



***LEOPARD LAKE GOLD***

NI 43-101

INDEPENDENT TECHNICAL REPORT

ON THE

LEDUC GOLD PROJECT

FOR

LEOPARD LAKE GOLD CORP.

BEARDMORE, ONTARIO

49.66° N, -87.53° W

Scot Halladay, P.Geo.  
Halladay Geological Consultants and Services  
Effective Date: July 19th, 2021

## Date and Signature Page

This technical report titled " NI 43-101 Independent Technical Report On The Leduc Gold Project For Leopard Lake Gold Corp., Beardmore, Ontario" and dated effective July 19, 2021 was prepared and signed by the Author:

Dated at Sudbury, Ontario this 19th day of July, 2021.

[*SIGNED and SEALED*]

"Scot Halladay"

Scot Halladay, P.Geo. (PGO # 1351)

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## **1.0 SUMMARY**

This technical report, entitled “43-101 Independent Technical Report on the Leduc Gold Project for Leopard Lake Gold Corp., Beardmore, Ontario” (this “Report”) was compiled mostly from company and government historical data and prepared and written by Scot Halladay, P.Geo., (the “Author”) at the request of Leopard Lake Gold Corp. (“Leopard Lake” or the “Company”) a private company formed under the Laws of British Columbia. This Report is specific to the standards dictated by National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (“NI 43-101”) in respect to the Leduc Gold Project (the “Property” or the “Leduc Gold Project”), which consists of a total of 9 unpatented mining claims (114 cells) and covers an area of approximately 2,290 hectares near Jellicoe, Ontario. This Report lists and describes the technical merits and economic potential of the project area and recommends additional exploration.

### ***Property Description, Location and Access***

The Property lies at the boundary of four NTS map sheets 42E/11E, 11L, 12H and 12I. The Property also borders the four townships of Leduc, Legault, South Beatty Lake Area and Leopard Lake Area, all within the Thunder Bay Mining Division. The approximate geographic centre coordinates of the Property are 49.66°N, -87.53°W (UTM coordinates 461500E, 5501000N, Zone 16U, NAD83). The overall Leduc Gold Project covers an area of approximately 2,290 hectares.

The Property is located 3km south of Jellicoe, Ontario along the Trans-Canada Highway 11. The Property is accessible via a series of all-weather roads, logging roads and ATV trails.

### ***Ownership***

Leopard Lake has entered into an option agreement dated August 17, 2020 (the “Option Agreement”) with Gravel Ridge Resources Ltd. (“Gravel Ridge Resources”) pursuant to which it has the option to acquire a 100% interest (the “Option”) in the 9 mining claims that constitute the Leduc Gold Project for cash consideration totaling \$81,000 and the issuance of 400,000 common shares of Leopard Lake. Gravel Ridge Resources is a private company formed under the Laws of Ontario. Pursuant to the terms of the Option Agreement, Leopard Lake has fulfilled a cash payment of \$12,000 due to Gravel Ridge Resources upon the execution of the Option Agreement. Upon the exercise in full of the Option, the Property will be subject to a 1.5% net smelter returns royalty held by Gravel Ridge Resources.

### ***History of Exploration***

From 1901-1922 iron was the main commodity explored for in the Beardmore-Geraldton area. The first well documented gold discovery was the King-Dodds occurrence in 1915. By 1925 T.G. Powers and P. Silam staked a gold-bearing vein near Beardmore that later became the Northern Empire Mine. The exploration of the immediate Geraldton area began in earnest in 1931. Through most of the 1930’s through to the end of the 1960’s the Beardmore-Geraldton Gold Camp has produced over 4.1 million ounces of gold and 300,000 ounces of silver from 20 different gold mines at an average head grade of 7.54 g/t Au.

Past work on the Property has been sporadic and much of it in conjunction with the various “gold” discoveries and mine openings between 1930 and 1960. Renewed exploration efforts are also synchronous with sporadic increases in the price of gold over the last 60 years. For the most part, the Property has undergone very little systematic exploration and has consisted mostly of trenching and sampling of the numerous banded iron formations, ground geophysical surveys of the 1980’s era and limited drilling from circa 1951-1988.

### ***Geology and Mineralization***

The Leduc Gold Project is situated within the Beardmore-Geraldton Greenstone Belt (BGB) of the East Wabigoon Terrane. The BGB is comprised of three metavolcanic and three metasedimentary units that are bounded by shear zones. The age of the belt ranges from 2.69-2.92 Ga (LaFrance et al. 2004). The sedimentary sequence suggests Timiskaming type units defined as a fluvial/alluvial depositional environment characterized by quick facies changes laterally and vertically. Polymictic conglomerate is the dominant sedimentary unit in the central sedimentary panel and is comprised of pebble to boulder sized clasts of variable compositions (granitic, felsic and mafic volcanic, jasper, black chert and quartz) in a feldspathic sandstone matrix indicative of a fluvial and/or alluvial depositional environment. The northern, central and southern sedimentary panels when taken together represent a shoreline to deeper water depositional environment (Lafrance et al, 2004).

Intrusive rocks within the belt consist of minor gabbro to diorite bodies and later quartz-feldspar porphyries stocks and sills, and the granodioritic Croll Lake Stock in the Geraldton-Longlac portion of the belt. Occasional Proterozoic diabase and related feldspar quartz porphyry dikes cut the belt. Metamorphism throughout the belt attained greenschist to lower amphibolite facies. The BGB has undergone four deformation events.

The Leduc Gold Project can be generally sub-divided into two distinct rock assemblages separated by the East Wabigoon-Quetico Subprovince boundary that transverses the Property. The rocks of the Quetico Subprovince consist of thinly bedded metasediments. North of the sub-province boundary mafic volcanic assemblages and their assorted counterparts dominate the East Wabigoon Subprovince.

Gold mineralization on the property has been largely exploited through prospecting, trenching, sampling and diamond drilling on the numerous banded iron formations that transverse the mafic volcanic package. The Lattimer showing is one such example of gold mineralization associated with a banded iron formation where a 1949 drill hole intersected **253.79 g/t Au over 0.49m**. The Jorsco Showing was also an area where exploration efforts concentrated on banded iron formations (**0.777 g/t Au over 1.22m, 0.31 g/t Au over 8.83m and 0.621 g/t Au over 1.22** in drilling). The Clist Lake showing has also documented gold in banded iron formation. Trenching efforts south of Dumont Lake by Prodigy Gold in 2010 also concentrated on banded iron formation documenting channel samples of **1.29 g/t Au over 1.22m and 0.88 g/t Au over 0.36m**. Prodigy Gold also documented gold in banded iron formation at the Keevil Mining trenches of **4.51 g/t Au over 1.09m** which included **7.31 g/t Au over 0.51m and 0.466 g/t Au over 1.26m**. Gold mineralization was also targeted in an iron formation southeast of Blackwater Lake by Harricana Gold Mines Limited in 1951. Drill hole 1 intersected **3.24 g/t Au over 9m** including **12.03 g/t Au over 1.82m** in a pyrrhotite rich chlorite schist.

### ***Status of Exploration***

As there are currently no mineral resources on the Property, the exploration status of the Property remains greenfield early stage. Since acquiring the Property, Leopard Lake has completed:

- 1) High resolution heli-borne magnetic survey;
- 2) Geological mapping and sampling; and
- 3) Ground Induced Polarization Gradient survey (IPGS).

### ***Deposit Types***

Through most of the 1930's through to the end of the 1960's, the Beardmore-Geraldton Greenstone Belt had produced over 4.1 million ounces of gold and 300,000 ounces of silver from 20 different gold mines at an average head grade of 7.54 g/t Au. These gold deposits are classified as orogenic lode gold deposits that occur in brittle-ductile structurally related regimes similar to the Kirkland Lake Gold Camp, the Timmins Gold Camp and the Pickle Lake Gold Camp to name a few. Orogenic gold deposit types should be the focus of future exploration activities on the Property.

### ***Interpretation and Conclusions***

Three styles of orogenic gold mineralization occur on the Property. These are, but not limited to:

- 1) Gold-enriched banded iron formation within the mafic volcanic belt;
- 2) Lode gold auriferous quartz-carbonate veins; and
- 3) Disseminated gold in silicified and chloritic shear zones.

The geological, geochemical and structural observations of the gold enriched banded iron formations at the Leduc Gold Project appear analogous to the historic Hardrock and McLeod-Cockshutt mines in Geraldton. Banded iron formation hosted gold deposits are and have been key producers of gold in Archean-aged greenstone belts and include the historic Pickle Lake gold camp and the current producing Musselwhite gold mine, both located in Ontario. Historical channel sampling by Prodigy Gold in 2010 at the Dumont iron formation trenches returned **1.29 g/t Au over 1.22m** and **0.88 g/t Au over 0.36m**. Highlights from the Keevil Trench (iron formation) **included 4.51 g/t Au over 1.09m** which included **7.31 g/t Au over 0.51m** and **0.466 g/t Au over 1.26m**. Sampling and mapping did confirm that these gold-bearing iron formations contain gold (Table 9.1).

Gold-bearing quartz-carbonate veins were the focus of the Northern Empire mine in Beardmore that is hosted within the same southern mafic volcanic suite as the Leduc Gold Project 30km to the northeast. The Northern Empire mine produced 149,493 ounces of gold and 19,803 ounces of silver from 1934-1941. Sampling by the Author along the Blackwater Fault in the northwest corner of the Property returned anomalous gold in a shear hosted quartz-carbonate vein.

Disseminated gold in silicified and chloritized shear zones are also common gold deposits in Archean-aged greenstone belts. Gold mineralization of this nature is primarily located in areas of high strain and deformation with brittle structures providing a pathway and hosting mineralization as veins or replacement zones with associated alteration. Harricana Gold Mines recorded **12.03 g/t Au over 1.82m** in a pyrrhotite-rich chlorite schist from a 1951 drilling program. Drill hole 21 (Jorsco Explorations, 1963)



within the Property intersected **0.621 g/t Au over 3.13m** in a silicified carbonatized section of mafic volcanics.

In conclusion, the Author is of the opinion that the Property remains highly prospective for the discovery of additional gold mineralization in the above gold deposit model types.

### ***Recommendations***

The Leduc Gold Project is an underexplored Archean greenstone property that has proven to yield important gold mineralization.

It is the opinion of the Author that the northeast corner of the Property north of Blackwater Lake holds good potential for immediate success. Historical drilling from 1963 and 1969 report gold values and lithological descriptions of unsampled sulphide mineralization, quartz-carbonate stringers and silicification typical of orogenic gold deposits in the Beardmore-Geraldton greenstone belt. The recent induced polarization gradient survey has outlined several favourable trends of high chargeability. The Jorsco Occurrence that contains historical documented gold mineralization to the west of the Property appears to extend onto the Property. No drilling has been performed in the northeast corner of the Property since 1969.

Gold mineralization intercepts from the 1951 drilling by Harricana Gold Mines Limited (13.19 g/t Au over 1.82m) should also be investigated further. Line-cutting and VLF-EM surveys in 1988 by Mingold Resources followed by 3 diamond drill holes did confirm gold mineralization with intercepts of 0.375 g/t Au over 1.7m and 0.356 g/t Au over 0.52m. This area has potential and has not been drilled or systematically explored since 1988.

It is recommended that compilation of all historical geological, geochemical and geophysical data into GIS referenced layers is the first and most important base of needed knowledge for methodical and diligent well-vectored exploration. Structural interpretation of all geophysical data to integrate mineralization is also recommended. Historical drilling needs to be verified in a high integrity database and modeled for mineralization and lithology. It is recommended that the above compilation be completed for the northeast corner and central portion of the Property.

When the above is compiled, interpreted and applied to modern day gold deposit model types, drilling should be performed on those targets with the highest merit and potential. A budget for a Phase I program of the above is estimated to cost \$107,000 (Table 1.1).

**Table 1.1** Estimated budget for Phase 1 exploration expenditures.

<b>Leduc Gold Project Phase I Exploration Budget</b>			
<b>Exploration Item</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Item Cost</b>
2D and GIS Compilation and Interpretation	1	\$20,000	\$20,000
Diamond Drilling (all-in costs of direct drilling, Senior Geologist, Technician, Room and Board, Supplies, Analyses, Rentals)	375m, 3 holes	\$200/m	\$75,000
<b>Sub-total</b>			\$95,000
<b>Field work + contingency</b>			\$12,000
<b>Total</b>			<b>\$107,000</b>

Scot Halladay, P.Geo. is a Qualified Person as defined by NI 43-101, and that by reason of his education, affiliation with a professional association and past relevant work experience fulfil the requirements to be a “Qualified Person” for the purposes of NI 43-101.

## 2.0 INTRODUCTION

At the request of Leopard Lake Gold Corp. (“Leopard Lake” or the “Company”), a private company formed under the laws of British Columbia which is seeking the listing of its common shares on the Canadian Securities Exchange (the “CSE”), Scot Halladay, P.Geo., (the “Author”) principal geologist of Halladay Geological Consultants and Services (HGCS) has prepared an independent technical report (this “Report”) on the Leduc Gold Project, located near Beardmore, Ontario. The Company has entered into an option agreement with Gravel Ridge Resources Ltd. (“Gravel Ridge Resources”) dated August 17, 2020, pursuant to which it has the option to acquire a 100% interest in the nine mining claims that comprise the Property.

This Report is an Independent Technical Report prepared in accordance with Canadian National Instrument 43-101 *Standards of Disclosure For Mineral Projects* (“NI 43-101”). This Report assesses the technical merit and economic potential of the Property and recommends additional exploration.

This Report has been prepared by Scot Halladay, P.Geo., PGO #1351. The Author has over 35 years in the exploration and mining industry with significant experience in gold (and Nickel – Copper – PGE) exploration and mining in greenstone belts of the Canadian Shield similar to the Beardmore-Geraldton Greenstone Belt. The Author visited the Property on May 27-28th, 2021 details of which can be found in Section 12.0.

The Author does not have a business relationship with Leopard Lake or Gravel Ridge Resources Ltd., other than acting as independent consultant to Leopard Lake for the preparation of this Report. The views expressed herein are genuinely held by the Author and considered independent of the issuer.

The Report is based on the Author’s knowledge of Archean and Proterozoic greenstone belt hosted gold deposits, their mineralization, alteration and structural environments, observations of bedrock exposures, over 300,000 meters of combined drill delineating and adding resources to Sudbury Nickel –

Copper – PGE mines, Au Mines in Ontario and exploration in the Abitibi Subprovince throughout Ontario and Quebec, and greenstone belts in Nunavut, Raglan, QC, and Greenland.

This Report was based on information known to the Author as of May – July 2021, with final compilation on July 19, 2021. Claim status was supplied by the Company, and the Author has verified the listing status of the original claims using the Ontario government’s online claim management system via the MLAS website. All sources of information are listed in Section 19 (References).

### **3.0 RELIANCE ON OTHER EXPERTS**

The Author is a Qualified and Independent Person as defined by NI 43-101, and was contracted by the Company to study technical documentation relevant to the report and to recommend a work program if warranted. The Author has reviewed the mining titles and their statuses, as well as any agreements and technical data supplied by the Company (or its agents) and any available public sources of relevant technical information.

The Author relied on information provided by the Company as follows:

- Information about the mining titles (Section 4.2) was supplied by the Company's CEO through an email and excel spreadsheet in July 2021. The Author is not qualified to express any legal opinions with respect to the property titles and possible litigation.
- Information about the Option Agreement (Section 4.3) was supplied by the Company representatives July 2021 through an email. The Author is not qualified to express any legal opinion with respect to the Option Agreement, Option and possible litigation.

## 4.0 PROPERTY DESCRIPTION and LOCATION

### 4.1 LOCATION

The Property is located immediately south of Jellicoe, Ontario, a town north of Lake Superior (Figure 4.1). The nearest settlement is the town of Geraldton (pop. ~1800) which is part of the regional municipality of Greenstone with current approximate population of 4,600 inhabitants. The Greenstone regional municipality includes the towns of Beardmore, Jellicoe, Geraldton, Nakina, Long Lac and Rural East and West. The Property lies at the boundary of four NTS map sheets 42E/11E, 11L, 12H and 12I. The Property also borders the four townships of Leduc, Legault, South Beatty Lake Area and Leopard Lake Area all within the Thunder Bay Mining Division. The approximate geographic centre coordinates of the Leduc Gold Project are 49.66°N, -87.53°W (UTM coordinates 461500E, 5501000N, Zone 16U, NAD83). The overall Leduc Gold Project covers an area of approximately 2,290 hectares.

**Figure 4.1.** Location Map of the Leduc Gold Project in Ontario. (source, Leopard Lake, July 2021).

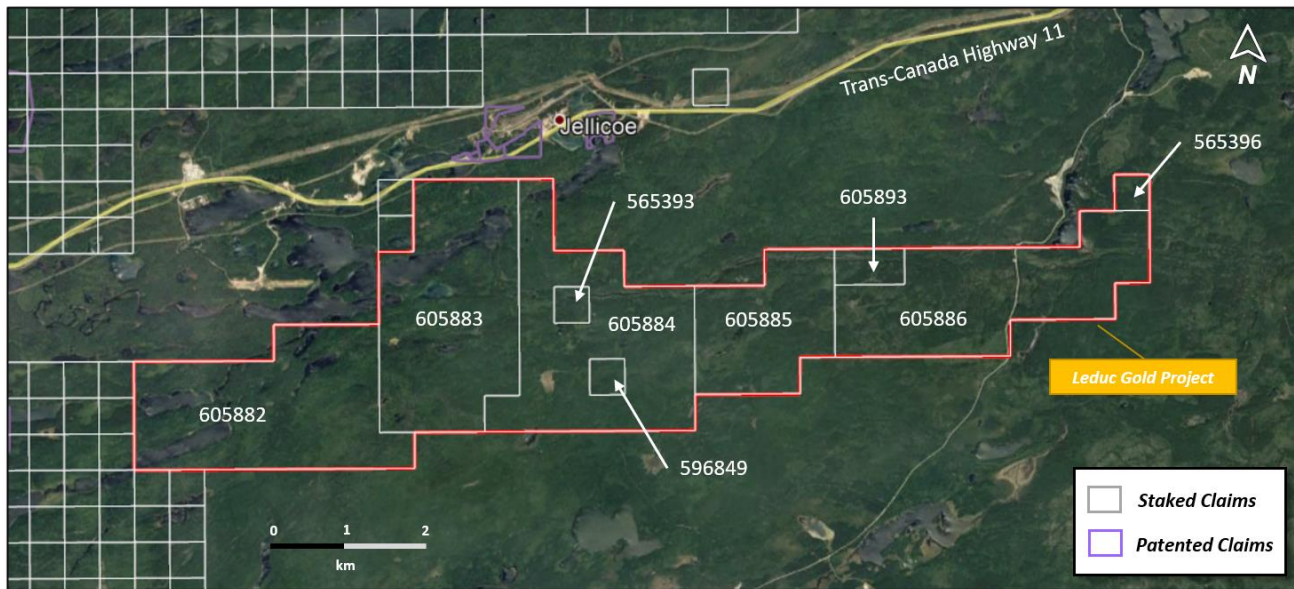


### 4.2. MINING TENURE

The Leduc Gold Project consists of a total of nine unpatented mining claims (114 cells) and covers an area of approximately 2,290 hectares (Figure 4.1). The claims are registered to Gravel Ridge Resources

according to the Ministry of Energy, Northern Development and Mines on-line Mining Land Administration System (MLAS). The claims registered to Gravel Ridge Resources are subject to the Option Agreement. Table 4.1 provides details of the mining claims pertaining to the Option Agreement.

**Figure 4.2** Claim fabric of the Leduc Gold Project, source MLAS.



**Table 4.1.** List of the mining claims of the Leduc Gold Project registered to Gravel Ridge Resources, MLAS.

Claim No.	Type	Status	Issue Date	Anniversary Date	Due Date	Owner Client No.	Number of Cells
<a href="#">565393</a>	Claim	Active	November 30, 2019	November 30, 2021	November 30, 2021	(10002746) Gravel Ridge Resources Ltd.	1
<a href="#">565396</a>	Claim	Active	November 30, 2019	November 30, 2021	November 30, 2021	(10002746) Gravel Ridge Resources Ltd.	1
<a href="#">596849</a>	Claim	Active	June 27, 2020	June 27, 2022	June 27, 2022	(10002746) Gravel Ridge Resources Ltd.	1
<a href="#">605882</a>	Claim	Active	August 7, 2020	June 27, 2022	June 27, 2022	(10002746) Gravel Ridge Resources Ltd.	25
<a href="#">605883</a>	Claim	Active	August 7, 2020	June 27, 2022	June 27, 2022	(10002746) Gravel Ridge Resources Ltd.	25
<a href="#">605884</a>	Claim	Active	August 7, 2020	June 27, 2022	June 27, 2022	(10002746) Gravel Ridge Resources Ltd.	24
<a href="#">605885</a>	Claim	Active	August 7, 2020	June 27, 2022	June 27, 2022	(10002746) Gravel Ridge Resources Ltd.	13
<a href="#">605886</a>	Claim	Active	August 7, 2020	June 27, 2022	June 27, 2022	(10002746) Gravel Ridge Resources Ltd.	22
<a href="#">605893</a>	Claim	Active	August 7, 2020	November 30, 2021	November 30, 2021	(10002746) Gravel Ridge Resources Ltd.	2

### 4.3 OWNERSHIP AND UNDERLYING AGREEMENTS

Leopard Lake has entered into the Option Agreement pursuant to which it has the option to acquire a 100% interest in the Leduc Gold Project for cash consideration totaling \$81,000 and the issuance of 400,000 common shares in its capital (the “Transaction”). Gravel Ridge Resources is a private company formed under the Laws of Ontario. Leopard Lake is a private company formed under the Laws of British

Columbia. Leopard Lake has fulfilled a cash payment of \$12,000 due upon the execution of the Option Agreement. Upon the Company acquiring a 100% interest in the Property, the Property will become subject to a 1.5% net smelter returns royalty held by Gravel Ridge Resources (the “NSR Royalty”).

#### 4.4 THE TRANSACTION

Leopard Lake will need to satisfy the terms and conditions of the Option Agreement made with Gravel Ridge Resources in order to gain 100% interest in the Leduc Gold Project. This includes:

- 1) A cash payment of \$12,000 to Gravel Ridge Resources upon the execution and delivery of the Option Agreement (completed);
- 2) A cash payment of \$14,000 to Gravel Ridge Resources on or before the 1<sup>st</sup> anniversary of the effective date of the Option Agreement, August 17, 2020 (the “Effective Date”);
- 3) A cash payment of \$20,000 to Gravel Ridge Resources on or before the 2<sup>nd</sup> anniversary of the Effective Date; and
- 4) A cash payment of \$35,000 to Gravel Ridge Resources on or before the 3<sup>rd</sup> anniversary of the Effective Date.

Pursuant to the terms of the Option Agreement, Leopard Lake will also need to issue common shares in its capital (each, a “Consideration Share”) to Gravel Ridge Resources as follows:

- 1) 200,000 Consideration Shares upon the listing of Leopard Lake on the CSE; and
- 2) 200,000 Consideration Shares on or before the 1<sup>st</sup> anniversary of the Effective Date.

Upon satisfaction of the above payments, the option granted to Leopard Lake pursuant to the Option Agreement shall be deemed to be exercised and an undivided 100% right, title and interest to the Property shall be automatically transferred to Leopard Lake. Gravel Ridge Resources shall promptly deliver to Leopard Lake a duly executed transfer in proper registered form conveying all of Gravel Ridge Resources’ right, title and interest in the Property (other than the NSR Royalty) to the Company.

If the Company exercises the option in full to acquire a 100% interest in the Property, the Company or its assigns shall have the right at any time to purchase from Gravel Ridge Resources 33.33% (being 0.5%) percent of the NSR Royalty from Gravel Ridge Resources for \$500,000 by way of certified cheque or bank draft within 30 days of such election by the Company. Upon such purchase and payment being made, the NSR Royalty shall thereafter be calculated as being reduced to 1.0%.

#### 4.5 ENVIROMENTAL LIABILITIES

The Author is unaware of any current environmental liabilities connected with the Property.

Permitting is required for many aspects of mineral exploration. Since the type of work being proposed for the Leduc Gold Project is considered preliminary exploration by the Ontario government, the permitting process isn’t particularly onerous. These permits will be acquired by Leopard Lake when required.

Under the *Mining Act* (Ontario), prospecting and staking in Ontario can occur on privately owned lands. A prospector must respect the rights of the property owner. Staking cannot disrupt other land use such

as crops, gardens or recreation areas, and the prospector is liable for any damage made while making property improvements. A claim holder may also explore on privately owned lands. Prior notification is required and exploration must be done in a way that respects the rights of the property owner.

Water crossings, including culverts, bridges and winter ice bridges, require approval from the Ministry of Natural Resources. This applies to all water crossings whether on Crown, municipal, leased or private land and includes water crossings for trails. Authorization may take the form of a work permit under the Ontario *Public Lands Act* (“PLA”) or approvals under the Ontario *Lakes and Rivers Improvement Act* (“LRIA”).

In circumstances where there is potential to affect fish or fish habitat, the federal Department of Fisheries and Oceans (“DFO”) must be contacted. Proper planning and care must be taken to mitigate impact on water quality and fish habitat. Where impact on fish habitat is unavoidable, a Fisheries Act Authorization will be required from DFO. In some cases, the Ministry of Natural Resources (“MNR”) and your local conservation authority may also be involved.

A work permit is required from MNR for the construction of all roads, buildings or structures on Crown lands with the exception of roads already approved under the *Crown Forest Sustainability Act*. Private forest access roads may not be accessible to the public unless under term and conditions of an agreement with the land holder.

Exploration diamond drilling may only occur on a valid mining claim. Ministry of Labour regulations regarding the workplace safety and health standards must be met during a drilling project. Notice of drilling operations must be given to the Ministry of Labour.

All new drill and boreholes should be properly plugged if there is a risk of the following:

- a physical hazard,
- groundwater contamination,
- artesian conditions, or
- adverse intermingling of aquifers.

Any previous drill holes found will be assessed of their condition and reported.

Appropriate plugging methods may vary and will depend on the type of hole and geology. Water well regulations through the *Water Resources Act* (Ontario) may apply.

The Author knows of no significant factors and risks that may affect access, title or the right or ability to perform work on the Property. The claim group is located within the Animbiigoo Zaagi'igan Anishinaabek (Lake Nipigon) First Nation Treaty Lands. It is the responsibility of Leopard Lake to consult and build agreeable relationships with those First Nations before any exploration efforts or mining is to proceed.

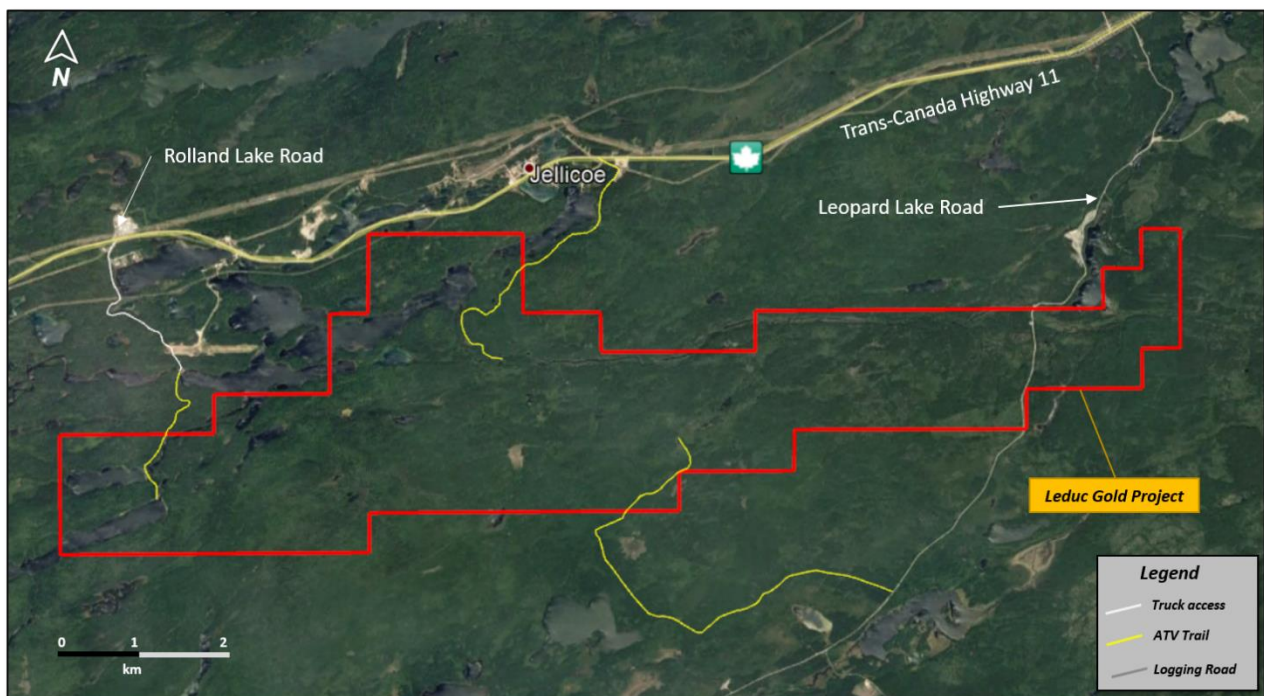


## 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE and PHYSIOGRAPHY

### 5.1 ACCESSIBILITY

The Leduc Gold Project is located south of Jellicoe, Ontario. The northwest corner of the claim group touches the Trans-Canada Highway 11 (Figure 5.1). The Property is accessible via a series of all-weather roads, logging roads and ATV trails which junction with Highway 11.

**Figure 5.1.** Access to the Leduc Gold Project, source Google Earth.



### 5.2 CLIMATE

The area exhibits a northern boreal climate, with short, warm summers and cold winters distinguished by abundant snowfall. Freezing temperatures can be expected from late October through mid-May with mid-winter temperatures reaching as low as  $-40^{\circ}\text{C}$ . Exploration may be hampered in the spring during thaw and fall during freeze-up. The property contains a mix of low-lying areas and steeper ridges, and as a result drilling may be optimal during winter months.

### 5.3 LOCAL RESOURCES

The closest community of substantial size is Geraldton, Ontario 50km east of the Property on Highway 11 (population approximately 1,800). Geraldton has a history of mining dating back to the 1930's and has supported mining and exploration over the last 90 years. Geraldton can be regarded as a source of some exploration and mining equipment, supplies and personnel.

## 5.4 INFRASTRUCTURE

Infrastructure located near the Leduc Gold Project includes the Trans-Canada Highway, hydro-electric power and a natural gas line all parallel to the bordering Highway 11. The expanse of the Property of 2,290 hectares provides ample space for the sufficiency of surface rights for mining operations, potential tailings storage areas, potential waste disposal areas, heap leach pad areas, and potential processing plant sites.

## 5.5 PHYSIOGRAPHY

The Leduc Gold Project is located within the Canadian Shield which is a major physiographic division of Canada. The region is dominated by mixed forest stands typical of the forests north of Lake Superior. Spruce, cedar and tamarack occupy low-lying areas with poplar, birch and pine primarily found along drier ridges. There are areas of moderate good bedrock exposure especially along the ridges. Overburden cover is mostly shallow except in rare boggy areas. The Property ranges in elevation from approximately 330m to 380m above sea level. Water for drilling is readily available from small ponds and lakes located within the claim block and from several creeks that transverse the Property.

## 6.0 HISTORY

From 1901-1922, iron was the main commodity explored for in the Beardmore-Geraldton area. The first well documented gold discovery was the King-Dodds occurrence in 1915. By 1925, T.G. Powers and P. Silam staked a gold-bearing vein near Beardmore that later became the Northern Empire Mine.

The exploration of the immediate Geraldton area began in earnest in 1931. Bruce (1936) describes the early history of the Geraldton Gold camp: “The story of the discovery of the orebody of the Little Long Lac Mine, which led to the renewed interest in the Little Long Lac area, is a somewhat unusual one. During the war, Tony Oklend went to Little Long Lac and built himself a cabin on the property now held by Long Lac Lagoon Gold Mines. In the course of his trapping along the shores of the lake, he discovered, south of the Main narrows, a boulder in which there was a metallic mineral. Oklend took samples of this to the Hudson's Bay post at Long Lac, where it was identified as gold. It is said that he chiseled a considerable quantity of gold out of this boulder. Later, rumours of this got abroad, and claims were staked covering the country in which the boulder had been found. No discoveries seem to have been made, and most of the claims were allowed to lapse”. Undeterred Oklend returned to the area of the boulder, and with his partner Johnson and finally found the source of the high-grade boulder in a shear zone submerged in water. This site later became the Little Long Lac Gold mine which produced 605,499 ounces of gold up to 1956.

Through most of the 1930's through to the end of the 1960's the Beardmore-Geraldton Gold Camp had produced over 4.1 million ounces of gold and 300,000 ounces of silver from 20 different gold mines at an average head grade of 7.54 g/t Au (Mason et al., 1985) (Table 6.1).

**Table 6.1.** Historic gold production of the Beardmore-Geraldton Greenstone Belt (source OGS Open File Report 5538).

<b>HISTORIC PRODUCTION – BEARDMORE-GERALDTON DISTRICT</b>			
<b>Minesite</b>	<b>Short Tons Mined</b>	<b>Gold Grade (oz/t)</b>	<b>Gold Ounces Produced</b>
Bankfield	231,009	0.29	66,417
Brengold	46	2.91	134
Crooked Green Creek	1,455	0.32	471
Hard Rock	1,458,375	0.18	269,081
Jellicoe	10,620	0.40	4,238
Leitch	920,745	0.92	847,690
Little Long Lac	1,780,516	0.34	605,499
MacLeod Cockshutt	10,337,229	0.14	1,475,728
Magnet Consolidated	359,912	0.42	152,089
Maloney Sturgeon	1	73.00	73
Maylac	1,518	0.52	792
Mosher	2,710,657	0.12	330,265
Northern Empire	425,866	0.35	149,493
Orphan	3,525	0.70	2,460
Sand River	157,870	0.32	50,065
Sturgeon River	141,123	0.52	73,438
Talmora	6,634	0.21	1,417
Tashota	51,200	0.24	12,356
Theresa	26,120	0.18	4,785
Tombill	190,622	0.36	69,120
<b>TOTAL PRODUCTION</b>	<b>18,815,043</b>	<b>0.22</b>	<b>4,115,611</b>

## 6.1 EXPLORATION HISTORY OF THE LEDUC GOLD PROJECT

A brief history of exploration is summarized below of the Leduc Gold Project. The Property was staked through the on-line staking platform of the Ministry of Energy, Development and Mines as per Table 4.1. Prior ownership in whole or part of the current Property has greatly changed over the last 100 years and is not the focus of this section. The earliest evidence of any exploration on the Property was reported in the 37<sup>th</sup> Annual Report of the Ontario Department of Mines in 1928.

**1928: Nipigon Mining Syndicate** conducted prospecting and trenching. This work revealed a banded iron formation which was traceable for 2,000m and up to 3m wide south of Dumont Lake.

**1949: C. Lattimer** drilled 286.3m in 9 drill holes at the “Lattimer” occurrence which consisted of replacement pyrite in a banded oxide formation in some of the holes. In other holes, an intersection of **253.79 g/t Au over 0.49m** was recorded in hole 3-N in sample number 1816 (AFRI 42E11NW0070) that from the drill log is contained in a carbonaceous sediment (contact of argillite – greywacke) unit within 3 m of the “diorite” contact. It is associated with pyrite, pyrrhotite in quartz – carbonate stringers.

**1951: Harricana Gold Mines** drilled 8 diamond drill holes for 653.8m in the central portion of the Property following trenching efforts. Hole 1 recorded **12.03 g/t Au over 1.82m** in a pyrrhotite rich chlorite schist contained within a broader intercept of **3.24 g/t Au over 9m**. All values were negligible through the next six holes. Hole 7 recorded **4.36 g/t Au over 0.91m** (AFRI 42E12NE0165).

**1961: Keevil Mining Group** performed mapping, trenching and diamond drilling east of Dumont Lake. Banded iron formation, mafic volcanics and feldspar porphyry were exposed. A plan of their trenching efforts was submitted along with hole locations but it is not known if the holes were ever drilled. No drill logs or assays can be found (AFRI 42E11NW0083 reference).

**1963: Jorsco Exploration Ltd.** drilled 22 diamond drill holes for 1,681.4m. Most of the drilling occurred at the “Jorsco” occurrence (west of the current property boundary) which targeted a gold-bearing cherty banded iron formation. Highlights from the Jorsco occurrence (MDI 42E12NE0020) include **0.777 g/t Au over 1.22m**, **0.31 g/t Au over 8.83m** and **0.685 g/t Au over 1.22**. Drill hole 21 within the Property intersected **0.622 g/t Au over 4.57m**. Much of the historical exploration from 1963-2008 has concentrated on these reported results with numerous trenching, sampling, mapping and geophysical surveys in and around the Jorsco showing (AFRI 42E12NE0070).

**1969: International Canadian Nickel Co. Ltd** drilled 4 diamond drill holes totaling 270.9m on apparent magnetic highs on the Property south and north of Blackwater Lake. Logs were submitted but contain no assay results (AFRI 42E12NE0061). In particular, drill hole 42925 describes 2.13m of massive sulphides within a 76.19m drill hole that hosted intervals of quartz-carbonate stringers and sulphides within silicified and graphitic andesites.

**1984: R.J. McGowan** performed ground VLF and magnetometer survey over the Lattimer Occurrence (AFRI 42E11NW0063).

**1987: Phantom Exploration Services** performed ground magnetic and VLF survey over the Lattimer occurrence (AFRI 42E11NW0055).

**1987: Terraquest Ltd.** flew an airborne VLF electromagnetic and magnetic survey over a large portion of the Property for Mingold Resources Inc. (AFRI 42E11NW0084).

**1988: Mingold Resources** performed line-cutting, electro-magnetic and magnetic ground geophysical surveys, soil and litho-geochemical surveys, reconnaissance and detailed mapping and diamond drilling over portions of the Property. A total of 213.2m was completed in 10 diamond drill holes. A majority of the drilling concentrated on the Clist Lake banded iron formation gold occurrence west of the current Property boundary. Drill holes BLW 8-10 were drilled within the Property boundary. Drill hole BLW-8 was drilled at the former 1951 Harricana trenching and drill area where massive pyrrhotite in a graphitic chlorite schist reported **0.375 g/t Au over 1.71m**. Holes BLW 9 and 10 targeted VLF and ground EM anomalies with disappointing results (AFRI 42E11NW0083 and AFRI 42E12NE0158).

**1990-1992: Founder Resources Inc.** performed geological, geobotanical, trenching and Max MIN II ground EM surveys over the northwest corner of the Property at and along the Jorsco occurrence trend. Grab samples at Jorsco reported nil to **15.25 g/t Au** (AFRI 42E12NE0009 and 42E12NE8339).

**1996: Harte Resources Corp.** completed stripping and trenching in the central portion of the Property. No significant assays were reported with all 13 samples <15ppb Au (AFRI 42E12NE0232 and 42E12NE0238).

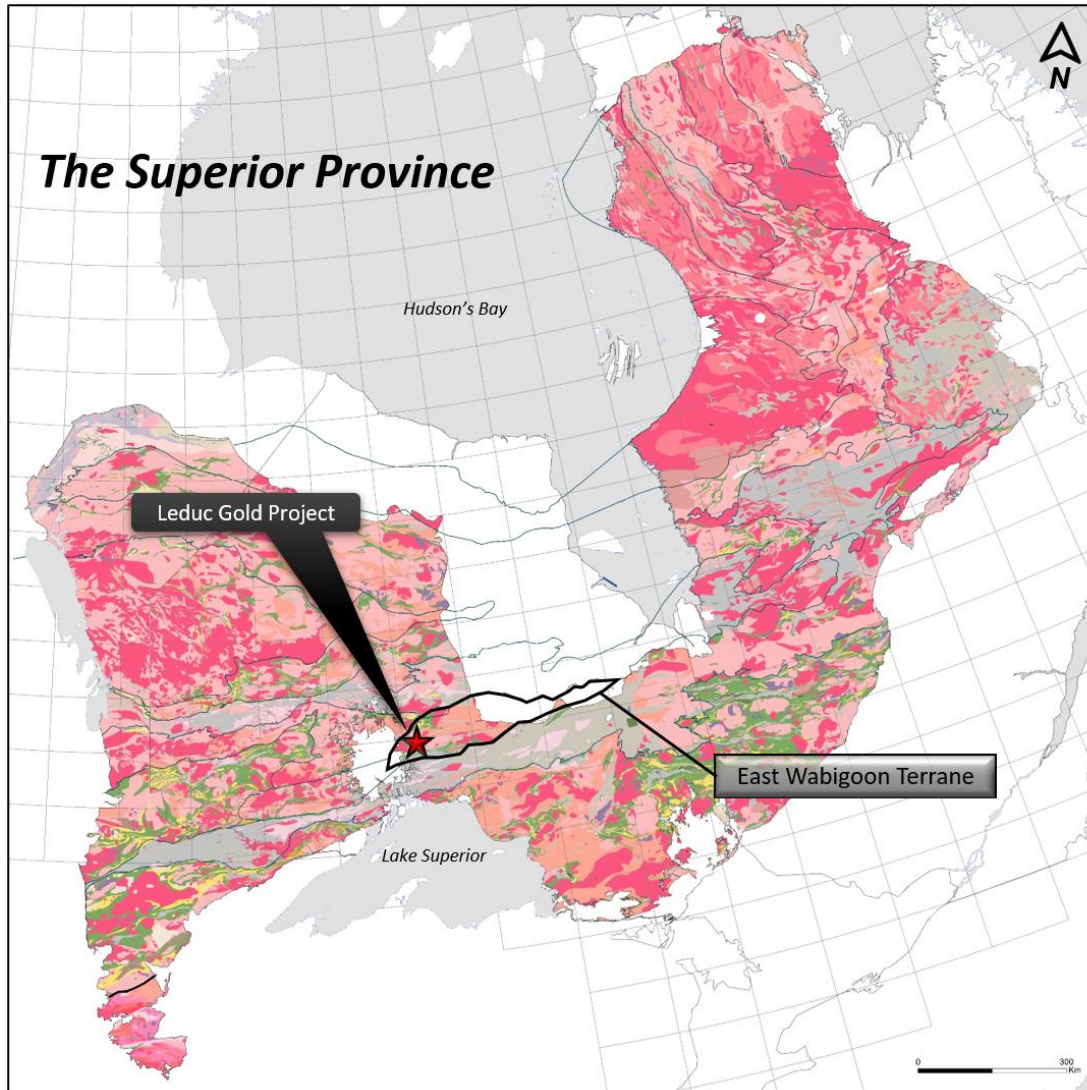
**2010: Prodigy Gold** completed 5,167 square meters of trenching and 685 channel samples (including QA/QC samples) over the “Clist Lake Area”. This work was completed on the Main, Asp, Dumont and Keevil showings. Only the Dumont and Keevil occurrences are within the current Property boundaries. All of the above showings occur in banded iron formation containing layered chert (often re-crystallized) and magnetite-rich layers mm scale to 5cm wide within shear zones. Glassy white to grey discontinuous and boudinaged quartz veining occur locally with 1-3% sulphides. Some of the magnetite-rich layers have been replaced by semi-massive pyrite and pyrrhotite. The Dumont showing commonly returned channel samples of 0.001 g/t Au. Highlights however included **1.29 g/t Au over 1.22m** and **0.88 g/t Au over 0.36m** from the Dumont Trench. Highlights from the Keevil Trench included **4.51 g/t Au over 1.09m** which included **7.31 g/t Au over 0.51m** and **0.466 g/t Au over 1.26m**.

## 7.0 GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 REGIONAL GEOLOGY

The Leduc Gold Project is located within the East Wabigoon Terrane or Subprovince of the Superior Province of Canada which spans three provinces of Manitoba, Ontario and Quebec (Figure 7.1). The Superior Province is the earth’s largest Archean craton that accounts for roughly a quarter of the planet’s exposed Archean crust and consists of linear, fault bounded Subprovinces that are characterized by volcanic, sedimentary and plutonic rocks (William et al., 1991).

**Figure 7.1.** Regional geological location of the Leduc Gold Project, source OGS, 2021.

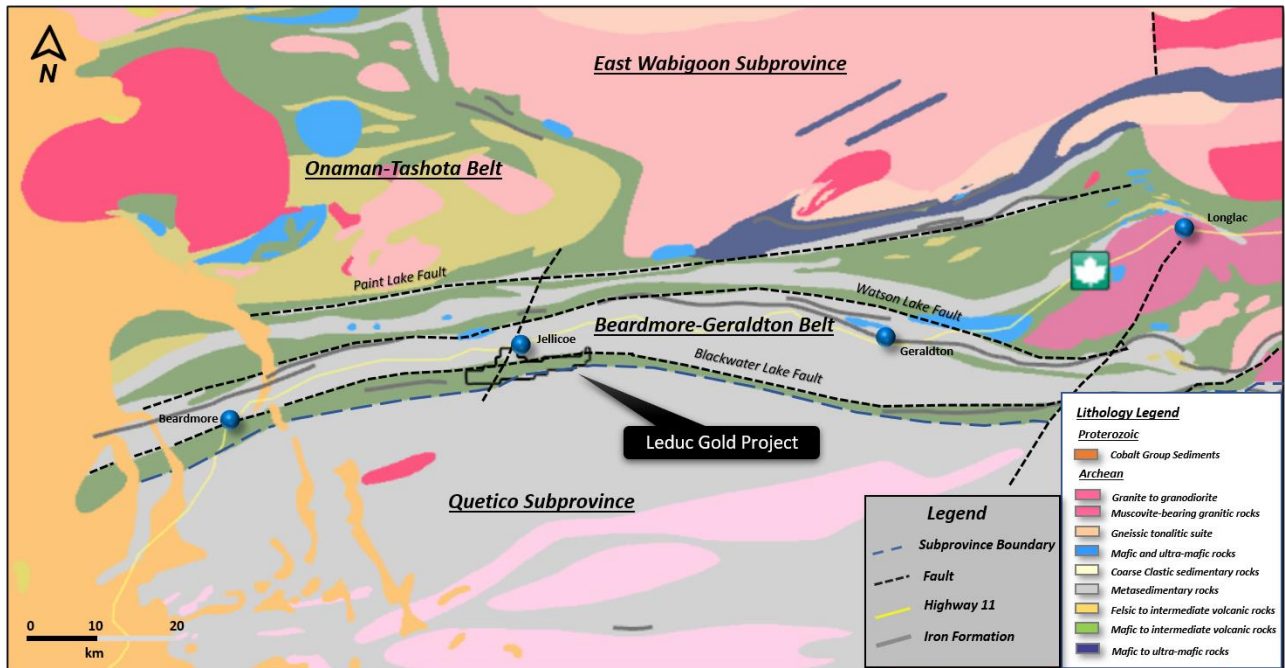


The East Wabigoon Subprovince is bounded on the south by the metasedimentary Quetico Subprovince, on the northwest by the plutonic Winnipeg River Subprovince and on the northeast by the metasedimentary English River Subprovince. The East Wabigoon-Quetico Subprovince boundary is a structurally complex and largely faulted interface.

The following description of the geological setting of the Beardmore-Geraldton Greenstone Belt is mostly modified and summarized from LaFrance et al., 2004.

The Leduc Gold Project is situated within the Beardmore-Geraldton Greenstone Belt ("BGB") that extends 120 km east from Lake Nipigon to Long Lac, Ontario (Figure 7.2). It is comprised of three metavolcanic and three metasedimentary units that are bounded by shear zones.

**Figure 7.2.** Regional geological setting of the Beardmore-Geraldton Greenstone Belt, source OGS, 2020.



The age of the belt ranges from 2.69-2.92 Ga (LaFrance et al. 2004). The sedimentary sequence suggests Timiskaming type units defined as a fluvial/alluvial depositional environment characterized by quick facies changes laterally and vertically. Polymictic conglomerate is the dominant sedimentary unit in the central sedimentary panel and is comprised of pebble to boulder sized clasts of variable compositions (granitic, felsic and mafic volcanic, jasper, black chert and quartz) in a feldspathic sandstone matrix indicative of a fluvial and/or alluvial depositional environment. The northern, central and southern sedimentary panels when taken together represent a shoreline to deeper water depositional environment (Lafrance et al, 2004).

Massive and amygdaloidal, pillowed, tholeiitic basalts and andesites dominate the north panel with the trace element geochemistry suggesting either an immature arc or a back-arc environment (Lafrance et al, 2004).

The central sedimentary panel where conglomerate overlays a sequence of feldspathic sandstone, siltstone, argillite and minor iron formation, appears to be transitional between the northern and southern panels. Central panel units appear to have been deposited in a shallow water or sub-aerial environment as evidenced by the thicker and more extensive pyroclastic units and the large amygdules in the calc-alkaline andesitic and dacitic flows. Tops are unknown. Rare and trace element geochemistry suggests a depositional environment of an emergent volcanic arc above a subduction zone.

The southern volcanic panel consists of massive and pillowed basalts and andesites of MORB geochemical affinity with thin sedimentary and tuffaceous interlayers. Although well deformed in the Beardmore area, top indicators consistently indicate younging to the north.

The southern sedimentary panel is dominated by thick deposits of feldspathic sandstone with finely bedded siltstone and argillite interlayers. Conglomerate within this latter panel occurs only as thin beds, and banded iron formation consisting of finely layered magnetite rich beds and jasper-hematite beds are interlayered with fine grained sediments (argillite, siltstone and sandstone). Sedimentary features within this panel indicate a deep water turbiditic environment.

Intrusive rocks within the belt consist of minor gabbro to diorite bodies and later quartz-feldspar porphyries stocks and sills, and the granodioritic Croll Lake Stock in the Geraldton-Longlac portion of the belt. Occasional Proterozoic diabase and related feldspar quartz porphyry dikes cut the belt. Metamorphism throughout the belt attained greenschist to lower amphibolite facies.

The BGB underwent four deformation events that are summarized in Table 7.1 (Tóth et al., 2013, 2014a). The deformation of the belt started with D<sub>1</sub> thrusting and the formation of isoclinal, recumbent F<sub>1</sub> folds and strong, axial-planar S<sub>1</sub> foliation. During D<sub>2</sub> north-to-south compression, F<sub>1</sub> folds were refolded by tight, upright, west-plunging, regional F<sub>2</sub> folds, which have an east-trending, steeply dipping, axial planar S<sub>2</sub> foliation (Lafrance et al., 2004). The last ductile deformation event recorded by these rocks was D<sub>4</sub> dextral transcurrent faulting. Previous studies suggest that gold was emplaced during D<sub>4</sub> dextral shear (Pye, 1952; Horwood and Pye, 1955; Anglin, 1987; Macdonald, 1988; Lafrance et al., 2004; DeWolfe et al., 2007; Lavigne, 2009). This was disputed by Tóth et al. (2013) who suggested that gold was emplaced either prior to or early during D<sub>2</sub>.



**Table 7.1. Summary of Deformation and Gold Mineralization Events; Beardmore-Geraldton Greenstone Belt (LaFrance et al., 2004; Toth et al., 2013, 2014a, 2014b).**

<b>Regional Deformation Style</b>	<b>Fold</b>	<b>Foliation</b>
<b>Gold Mineralization</b> D <sub>1</sub> thrusting	Isoclinal, recumbent F <sub>1</sub> folds; up to 1m in amplitude	Strong S <sub>1</sub> ; appears in some mafic dykes and quartz-feldspar porphyry, typically bedding parallel in sedimentary rocks
D <sub>2</sub> north-south compression	Tight upright regional F <sub>2</sub> folds; plunge 20°W to 70°W, amplitude up to several kms	East-trending, steeply dipping S <sub>2</sub> ; axial planar to F <sub>2</sub> folds; parallel or slightly clockwise or anti-clockwise of bedding
<b>Gold Mineralization</b>		
D <sub>3</sub> sinistral transcurrent shear	Tight to open S-shaped F <sub>3</sub> folds; amplitude up to 10's of cm	East-trending, steeply dipping S <sub>3</sub> crenulation cleavage; axial planar to F <sub>4</sub> ; regionally oriented anti-clockwise to bedding
<b>Gold Mineralization</b>	Z-shaped F <sub>4</sub> folds; plunge 20°W to 60°W; amplitude up to several kms	East-northeast-trending steeply dipping regional S <sub>4</sub> ; axial planar to F <sub>4</sub> ; regionally oriented anticlockwise to bedding
	Dextral east-trending shear zones localized along S <sub>2</sub> and lithological contacts	
D <sub>4</sub> dextral transpression	Z-shaped F <sub>4</sub> drag folds overprinting S <sub>4</sub> foliation in shear zones	Sinistral slip S <sub>4</sub> crenulation cleavage; axial planar to F <sub>4</sub>

## 7.2 PROPERTY GEOLOGY

The Leduc Gold Project can be generally sub-divided into two distinct rock assemblages separated by the East Wabigoon-Quetico Subprovince boundary that transverses the Property. The rocks of the Quetico Subprovince consist of thinly bedded metasediments. North of the sub-province boundary mafic volcanic assemblages and their assorted counterparts dominate the East Wabigoon Subprovince. The boundary is very distinct following a high-resolution heli-borne magnetic survey performed by Leopard Lake (Figure 7.2). Leopard Lake's consulting geologist spent 10 days mapping the Property from Oct 2<sup>nd</sup> to Oct 11<sup>th</sup>, 2020. The following lithologic descriptions are based on Leopard Lake's consulting geologist's observations and those of previous mapping programs carried out by Mingold (1988) and Prodigy Gold (2010). The prefix meta will not be used in descriptions as all rocks have undergone some degree of metamorphism and thus can be assumed.

### 7.2.1 Quetico Subprovince Sediments

Sediments of the Quetico Subprovince consist of thinly bedded (mm-scale to 10's of cm's) of fine clastic sediments consisting predominantly of greywacke. Foliation planes (S<sub>1</sub>) occur along bedding planes (S<sub>0</sub>) which are consistently sub-vertical. Deformation and degree of metamorphism increases in relation to

the proximity of the subprovince boundary. Lower-amphibolite metamorphism consisting of biotite mm-scale porphyroblasts grade away from the subprovince boundary to lower regional greenschist facies. Quartz-veining in the form of veins, veinlets and boudins both parallel to sub-parallel to  $S_1$  also increase in proximity to the subprovince boundary in discrete sub-meter shear zones. Cross-cutting quartz-veins, veinlets and tension gashes are also consistently more common proximal to the subprovince boundary (Photo 7.1).

**Photo 7.1.** Quartz-veining and shearing within the Quetico Subprovince sediments proximal to the subprovince boundary, photo by Leopard Lake (LLG), 2020.



### 7.2.2 Southern Mafic Volcanic Unit

The other major lithological unit of the Leduc Gold Project is the southern mafic volcanic unit of the Beardmore-Geraldton Greenstone Belt as subdivided by Lahance et al., 2004.

This unit consists of generally massive to locally pillowed basalts with subordinate mafic tuffs and variolitic mafic volcanics. Cross-cutting and sill-like hypabyssal diorite and minor feldspar porphyry units are also hosted within the belt.

The mafic volcanics are moderately to strongly deformed with foliation planes (S<sub>1</sub>) parallel to the general east-west stratigraphy of the region. Alteration is consistently strongly chloritic within a greenschist metamorphic facies with local actinolite crystals and subordinate biotite alteration of the lower amphibolite facies. Pillows are generally well preserved to moderately stretched along S<sub>1</sub> and have been observed up to sub-meter lengths. White quartz veins up to 50 cm across were commonly noted containing chloritized mafic seams and rafts.

Variolitic flow rocks contain 10-40% variolites that range in size from 2-3mm to 5cm across, are rounded to sub-angular and commonly contain light green epidotized feldspar. A coarse variolitic basalt that appeared to be 1-5m in width was intermittently encountered across the entire length of the Property for approximately 11 km as a potential marker horizon (Photo 7.2). Variolitic basalt was strongly associated with the Lattimer gold occurrence.

**Photo 7.2.** Coarse variolitic mafic volcanics, photo by LLG, 2020.



### 7.2.3 Banded Iron Formation

Several parallel widely spaced 1-10m wide chert-magnetite iron formations are hosted within the southern mafic volcanic unit and traceable for several kilometers. They primarily occur at sheared mafic volcanic flow contacts and are comprised of alternating mm-scale to 5cm wide alternating black fine-grained magnetite and sugary re-crystallized white chert (Photo 7.3). Sulphide mineralization (pyrite-pyrrhotite+/-chalcopyrite) in thin seams replacing magnetite are predominant within the western half of the property while iron-magnesium amphibole (grunerite) and a lack of sulphide mineralization is common on the eastern half of the Property.

**Photo 7.3.** *Banded iron formation of the Dumont trenching efforts by Prodigy Gold, 2010, photo by LLG, 2020.*



Locally the iron formations have undergone intense deformation and folding. Boudins of iron formation can be isolated (Photo 7.4).

**Photo 7.4.** *Isolated boudin of banded iron formation. Faint pillowed mafic volcanics are situated to the left of the boudin, Jorsco occurrence, photo by LLG, 2020.*



Local isoclinal folding of the iron formation was also noted to occur (Photo 7.5).

**Photo 7.5.** Local isoclinal folding of the banded iron formation with white re-crystallized chert, Dumont trenching by Prodigy Gold, 2010, photo by LLG, 2020.



Minor late discontinuous white to glassy grey quartz veining up to 1m wide both parallel and cross-cutting bedding was also noted that contained arsenopyrite sulphide mineralization (Photo 7.6).

**Photo 7.6.** Glassy grey to white quartz veining with arsenopyrite mineralization noted in the Dumont trenching efforts by Prodigy Gold, 2010, photo by LLG, 2020.



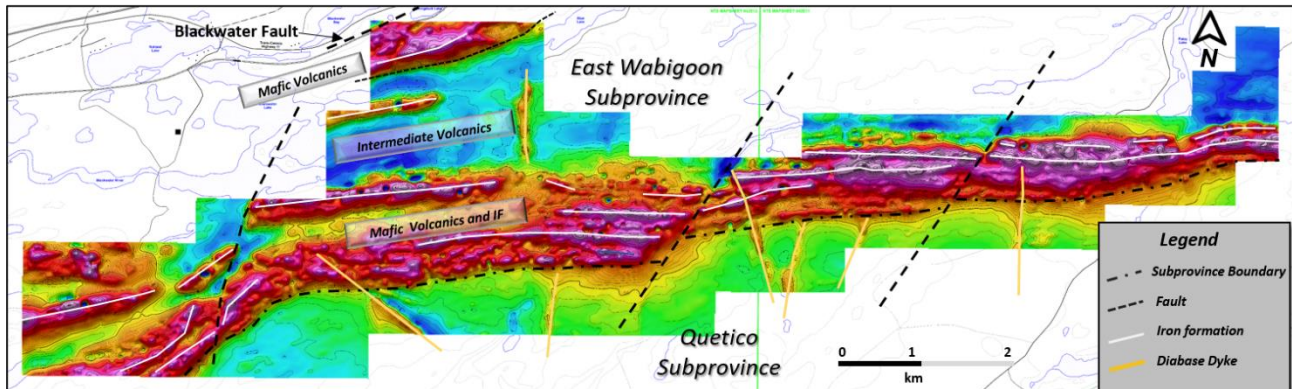
### 7.2.3 Diabase

Two sets of diabase dykes are recognized on the Property. Northwest-trending diabase of the Matachewan swarm (2.454 Ga) and north to northeast-trending diabase of the Marathon swarm (2.125Ga).

### 7.2.4 High Resolution Heli-borne Magnetic Survey and Geological Implications

In September 2020, Leopard Lake commissioned ProspectAir to perform a heli-borne high resolution magnetic survey of the entire Property at 50m line spacings. The survey aided in pinpointing several geological contacts, the East Wabigoon-Quetico Subprovince boundary, faults, major lithological packages and iron formation (Figure 7.3).

**Figure 7.3.** Heli-borne high-resolution magnetic survey and geological observations, source Proprospectair, 2020.



The central portion of the Property displays high total magnetic intensity. Numerous parallel 1-10m wide banded iron formations were observed during the mapping program which contribute to the overall high magnetic intensity of the mafic volcanic package. Lesser magnetic intensities within the mafic volcanic package can be attributed to observed mafic-intermediate volcanic rocks of a dioritic make-up. At least 3 northeast-trending late faults are also recognized that offset lithological and the subprovince boundary. Diabase dykes of both the northwest-trending Matachewan swarm and the north to northeast trending Marathon swarm are clearly outlined and confirmed in the field. The Blackwater Fault in the very northwest corner of the Property was also confirmed along the old railroad bed where intense shearing, sericitic and limonitic alteration was noted with subordinate thin 3-5cm wide seams of semi-massive sulphides (pyrite) and concordant quartz-carbonate alteration with semi-massive arsenopyrite and pyrite mineralization (Photo 7.7).

**Photo 7.7.** Semi-massive arsenopyrite and pyrite in a silicified carbonatized seam within sheared and altered mafic volcanics along the Blackwater Fault, photo by LLG, 2020.





### 7.3 PROPERTY MINERALIZATION

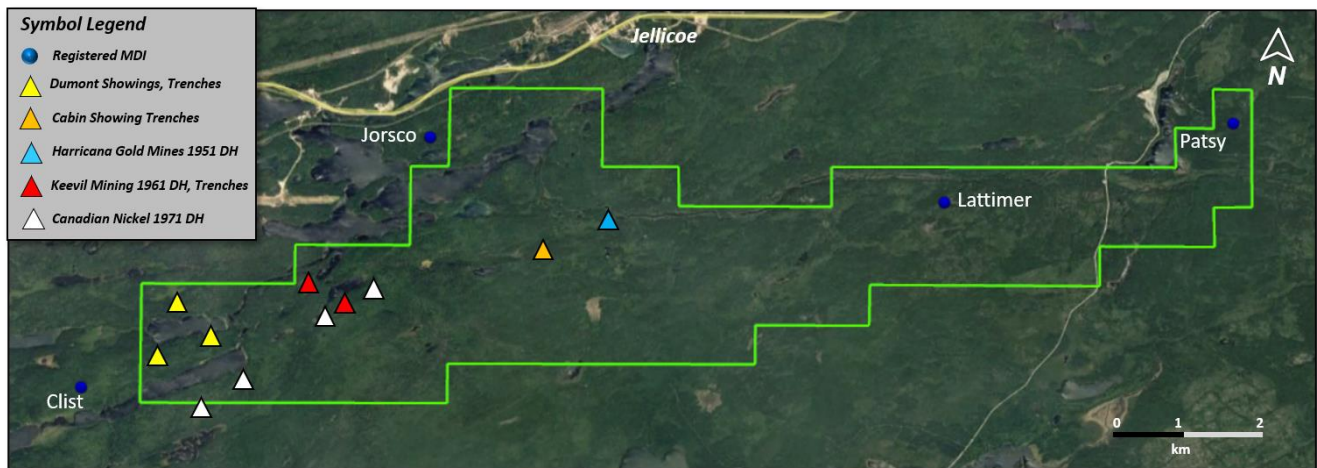
There are 2 documented and registered Ministry Energy Department and Mines (MNDM) Mineral Deposit Inventory (MDI) occurrences within the Leduc Gold Project. Details are provided below in Table 7.3.

**Table 7.3.** MNDM registered mineral occurrences Leduc Gold Project.

<b>MNDM Mineral Deposit Inventory Occurrences</b>					
<b>MDI Identification Number</b>	<b>Occurrence Names</b>	<b>Easting UTM</b>	<b>Northing UTM</b>	<b>Primary Commodity</b>	<b>Secondary Commodity</b>
MDI42E11NW00004*	Lattimer Legault Township	465724	5501740	Gold	
MDI42E11NW00005	Patsy Lake	469121	5502642	Gold	
MDI42E12NE00020**	Jorsco Burrows Thor Johansen	459588	5502654	Silver	Gold, Copper, Zinc Lead
MDI000000002231**	Clist Lake Asp	455541	5499604	Gold	
Coordinates in NAD 83, Zone 16 datum.					
* MNDM has this MDI with the wrong coordinates. Coordinates confirmed by author.					
** These MDI's just outside of the boundary					

Exploration efforts by past companies have expanded on these occurrences through prospecting, mapping, trenching and diamond drilling (Figure 7.4).

**Figure 7.4.** Registered MDI mineral occurrences and other areas of historical exploration, source OGS and AFRI 42E11NW0083.



Mineralization in the Jellicoe area was first discovered in 1916 by A.G. Burrows in a rock-cut on the Canadian National Railway 1.6km west of Jellicoe. This rock cut along the now abandoned rail-bed transects the very northeast corner of the Property. Mapping by Leopard Lake noted strong shearing, sericite, silicification, carbonatization and limonite alteration along the exposed outcrop in the rail bed. Semi-massive sulphides (pyrite and arsenopyrite) were noted in 3-5cm seams associated with the above alteration. This corridor of deformation contains the Blackwater Fault.

Mineralization on the Property has been found through prospecting, trenching, sampling and diamond drilling on the numerous banded iron formations that transverse the mafic volcanic package.

The Lattimer showing is one such example of gold mineralization associated with a banded iron formation where a 1949 drill hole intersected **253.79 g/t Au over 0.49m**. The Jorsco Showing (**0.777 g/t Au over 1.22m, 0.31 g/t Au over 8.83m and 0.621 g/t Au over 1.22m** in drilling) was also exploration efforts concentrated on banded iron formations. The Clist Lake showing has also documented gold in banded iron formation. Trenching efforts south of Dumont Lake by Prodigy Gold in 2010 also concentrated on banded iron formation documenting channel samples of **1.29 g/t Au over 1.22m** and **0.88 g/t Au over 0.36m**. Prodigy Gold also documented gold in banded iron formation at the Keevil Mining trenches of **4.51 g/t Au over 1.09m** which included **7.31 g/t Au over 0.51m** and **0.466 g/t Au over 1.26m**. Gold mineralization was also targeted in an iron formation southeast of Blackwater Lake by Harricana Gold Mines Limited in 1951. Drill hole 1 intersected **3.24 g/t Au over 9m** including **12.03 g/t Au over 1.82m** in a pyrrhotite rich chlorite schist.

## 8.0 DEPOSIT TYPES

The Leduc Gold Project is hosted within the Beardmore-Geraldton Greenstone Belt (BGB) of the East Wabigoon Subprovince. The BGB is comprised shear-bounded interleaved metasedimentary and metavolcanic units that have undergone at least four deformation events. Through most of the 1930's through to the end of the 1960's the Beardmore-Geraldton Gold Camp had produced over 4.1 million ounces of gold and 300,000 ounces of silver from 20 different gold mines at an average head grade of 7.54 g/t Au. These gold deposits are classified as orogenic lode gold deposits that occur in brittle-ductile structurally related regimes similar to the Kirkland Lake Gold Camp, the Timmins Gold Camp and the Pickle Lake Gold Camp to name a few. Orogenic gold deposit types should be the focus of future exploration activities on the Property.

Orogenic lode gold deposits throughout the world show very distinct clustering along major lineaments and deformation zones (shear zones) which tend to be crustal scale, terrane bounding features. Kerrich and Feng (1992) summarize: "The giant quartz vein systems with lateral extents of tens of kilometers and up to 3 kilometers in depth are hosted in brittle-ductile shear zones and are restricted to terrane boundaries. These are regional structures that cut through the lithosphere, but are usually recognized at strike-slip fault, duplexes and second and third order splays at mid-crustal levels."

### 8.1 BANDED IRON FORMATION DEPOSITS

The discussion on banded iron formation hosted gold deposits is mostly taken from Kerswill (1993).

Important common features of BIF-hosted gold deposits include a strong association between native gold and iron sulfide minerals, the presence of gold-bearing quartz veins and/or shear zones, the occurrence of deposits in structurally complex terranes, and the lack of lead and zinc enrichment in the ores.

BIF-hosted gold is restricted to late structures (quartz veins and/or shear zones) and/or sheared sulfide BIF immediately adjacent to such structures. Mineralization is confined to discrete, commonly small, shoots separated by barren (gold- and sulfide-poor), typically oxide BIF (Figure 8.1). Mineralized rocks are generally less deformed than associated rocks. Iron-sulfide minerals are in many cases relatively undeformed and unmetamorphosed. Pyrite and/or sheared pyrrhotite have clearly replaced other pre-existing iron-rich minerals, notably magnetite (Figure 8.3). Arsenic-bearing minerals are common, but not always present. If they are present, a strong positive correlation generally exists between gold and arsenic. Alteration is usually typical of that associated with "mesothermal vein" gold deposits. Mineralization is relatively silver-poor, and gold grains generally have gold/silver ratios of >8.0. Non-stratiform deposits are relatively common, typically small and, compared with stratiform deposits, difficult to evaluate and mine. Examples of non-stratiform deposits are the North ore zone at the MacLeod-Cockshutt mine (Geraldton), the Central Patricia mine and portions of the Pickle Crow mine, the Musselwhite mine (all in Ontario) and numerous deposits in Western Australia.

Another discussion of BIF -hosted Gold deposits is from Richard Mills (March 2019) stating examples of "Canadian mines include Detour Lake, Madsen-Red Lake, Pickle Crow, Musselwhite and Dona Lake in Ontario.

The gold in banded iron is associated with greenstone belts believed to be ancient volcanic arcs, or in adjacent underwater troughs. Greenstone belts often contain gold, silver, copper, zinc and lead ores.

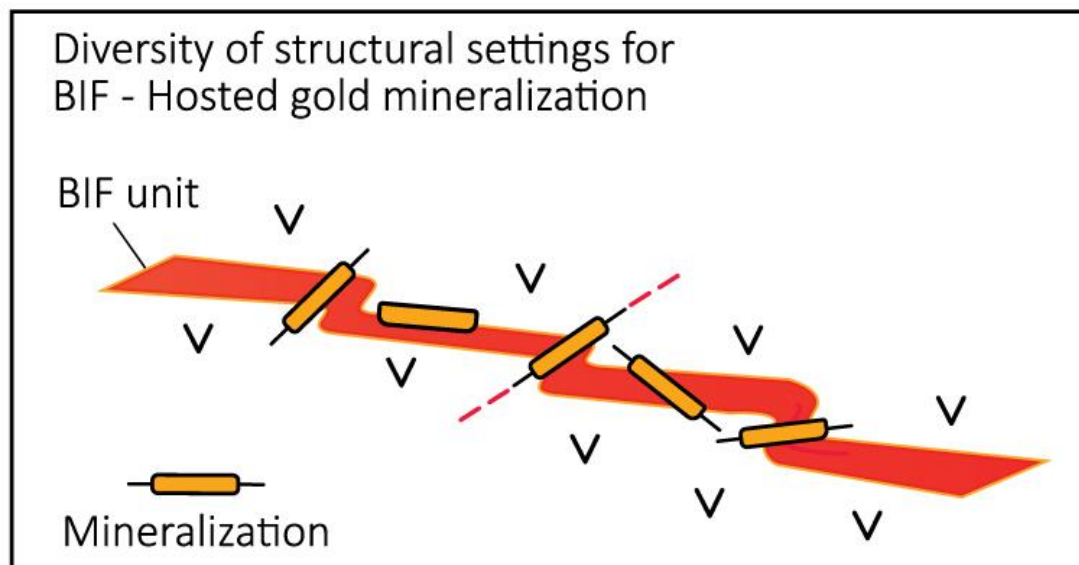
The gold is usually found in cross-cutting quartz veins/ veinlets, or as fine disseminations associated with pyrite, pyrrhotite and arsenopyrite. The host strata has generally been folded and deformed. In terms of mineralogy, gold-bearing BIFs may include native gold, pyrite, arsenopyrite, magnetite, pyrrhotite, chalcopyrite, sphalerite, galena, stibnite, and rarely, gold tellurides.

Gold in banded iron formations make excellent exploration targets because of their scalability. Like VMS deposits, they are often found in clusters, something that is attractive to major gold companies looking for new deposits that can be developed into mines with longevity.

Perhaps the best example of a gold-bearing banded iron deposit is the shuttered Homestake Mine in South Dakota. The +40-million ounce deposit was the largest and deepest gold mine in North America before it closed in 2002.

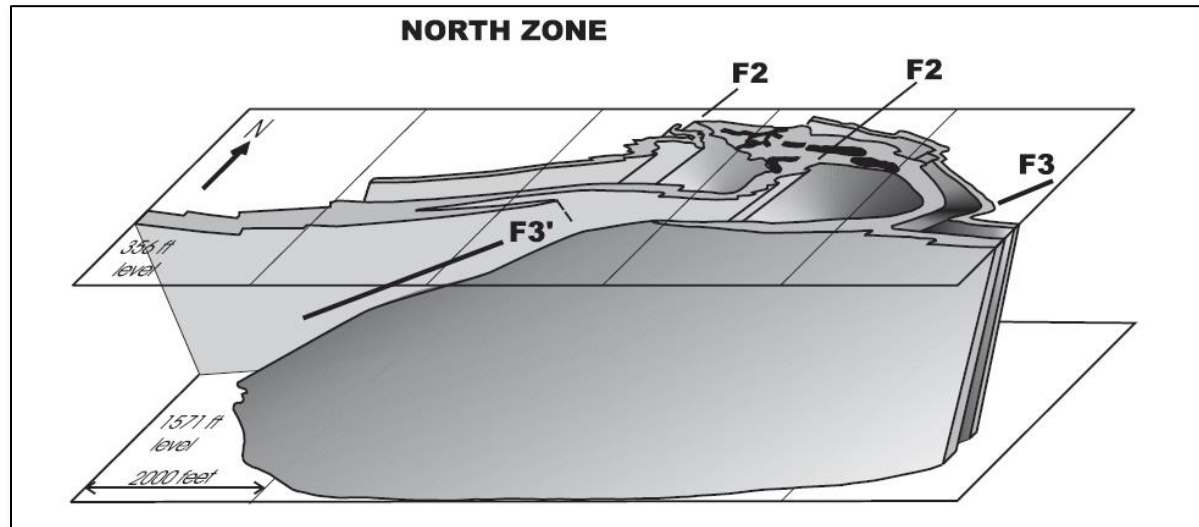
The gold ore was contained almost exclusively within the Homestake Formation, a 20 to 30-meter layer of iron carbonate and iron silicate that had been deformed, resulting in upper greenschist facies of siderite-phylite, and lower amphibolite facies of grunerite schists.”

**Figure 8.1.** Diverse structural setting for BIF-hosted gold mineralization (internal BIF study).



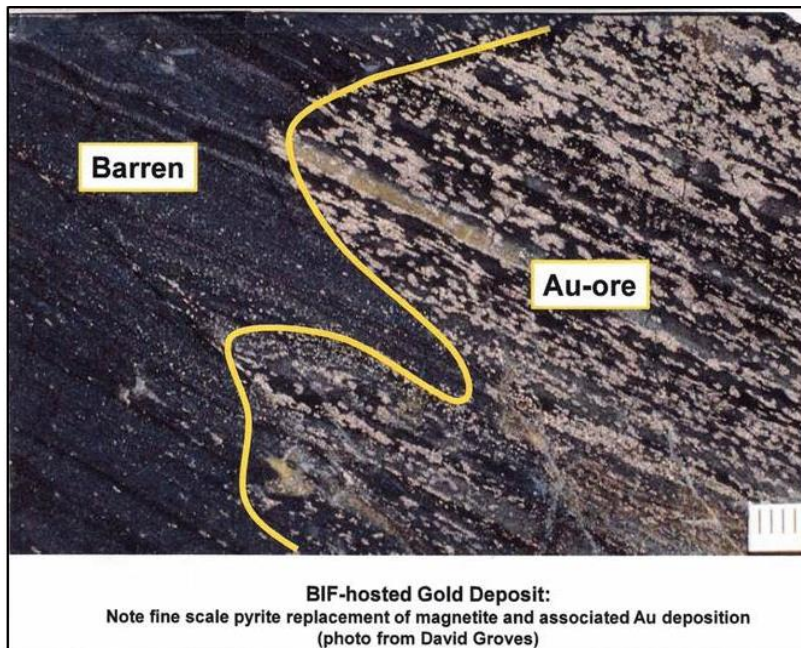
Non-stratiform deposits contain sulfide-rich alteration zones immediately adjacent to late structures and are similar to mesothermal vein-type gold deposits. Late quartz veins and/or shear zones are present in most known BIF-hosted gold deposits. The distributions of gold-bearing veins and sulfide-rich zones are commonly controlled by fold structures (Figure 8.2). Major faults ("breaks") of regional scale have been recognized near many non-stratiform deposits.

**Figure 8.2.** Block diagram of the North Zone at the MacLeod-Cockshutt and Hardrock mines drawn using level mine plans published in Horwood and Pye (1955). Diagram shows the overprinting of a S F<sub>2</sub> fold by a Z F<sub>3</sub> fold on the north limb of the Hard Rock anticline. Ore pods are shown in black.



Irregular, massive lenses of sulfides and quartz occur in a folded series of greywacke and iron formation in the Hard Rock and MacLeod-Cockshutt mines (Horwood and Pye, 1951). These massive replacement lenses (up to 65% sulfides) cut the Z-folded iron formation and are related to quartz-carbonate veins up to 0.6 m wide. Veins are usually barren of gold mineralization except where they contain sulfides, consisting primarily of pyrite, arsenopyrite and pyrrhotite. Mineralization is preferentially concentrated in the wall rocks outward from the quartz veins and ore is locally banded due to the selective replacement of the less competent wacke laminae in the iron formation by sulfides. The main ore zone (the North or No. 30 Zone, and the West Zone), mined in the Hard Rock and MacLeod-Cockshutt mines, was of this type (Horwood and Pye, 1951). The grade from these zones was generally higher than the grades in the larger F-Zone (associated with greywacke).

**Figure 8.3.** Pyrite replacement (sulphidation) of magnetite and associated gold mineralization, Leopard Lake, 2020.



## 8.2 GREENSTONE-HOSTED QUARTZ-CARBONATE VEIN DEPOSITS

Greenstone-hosted quartz-carbonate vein deposits occur as quartz and quartz-carbonate veins, with valuable amounts of gold and silver, in faults and shear zones located within deformed terrains of ancient to recent greenstone belts commonly metamorphosed at greenschist facies (Dubé and Gosselin, 2007). Greenstone-hosted quartz-carbonate vein deposits are a subtype of lode gold deposits (Poulsen et al., 2000) (Figure 8.1). They are also known as mesothermal, orogenic. They consist of simple to complex networks of gold-bearing, laminated quartz-carbonate fault-fill veins in moderately to steeply dipping, compressional brittle-ductile shear zones and faults, with locally associated extensional veins and hydrothermal breccias. They can coexist regionally with iron formation-hosted vein and disseminated deposits, as well as with turbidite-hosted quartz-carbonate vein deposits (Figure 8.2). They are typically distributed along reverse-oblique crustal-scale major fault zones, commonly marking the convergent margins between major lithological boundaries such as volcano-plutonic and sedimentary domains. These major structures are characterized by different increments of strain, and consequently several generations of steeply dipping foliations and folds resulting in a fairly complex geological collisional setting.

At the district scale, the greenstone-hosted quartz-carbonate-vein deposits are associated with large-scale carbonate alteration commonly distributed along major fault zones and associated subsidiary structures (Dubé and Gosselin, 2007). At the deposit scale, the nature, distribution and intensity of the wall-rock alteration is largely controlled by the composition and competence of the host rocks and their metamorphic grade. Typically, the alteration haloes are zoned and characterized, at greenschist facies,

by iron-carbonatization and sericitization with sulfidation of the immediate vein selvages (mainly pyrite, less commonly arsenopyrite).

The Northern Empire mine located in Beardmore within the BGB produced 149,493 ounces of gold and 19,803 ounces of silver from 1934-1941. The Northern Empire mine is the only past producer located in the southern mafic volcanic belt. The Property is also situated within the same southern mafic volcanic belt 30km east northeast of the former mine.

The composite quartz-carbonate production vein, the Power Vein, intrudes the metavolcanics and is almost concordant to foliation. Within the composite vein, gold was mined from a relatively persistent boudinaged single vein. The vein strikes 72 and dips 80° south. Average width of the vein is 0.6 m within a 1.2-3.0 m wide shear zone. The metavolcanics are fine-grained pillowed basalt and massive medium-grained basalt, with some mafic tuffaceous rocks. Granitic dikes and steeply dipping diorite sills, up to 4.5 m wide, intrude the metavolcanics (Mason et al., 1985).

The gold-bearing "Power Vein", which includes en-echelon veins, is mineralized with gold, arsenopyrite, pyrrhotite, pyrite and minor chalcopyrite, galena, and tourmaline. The metavolcanic wall rocks marginal to the vein contain sulphides with no gold values. Relatively pervasive carbonate alteration occurs subparallel to the vein (Mason et al., 1985).

### **8.3 OTHER GREENSTONE-HOSTED GOLD DEPOSITS**

Economic concentrations of gold in the Beardmore-Geraldton area are typical of Archean epigenetic hydrothermal gold deposits normally considered to be mesothermal lode gold deposits. The gold mineralization is primarily located in areas of high strain and deformation with brittle structures providing a pathway and also hosting mineralization as veins or replacement zones with associated alteration. There are also low-grade zones that locally have less obvious structural control, less veining, and less intense hydrothermal alteration on a hand specimen scale, but these clearly have strong deposit scale structural controls.

Gold mineralization on the Brookbank deposit is hosted within bands of intense deformation at the contact zone between domains of mafic flows and polymictic conglomerate. This contact zone straddles the 6.5 km east-west trending Brookbank shear zone. The mineralization occurs within quartz-carbonate veinlets/stringers, fractures and/or stockworks associated with hydrothermal alteration (G Mining Services, 2016).

Orogenic lode gold deposits similar to the BIF-hosted gold deposits of the Geraldton gold camp (Macleod-Cockshutt and Hardrock mines), the vein hosted lode gold deposits similar to the Northern Empire mine in Beardmore and the hydrothermal epigenetic gold deposits similar to the Brookbank gold deposit should be the focus of future exploration activities on the Leduc Gold Project. However, precious mineralization of this nature is not necessarily indicative of mineralization on the Leduc Gold Project.

## 9.0 EXPLORATION

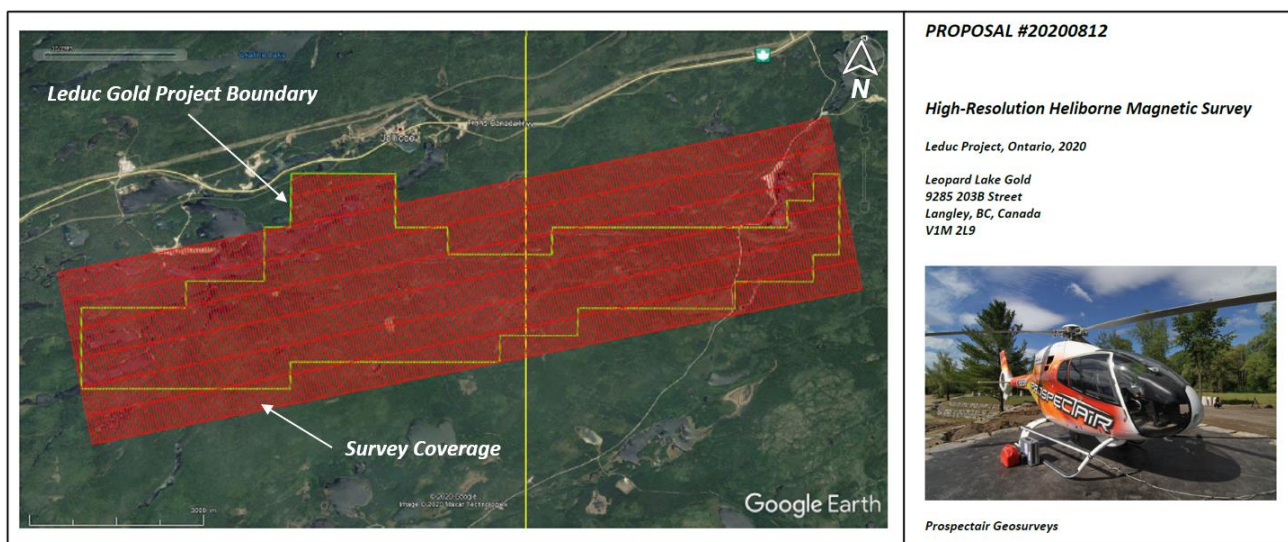
Since entering into the Option Agreement on August 17<sup>th</sup>, 2020, Leopard Lake has completed:

- 1) High resolution heli-borne magnetic survey
- 2) Geological mapping and sampling
- 3) Ground Induced Polarization Gradient survey

### 9.1 HELI-BORNE MAGNETIC SURVEY

During the 29-30 August, 2020, Prospectair of Gatineau, QC flew a high resolution helicopter -borne magnetic survey of the entire Property (Figure 9.1). The Leduc block was flown with traverse lines at 50 m spacing and control lines spaced every 500 m. The survey lines were oriented N169 and control lines were flown at an azimuth of N079. The average height above ground of the helicopter was 41 m and the magnetic sensor was at 22 m. The average survey flying speed was 31.9 m/s. A total of 943-line km were flown. Their report was written by Joel Dube of Dynamic Discovery Geoscience in Oct. 2020 (Dube, Oct. 2020, Dynamic Discovery Geoscience for Prospectair).

**Figure 9.1.** Heli-borne magnetic survey coverage, source Prospectair, 2020.



As depicted in Figure 7.3 the high-resolution heli-borne magnetic survey aided in pinpointing several geological contacts, the East Wabigoon-Quetico Subprovince boundary, faults, major lithological packages and iron formation.

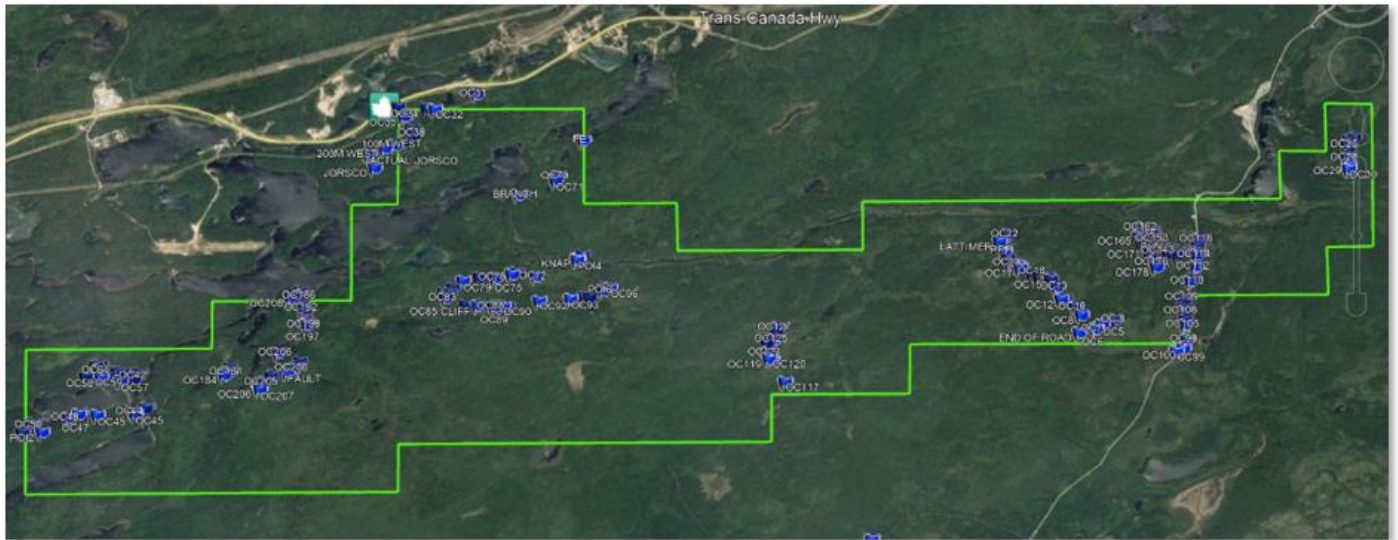
### 9.2 GEOLOGICAL MAPPING AND SAMPLING

Between Oct 2 and Oct 11<sup>th</sup>, 2020, Leopard Lake performed reconnaissance geological mapping, prospecting and sampling. During the course of the mapping program, 232 outcrops and points of interest were catalogued with 57 samples taken (including two standards, two blanks and one pulp replicate) (Figure 9.2). The two registered MDI mineral occurrences on the Property (Lattimer and Patsy Lake) were investigated and sampled. Trenching at the Jorsco Showing, west of the Property was also investigated and noted. The trenching efforts by Prodigy Gold in 2010 at the Dumont trenches were also



investigated for their geological, structural and mineralogical relationships. Grab samples were taken at some of the historic channel samples completed by Prodigy Gold 2010 were still marked and readable. Other channel sampling at the Keevil trenches were also investigated. Additional historical evidence of exploration could not be found at the Cabin trenches circa 1928, the Harricana trenching and drill efforts circa 1951, the Keevil trenching and diamond drill sites circa 1961 and the Canadian Nickel drill program circa 1971.

**Figure 9.2.** Waypoints and registered outcrops and points of interest, October 2020 mapping program, source Leopard Lake.



Sampling results of the mapping program are tabled below (Table 9.1).

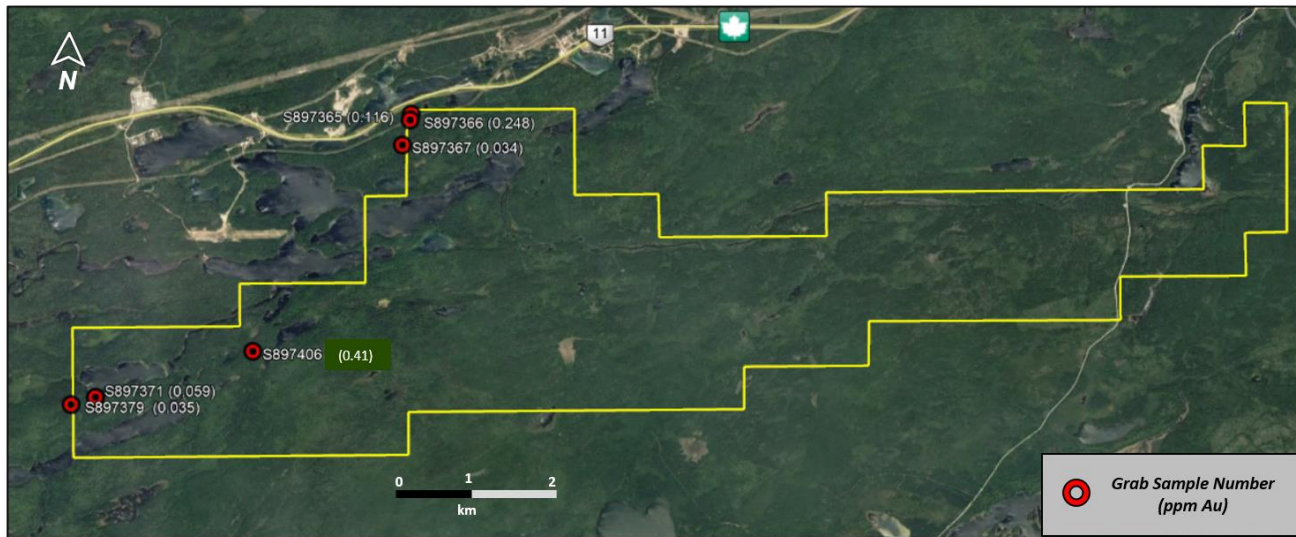
**Table 9.1.** Sample results from the October 2020 mapping program, source LLG.

Sample Number	Easting	Northing	MSL	Lithology	Au ppm
S897351	466954	5501000	374	biotite rich metaseds (Quetico)	<0.005
S897352	466736	5500918	387	quartz vein in metaseds (Quetico)	<0.005
S897353	466616	5500863	384	possible diorite, siliceous	<0.005
S897354	465899	5501469	354	magnetic massive mafic volcanics	<0.005
S897355	465868	5501497	354	quartz vein with chl rafts in mafic volcanics	<0.005
S897356	465785	5501791	343	large white quartz knot in variolitic strongly chloritic mafic volcanics	<0.005
S897357	465724	5501740	349	Lattimer Showing, re-crystalized chert layers with minute magnetite crystals	<0.005
S897358	465724	5501740	349	Lattimer Showing, re-crystalized rose chert with limonitic edges	<0.005
S897359	465724	5501740	349	Lattimer Showing, re-crystalized chert layers and interlayered altered sediments	0.011
S897360				Standard ME-1708	7.01
S897361	469141	5502671	357	Patsy Showing, quartz veining within intermediate volcanics	<0.005
S897362	460161	5503083	339	limonitic shear in mafic volcanics	0.006
S897363	460148	5503082	337	limonitic shear in mafic volcanics	0.006
S897364	459999	5503052	343	limonitic shear in mafic volcanics	0.007
S897365	459936	5503071	338	limonitic shear in mafic volcanics with 3cm wide pyrite seam with 10% py, CNR rock-cut	0.116
S897366	459923	5503008	330	quartz carbonate vein in shear with coarse semi-massive py-po, CNR rock-cut	0.248
S897367	459836	5502741	346	Jorsco Occurrence, limonitic shear in iron formation	0.034
S897368	457314	5500532	332	white quartz carbonate vein in mafic volcanics	<0.005
S897369	457302	5500168	337	white quartz carbonate vein in mafic volcanics	<0.005
S897370				Blank	<0.005
S897371	456493	5500084	332	Dumont IF Trench, Prodigy Channel C61185, quartz clast supported by sulphide matrix of aspy-py	0.059
S897372	456497	5500073	331	Dumont IF Trench, recrystalized chert and intercalated sed with fine sulphides 5%	0.02
S897373	456500	5500078	330	Dumont IF Trench, recrystalized chert and limonitic intercalated sed with fine sulphides 2-3%	0.01
S897374	456525	5500073	329	Dumont IF Trench, Prodigy Samples G27680 and C56461, late quartz vein with minor sulphides 1-2% along rims	0.031

Sample Number	Easting	Northing	MSL	Lithology	Au ppm
S897375	456518	5500082	329	Dumont IF Trench, Prodigy Channel C61157, late quartz vein 1.5m with interstitial aspy 2-3% and tourmaline	0.019
S897376	456297	5500069	341	Dumont IF Trench, separate trench farther west with contorted folded IF and recrystalized chert	0.005
S897377	456258	5500043	339	Dumont IF Trench, Prodigy Channel C60399, recrystalized chert plus late quartz with 2-3% sulphides	0.007
S897378	456240	5500017	346	Dumont IF Trench, separate trench farthest west with late quartz boudins and mineralized host rock, sulphides 3-4%, rare cpy	0.019
S897379	456230	5500009	349	Dumont IF Trench, separate trench farthest west massive sulphide band of po-asy-py	0.035
S897380				pulp replicate of S897379	0.042
S897381	456264	5500006	344	Dumont IF Trench, separate trench farthest east, limonitic BIF, 1-3% sulphides	0.008
S897382	457421	5500234	327	cherty BIF	0.019
S897383	456975	5500518	344	bull white qtz vein	<0.005
S897384	456975	5500518	344	wall rock to bull white quartz vein	<0.005
S897385	461653	5501656	337	intermediate volcanics with 1-2% fine pyrite	<0.005
S897386	460492	5501410	356	BIF with re-crystalized chert	0.007
S897387	460492	5501410	356	BIF with re-crystalized chert	<0.005
S897388	467397	5500639	366	quartz veined metaseds (Quetico)	<0.005
S897389	467401	5500650	364	quartz veined metaseds (Quetico)	<0.005
S897390				Standard ME-1708	7.62
S897391	467490	5500944	372	quartz veined metaseds (Quetico)	<0.005
S897392	467492	5500904	373	quartz veined metaseds (Quetico)	<0.005
S897393	467476	5501062	380	quartz veined metaseds (Quetico)	<0.005
S897394	467469	5501146	365	quartz veined metaseds (Quetico)	<0.005
S897395	467628	5501595	344	agglomerate	<0.005
S897396	467641	5501729	345	BIF with re-crystalized chert	0.005
S897397	463446	5500642	359	quartz veined metaseds (Quetico)	0.007
S897398	463440	5500679	358	quartz veined metaseds (Quetico)	<0.005
S897399	463503	5500806	358	quartz veined metaseds (Quetico)	<0.005
S897400				Blank	<0.005
S897401	467366	5501629	351	iron formation	<0.005
S897402	467337	5501605	353	quartz knot in mafic volcanics	<0.005
S897403	467308	5501632	347	iron formation	0.005
S897404	467050	5501707	349	iron formation	<0.005
S897405	458217	5500562	340	iron formation	0.014
S897406	458195	5500551	342	iron formation, Keevil Mining trenches	0.41
S897407	458821	5501271	334	iron formation	0.008
<i>Coordinates in NAD83, Zone 16U</i>					

Sample points of greater than 0.030 ppm are figured below.

**Figure 9.3.** October 2020 mapping program sample locations > 0.030 ppm Au, source LLG.



In general, the results of the sampling program reflect previous historical showings particularly in the Dumont banded iron formation trend south of Dumont Lake, the Jorsco iron formation showing and gold values in the extreme northwest corner proximal to the Blackwater Fault along the old railbed where gold was first discovered in 1928.

### 9.3 INDUCED POLARIZATION GRADIENT SURVEY

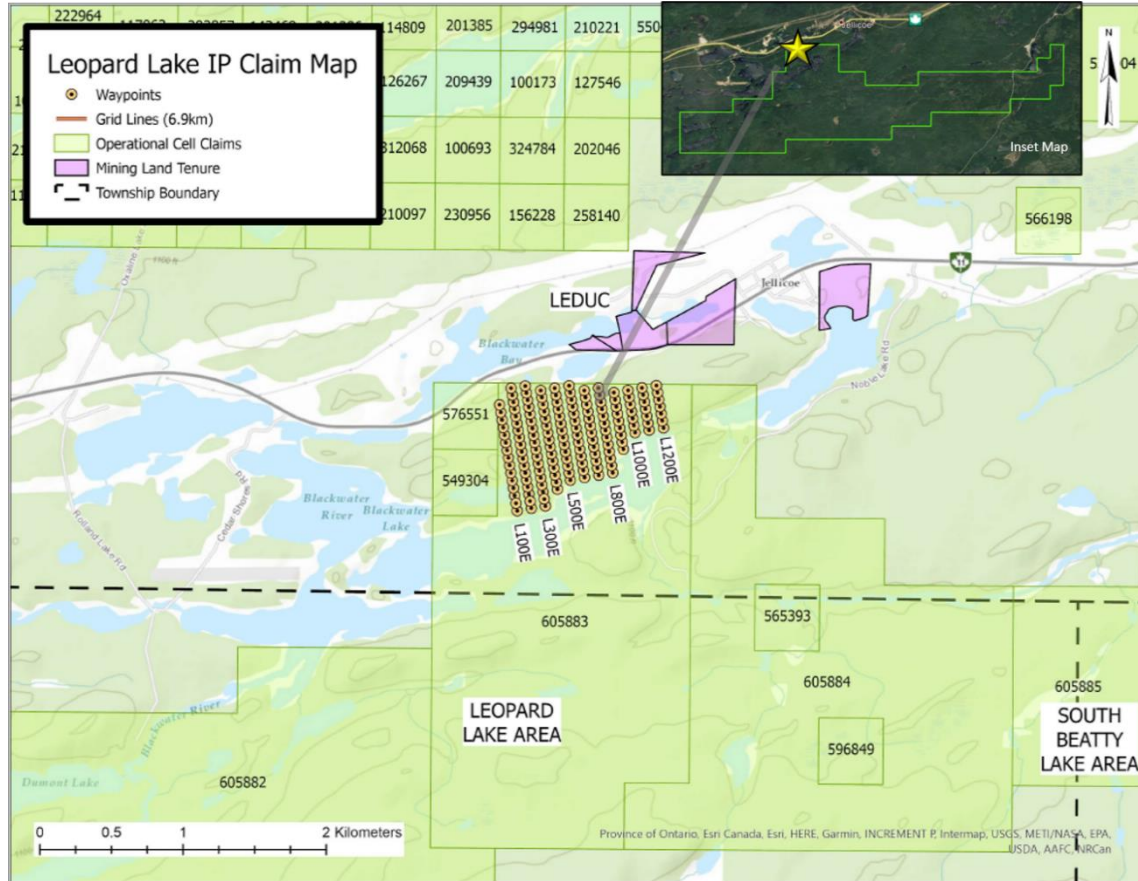
The IP method was developed to aid in exploration of disseminated electronically conducting mineralization that may not be detected by electromagnetic methods. Induced polarization (IP) and resistivity are two electrical properties measured in near-surface sediments or bedrock. They are usually measured at the same time by inserting two electrodes into the earth surface and passing a current through them. In “time domain” IP, after the resistivity measurements are made, the current is shut off and the IP is measured. The IP is caused by the current placed into the earth “charging” specific mineral phases similar to a capacitor. The polarization measures the slow decay of voltage from this stored charge after the flow of electric current ceases.

In the fall 2020, Dan Patrie Exploration Ltd. (“DPE Exploration”) was commissioned to perform a ground Induced Polarization Gradient Survey (IPGS) survey in the northwest corner of the Property (Figure 9.4). A crew of 4 men were in the field a total of 6 days (Oct. 29- Nov. 3rd) on the northwest corner of claim 605883, accessed from the old railroad bed trail.

The receiver, a model IPR-12 accepts signals from up to eight potential dipoles simultaneously which are then recorded in solid-state memory along with automatically calculated parameters. It is compatible with the transmitter, TX KW10 that output square waves with equal on and off periods and polarity changes each half cycle. These periods can vary in duration from 1 to 32 seconds with the IPR-12 measuring the primary voltage (Vp), self potential (SP) and time domain induced polarization (Mi) characteristics of the received waveform. The primary voltage, self potential and individual transient

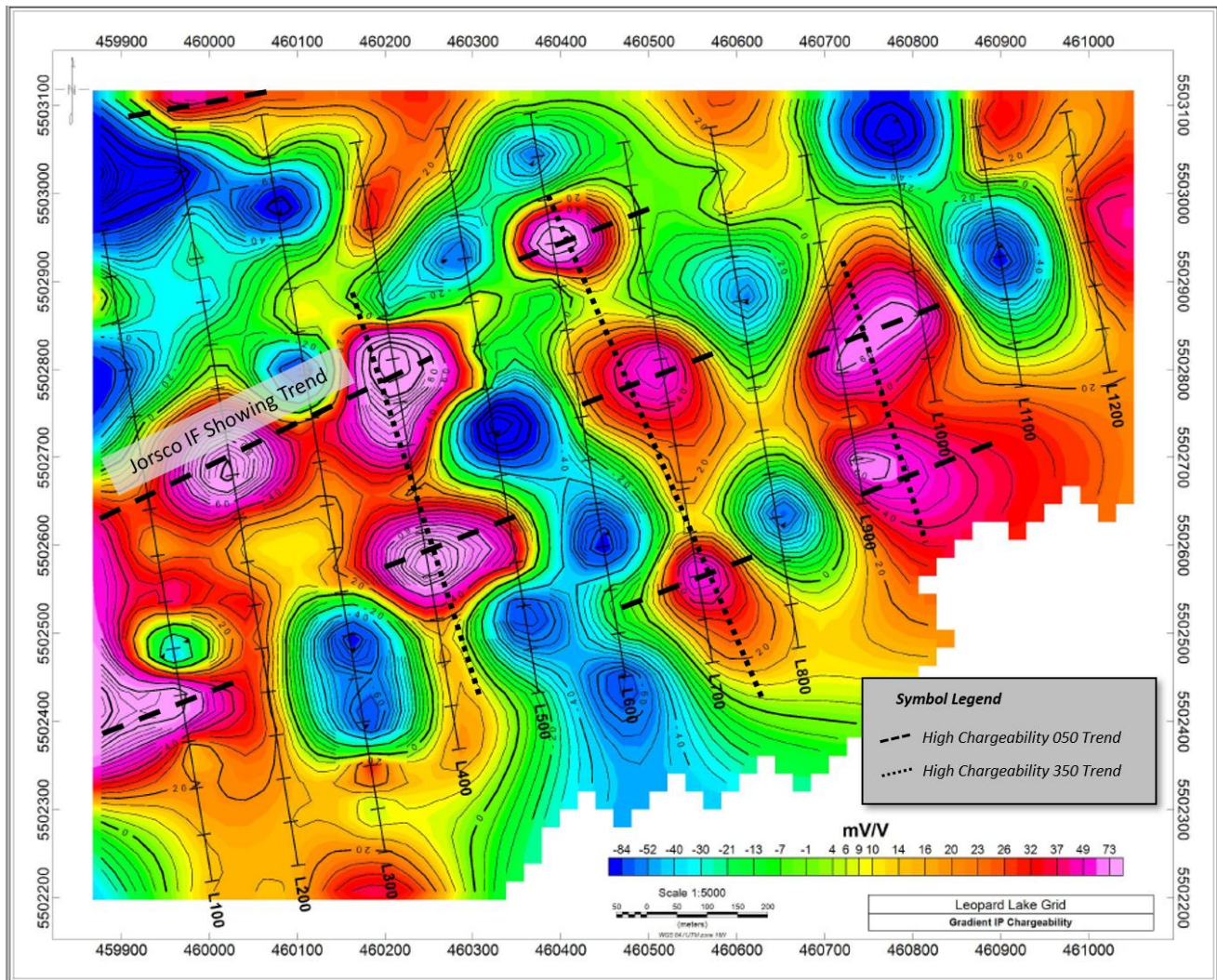
windows are continuously averaged and updated every cycle. Normally, depending on the receive time, 10 to 14 predetermined windows are measured simultaneously for each dipole. The transmitter was Model TX KW10 with an input voltage of 125V, 400Hz / 3 phase, while the output was from 100 to 3200V in 10 steps (source DPE Exploration).

**Figure 9.4.** Survey coverage of the Induced Polarization Gradient Survey, source DPE Exploration.



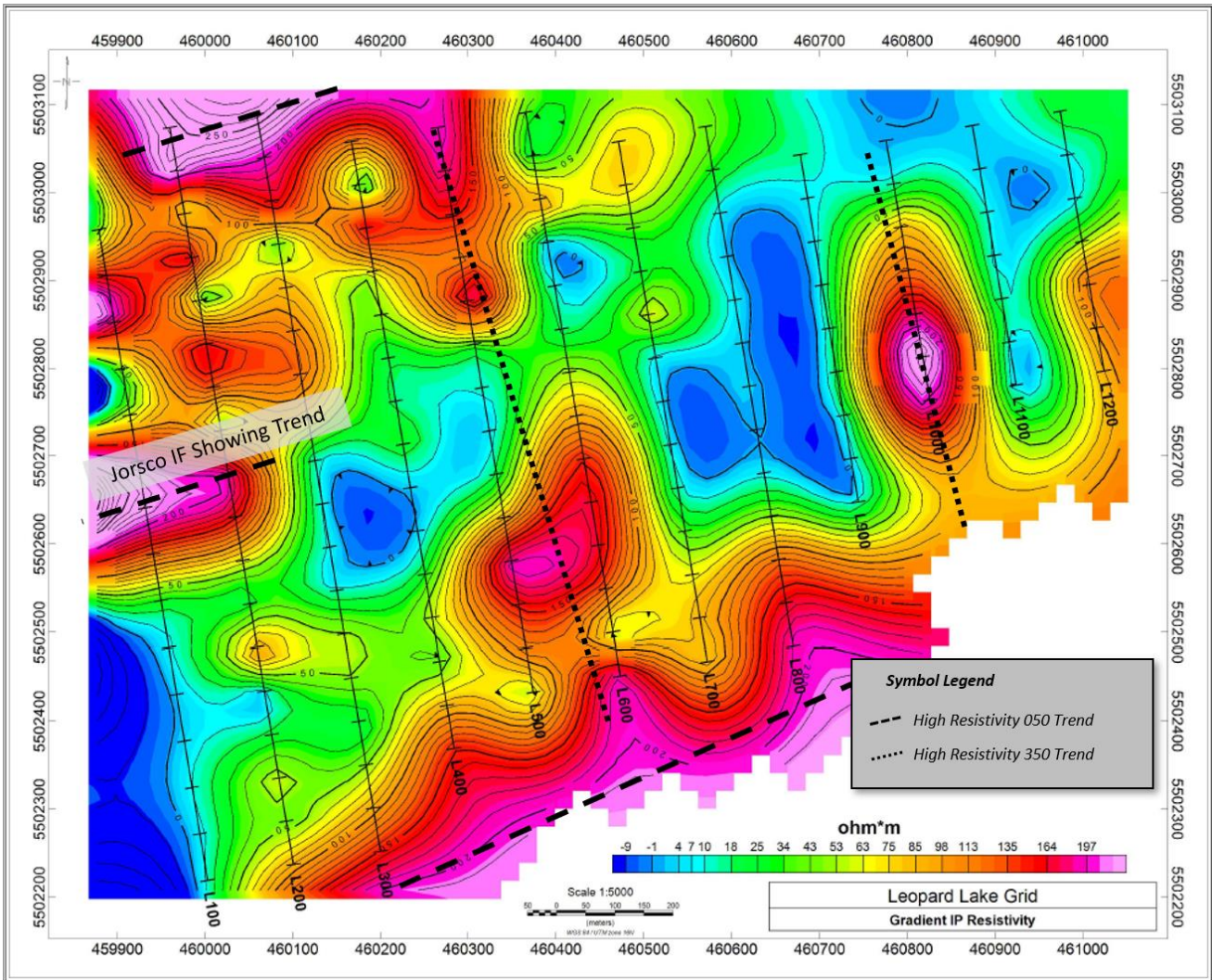
Survey lines were oriented at azimuth 350° and 100m apart. Readings were taken every 25m. Approximately 7km of line were surveyed with readings of both chargeability (Figure 9.5) and resistivity (Figure 9.6).

**Figure 9.5.** Chargeability values (mV/V) of the IPGS survey, source DPE Exploration.



The chargeability values are best described as a collection of small elliptical highs. The anomalous chargeability zones are aligned in two directions of azimuth 050 and 350. The 050 trend is reflective of the general strike of lithologies in the area and of shearing and/or foliation. The Jorsco iron formation (IF) trend (050) is quite apparent as it passes onto the Property. A second and third high-chargeability trend bearing 050 is also apparent to the southeast most likely reflecting parallel additional iron formation previously undetected. One additional trend in the extreme northeast corner of the survey just beyond the Property boundary is most likely reflecting sulphides proximal to the Blackwater Fault and gold mineralization sampled along the old railbed. The high-chargeability trends of 350 may reflect structural zones or dykes hosting possible sulphide minerals.

**Figure 9.6.** Resistivity values (ohm) of the IPGS survey, source DPE Exploration.

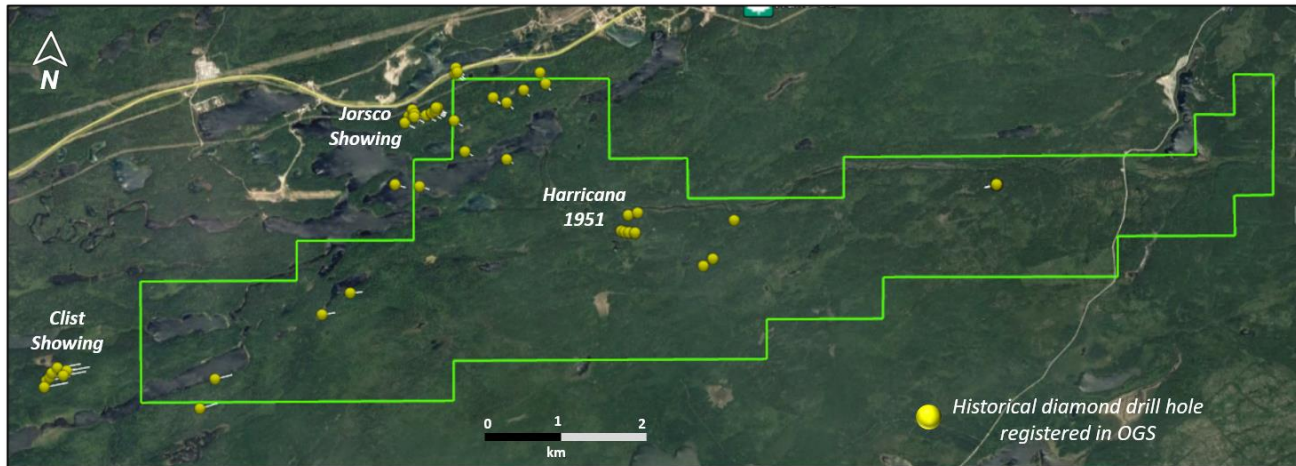


The same 050 and 350 azimuth trends are apparent in the resistivity values. The Jorsco IF showing appears to be strongly chargeable and strongly resistive. Two additional strong resistive trends are apparent in the northeast and southwest part of the survey. The two highly resistive 350 trends coincide with low chargeability and are probably reflective of late cross-cutting faulting.

## 10.0 DRILLING

Leopard Lake has not yet performed drilling on the Property. For a summary of drilling performed by previous operators on the Property, see section 6.0 History. A collar plan of the historic drilling registered by the Ontario Geological Survey (OGS) at the Property is provided below in Figure 10.1.

**Figure 10.1.** OGS registered historical drill hole locations, source OGS, July 12, 2021.



## 11.0 SAMPLE PREPARATION, ANALYSIS and SECURITY

As mentioned in Section 9.0, Leopard Lake performed a mapping and sampling program in October 2020 completed by a consulting geologist. A total of 57 grab samples were analyzed for gold and a multi-element ICP method.

Rock grab samples were secured in plastic bags with sample tags and kept under the personal care of the consulting geologist during the mapping and sampling program. Samples were hand delivered in four secured rice bags to the ALS Geochemistry preparation lab in Thunder Bay, Ontario on October 13<sup>th</sup>, 2020. Following sample preparation, the samples were shipped by ALS to their ALS geochemical lab in North Vancouver, B.C.

Primary analytical methods by ALS for Au were Au-AA23, a 30-gram Fire Assay with an ICP-OES finish. Samples were also analyzed using the ME-MS41 Aqua Regia with ICP-MS Finish which analyzes 51 elements.

All ALS Minerals laboratories are ISO 17025:2005 accredited, and ALS Minerals laboratories is independent of the Company.

The Author confirmed that all protocols regarding QA/QC were followed in collecting grab samples in the field, ALS lab sample preparation and analyses and the security of the samples between collection and delivery to the laboratory by the consulting geologist.



Two blanks, one pulp replicate and two standards were inserted into the analytical stream for the mapping and sampling program for the purpose of QA/QC. The limits of the certified reference standard supplied by CDN Resource Laboratories Ltd ([www.cdnlabs.com](http://www.cdnlabs.com)) and referenced below.

CRM Code	Au g/t	Ag ppm	Cu %	Pb %	Zn %
CDN-ME-1708*	6.96**	53.9	2.00	0.171	0.484

\*CDN-ME-1706 are Miscellaneous High Sulfide Mineralization blends with Au to undergo Fire Assay analysis. All other elements to be undergo a 4-acid digestion with ICP finish.

\*\* Certified gold value +/- 0.50 g/t Au within the two standard deviations.

There were no failures with the above QA/QC protocols inserted during the mapping and sampling program in the analytical stream. Internally, ALS retains their own QA/QC protocols during analysis. There were no failures within their own internal insertion of standards, blanks and duplicates and the Author's opinion is that the adequacy of ALS's analytical procedures, sample preparation and security was sufficient.

Site verification of 5 samples was taken by the Author from May 28, 2021. These rock grab samples were secured in plastic bags with sample tags and kept under the personal care of the Author until hand delivered in a secured rice bag to the ALS Geochemistry preparation lab in Sudbury, Ontario on July 2, 2021. Following sample preparation, the samples were shipped by ALS to their ALS geochemical lab in North Vancouver, B.C.

Primary analytical methods by ALS for Au were Au-AA23, a 30-gram Fire Assay with an ICP-OES finish.

## 12.0 DATA VERIFICATION

Some of the exploration summary reports and technical reports for projects on the Property were prepared before the implementation of NI 43-101. The authors of such reports appear to have been qualified and the information prepared according to standards that were acceptable to the exploration community at the time. The Author has no known reason to doubt the adequacy of historical sample preparation, transport and security and analytical procedures for the previous exploration work completed. Previous diamond drilling by various companies within the current Leopard Lake Gold property boundaries should have their collar coordinates verified and field checked for accuracy, GPS'd and with Azimuth and Dip recorded if possible and review any remaining core left in the field.

### 12.1 SITE VISIT

Additional data verification included a site visit to access the Property, the confirmation and sampling of historical trenching and the investigation of registered and non-registered OGS mineral occurrences under the MNDM mineral deposit inventory system (MDI) and sampling completed by Leopard Lake's consulting geologist between October 2<sup>nd</sup> and 11<sup>th</sup>, 2020. This was partially verified by the Author where access was available.

The Author visited the property on May 27-28<sup>th</sup>, 2021, and access was gained via pick-up truck. Trenching completed by Prodigy Gold circa 2010 at the Dumont Trenches and sampled by Leopard Lake's consulting geologist in October 2020 could not be accessed during the Author's site visit due to high-water conditions along the Blackwater River .

Five grab samples were collected during the Author's site visit and sent for analysis and tabled below.

**Table 12.1** *Sample locations and descriptions during Author site visit.*

Sample Number	Easting	Northing	Elevation	Lithology	Au ppm
D837001	460028	5503054	332	south of railroad bed, quartz veinlet/sweat in limonitic mafic volcanics with 1% fine pyrite	0.005
D837002	460023	5503056	335	North wall of railroad bed, sheared foliated and folded metasediment or metavolcanic rocks, limonitic staining, 1% fine grained pyrite, sample taken at apex of rusty micro-fold (true width 20 cm)	0.007
D837003	459934	5503014	344	Sheared limonitic quartz-carbonate-pyrite-rich metasedimentary or mafic volcanic rocks, 20cm wide steeply dipping -80° south (south wall along railroad bed)	0.156
D837004	459934	5503014	344	Sheared limonitic quartz-carbonate-pyrite-rich metasedimentary or mafic volcanic rocks, 20cm wide, dipping -70° south with 5-15% pyrite (southwest outcrop along railroad bed)	0.186
D837005	459933	5503013	342	Sheared limonitic quartz-carbonate-pyrite-rich metasedimentary or mafic volcanic rocks, 20cm wide, dipping -70° south with 5-15% pyrite (southwest outcrop along railroad bed)	0.007
<i>Coordinates in NAD83, Zone 16U</i>					

**Photo 12.1** Field sample SH-04 = Lab Tag D837004, Leduc Gold Project, May 28, 2021, photos by the Author, 2021.

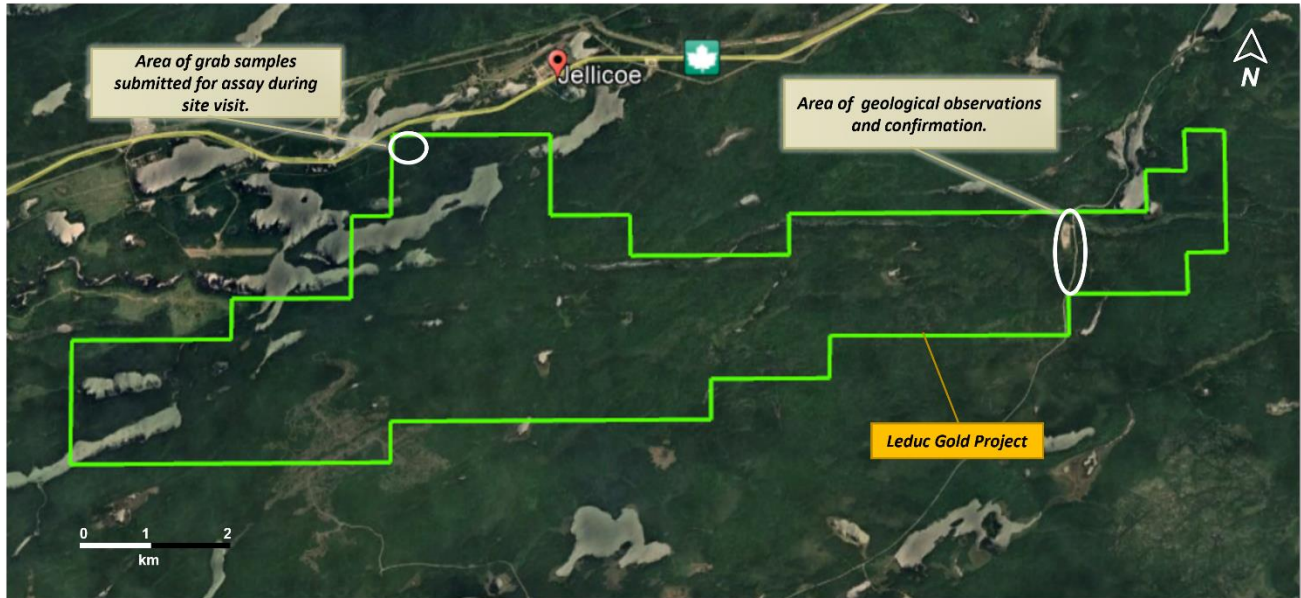


**Photo 12.2.** LLG Sample#S897366 location verification by HGCS, photo by the Author, 2021.



No historical drill holes on the Property were found due to the Author's limited access and the duration of the site visit. Geological observations made on the north-west and eastern part of the claims confirmed geological sampling and GPS points by Leopard Lake, 2020 (Figure 12.1).

**Figure 12.1.** Grab sample location area and area of geological observations, source, the Author, 2021.



It is the Author's opinion that the data in this Report is adequate for the purposes used in this Report.

## 13.0 MINERAL PROCESSING and METALLURGICAL TESTING

This section is not applicable to the Property at its current stage.

## 14.0 MINERAL RESOURCE ESTIMATES

Leopard Lake has not performed any mineral resource estimates within the Property.

## 23.0 ADJACENT PROPERTIES

The Author is aware that the Property is currently in a greenfield exploration stage. There are no immediate adjacent properties that have advanced beyond the status of the Leduc Gold Project.

One of the closest (within 50 km) new mining developments will be the 50/50 joint venture between Centerra Gold and Equinox Gold Corp. (formerly Premier Gold mines) on their "Greenstone Project". Equinox has received final permit approval for their combined open pit/underground mine plans at Geraldton, Ontario. From Premier Gold Mines Limited, Table 1.1, page 1-4, "NI 43-101 Technical Report

Feasibility Study Update Hardrock Project, Ontario Canada,” January 26, 2021 (filed on SEDAR):

**Table 1.1: Mineral Resource Estimate (Exclusive of Mineral Reserves) for the Hardrock Project**

Resource Type	Cut-off (g Au/t)	In-Pit	Underground	Total
		> 0.30 g Au/t	> 2.00 g Au/t	
Indicated	Tonnes (t)	5,972,000	9,792,000	15,764,000
	Grade (g Au/t)	1.21	3.93	2.90
	Au (oz)	231,400	1,237,400	1,468,800
Inferred	Tonnes (t)	356,000	24,593,000	24,949,000
	Grade (g Au/t)	1.14	3.87	3.83
	Au (oz)	13,100	3,059,100	3,072,200

The Company has no interest or right to acquire an interest in the Hardrock Gold Project (now referred to as the Greenstone Project) and the Author has not verified the information, and the information is not necessarily indicative of the mineralization on the Leduc Gold Project.

“On December 13, 2018, the Federal Government of Canada approved the Hardrock Project Environmental Impact Study and Environmental Assessment (EA). The Ontario Provincial Ministry EA Review Report was issued for public comment on October 22, 2018 and provincial approval was subsequently received in March 2019.

Throughout 2019, numerous permit applications were submitted and the project received federal authorization under Section 35 of the Fisheries Act, as well as, the Release of Tree Reservations from the provincial Ministry of Natural Resources and Forestry which allows it to clear trees on patent land within the Project Development Area. Also, the project has received approval of the filed Closure Plan from the provincial Ministry of Energy, Northern Development and Mines in early January 2020 (Centerra website <https://www.centerragold.com/operations/greenstone/history> ).”

This will be significant for this region from Beardmore to Geraldton, Ontario as it will bring in numerous people, companies and supplies to the area for future exploration.

## 24.0. OTHER RELEVANT DATA AND INFORMATION

There is no additional data or information that the Author is aware of that would make the report misleading or change the findings, interpretations, conclusions and recommendations of the potential of the Property.

## 25.0 INTERPRETATION AND CONCLUSIONS

The Leduc Gold Project lies within the Beardmore-Geraldton Greenstone Belt (BGB) of the East Wabigoon Terrane (Figure 7.1). The Beardmore-Geraldton Greenstone Belt has had a long gold mining

history dating back to the early 1930's. Through most of the 1930's through to the end of the 1960's the Beardmore-Geraldton Gold Camp has produced over 4.1 million ounces of gold and 300,000 ounces of silver from 20 different gold mines at an average head grade of 7.54 g/t Au (Table 17.1).

**Table 25.1.** *Historic gold production of the Beardmore-Geraldton Greenstone Belt, source OGS Open File Report 5538.*

<b>HISTORIC PRODUCTION – BEARDMORE-GERALDTON DISTRICT</b>			
<b>Minesite</b>	<b>Short Tons Mined</b>	<b>Gold Grade (oz/t)</b>	<b>Gold Ounces Produced</b>
Bankfield	231,009	0.29	66,417
Brengold	46	2.91	134
Crooked Green Creek	1,455	0.32	471
Hard Rock	1,458,375	0.18	269,081
Jellicoe	10,620	0.40	4,238
Leitch	920,745	0.92	847,690
Little Long Lac	1,780,516	0.34	605,499
MacLeod Cockshutt	10,337,229	0.14	1,475,728
Magnet Consolidated	359,912	0.42	152,089
Maloney Sturgeon	1	73.00	73
Maylac	1,518	0.52	792
Mosher	2,710,657	0.12	330,265
Northern Empire	425,866	0.35	149,493
Orphan	3,525	0.70	2,460
Sand River	157,870	0.32	50,065
Sturgeon River	141,123	0.52	73,438
Talmora	6,634	0.21	1,417
Tashota	51,200	0.24	12,356
Theresa	26,120	0.18	4,785
Tombill	190,622	0.36	69,120
<b>TOTAL PRODUCTION</b>	<b>18,815,043</b>	<b>0.22</b>	<b>4,115,611</b>

All of the above historical gold mines and current to near future producers in the region are considered orogenic gold deposits of Archean-aged greenstone belts and environments.

The Leduc Gold Project can be generally sub-divided into two distinct rock assemblages separated by the East Wabigoon-Quetico Subprovince boundary that transverses the Property. The rocks of the Quetico Subprovince consist of thinly bedded metasediments. North of the sub-province boundary mafic volcanic assemblages and their assorted counterparts dominate the East Wabigoon Subprovince.

The BGB underwent four deformation events that are summarized in Table 7.1. These four deformational events are intimately associated with three gold mineralizing periods within the BGB.

**Three types of orogenic gold mineralization occur on the Leduc Property.** These are, but not limited to:

- 1) Gold-enriched banded iron formation within the mafic volcanic belt;
- 2) Lode gold auriferous quartz-carbonate veins; and
- 3) Disseminated gold in silicified and chloritic shear zones.

### **TYPE 1 Gold – Leduc Gold Project – examples**

The geological, geochemical and structural observations of the gold enriched banded iron formations at the Leduc Gold Project appear analogous to the historic Hardrock and McLeod-Cockshutt mines in Geraldton. Banded iron formation hosted gold deposits are and have been key producers of gold in Archean-aged greenstone belts and include the historic Pickle Lake gold camp and the current producing Musselwhite gold mine, both located in Ontario.

Extracted from the Canadian Mining Journal – June 2007, the Musselwhite Gold Mine, has a “New geological model”:

*“The geology around the Musselwhite mine has been of continuing interest to geologists for four decades, but by the end of 2006 the model of the Musselwhite deposit had changed fundamentally. In the early 1990s the Musselwhite deposit was assumed to lie in a fold closure. A decade later, the deposit was drawn on a faulted model. Then last year, geologists adopted a shear zone model. What they now know is that gold mineralization can occur anywhere in the iron formation but that it is higher-grade where the iron formation is intersected by specific shear zones.”*

Historical channel sampling by Prodigy Gold in 2010 at the Dumont trenches returned **1.29 g/t Au over 1.22m** and highlights from the Keevil Trench **included 4.51 g/t Au over 1.09m** which included **7.31 g/t Au over 0.51m**.

### **TYPE 2 Gold – Leduc Gold Project – examples**

Gold-bearing quartz-carbonate veins were the focus of the Northern Empire Mine in Beardmore that is hosted within the same southern mafic volcanic suite as the Leduc Gold Project 30km to the northeast. The Northern Empire mine produced 149,493 ounces of gold and 19,803 ounces of silver from 1934-1941. Sampling by Halladay along the Blackwater Fault in the northwest corner of the Property returned anomalous gold in a shear hosted quartz-carbonate veins.

The Little Long Lac mine (table 17.1) produced most of the gold from the narrow quartz veins within the arkosic beds of the Metasedimentary package of rocks. “The orebodies are confined to the arkosic beds, are lodes made up of narrow veins of quartz along the shear planes. Gold occurs rather abundantly and uniformly distributed through the quartz so that 20% of quartz is sufficient to form ore (at grades of 1/3 oz or > 10 g/t Au). The wall rocks are little altered and contain little gold.” (Bruce and Samuel, SEG, May 1937).

The Lattimer Gold Occurrence - In hole 3-N, an intersection of **253.79 g/t Au over 0.49m** was recorded in sample number 1816 (AFRI 42E11NW0070) that from the drill log is contained in a carbonaceous sediment (contact of argillite – greywacke) unit within 3 m of the “diorite” contact. It is associated with pyrite, pyrrhotite in quartz – carbonate stringers.

### **TYPE 3 Gold – Leduc Gold Project – examples**

Disseminated gold in silicified and chloritized shear zones are also common gold deposits in Archean-aged greenstone belts. Gold mineralization of this nature is primarily located in areas of high strain and deformation with brittle structures providing a pathway and also hosting mineralization as veins or replacement zones with associated alteration.

Harricana Gold Mines recorded **12.03 g/t Au over 1.82m** in a pyrrhotite-rich chlorite schist from a 1951 drilling program. Drill hole 21 (Jorsco Explorations, 1963) within the Property intersected **0.622 g/t Au over 4.57m** in a silicified carbonatized section of mafic volcanics.

Historical drill hole 42925 drilled by the International Nickel Company of Canada (INCO) in 1969 intersected 2.13m of massive sulphides with a majority of the 75m long hole reporting quartz-carbonate stringers and sulphides in altered and silicified andesite and graphitic schists. No results or sampling was reported in the logs. Author's note, Inco was probably looking for nickel in the anomaly of massive sulphides, and never recorded Au assays.

Geophysical Surveys have been performed by numerous companies over the last 30 years and this needs to be reviewed for untested anomalies and targets and compiled digitally with current data.

**In conclusion**, the Author, Scot Halladay is of the opinion that “**the Leduc Property remains highly prospective for the discovery of additional gold mineralization in the above 3 gold deposit model types. Gold is where you find it. Gold appears in at least 3 of the rock types on the property.**” The higher -grade samples (>3 g/t Au) in all areas need to be explored further, ground truthed, confirmed and where possible followed up with an initial exploration plan to extend along strike, dip and plunge directions.

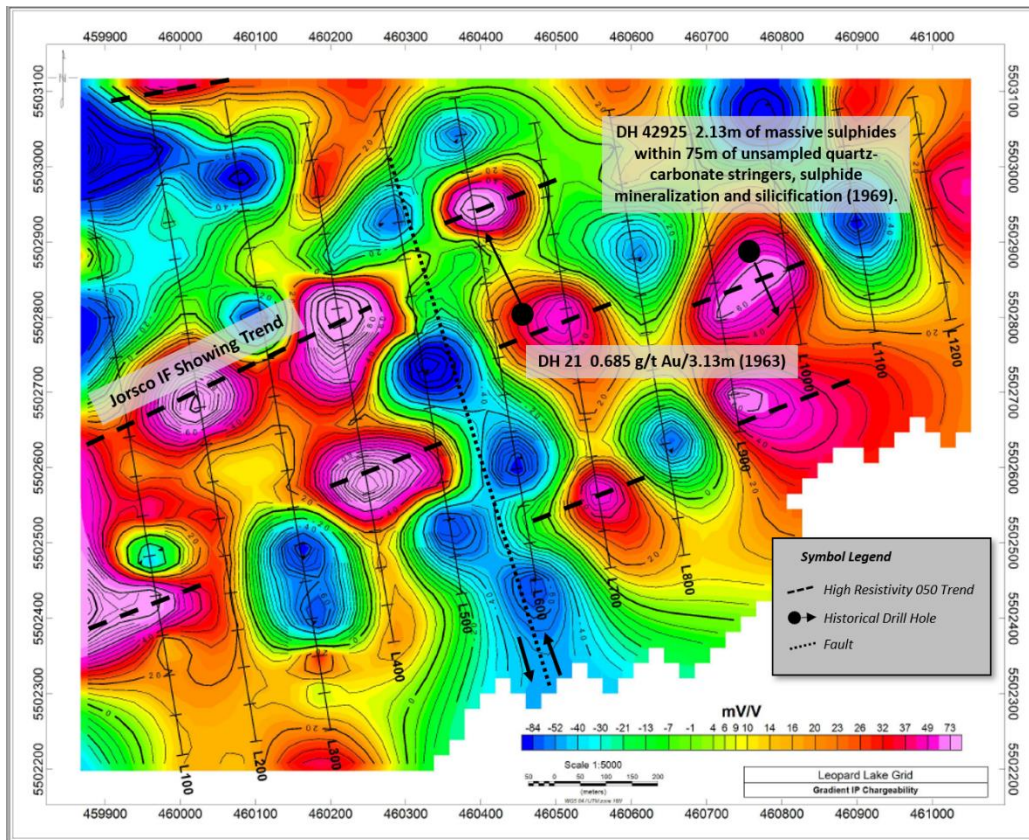


## 26.0 RECOMMENDATIONS

The Leduc Gold Project is an underexplored Archean greenstone property that hosts several Banded Iron Formations that has significant historic individual gold assays from surface grab samples, channel samples and drill core.

1. The Author recommends compilation of all historical geological, geochemical and geophysical data into GIS referenced layers is the first and most important base of needed knowledge for methodical and diligent well-vectored exploration. Structural interpretation of all geophysical data to integrate mineralization is also recommended. Historical drilling needs to be verified in a high integrity database and modeled for mineralization and lithology. It is recommended that the above compilation be completed for the northeast corner and central portions of the Property as priority #1.
2. After the GIS compilation and interpretation of data, a week of field work and ground truthing of the best anomalies and structures should be done, with sampling, assays and possible mechanical stripping to better target the future drill holes if warranted. This cost is allocated in field work and contingency.
3. The Author believes the northeast corner of the Property north of Blackwater Lake holds potential for gold mineralization. Historical drilling from 1963 and 1969 report gold values and lithological descriptions of unsampled sulphide mineralization, quartz-carbonate stringers and silicification typical of orogenic gold deposits in the Beardmore-Geraldton greenstone belt.
4. The recent induced polarization gradient survey has outlined several favourable trends of high chargeability (anomalies). The Jorsco Occurrence that contains historical documented gold mineralization to the west of the Property appears to extend onto the Property (Figure 18.1). No drilling has been performed in the northeast corner of the Property since 1969.
5. A Geophysicist should review the recent ground and airborne geophysics and assist in targeting the best anomalies to drill for this NW corner of the Property. A geologist should compile all available past geophysical surveys on various parts of the Leduc Gold Project with knowledge of the past exploration work and rock types and prioritize the best areas for a Geophysicist to review and propose drill holes.
6. **The Lattimer MDI occurrence and drill hole 3-N (North) which intersected >250 g/t AU over 0.49m needs Exploration follow up in 2021 - 22. This is the HIGHEST Grade drill intercept on the Property.**
7. **Harricana Gold Mines recorded 12.03 g/t Au over 1.82m. This is the 2<sup>nd</sup> HIGHEST Grade drill intercept on the Property and requires exploration follow-up.**

**Figure 26.1.** Historical drilling over high chargeability trends, northeast Property, source DPE Exploration.



Gold mineralization intercepts from the 1951 drilling by Harricana Gold Mines Limited (12.03 g/t Au over 1.82m) should also be high priority to investigated further. Line-cutting and VLF-EM surveys in 1988 by Mingold Resources followed by 3 diamond drill holes did confirm mineralization there with intercepts of 0.375 g/t Au over 1.7m and 0.356 g/t Au over 0.52m. This area has potential and has not been drilled or systematically explored since 1988.

The Author recommends that compilation of all historical geological, geochemical and geophysical data into GIS referenced layers is needed for the remainder of the Property and any new claims staked.

A budget for a Phase I program of the above is estimated to cost \$107,000 (Table 18.1).

**Table 26.1.** Estimated budget for Phase 1 exploration expenditures.

<b>Leduc Gold Project Phase I Exploration Budget</b>			
<b>Exploration Item</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Item Cost</b>
2D and GIS Compilation and Interpretation	1	\$20,000	\$20,000
Diamond Drilling (all-in costs of direct drilling, Senior Geologist, Technician, Room and Board, Supplies, Analyses, Rentals)	375m, 3 holes	\$200/m	\$75,000
<b>Sub-total</b>			\$95,000
Field work + contingency			\$12,000
<b>Total</b>			<b>\$107,000</b>

Subsequent exploration programs beyond Phase I will depend upon the success and findings of the first phase of exploration. A Phase II budget should be in the \$200 - \$500,000 range with full GIS Compilation for all parts of the Property, along with 3D drill hole interpretations of the past drill results, more focused prospecting (possibly with a beep - mat or EM hand held meter) and ground - truthing of past results, anomalies, locating of drill hole collars and along the “interpreted structures that offset the magnetic survey trends” and other geophysical anomalies, included with mechanical stripping, washing and trenching, mapping and sampling, future ground geophysics and diamond drilling.

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## 28.0 CERTIFICATE

### CERTIFICATE OF QUALIFIED PERSON

Scot Halladay, P.GEO.

I, Scot H. Halladay, P. Geo., 3243 St. Laurent Street, Greater Sudbury, ON, do hereby certify that:

- 1) I am a geologist currently employed by Halladay Geological Consultants and Services (HGCS) a company in operation for 22 years.
- 2) This certificate applies to the technical report titled "NI 43-101 Independent Technical Report on the Leduc Gold Project for Leopard Lake Gold Corp., Beardmore, Ontario", (the "Technical Report") with an effective date of July 19, 2021.
- 3) I am a Professional Geoscientist (P.Geo.) registered with the Professional Geoscientists of Ontario (PGO No. 1351) and am a member of the Prospectors and Developers Association of Canada PDAC, and Geological Association of Canada (F5609), SGDG, SPDA.
- 4) I graduated with a degree of Bachelor of Science Honours, Geology from the University of Western Ontario in 1985.
- 5) I have over 35 years of experience in the exploration and mining industry with various senior and junior exploration and mining companies throughout North America. I have supervised and managed over 300,000 meters of diamond drilling exploring, delineating and adding resources to Sudbury Nickel – Copper – PGE mines, Au Mines in Ontario and exploration in the Abitibi Subprovince throughout Ontario and Quebec, and greenstone belts in Nunavut, Raglan, QC, and Greenland.
- 6) I have read the definition of "Qualified Person" set out in NI 43-101 and Form 43-101F1 and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "Qualified Person" for the purposes of NI 43-101.
- 7) I have read NI 43-101 and Form 43-101F1 and I am responsible for this Technical Report and confirm through research and writing that all Sections of the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
- 8) I have no prior involvement with the property that is the subject of this Technical Report. I own no securities of Leopard Lake Gold Corp (the "Issuer").
- 9) I visited, confirmed some past sampling, prospected and took some samples at the Property from May 27-28<sup>th</sup>, 2021.
- 10) I am independent of the Issuer applying all of the tests in Section 1.5 of NI 43-101.
- 11) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated at Sudbury, Ontario this 19<sup>th</sup> day of July 2021.

*{SIGNED and SEALED}*

"Scot Halladay"

Scot Halladay, P.Geo. (PGO # 1351)