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BEAR CREEK GOLD LTD

EXPLORATION PROGRAM

ON THE

CLIFFORD PROPERTY

CLIFFORD TOWNSHIP
LARDER LAKE MINING DIVISION
ONTARIO

L. D. S. Winter, BASc, MSc (App)
28 November 2021

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1. INTRODUCTION.

The Clifford Property is comprised of 61 contiguous MLAS mining claims/cells located in Clifford township, Kirkland Lake area, Ontario. The original 4 Legacy claims were staked in August 2015 and recorded on September 1, 2015. Subsequently with the introduction of the MLAS they were converted to 62 MLAS mining claims/cells. The Property is located in the southeastern part of Clifford township and the adjacent, to the east, southwestern quadrant of Ben Nevis township, 22 km north of the village of Larder Lake and 28 km northeast of Kirkland Lake, in the Larder Lake Mining Division (Figure 1)

The following report presents a review of the regional and Property area geology as well as a summary of previous exploration work and geological, geochemical and geophysical studies by the Ontario Geological Survey (OGS). Between the 15 May and the 15 June 2021 Dan Patrie Exploration Ltd carried out 10.6 line-km of grid Pole=Dipole IP as shown in Figures 2, 9 and 10. This Report describes the work done and the results obtained.

The IP Equipment Specifications and Procedures are provided in Appendix 1 and all the Pseudo-Sections and Chargeability Plans are provided in Appendix 2

2. PROPERTY

The Clifford Property consists of 61 MLAS mining claims/cells as listed in Table 1 and as shown in Figures 2

3. LOCATION AND ACCESS

The Property is located in the southeast quadrant of Clifford township at UTM coordinates, NAD 83, Zone 17, 591100mE, 5349500mN, (79°45.3′W long., 48° 18.1′N lat.), approximately 22 km north of the village of Larder Lake and 28 km northeast of Kirkland Lake , Ontario as shown in Figure 1.

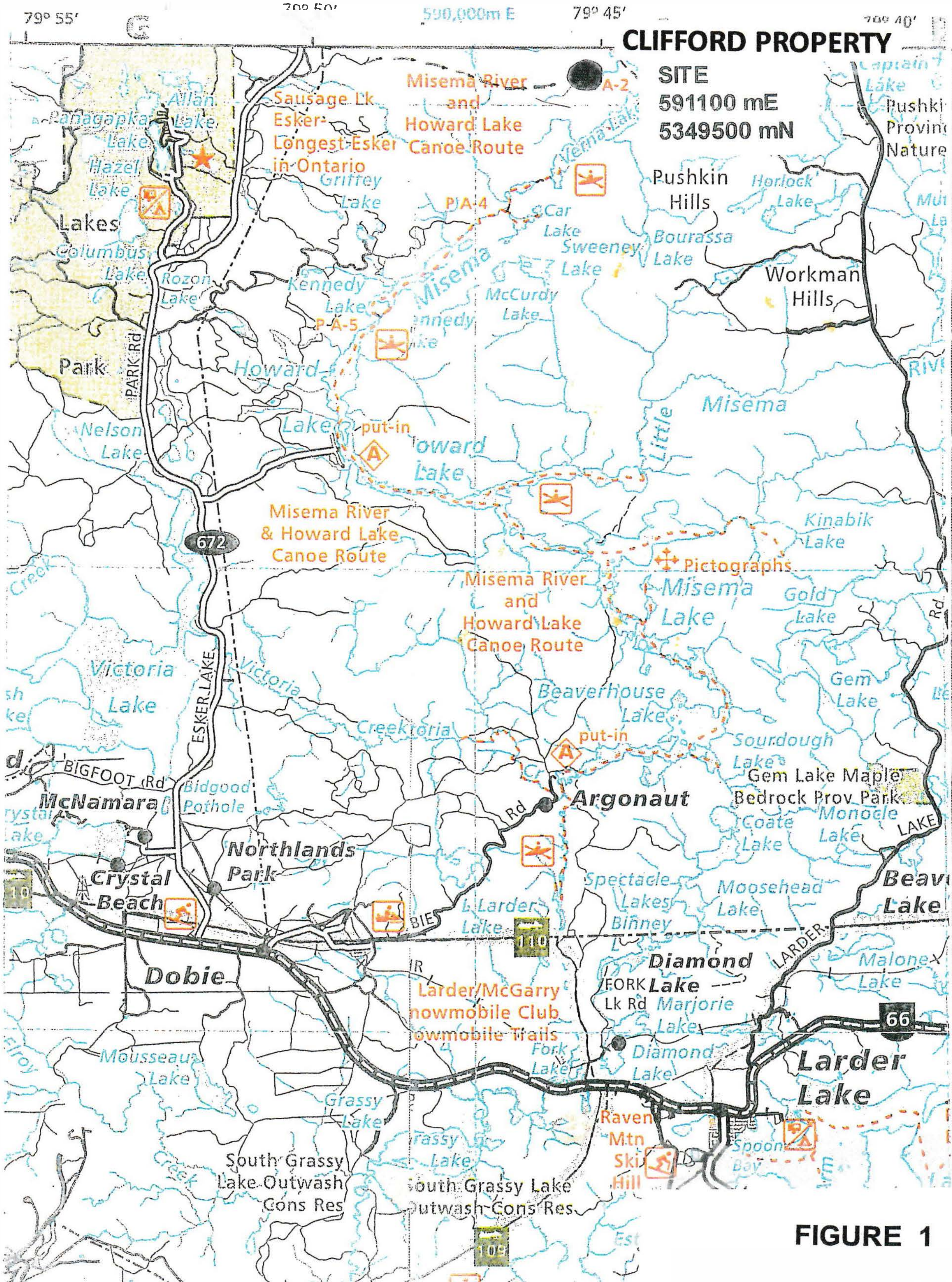

FIGURE 1

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2.5km 0 2.5km 5km

CLIFFORD PROPERTY
LOCATION and ACCESS

NTS 32D/05

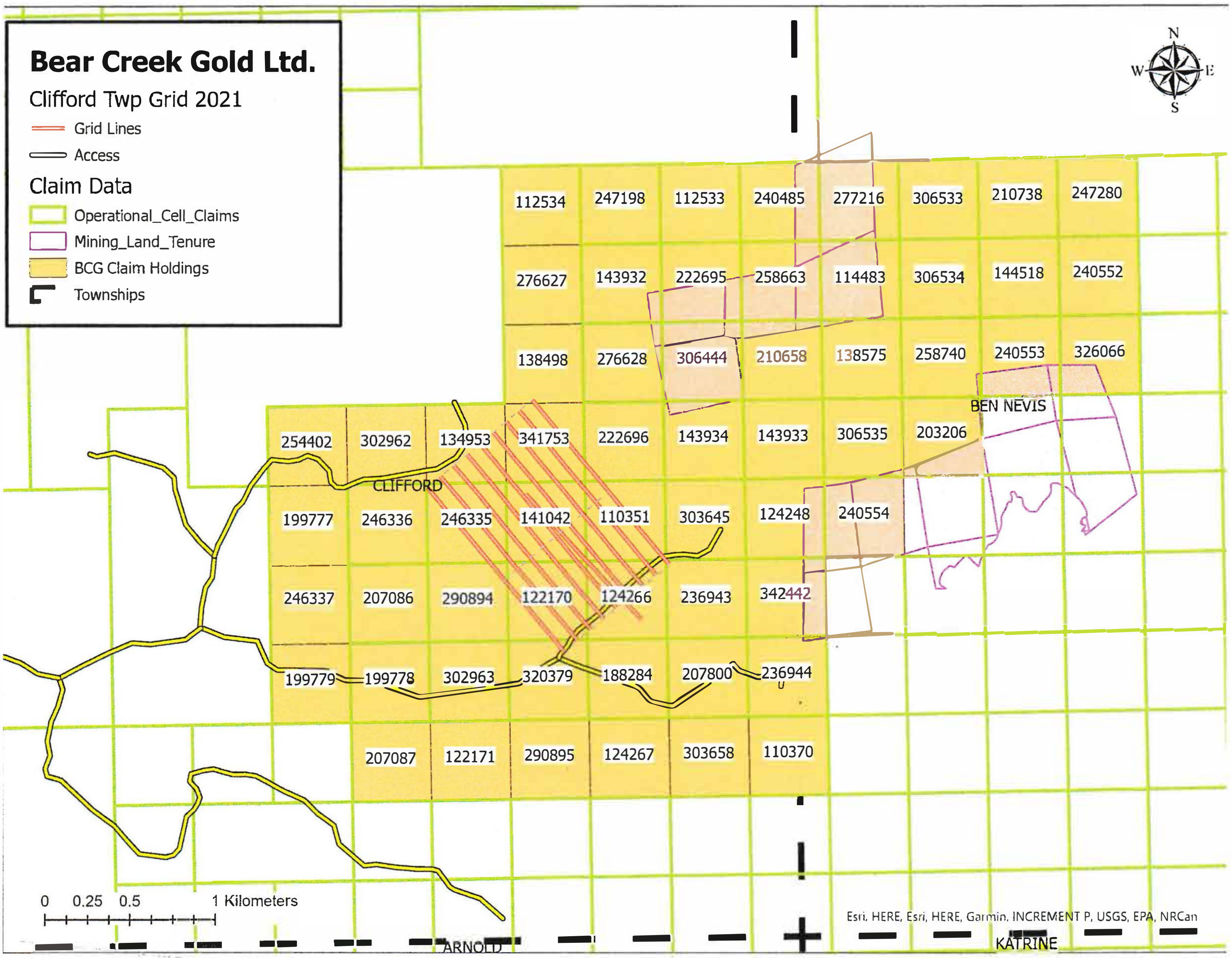
NOV 2021

TABLE 1

CLIFFORD PROPERTY
MLAS MINING CLAIMS

112534	247198	112533	240485	277216
306533	210738	247280	276627	143932
222695	258663	114483	306534	144518
240552	138498	276628	306444	210658
138575	258740	240553	326066	254402
302962	134953	341753	222696	143934
143933	306535	203206	199777	246336
246335	141042	110351	303645	124248
240554	246337	207086	290894	122170
124266	236943	342442	199779	199778
302963	320379	188284	207800	236944
187584	207087	122171	290895	124267
303658	110370			

TOTAL 61 CLAIMS/CELLS



SCALE AS SHOWN

FIGURE 2

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CLAIMS AND IP SURVEY GRID
CLIFFORD PROPERTY

NOV 2021

Provincial highway 66 passes east from Kirkland Lake to Larder Lake, a distance of approximately 25 km. Approximately 13 km east of Kirkland Lake , Hwy 672 connects with Hwy 66 and leads north.. Twenty km north of Hwy 66 on Hwy 672 , a bush road trends approximately east for a distance of 5 km , where it crosses the Clifford Property.

4. REGIONAL AND PROPERTY GEOLOGY

The Clifford-Ben Nevis township area is underlain by metavolcanics ,metasediments and associated intrusive units of the Archean age Blake River Group of the Abitibi Subprovince of the Canadian Superior Province. The Blake River Group is divided into 3 subgroups: the Garrison, the Misema and the Noranda with the units of the Misema subgroup underlying the Clifford-Ben Nevis area. Subaqueous andesitic flows are the dominant units in the subject property area but, basalts and rhyolites are also present with the felsic units often being pyroclastics. High level synvolcanic dykes are also present. The dominant intrusive in the area is the Clifford intrusive in the southeast quadrant of Clifford township. (Peloquin and Piercey,2005) and see Figure 3.

The Clifford Intrusive was emplaced in a domal structure which in turn is crosscut by east-northeast and north-northwest trending structures. The dominant structural trend is east-northeast to east-west. Matachewan-age , north-northwest trending dykes crosscut the area.

VMS style alteration and mineralization as well as a porphyry Cu-Au-Mo-style in the area of the Clifford stock has been recognized.

The property area geology is shown in both Figures 3 and 4.with the main supracrustal units in the area being those of the Misema subgroup of the Blake River Group. The three main metavolcanic units are, felsic volcaniclastics, intermediate volcanics and mafic to intermediate volcanics. These have been folded into a domal feature which in turn hosts the Clifford stock which is a relatively equigranular body of granodioritic to tonalitic composition. South of the Clifford stock the metavolcanic units face and dip south and there are numerous east to northeast-trending sill to dyke-like felsic intrusions which are considered to be related to the Clifford stock.

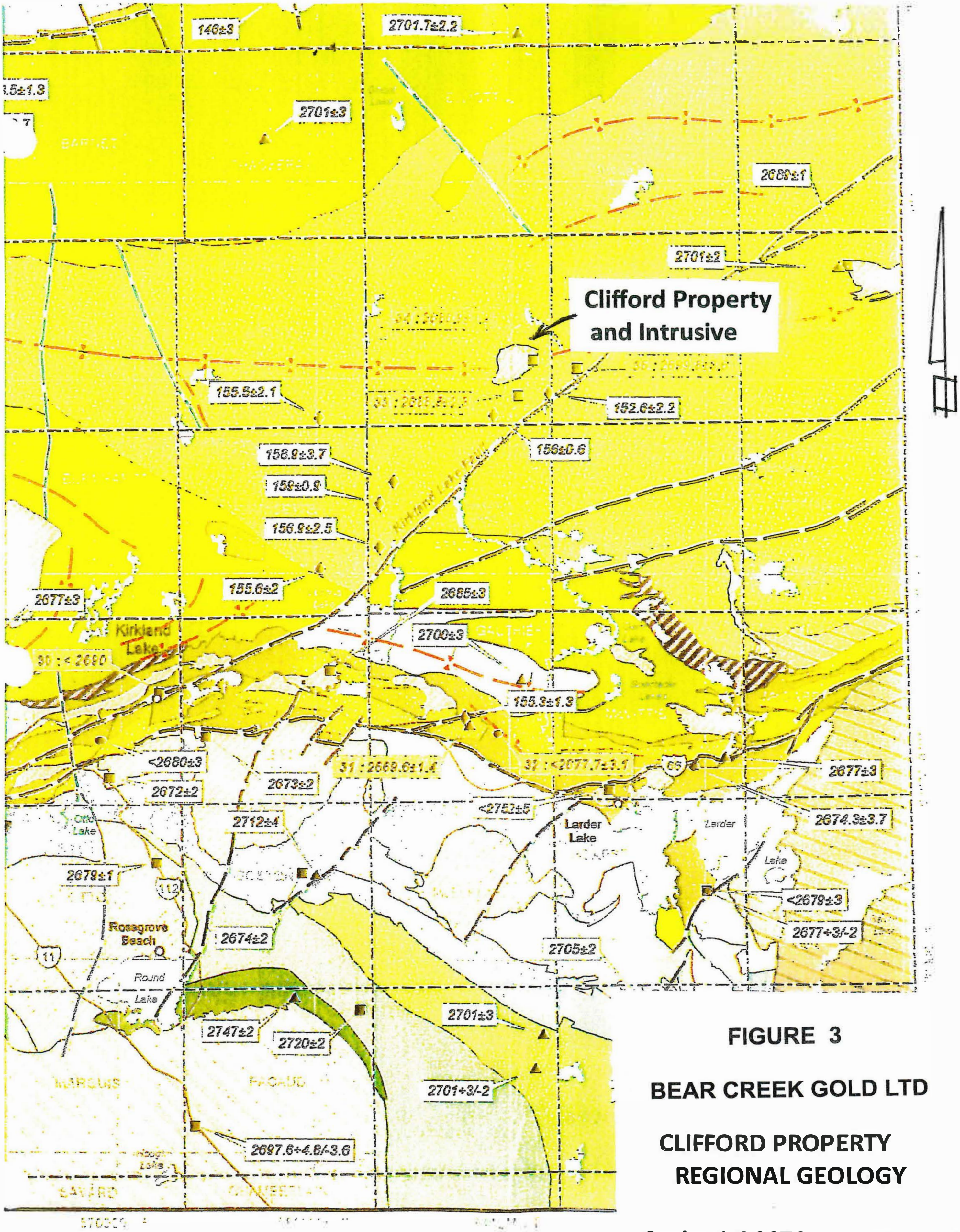

FIGURE 3

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**CLIFFORD PROPERTY
REGIONAL GEOLOGY**

Scale: 1:26670 **NOV 2021**

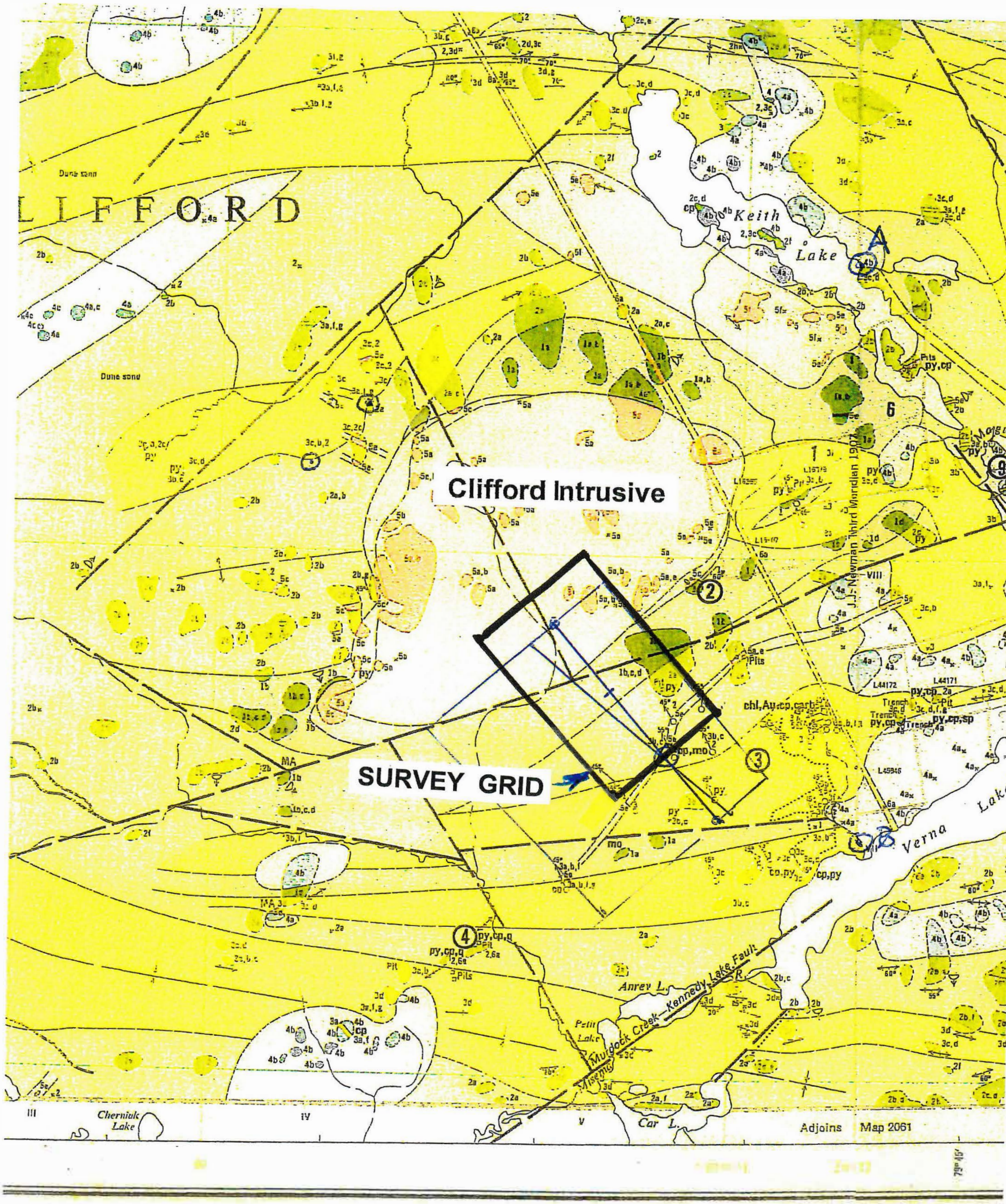

FIGURE 4

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CLIFFORD PROPERTY
PROPERTY AREA GEOLOGY

NOV 2021

Map 2283

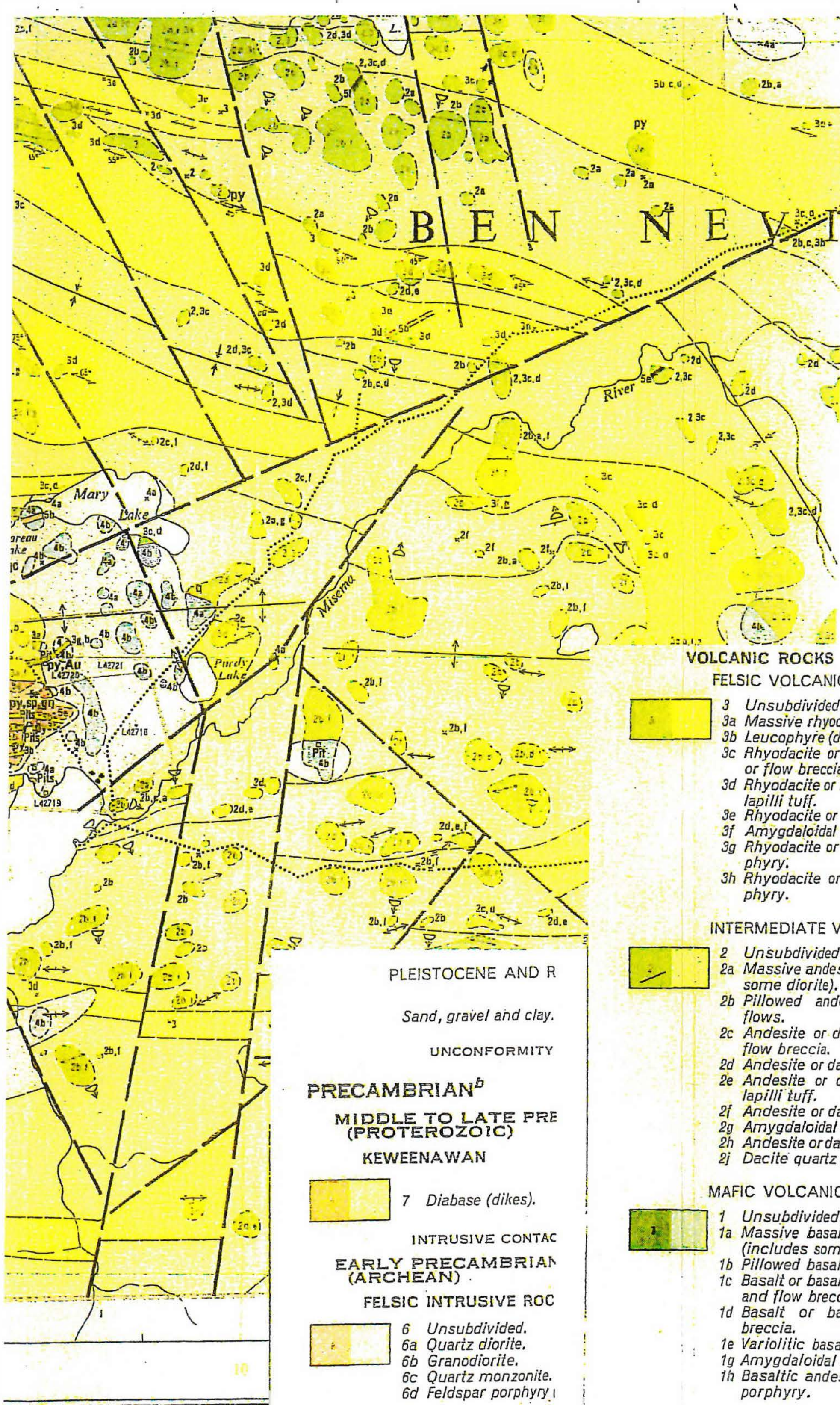
CLIFFORD AND BEN NEVIS

TIMISKAMING DISTRICT

SCALE: 1 cm = 315 m

Scale 1:31,680 or 1 Inch to ½ Mile

0 1



PLEISTOCENE AND R

Sand, gravel and clay.

UNCONFORMITY

PRECAMBRIAN[b]

MIDDLE TO LATE PRE (PROTEROZOIC)

KEWEENAWAN

7 Diabase (dikes).

INTRUSIVE CONTAC

EARLY PRECAMBRIAN (ARCHEAN)

FELSIC INTRUSIVE ROC

6 Unsubdivided.
6a Quartz diorite.
6b Granodiorite.
6c Quartz monzonite.
6d Feldspar porphyry

INTRUSIVE CONTAC

INTERMEDIATE INTRUSI

5 Unsubdivided.
5a Microdiorite (magn

INTRUSIVE CONTAC

MAFIC INTRUSIVE ROCI

4 Unsubdivided.
4a Gabbro and quartz
4b Diorite and quartz
4c Hornblende gabbro
4d Magnetite-rich gab
4e Mafic pegmatite.

INTRUSIVE CONTAC

VOLCANIC ROCKS

FELSIC VOLCANIC RC

3 Unsubdivided.
3a Massive rhyodacite
3b Leucophyre (dikes)
3c Rhyodacite or rhy or flow breccia.
3d Rhyodacite or rhyo. lapilli tuff.
3e Rhyodacite or rhyc
3f Amygdaloidal rhyo
3g Rhyodacite or rhyc phyry.
3h Rhyodacite or rhy phyry.

INTERMEDIATE VOLC

2 Unsubdivided.
2a Massive andesite (some diorite).
2b Pillowed andesite flows.
2c Andesite or dacite flow breccia.
2d Andesite or dacite
2e Andesite or dacit lapilli tuff.
2f Andesite or dacite
2g Amygdaloidal and
2h Andesite or dacite
2j Dacite quartz porp

MAFIC VOLCANIC RC

1 Unsubdivided.
1a Massive basalt or (includes some ga
1b Pillowed basalt or
1c Basalt or basaltic and flow breccia.
1d Basalt or basalt breccia.
1e Variolitic basalt.
1g Amygdaloidal bas
1h Basaltic andesite porphyry.

Silicified zone.

Au Gold.
carb Carbonate.
cp Chalcopyrite.
ep Epidote.
po Pyrrhotite.
py Pyrite.
q Quartz.

3" Vein, width in inches.

175' Shaft; depth in feet.

MA Magnetic attraction.

1,500' Altitude in feet above mean sea level.

Muskeg or swamp.

Other road.

Trail, portage, winter road.

Building.

VII District boundary, approximate position only.

VIII Township boundary, meridian or base line, with mile posts, approximate position only.

Property boundary, approximate position only.

Surveyed line, approximate position only.

6 Location of mining property, surveyed. See list of properties.

(5) Location of mining property, unsurveyed. See list of properties.

LIST OF PROPERTIES

CLIFFORD TOWNSHIP

1. Campbell, J.
2. Cliff Copper Incorporated. [circa 1960]
3. Herrick prospect.
4. Mining Corporation of Canada prospect.

BEN NEVIS TOWNSHIP

5. Beaudry prospect.
6. Campbell, J.
7. Canagau Mines Ltd.
8. Duvan occurrence.
9. Martin prospect.
10. Preston East Dome Mines Ltd. [circa 1948]
11. Roche prospect.
12. Tremblay, A.

Ownership of properties as of December 31, 1968. Date in brackets [1965] indicates year of last major work on property. For further information, see report.

SOURCES OF INFORMATION

Geology by L. S. Jensen and assistants, 1969. Geology in part is tied to surveyed lines.

Geological and geophysical maps of mining companies.

Geological Survey of Canada aeromagnetic map 46G.

WNSHIPS

2 Miles

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FIGURE 4A

Three northeast-trending and steeply dipping faults crosscut the area.(Figure 4). One lies to the northwest and the Clifford Fault cuts through the central part of the area. To the south is the Murdoch Creek-Kennedy Lake Fault. North-northwest-trending structures are also present and in turn one of these hosts a Matachewan-age diabase dyke.

Regional metamorphism in the area is low grade with the Clifford stock showing a well developed contact metamorphic aureole in the order of 200m to 300m wide. It has a distinctive dark colouration and contains significant amounts of magnetite with albite, epidote and actinolite plus pyrite.

As part of the Discover Abitibi Initiative the Clifford area was covered by a MEGATEM II airborne survey flown in 2003. In OGS Open File Report 6163(Reed,2005) this data is correlated with ground-based gravity survey data and modeled. The Total Field Residual Magnetic Anomaly adjacent to the Clifford stock was outlined by this work (Figures 5 and 6) The *Clifford Residual Magnetic Anomaly* (CRMA) has a strike length in the order of 3km and appears to lie along the southeast-dipping contact of the Clifford stock. Magnetic and gravity inversions carried out by Reed (2005) indicate that the CRMA extends to depths of 3.75 km for the magnetics and 5.0 km for the gravity. A third party geophysicist engaged by Winterbourne Explorations Ltd. estimated the top of the "Causative Body" to be at a depth of 150m to 200m below surface, that the width of the body was in the order of 175m wide and that it dipped to the south at 55 .

A lithogeochemical survey carried out by the OGS in Ben Nevis township to the east also sampled into the eastern part of Clifford township and this work shows a "copper-in-rock" anomaly coincident with the eastern end of the CRMA.(Figures 7).

5. BACKGROUND AND MODEL

In the publication Economic Geology, Vol.88, in 1993, R. J. Fraser reported on the Lac Troilus Gold-Copper Deposit, a Possible Archean Porphyry System. This property is located in the Abitibi subprovince approximately 125 km north of Chibougamau, Quebec. At that time the deposit was described as containing 60 million tonnes in a drill indicated resource containing 2.5 million ounces gold, 3 million ounces silver and 60 000 tonnes copper.

Between 1996 and 2010, the Troilus Mine produced from an open pit over 2 million ounces gold and almost 70 000 tonnes copper. The property is currently being evaluated by

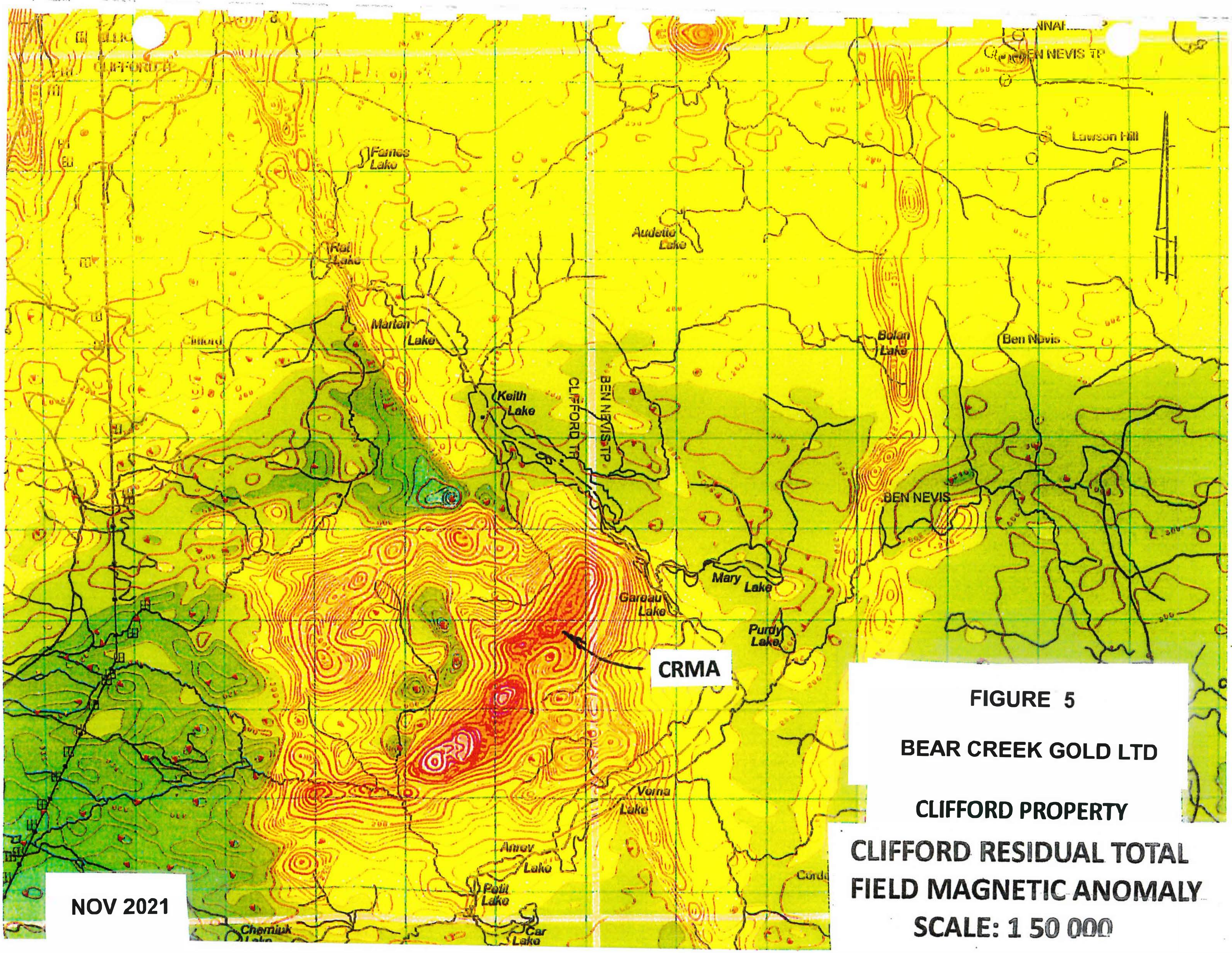

FIGURE 5

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CLIFFORD PROPERTY

CLIFFORD RESIDUAL TOTAL FIELD MAGNETIC ANOMALY

SCALE: 1 50 000

Sulfiden Mining Capital and associates as an open pit/UG operation with a total indicated mineral resource of 44 million tonnes @ 1.27g/t Au and 0.12% Cu and the mineralized zone is open at depth.

The Lac Troilus alteration and mineralization are described by Fraser (1993) as follows. This alteration/mineralization combination is typical of Archean age IOCG--deposits

- a well developed asymmetrical hydrothermal alteration and mineral assemblage is associated with the orebody
- the alteration halo is much larger than the mineralized zone with a thickness up to 400m,
- the core area of wallrock alteration is characterized by a strong potassic-rich core
- outward from the potassic core there is an increase of albite, epidote and calcite.
- The alteration zone is asymmetric and is best developed in the hangingwall.
- The wallrock alteration correlates well with the distribution of mineralization. The footwall rocks are potassium enriched and carry chalcopyrite and pyrrhotite. The hangingwall rocks are sodium enriched with abundant secondary albite and are gold-rich with pyrite and lesser chalcopyrite.
- The correlation between gold and sodium-rich minerals is much stronger than that between potassium and copper.

6. PREVIOUS WORK ON THE PROPERTY

For site locations see Figure 4 after OGS Map 2283, 1975

Work in the Clifford and Ben Nevis area dates initially from the late 1920s with work starting again following the Second World War. In 1962 Mining Corporation of Canada drilled 5 diamond drill holes at the Brazzoni Occurrence (Figure 4, # 4) based on pre-1948 and 1956. information in the Kirkland Lake Resident Geologist Office Mining Corporation carried out ground magnetic and EM surveys in 1970 and 1972.

The Ehrhart-Costelloo Occurrences -the Campbell Property- date from the 1920s (Figure 4, # 1 and # 6) and in 1958 Cliff Copper Incorporated completed 3 diamond drill holes to test chalcopyrite and gold mineralization reported in old pits. In 1960 Cliff Copper at “showing” # 2 (Figure 4) prospected an area identified in the 1940s, did geological mapping and then dropped the property.

The Herrick Prospect (# 3, Figure 4) was prospected in the late 1920s when chalcopyrite and molybdenite mineralization were identified.. At that time the property was referred to as the “Brett-Tretheway Copper Prospect and/or the “Bain Copper

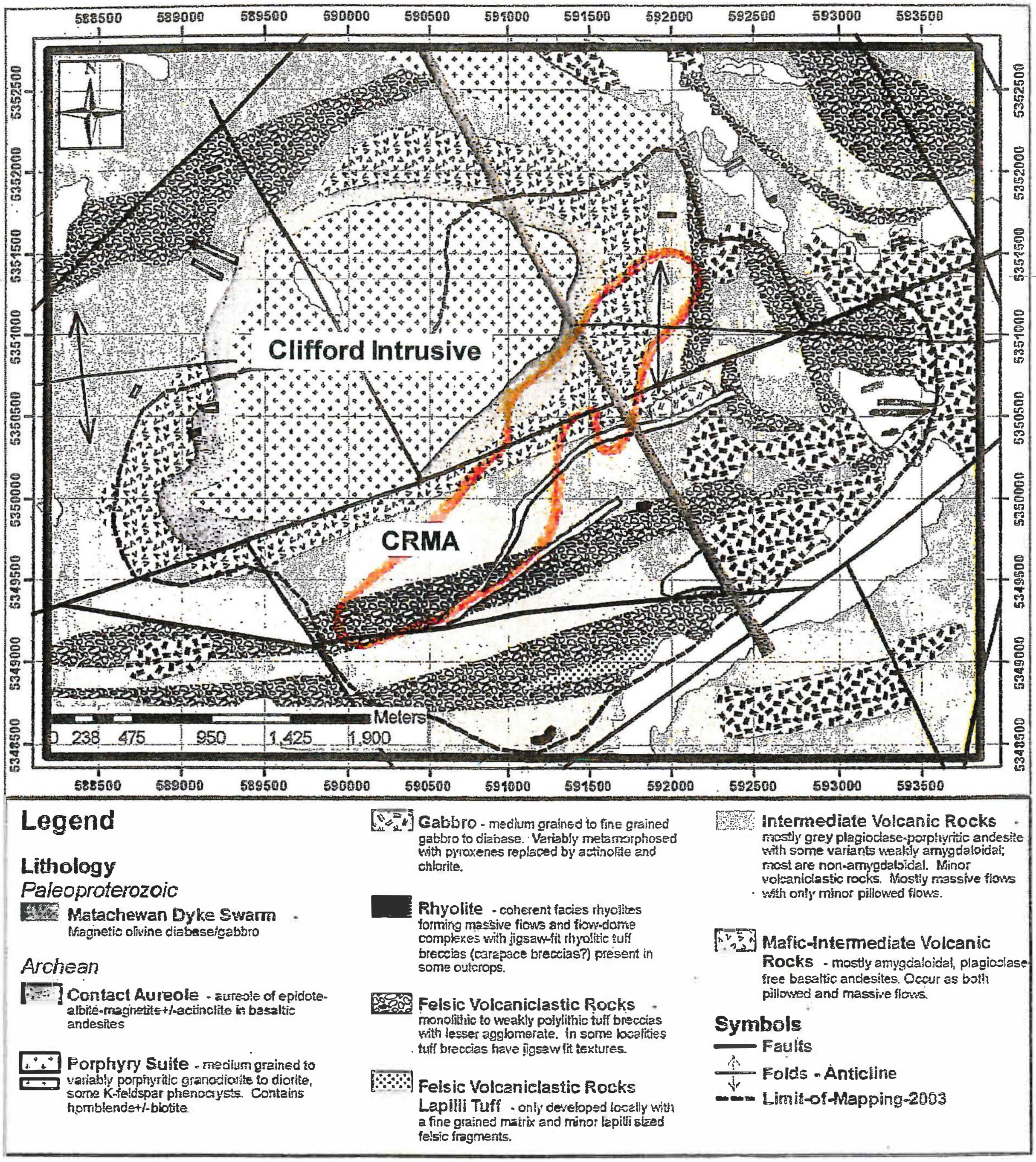

Figure 8. Geological map of Clifford Township (*from* MacDonald et al. 2005).

Scale as shown **NOV 2021**

FIGURE 6

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CLIFFORD PROPERTY
PROPERTY GEOLOGY and CRMA

Discovery".where pitting and some diamond drilling was done. In 1964 Hollinger Gold Mines drilled 24 holes in this sector over an east-west distance of 1.75 km from the Clifford/Ben Nevis township line and south to Verna Lake. The results from 5 of the Hollinger drill holes are summarized below because they appear to be representative of the work in this area over a period of over 50 years. Note. All gold assays have been converted from Troy ounces per ton to grams per tonne. The deepest hole drilled was 705 ft at a 45 degree angle for a depth below surface of approximately 150m.

Hole 1 – 73-212 ft, dacite breccia, quartz, calcite,coarse to fine pyrite, specks of chalcopyrite and pyrite decreases in depth, 25 ft. – 5ft @ 26g/t Ag; 55 ft – 5ft@ 22g/t Ag: 68ft – 1ft @ 28g/tAu and 28g/t Ag; 73ft – 2ft@ 1.55g/tAu

Hole 3 – Porphyritic dacite, silicified with pyrite, in plaves "heavy" to disseminated to stringers to veinlets, red to pink alteration and quartz veining. (No assays)

Hole 4 – Dacite silicified with disseminated pyrite, coarse pyrite up to 10% in places, pyrite stringers and quartz stringers, "bleaching", epidote, brick-red alteration. 590ft – 5ft@ 83g/t Au

Hole 7 – Porphyritic dacite to dacite, "trap" dykes rich in magnetite, epidote alteration, quartz-carbonate stringers, red to pink alteration, low pyrite content; 420ft – 10ft@ 1.09g/t Au

Hole 22 – Porphyritic and fragmental dacite and breccias.; at 65ft - 10 ft of disseminated chalcopyrite and also in a breccia; 200ft – 10ft@ 1.08g/t Au

Claim 919892 in the south-central part of the property is a third party claim held by Wallbridge Mining Company Limited. This claim was staked in 1987 with Wallbridge taking it over in January 2004. Wallbridge covered the claim and surrounding area with a Helicopter-Borne Magnetic Gradiometer and VLF-EM Survey in 2008 and followed up with line-cutting, magnetic and IP surveys, stripping and drilling. The results were similar to those reported by Hollinger from their drilling program in 1964, i.e., quartz veining with associated pyrite, pyrrhotite and chalcopyrite in narrow shear zones and with gold and silver values.

Grunsky (1986) carried out a lithogeochemical sampling program in Ben Nevis township to study the alteration and compositional variation patterns in volcanic rocks using statistical methods. The sampling "spilled-over" into the eastern part of Clifford township with the copper in rock values being shown in Figure 7. The outline of the Clifford Intrusive and the CRMA are also shown in Figure 7.with anomalous copper values,>100ppm, being present and coincident with the northeastern part of the CRMA and also along the south-central side of the anomaly.

In summary, previous work in the area of the CRMA has indicated widespread alteration with associated quartz-veining, disseminated to fracture and shear hosted pyrite stringers as well as chalcopyrite and pyrrhotite and gold, silver and copper values of economic interest. Most of the work/sampling took place along the southern edge of, and up to 1000m to the south of the location of the CRMA, which was unknown at the time the work was done. This work was basically above the hangingwall of the CRMA, which dips to the south at 55 degrees.

The Clifford Property was staked in 2015 based on a review of the literature and in particular, work by the OGS in the area and a property area visit. In OGS Open File Report, p.42 the authors state," In Clifford Township, McDonald et al (2005) recognized porphyry Cu-Au-Mo-style alteration overprinting and younger than --------". The literature review indicated many similarities in the styles of alteration and mineralization to the Lac Troilus Gold-Copper Deposit and when the location of the CRMA was superimposed on the geological map there appeared to be a relationship between the Clifford stock and the CRMA.

During late July 2015 Winterbourne carried out a preliminary Soil Gas Hydrocarbon(SGH) soil sampling program with the samples being sent to Activation Laboratories, Ancaster, Ontario. Figure 8. shows the area of the SGH survey and the Gradient IP survey with the locations of the Clifford stock contact and the CRMA superimposed on it. The gold results were rated as 5 out of 6 and the copper results were rated as 4.5 out of 6 based on over 1000 case histories by Activation Labs. The SGH results were considered to be encouraging in that they showed gold and copper values associated with the CRMA with gold enriched relative to copper as in the Lac Troilus deposit. This was also consistent with the previous work in the area that showed sulphide mineralization containing gold, silver and copper values. These results were considered to be positive and 4 claims wereestaked in August 2015 and recorded on September 1, 2015.

Following the SGH survey and the staking of the Property in August 2015, additional prospecting and sampling, geological mapping and lithogeochemical sampling was carried out with 24 samples being collected and analyzed by Multielement-type methods. Many of

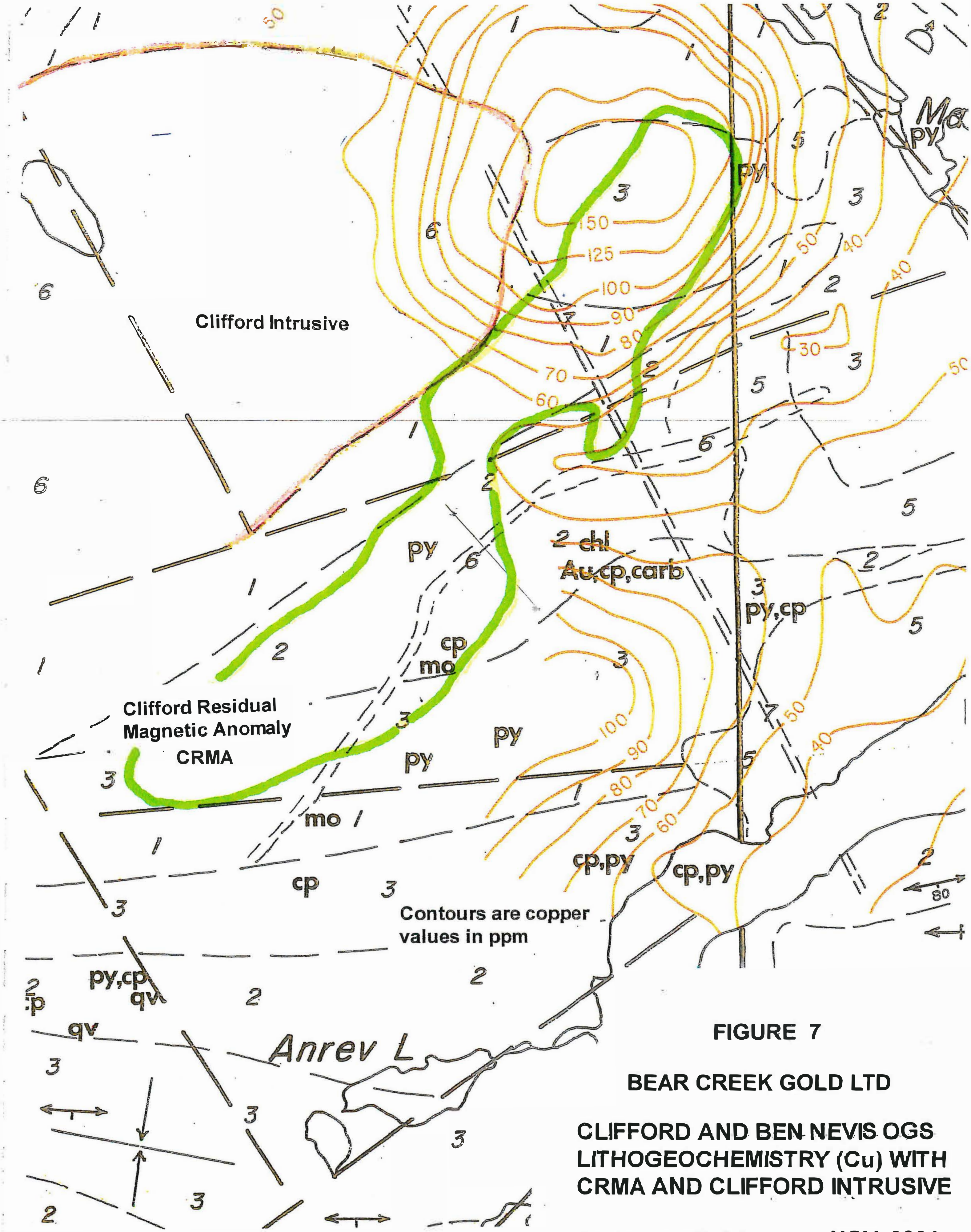

FIGURE 7

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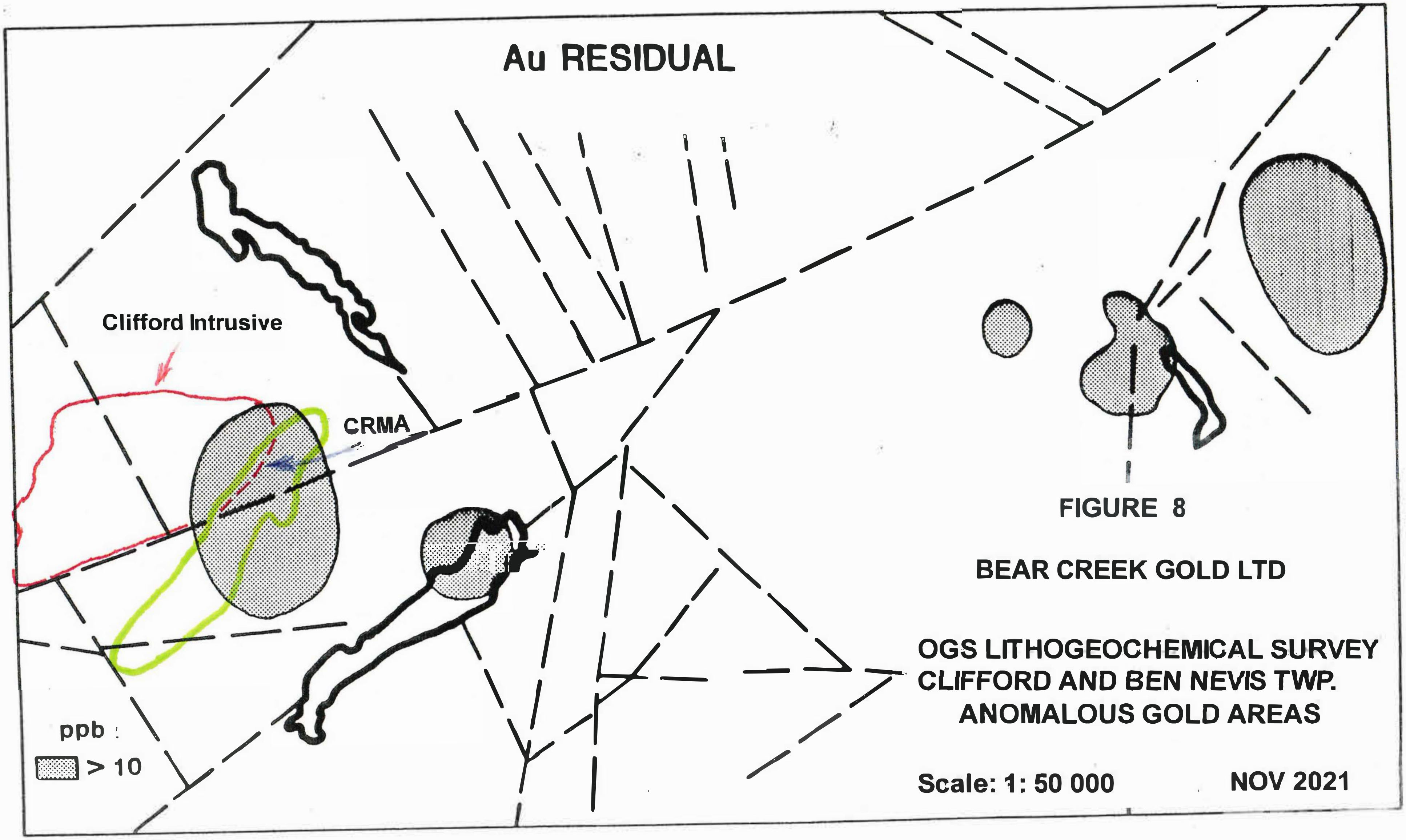
CLIFFORD AND BEN NEVIS OGS LITHOGEOCHEMISTRY (Cu) WITH CRMA AND CLIFFORD INTRUSIVE

Scale: 1: 50 000 **NOV 2021**



(After Grunsky 1986) Figure 28b

the sample sites had been stripped and/or pitted over the years and in general showed alteration and in places veining by quartz and sulphides The host rocks appeared to be dominantly intermediate to felsic volcanics and in many stripped areas the rocks have a bleached to pale yellow-brown surface colouration. The purpose of this work was to determine the characteristics of the metavolcanics above and in the hangingwall of the CRMA and to compare them to those shown by the Lac Troilus gold-copper deposit. Of particular interest was the copper and Na2O content of the rocks. The geological mapping was done to provide some context for the chemical analyses..

The 12 samples collected during the prospecting and sampling program from the CRMA hangingwall area returned an average sodium(Na) content of 1.66% which translates into an average Na2O content of 4.47%. The Na2O content in the hangingwall of the Lac Troilus deposit is in the 4% to 5% range. Copper sample values with copper values ranging from less than 50 ppm to over 5000 ppm, i.e.,over 0.5% Cu are also present in the hangingwall area of the CRMA.

A Gradient Induced Polarization (IP) survey was carried out over a five day period (October 18, 19 and 20 and November 27 and 28, 2017) with 5 lines of 1.5 km being surveyed for a total of 7.5 line-km. The work was carried out by Dan Patrie Explorations Ltd an experienced IP contractor and the location of the area surveyed is shown in Figure 8. and includes L12+00E. Elevated to anomalous chargeabilities occur in 3 northeast-trending zones parallel to the CRMA, 3 on the northwest footwall side and 2 on the southeastern hangingwall side (Figure 14) Anomalous chargeabilities were considered to be over 50 mV/V and up to and over 80 mV/V. In general there is a good crrelation between the anomalous gold and copper values from the Soil Gas Hydrocarbon survey and the Gradient IP anomalies.

Three lines of Induced Polarization (IP) surveying, for a total of 2 750 metres 2.75 line-km were completed in the southwestern part of the Clifford Property between the 8 to 12 October 2018. The work was carried out by Dan Patrie Exploration Ltd., an experienced IP contractor. The locations of the 3 lines, L12+00E, L0 and L200 are shown in Figure 8. L12+00E was surveyed in an attempt to better define IP chargeability anomalies identified in the Gradient IP survey in October 2017 (Winter, 2019) and 2 Gradient IP lines, L0 and L200 were completed in the southwestern part of the Property to assess the area at the southwestern end of the CRMA. The L12+00E survey was completed using a Pole-Dipole array.

The IP survey work was supervised by Mr Gab Roy,Smooth Rock Falls, an experienced IP operator with 6 experienced fieldmen employed by Dan Patrie Exploration. For all 3 lines the chargeability and resistivity values are plotted at the mid-point of the "a" spacing. The IP Equipment Specifications are provided in Appendix 1.

7. CURRENT WORK PROGRAM AND RESULTS

The Current Work Program and the basis for this Report was carried out between the 15 May and the 15 June 2021 and consisted of a Pole-Dipole Induced Polarization (IP) survey on the Grid shown in Figures 2, 9 and 10 of this report. The work was carried out by Dan Patrie Explorations Ltd., an experienced IP contractor, and the following work was completed;

-- 12 line-km of line cutting

-- 10.6 line-km were surveyed, with an "a" spacing of 50 m and "n" of 6 levels

The work program was supervised by Gab Roy, an experienced IP operator who, in turn was assisted by, Justin Abramson, R. Kippax, J. Francis, C. McKenna, M. Pilon, Marvin Chief and B. Patrie Mr. Roy also prepared the Pseudo-Sections and Chargeability Plans in the Report

Appendix 1 of the Report provides technical and operating information for the IP equipment and Appendix 2 contains copies of the Pseudo-Sections,

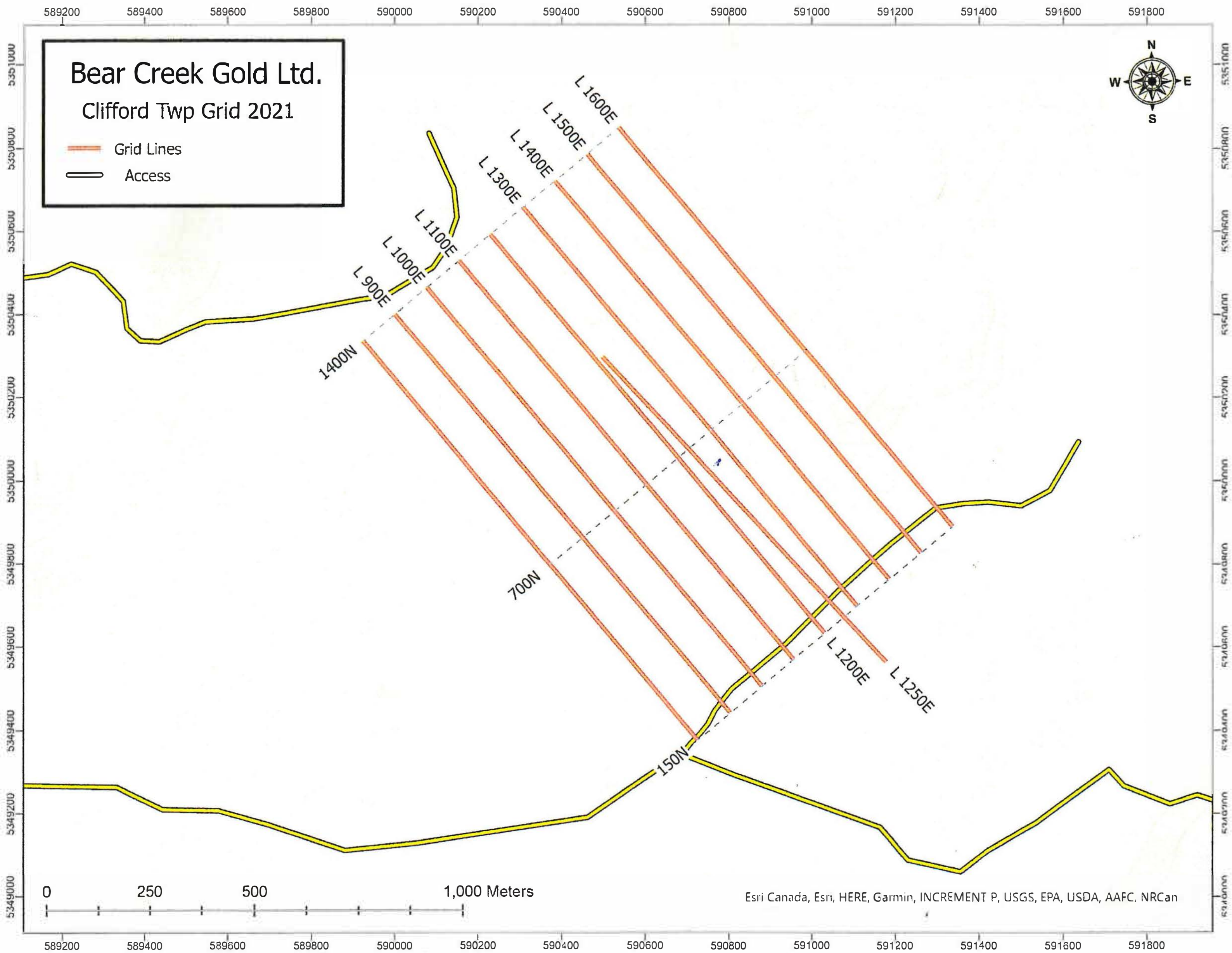
Figures, 11 to 18, Lines 9+00E, 10+00E, 11+00E, 12+00E, 12+50E, 14+00E 15+00E and 16+00E and

Figures, . 18 to 24 Chargeability Plans for Levels 1 to 6 Vertical Level separation is 35 m

Level 6 is at 210 m

The Clifford IP Survey Grid overlies approximately the southwestern end or 1000 m of the CRMA which trends N60°E. The survey lines run N40°W, are spaced 100 m apart and are approximately 1000 m long. The central, N60°E – trending axis underlies the Grid at approximately 6+00 N on the survey lines

When one looks at the 6 Level IP Chargeability Plans (Figures 19 to 24), in general the higher Chargeability values of 40 mV/V (green) to over 80 mV/V (pink)) form an irregular, more or less rectangular area extending from L 9+00E to L 16+00E (700 m). The CRMA is 3000 m long which leaves in the order of 2000 m of the CRMA to still be evaluated. This overall pattern is present on all 6 Chargeability Level Plans to a depth to over 200 m The same Chargeability values are present on the 8 Pseudo Sections, with in general,higher Chargeabilities on the lower levels (more sulphides ?) and lower Chargeabilities closer to surface (30 mV/v).

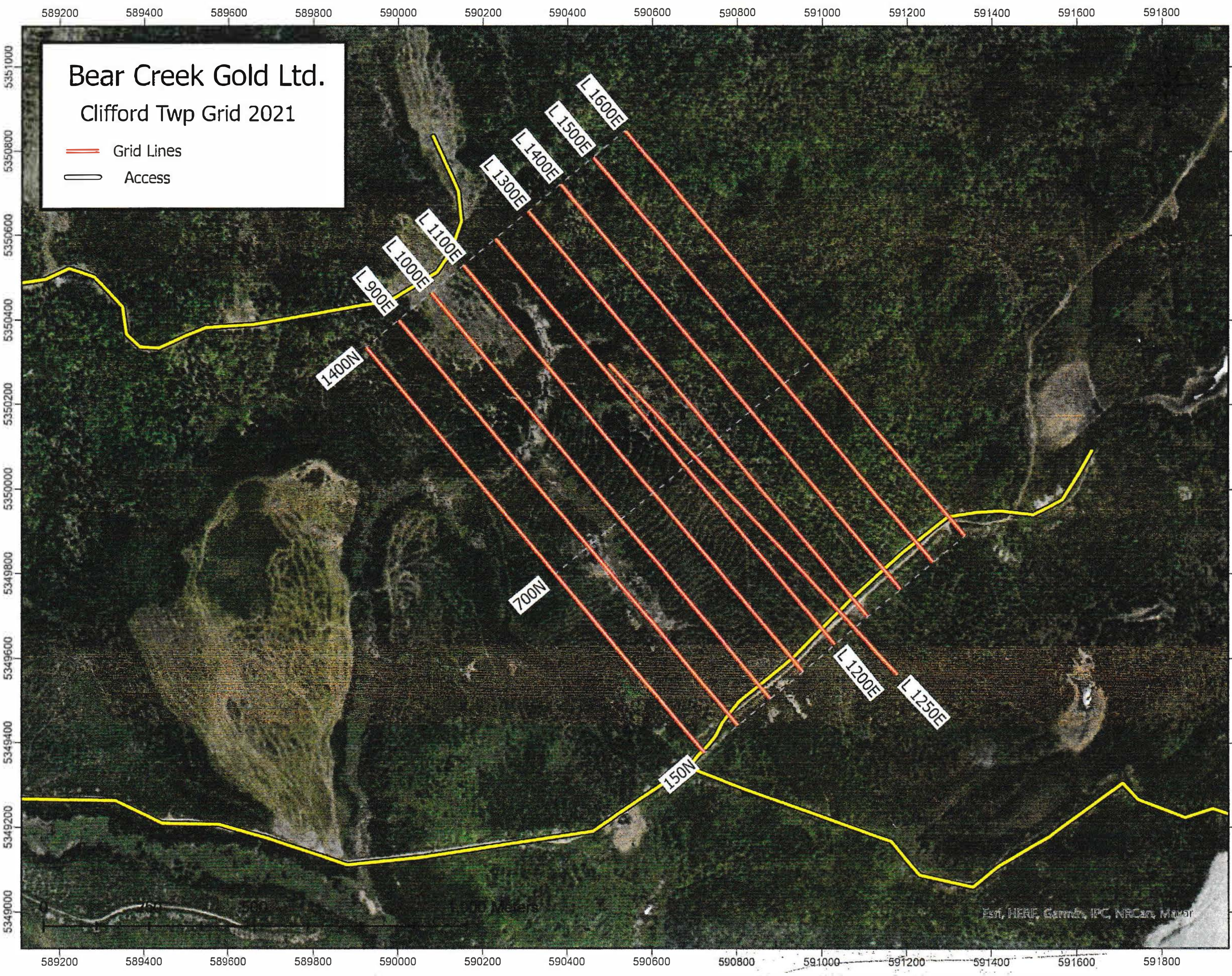


SCALE AS SHOWN

FIGURE 9

BEAR CREEK GOLD LTD
IP SURVEY GRID

NOV 2021



SCALE AS SHOWN

FIGURE 10

BEAR CREEK GOLD LTD
IP SURVEY GRID
TOPOGRAPHY AND ACCESS

NOV 2021

The CRMA is mainly a 200 m wide body of massive magnetite emplaced in or adjacent to the Kirkland Lake Fault Structure and striking N60°E and dipping 55°SE, Based on magnetic and gravity surveys by the OGS it is considered to extend to a depth of 4500 m +/-. The sulphide body. being investigated by Bear Creek Gold Ltd appears to be a "cap-like body" draped over the top of the magnetite body. This close association of copper-gold mineralization with bodies of magnetite is typical of IOCG type deposits, such as those in the Carajas District in the State of Para, Brazil (see Appendix 3).

It is suggested that the area/volume that has been covered by the current IP Survey is in the order of 700m NW by 700m NE and 200m in depth for a volume in the order of 700m X 700M X 200M = say 50 X 20 X10 or 100 000 000 cu m. Work over various times over the last 75 or so years has shown the presence of copper, gold and silver mineralization adjacent to the CRMA. Due to the potential size of any mineralized body associated with the indicated IP zone, it is recommended that a Phase 1 drill program be put in place to asses the potential grade of the indicated zone

8 EXPENDITURES

The expenditures for the Pole-Dipole IP Survey completed between the 15 May and the 15 June 2021 are as follows

1. Line Cutting, 12 Line km at $ 1200.00	$ 14 400.00
2. Pole-Dipole Survey, 10.6 Line km at $ 2100.00	22 260.00
3. Mob and Demob	4 500.00
4. Data Processing	3 200.00
5. Report	1 800.00
TOTAL	$ 46 160.00

HST is not included

L. D. S. Winter, BASc, MSc (App)
28 November 2021

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CERTIFICATE OF AUTHOR

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

1. I am currently an independent consulting geologist.

2. 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.

Dated this 28th day of November 2021

L.D.S. Winter

L.D.S. Winter,

APPENDIX I

INDUCED POLARIZATION (IP)

EQUIPMENT INFORMATION

A DIVISION OF LRS

ELECTRICAL METHODS

IPR-12

Induced Polarization

WWW.SCINTREXLTD.COM

Setting the Standards

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.

Inputs:	1 to 8 dipoles are measured simultaneously.
Input Impedance:	16 MΩ
SP Bucking:	±10 volt range. Automatic linear correction operating on a cycle by cycle basis.
Input Voltage (Vp) Range:	50 µV to 14 V
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 MΩ with 0.1 kΩ resolution. Circuit resistances displayed and recorded.
Filtering:	RF filter, 10 Hz 6 pole low pass filter, statistical noise spike removal.
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.
Power Supply:	Rechargeable Ni-Cad D cells. More than 20 hours service at +25°C. (77°F), more than 8 hours at -30°C (-22°F)
Operating Temperature:	-30°C to +50°C (-22°F to 122°F)
Dimensions and Weights:	Console: 355 x 270 x 165 mm (14" x 10.6" x 6.5") Charger: 120 x 95 x 55 mm (4.7" x 3.7" x 2") Console: 5.8 kg (12.8 lbs.) Batteries: 1.3 kg (2.8 lbs.) Charger: 1.1 kg (2.4 lbs.)

OPTIONS

Transmitters
Software Packages
Training Program

ISO 9001:2000 registered company. All specifications are subject to change without notice.

Specification Sheet Part Number 745711 Revision 0

SCINTREX

CANADA
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222 Snidercroft Road
Concord, Ontario L4K 2K1
Telephone: +1 905 669 2280
Fax: +1 905 669 6403
e-mail: scintrex@scintrexltd.com
Website: www.scintrex.com

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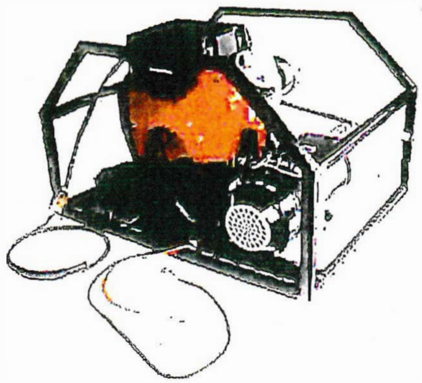
Fax: +1 303 828 3288
e-mail: info@microglacoste.com
Website: www.microglacoste.com

WALCER GEOPHYSICS LTD.



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 GEOPHYSICS LTD.

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

Size
63cm. x 54cm. x 25cm.

Weight
44 kg.

For each reading taken in the field, the IPR-12 Receiver calculates the chargeability and resistivity for the site. In addition to the readings taken, the electrode array and locations are also noted by the operator. The current voltage at the time of the reading is also recorded. Following the completion of the survey, the recorded chargeability and resistivity values can be downloaded from the IPR-12 Receiver to a computer with a Geosoft program and from there the chargeability and resistivity values can be plotted

The IP Survey Equipment Specifications for the motor generator, transmitter and IPR-12 Receiver are provided in Appendix I. The transmitter can pulse at 1, 2, 4, 8, 16 or 32 seconds and for this survey a 2 second on and off cycle was used. During the survey, readings were generally completed within a 5 minute time interval which is normal. Chargeability readings are reported as mV/V and resitivity values as ohm-metres.

APPENDIX 2

INDUCED POLARIZATION POLE DIPOLE SURVEY

Pseudo Sections (8) and Chargeability Plans (6 levels)

FIGURES 11 to 24

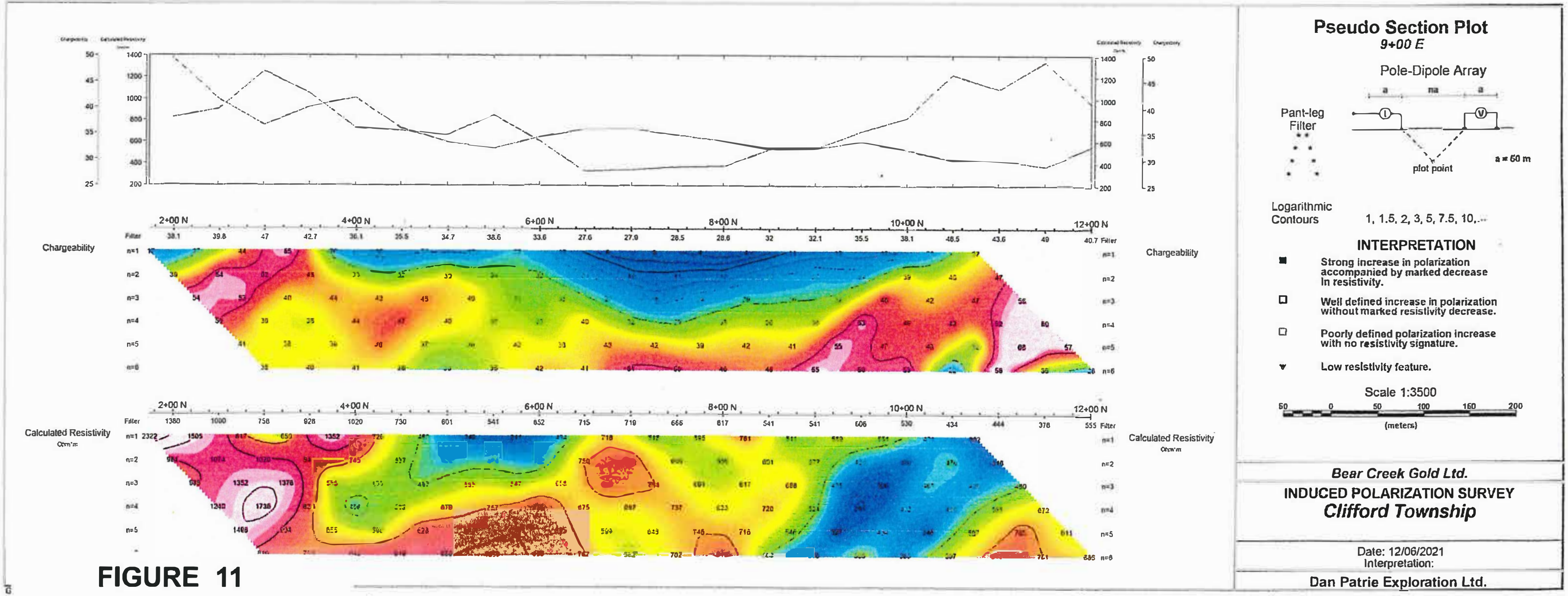


FIGURE 11

IP PSEUDO SECTION LINE 9 + 00E

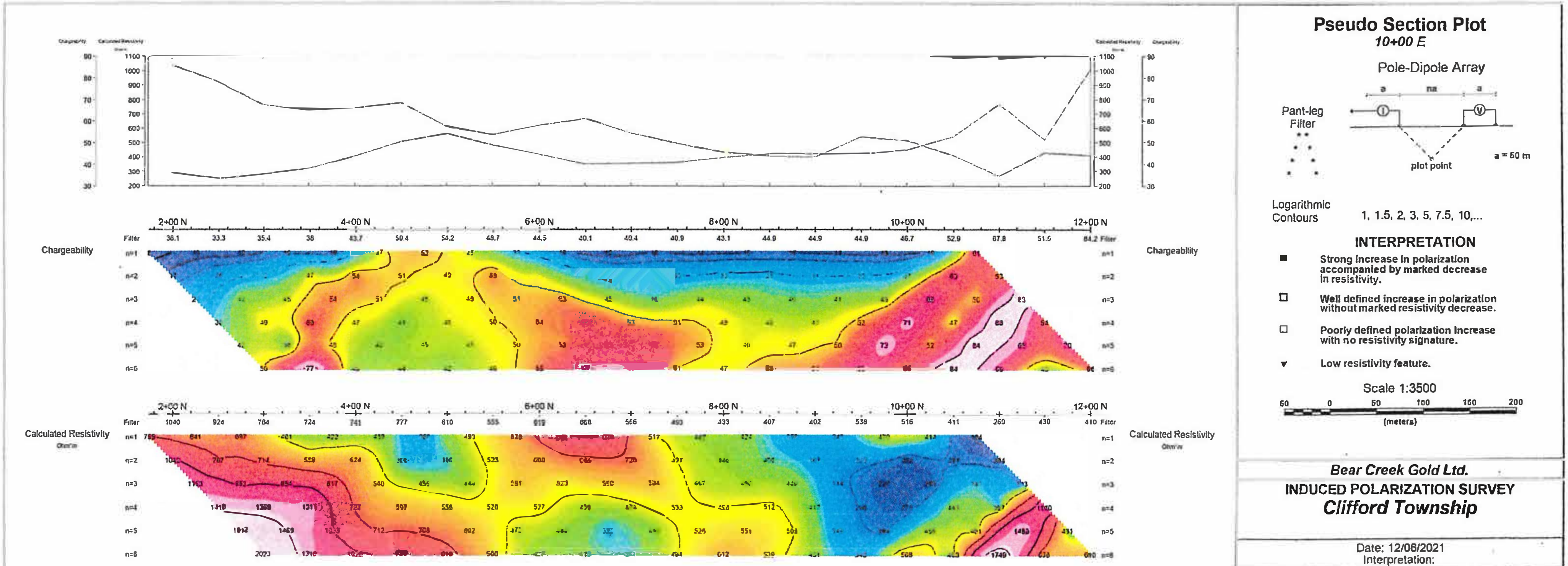


FIGURE 12

IP PSEUDO SECTION LINE 10 + 00E

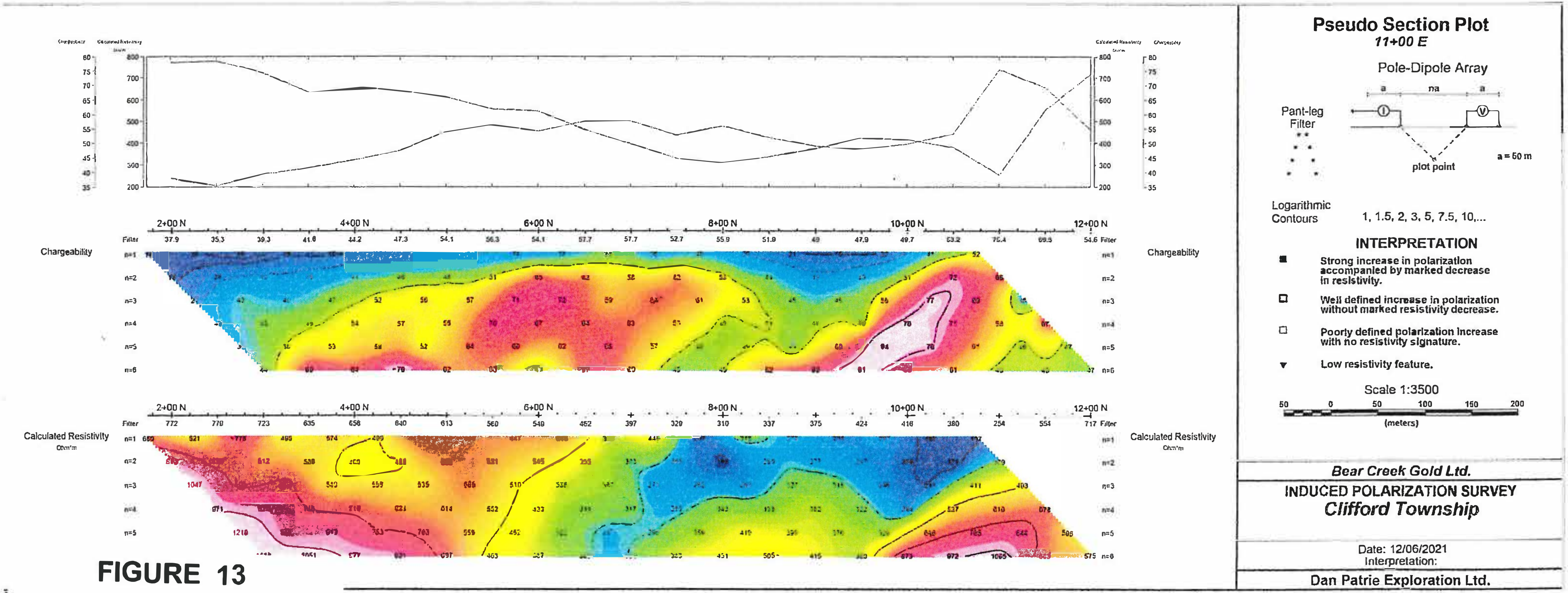


FIGURE 13

IP PSEUDO SECTION
LINE 11 + 00E

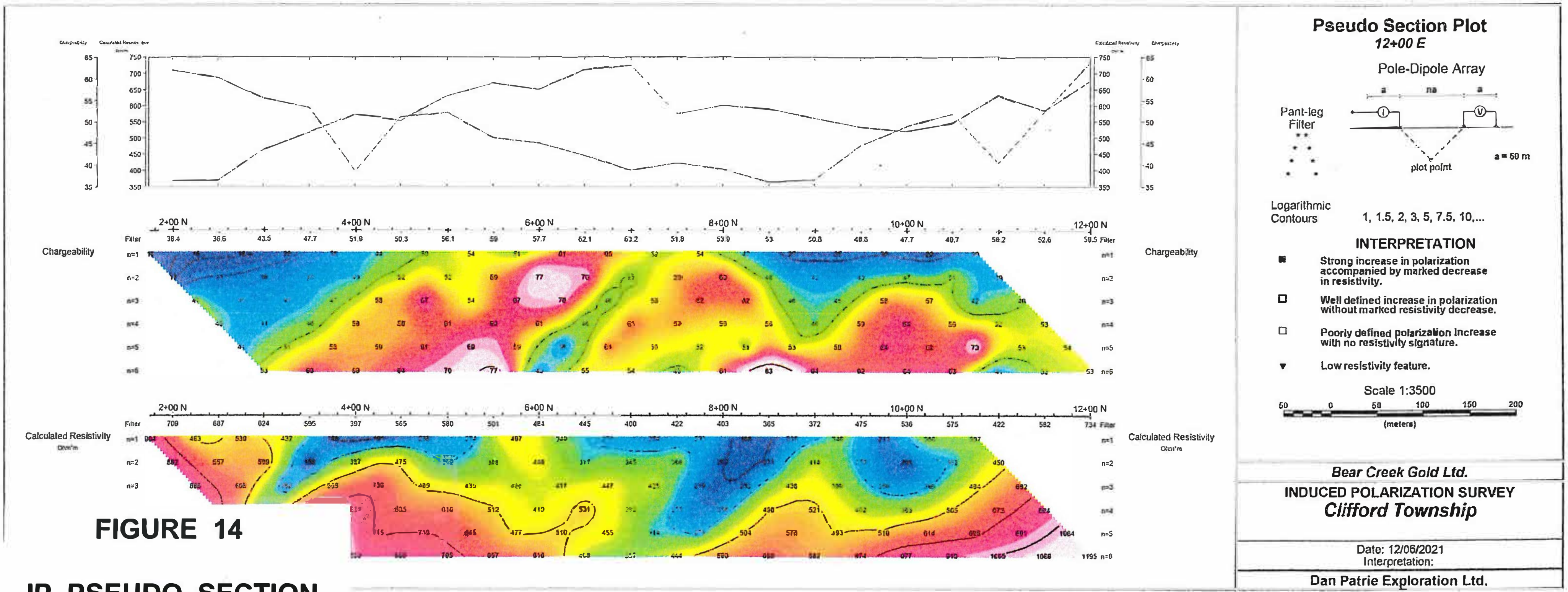


FIGURE 14

IP PSEUDO SECTION

LINE 12 + 00E

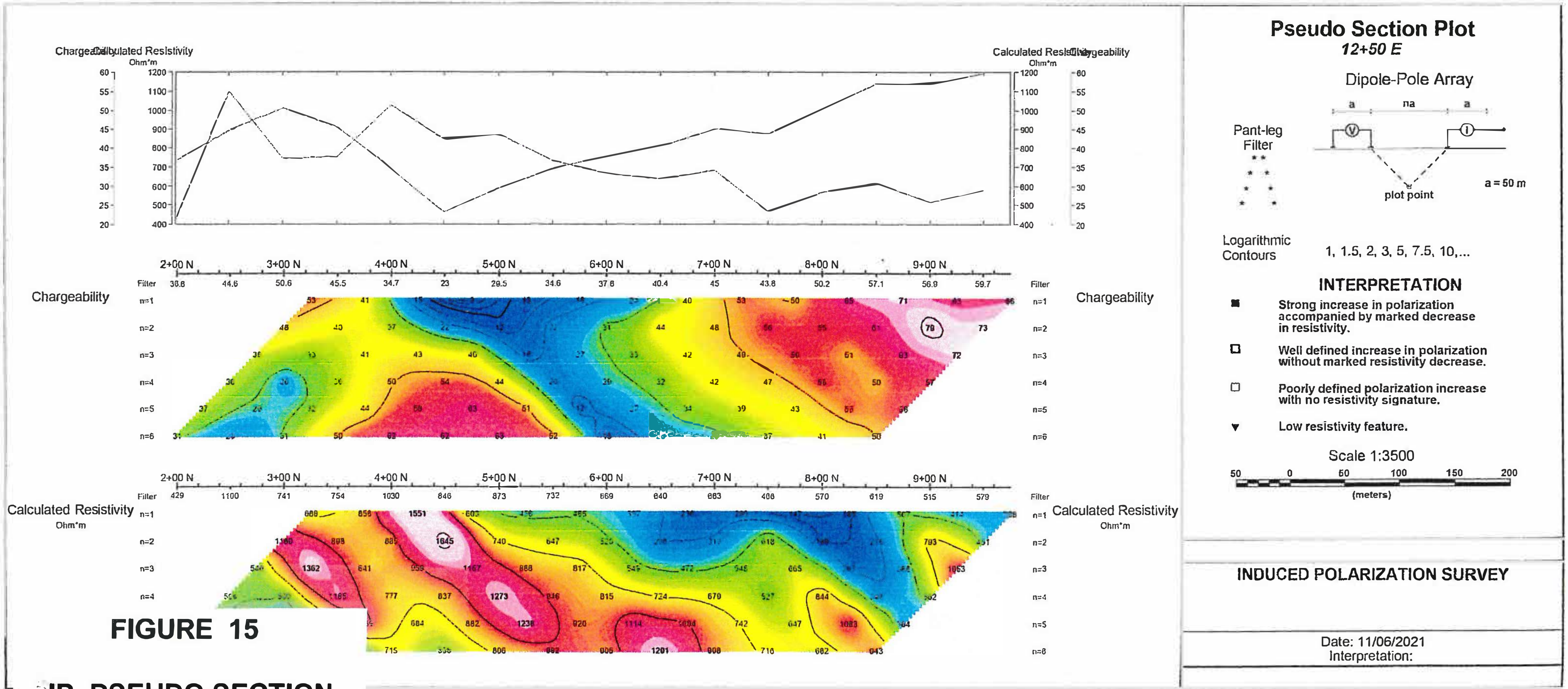


FIGURE 15

IP PSEUDO SECTION

LINE 12+50E

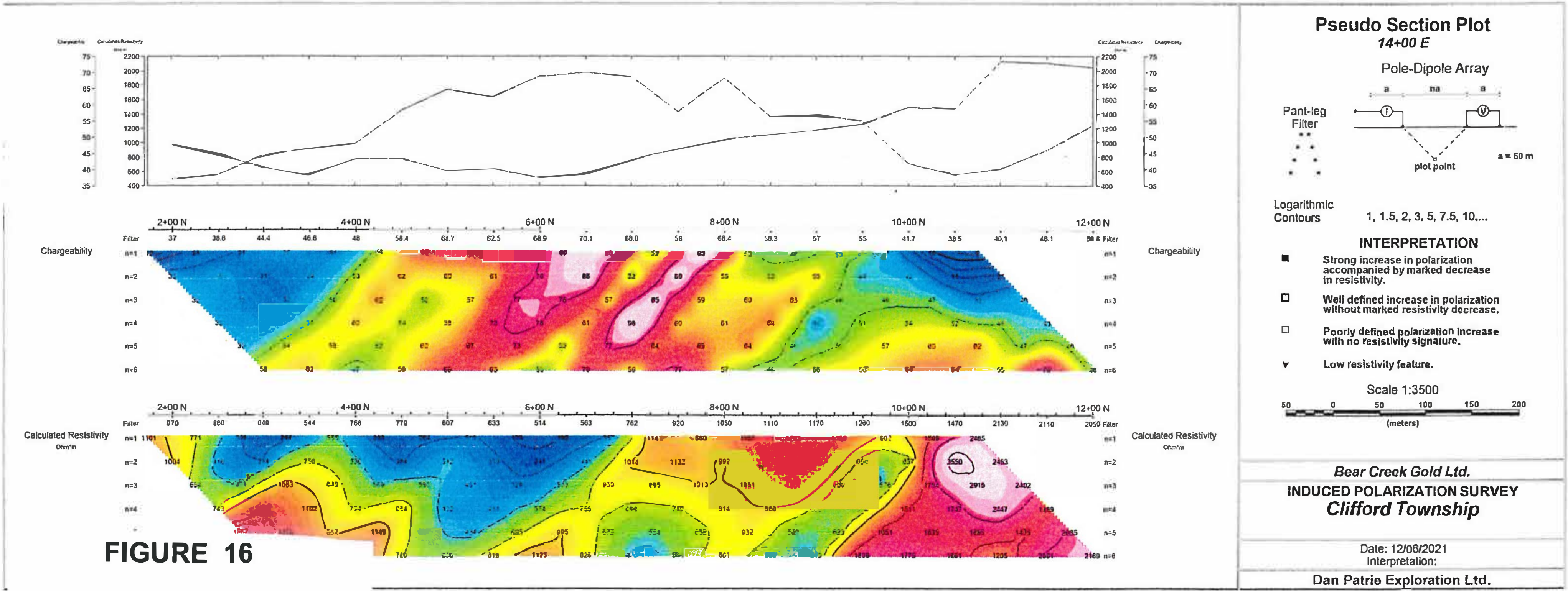
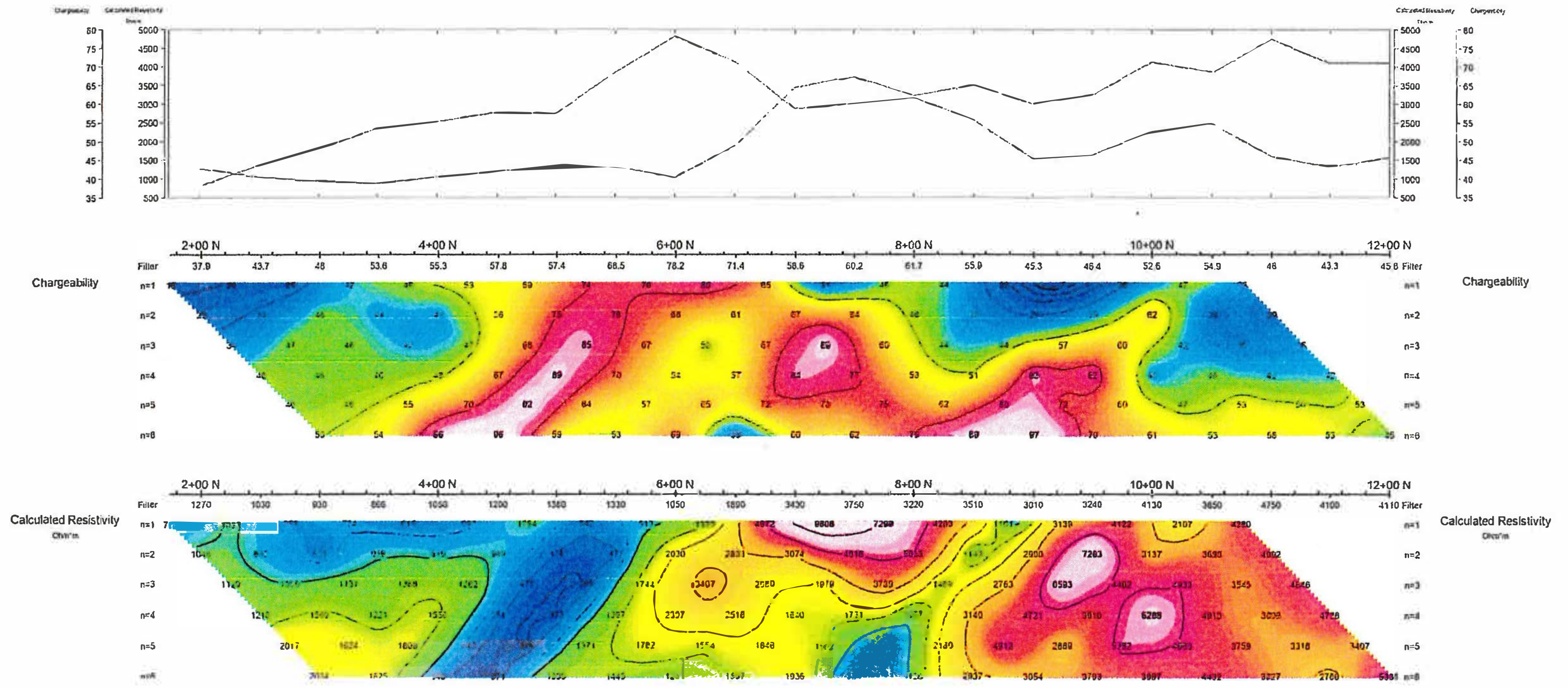


FIGURE 16

IP PSEUDO SECTION

LINE 14 + 00E



Pseudo Section Plot
15+00 E

Pole-Dipole Array

Pant-leg Filter

plot point

a = 60 m

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

INTERPRETATION

- Strong increase in polarization accompanied by marked decrease in resistivity.
- Well defined increase in polarization without marked resistivity decrease.
- Poorly defined polarization increase with no resistivity signature.
- Low resistivity feature.

Scale 1:3500

50 0 50 100 150 200 (meters)

Bear Creek Gold Ltd.

INDUCED POLARIZATION SURVEY

Clifford Township

Date: 12/06/2021

Interpretation:

Dan Patrie Exploration Ltd.

FIGURE 17

IP PSEUDO SECTION LINE 15 + 00E

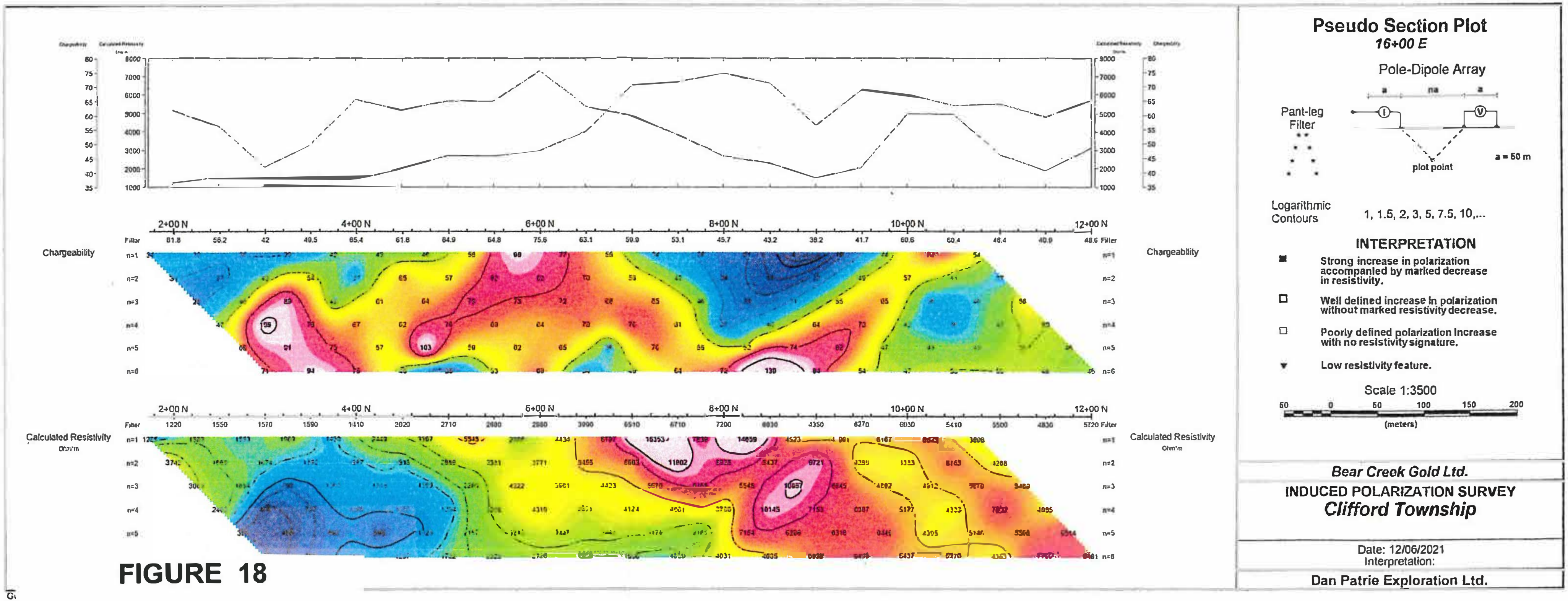
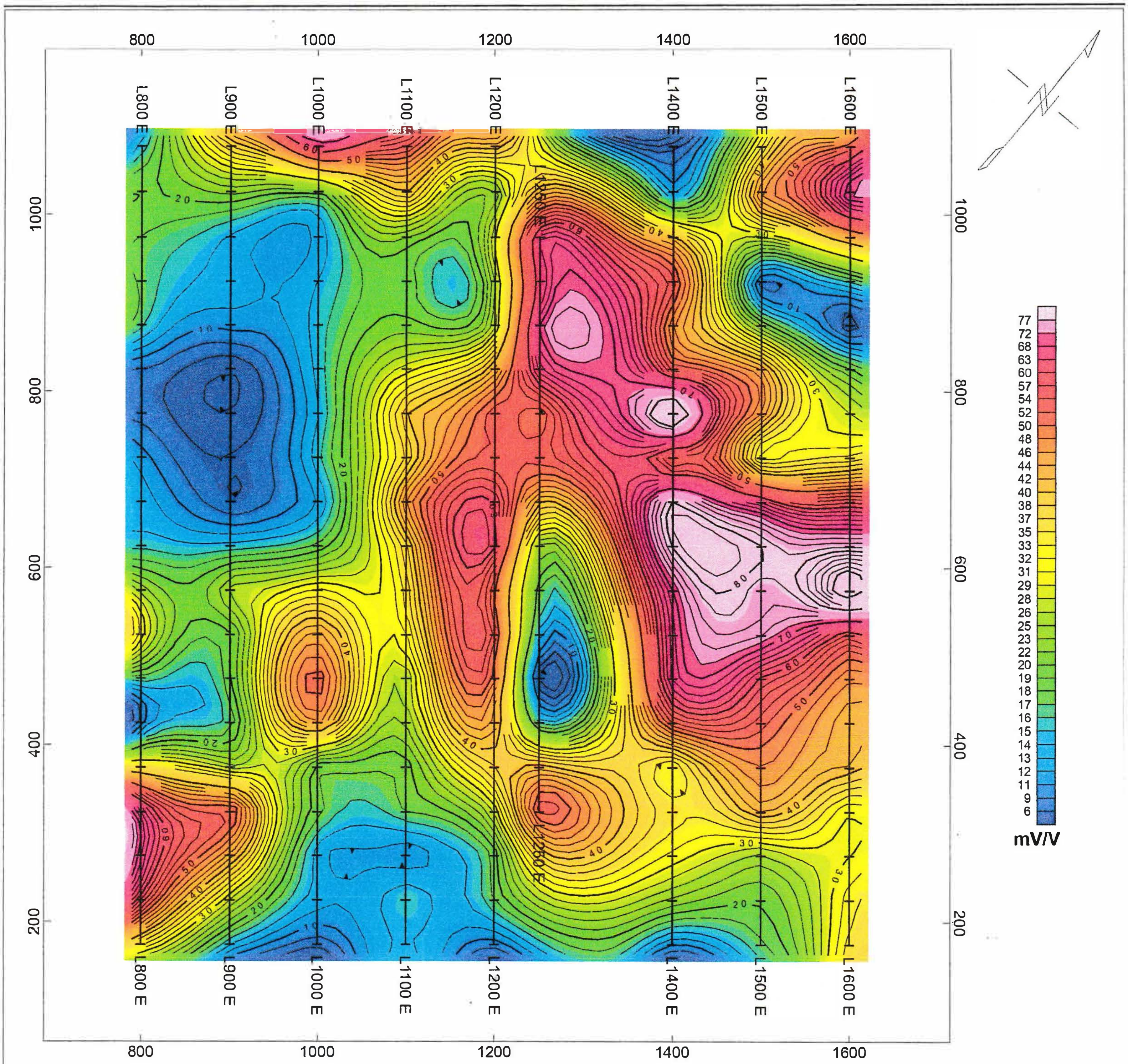


FIGURE 18

IP PSEUDO SECTION
LINE 16 + 00E



Scale 1:5000

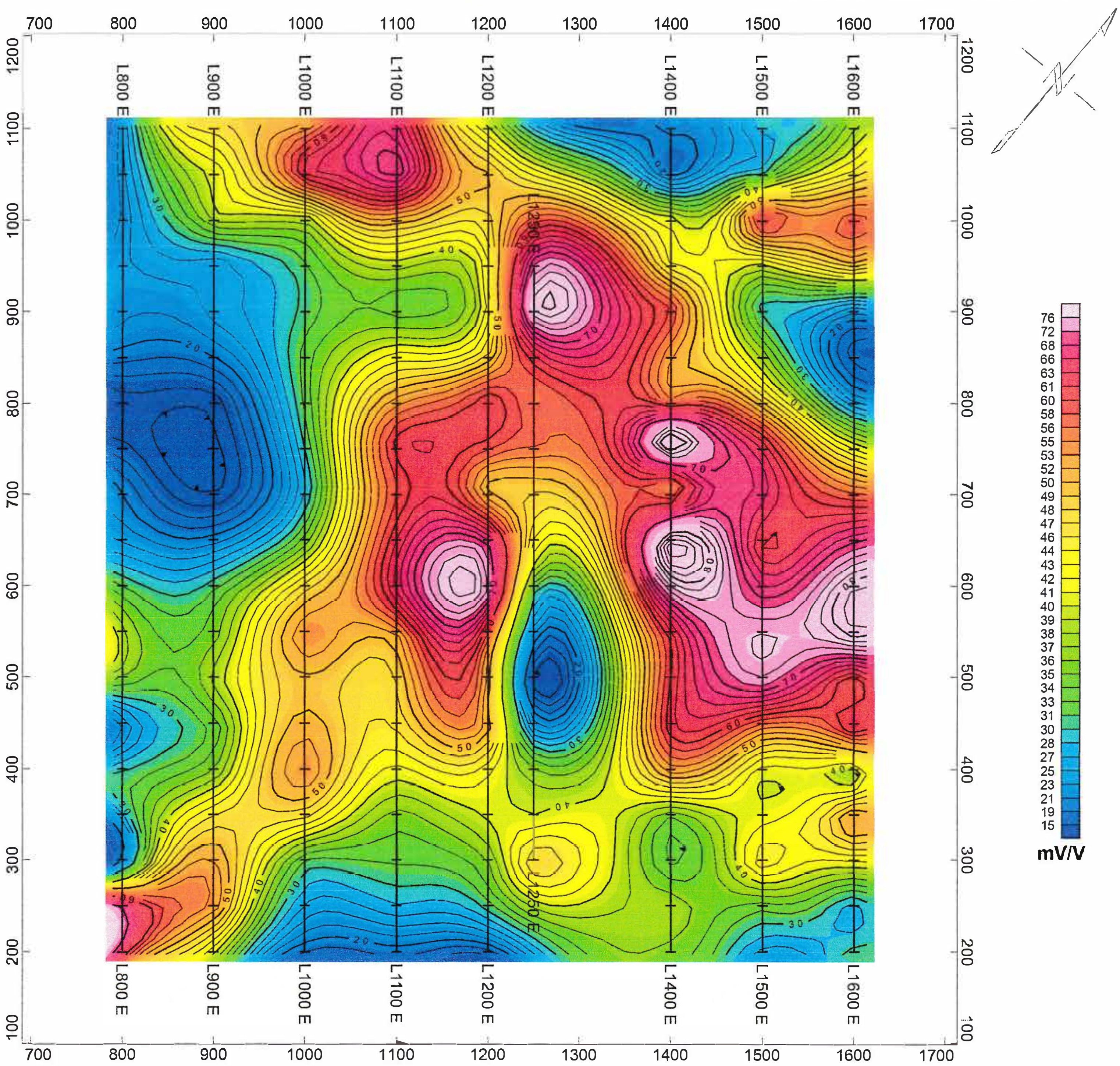
50 0 50 100 150 200

(meters)

Bear Creek Gold Ltd.

Clifford IP
Level 1 Chargeability

June 2021



Scale 1:5000

50 0 50 100 150 200

(meters)

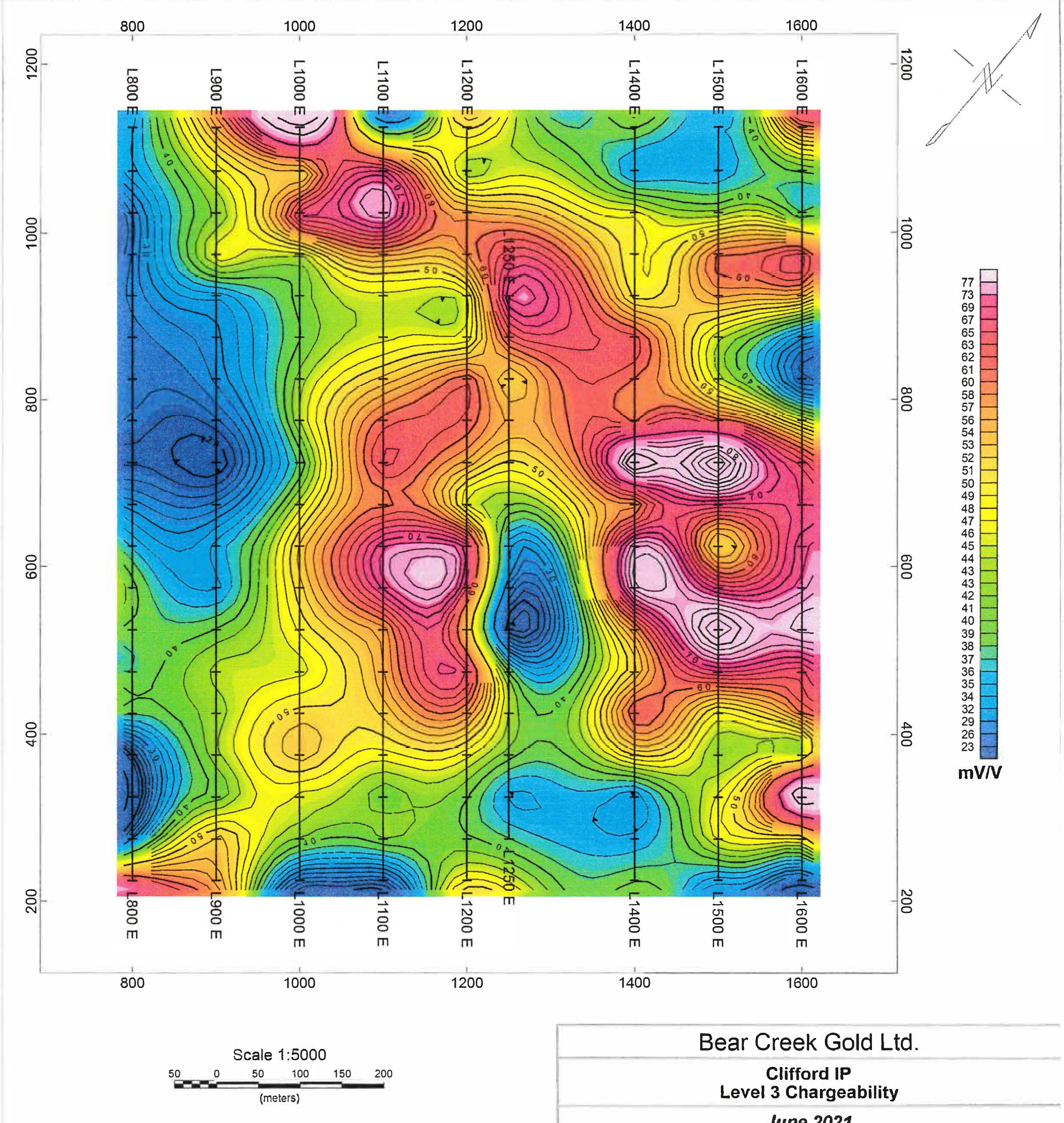
Bear Creek Gold Ltd.

Clifford IP
Level 2 Chargeability

June 2021

NOV 2021

FIGURE 20 **SCALE AS SHOWN**



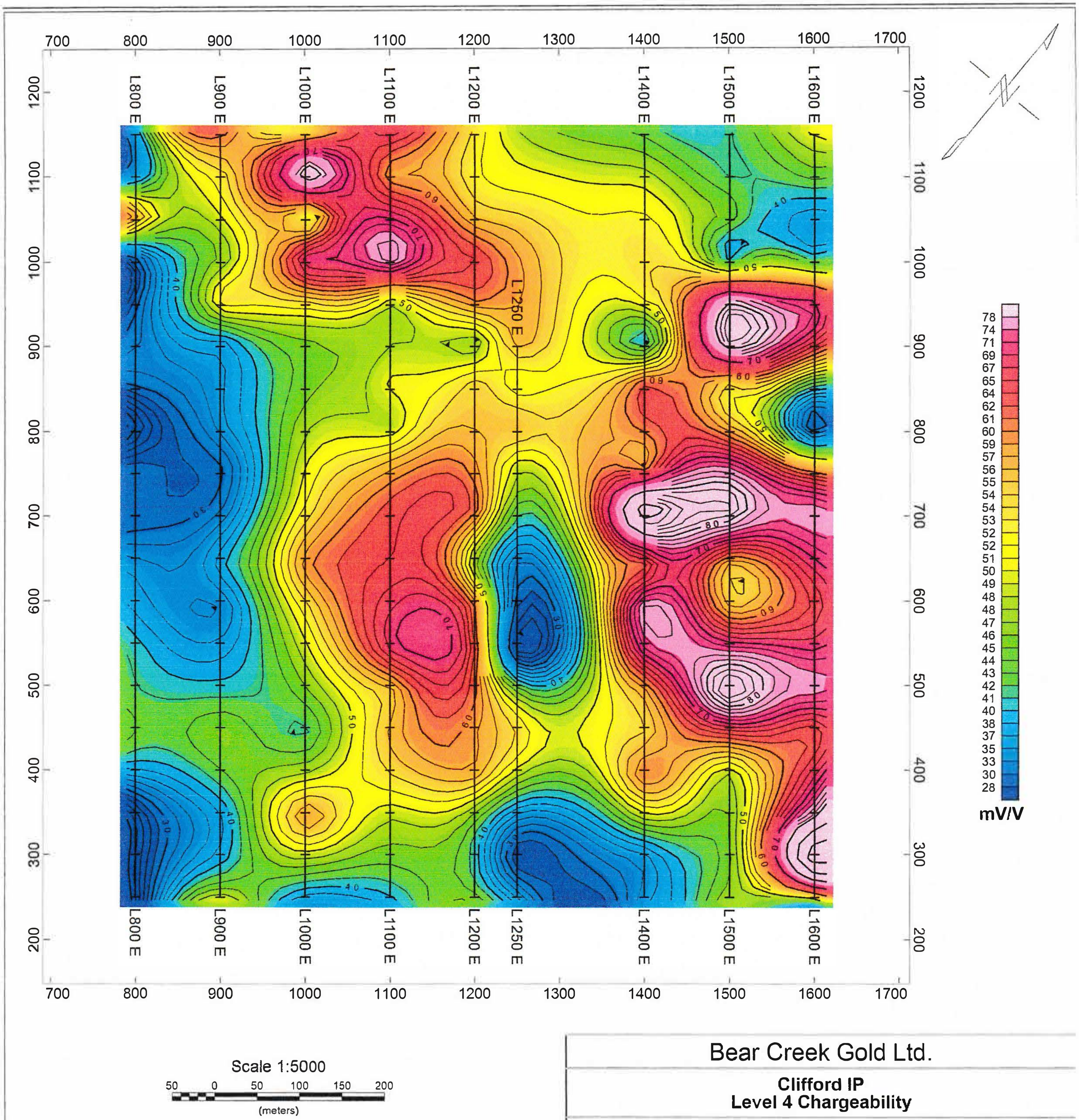
Bear Creek Gold Ltd.

Clifford IP
Level 3 Chargeability

June 2021

NOV 2021

FIGURE 21 **SCALE AS SHOWN**

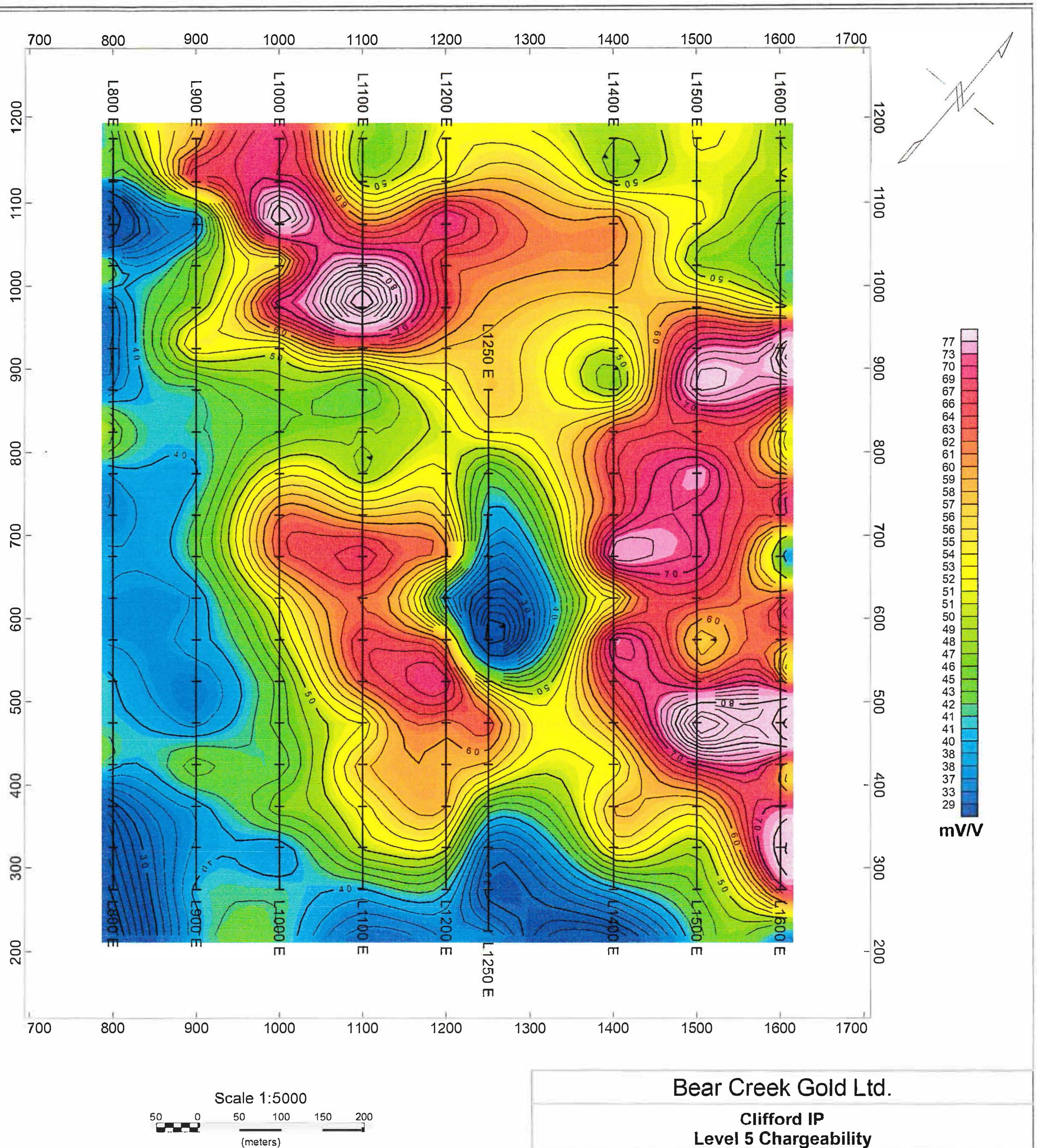


Bear Creek Gold Ltd.

Clifford IP
Level 4 Chargeability

June 2021

NOV 2021 **FIGURE 22** **SCALE AS SHOWN**

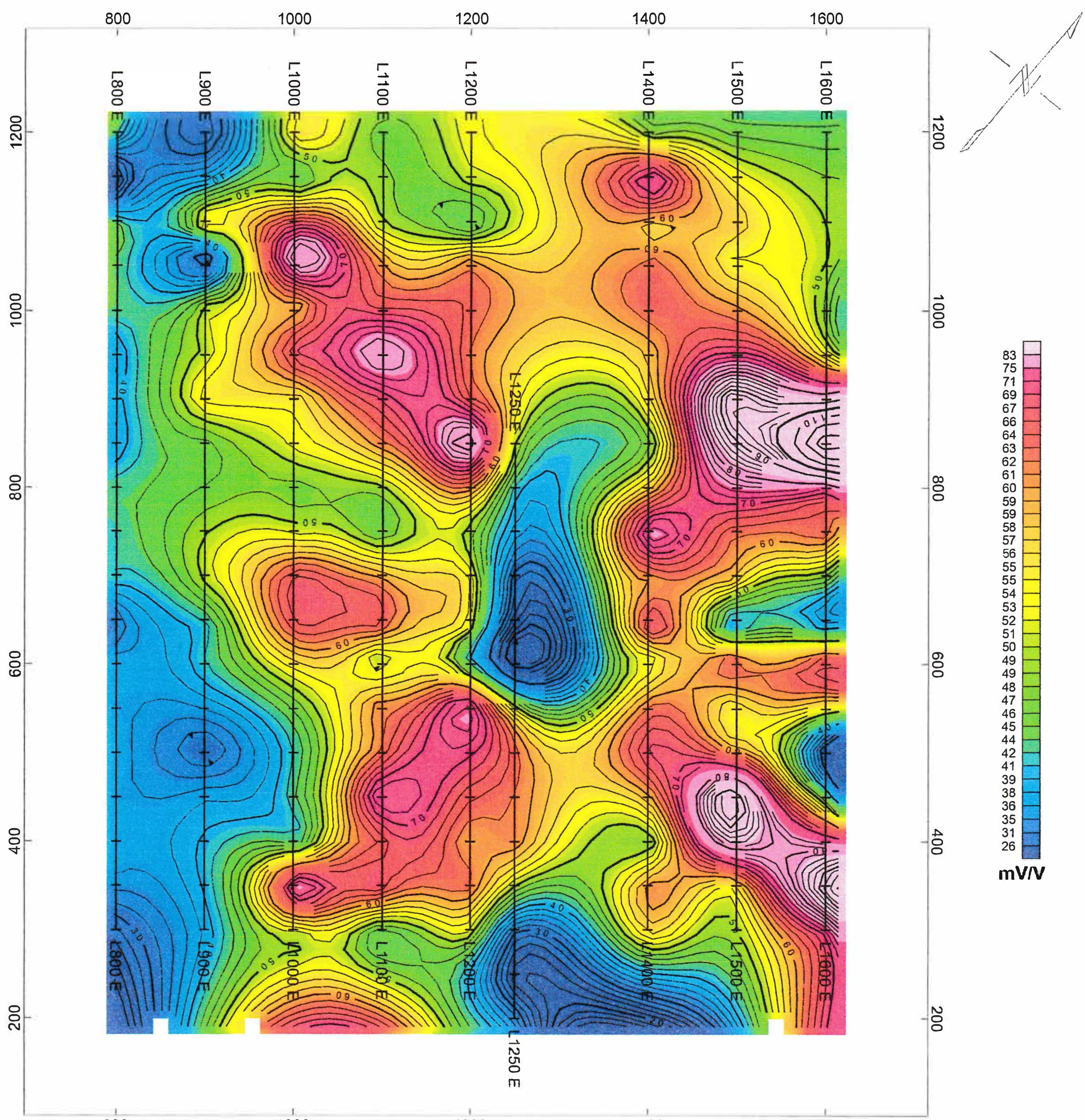


Bear Creek Gold Ltd.

Clifford IP
Level 5 Chargeability

June 2021

NOV 2021 **FIGURE 23** **SCALE AS SHOWN**



Scale 1:5000

50 0 50 100 150 200

(meters)

Bear Creek Gold Ltd.

Clifford IP
Level 6 Chargeability

June 2021

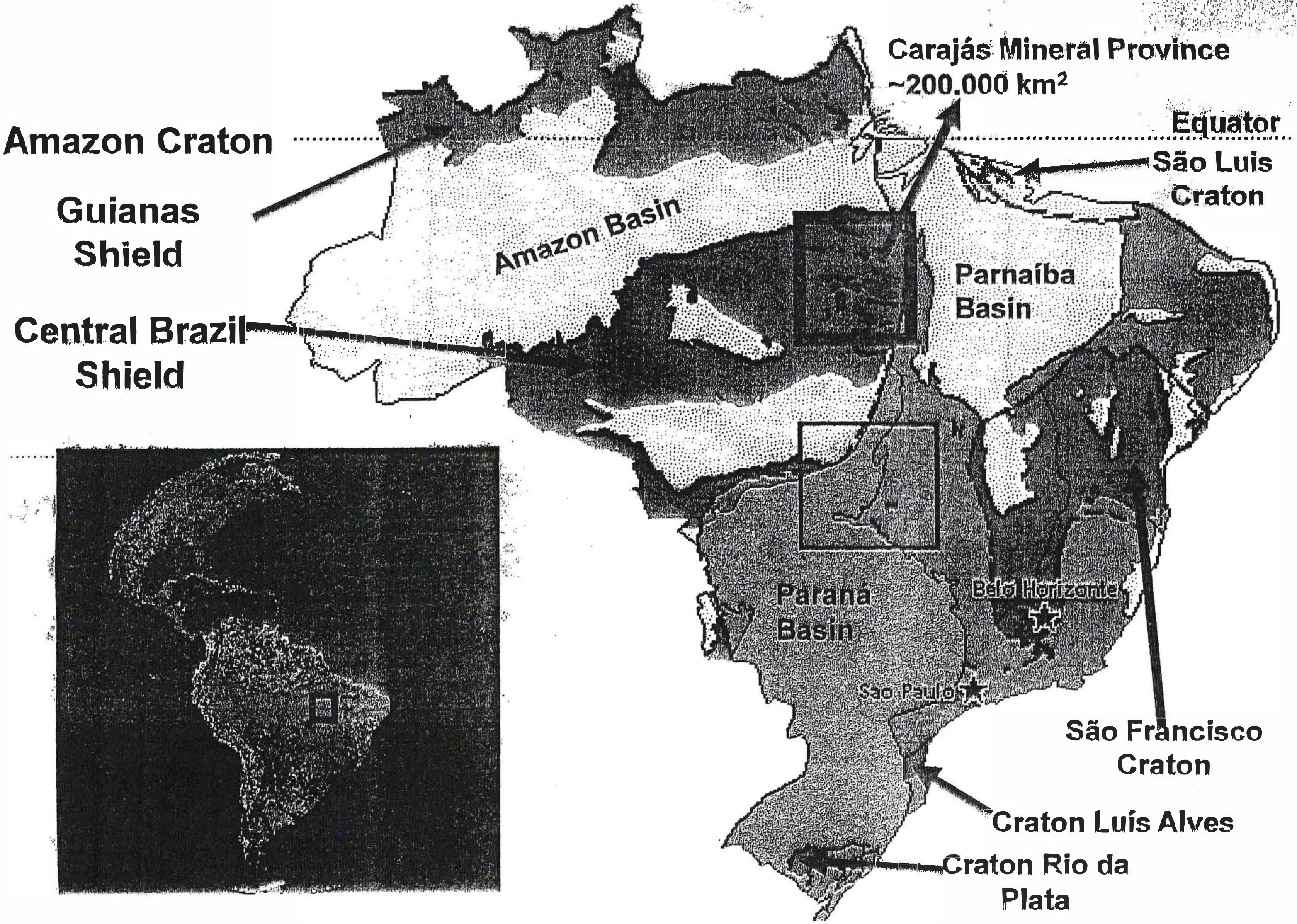
NOV 2021 **FIGURE 24** **SCALE AS SHOWN**

APPENDIX 3

Iron Oxide Copper - Gold (IOCG) Mineralization

Carajas District, Para State, Brazil

LOCATION OF THE CARAJÁS MINERAL PROVINCE



Another PGC International Study Tour
Developed & Managed by Porter GeoConsultancy

IOCG 07

Iron Oxide Copper-Gold in South America

4 to 13 June 2007

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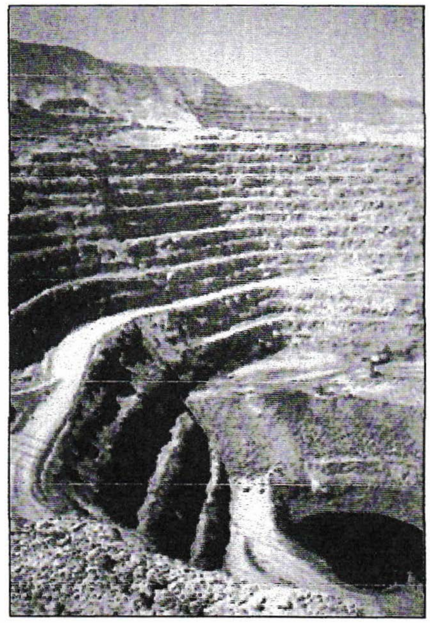
CONTENT and DESCRIPTIONS OF ORE DEPOSITS

Image: The Candelaria open pit, Chile.



Porter GeoConsultancy continued its International Study Tour series of professional development courses by visiting a representative selection of the most important iron oxide copper-gold deposits in South America, in the Andes of Chile and the Carajas region of Brazil.

The tour commenced in Marabá, Para state, Brazil on the evening of Sunday 3 June and ended in Santiago, Chile on the evening of Wednesday 13 June, 2007.

Participants were able to take any 4 or more days, up to the full tour, as suited their interests or availability.

The main components of the itinerary were:

- Cristalino in Para, Brazil,
- Sossego in Para, Brazil,
- Igarapé Bahia in Para, Brazil,
- Alemão in Para, Brazil,
- Salobo in Para, Brazil,
- Andean Workshop in Copiapo, Chile,
- Punta del Cobre Field Workshop Copiapo district, Chile,
- Mantoverde northern Chile,
- Candelaria northern Chile,
- *Mantos Blancos northern Chile,*

Cristalino .... Monday 4 June, 2007.

The **Cristalino** IOCG deposit is located some 40 km to the east of Sossego in a bifurcation of the major regional Carajás Fault in the Carajás district of Para State, Brazil.

Basement in the area is represented by the Xingu Complex which is >2.86 Ga in age and is composed of a variety of rocks, including the ~3.0 Ga Pium Complex and 2.9 Ga Greenstones. These are overlain by the 2.76 Ga Grão Para Group of volcanics and sediments, cut by the 2.5 Ga Estrella Granite and subsequently by 1.9 Ga granites but is overlain by the un-metamorphosed 2.7 to 2.6 Ga Águas Claras marine sandstones.

Cristalino is hosted by volcanics of the Grão Para Group composed of orange dacite and green andesite with minor basalt and in association with hydrothermally altered and disrupted banded iron formations within this same sequence. These iron formations have been upgraded nearby where they constitute part of the Carajás Iron Resources.

Mineralisation is concentrated in a NW-SE trending, sinsitral transpressive zone of shearing over a drilled length of 2200 m and thickness ranging from 10's of metres to 500 m. The shear zone is several hundreds of metres in width and is a splay of the Carajás Fault. The ore zone is generally brecciated and is found in the volcanics below the iron formation and in the lower sections of the iron formation itself. In general the iron formation forms the upper limit to ore and may have acted as a capping. The hydrothermally altered breccia is composed of 5 to 50% sub-angular to sub-rounded fragments.

Mineralisation is associated with the emplacement of 2.7 Ga diorite to quartz-diorite intrusions into the volcano-sedimentary sequence and iron formation.

There are two styles of mineralisation: **(i).** 60% of which is crosscutting stockwork veins and veinlets, and **(ii).** 40% breccia ore where the breccia fragments are surrounded by sulphide veins and a sulphide matrix. Mineralisation is also accompanied by magnetite and associated amphibole alteration. The principal sulphides are chalcopyrite and pyrite in a 2:1 to 3:1 ratio. The Copper was introduced after the magnetite and amphibolite alteration, although the highest grades are associated with the amphibole zones. The iron alteration where it affects the iron formation represents addition, not remobilisation of iron.

Hydrothermal alteration progressed from: **(i).** early widespread actinolite-albite; to **(ii).** biotite with scapolite and magnetite; to **(iii).** amphibole with magnetite as hastingsite, grunerite, actinolite and cummingtonite; to **(iv).** chlorite with albite, magnetite and hematite; to **(v).** chlorite and carbonate; to **(vi).** muscovite and carbonate.

The average 3-5% sulphide mineralisation is associated with the last three overlapping phases of alteration and comprise chalcopyrite, pyrite and lesser arsenopyrite with trace Ni-Co sulphides. The gold is in the pyrite.

Indications of Cu mineralisation were first noted in the area in the late 60's to early 70's. Grid geochemistry and geophysics from 1984-87 led to 2 anomalies being drilled in 1988 with some 13 holes in two prospects. The second phase of work was commenced in 1997-98 with more grid mapping, geochemistry and geophysics, culminating in a drill intersection of 38 m @ 1.4% Cu, 0.25 g/t Au between 76 and 114 m depth.

The resultant approximate resource from the subsequent drilling to 2001 amounted to 500 Mt @ 1.0% Cu, 0.2-0.3 g/t Au. According to CVRD, the reserves amount to 261 Mt @ 0.73% Cu.

Return to top

Sossego .... Tuesday 5 June, 2007.

The **Sossego** IOCG deposit is located some 40 km to the south of the Carajás townsite in the state of Para, Brazil. It is approximately 80 km SE of Igarapé Bahia and Alemao, and 40 km west of Cristalino.

Mineralisation is hosted along a regional WNWESE-striking shear zone that defines the contact between the metavolcano-sedimentary rocks of the ~2.76 Ga Itacaiúnas Supergroup and tonalitic to trondhjemitic gneisses and migmatites of the ~2.8 Ga Xingu Complex.

The deposit is hosted by granite, granophyric granite, gabbro and felsic metavolcanic rocks representing both suites.

The ore is located in two adjacent centres, Sossego Hill (the SossegoCurral zones) and the larger Sequeirinho (the Pista-

SequeirinhoBaiano zones) which has a length of 1.6 km and thickness of 150 to 200 m in its central section. These two centres are separated by a major high angle fault.

The Sequeirinho orebodies have been subjected to regional sodic (albitehematite) alteration, overprinted by sodiccalcic (actinolite-rich) alteration accompanying with the formation of massive magnetite(apatite) bodies. Both alteration assemblages exhibit ductile to brittle-ductile fabrics and are cut by spatially restricted zones of potassic (biotite and potassium feldspar) alteration that grades outward to chlorite-rich assemblages (Monteiro, *et al.*, 2007).

The Sossego Hill orebodies display only weakly developed early albitic and very poor subsequent calcicsodic alteration, although they have well-developed potassic alteration assemblages that were formed during brittle deformation that produced breccia bodies. The matrix of the breccias commonly displays coarse mineral infill suggestive of growth into open space (Monteiro, *et al.*, 2007).

The sulphides of both groups of orebodies were initially accompanied by potassic alteration and a subsequent more important assemblage of calcitequartzepidotechlorite. In the Sequeirinho orebodies, sulphides range from undeformed to deformed, while at the Sossego Hill orebodies they are undeformed. Very late stage, weakly mineralised hydrolytic alteration is present in the Sossego Hill orebodies (Monteiro, *et al.*, 2007).

The dominant sulphides are chalcopyrite with subsidiary siegenite and millerite, and minor pyrrhotite and pyrite in the Sequerinho orebodies, although pyrite is relatively abundant in the Sossego Hill bodies.

In early 2001 the total resource was quoted as 355 Mt @ 1.1% Cu, 0.28 g/t Au, encompassing a mineable reserve of 219 Mt @ 1.24% Cu, 0.33 g/t Au at a 0.4% Cu cut-off and stripping ratio of 3.3:1 wate:ore.

At the commencement of mining in 2004, reserves were quoted by CVRD as 250 Mt @ 1.0% Cu. Montiero, *et al.*, (2007) published a reserve of 245 Mt @ 1.1% Cu, 0.28 g/t Au.

Mineralisation (gold) was initially discovered by garimperos (prospectors) in 1984 within CVRD concessions. The area was tendered to Phelps Dodge in 1996 and the first major intersections were in early 1997.

In 2001 the project was controlled by Mineracao Serra do Sossego, a 50:50 joint venture between Phelps Dodge do Brasil and CVRD. In 2002 CVRD bought Phelps Dodge's share and commenced mining in 2004.

Return to top

Igarapé Bahia .... Wednesday 6 June, 2007.

The Igarapé Bahia Au-Cu-(REE-U) deposit is located in the Carajás Mineral Province of Para State Brazil.

Igarapé Bahia is hosted by the Igarapé Bahia Group, *considered to be a lower greenschist facies metamorphosed unit of* the Archaean (*ca.* 2.75 Ga) metavolcano-sedimentary Itacaiúnas Supergroup which comprises two lithological and stratigraphic domains: a lower metavolcanic unit composed of metavolcanic rocks and acid to intermediate volcanoclastics; and an upper clastic-chemical metasedimentary unit and volcanoclastic rocks. The Igarapé Bahia orebodies represents a 100 to 150 m thick gossan-laterite zone from which significant amounts of gold (>60 t) were mined until 2003. Where not outcropping, the primary mineralisation is obscured by a 250 m thick unconformable siliciclastic unit referred as the Aguas Claras Formation.

The copper-gold mineralisation at the Igarapé Bahia deposit is hosted by a hydrothermally altered breccia at the contact between the footwall mafic volcanics, with associated BIF and hyaloclastite, and a dominantly coarse to fine-grained metasedimentary sequence in the hanging wall. The breccia unit is exposed at or near the surface as a semicircular annulus, with a form similar to a ring complex with a diameter of approximately 1.5 km. The mineralised breccia unit occurs as a 2 km long by 30 to 250 m thick series of fault dislocated bodies on the southern, northeastern and northwestern sections of this structure, dipping steeply outwards at ~75°, and is nearly concordant with the metavolcanic-sedimentary wallrocks.

The economically extracted ore at Igarapé Bahia is largely developed as a supergene gossan-laterite enrichment within the 150 to 200 m thick oxide profile. Three orebodies have been mined at this contact, forming a semi-circular trace at the surface namely, Acampamento - dipping at around 75° to the north-east, Furo Trinta to the south-east, and Acampamento Norte to the north-west, forming an outward dipping domal structure in three dimensions.

The oxide zone is characterised by supergene enrichment and hematite, goethite, gibbsite and quartz. This is underlain by a transition zone that may be up to 50 m thick with enriched supergene malachite, cuprite, native copper and goethite and minor amounts of digenite and chalcocite responsible for high grade Cu and Au. This zone is in turn underlain by primary Cu-Au mineralisation, represented by hydrothermal breccias containing chalcopyrite, bornite, carbonate, magnetite and minor molybdenite and pyrite.

Strong hydrothermal alteration of the host sequence produced intense chloritisation, Fe-metasomatism, Cu-sulphidation (chalcopyrite and bornite), carbonatisation, silicification, tourmalinisation and biotitisation in the primary zone.

Gold-copper mineralisation is localised at the commonly brecciated contact between the metavolcanics and the meta-volcaniclastics-metasediments and comprises, magnetite/siderite heterolithic breccias and hydrothermally altered metavolcanics. These rocks are enriched in REE (monazite, allanite, xenotime, bastnŠsite and parisite), Mo (molybdenite), U (uraninite), F (fluorite), Cl (ferropyrosmalite) and P (apatite).

Production has been at a rate of around 10 t Au per annum, with the remaining reserve in 1998 being 29 Mt @ 2 g/t Au. The deposit was and is controlled and operated by CVRD/Vale.

Return to top

Alemão .... Wednesday 6 June, 2007.

The **Alemão** IOCG Au-Cu-(REE-U) deposit is part of the Igarape Bahia mineralised system in the Carajás Mineral Province of Para State Brazil (see the *Igarapé Bahia record*).

Alemão is hosted by the Igarapé Bahia Group, considered to be a lower greenschist facies metamorphosed unit of the Archaean (ca. 2.75 Ga) metavolcano-sedimentary Itacaiúnas Supergroup which comprises two lithological and stratigraphic domains: a lower metavolcanic unit composed of metavolcanic rocks and acid to intermediate volcanoclastics; and an upper clastic-chemical metasedimentary unit and volcanoclastic rocks. The Alemão ore body underlies the far northwestern margin of the Igarapé Bahia deposit, which represents a 100 to 150 m thick gossan-laterite zone from which significant amounts of gold (>60 t) were mined until 2003. Elsewhere it is obscured by a 250 m thick unconformable siliciclastic unit referred as the Aguas Claras Formation.

The copper-gold mineralisation at the Igarapé Bahia/Alemão deposit is hosted by a hydrothermally altered breccia at the contact between the footwall mafic volcanics, with associated BIF and hyaloclastite, and a dominantly coarse to fine-grained metasedimentary sequence in the hanging wall. The breccia unit is exposed at or near the surface as a semicircular annulus, with a form similar to a ring complex with a diameter of approximately 1.5 km. The mineralised breccia

IOCG DEPOSITS OF THE CARAJÁS MINERAL PROVINCE

Similar sequence of hydrothermal alteration

Na (albite + scapolite)

↓

Na-Ca (albite – actinolite – epidote – magnetite - apatite)

↓

See Figure 6 of Clifford report and Contact Aureole mineralogy of the Clifford intrusive

K (biotite – K-feldspar)

↓

Chorite - carbonate

↓

Cu-Au mineralization

↓

sericite

Note the mineralogy and chemistry of the first 2 hydrothermal phases

IOCG DEPOSITS: GEOCHEMICAL SIGNATURE OF THE ORE

Sossego

Fe – Cu – Au – LREE – Co –Ni – Pd - P

Castanha

Cu – Fe – Zn – Ni - (Co – Pb – Mo - Pd), ETR, U, P

Bacaba

Cu – Fe – Ni – Te – Ag –Pb – U – Sn – W –ETR –Th - P

Alvo 118

Cu – Fe – Sn – Te - Bi - Pb - Zn - Au - Ag - HREE

depends on the chemistry of the host rocks !

MINERALS, CHEMISTRY AND ALTERATION

SODIUM - RICH MINERALS (Na)

Albite $NaAlSi_3O_8$

Scapolite Ca,Na silicate +Al +/- CO_3 or Cl

CALCIUM (Ca) and IRON(Fe) - RICH MINERALS

Actinolite $Ca_2(Mg_{3.5}Fe^{++})Si_8O_{22}(OH)_2$

Epidote $Ca_2Al_2(Fe^{+++},Al)Si_3O_{12}(OH)$

Apatite $Ca_{10}(PO_4)_6(OH,F,Cl)_2$

Magnetite Fe_3O_4

Hematite Fe_2O_3

Carbonates; ankerite, calcite, dolomite
and siderite

Scheelite $CaWO_4$

Tourmaline Na Fe B Al silicate, OH

REE, Cerium(Ce) and Lanthium(La)

Allanite $(Ce,Ca,Y,La)Fe,Al(SiO_4)(OH)$

Monazite $(Ce,La)PO_4$