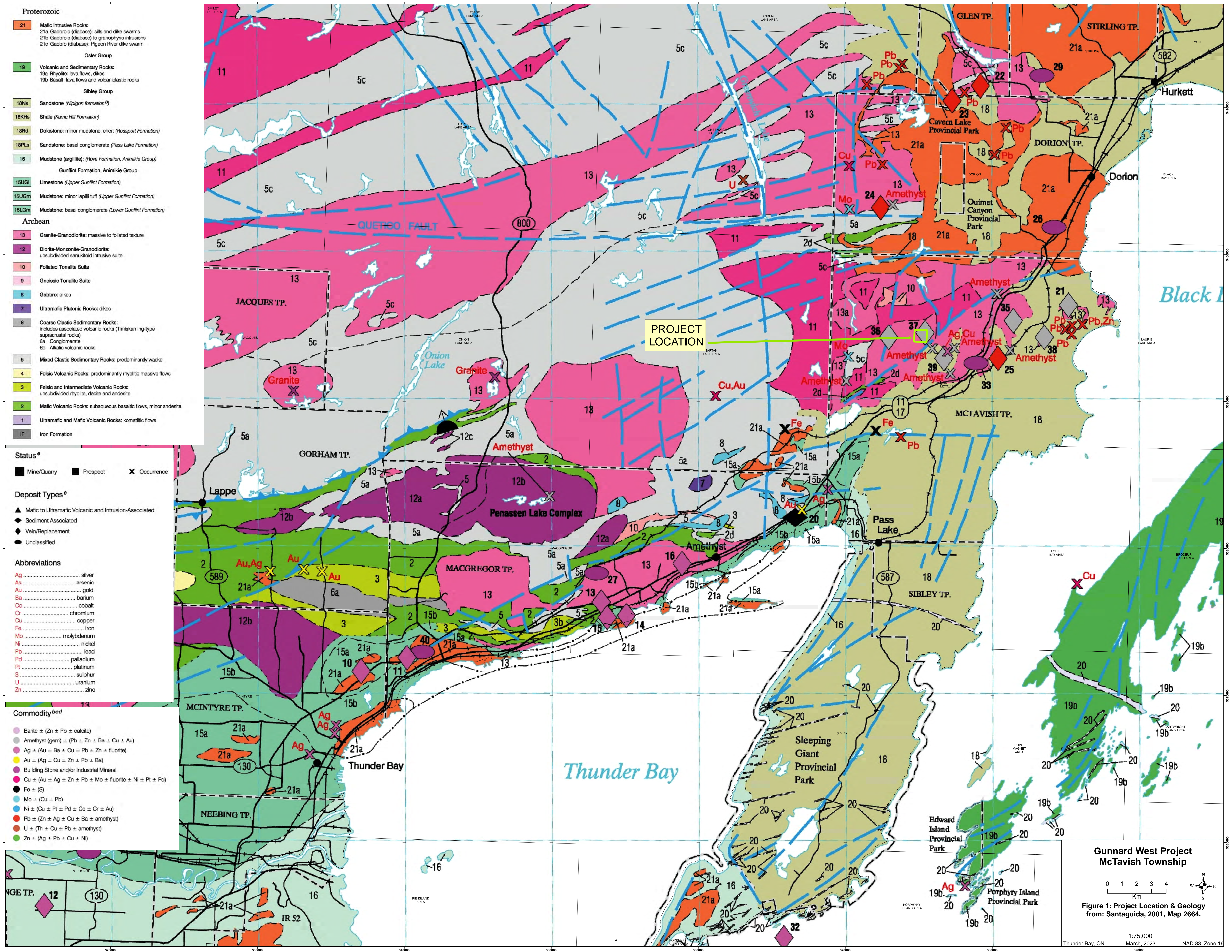
*Pleistocene deposits consist of till, boulder till, sand, and clay. Good crossbedding is locally present in the sand deposits.”*

He also comments on the amethyst deposits in the area:

*“The amethyst deposits are in veins in or near granitic rocks, Some of these deposits are associated with the base of the Sibley strata. The G. Noyes occurrence, 2 miles (3.2 km) northwest of Pearl, is one such deposit as is that of N. Dzuba in Location 5. Although Sibley conglomerate is present in the pit at the Thunder Bay Amethyst Mine, the vein system is apparently not along the contact but strictly in the granitic rock. Sulphide mineralization is more common in the occurrences at the contact and include galena, sphalerite, pyrite, and chalcopyrite.*

*The amethyst is deep purple and some crystals are coated with hematite. Kustra (1969, p. 46) published analyses of white and purple quartz from the Thunder, Bay Amethyst Mine; the results indicate the colour is due to iron, which in the white quartz was 150 ppm whereas there were 500 ppm in the purple quartz.*

*There are two ages of quartz veins; early massive quartz veins are cut by later amethystine quartz veins.”*



- Proterozoic**
- 21 Mafic Intrusive Rocks:
    - 21a Gabbroic (diabase): sills and dike swarms
    - 21b Gabbroic (diabase): to granophyric intrusions
    - 21c Gabbro (diabase): Pigeon River dike swarm
  - 19 Volcanic and Sedimentary Rocks:
    - 19a Rhyolite: lava flows, dikes
    - 19b Basalt: lava flows and volcanoclastic rocks
- Sibley Group**
- 18Ns Sandstone (*Nipigon formation*)<sup>b</sup>
  - 18KHs Shale (*Karna Hill Formation*)
  - 18Rd Dolostone: minor mudstone, chert (*Rosport Formation*)
  - 18PLs Sandstone: basal conglomerate (*Pass Lake Formation*)
  - 16 Mudstone (argillite): (*Frove Formation, Animikie Group*)
- Gunflint Formation, Animikie Group**
- 15UGl Limestone (*Upper Gunflint Formation*)
  - 15UGm Mudstone: minor lapilli tuff (*Upper Gunflint Formation*)
  - 15LGM Mudstone: basal conglomerate (*Lower Gunflint Formation*)
- Archean**
- 13 Granite-Granodiorite: massive to foliated texture
  - 12 Diorite-Monzonite-Granodiorite: unsubsided sanukitoid intrusive suite
  - 10 Foliated Tonalite Suite
  - 9 Gneissic Tonalite Suite
  - 8 Gabbro: dikes
  - 7 Ultramafic Plutonic Rocks: dikes
  - 6 Coarse Clastic Sedimentary Rocks: includes associated volcanic rocks (Timiskaming-type supracrustal rocks)
    - 6a Conglomerate
    - 6b Alkaline volcanic rocks
  - 5 Mixed Clastic Sedimentary Rocks: predominantly wacke
  - 4 Felsic Volcanic Rocks: predominantly rhyolitic massive flows
  - 3 Felsic and Intermediate Volcanic Rocks: unsubsided rhyolite, dacite and andesite
  - 2 Mafic Volcanic Rocks: subaqueous basaltic flows, minor andesite
  - 1 Ultramafic and Mafic Volcanic Rocks: komatiitic flows
  - IF Iron Formation

- Status<sup>e</sup>**
- Mine/Quarry
  - Prospect
  - ✕ Occurrence

- Deposit Types<sup>e</sup>**
- ▲ Mafic to Ultramafic Volcanic and Intrusion-Associated
  - ◆ Sediment Associated
  - ◆ Vein/Replacement
  - Unclassified

- Abbreviations**
- Ag ..... silver
  - As ..... arsenic
  - Au ..... gold
  - Ba ..... barium
  - Co ..... cobalt
  - Cr ..... chromium
  - Cu ..... copper
  - Fe ..... iron
  - Mo ..... molybdenum
  - Ni ..... nickel
  - Pb ..... lead
  - Pd ..... palladium
  - Pt ..... platinum
  - S ..... sulphur
  - U ..... uranium
  - Zn ..... zinc

- Commodity<sup>bcd</sup>**
- Barite ± (Zn ± Pb ± calcite)
  - Amethyst (gem) ± (Pb ± Zn ± Ba ± Cu ± Au)
  - Ag ± (Au ± Ba ± Cu ± Pb ± Zn ± fluorite)
  - Au ± (Ag ± Cu ± Zn ± Pb ± Ba)
  - Building Stone and/or Industrial Mineral
  - Cu ± (Au ± Ag ± Zn ± Pb ± Mo ± fluorite ± Ni ± Pt ± Pd)
  - Fe ± (S)
  - Mo ± (Cu ± Pb)
  - Ni ± (Cu ± Pt ± Pd ± Co ± Cr ± Au)
  - Pb ± (Zn ± Ag ± Cu ± Ba ± amethyst)
  - U ± (Th ± Cu ± Pb ± amethyst)
  - Zn ± (Ag ± Pb ± Cu ± Ni)

**Gunnard West Project  
McTavish Township**

0 1 2 3 4  
Km

**Figure 1: Project Location & Geology**  
from: Santaguida, 2001, Map 2664.

1:75,000  
Thunder Bay, ON March, 2023 NAD 83, Zone 18

## Historical Work

Previous work on the nearby mining claim tenure is discussed in Assessment Reports submitted by the author (2\_55369\_10, 2\_55760\_10, 20014075, 20000017947, 20000019085).

## 2022 Field Program

There are 4 named areas where exploration/development work took place. They are known as the Quartz Zone, Amethyst Vein West, Amethyst Vein East and Amethyst Vein South (Figure 3).

Equipment used, Link belt 3400 Ls excavator, C5 Tree Farmer Skidder, Honda 5 horse power water pump, Sullair air compressor.

### July 8, 2022, Location: Amethyst vein west

Work started at 7am. I used a Link belt 3400 LS excavator to clear a trail to the North end of the claim. When reaching that point I would be able to start stripping and removing overburden along a vein of amethyst and explore its potential. I spent a total of 8 hours working the excavator clearing and widening out the access trail. Work for this day was completed at 3pm.

### July 9, 2022, Location: Amethyst vein west

Work started at 7am returning to the same area. I again worked the link belt excavator building access trail. At approximately 12pm this day I completed the trail. At this point I was able to start stripping and removing overburden with the excavator. I was finding it to be very tuff going since the area was mostly granite and mud stone. I was able to loosen up large pieces of granite/mud stone along the amethyst vein and moving it off to the side. I completed this day at 3pm.

### July 10, 2022, Location: Amethyst vein west

Work started again this day at 7am using the link belt excavator. I was finding I was running out of room to put the overburden I had stripped the previous day. I removed trees along the access trail and had to push back widen the area making more room for material. I had created a pretty decent trail and lay down at this point giving myself more area to move around in. Work commenced at 3pm.

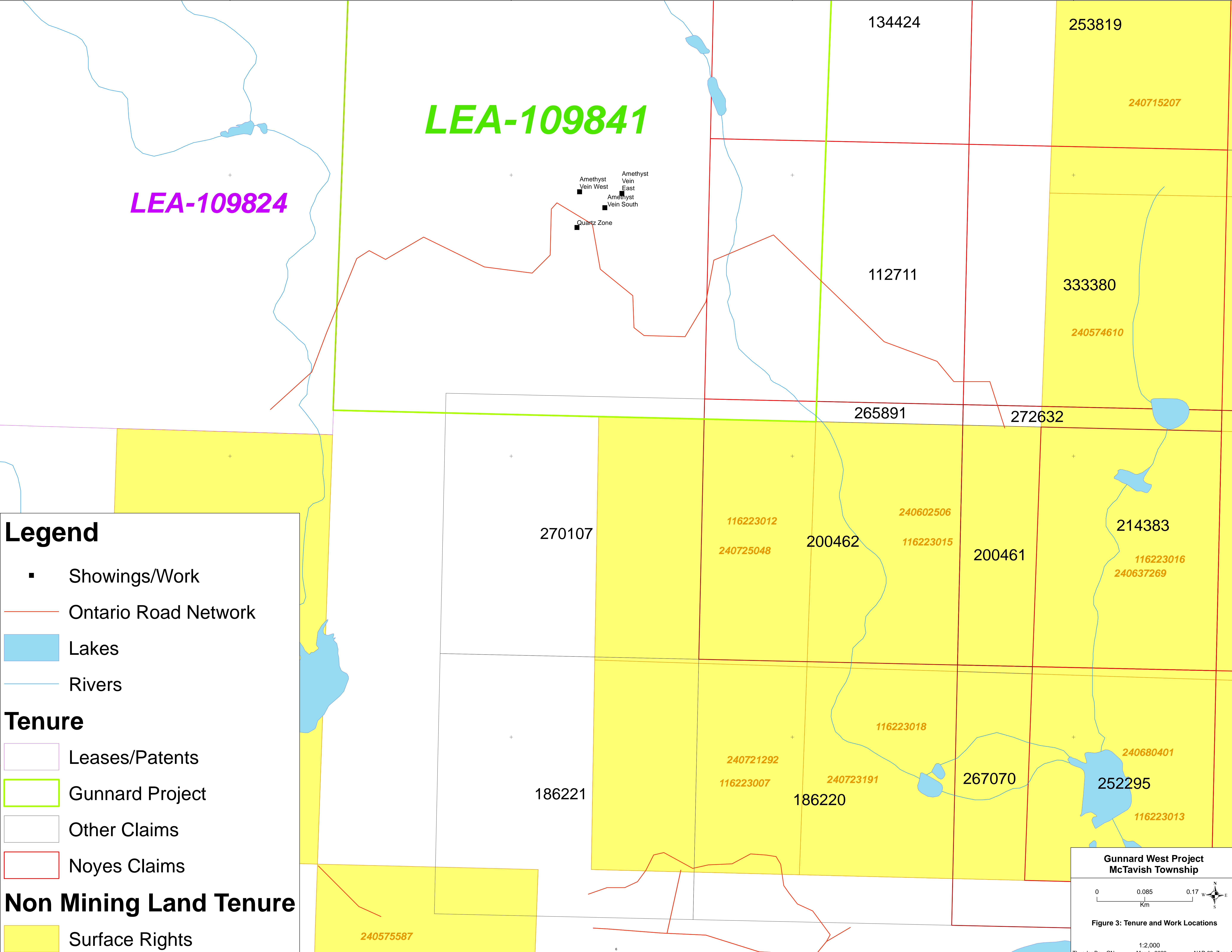
### July 16, 2022, Location: Amethyst Vein South

At 7am I decided to move the excavator to a lower area of the claim approximately 50 meters to the south where there were some standing dead trees to explore for possible amethyst veins thinking that the Quartz Zone would trend into this area. Unfortunately, this was not the case and no veins were discovered. For the time being a bit more clearing and levelling was completed for future storage of amethyst and to park equipment. I spent a total of 8 hours removing tress, stumps, and overburden levelling the area for future use. Work commenced on this day at 3pm.

### July 17, 2022, Location: Lay Down







**Legend**

- Showings/Work
- Ontario Road Network
- Lakes
- Rivers

**Tenure**

- Leases/Patents
- Gunnard Project
- Other Claims
- Noyes Claims

**Non Mining Land Tenure**

- Surface Rights

**Gunnard West Project  
McTavish Township**

0 0.085 0.17  
Km

**Figure 3: Tenure and Work Locations**

1:2,000  
Thunder Bay, ON March, 2023 NAD 83, Zone 16

7am returning to the same area as the previous day. Using the excavator I started stripping off more overburden, large boulders and tree stumps. I was finding that as I was able to clear the overburden and get a little deeper gravel started to appear. This made it much easier to work with and prepare the area. Work was completed at 3pm.

July 23, 2022, Location: Amethyst Vein West

7am start work with excavator. Moved back up to where the vein of amethyst is. This vein travels in from the west side of property and travels in a south east direction. Reaching up high on granite outcrop with boom of excavator I was able to break away sections of rock and pulling it down to use for road bed and widening out the area at same time to allow more room. At the same time sorting waste rock and low grade amethyst putting it off to the side. Day commenced at 2pm.

July 31, 2022, Location: Amethyst Vein West

7am continue working with excavator at busting out rock and cleaning vein. I worked my way from west side heading to the east clearing stripping away overburden and building access trail with the material along the southern edge of vein. At this point I was starting to notice amethyst of many different colours. Dark blue, Red, Brown and even some black. Day ended at 3pm.

August 1, 2022, Location: Amethyst Vein West

7am returning to same area using excavator continue stripping and trenching lower section of vein. Cleaning out overburden and again using to build access trail. At the same time sorting out the amethyst from waste rock. Day ended at 2pm.

August 6, 2022, Location: Quartz Zone

7am I decided I was going to start work on a different area little further to the south east of property. I had been previously prospecting this area and noticed a quartz vein travelling in from the east along an exposed granite outcrop heading in a westerly direction. To access this area I used a C5 tree farmer to move away brush and dead standing trees. Building somewhat of an access trail to allow better access for the excavator. Day ended at 11am.

August 7, 2022, Location: Quartz Zone

7am moved excavator to the area I was working previous day with Tree farmer. Started Building access trail. Once reaching the granite out crop where the quartz vein is I continued to strip away overburden trenching it out to expose the vein. Spent time sorting out loose rock from the brush and gravel so I could later wash it down to see if it held sign of amethyst. Day ended at 3pm.

August 13, 2022, Location: Quartz Zone

7am again back to same area to strip overburden doing exploration work in search of amethyst. Removing small trees/brush and building better access to area. Day ended at 2pm.

August 14, 2022, Location: Amethyst Vein West

7am today I decided to go back to the area where I had been stripping cleaning out the vein of amethyst with excavator. Manual hand labour I removed as much of the exposed amethyst I could. Amethyst of

various colours was to be found, Red, Blue, Black, and purple. I spent a total of 8 hours on this day manually removing amethyst and loose rock from the area. Day ended at 3pm.

August 20, 2022, Location: Amethyst Vein West

7am using my compressor to blow loose rock and debris from vein. At same time manually by hand removing larger material to remove from work area. Day commenced at 11am.

August 27, 2022, Location: Amethyst Vein East

7am I moved excavator to south east side of access trail and started to strip the area while trying to follow vein. Removing clearing away small trees and overburden. The vein at this point seems to run very deep. I trenched out approximately 2 meters deep and got down to solid granite. I was not seeing any sign of quartz or amethyst. Day ended at 3pm.

September 3, 2022, Location: Amethyst Vein West

7am being a little discouraged from not seeing any sign of amethyst on south east section of access trail I decided to move excavator back up to the north side of trail where the vein was more exposed. I proceeded to strip away more overburden of loose granite and mud stone moving it off to the side to build access trail along the vein. As I was pulling it back I noticed large pieces of rock that held good sign of amethyst of dark blue in colour. Day ended at 3pm.

September 4, 2022, Location: Amethyst Vein West

7am I brought in a 5 horse power Honda water pump to pump water that was holding in a low lying area of the property. I used it to wash away sand gravel from the vein and overburden stock piles. I was very happy with the outcome. Noticed there was an abundance of amethyst to be found in both the vein and stock piles. Day ended at 3pm.

September 17, 2022, Location: Amethyst Vein West

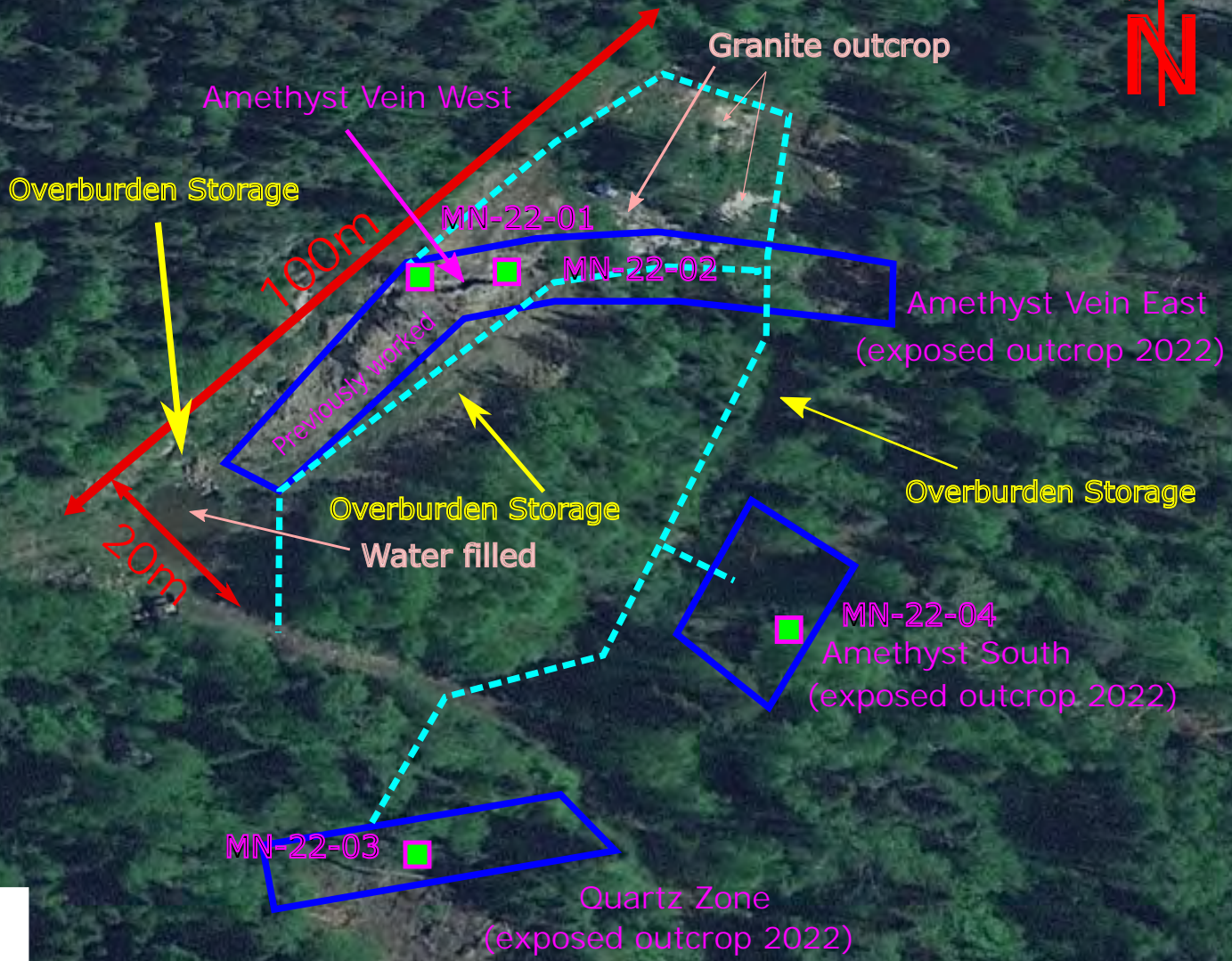
7am using excavator I moved more to the west side of property stripping and trenching trying to follow the vein of amethyst and at the same time sorting stock piling loose rock. Digging down and pulling back overburden. The vein appeared to run very deep at this point. I dug down approximately 3 meters and was not able to see or locate amethyst. Day ended at 3pm.

September 18, 2022, Location: Amethyst Vein West

7am using Honda water pump again I washed down overburden and stock piles I had excavated the previous day. Low grade amethyst mixed with granite, quartz and mud stone was visible. Day ended at 3pm.

September 24, 2022, Location: Access trail to mining exploration area

7am using excavator I took this day to make improvements to the access trail to exploration area. I spent time widening trail removing brush and debris along the way. I built up low lying areas that contained water and widening out corners also cutting out steep inclines or hills. Day ended at 3pm.



**Legend**

-  Stripping area
-  Road
-  Sample area (MN-22)

 20m



**Photo 2:** Stripped area amethyst vein west looking from the south east.



**Photo 3:** Exploration work area lay down and stock piles. Looking west.



**Photo 4:** Access trail to quartz zone.



**Photo 5:** Stripping and trenching of quartz zone area.



**Photo 6:** Stripping and trenching of quartz zone area.



**Photo 7:** Deep Red colour Amethyst discovered at Amethyst vein west



**Photo 8:** Various different colour samples of amethyst mixed quartz discovered at amethyst vein west



**Photo 9:** Photo of Actual GPS coordinates near amethyst vein west work area.





**Photo 10:** Photo of Actual GPS coordinates at Amethyst Vein South.



**Photo 11:** Photo of Actual GPS coordinates at Amethyst Vein East.



**Photo 12:** Photo of Actual GPS coordinates at Quartz Zone.

### **Costs**

Link belt excavator (owned by tenure holder M. Noyes) at \$200.00 per hour with operator total \$21,800

C5 tree farmer skidder (owned by tenure holder M. Noyes) at \$200.00 per hour with operator total \$800.00

Honda water pump (owned by tenure holder M. Noyes) at \$50.00 per hour total \$800.00

Air compressor (owned by tenure holder M. Noyes) at \$100.00 per hour total \$400.00

Manual labour (by tenure holder M. Noyes) at \$30.00 per hour total \$240.00

Fuel costs \$1582.81

Hydraulic oil \$88.68

Final total is \$25,692.20

### **References**

McIlwaine, W.H. 1971: McTavish Township (West Part of North Half). District of Thunder Bay; Ontario Dept. Mines and Northern Affairs. Prelim. Geol. Ser. Map P.720, scale 1 inch to ¼ mile. Geology 1971.

Santaguida, F. 2001: Precambrian geology compilation series – Thunder Bay sheet; Ontario Geological Survey, Map 2664, scale 1:250,000.