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**2022 PROSPECTING & GEOLOGICAL MAPPING REPORT ON THE  
HILL LAKE GOLD PROPERTY, HUTCHINSON TOWNSHIP**

**Property Tenures: 161648, 234489**

*Total Assessment Report Related Expenditures: \$6883*

NTS Map 52B/14SW  
OGS Maps P3350-REV, P2388 REV, ARM 38E  
Latitude 48° 37'N Longitude 91° 16'W  
UTM Zone 15U (NAD 83): 626200E/5406000N  
Thunder Bay Mining Division  
Ontario MDI: None

Property Owners  
**Karl Bjorkman, Katarina Bjorkman**

**Date: March 24<sup>th</sup>, 2023**

**Author**  
“Signed & Sealed”  
Dr. Katarina Bjorkman, P.Geo.,

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## SUMMARY

The owners completed research, mapping and prospecting on their Hill Lake Gold Property in September 28 – 29, 2022. The Hill Lake Gold Property is located approximately 22 km east of the town of Atikokan in Northwestern Ontario. It is accessed by ATV or UTV through an old trail from the Sapawe – Upsala Road. It is located in the southwestern Superior Craton, ~20 km southeast of the 3.3 M oz Hammond Reef gold deposit. The property consists of 2 mineral tenures covering a total of 37.27 hectares. All tenures are 90% owned by Karl Bjorkman and 10% owned by Katarina Bjorkman

The aim of the 2022 program was to locate and examine the historical mineralization on the property and locate historical workings. To accomplish this, two days were spent in the field, with four man days. The first day involved clearing the access trail into the property by chainsaw, and locating and sampling the historical blasted pits. The second day was spent mapping the geology and historical workings.

The property occurs within the Canadian Shield. Terrain is rugged with moderate relief ranging from 430-460 m ASL. The property is heavily vegetated by species of the boreal forest with a mix of birch, spruce, poplar, jackpine on ridges and ash, alder and cedar in swamps. There is moderate overburden ranging from a cm skiff to several m thick till, with 2-3% outcrop exposure. Hill Lake is located in the northeastern corner of the Property. The climate has very distinct seasons ranging from +30°C in the summer to -50°C in the winter, with moderate amounts of precipitation. There is commonly snow cover from November to April.

The property is accessible by truck, then UTV and thence by foot. To access by UTV, one must drive north from Highway 11 on paved Highway 623 to Sapawe, then continue north on the gravel Sapawe Road for 6 km. From there, a trail to the south provides access to the Main Zone of the Property.

The property is underlain by the Lac Des Milles Lacs greenstone belt and the Marmion batholith of the Marmion Terrane, within the Western Superior Craton. The Property is 1 km north of the craton-scale east-west Quetico Fault. The Lac Des Milles Lacs greenstone belt comprises basalt flows and gabbro intercalated with minor felsic volcanic tuffs and exhalative horizons. The area is strongly sheared with a penetrative steep, east-northeast trending fabric that is locally east-west trending in the area of mineralization.

Gold mineralization occurs in, or alongside, quartz - chalcopyrite ± tourmaline ± chlorite ± pyrite ± arsenopyrite ± telluride ± carbonate veins associated with the main shear structure. The best mineralized zones observed occur near and along folded contacts between mafic and felsic volcanic as well as felsic intrusive rocks. The main fault structure hosting the historical showings dips steeply north and was followed and mapped to 200 m, but clearly continues as a strong lineament in topographic maps. There are a series of previously identified visible gold locations within an anastomosing and folded quartz-chlorite-tourmaline-pyrite-arsenopyrite-chalcopyrite vein. Gold was not seen, but assay results were encouraging with four of the five samples assaying 7 to 57 g/t Au. The vein is up to 3 m wide locally. The contact with the Marmion batholith is typically within a few tens of metres from the mineralized structure and could be a target for future mineralization.

Further work is recommended to follow up on the results of the 2022 exploration program: (i) ongoing mapping and sampling of previously stripped areas; (ii) additional prospecting and mapping along and across strike to better understand the controls and distribution of mineralization and look for additional mineralization in identified lineaments; (iii) detailed geophysical surveys to target for mineralization at depth.

# 1.0 INTRODUCTION

## 1.1 General

The Hill Lake Gold property (the "Property") is located approximately 22 km east of the town of Atikokan in the Rainy River district of northwestern Ontario (Fig. 1). The property occurs at the southern margin of the 3.0 Ga Marmion terrane, only 1 km north of the 2.7 Ga Quetico basin to the south. The Marmion terrane hosts several historical gold mines, as well as Agnico Eagle's Hammond Reef deposit (3.3 Moz mineral reserves), 20 km northwest of the property. The property was most recently explored by the Labrador Mining and Exploration Company Limited. The property does not host a known mineral record, but the Gray Vein, also known as the Hill Lake vein is located just 150 m north of the Property.

The property is 90% owned by Karl Bjorkman and 10% owned by Katarina Bjorkman. The property has been worked on from the early 1900's, but early work is poorly documented. The area was mapped by the Ontario government by Hawley (1929), McIlwaine and Larson (1981) and Stone (2008).

The owners completed trail clearing, prospecting and geological mapping from September 28-29, 2022. They followed the known mineralization along strike for 200 m. Five samples were taken. Historical blasted pits were mapped in, and the geology, including lithologies, structures and veins were mapped. The purpose of this report is to provide background information on the Property and to document the work completed in 2022.

The 1983 North American Datum (NAD83) co-ordinate system is used in this report. The Property is in Universal Transverse Mercator (UTM) Zone 15N.

## 1.2 Abbreviations Used in the Report

Ag – silver	cpy – chalcopyrite
Au – gold	py – pyrite
Bi - Bismuth	aspy – aresonpyrite
Cu – copper	mal – malachite
Fe – Iron	ht - hematite
Pb – lead	Ga (Giga-annum) - a billion years
Sb – antimony	Oz – ounce
Te - Tellurium	ppb – parts per billion
Zn – zinc	
g/t – grams per tonne	
cm – centimeter	
m – meter	
km - kilometer	

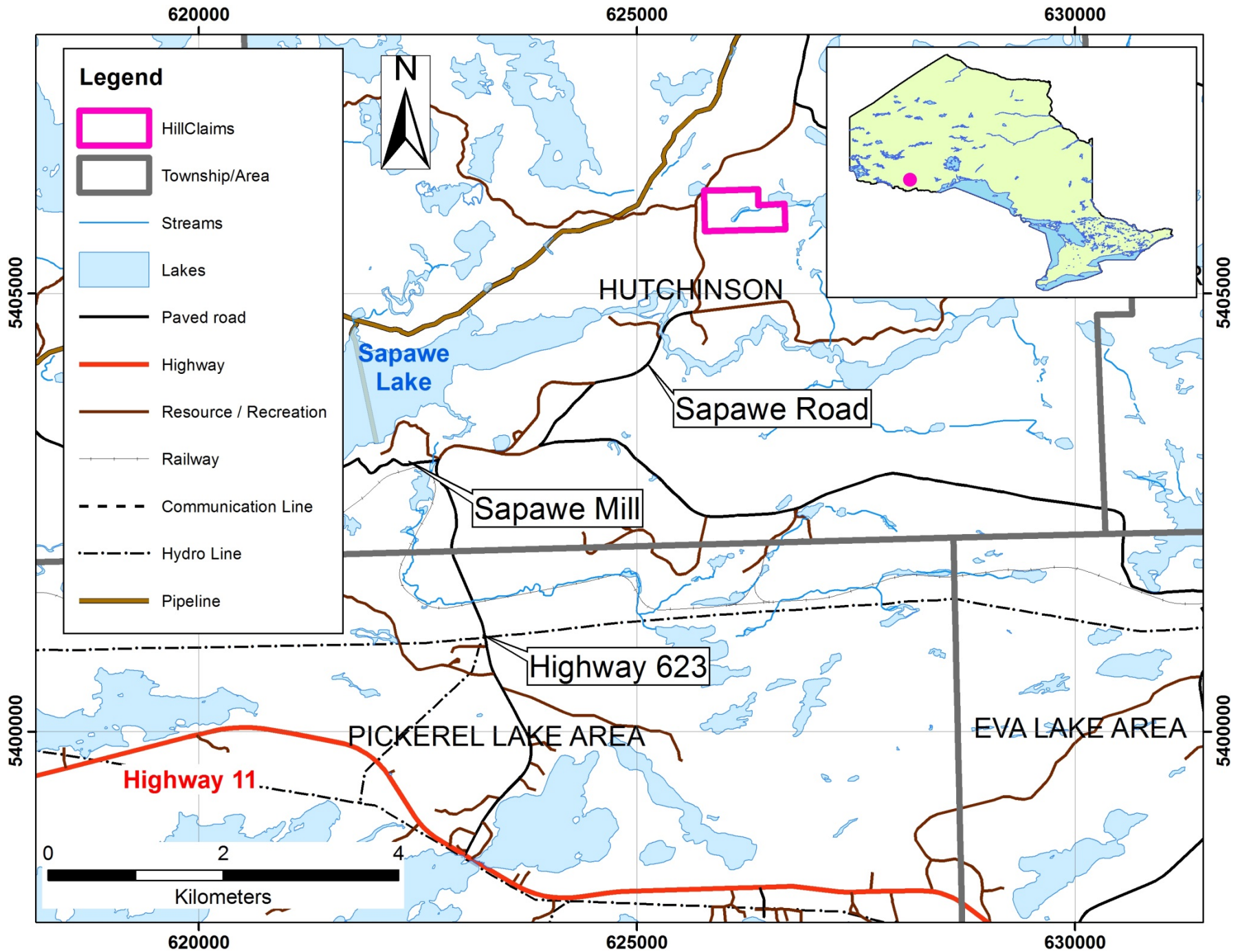


Figure 1: Location of the Hill Lake Gold property in Northwestern Ontario.

## 2.0 PROPERTY DESCRIPTION AND LOCATION

The Property occurs 22 km east of Atikokan (population 2800) in Hutchinson Township of the Thunder Bay Mining Division (Fig. 2). It is an approximately two hour drive from the larger center of Thunder Bay. The Property consists of 2 mineral tenures covering a total of 37.27 hectares, and is centered at approximately 626200E/5406000N (UTM Co-ordinates) or 48°37'37N/91°16'56W (latitude/longitude), in National Topographic System (NTS) 1:50,000 map sheet 52B/14 (Table 1; Fig. 2). All tenures comprising the properties are 90% owned by Karl Bjorkman (Client #108755) and 10% owned by Katarina Bjorkman (Client #392987) of Atikokan, Canada. The Hill Lake Gold property formerly part of a larger claim group. There are no known mineral reserves on the property, and no environmental liabilities accruing to the owners.

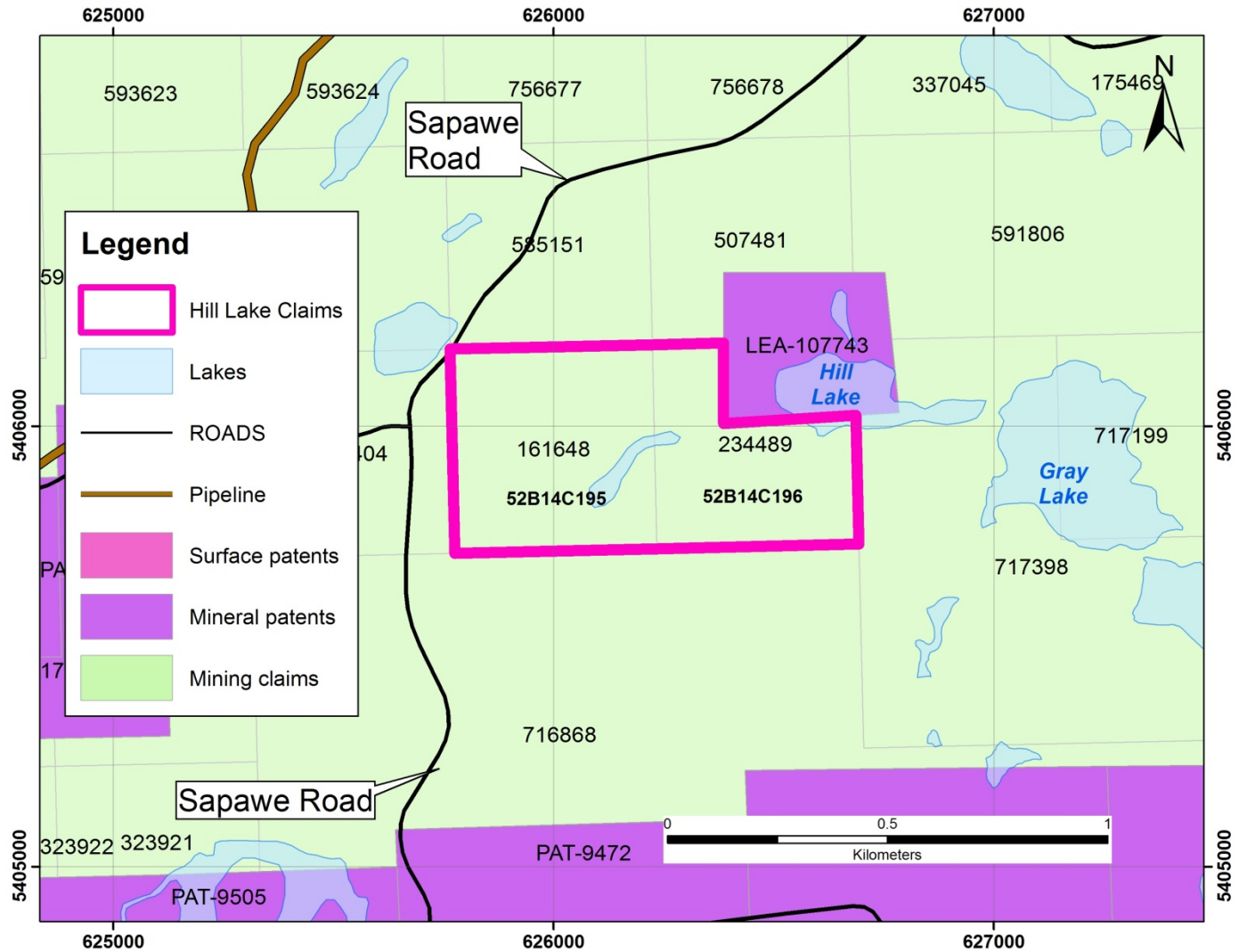


Figure 2: Mineral tenures of the Hill Lake Gold property, 100% owned by the Bjorkmans.

Table 1: Mineral Tenures Comprising the Hill Lake Gold Property

Provincial Cell #	Tenure #	Type	Issue Date	Good to Date	Area (ha)
52B14C195	161648	Single cell mining claim	4/9/2018	3/30/2023	21.27
52B14C196	234489	Single cell mining claim	4/9/2018	3/30/2023	21.27



### 3.0 ACCESS AND PHYSIOGRAPHY

Access to the Central Canada property is good granted one has a UTV. Road access is acquired by driving north from Highway 11 on Highway 623 (24 km east of Atikokan at the Sapawe turnoff). After 6 km on the 623, continue north another 6 km on the Sapawe Road (gravel). Then a trail provides access to the Property.

The property has moderate changes in topography (<30 m, varying from 430-460 m ASL), with rocky ridges and low-lying swamps and small lakes. Most of the land and is forested by a mix of balsam, birch, poplar, spruce and jackpine, with reasonably thick underbrush comprising alders, beaked hazel, mountain maple and res osier dogwood. Some of the area has been logged in the past. The overburden on ridges is most commonly poorly sorted till, and ranges from a skiff to several meters. Thus outcrop varies quite considerably, with about 2-7% typical exposure. That said, there is a large stripped area near the top of the claims from historical work.

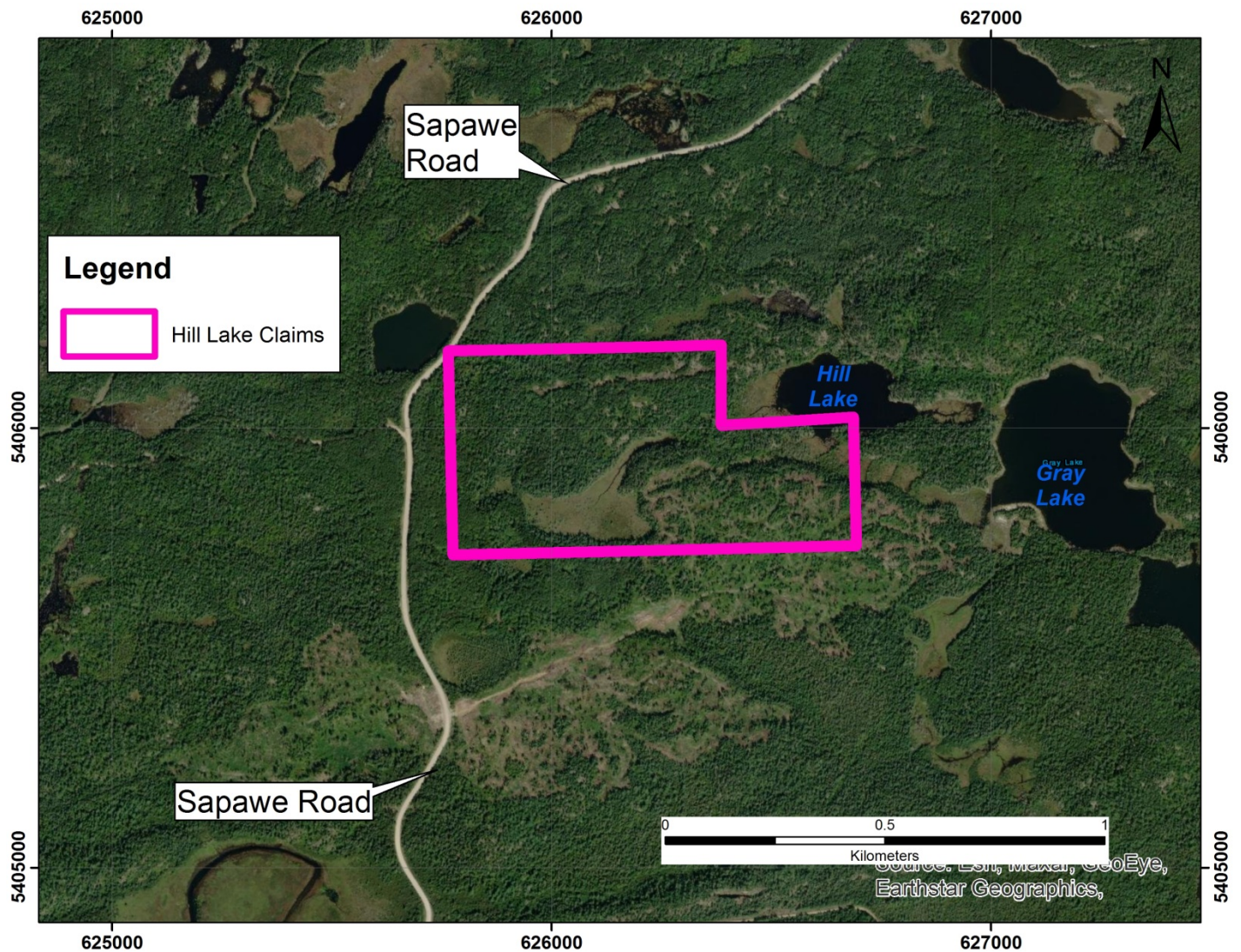


Figure 3: ESRI imagery showing property access and physiography for the Hill Lake Gold Property.



**Figure 4: Part of the prospecting crew on the property, showing the thick vegetation in regrowth forest of the area.**

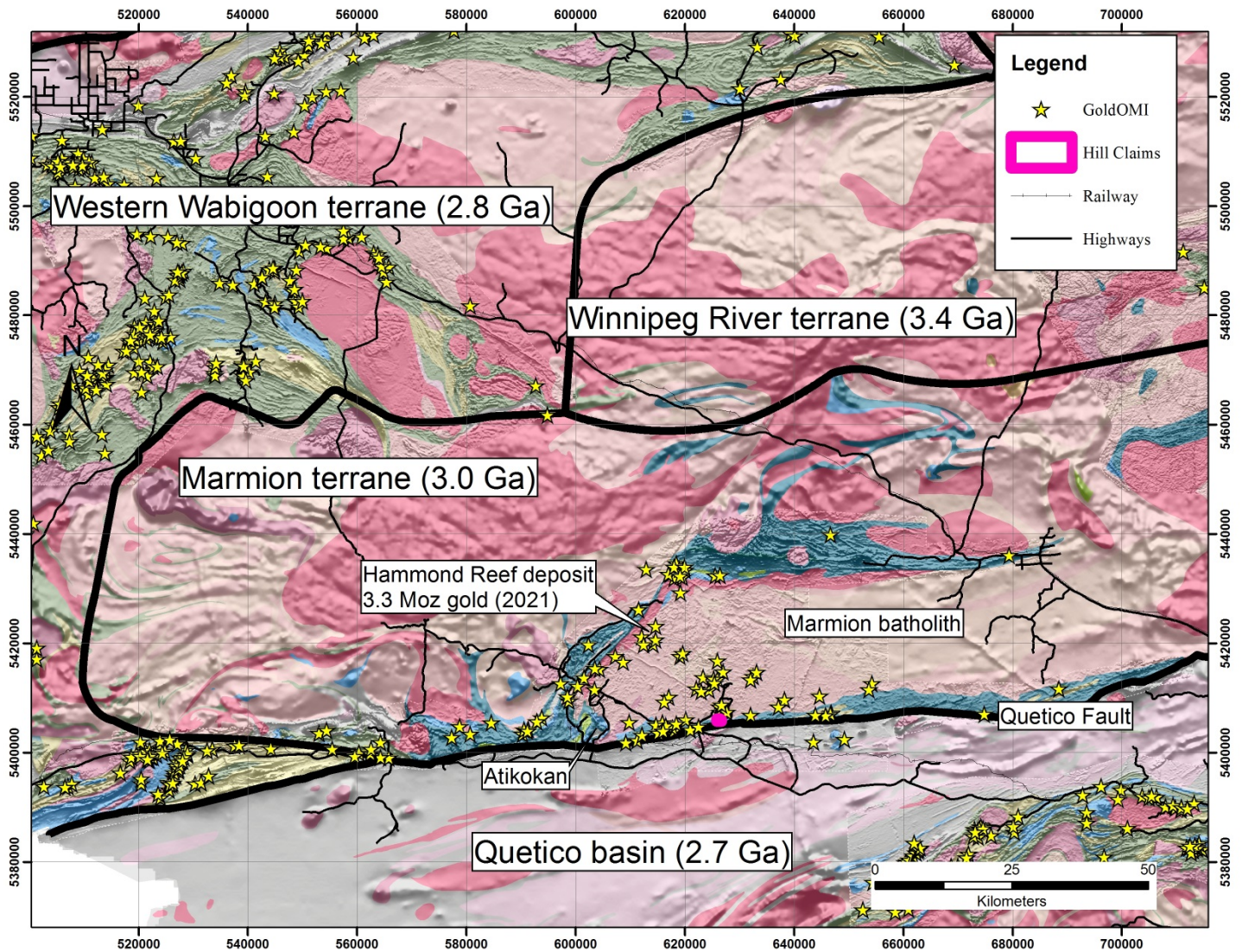
## 4.0 GEOLOGIC SETTING

### 4.1 Regional Geology and Mineralization

The property occurs in the southern margin the 3.0 Ga Marmion terrane of the south-central Wabigoon Subprovince in Northwestern Ontario (Fig. 5; Davis, 2006; Davis and Jackson, 1988; Tomlinson et al., 2003). The granite-greenstone Marmion terrane and Quetico sedimentary basin to the south are separated by the steep, craton-scale Quetico Fault, which occurs 1 km south of the Property. North of the Quetico Fault, the Marmion terrane is dominated by the multiphase TTG Marmion batholith, which is surrounded by Meso to Neoproterozoic greenstone belts with Lumby Lake to the north, Finlayson Lake to the west, Steep Rock to the southwest and the Lac Des Milles Lacs along the southern margin of the batholith. The Quetico basin to the south comprises thrust-imbricated meta-turbidites that young to the south.

The southern margin of the Marmion terrane hosts historical gold mines and occurrences, where most gold mineralization can be linked to north-northeast trending lineaments traceable for up to 80 km (Schnieders and Dutka, 1985), which commonly splay off of the Quetico Fault. The lineaments are expressed by shorelines, valleys and drainage systems, and represent faults or shear zones. East-southeast trending lineaments may also aid in the localization of gold. Anastomosing shear zones have been observed within or adjacent to the lineaments. Gold mineralization occurs in and adjacent to quartz veins, with associated alteration consisting of ankerite, sericite, chlorite, pyrite and local fuchsite and tourmaline. The gold-bearing veins are dominated by quartz, but also commonly contain pyrite, and may also have chalcopyrite, arsenopyrite, sphalerite, galena and visible gold (Schnieders and Dutka, 1985; Wilkinson, 1982). Lineaments are most commonly expressed as zones of chlorite schist, which can be several m thick and up to several km in strike length. Carbonate, sericite, and green chromium muscovite may be present, and pyrite is typically present in association with gold. Examples of mineralization in the Marmion batholith include the Hammond Reef, Roy, Pettigrew, Sunbeam, Reserve Island and Jack Lake deposits, which were discovered and explored in the late 19<sup>th</sup>/early 20<sup>th</sup> century and in some instances produced minor amounts of gold. Examples of gold mineralization within the greenstone belts along the southern margin of the Marmion terrane include Bedivere Lake, Olcott, Eagle, White Lake, the Zephyr Zone and the Central Canada property.

Agnico Eagle's 3.3 Moz Hammond Reef deposit is the key known gold within the terrane, and is hosted within the Marmion batholith within the northeast trending Marmion shear zone, <20km northwest of the Central Canada property. The most recent NI 43-101 compliant technical report (December 31, 2021) reports open pit probable mineral reserves (123.5 million tonnes grading 0.84 g/t gold); 0.8 million ounces of measured mineral resources (47.1 million tonnes grading 0.54 g/t gold) and 1.5 million ounces of indicated mineral resources (86.3 million tonnes grading 0.53 g/t gold; <https://www.agnicoeagle.com/English/exploration/exploration-projects/Hammond-Reef/default.aspx>). Agnico Eagle has also recently acquired and explored the Melema property directly northeast of the Hill Lake Gold property, where gold was discovered along a northeast trending structure hosted by the Marmion batholith.



**Figure 5: Regional geology of the south central Wabigoon subprovince, showing the terrane boundaries and locations of known gold mineralization.**

## 4.2 Property Geology

The Hill Lake property straddles the Marmion batholith to the north and the Lac Des Milles Lacs greenstone belt in the centre (Figs. 5, 6). The terrane-bounding Quetico Fault lies at the contact between mafic volcanic rocks of the Lac Des Milles Lacs greenstone belt and Quetico sediments, 1 km south of the Property. Also at the boundary lies the Atikokan Iron Range, a gabbro that hosts magnetite and Ni-Cu-Co sulphides, ~500 m south of the Property. Rocks north and south of the fault are strongly sheared parallel to the fault, with a strong chlorite-ankerite-sericite alteration halo.

The Lac des Milles Lacs greenstone belt is dominated by thick flows of aphanitic to medium grained andesite to basalt and gabbro with lesser intercalated dacite, rhyodacite and rhyolite flows and porphyries ranging from 3.02 Ga to 2.8 Ga (Leahey, 1984; Stone, 2008). All rocks have a strong greenschist overprint (Leahey, 1984) Abundant east-northeast trending felsic (granitic) apparent dikes occur on the property within the greenstone which have been historically mapped as quartz feldspar porphyries (Hawley, 1929). Structural complexity is such that it is not clear whether these are real intrusive dikes, or whether they are part of the Marmion batholith that have been structurally juxtaposed against the mafic rocks (Setterfield, 2012).

In addition to the steeply dipping east-west trending Quetico Fault, there are north-easterly splays. Although the schistosity along the Quetico fault is approximately parallel to the fault, north of the fault, the predominant foliation/cleavage dips ~ 70/070 (Leahey, 1984). Alteration is associated with shearing on the property and includes chlorite, carbonate, sericite, silica and locally tourmaline and fuchsite.

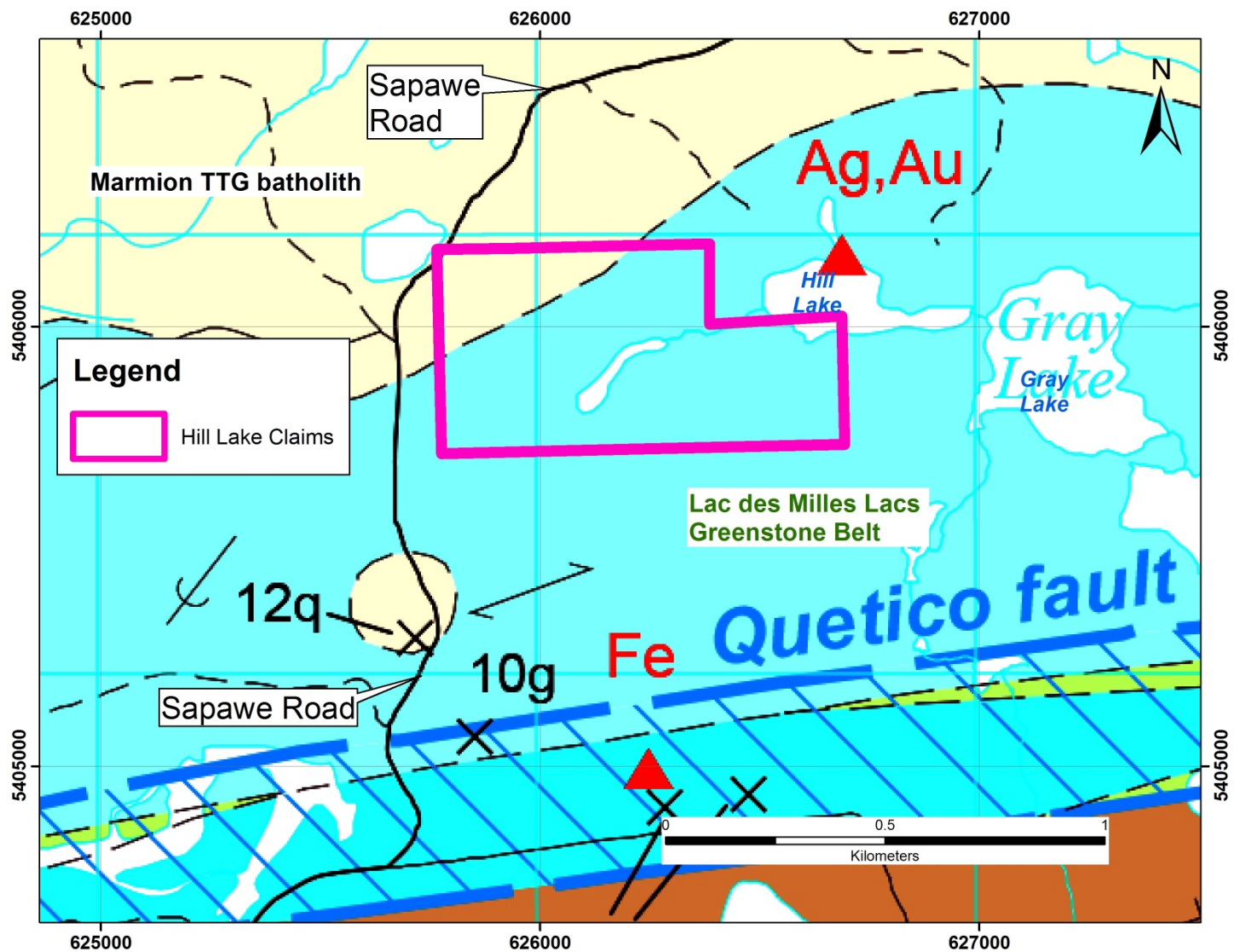


Figure 6: Geological map of the Hill Lake Gold property from Stone (2008).

#### 4.3 Hill Lake / Gray Lake Vein

The main mineralization on the Property occurs within an east-west trending shear zone in the north, that aligns with a lineament valley and is along strike with the Gray Vein, also known as the Hill Lake Vein, north of Hill Lake (Ontario Mineral Inventory # [MDI52B14SW00031](#)). The Hill Lake Vein has been classified by Wilkinson (1982) as contact type gold mineralization.

#### 4.4 Geophysics

The Property is covered by Ontario Geological Survey Airborne Magnetics. The magnetics highlight the regional anomaly associated with the magnetite-bearing Atikokan Iron Range (Shaded Relief, first derivative; Fig. 7). The data also highlight a zone of complexity associated with the Hill Lake Gold area, where there are several lineaments visible including: (i) a northeaster trending splay, (ii) an east trending lineament, (iii)

dislocations of lineaments from east-southeast trending structures and (iv) a strong magnetic low between the Property and the Iron Range to the south.

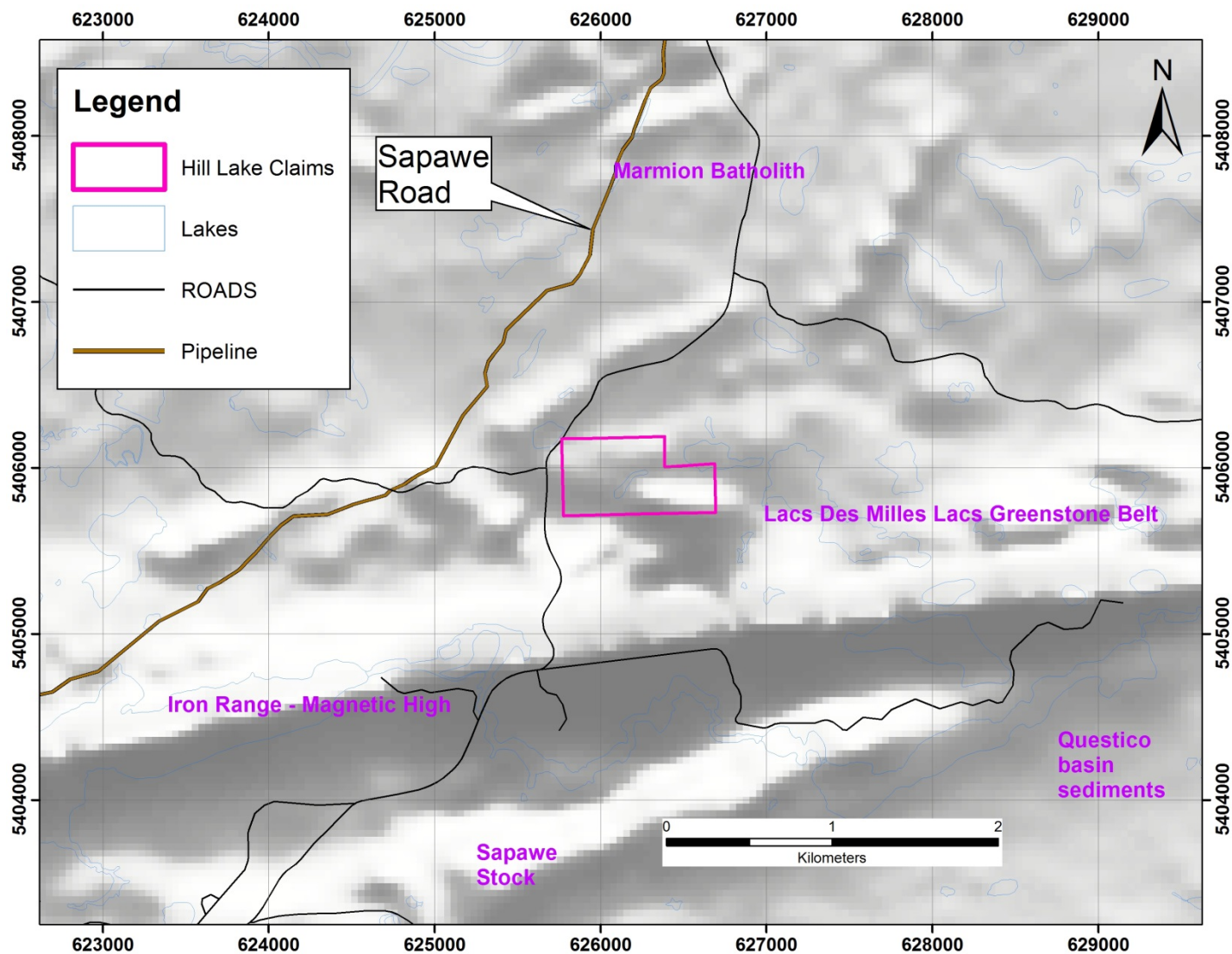


Figure 7: Total magnetic intensity image of the Property.

#### 4.5 Mineral Deposit Type

This program is exploring for and targeting orogenic lode gold. Orogenic lode gold deposits are concentrated along major crustal breaks, or structures that commonly mark major terrane boundaries in compressional to trans-tensional orogenic settings (Dubé and Gosselin, 2007; Hronsky et al., 2012). They tend to occur in quartz-carbonate veins within greenstone belts with high Fe basalts and felsic porphyries (Dubé and Gosselin, 2007). In Canada, the majority of gold comes from lode gold deposits within Archean greenstone belts.

The Hill Lake Gold project is one of many gold occurrences clustered along the terrane bounding Quetico fault on a secondary splay structure. By better understanding the structural setting and applying that to future targeting, it is hoped that new gold mineralization will be discovered.

## 5.0 PREVIOUS EXPLORATION

Gold exploration on the Hill Lake Gold Property has occurred since the early 1900's, but is poorly documented. The summary provided below of previous exploration is largely based on Davis (1986), and much of the exploration was focused outside of the current Property.

In 1897, the property was staked by John Greece of Port Arthur, and Thomas Wiegand, Thomas J. Morrison and Alexander A. Lockhart, all of Fort William. No record of discoveries or work performed is available. In 1926, the ground was re-staked by J. C. Hill of Toronto, Ontario. Stripping, trenching and sampling of numerous quartz veins within the Main Zone, northeast of the Property, was completed. The quartz veins were noted to contain minor sulphides and some visible gold.

In 1929 mapping by J. E. Hawley mapped the J. Hill claims on FF804 and FF805. Further he reported on FF864, FF885, 88, 890, 891 and others, earlier work consisted of stripping, trenching and sampling, including on the Property (Hawley, 1929).

From 1930 to 1968, the Property was re-staked on numerous occasions by several different parties. No record of associated work or discoveries is available. Then, in 1972 the ground was restaked by M. Wicheruk, a part time prospector from Atikokan, Ontario. Prospecting and trenching were conducted resulting in the discovery of a new gold showing on the north shore of Hill Lake. Subsequent power drilling was completed, but no results were reported.

In 1973, the property was optioned to Noranda Exploration Company Limited. They commissioned a 17.4 km cut line grid followed by ground VLF-EM and fluxgate magnetometer surveys as well as geological mapping and prospecting. In 1977, Mitch Wicheruk completed manual and mechanical trenching. Then, in 1980, Fern Elizabeth Gold Exploration Company Limited completed extensive stripping, trenching, sampling and prospecting on the ground, including in the area of the current Property.

Fern Elizabeth Gold Exploration Company Limited then optioned the property in 1981 to Camflo Mines Limited. Another 43.9 km line grid was cut. Geological mapping and sampling were completed in conjunction with VLF-EM, fluxgate magnetometer, and biogeochemical surveys. Furthermore, in 1982 Camflo Mines Limited drilled five diamond drill holes for a total of 323 m (1059.71 feet; see Fig. 8). Two of these holes targeted the Main Zone within the Property.

From 1983 to 1984, Fern Elizabeth Gold Exploration Company Limited continued stripping, trenching, blasting and sampling the property. In 1984 the property was optioned to Labrador Mining and Exploration Company Limited, who conducted 1:2500 and 1:200 scale mapping and sampling, prospecting, channel sampling, rock geochemistry, re-log and sampling of Camflo core, and spectral analyses. 422 rock samples were collected for gold and silver analyses, with a few also being analyzed for copper and arsenic. The sampling program was planned to provide a statistical background for examining potential of areas and lithologies, which highlighted that schists, followed by basalt, quartz veins, felsic volcanic, diorite and trondjemite concentrated the most gold. From there they highlighted anomalous samples for each lithology.

The exploration program of Labrador Mining and Exploration Company Limited focused on the Main Zone, which stretches from the Gray Lake / Hill Lake Vein north of Hill Lake over 1.4 km west, onto the current Property. The Main Zone is described as being an 8 m to 20 m wide, chlorite-sericite-iron carbonate schist with late quartz-carbonate tourmaline chlorite veins, veinlets and quartz pods containing local pyrite with lesser chalcopyrite, arsenopyrite, pyrrhotite and magnetite. They concluded that the Western part of the shear, on the current Property, has the most gold potential. This area includes the Ball Diamond Area, Breccia Area,

Daughter Vein and Copper Showing area, where several chip and channel samples were taken. Key assays from their program include:

Ball Diamond Area: 0.584 oz. per ton gold over 0.40 m (channel sample)

Breccia Area: 0.064 oz. per ton gold, 0.4 ppm silver and 26 ppm copper over 0.91 m (channel)

Daughter Vein: 0.24 oz. per ton gold, 0.4 ppm silver and 8 ppm copper across 0.10 m

Hill Lake Vein: 5.66 oz. per ton gold, 0.73 oz. per ton silver across 0.10 m and 24.76 oz. per ton gold and 1.0 ppm silver (grab sample; east of Property)

The Property also includes a showing of erythrite that contains anomalous gold (~300 ppb) documented by Davis (1986).

Five drill holes targeted the Main Zone on the Property. These include H-85-1, H-85-2, H-85-3, H-85-4, H-85-9, H-85-10 (Fig. 8). No results or drill logs are provided for these holes, but they are plotted on the geology map and the core is stored at the MNDM property in Thunder Bay and could potentially be examined in the future.

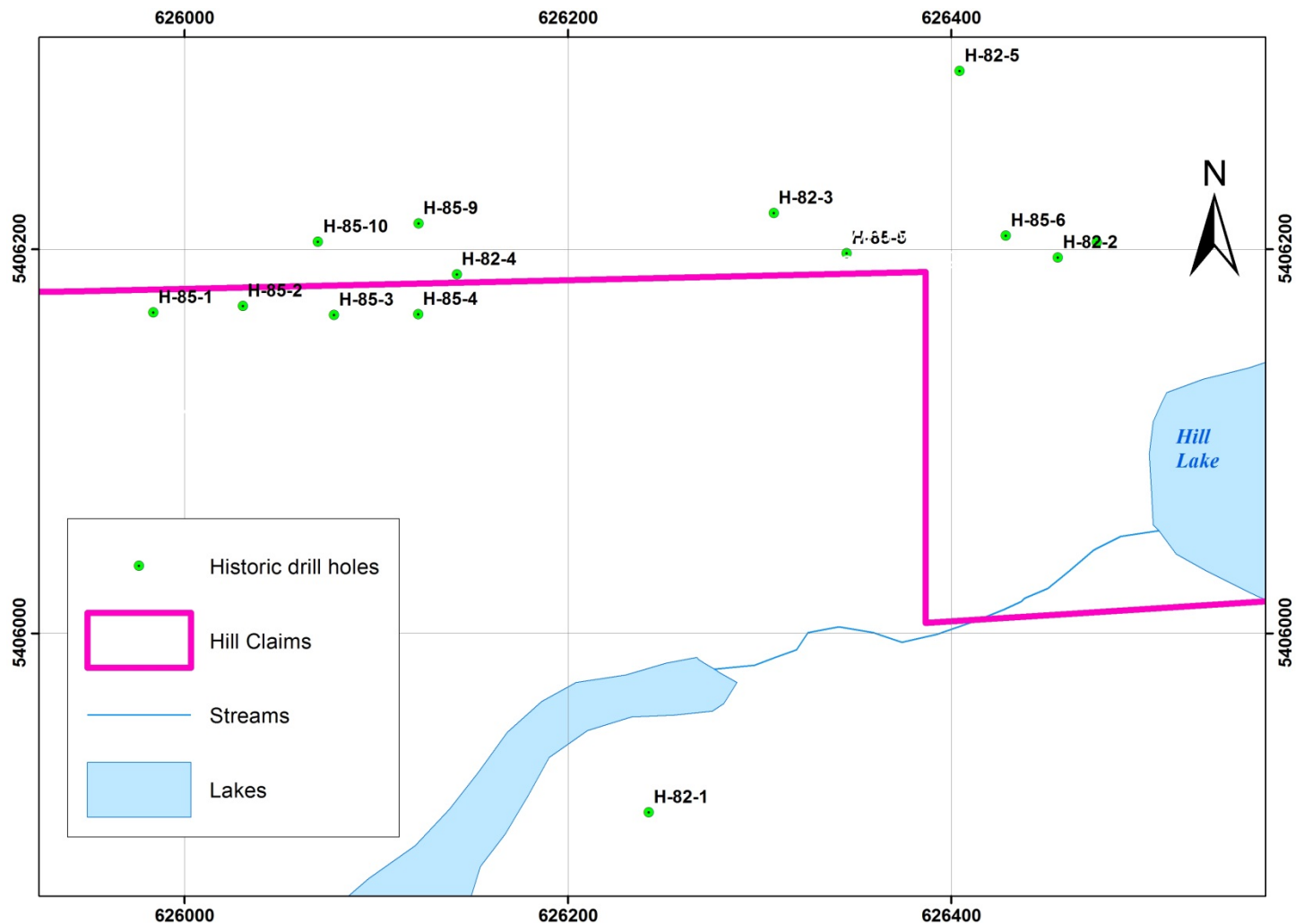


Figure 8: Locations of historical drill holes by Camflo (1982) and Labrador Mining and Exploration Company (1985)



## 6.0 2022 MAPPING AND PROSPECTING

### 6.1 Logistics of the 2022 program

On September 27 – 28<sup>th</sup>, 2022, a short exploration program was conducted on the Hill Lake Gold Property. The aim of the program was to provide access to the Property, locate and map historical showings, and gain a preliminary understanding of the geology and mineralization. This was accomplished by a short research effort, trail clearing, prospecting and mapping. The field team included prospectors Karl Bjorkman and Jessica Weber, and geologist Katarina Bjorkman. A pickup truck and UTV were used to access the Property from Sapawe Road.

In order to provide access to the mineralized zone, Karl, Jessica and Katarina cleared the UTV/ATV trail into the Main Zone mineralization, south of the Sapawe Road, which was used during historical exploration and during logging operations (Figs. 9, 10). The trail continues south and west back to the Sapawe Road. All 2022 exploration concentrated on the Main Zone mineralization contained within the Property. The Main Zone mineralization has been historically stripped for >200 m along its strike length, and about 20 m wide (Fig. 9). The previous stripping provides incredible bedrock exposure, but lichen cover masks much of the subtle geological features. Thus, the stripping is beneficial, but would be much more so if lichen is removed in the future.

In the short program, mineralized areas were located, described and mapped in, and five samples were taken. More time would allow for a better understanding of the area, but in general, the descriptions provided by Davis (1986) are helpful. However, some of the structural elements may have been overlooked, and the current mapping provides an improved understanding of structural elements. The results of the program are discussed below.



**Figure 9: Field photos from trail clearing and locating historical work. Left: Group photo during trail clearing. Right: Jessica examining the stripped outcrop.**

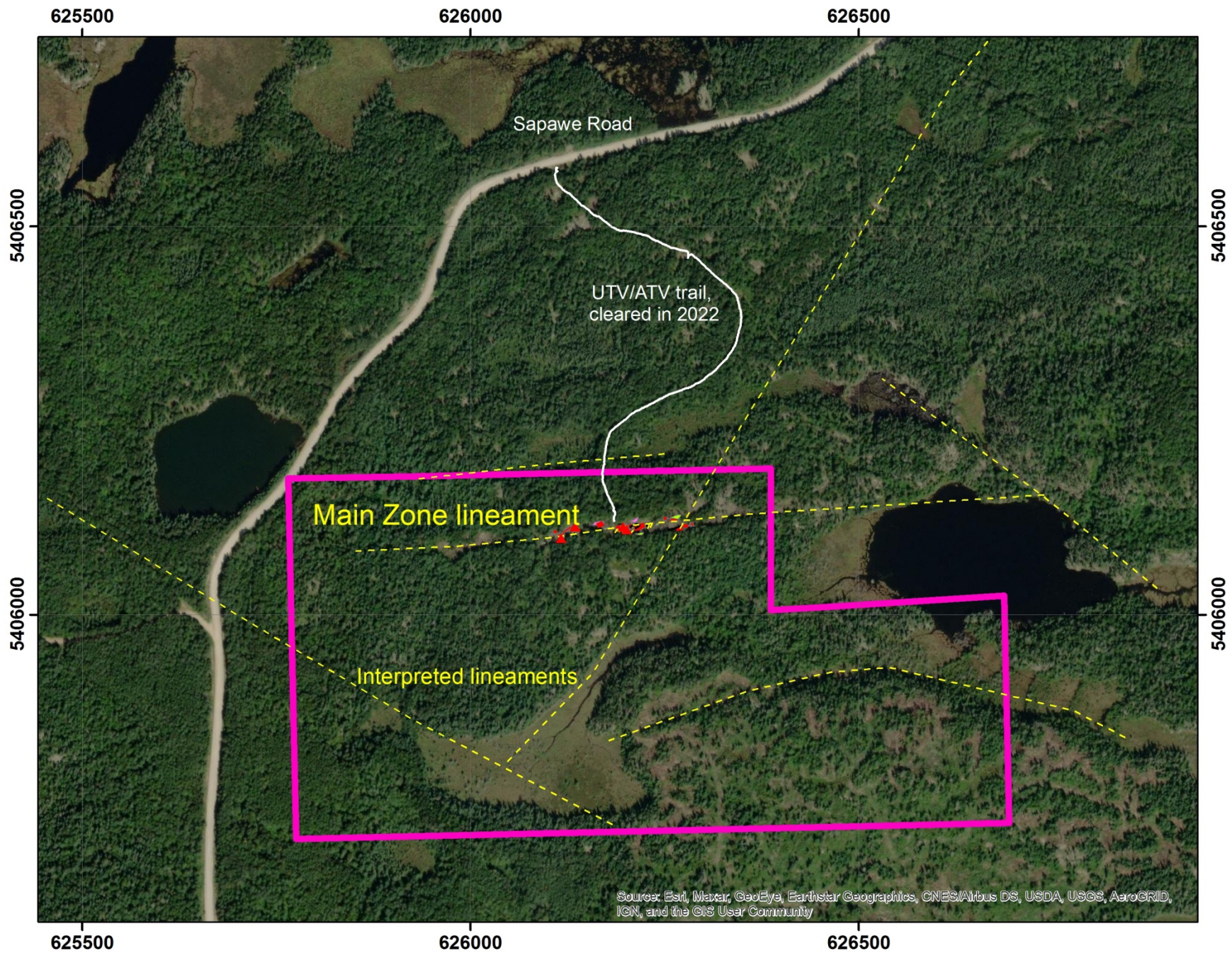


Figure 10: Location of 2022 work showing the location of the UTV/ATV trail and the Main Zone lineament where 2022 work was done. Samples taken are shown by the red triangles. Interpreted lineaments are shown in yellow.

**Table 2: Sample locations from 2022 prospecting.**

Sample ID	Date	Sample type	Rock	Easting	Northing	Elevation (m)
D903051	9/27/2022	Blast rock	QV, cpy mal	626117	5406097	446
D903052	9/27/2022	Blast rock	QV, cpy mal	626135	5406112	447
D903053	9/27/2022	Blast rock	QV, aspy	626135	5406113	447
D903054	9/27/2022	Outcrop	QV, aspy, mal	626201	5406108	446
D903055	9/27/2022	Outcrop	QV, aspy	626197	5406112	447

## **6.2 Results of Mapping and Prospecting**

Figure 10 provides a geological map for the area visited in 2022 including 2022 sample locations and historic channel sample locations in the Breccia and Copper areas (time ran out for mapping in the Ball Diamond area). The area covered could be mapped in far greater detail if time permitted. Moreover, the stripped area continues eastward, which should be mapped as well.

The area mapped is underlain by tonalite of the Marmion batholith to the north, and mafic volcanic flows intercalated with felsic volcanic flows and tuffs of the Lac des Milles Lacs greenstone belt to the south. Due to strong deformation, felsic volcanic horizons occur as elongated pods, possibly originally continuous, but boundinaged by the deformation. The area stripped is strongly sheared with an east-west fabric that dips steeply north. Quartz veins occur throughout the shear zone, commonly at a slightly oblique angle to the shear fabric. The veins are also deformed by shearing and folding.

Gold mineralization occurs in or alongside quartz - chalcopyrite  $\pm$  tourmaline  $\pm$  chlorite  $\pm$  pyrite  $\pm$  arsenopyrite  $\pm$  telluride  $\pm$  carbonate veins. The best mineralized zones (based on historical results) tend to occur in areas of structural complexity, dilation and in areas of folding. The rock types, structure, alteration and mineralization are described below.

### **6.2.1 Lithologies**

#### ***Mafic volcanic flows and tuffs***

Mafic volcanic rock is the most common lithology encountered in stripped area mapped. Mafic volcanic rock is fine grained, dark grey-green and comprises a greenschist alteration assemblage. It is moderately to strongly sheared and seldom retains original textures. Mafic volcanic rock becomes bleached and banded where highly strained and altered. It is possible that the banding has exploited a primary texture.

#### ***Felsic volcanic tuff & exhalite horizons***

Felsic volcanic pyroclastic rocks are localized near the breccia and copper mineralized zones and are commonly very strongly overprinted by alteration. They are commonly intercalated with exhalative chert – iron horizons. Where original textures are preserved, clasts vary from oblong to extremely elongated clasts, from ash through to lapilli size. Ash and crystal tuff are laminated on the mm to cm scale, giving the rock a strong banded appearance with dark green and pale yellow bands. Near the Breccia Area, this unit is very strongly silica – ankerite – tourmaline – pyrite  $\pm$  fuchsite  $\pm$  pyrite altered and has a laminated appearance.

#### ***Tonalite – granodiorite***

Tonalite is noted north of the stripped area and in places along the northern part of the stripped area. It is medium to coarse grained, light grey-green with 70% sausseritised plagioclase, 20% quartz and 10% mafic minerals altered to chlorite - sericite. There is local sericite alteration along fractures and quartz veins and local chlorite-sericite-silica-pyrite alteration associated near the contact.

#### ***Quartz veins***

Quartz veins occur throughout the stripped area, varying between <mm to >2 m wide, and with a variety of mineral associations and textures. Mineralized quartz veins tend to be associated with chlorite – tourmaline –

pyrite – chalcopyrite ± ankerite ± arsenopyrite; greater vein widths; and with zones of dilation and/or folding. The mineralized veins occur within mafic volcanic rocks at the Breccia and Copper Areas and within strongly sheared and altered tonalite with mm to cm veins that form a stock work at the Ball Diamond area, as well as within mafic volcanic rocks there. Pyrite is often euhedral and fine to medium grained, chalcopyrite is fine and blebby, whereas arsenopyrite is commonly medium to coarse grained. Sulphides occur disseminated in and concentrated along vein margins and tourmaline – chlorite seams.

### 6.2.2 Structure and alteration

The Main Zone trend was examined for over 200 m. The main structural trend hosting the mineralization dips very steeply to the north, but waves around (e.g., 80/346, 87/005, 89/020, 87/176). Examination of outcrop exposures suggests that lithological contacts as well as the mineralized structure has been transposed and folded by dextral shearing. Z folds were noted and can be seen in the mapping of quartz veins at the Breccia Zone (Figs. 11, 12). In general, increasing alteration intensity occurs towards the main mineralized structure, with changes in mineralogy as well, in the order of chlorite, calcite, ankerite, pyrite, sericite, quartz, and tourmaline with increasing proximity to veins. Late parallel faults dipping steeply to the southeast are concentrated in areas of mineralization, but have only cm – dm offsets (e.g., Fig 12). It is unclear if these late faults have a role in gold localization. Also noted were late joints and reverse faults dipping shallowly to the northeast (23/035).

### 6.2.3 Sample descriptions

Table 3 provides sample descriptions for rocks sampled in 2022. Samples were all taken in mineralized areas that included quartz vein material. Additional sampling should be done to better understand the localization of gold and silver in the system and allow for better targeting in the future.

**Table 3: 2022 rock sample descriptions.**

Sample ID	Rock	Colour	Description
D903051	QV, cpy mal	rusty	5cm loose piece of blast rock. Rose and white Quartz with 7% dark tour seams; moderate chlorite alteration. Minor cpy, mal, ht.
D903052	QV, cpy mal	yellow	80 cm loose piece of blast rock from trench. White quartz vein in sericite - quartz schist with 5% mm seams aspy; yellow staining in schist - orpiment? Moderate chlorite alteration. 3% aspy, trace orp, ht.
D903053	QV, aspy	yellow	80 cm loose piece of blast rock from trench. White quartz with seams aspy, 0.3%.
D903054	QV, aspy, mal	grey	10 cm banded white and grey quartz vein with 5% tourmaline. Hosted by MV - chlorite ankerite silica schist. Mal on fractures and vugs. 3% chunky aspy in veins, 0.1% malachite.
D903055	QV, aspy	grey	1 m banded white and grey quartz vein with 5% tourmaline. Hosted by MV chlorite ankerite silica schist. Folded blowout in vein. Chunky aspy in seams - 3%.

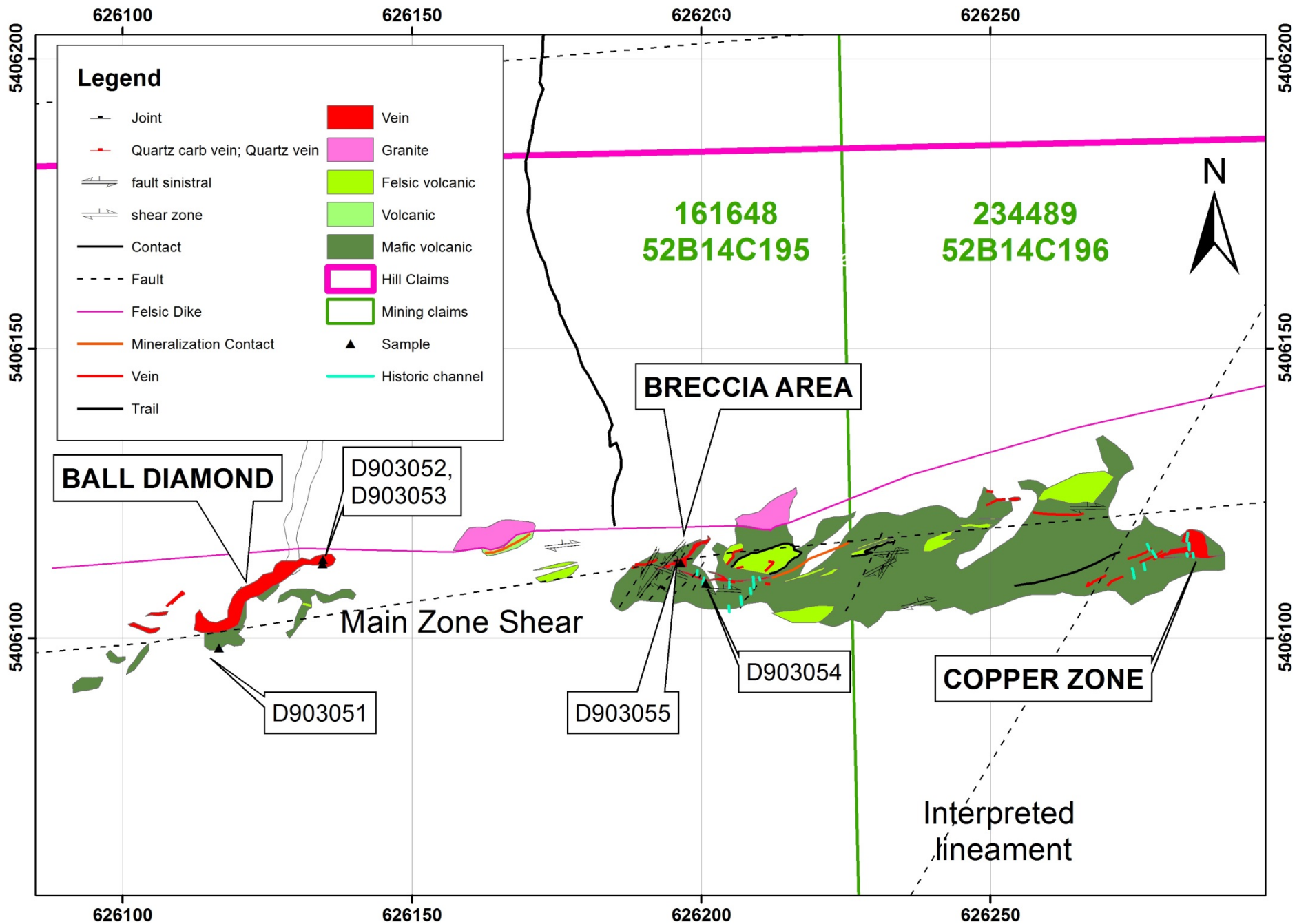


Figure 11: Geological map of the area of the Main Zone visited in 2022, with sample locations. This area is exposed by stripping but is lichen covered.

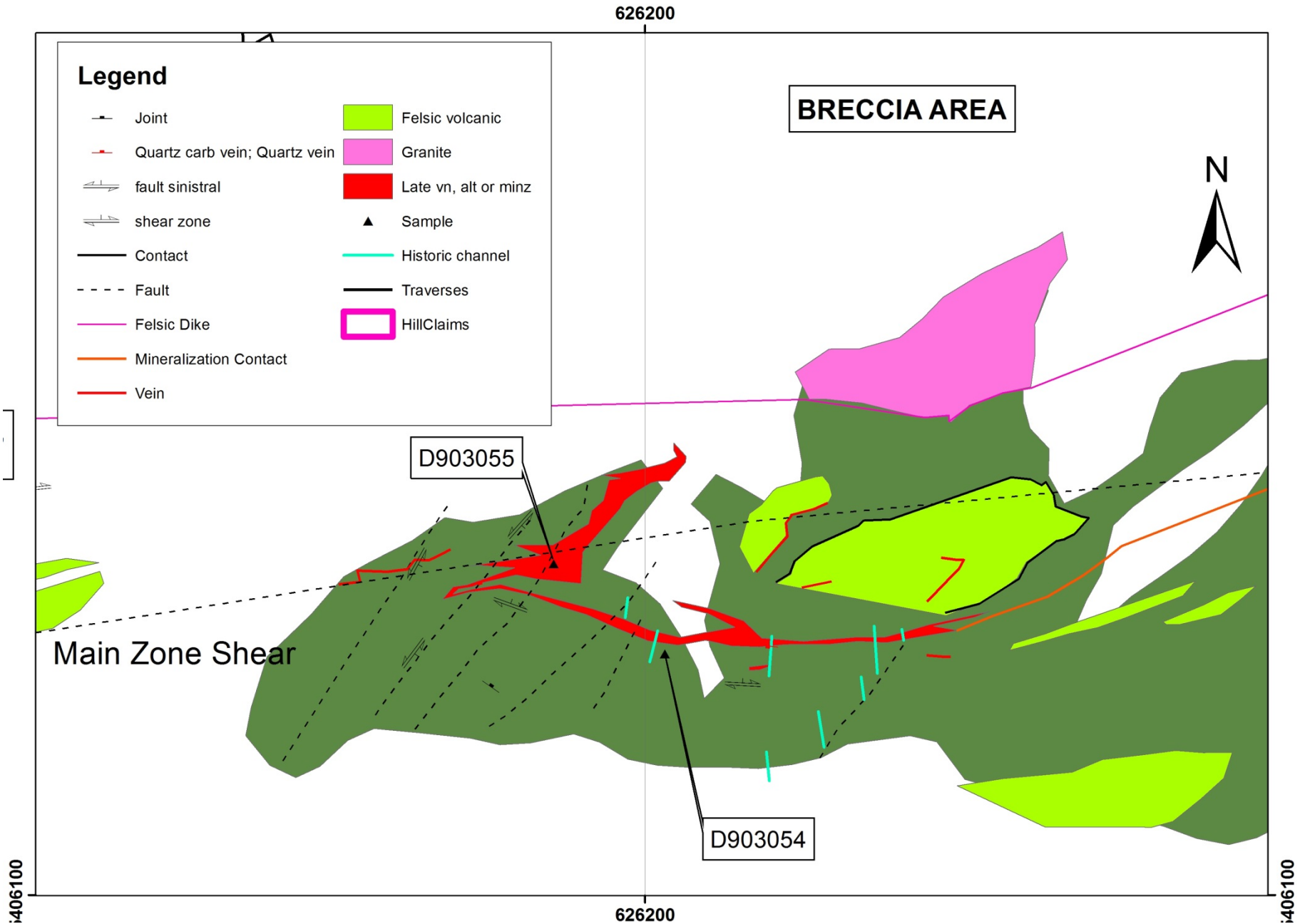
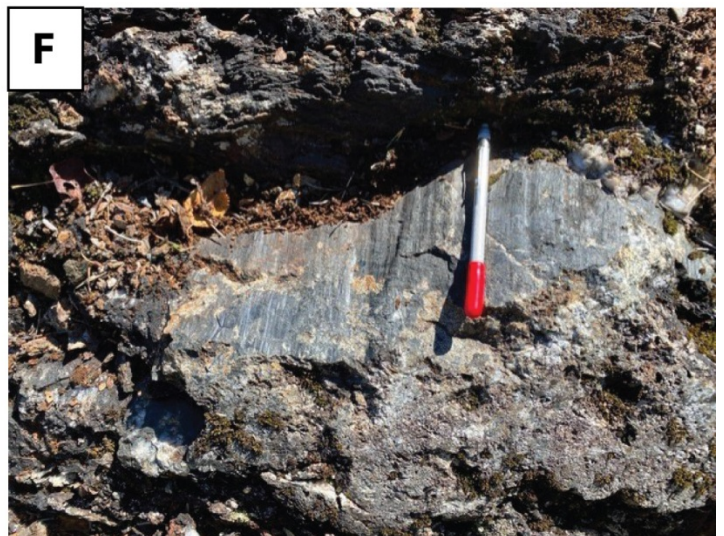


Figure 12: Geological map of the Breccia Area, showing that the main mineralized quartz veining is actually folded in a Z pattern consistent with dextral shearing. It also highlights the late northeast striking, southeast dipping faults in the area.



**Figure 13: Field photos of the Main Zone Shear on the Property. A. Quartz Vein at the Breccia Area, that folds in the area of mineralization, looking west. B. Quartz pod at the Copper Area in mafic schist, looking west. Further west there are a series of extension veins obliquely cutting the shear zone. C. Felsic volcanic lapilli tuff with flattened fragments containing quartz eyes. Contact is folded in a Z pattern. Hammer points south. D. Mafic volcanic schist, strongly chlorite – ankerite – sericite – silica altered. E. Late joint/faults cutting the shear zone (hammer). Photo is taken looking south. F. Late northeast dipping reverse fault with chlorite slickensides. Magnetite for scale.**



Figure 14: Field photos of 2022 samples in order of sample number from A – E respectively. F. shows the context for samples D903054 and D903055.



### 6.2.3 Gold results

Gold results are shown Table 4. The results ranged from 0.030 g/t to 57 g/t Au. These results are very encouraging for a first pass look! Perhaps there was visible gold that we missed. All samples were from quartz veins. The highest value came from the southern limb of the folded main quartz vein at the Breccia Area containing arsenopyrite, chalcopyrite and malachite, suggesting a role for chalcopyrite in the highest gold assay (Figs. 11 and 12). Quartz veining from the Ball diamond area also yielded encouraging results with 14 and 12 g/t Au. Clearly, follow up prospecting and mapping along the trend is warranted.

**Table 4: Results for 2022 samples**

<b>Sample ID</b>	<b>Rock</b>	<b>Au (ppb)</b>	<b>Au (g/t)</b>
D903051	QV, cpy mal	> 5000	14
D903052	QV, cpy mal	> 5000	12
D903053	QV, aspy	30	
D903054	QV, aspy, mal	> 5000	<b>57</b>
D903055	QV, aspy	> 5000	7

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

### **7.1 Summary of 2022 Exploration**

The Hill Lake Gold property occurs on the southern margin of the Marmion Terrane within the prolific Western Superior Craton. It is underlain by the 3.0 -2.8 Ga Marmion batholith in the north, 3.0 – 2.7 Ga Lac Des Milles Lacs greenstone belt in the south. The magmatic Atikokan Iron Range, Quetico fault and Quetico turbidites are all within 1 km to the south. All rocks are at greenschist facies and retain a strong planar fabric that parallels the Quetico Fault in the Main Zone and dips steeply north-northwest elsewhere.

Karl Bjorkman, Jessica Weber and Katarina Bjorkman completed prospecting and mapping from September 27 – 28, 2022. Key outcomes of the programs include: (i) the historical Main Zone was located and mapped for 200 m along strike; (ii) many historical channel samples were located and mapped; (iii) five samples were collected during prospecting, returning up to 56 g/t Au; (iv) old trails were cleared out and maintained.

Summer prospecting and mapping has shown a strong structural control on gold mineralization, where veining within the major east – west trending shear zones hosts gold. The shear zone is within a few tens of meters of the contact between the Marmion batholith and the Lac des Milles Lacs greenstone belt. Mineralized structures have been deformed and offset by folding and faulting. Mineralization is concentrated in zones of dilation/folding, which can help to target additional mineralization. Volcanic flows, tuffs and exhalative horizons are favourable host lithologies for gold-bearing quartz veins, but mineralization also occurs in strongly altered tonalite. The structure and the lithological contacts can guide future exploration

### **7.2 Recommendations for future work**

The results of the 2022 exploration are encouraging. Although previous work has shown that the gold mineralization is erratic, the potential for additional gold mineralization is high. We recommend additional programs to follow up on results and continue to explore for new mineralization: (i) completion of mapping and sampling in areas of historic mechanical stripping; (ii) continued prospecting and mapping in new areas, particularly along lineaments identified in 2022 research (Fig. 10); (iii) detailed ground geophysics (magnetic and IP surveys) to aid in targeting in areas of cover.

#### **7.2.1 Rock Washing, Mapping and Channel Sampling of stripped areas**

The area was mechanically stripped historically. The areas are now lichen covered. We recommend bleaching rocks to allow for better mapping, and continuation of the 2022 program. This is estimated to cost \$12000.

#### **7.2.2 Prospecting and mapping**

Prospecting should be continued across the property, with attention to lineaments identified in 2022. Although the property was mapped previously, improved GPS accuracy and a new outlook will allow for better detail in less time, and a more accurate spatial interpretation. This is estimated to cost \$15000.

#### **7.2.3 Ground IP and magnetic surveys**

We recommend a ground IP survey is completed over the Property to target for disseminated mineralization. This is estimated the cost to be \$10 000 for line cutting, \$20 000 for surveying and \$3 000 for interpretation, for a total of ~\$35 000.

## 8.0 CERTIFICATES OF QUALIFICATION

I, Katarina Bjorkman, PhD, P.Geol. do hereby certify that:

1. I am a Consulting geologist/owner of: Bjorkman Prospecting Inc.  
225 Whiskeyjack Road, PO Box 338  
Atikokan, ON, P0T1C0
2. I graduated with an HBS degree in Geology from Lakehead University in 2011. In addition, I have obtained a PhD in Geology from The University of Western Australia in 2017.
3. I have worked as a geologist for a total of seven years since my graduation from university and as a prospector for seven years prior to enrolling in geology.
4. I supervised and participated in the fieldwork on the Central Canada property described in this report.

Dated this March 24<sup>th</sup>, 2023.



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Katarina Bjorkman

## 9.0 STATEMENT OF COST

Type of Work	Type of Unit	No. of Days/Units/Items	Cost/Unit/Day	Start Date	End Date	\$ Total
Geological Mapping/research	days	2	800	9/26/2022	9/28/2022	1600
Prospecting	days	1	550	9/27/2022	9/27/2022	550
Trail Clearing	days	1	550	9/27/2022	9/27/2022	550
<b>Total Type of Work</b>						<b>2700</b>
Type of Associated Cost						
Assessment Report	days	3	800	3/1/2023	3/10/2023	2400
Truck Rental	days	3	55	9/27/2022	9/28/2022	165
GPS Rental	week	0.25	100	11/5/2020	12/22/2020	25
GIS Fee	week	0.25	100	9/9/2021	11/24/2021	25
Analytical Prospecting	assays	5	161.7	3/7/2023	3/17/2023	808.5
Kilometres (assays to lab)	kms	420	0.7			294
UTV Rentals	day	2	180	7/5/2021	11/24/2021	360
Chainsaw Rental	day	1	55	7/5/2021	11/24/2021	55
Expenses	misc	1	50	2/23/2021	11/24/2021	50
<b>Total Associated Cost</b>						<b>4182.5</b>

**Total Work & Associated Costs**

**6882.5**

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## **APPENDIX A: DAILY LOG**

### ***September 27<sup>th</sup>, 2023***

Karl Bjorkman and Katarina Bjorkman researched the Hill Lake Gold property, and prepared maps and targets. Karl, Katarina and Jessica drove to the Property via the Sapawe Road. At ~ km 6, they unloaded the UTV and cleared the trail into the Main Zone mineralization using a chainsaw and manual labour. The day was hot and sunny and they did not carry enough water! Generally, there is a lot of outcrop along the trail, but it is not on the property. The terrain is moderate with distinct ravine valleys and a few grassy swamps. The forest is regenerated from historic logging of the area.

Once at the stripped area, they looked for the main showing areas, including the Breccia, Ball Diamond, Copper and Daughter Areas. Most of these known areas are marked by blow-outs of quartz veins, or folded veins, as well as areas of blasted trenches and old channel samples. The mineralized veins are hosted mostly by volcanic rocks that are highly strained and strongly altered. The shear zone dips steeply north, but wavers along its length. The contact with the Marmion batholith is very close to the veins, and is in contact with the veins at the Ball Diamond area. They looked for visible gold at each location but could not find any. After a brief traverse of the area, they took five samples from the Ball Diamond and Breccia areas. It was quite late when they left the Property.

### ***September 28<sup>th</sup>, 2023***

Katarina Bjorkman returned to the Main Zone stripped area to map in lithologies, veins and structures. She was able to map about 200 m of the zone, but not in the detail that should be done. The outcrops are covered with thick lichen, so mapping is challenging. However, some of the key outcomes include noticing that the mineralized quartz vein is folded in a Z pattern, similarly the contacts between felsic and mafic volcanic rocks are folded. The best zones of mineralization are associated with fold noses.



Report No.: A23-03121
Report Date: 20-Mar-23
Date Submitted: 07-Mar-23
Your Reference: Hill Lake Gold

Katarina Bjorkman
225 Whiskeyjack Road
Atikokan Ontario P0T 1C0 Canada
Canada

ATTN: Katarina Bjorkman

CERTIFICATE OF ANALYSIS

5 Rock samples were submitted for analysis.

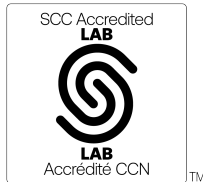
Table with 3 columns: Analytical package(s) requested, Testing Date, and details for samples 1A2-Tbay and 1A3-Tbay.

REPORT A23-03121

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3



LabID: 673

ACTIVATION LABORATORIES LTD.
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TELEPHONE +807 622-6707 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Tbay@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

CERTIFIED BY:

Handwritten signature of Mark Vandergeest

Mark Vandergeest
Quality Control Coordinator

Analyte Symbol	Au	Au
Unit Symbol	ppb	g/tonne
Lower Limit	5	0.03
Method Code	FA-AA	FA- GRA
D903051	> 5000	14.0
D903052	> 5000	11.6
D903053	30	
D903054	> 5000	56.9
D903055	> 5000	6.87



Analyte Symbol	Au	Au
Unit Symbol	ppb	g/tonne
Lower Limit	5	0.03
Method Code	FA-AA	FA- GRA
OREAS 229b (Fire Assay) Meas		12.1
OREAS 229b (Fire Assay) Cert		11.95
OREAS 229b (Fire Assay) Meas		12.2
OREAS 229b (Fire Assay) Cert		11.95
OREAS 238 (Fire Assay) Meas	3020	
OREAS 238 (Fire Assay) Cert	3030	
OREAS 257b (Fire Assay) Meas		13.6
OREAS 257b (Fire Assay) Cert		14.220
OREAS 257b (Fire Assay) Meas		14.3
OREAS 257b (Fire Assay) Cert		14.220
Oreas E1336 (Fire Assay) Meas	492	
Oreas E1336 (Fire Assay) Cert	510	
D903051 Orig	> 5000	13.0
D903051 Dup	> 5000	15.1
D903055 Orig		7.19
D903055 Dup		6.54
Method Blank	< 5	
Method Blank		< 0.03
Method Blank		< 0.03