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## **Abstract**

Ashley Gold Mines Limited (Ashley) contracted Canadian Exploration Services Limited (CXS) to assist in interpreting (Modelling and Reprocessing data) unprocessed LiDAR data for the Law-Olive Property located in Olive and Law Townships. Processing of the LiDAR to bare earth was completed.

The LiDAR appears to have identified the location of the historic showing about 200m east of the OMI showing identified by the government, which should be verified in the field. The LiDAR also indicates the presence of strong structures associated with the showing. Determining the relationship between the structures and veins will identify new targets.

**ASHLEY GOLD MINES LIMITED**  
**Q3126 – Olive Law Property**  
**Reprocessing of Existing LiDAR Data**

**C. Jason Ploeger, P.Geo.**  
**Kajal Makwana**

**May 8, 2023**

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## 1. SUMMARY

### 1.1 PROJECT NAME

This project is known as the **Law-Olive Property**.

### 1.2 CLIENT

Ashley Gold Mines Limited

114579 Government Rd.  
Larder Lake, Ontario  
P0K1L0

### 1.3 OVERVIEW

Canadian Exploration Services Limited (CXS) was requested to assist in the final processing of partially processed LiDAR data. The data was processed in a particular fashion for non-exploration applications; CXS was asked to complete the processing to a bare earth layer to allow for a visual of the ground surface with the vegetation subtracted.

### 1.4 OBJECTIVE

The objective of the final data processing was to create a bare earth image to allow for better visualization of structural and bedrock features and identify historical work that may have occurred on the Property. The bare earth model would also be employed to better direct future exploration programs.

### 1.5 SURVEY & PHYSICAL ACTIVITIES UNDERTAKEN

| Survey/Physical Activity   | Dates  | Total Hours | Square Kilometers |
|----------------------------|--|-------------|-------------------|
| Reprocessing of LiDAR data | April 19 <sup>th</sup> to May 8 <sup>th</sup> , 2023 | 20          | ~1.1              |

***Table 1: Survey and Physical Activity Details***

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## 1.6 SUMMARY OF RESULTS, CONCLUSIONS AND RECOMMENDATIONS

The LiDAR appears to have identified the location of the historic showing about 200m east of the OMI showing identified by the government, which should be verified in the field. The LiDAR also indicates the presence of strong structures associated with the showing. Determining the relationship between the structures and veins will identify new targets.

## 1.7 COORDINATE SYSTEM

**Projection:** UTM zone 17N

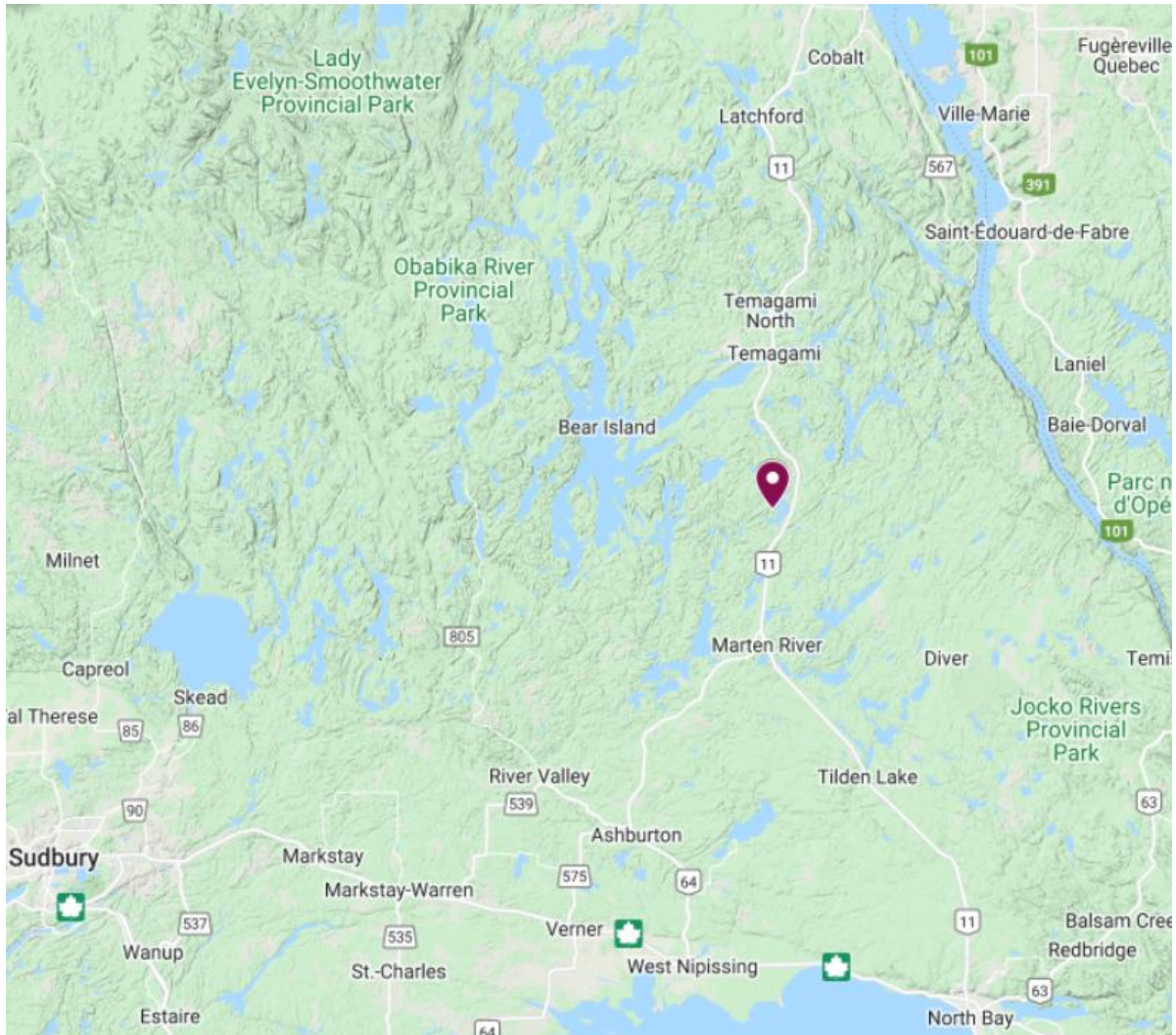
**Datum:** NAD83

**UTM Coordinates near the center of the grid:** 592050 Easting and 5193400 Northing

## 2.SURVEY LOCATION DETAILS

### 2.1 LOCATION

The Law-Olive Property is located approximately 20.0 kilometres south of Temagami, Ontario. The Property is located in Law and Olive Townships and is part of the Sudbury Mining Division of Ontario.



**Figure 1: Location of the Law-Olive Property**

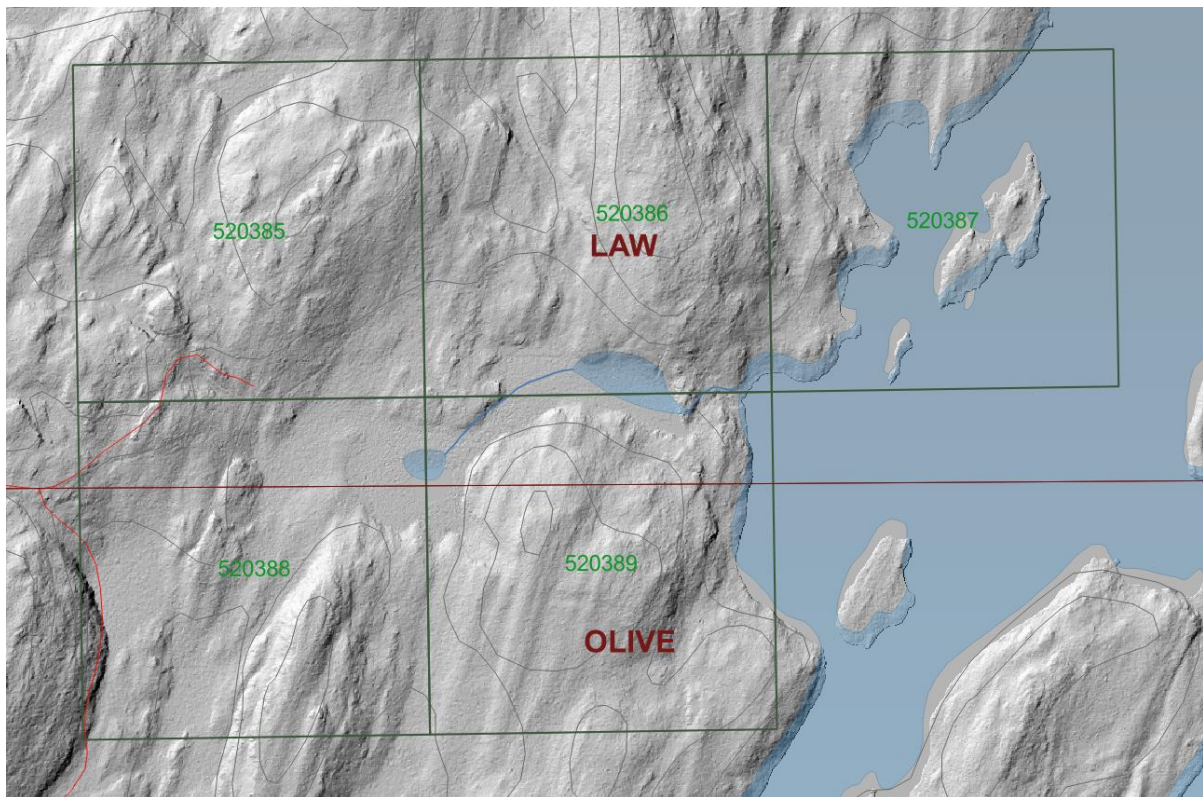
### 2.2 MINING CLAIMS

The survey area covers a portion of mining claims 520385, 520386, 520387, 520388

and 520389, all located in Law and Olive Townships within the Sudbury Mining Division.

| Cell Number | Provincial Grid Cell ID | Ownership of Land         | Township      |
|-------------|-------------------------|---------------------------|---------------|
| 520385      | 31L13F133               | Ashley Gold Mines Limited | Law           |
| 520386      | 31L13F134               | Ashley Gold Mines Limited | Law           |
| 520387      | 31L13F135               | Ashley Gold Mines Limited | Law           |
| 520388      | 31L13F153               | Ashley Gold Mines Limited | Law and Olive |
| 520389      | 31L13F154               | Ashley Gold Mines Limited | Law and Olive |

**Table 2: Mining Lands and Cells Information**



**Figure 2: LiDAR with Claims and Topography**

### 2.3 ACCESS

The Law-Olive Property can be accessed with a 4x4 truck and ATV via Wilson Lake Road. From Temagami, highway 11 can be travelled 11.5 kilometres south to Wilson



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Lake Road. The Wilson Lake Road needs to be crossed for an additional 11.5 km south to a series of trails that can be travelled for about a kilometre to reach the Survey area.

## 2.4 PROPERTY HISTORY

Significant historical exploration has been carried out throughout the survey area over the years. The following list describes details of the previous geoscience work, which was collected by the Mines and Minerals division and provided by OGSEarth (MNDM & OGSEarth, 2022).

- **1972: HA Keith. (File 31L13NW0001)**  
**Geochemical**  
In 1972 Keith reported assays from a series of trenches.
- **2000: Temex Resources Corp (File 31L13NW2010, 31M04SE2006)**  
**Airborne**  
In 1994 Poirier reported mapping some geology along with performing some geochemical sampling and microscopic work.
- **2002 - 2003: Tres-Or Resources Ltd. (Files 31M03SW2011, 31M04SE2014, 31M03NW2015)**  
**Airborne Geophysical, Geochemical**  
In 2002 Tres-Or flew an airborne magnetometer over a large area. This was followed up with some overburden sampling.  
**2022: Ashley Gold Mines Limited (Files 2000020311)**  
**Ground Geophysics**  
In 2022, Ashley Gold Mines Limited performed an Electromagnetic, Very Low Frequency, Magnetic/Magnetometer Survey over the Property.

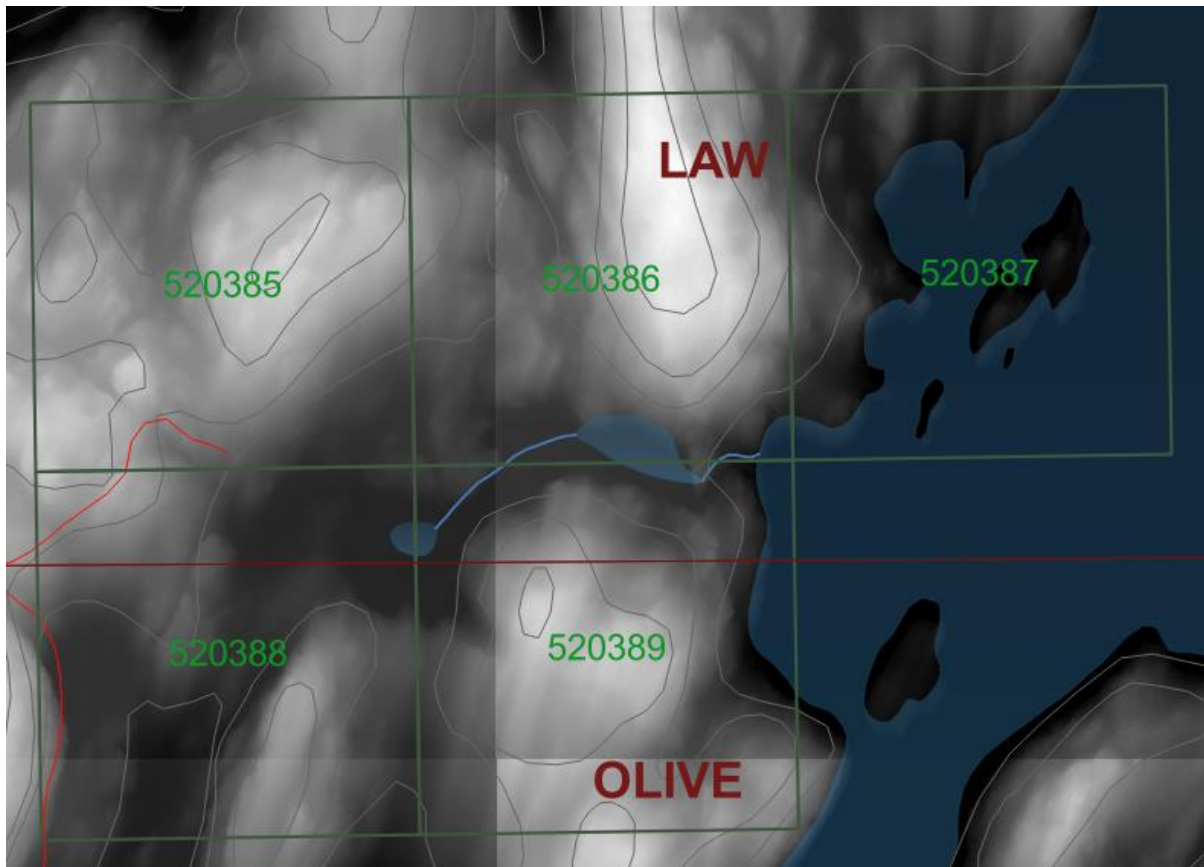
## 2.5 GENERAL REGIONAL/LOCAL GEOLOGICAL SETTINGS

The underlying geology is a foliated tonalite suite which includes tonalite to granodiorite. This has been covered with a sequence of Huronian Supergroup. These packages have been intruded with a Nipissing Diabase—the final intrusive results in mineralized vein structures.

### 3. WORK UNDERTAKEN

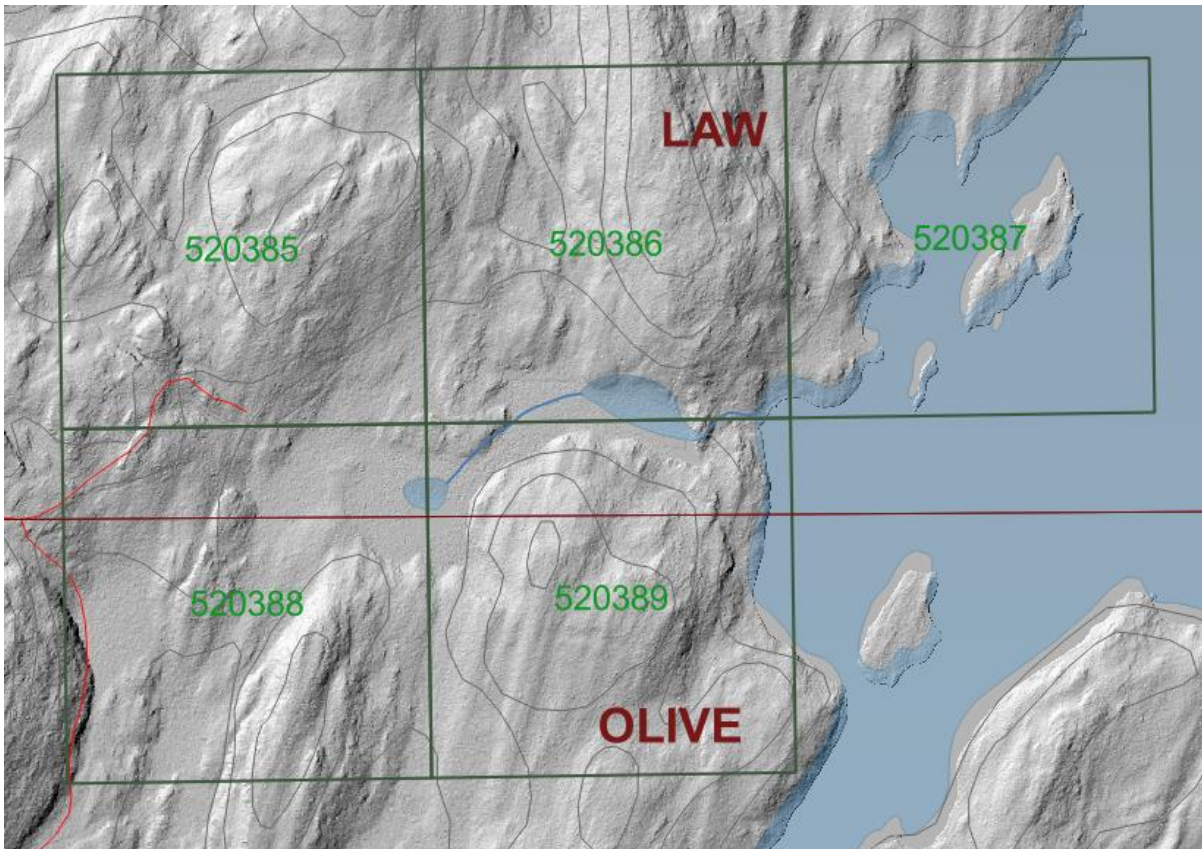
#### 3.1 REPROCESSING OF THE DATA

The partially processed data was initially processed in a DEM format. This represents 1km x 1km DEM tile files that are not visually interpretable or usable other than for elevation. The available DEM tiles for the Law-Olive Property are in the image below.



***Figure 3: Partially processed DEM image from data (starting point)***

This data was then processed from the DEM through QGIS to a bare earth model. This was processed by using Hillshade with the following parameters: Band number 1, Z factor 1, scale 1, azimuth of light 315, altitude of light 45, no edges, Horn's formula, no combined shading and no multidirectional shading. The final processed bare earth image is below.



**Figure 4: Processed LiDAR Image**

This processed image represents the bare earth without vegetation. This version allows for better visualization of the locations where the ground has been disturbed along the areas of outcrops and structural features.

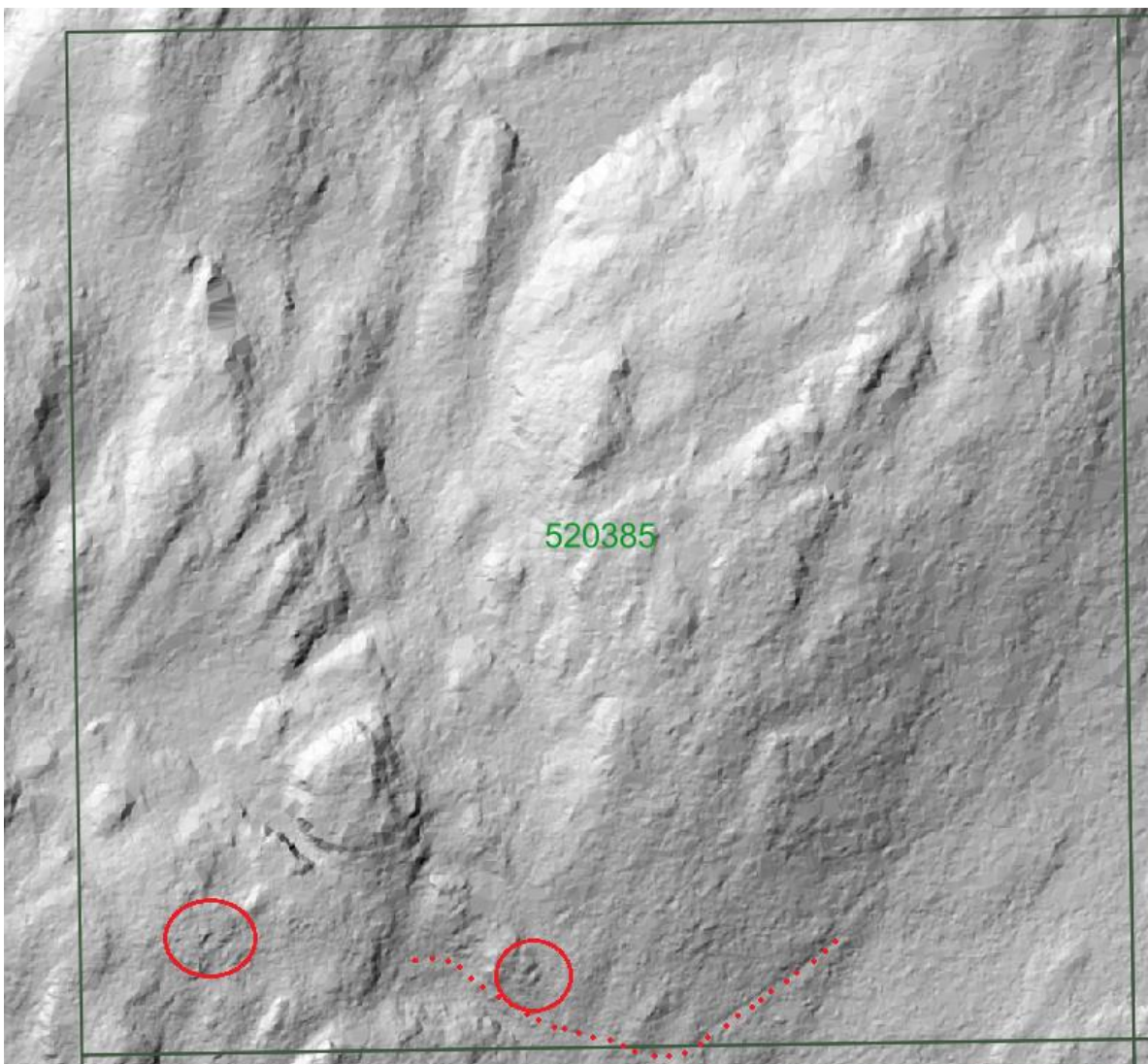
## 4. INTERPRETATION

### 4.1 OBJECTIVE

The objective of the final data processing was to create a bare earth image to allow for better visualization of structural and bedrock features and identify historical work that may have occurred on the Property. The bare earth model would also be employed to better direct future exploration programs.

### 4.2 INTERPRETATION

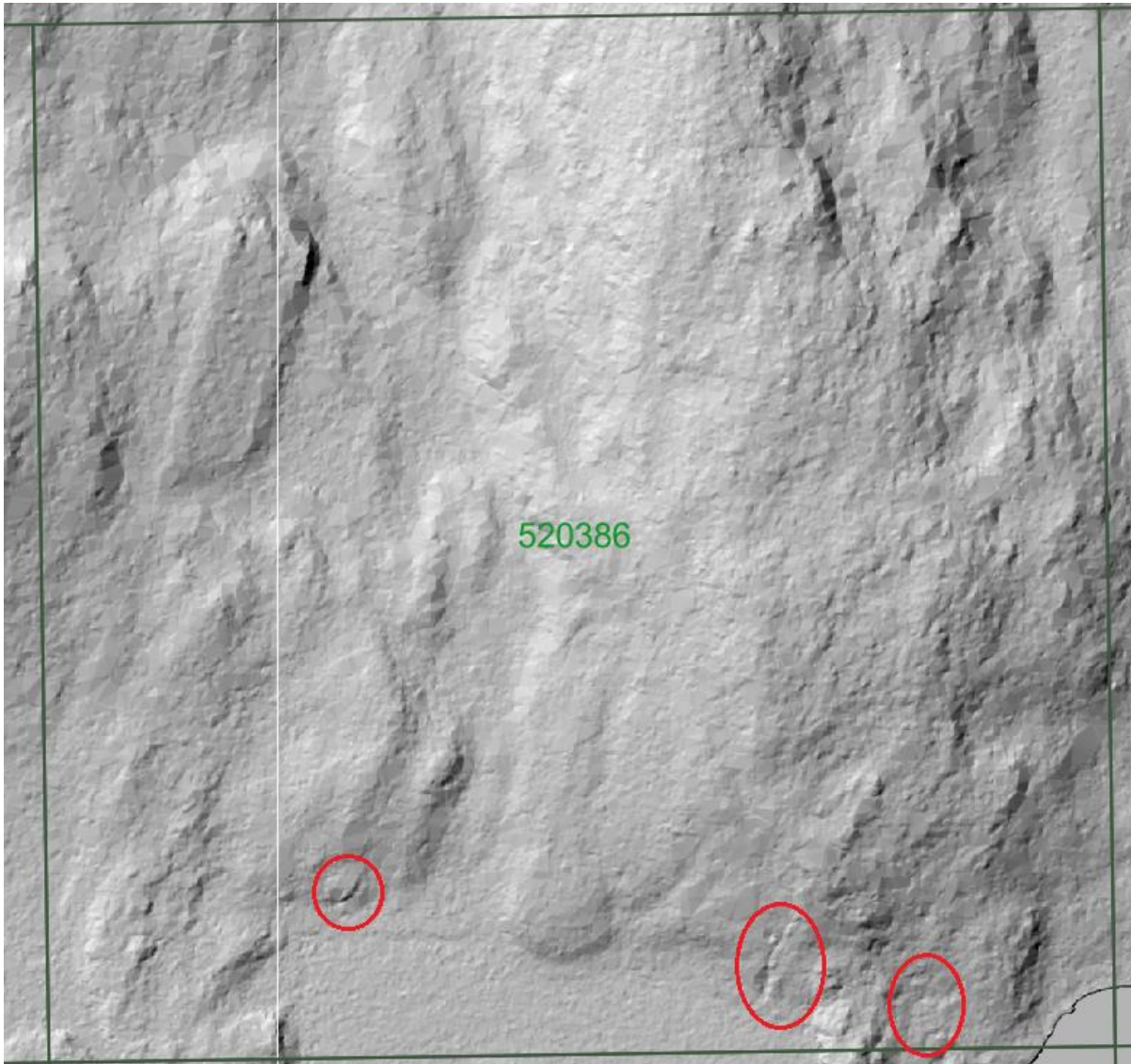
#### Cell 520385



**Figure 5: Interpretation of Cell 520385**

There is what appears to be an old road (red dots) that could be used for access; however, only a partial track could be identified. Two areas appear that may represent historic unreported trenching (red circles). These are located at 591478E/5193413N and 591625E/5193398N.

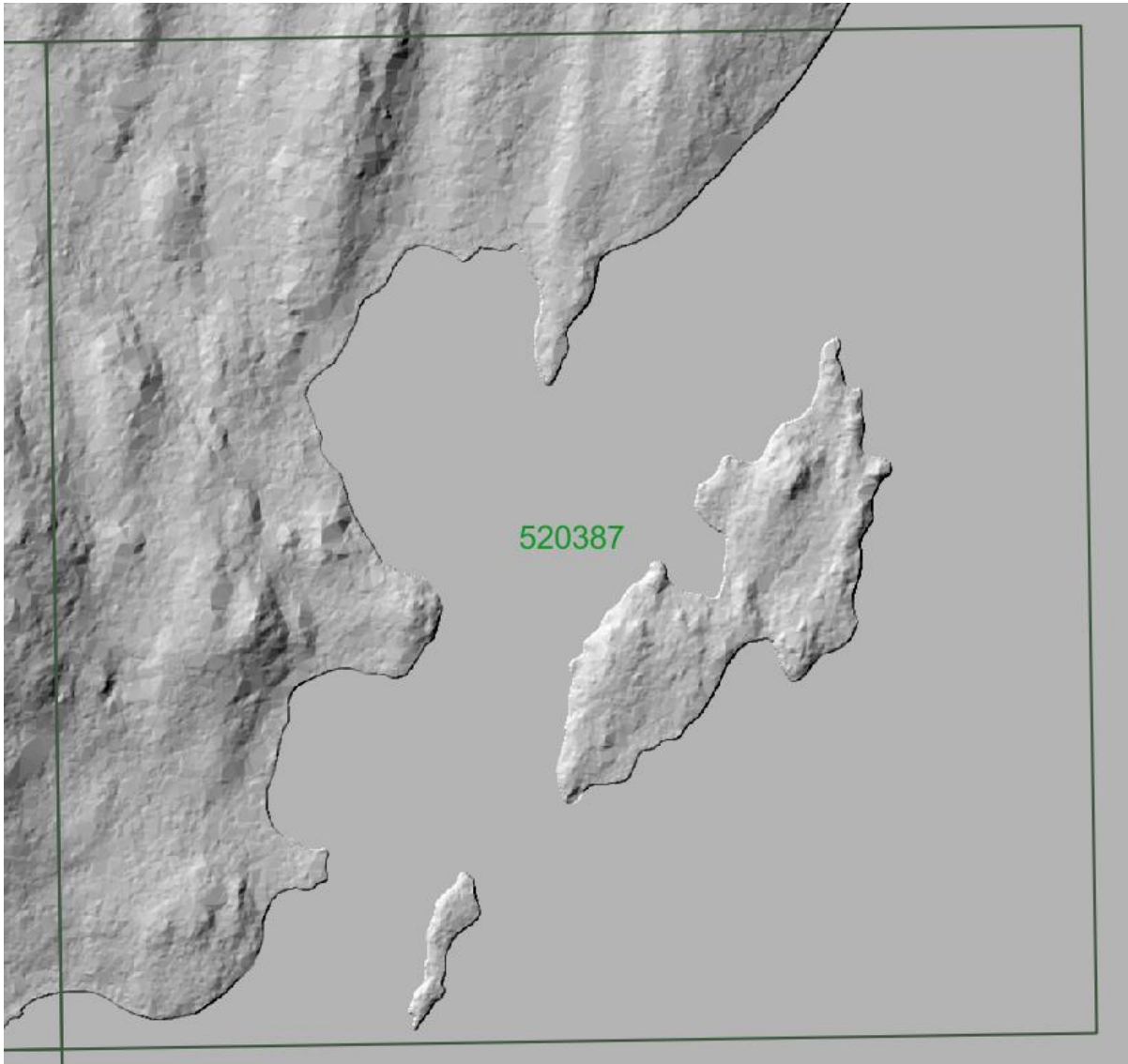
### **Cell 520386**



***Figure 6: Interpretation of Cell 520386***

No access appears on this cell; however, some historical work can be seen in the south part of the cell. A potential trench in the central southwest portion is located at 592033E/5193443N. In the southeast part of the cell, trenches can be identified at 592219E/5193415N and around 592283E/5193409N. These most likely represent the areas identified on the map reported in the HA Keith assessment report.

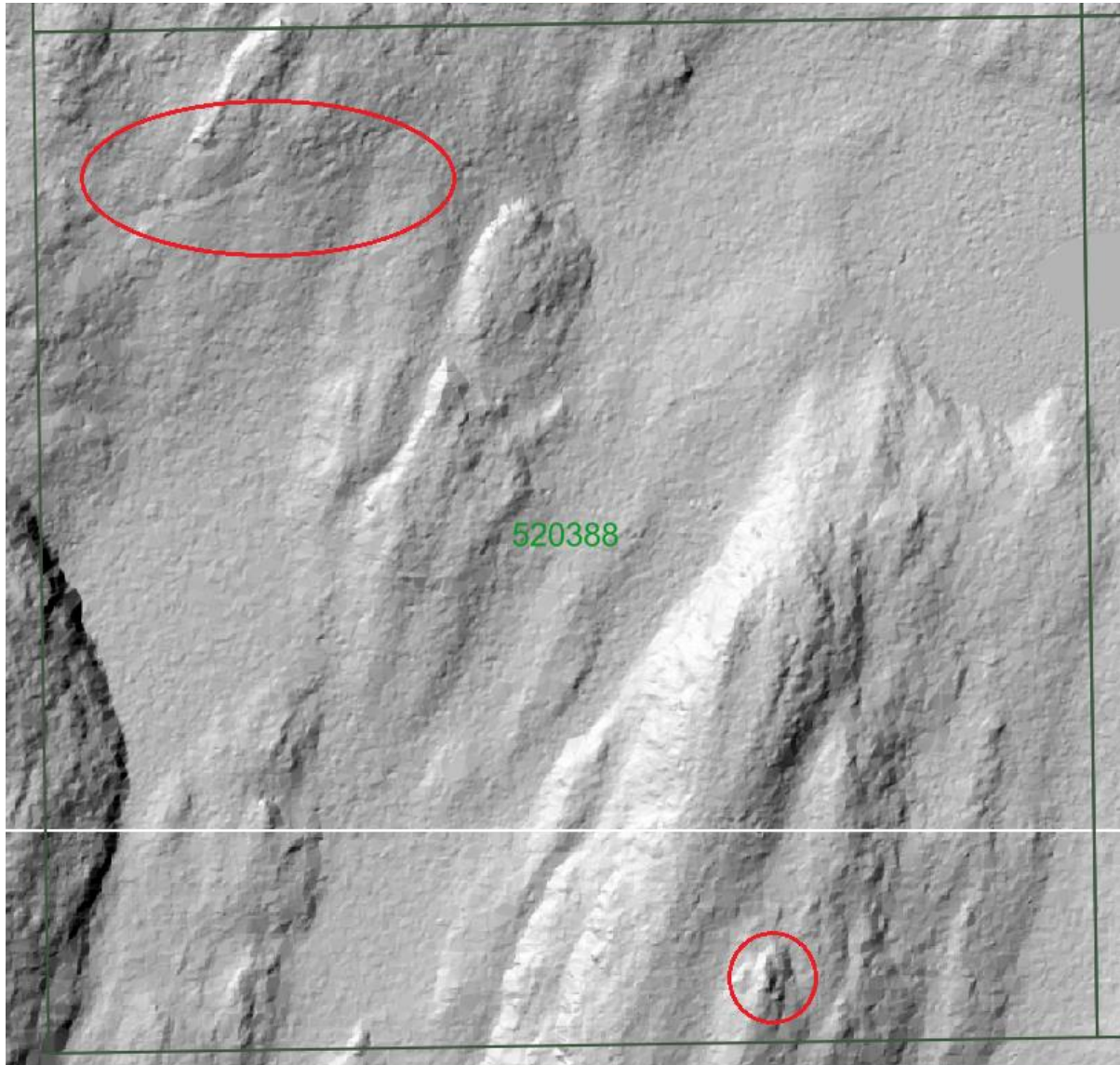
**Cell 520387**



**Figure 7: Interpretation of Cell 520387**

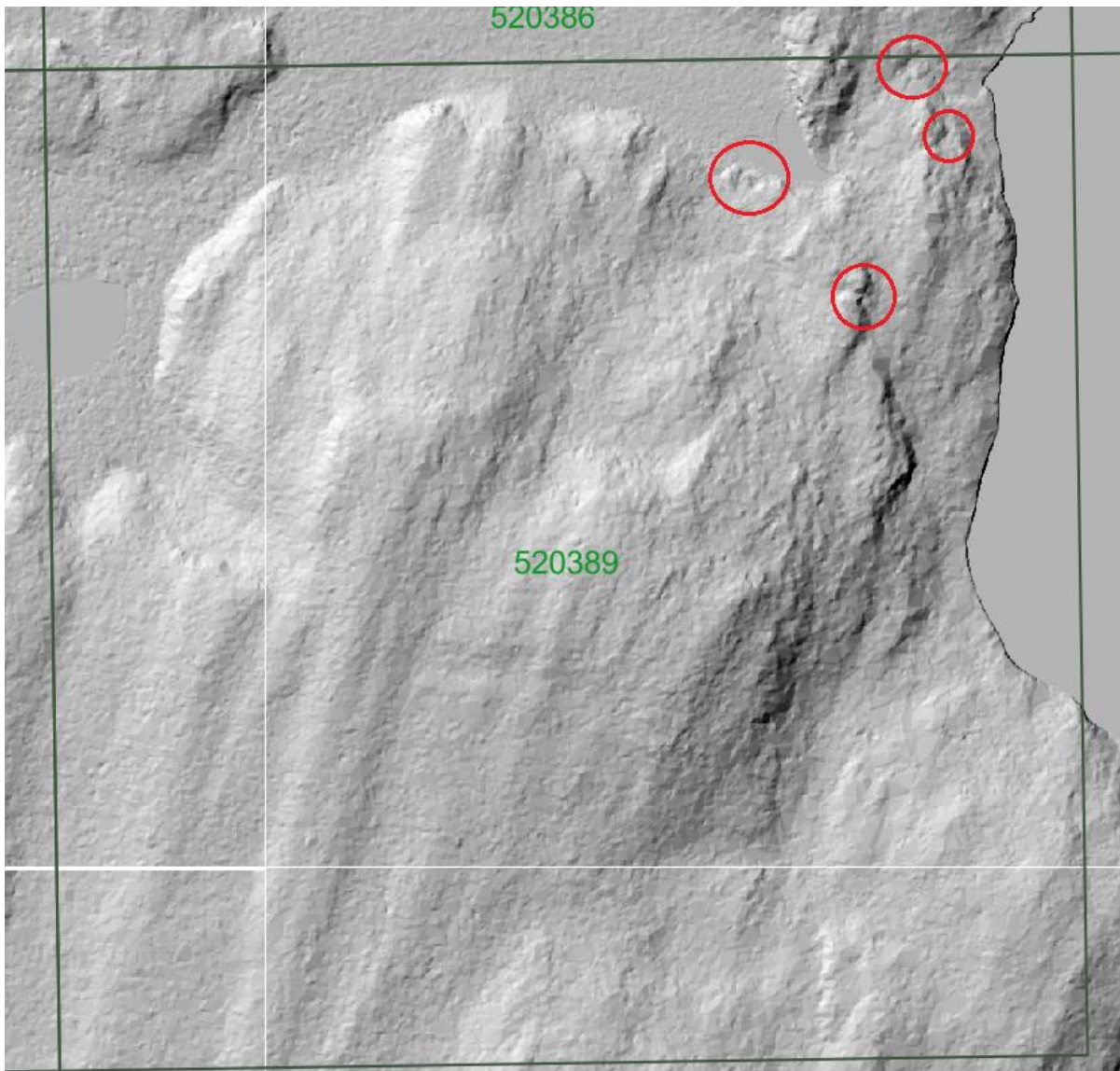
No identifiable features are noted on this cell.

**Cell 520388**



**Figure 8: Interpretation of Cell 520388**

Two areas stand out in this cell. The first is in the northern part of the cell and appears to be an area of disturbance. The origin of this disturbance cannot be identified and may represent a historic road or shallow trench but can be seen at coordinates 591505E/5193299N. The second area appears in the south and may define as an undocumented trench. The coordinates for this are 591757E/ 5192929N.

**Cell 520389**

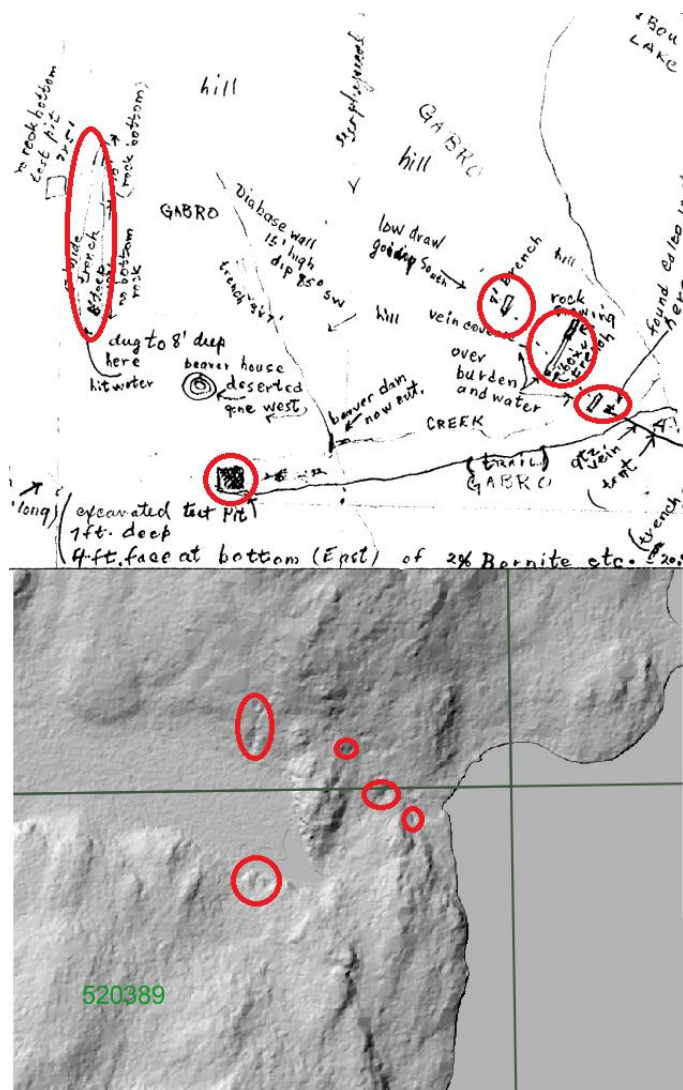
***Figure 9: Interpretation of Cell 520389***

Four historical features are visible in this data. The westernmost represents a pit and appears at 592222E/5193317N. This most likely represents the Keith Property (MDI31L13NW00022) approximately 200m east of the government's coordinates. To the south, at coordinates 592276E/5193263N, appears an area that may represent some undocumented work. This may also be natural, resulting from the interaction of faults. Two trenches appear at coordinates 592299E/5193382N and 592311E/5193363N.



The historical work report by HA Keith exhibits a crudely drawn map with no scale information to help identify the locations or attitudes of the mineralized systems. The comparison to the LiDAR allows us to locate the most likely site of the mineralized pits, as seen in the image below.

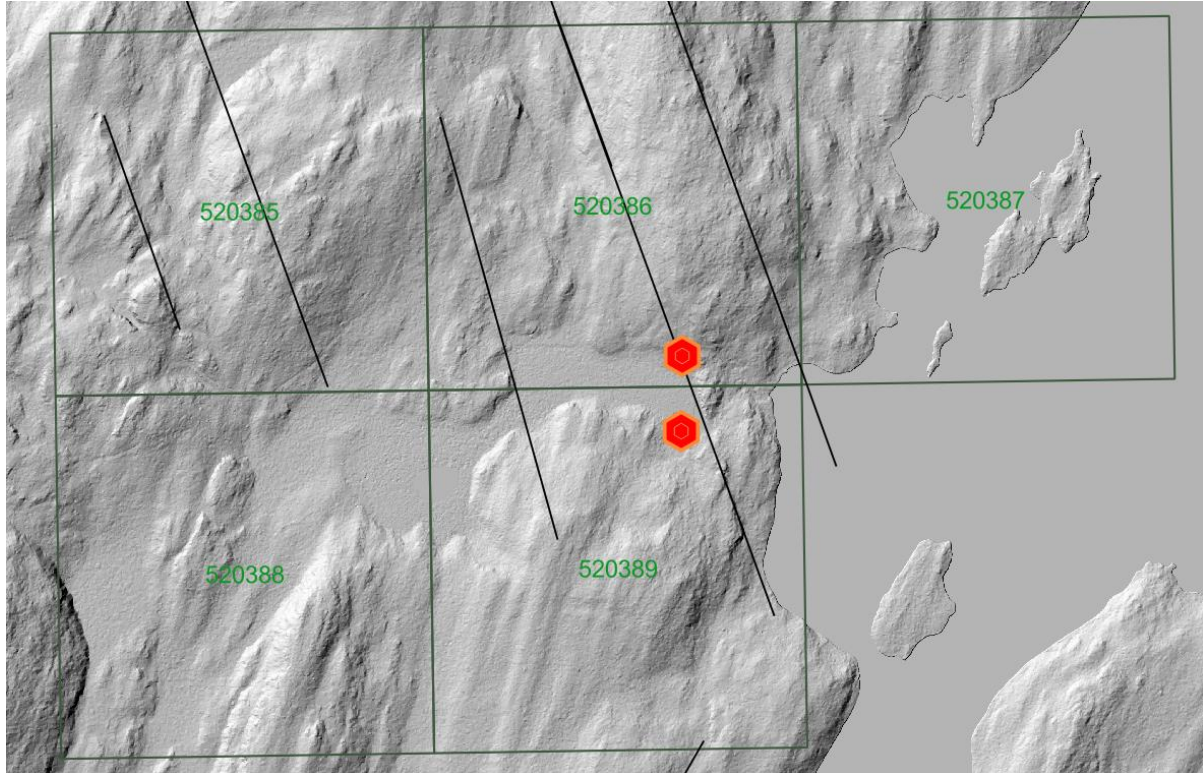
| Easting | Northing | Feature        |
|---------|----------|----------------|
| 592219  | 5193415  | Trench and Pit |
| 592225  | 5193318  | Pit            |
| 592283  | 5193409  | Trench         |
| 592315  | 5193358  | Trench         |
| 592299  | 5193382  | Trench         |



**Figure 10: HA Keith hand-drawn map compared with LiDAR**

### 4.3 TARGETS

The image below represents the claim group with some interpreted structure. Highlighted in red are areas where the historical values appear to come from. East-west structures are also assumed to exist as reflected in the straight edges of the ponds. This structural relationship may indicate the formation of the traps needed for the mineralization. Similar targets may occur at the intersection of the faulting.



### 4.4 RECOMMENDATIONS

The identified documented and undocumented historic features should be explored through prospecting. The vein system should be identified, and a strike and dip should be taken to understand the possible association with the structures on the Property. These should then be compared to the identifiable structures on the Property. These trends should be further prospected to determine if other traps exist.

### 4.5 CONCLUSION

The LiDAR appears to have identified the location of the historic showing about 200m east of the OMI showing identified by the government, which should be verified in the field. The LiDAR also indicates the presence of strong structures associated with the showing. Determining the relationship between the structures and veins will identify new targets.

## APPENDIX A

### STATEMENT OF QUALIFICATIONS

I, C. Jason Ploeger, at this moment, declare that:

1. I am a professional geophysicist with residence in Larder Lake, Ontario and am presently employed as a Geophysicist and Geophysical Manager of Canadian Exploration Services Ltd. of Larder Lake, Ontario.
2. I am a Practising Member of the Association of Professional Geoscientists, with membership number 2172.
3. I graduated with a Bachelor of Science in geophysics from the University of Western Ontario in London, Ontario 1999.
4. I have practiced my profession continuously since graduation in Africa, Bulgaria, Canada, Mexico and Mongolia.
5. I am a member of the Ontario Prospectors Association, a Director of the Northern Prospectors Association and a member of the Society of Exploration Geophysicists.
6. I do not have nor expect an interest in the properties and securities of **Ashley Gold Mines Limited**.
7. I am responsible for the final processing and validation of the results and the compilation of the presentation of this report. The statements in this report represent my professional opinion based on my consideration of the information available at the time of writing this report.



C. Jason Ploeger, P.Geo., B.Sc.  
Geophysical Manager  
Canadian Exploration Services Ltd.

Larder Lake, ON  
May 8, 2023

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## STATEMENT OF QUALIFICATIONS

I, Kajal P. Makwana, at this moment, declare that:

1. I am a Junior Geologist/Exploration Geologist residing in Virginiatown, Ontario and employed with Canadian Exploration Services Ltd. of Larder Lake, Ontario.
2. I graduated with a Bachelor of Science in Geology from The Maharaja Sayajirao University of Baroda, Gujarat, India 2017.
3. I have previous geological work experience with Battery Mineral Resources, 2021-2022.
4. I do not have nor expect interest in the properties and securities of **Ashley Gold Mines Limited**.
5. I am responsible for the processing of the results and the compilation of the presentation of this report. The statements in this report represent my professional opinion based on my consideration of the information available when writing this report.

Kajal P. Makwana, B.Sc.  
Exploration Geologist/ Junior Geologist  
Canadian Exploration Services Ltd.  
Larder Lake, ON  
May 8, 2023

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## APPENDIX B

### QGIS – 64 BIT

QGIS is a user-friendly open-source Geographic Information System (GIS) Licensed under the GNU General Public Licence. QGIS is an official project of the Open-Source Geospatial Foundation (OSGeo). It runs on Linux, Mac, OSX, Unix, Windows and Android and supports multiple Vector, Raster, and Database formats and Functionalities.

|                                |                         |
|--------------------------------|-------------------------|
| QGIS version                   | 3.22.7-Białowieża       |
| Qt version                     | 5.15.3                  |
| Python version                 | 3.9.5                   |
| GDAL/OGR version               | 3.4.3                   |
| PROJ version                   | 9.0.0                   |
| EPSG Registry database version | v10.054 (2022-02-13)    |
| GEOS version                   | 3.10.2-CAPI-1.16.0      |
| SQLite version                 | 3.38.1                  |
| PDAL version                   | 2.3.0                   |
| PostgreSQL client version      | 13.0                    |
| SpatiaLite version             | 5.0.1                   |
| QWT version                    | 6.1.6                   |
| QScintilla2 version            | 2.13.1                  |
| OS version                     | Windows 10 Version 2009 |
| Active Python plugins          |                         |
| geoscience                     | 1.11                    |
| inkscape2symbol-master         | 0.2                     |
| mmqgis                         | 2021.9.10               |
| openlayers_plugin              | 2.0.0                   |
| qgis-maptiler-plugin           | 2.0.0                   |
| quick_map_services             | 0.19.33                 |
| db_manager                     | 0.1.20                  |
| grassprovider                  | 2.12.99                 |
| MetaSearch                     | 0.3.5                   |
| processing                     | 2.12.99                 |
| sagaprovider                   | 2.12.99                 |

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## APPENDIX C

### REFERENCES

- E. McGhee, E. Spackman, D. Thoresen, R. Miyazaki, (2019), “Comparing the spatial accuracy of LiDAR to Digital Elevation” (Storymap.arcgis.com).
- Google. (2023). *Location of the Law-Olive Property.*
- HA Keith, Work Report on Claim NO L.295014 (1972), AFRI 31L13NW0001
- MNM & OGSEarth. (2023). *OGSEarth*. Ontario Ministry of Northern Development and Mines.
- Open Government Licence – Ontario <https://www.ontario.ca/page/open-government-licence-ontario>
- Ontario Geological Survey, “AMIS – Abandoned Mine Inventory for Ontario.”
- Ontario Geological Survey, “OMI – Ontario Mineral Inventory.”
- Ontario Ministry of Mines, “MLAS Operational GIS Data.”
- Ontario GeoHub, (2023)
- QGIS, (2023) “Discover QGIS”

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## APPENDIX D

### LIST OF MAPS (IN MAP POCKET)

LiDAR Plan Map

- 1) Map-Q3126-AGM-OliveLaw-LiDAR

**TOTAL MAPS = 1**

Law-Olive Property



Projection: UTM zone 17N  
Datum: NAD83

Legend

- MENDM\_Administrative\_Boundaries
- Operational\_Cell\_Claims
- obm\_OBMUSER\_Contour\_line
- obm\_OBMUSER\_waterseg\_arcne\_line
- obm\_OBMUSER\_roadseg\_line
- obm\_OBMUSER\_Railroads\_line
- obm\_OBMUSER\_waterseg\_polyne\_poly

LiDAR

Band 1 (Gray)  
Max  
Min

