

We are committed to providing <u>accessible customer service</u>. If you need accessible formats or communications supports, please <u>contact us</u>.

Nous tenons à améliorer <u>l'accessibilité des services à la clientèle</u>. Si vous avez besoin de formats accessibles ou d'aide à la communication, veuillez <u>nous contacter</u>.

# Gradient IP Survey Report

Work Performed by
Dan Patrie Exploration Ltd.
On Behalf of

Bear Creek Gold Ltd.

In

Lizar Township
District of Algoma, Ontario

**Brent Patrie Dan Patrie Exploration Ltd.** 

P.O Box 45, Massey, Ontario POP 1P0 705-869-7507

# **Table Of Contents**

Page 3 - Authors, Contributors & Qualifications

- Introduction

- Location & Access

Page 4 - BCG Holdings & Permits (Table 1)

Page 5 - Geology

Page 6 - A Brief History

Page 7 - Work Preformed

- Interpretation & Recommendations

- Instrumentation

Page 8 - Property Map (Figure 1)

Page 9 - Property Access (Figure 2)

Page 10 - Survey Grid Map (Figure 3)

Page 11 - Chargeability Contour (Figure 4)

Page 12 - Resistivity Contour (Figure 5)

Page 13-14 - Instrumentation Specifications (Figure 6)

# **Report Authors, Contributors & Qualifications**

C. Brent Patrie – 30+years Exploration & Geophysics Management

**Gabriel Roy** – 16+years Exploration & Geophysics, Mapping & Data Management

**L.D.S Winter** – 50+years Geologist BASe, MSc(App)

# **Introduction**

Bear Creek Gold Ltd. holds a series of claim groups within the central area of Lizar Township. A Gradient IP survey was preformed within the claim group consisting of 68 contiguous single cell mining claims that host the past-producing Hiawatha Gold Mine (Mining Lease Patent -108432)(**Figure 1**).

Between December 10<sup>th</sup> to December 15<sup>th</sup> 2021. Dan Patrie Exploration Ltd. carried out along lines 400W to 400E, 5.55 line-kilometers of Gradient IP Surveying as shown in (**Figure 3**). The following report is a summary of the work carried out and the results obtained.

# **Location and Access**

The Project is located within the central area of Lizar Township (District of Algoma at NTS NAD 83, UTM Zone 16, 685000mE, 5415000mN) (**Figure 1**)

The Property can be reached by road from White River, Ontario. From here, secondary highway 631 goes to Hornepayne. At about 60km north of White River / 40km South of Hornepayne on highway 631, forest access roads lead to the east and from here a bush road for equipment and ATV's leads directly to the site and the old Hiawatha Gold Mines area (**Figure 2**).

# **Hiawatha Lizar Holdings & Plan/Permit**

The Hiawatha claim group consisting of 68 contiguous single cell mining claims, as well as the contained mining patent lease in Lizar Township held by Bear Creek Gold Ltd., represented in **Table 1** including the active Plan & Permit for the property.

**Table 1** – Claim List, Lease, Plan & Permit

102445	223790	276986	337421
102446	229754	277584	337480
104386	229755	277585	337481
104387	229756	277657	338065
119582	229824	278272	338708
129136	229825	278437	538070
157697	230413	279056	538071
162996	241931	279782	538072
163066	241932	289086	538073
163151	242527	296448	538074
163785	258955	298416	538075
175863	259017	298417	538076
176449	259103	325055	538077
192546	259104	325056	538078
192547	259105	325624	538079
221793	259106	325692	538080
223076	276985	327036	538081

LEA - 108432

PL - 19-000143

PR - 19-000041

#### REGIONAL GEOLOGY

On a regional basis the Property is located in the southwestern end of an approximately 100 km long, arcuate shaped (convex to the north) Archean age greenstone belt located within the Superior Province of the Canadian Shield. The main lithological units within the greenstone belt are mafic to intermediate metavolcanic flows and pyroclastics with minor sedimentary rocks including chert and iron formation. These units have been folded, faulted and intruded by a suite of rocks of tonalitic composition that are foliated to gneissic. In the southwestern end of the greenstone belt, the adjacent country rocks are dominantly massive granodiorite and granite with some tonalitic phases. Proterozoic age (Keweenawan) mafic dykes trending northeasterly are present in the southwestern part of the area.

#### PROPERTY GEOLOGY

The subject Property is underlain by a northeast-trending and vertical to sub-vertical dipping suite of mafic metavolcanics which are do minantly flows. The folded metavolcanics have been strongly sheared along the northeast trend and a feldspar porphyry dyke in turn has intruded the shear zone. Lamprophyre dykes are also present within this structural corridor.

D. Sharpstone, Consulting Engineer, in a report dated 26 August 1939 described the main mineralized zone as follows. "The principal showing is a strong shear zone in a wide granodiorite dyke which follows its long axis. This shear has been followed on the bottom level for about 2000 feet and on the 150 foot level for less than 1000 feet. On surface, it appears to have been followed for 3000 feet.

The shear ranges from 2 feet to 12 feet in width and probably averages four feet. Mineralization varies from sericitization of the granite and pyritization to extensive silicification with numerous parallel stringers of quartz, 0.5 to 6.0 inches in width. Numerous showings of free gold have been found in the quartz stringers, but altered granite in the shear appears to be barren. Likewise, all the gold appears to be free, with little or none in the sulphides".

In addition to pyrite, chalcopyrite, galena and molybdenite are associated with the gold mineralization.

# **A Brief History**

Hiawatha Gold Mines was incorporated in 1936 based on the spectacular gold assay returns from surface pits on the Lizar township property. The company proceeded to explore and develop the prospect during the next three years, however, all activity stopped in 1939 as a result of the outbreak of World War II.

During the period 1937-1939, Hiawatha Gold Mines Limited, carried out surface prospecting, trenching, diamond drilling and sank a three compartment shaft to a depth of 325 feet and established levels at 150 feet and 275 feet.

On the 150 foot level, 967 feet of crosscutting and 847 feet of drifting is reported. On he 275 foot level, 1750 feet of crosscutting, 2547 feet of drifting and 250 feet of raising is reported, for a total of 6361 feet.

A 20 ton test mill was also built on the property.

The last completed assessment of the work on the Hiawatha Mine was done by D. Sharpstone, Consulting Engineer, dated August 26, 1939, extracts of which are as follows: "Main showing: The principal showing is a strong shear zone in a wide granodiorite dyke which follows its long axis. The shear has been followed on the bottom level for about 2000 feet and on the 150 foot level for less than 1000 feet. On surface, it appears to have been followed for 3000 feet. "

Stope preparation was underway and partially completed at the time the mine was closed in 1939.

F.A. Enders, President of Hiawatha in his report to the shareholders Oct. 15, 1938 states that a shipment of ore of one half ton to the Dominion Government Laboratories Ottawa assayed 0.9 oz gold per ton or \$31.50 a ton.

G.L. Holbrooke reports that a trial shipment of one to n of material was made from a pit in the area known as the West A zone 2900 feet south-west of the shaft it returned over \$2,000,00. This information is contained in a letter to W.V. Moat dated September 18, 1937 from G.L. Holbrooke superintendent of Erie Canadian Mines Limited.

The West A zone is described by Holbrooke, as a gold bearing quartz vein investigated over 200 feet, having a width of 3.5 feet. Four diamond drill holes 50 feet apart along strike intersected the zone at depth.

# **Work Preformed & Personnel**

The Gradient IP survey was carried out along cut lines 400W to 400E for a total of 5.55kms. The gradient readings were taken along the lines spaced at 100metres with readings at 25meter intervals along the lines (**Figure 3**).

Three Dan Patrie Exploration Ltd. employees carried out the field survey, Gabriel Roy, Justin Abramson and Robert Kippex, from the dates of December 10<sup>th</sup> to December 15<sup>th</sup> 2021. Accommodations and daily travel was based out of White River, Ontario for the duration of the work.

# **Interpretation & Recommendations**

The gradient IP field readings were subsequently interpreted using Geosoft software as contoured and color-coded data maps, presented in **Figures 4-5**. Notable anomalies coinciding with the previous total field magnetics survey are reveled throughout the western half of the survey. These areas of interest should be considered for the prospective detailed geophysics program (12.5m ground magnetics & 6level pole-dipole).

Recommendations for near future work on the property consist of a 6 level Pole-Dipole Induced Polarization survey covering the existing grid area. Expansion of the grid area to the east, continuing with TFM & IP geophysics. Diamond Drilling of anomalous targets in reference to the cumulative historical and present data compilations.

# **Instrumentation**

The survey instruments used were Scintrex IPR12 receiver, Walcer TX-KW10 Transmitter, and Walcer MG-12A generator system. **Figure 6** provides detailed equipment specifications.

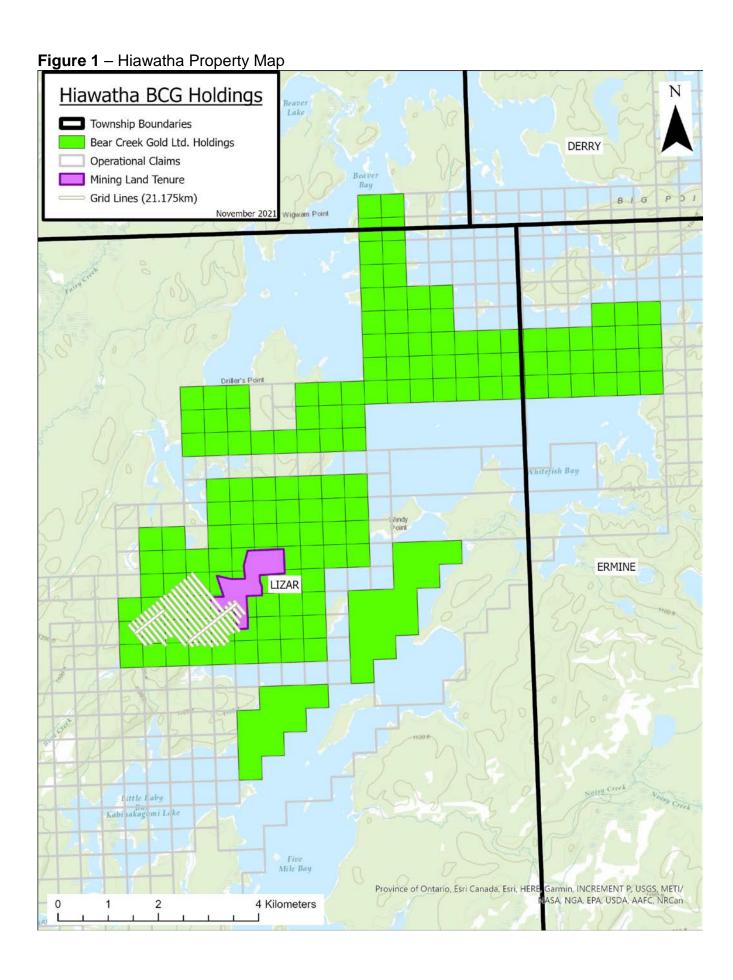
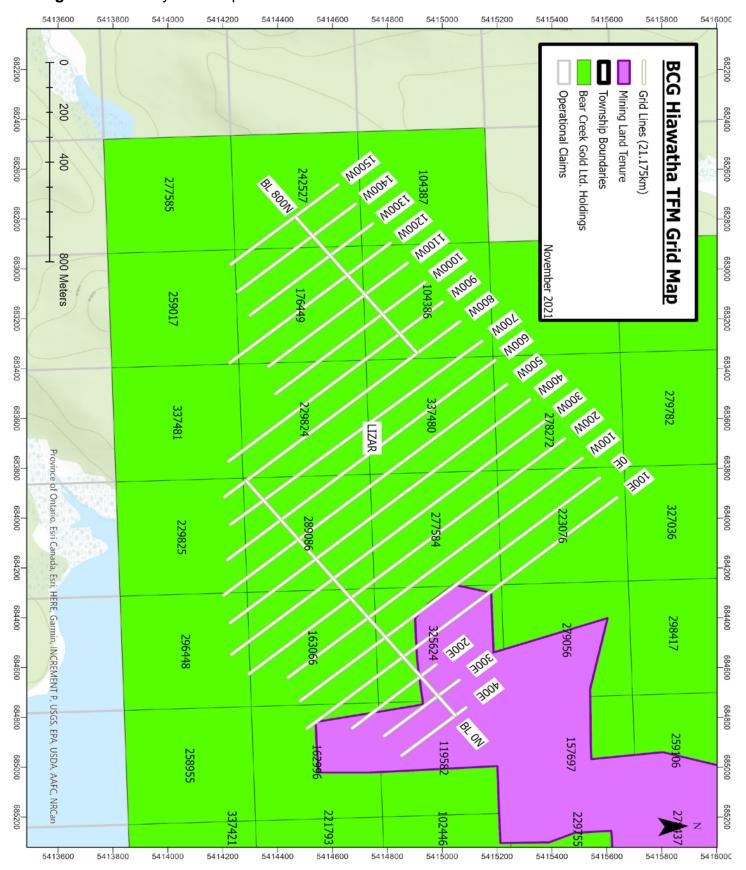
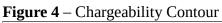
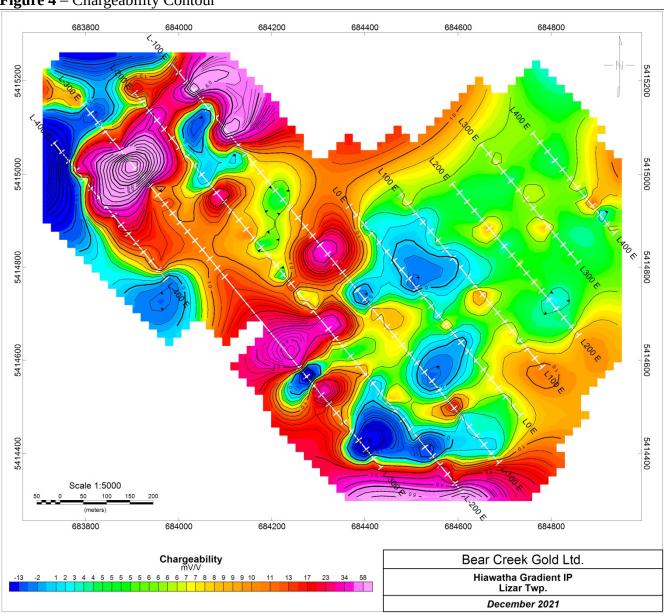


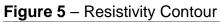
Figure 2 - Property Access Map HIAWATHA ACCESS MAP INTERSECTION POINT DISTANCE BETWEEN POINTS 676131E 5431939

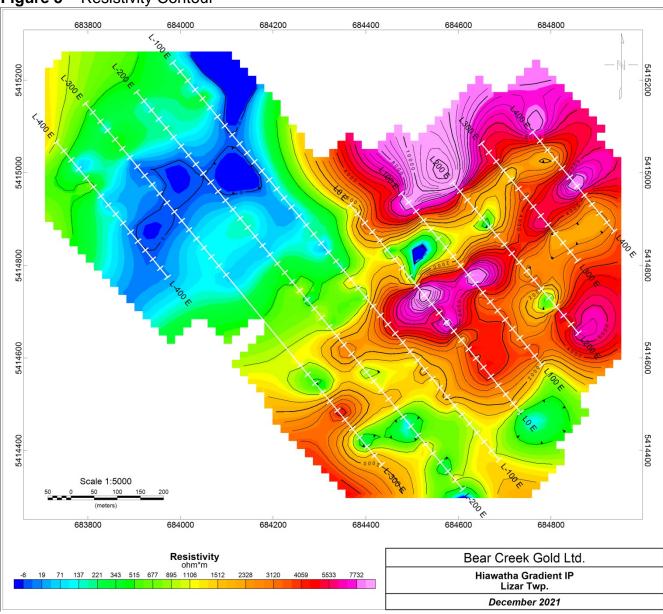
Figure 3 - Survey Grid Map











# **Instrumentation Specifications – Figure 6**

#### Scintrex IPR-12 Receiver



#### **IPR-12 SPECIFICATIONS**

The IPR-12 IP receiver has been successfully used for many years as a mineral exploration tool, specifically for gold exploration.

Induced polarization can also be used as a method for mapping hydrocarbon plumes and geotechnical applications.

1 to 8 dipoles are measured simultaneously. Inputs:

Input Impedance:

SP Bucking: ±10 volt range. Automatic linear correction operating on a cycle by

cycle basis. 50 μV to 14 V Input Voltage (Vp) Range:

Chargeability (M) Range: 0 to 300 mV/V Tau Range: 60 microseconds to 2000 seconds.

Reading Resolution of Vp, SP and M: Vp - 10 μV; SP - 1 mV; M - 0.01 mV/V Absolute Accuracy of Vp, Sp and M: Better than 1%

Common Mode Rejection: At input more than 100dB. Vp Integration Time: 10% to 80% of the current on time.

IP Transient Program: Pulse selectable at 1,2,4,8,16 or 32 seconds. Programmable windows

also available. 50% duty cycle.

Transmitter Timing: On/off times of 1,2,4,8,16 or 32 seconds.

External Circuit Test: All dipoles measured individually in sequence. Range 0 to 2  $M\Omega$  with  $0.1 \text{ k}\Omega$  resolution. Circuit resistances displayed and recorded.

RF filter, 10 Hz 6 pole low pass filter, statistical noise spike removal. Filtering:

Internal Test Generator: 1200 mV of SP; 807 mV of Vp and 30.28 mV/V of M. Analog Meter: For monitoring input signals; switchable to any dipole via keyboard. Memory Capacity: Stores approximately 400 dipoles of information when 8 dipoles are measured simultaneously.

Rechargeable Ni-Cad D cells. More than 20 hours service at +25°C.

Power Supply: (77°F), more than 8 hours at -30°C (-22°F)

-30°C to +50°C (-22°F to 122°F) Operating Temperature:

Dimensions and Weights: Console: 355 x 270 x 165 mm (14" x 10.6" x 6.5") 120 x 95 x 55 mm (4.7" x 3.7" x 2") Charger:

Console: 5.8 kg (12.8 lbs.) 1.3 kg (2.8 lbs.) 1.1 kg (2.4 lbs.) Batteries: Charger:

#### Walcer TX-KW10 Transmitter & Walcer MG-12A Generator



**Gasoline Tank** External - to minimize shipping problems with airlines

### **MG-12A**

#### Output

Self Excite / Regulated 120 / 220V AC 20 KVA Max 400 Hz / 3 phase

#### Generator

Bendix Aircraft Type Very durable Forced Air Cooled

Engine 24 HP Honda Electric Start

#### Size

79cm. x 61cm. x 48cm.

Weight 89 kg.

# Walcer Model TX KW10



#### **Voltage Input**

125V line to neutral 400 Hz / 3 phase Powered by MG12, MG6 and MG12A

## Output

100 - 3200V in 10 steps 0.05 - 20 Amps Tested to 10.5 kVA

#### **Switching**

1 sec., 2 sec., 4 sec., 8 sec.

#### Metering

LED for line voltage and output current

63cm. x 54cm. x 25cm.

#### Weight

44 kg.



September 10<sup>th</sup> 2022

Re: April 2022, Gradient IP Report, Lizar Twp (Work Report Submission: 4806)

References for the April 2022 Gradient IP

- Property geology, brief history of the property and work performed. (Feb 19 2021 Report on the Hiawatha Gold Property Prepared by L.D.S Winter, B.A.Sc., M.Sc (APP)
- Instrumentation Specifications (www.walcergeophysics.com, www.sintrexltd.com)

# **Report Authors, Contributors & Qualifications**

- C. Brent Patrie 30+years Exploration & Geophysics Management (Dan Patrie Exploration Ltd.)
- Gabriel Roy 16+years Exploration & Geophysics, Mapping & data Management (Dan Patrie Exploration Ltd.)
- L.D.S Winter 50+years Geologist BASc, MSc(App)

C.Brent Patrie

Gabriel Roy

L.D.S. Winter
1849 Oriole Drive
Sudbury, ON P3E 2W5
705-523-4597
705-507-4960 (cell)
email: winbourne@eastlink.ca

## **CERTIFICATE OF AUTHOR**

I, Lionel Donald Stewart Winter, do hereby certify that:

.. 1

- 1. I am currently an independent consulting geologist.
- I graduated with a degree in Mining Engineering (BASc) from the University of Toronto in 1957 and in addition, I obtained a Master of Science (Applied) (MSc App) from McGill University, Montreal QC in 1961.
- 3. I am a retired Professional Geo-scientist (P.Geo) in both British Columbia and Ontario (2016).
- 4. I am a Life Member of the Canadian Institute of Mining and a Life Member of the Prospectors and Developers Association of Canada.

LDS hinten

L.D.S. Winter,