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# HINTERLAND METALS INC.

## A REPORT OF PROSPECTING AND GEOPHYSICAL SURVEYS

### HELEN AND GLEAM PROPERTIES

GLEAM 1-42, YB94107-94148 & GLEAM 43-50, YC 24194-24201

HELEN 1-4, YC 24190-193 & HELEN 5-14, YC 24260-24373

61°22' N. LAT. AND 130°56' W. LONG.,  
N.T.S. 105 G/07

## WATSON LAKE MINING DISTRICT OF YUKON

JUNE TO SEPTEMBER 2004

YMIP # 04-068

MARK FEKETE, P.GEO.

JANUARY 31, 2005



# HINTERLAND METALS INC.

A REPORT OF PROSPECTING AND GEOPHYSICAL SURVEYS

HELEN AND GLEAM PROPERTIES

GLEAM 1-12, YB94107-94148 & GLEAM 43-20, YC 24194-24201

HELEN 1-4, YC 24190-193 & HELEN 2-14, YC 24260-24273

61°22' N. LAT. AND 130°26' W. LONG.

N.T.S. 1:60,000

WATSON LAKE MINING DISTRICT OF YUKON

Costs associated with this report have been approved in the amount of \$ 6500.00 for assessment credit under Certificate of Work No. 6625737.

Mining Recorder  
Watson Lake Mining District

094910

This report has been examined by  
the Geological Evaluation Unit  
under Section 53 (4) Yukon Quartz  
Mining Act and is allowed as  
representation work in the amount  
of \$ 6500.00.



Regional Manager, Exploration and  
Geological Services for Commissioner  
of Yukon Territory.



## SUMMARY

The 50-claim (2582-acre) Gleam and 18-claim (930-acre) Helen properties are situated within the Watson Lake Mining Division and located in the Finlayson Lake Area of southeastern Yukon approximately 225 kilometres east-northeast of the capital city of Whitehorse. Based on the results of the exploration program completed in 2004 and a review of relevant reports and maps obtained from various sources, an evaluation of the exploration potential of the properties is presented and an exploration program is proposed.

Hinterland Metals Inc. may earn 100% of the property mineral rights from True North Gems Inc. subject to an agreement signed by the parties on December 11, 2002 with respect to the Gleam property. Both properties are subject to an underlying 3% royalty on all gemstone and metal production in favour of Glacier Gems Inc. The Helen claims were staked in September 2003 within an area of influence and are subject to the terms and conditions of the Gleam agreement.

Access to the properties is limited by the lack of roads into the area. The closest road to the properties ends at Teck-Cominco's Kudz Ze Kayah camp some 15 km to the northeast. At present, the most practical access to the properties is provided by floatplane to West Grass Lake which is suitable for the establishment of a base camp and then by helicopter from the base camp to the properties on a daily or fly-camp basis. Both properties are in steep, rugged terrain where snow conditions and short daylight hours in winter mean that the best period for exploration is from mid-June to mid-September.

The Finlayson Lake Area lies within the northern Canadian Cordillera in a region underlain primarily by several fault- and unconformity-bound meta-sedimentary and meta-volcanic successions and affiliated meta-plutonic rocks of the Yukon-Tanana Terrane. The region is bound to the south by the Tintina Fault and to the north by rocks of the North American Miogeocline. The properties lie in the southwestern part of the region along the footwall to the Money Creek thrust. Meta-sediments and meta-volcanics of the Grass Lake succession and coeval granitic and monzonitic rocks of the Grass Lakes Plutonic Suite underlie the properties. These Late Devonian to Early Mississippian rocks were deformed and imbricated prior to the emplacement of a mid-Cretaceous suite of peraluminous granitic rocks. The properties cover the eastern margin of one such pluton in contact with sub-horizontal layers of the lowermost section of the Grass Lake succession which has been variably displaced by normal and thrust faults.

The Finlayson Lake Area is best known for the Fyre Lake, Wolverine, Kudz Ze Kayah, Ice and GP4F volcanic massive sulphide-type deposits and more recently for the emerald mineralization found on the Regal Ridge Property. Recent geological mapping surveys of the area on a regional scale and several technical studies on a property scale have contributed greatly to the overall understanding of the mineral potential of the area. Similar to Regal Ridge, the Dazzle, Gleam and Helen properties lie adjacent to a mid-Cretaceous granitic intrusion that may have generated quartz veins or pegmatite dykes to cut neighboring schistose meta-sediments and meta-volcanics. This juxtaposition of Be-rich rocks against Cr-rich rocks may, under certain conditions, produce emeralds.



The Helen Gold Zone was discovered by Hinterland in 2003. A series of six chip samples across the showing returned a weighted average of 3.86 g/t Au and 48.1 g/t Ag over a width of 5.0 m. The zone is a vertical hydrothermal arsenopyrite-quartz vein of uncertain origin. A gold bearing rusty quartz vein was found by prospecting in 2004. The vein is in place on YC 24360 some 540 m north of the Helen Showing and suggests that the Helen Gold Zone is not the only mineralized structure on the property.

The 2004 sampling and geophysical results clearly demonstrate that the Helen Gold Zone continues for at least a 300 m strike length. The zone is a weakly conductive structure that appears to dip gradually to the southwest. There is little more surface work that can be done to evaluate the zone. The results justify further sub-surface exploration of the zone by diamond drilling. A 500 m drill program is recommended at an estimated cost of \$197,800.



## CERTIFICATE OF QUALIFICATIONS

I, **Mark Fekete**, having my place of residence at 178 Dennison Boulevard in Val d'Or in the Province of Quebec do hereby certify that:

1. I obtained a Bachelor of Science Degree in Geology from the University of British Columbia in 1986, I have been engaged as a Geologist continuously since 1986, I am a Member in good standing of the Order of Geologists of Quebec (# 553) and I am a "qualified person" as defined in Section 1.2 in and for the purposes of National Instrument 43-101;
2. I have visited the Helen and Gleam properties (the "Properties") most recently in August 2004;
3. I wrote and am solely responsible for the contents of this technical report entitled "A Report of Prospecting and Geophysical Surveys, Helen and Gleam Properties, YMIP # 04-068" based on my professional experience, a review of relevant reports and maps and my own work on the Properties;
4. I am not aware of any material fact or material change with respect to the subject matter of the report that is not disclosed in the report which, by its omission, makes the report misleading;
5. I am an officer and director and I beneficially hold a number of shares in Hinterland Metals Inc.;
6. I hold no direct interest in either of the Properties as a result of any prior involvement in the Properties;
7. I have read, and this report has been prepared in compliance with, National Instrument 43-101 and Form 43-101; and
8. I hereby give consent to Hinterland Metals Inc. to use or reproduce this report in whole or in part for the purposes of exploring and developing the Properties (including the raising of funds) provided that no portion of the report is used in such a manner that conveys any misrepresentation of the information contained in the report.

Respectfully submitted this 31<sup>st</sup> day of January, 2005,

***"Mark Fekete"***

Mark Fekete, P.Geol.



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## 1. Introduction and Terms of Reference

Breakaway Exploration Management Inc. (“Breakaway”) was retained by Hinterland Metals Inc. (“Hinterland”) to complete a program of prospecting, geochemical and geophysical surveying on the Helen and Gleam properties located in the Finlayson Lake Area of southeastern Yukon. This work is a continuation of work initiated on the properties in 2003. The purpose of this report is to describe the details of the work program, to provide an opinion of the exploration potential of the properties and to recommend a program for further exploration of the properties.

This report was prepared as part of continuous disclosure on the part of Hinterland. It was also prepared as a requirement of the Yukon Mining Incentive Program in order to complete the application for \$20,000 of funds under YMIP # 04-068. Finally this report will be filed to complete assessment work requirements of the *Yukon Quartz Mining Act*. The report is based on the results of the exploration program as well as information obtained from a review of relevant reports and maps available from various sources cited throughout the report. Mark Fekete, P. Geo. is the sole author of the report. In his capacity as President of Hinterland, Mr. Fekete also accepts responsibility as the qualified person for the Company.

The metric system is used for all units of measure mentioned in this report and all dollar amounts are in Canadian funds unless otherwise stated. All maps presented in this report are plotted in map projection UTM NAD 83, Zone 9 unless otherwise stated.

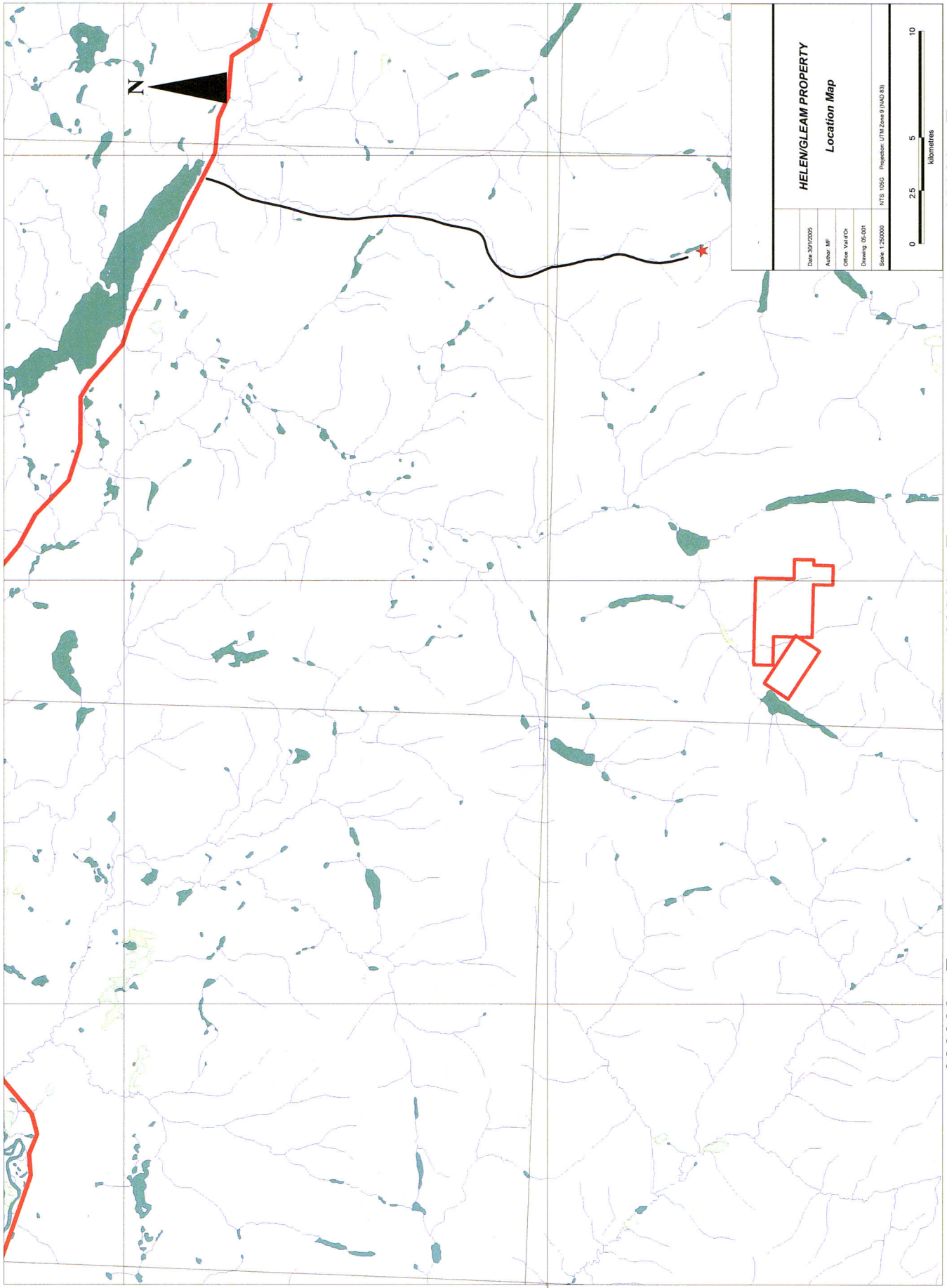
## 2. Disclaimer

The author has relied on the technical data and interpretation found in various sources cited throughout the report. The author has not verified this information and takes no responsibility for its accuracy or completeness. The author does not offer any opinion concerning legal, title, environmental, political or other non-technical issues that may be relevant to the technical report.

## 3. Location and Property Description

The Helen and Gleam properties are located in the Finlayson Lake Area of southeastern Yukon approximately 225 kilometres east-northeast of the capital city of Whitehorse (Figure 1). The properties are situated within the Watson Lake Mining Division and lie on N.T.S. map sheet 105 G/07 at an approximate geographic centre of 61° 22' North Latitude and 130° 56' West Longitude. The most notable topographic features near these properties is West Grass Lake which touches the west boundary of the Helen Property.

The surface rights for the area of the properties are held by the Crown. The mineral rights (Figures 2) are held under the statutes of the *Yukon Quartz Mining Act* and are listed as follows:



684000 mN

682000 mN

380000 mE

400000 mE

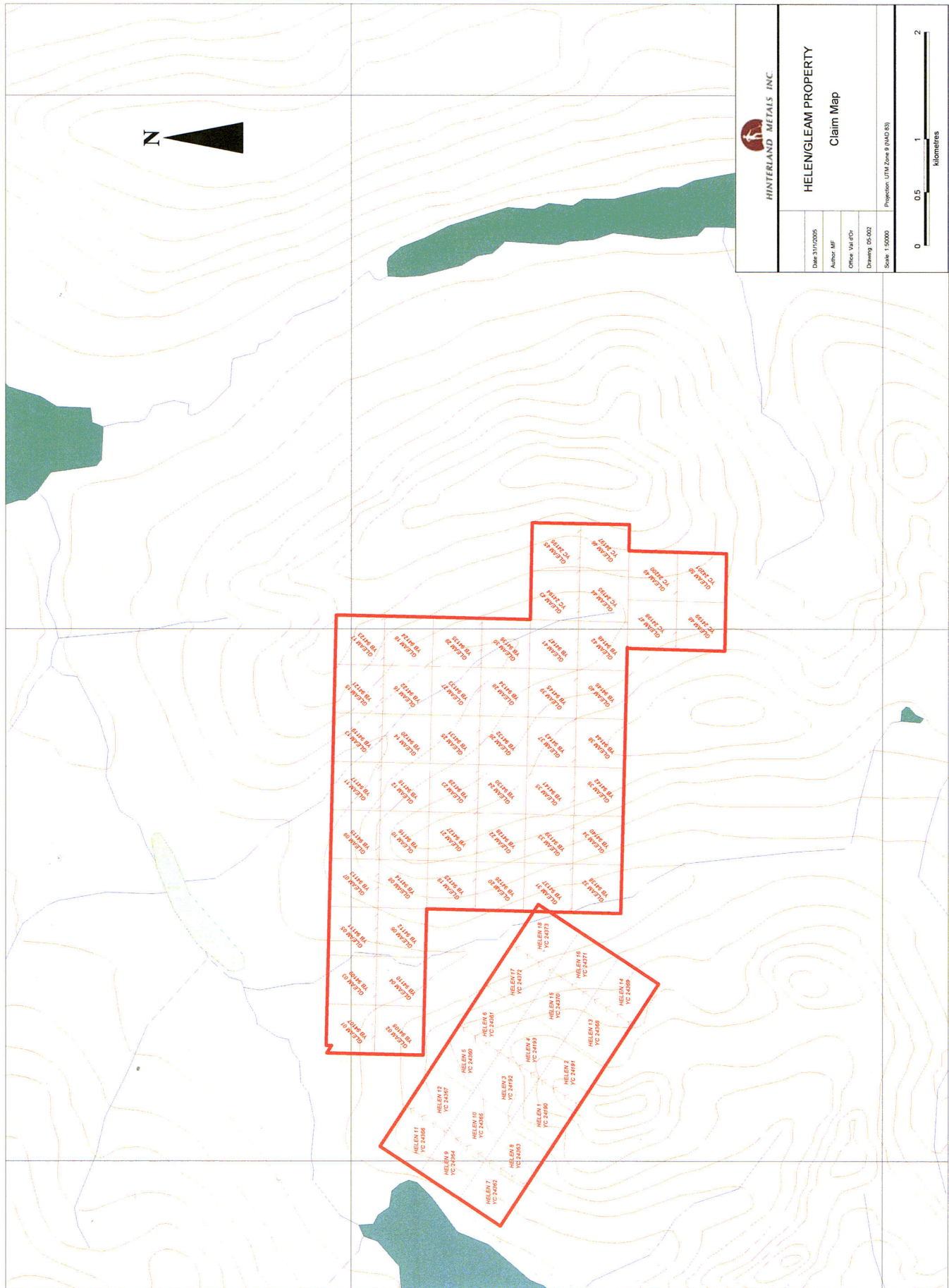
420000 mE

**HELENGLEAM PROPERTY**

**Location Map**

Date: 30/1/2005  
Author: MF  
Office: Val d'O  
Drawing: 05-001  
Scale: 1:20000  
NTS: 1050 Projection: UTM, Zone 9 (NAD 83)





|   |                 |
|---|-----------------|
|  <b>HINTERLAND METALS INC.</b> |                 |
| <b>HELEN/GLEAM PROPERTY</b><br>Claim Map  |                 |
| Date: 31/10/2009  | Author: MF      |
| Office: Val d'Or  | Drawing: 05-002 |
| Scale: 1:50000  |                 |
| Projection: UTM Zone 8 (NAD 83)   |                 |



405000 mE

400000 mE

395000 mE

6810000 mN

6805000 mN



**Table 1 - List of Mineral Titles**

| <b>Claim Name</b>   | <b>Claim Number</b>  |
|---|--|
| Gleam 1 to Gleam 42 inclusive<br>Gleam 43 to Gleam 50 inclusive | YB94107 to YB94148 inclusive<br>YC 24194 TO YC 24201 inclusive   |
| Helen 1 to Helen 4 inclusive<br>Helen 5 to Helen 14 inclusive   | YC 24190 to YC 24193 inclusive<br>YC 24260 to YC 24373 inclusive |

Hinterland holds the option to acquire a 100% interest in the Gleam Property from True North Gems Inc. ("True North") under the terms and conditions of an option agreement executed between the two parties on December 11, 2002. Under this agreement Hinterland has paid \$11,000 cash, issued 50,000 shares and must complete \$200,000 of work expenditures by the third anniversary of the agreement. True North may earn back a 50% interest by completing an additional \$200,000 of work on the property. True North may earn an additional 10% by funding all costs through to production. The Helen Property was staked adjacent to Gleam Property and lies within an area of influence. Consequently it is subject to the terms and conditions of the Gleam agreement and for all intents and purposes may be considered part of the Gleam Property. The properties are subject to an underlying agreement with Glacier Gems Inc. ("Glacier") whereby Glacier is entitled to a 3% royalty on all metal and gemstone production from the properties.

#### **4. Accessibility, Local Resources, Infrastructure, Physiography and Climate**

The Helen and Gleam properties are relatively isolated as there are no roads or trails that provide vehicle access. The Robert Campbell Highway passes approximately 40 km to the north and a secondary road leads from the highway to the Kudz Ze Kayah camp located some 15 km to the northeast. This is a private road operated by Teck-Cominco and access to it is restricted. However, True North has gained access on two occasions in the past in order to mobilize equipment and supplies into its Regal Ridge Project. Therefore it may be possible to obtain permission to use the Kudz Ze Kayah road to mobilize equipment and supplies into the properties at sometime in the future. For the time being however, access by air is the most practical method.

The most suitable place to establish a base camp is on either Grass Lake or West Grass Lake located east and west of the properties respectively. Both lakes provide excellent access to fixed wing aircraft on floats or skis. A helicopter is necessary to move exploration crews onto the properties on a daily basis or on a fly-camp basis. Helicopters are available for charter in Whitehorse and Ross River. During the summer months, Kluane Airways operates a helicopter out of Inconnu Lodge on McEvoy Lake some 50 km north of the project area.

All supplies and services for the base camp are available in Whitehorse. Although Ross River and Faro are much closer, these villages offer only limited services. Whitehorse also offers claim staking, linecutting, geological, geophysical, trenching and diamond drilling services through a number of contractors. Analytical services must be obtained outside Yukon.



The properties lie in rugged mountainous terrain ranging from 1250 m to 2050 m above sea level. They are drained northward into Big Robert Campbell Creek, a tributary of the Pelly River in the Yukon River Watershed. The higher elevations are either barren or covered with mosses, lichen grasses and low brush. The lower elevations are covered by stunted fir forest with intermittent grassy meadows and brush covered creek bottoms. Rock outcrops are abundant and well exposed although talus slides obscure much of the exposure.

The Finlayson Lake Area is characterized by a semi-arid, sub-arctic continental climate with mild summers and very cold winters. Precipitation is generally light in the summer although overcast conditions can persist for weeks without any rain. Heavy morning fog can be a problem especially towards the end of the summer season. Maximum winter snow accumulation is less than two metres although avalanches result in areas of much thicker snow pack that may last into July. Due to the northerly latitude of the region, summer days are long and winter days very short. The best season for exploration is during the summer months from mid-June to mid-September.

## **5. Exploration History**

The properties have seen limited exploration for VMS-type or replacement type gold mineralization. In the past, no mineral showings have been located in place on the properties although there is reference to an occurrence of arsenopyrite float on the Helen Property (MINFILE # 105G 030). A review of the Yukon Geology Program MINFILE database reveals that the immediate area of the properties has seen three periods of exploration activity.

The first period covers the early-1950s and is poorly documented. Records show that limited staking, prospecting and geophysical surveying took place during this period (Allan 1955). The second period covers the late-1960s when North Lake Mines Ltd. led a syndicate into the area with a regional airborne geophysical survey followed by prospecting, geochemical and ground geophysical surveys (MacDonald 1967, Sevensma 1966, Sevensma 1967, Sevensma and Heard 1967). The third period of exploration in the area was touched off by the discovery of the Kudz Ze Kayah deposit in 1994 and continued into the late-1990s. During this period a number of companies completed work in the area of the properties. Expatriate Resources Ltd. has been the most active company in the area. It participated in a regional airborne geophysical survey followed by prospecting, geological mapping, geochemical and ground geophysical surveys followed by limited trenching and diamond drilling on a number of adjacent properties (Burgert 1997, Eaton 1997, Wenzynowski 1996, Wenzynowski 1998, Wenzynowski 1999, Woolham 1997). Arcturus Resources Ltd. also completed exploration programs on a number of adjacent blocks. This work included participation in a regional airborne survey followed by prospecting, geological mapping, geochemical and ground geophysical surveys followed by limited diamond drilling (Davidson 1997, Davidson 1998, MacDonald 1995, Woolham 1997). Based on a regional geophysical survey flown in 1994, Cominco Ltd. staked and subsequently optioned a block of claims to Pacific Bay Minerals Ltd. Work on these claims was limited to cursory prospecting and geological mapping (MacRobbie 1996, Moyle and Wesa 1998).



## 6. Regional Geology

The Helen and Gleam properties lie within the northern Canadian Cordillera and cover complexly deformed greenschist to lower amphibolite grade metamorphic rocks of the Yukon-Tanana Terrane in contact with mid-Cretaceous granitic plutons (Figure 3). Southwest of the property the right-lateral Tintina Fault Zone separates the Yukon-Tanana Terrane from sedimentary rocks of the Cassiar Platform. Northwest of the property area, the Yukon-Tanana Terrane has been obducted onto clastic and carbonate sediments of the North American Miogeocline by the Inconnu Thrust. The properties lie in an area located north of the Tintina Fault where the Yukon-Tanana Terrane is comprised mainly of pre- to Late Devonian quartz-rich meta-clastic rocks and carbonates and Late Devonian and Mississippian meta-volcanic and meta-plutonic rocks. These rocks were deformed and imbricated in the late Paleozoic and again in the Early Cretaceous prior to the emplacement of a suite of ca. 112 Ma peraluminous granitic intrusions (Mortenson 1999).

## 7. Local Geology

The most recent compilation of Finlayson Lake Area by Murphy et al (2001) divides the Yukon-Tanana Terrane locally into several fault- and unconformity-bound, meta-sedimentary and meta-volcanic successions and affiliated meta-plutonic rocks (Figure 4). The southernmost and structurally deepest rocks are found in the footwall of the Money Creek thrust and include the Grass Lakes succession, mid-Paleozoic granitic meta-plutonic rocks and the unconformably overlying Wolverine succession. On the hanging wall of the thrust is the narrow, discontinuous, largely undifferentiated Tuchitua succession of Upper Devonian to Pennsylvanian quartzites, phyllites, limestones, greywackes and cherts, as well as intermediate metavolcanic rocks coeval to these within both the Grass Lakes and Wolverine successions. Dark clastic rocks and cherts of probable Late Pennsylvanian age overlap both the footwall and thrust sheet of the Money Creek thrust. Rocks in the footwall of the Money Creek thrust, the Money Creek thrust sheet, and the Pennsylvanian overlap rocks have been thrust to the northeast along the Jules Creek Fault and thereby placed over the Finlayson succession composed of clastic rocks, cherts, limestones and meta-volcanics. Permian basalts and cherts of the Campbell Range succession overlie all the thrust sheets. Foliated mafic and ultramafic intrusives, possibly sub-volcanic feeders to the Campbell Range basalts, are found within much of the older rock units. In the southern part of the map area there are several weakly foliated mid-Cretaceous intrusions. In the west-central part of the map area, three bodies of non-foliated Jurassic granitic rocks intrude Yukon-Tanana rocks.

The Helen and Gleam properties lie within the Upper Devonian and Lower Mississippian Grass Lake succession. The lowermost section of the Grass Lakes succession includes muscovite-quartz phyllite, augen phyllite and minor chloritic phyllite, marble and calcareous schist. The Fyre Lake meta-volcanic unit, composed mainly of chloritic phyllite with lesser carbonaceous phyllite and rare muscovite-quartz phyllite, overlies the lowermost section. Carbonaceous phyllite, lesser quartz-feldspar schists and pebble schists and thick sections of feldspar-muscovite-quartz phyllite and augen phyllite (felsic meta-volcanic rocks) of the Kudze Kayah unit overlie the Fyre Lake unit. The upper part of the Grass Lakes succession is composed of carbonaceous phyllite, chloritic phyllite (mafic meta-volcanic rocks and dykes),



quartzite and quartzo-feldspathic meta-conglomerate. These layered rocks are sub-horizontal with an easterly strike. They are variously displaced by normal and thrust faults.

The Grass Lakes succession is intruded by the extensive Grass Lake Plutonic Suite of Early Mississippian age. These well foliated and lineated granites and monzonites are medium- to coarse-grained and generally equigranular, although augen textures are present locally. Smaller bodies of the late Devonian North Lakes meta-diorite, including foliated hornblende-biotite meta-diorites, meta-gabbros, meta-pyroxenites and serpentinized ultramafic rocks, also intrude the Grass Lakes succession. Several weakly foliated to non-foliated peraluminous granitic mid-Cretaceous plutons intrude both the Grass Lakes succession and Grass Lake Plutonic Suite in the southern part of the region. Crosscutting relationships in this area suggest that this plutonic suite is late-kinematic with respect to deformation in the host rock.

## **8. Property Geology**

The Helen and Gleam properties cover the eastern margin of a mid-Cretaceous granitic pluton measuring 10 km from east to west and 6 km from north to south (Figure 5). A cursory inspection of the intrusion shows it to be medium- to coarse-grained, generally equigranular and zoned; the author observed muscovite granite in places and reddish-weathering biotite-muscovite granite elsewhere. The pluton has intruded layered meta-sediments and meta-volcanics of the Grass Lakes succession and meta-plutonic rocks of the Grass Lakes Plutonic Suite. Lithological abbreviations used by Murphy et al (2001) are used in the following discussion for the sake of clarity.

The Gleam Property covers a north trending ridge and is drained by two creeks flowing northwards. Roughly 50% of the property is above treeline with good outcrop exposure. The ridge exposes mainly foliated, lineated and equigranular granitic rocks belonging to the Grass Lakes Plutonic Suite (“MGg”). The ridge is capped by flat-lying tan-coloured quartz-mica schists (“Dq”) overlain by Fyre Lake metavolcanic schists (“Df”). The Helen Property straddles a contact between the mid-Cretaceous granitic pluton (“Kg”) to the south and MGg granitic rocks to the north. Moving west, Dq schists lie on the north side of the contact. The elevation of the Helen Property is relatively high and shows abundant outcrop.

## **9. Deposit Model**

Hinterland’s exploration of the Helen and Gleam properties initially targeted two deposit models. Primarily, the properties were considered to have potential for emerald mineralization similar to that found on True North’s Regal Ridge Project (Groat et al. 2002). Historically the Finlayson Lake Area is best known the Fyre Lake, Wolverine, Kudz Ze Kayah, Ice and GP4F volcanic massive sulphide-type (“VMS” or “VMS-type”) deposits (Murphy et al. 2002). VMS-type deposits are still considered a secondary target for exploration on the properties.

The discovery of the Helen Gold Zone on the Helen Property in 2003 shifted Hinterland’s focus towards a lode gold-type deposit model. The Helen Gold Zone is a weakly deformed hydrothermal vein composed of semi-massive arsenopyrite and quartz. The vein carries significant gold and silver values. Lode gold-silver deposit models are numerous and diverse



(Poulsen 1996). At this early stage it is difficult to identify the Helen gold discovery with a specific model. Copper and zinc values were not very high; therefore this zone does not appear to be related to VMS-type mineralization. Its setting within quartz-mica schists adjacent to a granitic pluton implies that it may be a mesothermal vein replacement associated with a dyke related to the pluton. Its high arsenopyrite content and texture suggests this is a credible model although no dykes were observed when the vein was sampled.

VMS-type deposits are an important source for base and precious metals in Canada (Franklin 1996). The Finlayson Lake Area has a number of VMS-type deposits that are well described in the Yukon Geology Program MINFILE database and summarized as follows:

**Table 2 - Finlayson Lake Area VMS Deposits**

| <b>MINFILE #<br/>Name</b> | <b>NTS Sheet</b> | <b>Host Rock<br/>(Murphy et al., 2001)</b> | <b>Resource</b>   |
|---------------------------|------------------|--|---|
| 105G 034 Fyre Lake        | 105G/02          | Fyre Lake meta-volcanic (DF)               | 15.4 million tonnes within which 8.2 million tonnes grade 2.1% Cu, 0.11% Co, and 0.73 g/t Au, using a 1.0% copper cut-off |
| 105G 072 Wolverine        | 105 G/08         | Wolverine Succession (MWcp/Mwt)            | 6.237 million tonnes grading 1.33% Cu, 1.55% Pb, 12.66% Zn, 1.76 g/t Au and 370.9 g/t Ag                                  |
| 105G 117 Kudz Ze Kayah    | 105G/07          | Kudz Ze Kayah felsic meta-volcanic (DK)    | 11,100,000 tonnes averaging 5.61% Zn, 0.85% Cu, 1.56% Pb, 136.9 g/t Ag and 1.33 g/t Au                                    |
| 105G 118 Ice              | 105G/14          | Campbell Range Succession basalts (PCb)    | 4,561,863 tonnes grading 1.48% Cu with minor gold, silver and cobalt  |
| 105G 143 GP4F             | 105G/07          | Kudz Ze Kayah felsic Meta-volcanic (DK).   | 1.5 million tonnes grading 6.4% Zn and 3.10% Pb, 0.10% Cu, 90 g/t Ag and 2.0 g/t Au.                                      |

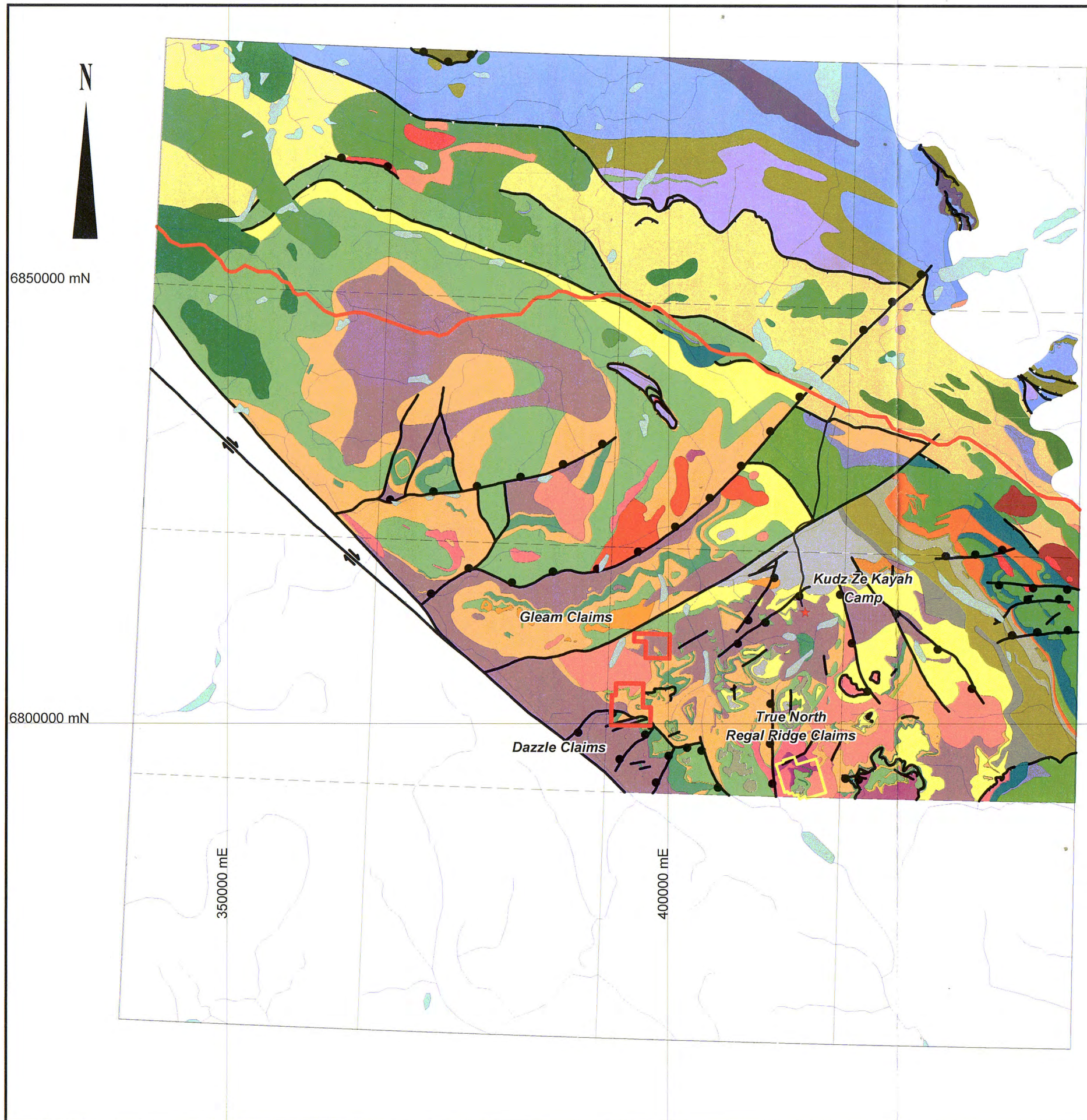
Murphy et al (2002) provide an excellent description of the VMS-type potential of the Finlayson Lake Area:

*“The recognition of the several different and sequentially developed paleogeographic settings within Yukon-Tanana Terrane has implications for the exploration for new mineral deposits. With the exception of the Fyre Lake deposit, all of the known volcanic-hosted massive sulphide deposits occur within rocks inferred to have been deposited in back-arc settings (Piercey and Murphy, 2000; Piercey, 2001b). The Kudz Ze Kayah and GP4F deposits formed in the Late Devonian back-arc region, while Wolverine Lake formed in the early Mississippian back-arc region, all of these in the footwall of the Money Creek thrust. The Ice deposit formed during rifting behind a coeval Early Permian arc recently recognized in southern Yukon (Roots et al., in press). As was noted by Piercey et al. (2000, 2001b), back-arc settings have the structural and thermal characteristics necessary for the generation and maintenance of large-scale hydrothermal circulatory systems that lead to the development of sea floor massive sulphide deposits.”*





Although the VMS-type deposit model is currently secondary to lode gold-type model, the potential for VMS-type mineralization to occur on the Helen or Gleam properties must not be understated. Lode gold is often associated with VMS-type deposits and the Helen Gold Zone may be a surface expression of buried VMS mineralization.



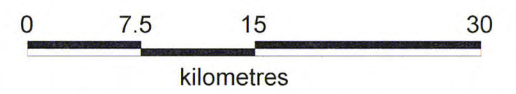
**Legend**

- TERTIARY**
- Eq - Quartz porphyry
- Eg - Gabbro and pyroxenite
- CRETACEOUS**
- Kg - Granite
- Kv - Crystal lithic tuff
- EOCENE**
- Eb - Basalt
- N.A. MIOGEOSYNCLINE**
- UPPER TRIASSIC**
- Tl - Bioclastic limestone
- Ts - Phyllite
- PERMIAN**
- PMC - Mt. Christie Fm Chert
- DEVONIAN - MISSISSIPPIAN**
- DME - Earn Gp metasediments
- ~~~~unconformity~~~~
- CASSIAR PLATFORM**
- MIDDLE DEVONIAN**
- DI - Limestone
- SILURIAN-DEVONIAN**
- SDq - Orthoquartzite
- Sdq - Dolostone and quartzite
- Ss - Laminated siltstone
- Hangin Wall of Inconnu Thrust**
- Jg - Granite
- YUKON-TANANA TERRANE**
- Plg - Leucogabbro, gabbro and diabase
- Pum - Serpentinized ultramafic
- MID-PERMIAN**
- Conglomerate
- ~~~~unconformity~~~~
- EARLY PERMIAN**
- Campbell Range Succession**
- PCb - basalt
- PCc - Chert
- ~~~~unconformity on all thrust sheets~~
- Footwall of Jules Creek Thrust**
- CARBONIFEROUS?**
- Cfv - Felsic metavolcanic
- Ccs - Metasediment
- Civ - Intermediate metavolcanic
- CI - Crinoidal limestone
- Hangin Wall of Jules Creek Thrust**
- PENNSYLVANIAN**
- Pcl - Phyllite, conglomerate and grewacke
- ~~~~unconformity~~~~
- Hangin Wall of Money Creek Thrust**
- EARLY MISSISSIPPIAN**
- Msg - Simpson Range Granites
- LATE DEVONIAN - EARLY MISSISSIPPIAN**
- Dqp - Mafic poor granite
- Dum - Serpentinized ultramafic
- CMCu - Felsic metavolcanic and metasediments
- PENNSYLVANIAN**
- Pq - Quartzite
- UPPER MISSISSIPPIAN TO MID-PENNSYLVANIAN**
- Cc - Crinoidal limestone
- LOWER MISSISSIPPIAN**
- Miv - Mica-quartz phyllite
- UPPER DEVONIAN**
- Df - Metavolcanic
- DFcp - Carbonaceous phyllite
- DFr - Rhyolite
- Footwall of Money Creek Thrust**
- EARLY MISSISSIPPIAN**
- Wolverine Succession**
- MWb - Chloritic phyllite
- MWt - Phyllite
- MWf - Metaporphyry
- MWcp - Carbonaceous phyllite
- MWcl - Metasediment
- ~~~~unconformity~~~~
- EARLY MISSISSIPPIAN**
- MGg & Mgag - Grass Lakes Suite - granite
- LATE DEVONIAN**
- North Lakes Meta-diorite**
- DNd - Foliated diorite
- DMi - Metagabbro
- Dum - Serpentinized ultramafic
- UPPER DEVONIAN TO LOWE MISSISSIPPIAN**
- Grass Lakes Succession**
- DMq - Quartzite
- DMn - Chloritic phyllite
- DMcp - Phyllite and quartzite
- DMcg - Metaconglomerate
- Kudz Ze Kayah felsic metavolcanic
- DKcp - Carbonaceous phyllite
- DKcs - Calcareous metasediment
- DF - Fire Lake Metavolcanic
- UPPER DEVONIAN & OLDER**
- Dq - Mica-Quartz-feldspar schist
- Dqm - Marble and calcareous schist
- Dm - Chlorite schist
- Dfv - Felsic metavolcanic



Date: 24/1/2003  
 Author: MF  
 Office: Val d'Or  
 Drawing: 05-004  
 Scale: 1:500000    NTS:105G    Projection: UTM Zone 9 (NAD 83)

**HELEN PROPERTY**  
**Finlayson Lake Geology Map**



Adapted from Murphy et al 2001, INAC OF 2001-33

6900000 mN

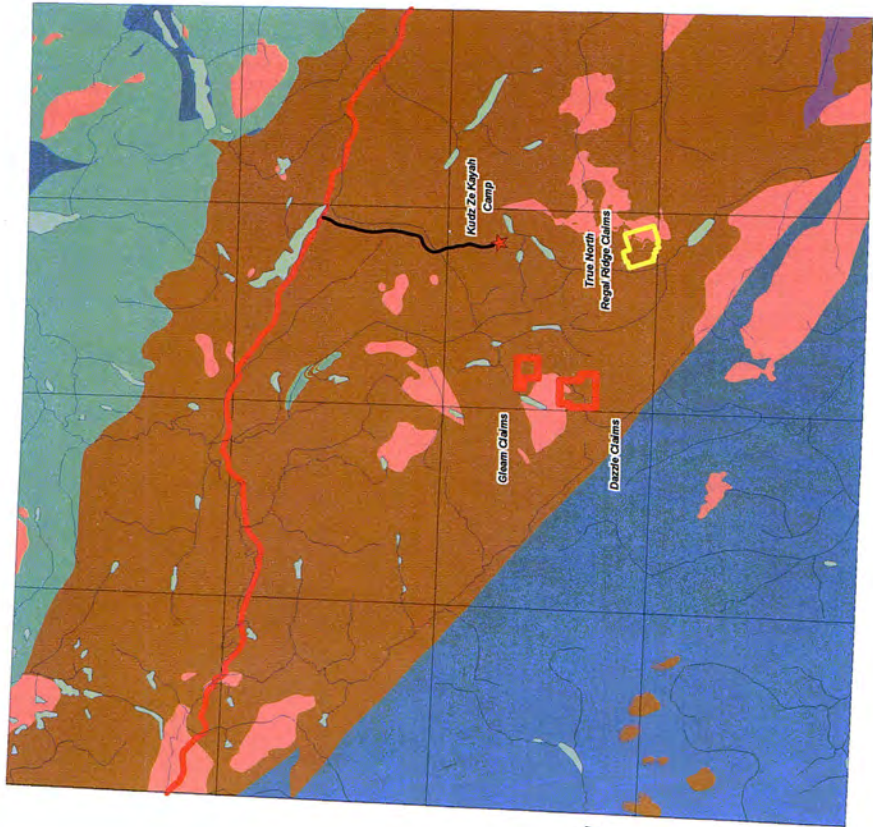
500000 mE



**LEGEND**

- CASSIAR PLATFORM
- NORTH AMERICAN MIOGEOCLINE
- INTRUSIVES
- YUKON-TANANA TERRANE

6800000 mN



400000 mE

6900000 mN

6800000 mN

400000 mE



HINTERLAND METALS INC.

# HELEN PROPERTY

## Regional Terrane Map

Date: 24/1/2003

Author: MF

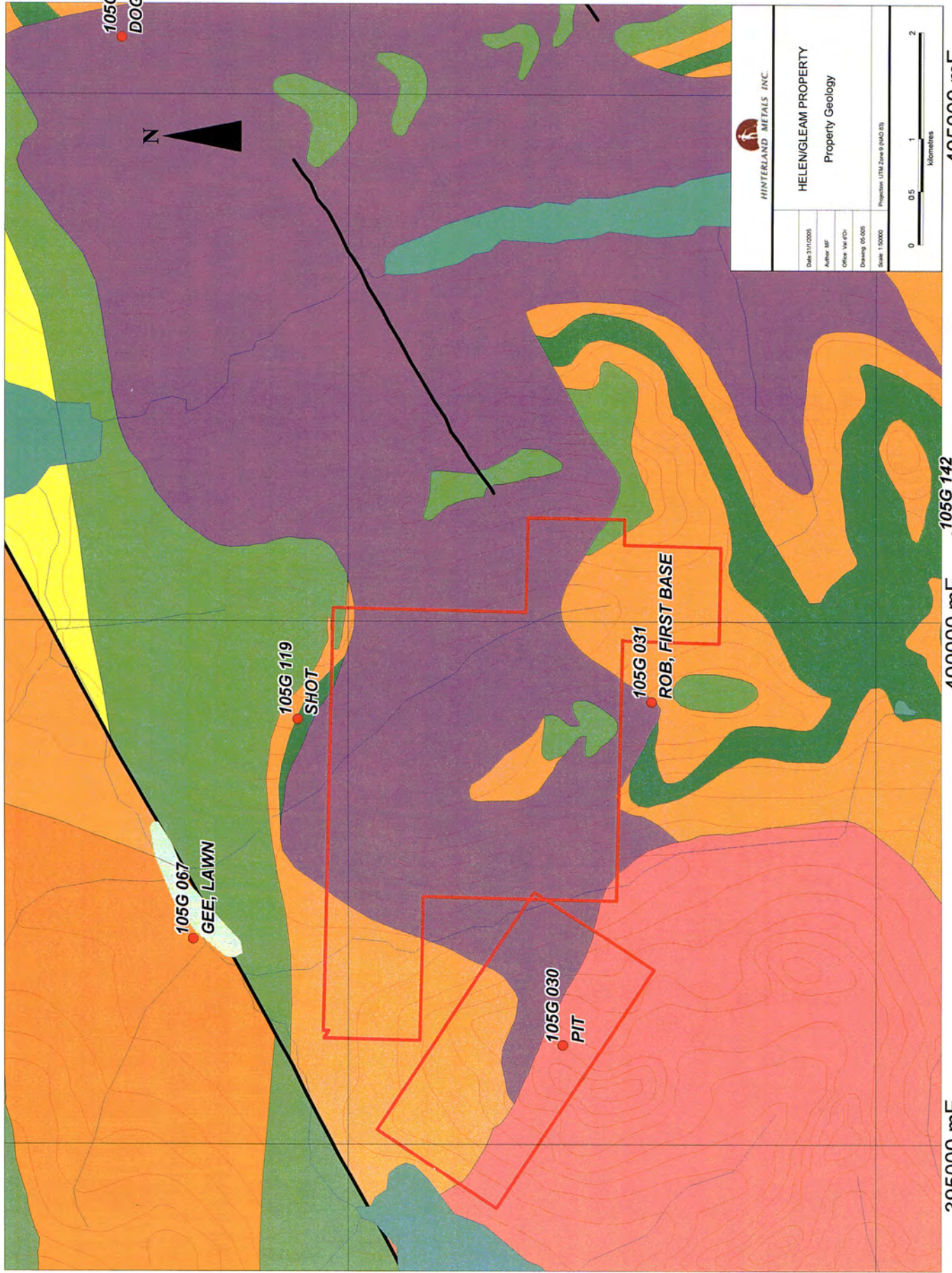
Office: Val d'Or

Drawing: 05-003

Scale: 1:1000000

NTS: 105G Projection: UTM Zone 9 (NAD 83)





105G 12  
DOG



HINTERLAND METALS INC.

HELEN/GLEAM PROPERTY

Property Geology

Date: 31/1/2005

Author: WF

Office: VIC/CD

Drawing: 05-005

Scale: 1:50000

Projection: UTM Zone 9 (MADRS)



405000 mE

400000 mE

395000 mE

105G 142  
FIRST BASE

105G 031  
ROB, FIRST BASE

105G 030  
PIT

105G 119  
SHOT

105G 067  
GEE, LAWN

681000 mN

680500 mN



## 10. Mineralization

No metal or gemstone occurrences in place have been previously documented on the Helen or Gleam properties. The Yukon Geology MINFILE database contains five files describing mineral occurrences in close proximity to these properties summarized as follows:

**Table 3 - Adjacent Mineral Occurrences**

| <b>MINFILE #<br/>Name</b> | <b>NTS Sheet</b> | <b>Deposit Type/Status</b> | <b>Location<br/>Description<br/>Best Assay Values</b>  |
|---------------------------|------------------|----------------------------|--|
| 105G 029<br>Gee           | 105G/07          | Vein/Showing               | 3 km west of Gleam NW Corner;<br>Galena in small quartz stringers<br>NA  |
| 105G 030<br>Pit           | 105 G/07         | Unknown/Showing            | 1.5 km west of Gleam SW corner:<br>Arsenopyrite float<br>68.6 g/t Ag   |
| 105G 031<br>Rob           | 105G/07          | VMS/Showing                | 0.3 km south of Gleam S boundary on ridge:<br>Massive arsenopyrite in schist<br>NA   |
| 105G 067<br>Lawn          | 105G/07          | Unknown/Anomaly            | 1.5 km north of Gleam NW corner:<br>EM anomaly<br>NA   |
| 105G 119<br>Shot          | 105G/07          | VMS/Drilled                | 0.3 km north of Gleam N boundary on ridge<br>Malachite, chalcopryite, sphalerite and pyrite in<br>feldspar-micas-quartz schist<br>0.24% Cu, 2.34% Pb, 4.24% Zn and 41.5 g/t Ag |

The Helen Property covers MINFILE # 105G 030 known as the Pit Showing which is generally described as arsenopyrite float carrying up to 68.6 g/t Ag. There is no evidence that previous workers identified the Helen Gold Zone in place. It is thought that the zone has only recently been revealed by retreating snow. It stands out as an outcrop within a talus slide and is hosted within flat-lying tan-coloured quartz-mica schists several hundred metres north of a contact with a mid-Cretaceous granitic pluton. A series of six chip samples taken across the showing returned a weighted average of 3.86 g/t Au and 48.1 g/t Ag over a width of 5.0 m (Fekete 2004).

Petrography, ore microscopy and S.E.M. evidence conclude the sulphide zone to be a hydrothermal vein comprised of semi-massive arsenopyrite with quartz (Miller 2003). The vein is mineralogically simple and contains approximately 65% arsenopyrite and 35% quartz. Ultra fine-grained metallic aggregates comprised of alloys of bismuth and silver, native bismuth and galena are present as inclusions in arsenopyrite and interstitial to arsenopyrite and quartz.



**Figure 6 - Helen Gold Zone Showing**

## **11. Exploration 2003**

### **11.1. Introduction**

Field exploration work was completed on the Helen and Gleam properties from June to August, 2004. The work consisted of prospecting, outcrop examination, rock sampling, gridding and geophysical surveys. The main goal of the exploration work was better evaluate the suitability of the Helen Gold Zone for diamond drilling. A secondary goal was to prospect the remainder of the Helen Property and follow-up some interesting results obtained along the southern boundary of the Gleam Property in 2003.

All aspects of the exploration program were co-ordinated and supervised by Mark Fekete of Val d'Or, Quebec; a Professional Geologist registered in Quebec, the author of this report and a "qualified person" as defined in Section 1.2 in and for the purposes of National Instrument 43-101. The field crew consisted of prospectors Dan Ferderber and Ray Grenier of Val d'Or, Quebec. Mark Fekete also spent several days in the field. Carl Schulze, P.Geo. of Whitehorse also spent one day sampling the Helen showing; results were presented in a previous assessment report. Geophysical services were provided by Aurora Geosciences Ltd. ("Aurora") of Whitehorse. John Small and Anthony Fekete of Whitehorse provided transportation and expediting services. The work was carried out from a fly camp set up at the north end of West Grass Lake. Helicopter support was provided by Kluane Airways based at Inconnu Lodge and by Heli-Dynamics based in Whitehorse. Kluane Airways made several supply trips to the camp with a Beaver float plane. All sample sites were recorded with Garmin 12XL receivers in the NAD 83, Zone 9 map projection and plotted on appropriate maps included in this report. Data compilation, drafting and report preparation was done by Mark Fekete with the assistance of Nicole Beaudet from September 2004 to January 2005.



## **11.2. Prospecting, Outcrop Examination and Rock Sampling**

Prospecting was focused on tracing the Helen Gold Zone on surface. Most of the Helen property was covered by the prospectors whom followed claim lines, ridge tops, creek valleys and often wandered randomly according to the terrain or the weather. A total of 28 samples were collected on the Helen claims. One day of prospecting was completed at the southeastern corner of the Glean Claims and three rock samples were collected. This work was to follow up some weakly anomalous values obtained in 2003. Sample locations and results are included in Appendix A. Assay certificates are included in Appendix B. Sample locations are plotted at a scale of 1:20,000 (Figure 6 and 7).

## **11.3. Sampling and Analytical Procedures**

A description of each rock sample including its location, sample type (i.e. grab, float etc.), rock type and mineralization was recorded. A representative hand specimen marked with the appropriate sample number was also kept for later reference. The remainder of each sample was placed in a plastic sample bag marked with the appropriate sample number and sealed with flagging tape. Batches of rock samples were subsequently sealed in rice bags and delivered by courier to ALS Chemex Labs in North Vancouver B.C. These samples were analyzed for gold by 30 g Fire Assay with Atomic Absorption (AA) finish and for 27 other elements by partial acid digestion with Induced Coupled Plasma (ICP) Emission Spectroscopy finish.

ALS Chemex follows an internal quality control program that uses a system of duplicates, blanks and standards. It is the author's opinion that the sampling procedure, security measures, sample preparations and analytical methods described above were diligently followed and were adequate to meet industry standards commonly accepted for this level of exploration.

## **11.4. Grid and Geophysical Surveys**

An EM-16 was used to provide a rough trace of the Helen Gold Zone for prospecting and to determine the orientation of the grid. This survey was done prior to the establishment of the grid. No readings were recorded and no map was plotted.

A picket line was laid out with a 450 m long baseline oriented at 065° Azimuth. Lines were laid out at right angles left and right of the baseline. A GPS receiver was used to record the location of all the lines. Approximately 3.5 line km of grid were completed. A horizontal loop electromagnetic ("HLEM") survey was completed over the grid by Aurora. The survey operators were Casey Adshead from Aurora and Dan Ferderber from Breakaway. The specifications of the survey are fully described in a memorandum from Aurora included as Appendix C. The survey results are plotted at 1:2500 scale (Figure 9).

## **11.5. Discussion of Results**

The HLEM survey traced a weak conductor for 300 m in a northwest to southeast direction. The source of the conductor appears to be a deep, highly conductive body. The asymmetry of the in-phase component suggests that the conductor dips gradually to the southwest. Further



mineralization was found in place approximately 50 m southeast of the original discovery and along the trend of the conductor. This second site is mostly buried by talus and no surface dimensions were determined. Gold and silver values from grab samples collected at this site range from 0.77 to 3.41 g/t Au and 1.4 to 2.9 g/t Ag. Similar to the original showing, the mineralization at the second showing is characterized by anomalous arsenopyrite and bismuth values ranging from 774 to 8980 ppm As and 426 to 1855 ppm Bi. The mineralization is composed of semi-massive arsenopyrite and pyrite within white to black quartz veins. Folding is evident within the quartz veins.

A third site was located an additional 80 m southeast along the trend of the conductor. A single grab sample from a 1.5 m wide rusty quartz vein exposed at this site returned 59.6 g/t Ag and 4100 ppm Bi but low gold and arsenic values. This quartz vein shows the same general orientation as the HLEM conductor and may be related to the mineralization found at the first two sites.

A poorly exposed, narrow, folded, rusty quartz vein was found in place on YC 24360 some 540 m north of the Helen Showing. Both grab samples taken from this vein returned strongly anomalous assay results. The first sample (No. 33704) returned 0.965 g/t Au, 2.1 g/t Ag and 774 ppm As. The second sample (No. 33705) returned 2.06 g/t Au, 1.4 g/t Ag and 8980 ppm As.

The three samples collected on the Gleam property did not return any results of merit.

## 12. Adjacent Properties

Information concerning adjacent properties is included in Sections 9 and 10 of this report. This information was obtained from the publically available Yukon Geology Program MINFILE database. The author has not attempted to verify any of the information contained in the MINFILE reports and **any such information is not necessarily indicative of similar mineralization existing on either of the Helen or Gleam properties.** The author cautions the reader to distinguish between the descriptions of mineralization found on adjacent properties provided in this report and the descriptions of mineralization found on the Helen or Gleam properties if and when any are provided.

## 13. Mineral Processing and Metallurgical Testing

To date, Hinterland has not completed any mineral processing and/or metallurgical testing on the Helen or Gleam properties.

## 14. Mineral Resource and Mineral Reserve Estimates

No mineral resource or mineral reserve estimates exist for the Helen or Gleam properties.

## 15. Other Relevant Data and Information

The author is not aware of any other information or explanation necessary to make this technical report more understandable and not misleading.



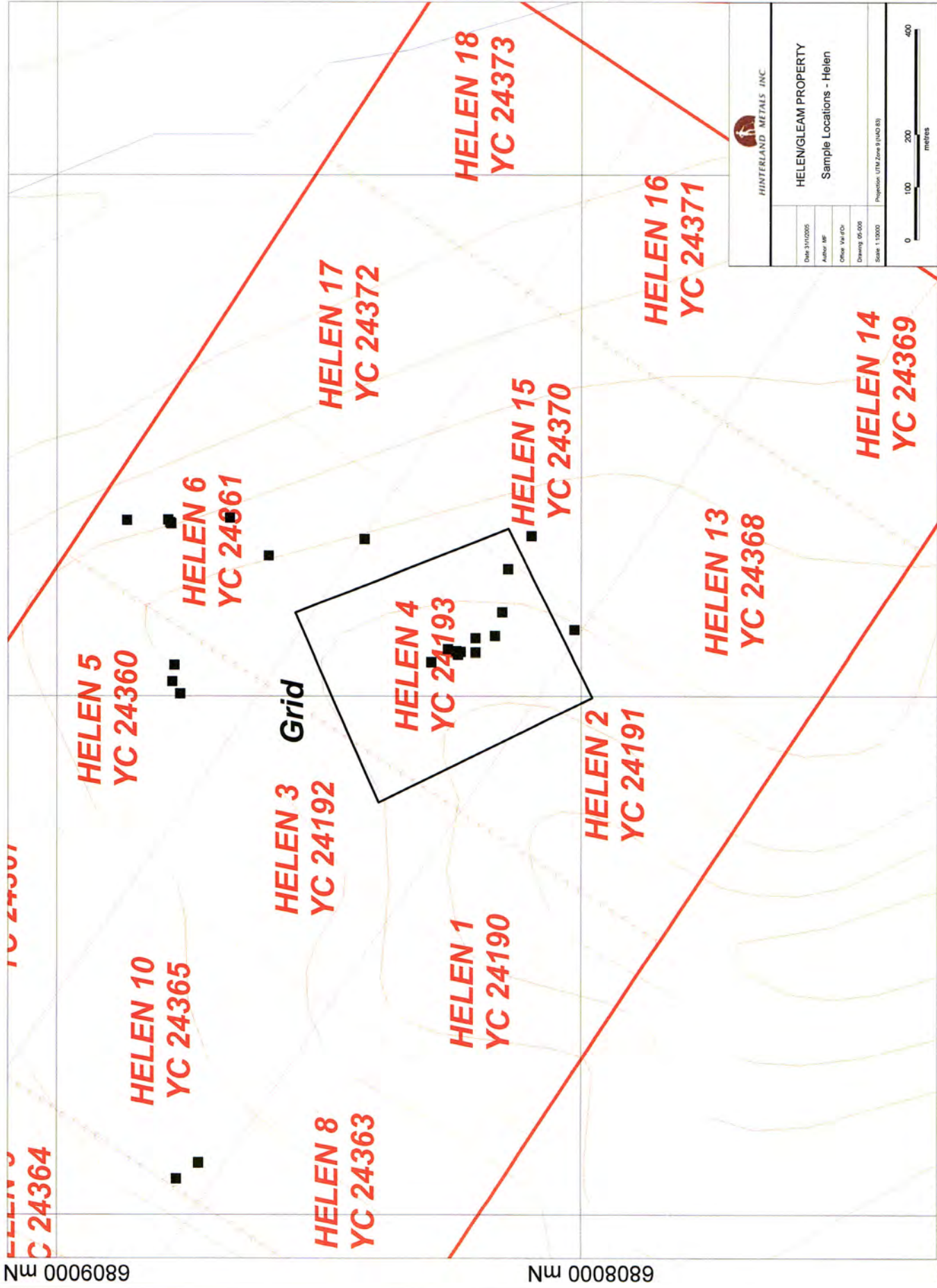
6808000 mN

6807000 mN



400000 mE

401000 mE



|   |                                 |
|---|---------------------------------|
| <br><b>HINTERLAND METALS INC.</b>                       |                                 |
| <b>HELEN/GLEAM PROPERTY</b><br>Sample Locations - Helen |                                 |
| Date: 31/10/2005  | Author: MF                      |
| Client: VNI CO  | Drawing: 05-005                 |
| Scale: 1:10000  | Projection: UTM Zone 9 (WAD 83) |



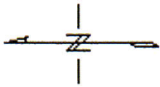
6809000 mN

6808000 mN

3950000 mE

396000 mE

397000 mE



# LEGEND

## HORIZONTAL LOOP EM

FREQUENCY: 2560 Hz

INSTRUMENT: INTERMETRICS MODEL 146

PROFILES: 1.000 TO 1.027

IR RANGE: 100

ORANGE: 100

COIL SEPARATION: 100

270' APPROX

450

1000

1000

1000

IR RANGE LATUM: 100

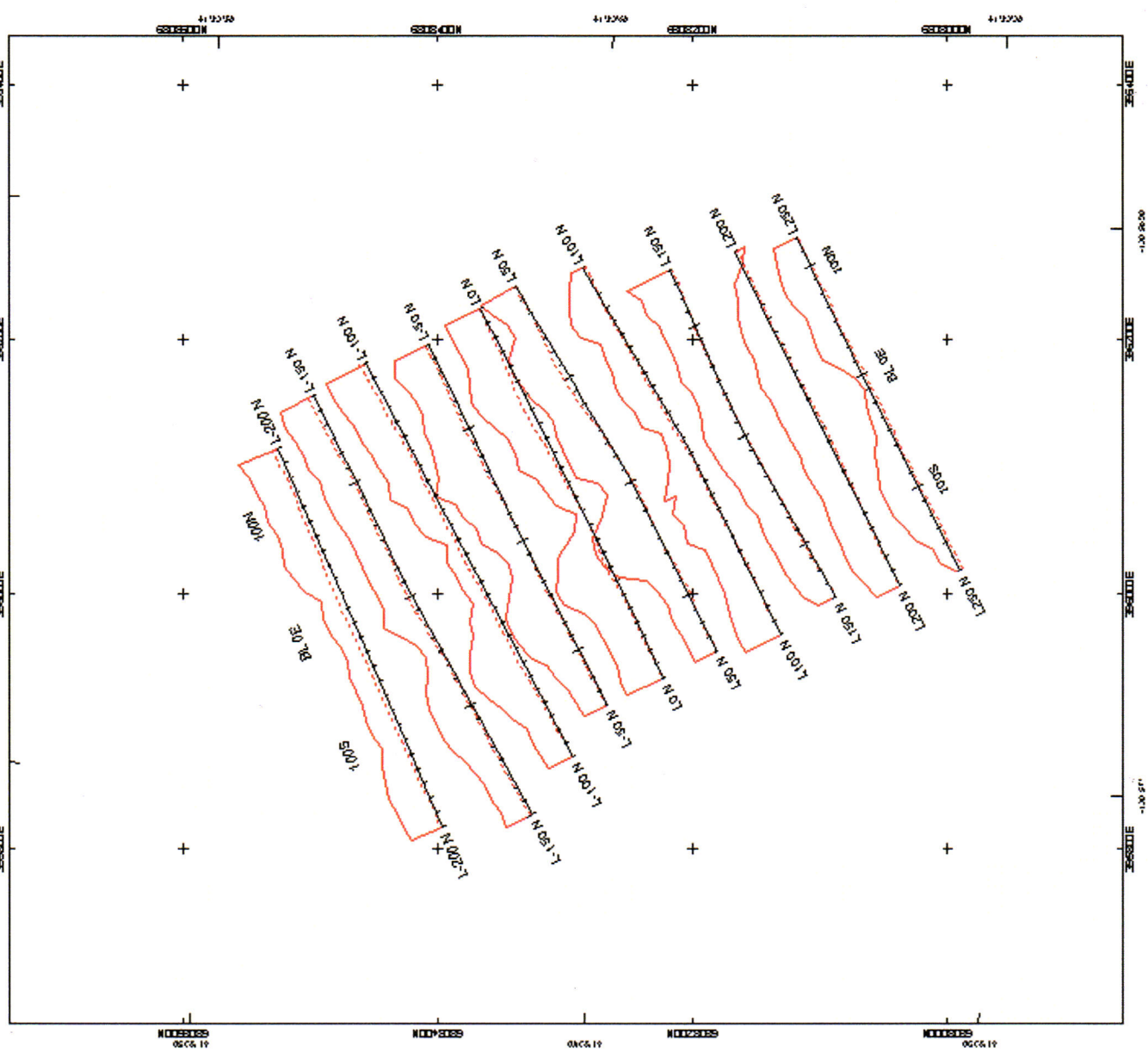
ORANGE LATUM: 100

DATA FILE: HELD\_ILLEM.MP

ORIENTED: CL, LP

STATION SEPARATION: 200

UP CORN SURVEYED THIS SHEET: 28 PM



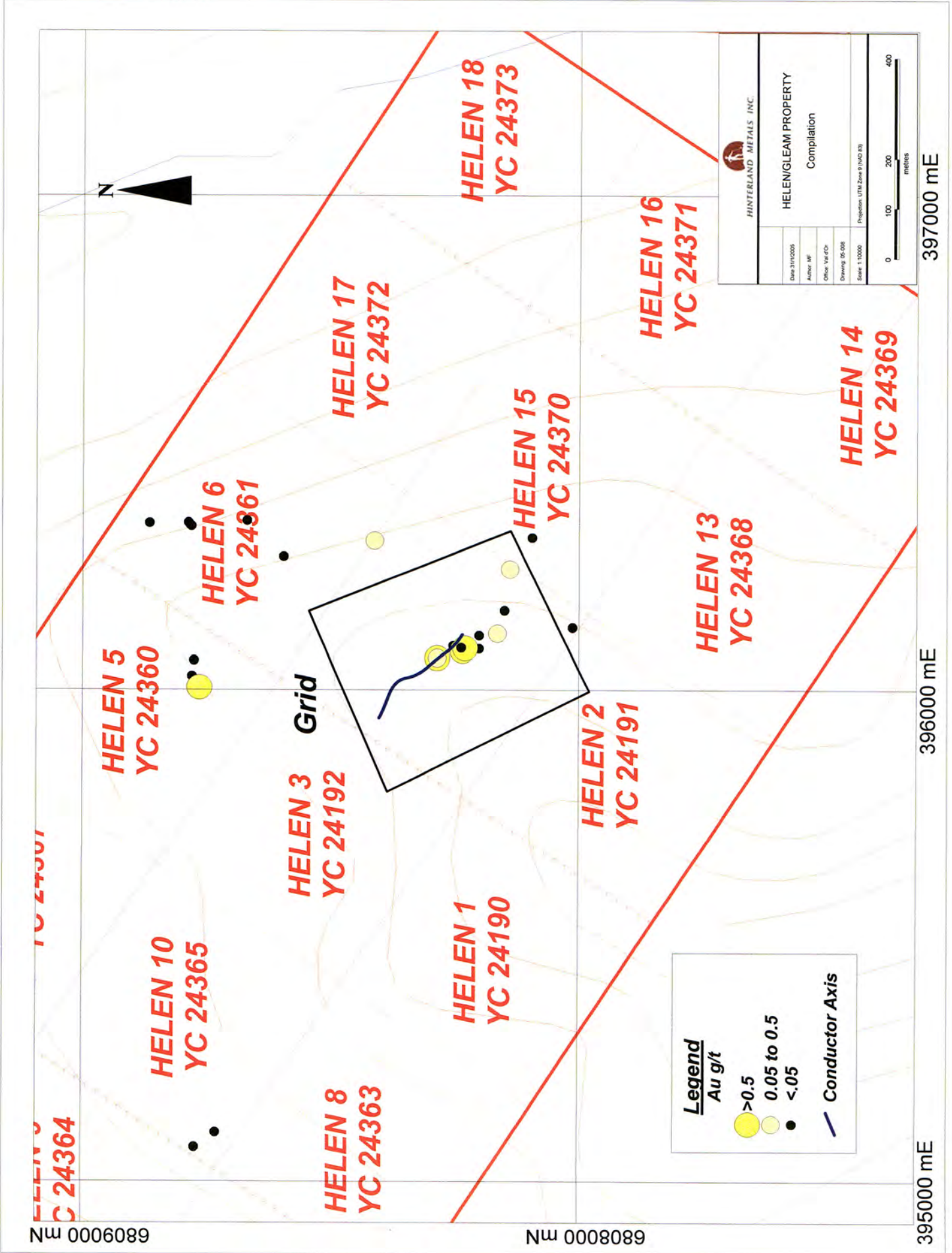
HINTERLAND METALS INC.

Helen Property

HELEN SURVEY

1760 Hz - 8 Bed profile 1

DATE: 28 AUG 04  
DRAWN: J. MAUSER  
CHECKED: J. MAUSER  
MIRING: J. MAUSER



680000 mN

682000 mN

395000 mE

396000 mE

397000 mE

|  |                                 |
|--|---------------------------------|
|  |                                 |
| <b>HELEN/GLEAM PROPERTY</b><br>Compilation |                                 |
| Date: 31/10/2005                           | Author: MF                      |
| Office: Val d'Or                           | Drawing: 05-006                 |
| Scale: 1:10000                             | Projection: UTM Zone 9 (NAD 83) |

**Legend**

Au g/t

- >0.5
- 0.05 to 0.5
- <.05
- Conductor Axis





## 16. Conclusions

The Finlayson Lake Area shows an impressive record of mineral discoveries over the past decade. These discoveries include the both volcanic massive sulphide-type base metal deposits and the Regal Ridge emerald deposit. Recent geological mapping surveys of the area on a regional scale and several technical studies on a property scale have contributed greatly to the overall understanding of the mineral potential of the area. The ongoing compilation and revision of the mineral occurrence database in terms of these recent surveys and studies provide new insights for further exploration in the area.

The discovery of the Helen Gold Zone represents a significant breakthrough for Hinterland in the Finlayson Lake area. It moves the Company's efforts in the area from the grassroots stage to the target evaluation stage. The results of the 2004 work reveal linear continuity to the Helen Gold Zone (Figure 8) and justify further, sub-surface exploration of the zone by diamond drilling. The gold bearing rusty quartz vein found in place on YC 24360 some 540 m north of the Helen Showing suggests that the Helen Gold Zone is not the only mineralized structure on the property.

## 17. Recommendations

The 2004 sampling and geophysical results clearly demonstrate that the Helen Gold Zone continues for at least a 300 m strike length. The zone is a weakly conductive structure that appears to dip gradually to the southwest. There is little more surface work that can be done to evaluate the zone. It is the author's opinion that the structure is of sufficient merit to recommend that Hinterland proceed with a limited drill program in order to test the size and tenor of the zone at depth. A 500 m drill program is recommended at an estimated cost of \$197,800 as summarized below. This estimate includes a 15% contingency.

**Table 4 – Cost Estimate for Proposed Drill Program**

|                       |     |         |          |                  |
|-----------------------|-----|---------|----------|------------------|
| Geologist             | 30  | days @  | \$500    | \$15,000         |
| Assistant             | 30  | days @  | \$250    | \$7,500          |
| Drilling              | 500 | m @     | \$125    | \$75,000         |
| Mob/demob             | 1   | fixed @ | \$15,000 | \$15,000         |
| Camp                  | 1   | fixed @ | \$10,000 | \$10,000         |
| Helicopter            | 30  | hours @ | \$1,100  | \$33,000         |
| Float Plane           | 500 | miles @ | \$10     | \$5,000          |
| Truck                 | 1   | month @ | \$1,500  | \$1,500          |
| Sat Phone             | 1   | month @ | \$2,500  | \$2,500          |
| Report                | 10  | days @  | \$500    | \$5,000          |
| Drafting              | 50  | hours @ | \$50     | \$2,500          |
| Subtotal              |     |         |          | \$172,000        |
| Contingency ~15%      |     |         |          | \$25,800         |
| <b>Phase II Total</b> |     |         |          | <b>\$197,800</b> |



## 18. References

- Bond J.D., Murphy, D.C., Colpron, M., Gordey, S.P., Plouffe, A., Roots, C.F., Lipovsky P.S., Stronghill, G. and Abbott J.G., 2002. Digital Compilation of Bedrock Geology and Till Geochemistry, northern Finlayson Lake Map Area, Southeastern Yukon (105G), EGSD Open File 2002-7D, and GSC Open File 4243.
- Burgert, A., 1997. Assessment Report #093653 for EXPATRIATE RESOURCES LTD.
- Davidson, G.S., 1997. Assessment Report #093647 for ARCTURUS RESOURCES LTD.
- Davidson, G.S., 1998. Assessment Report #093844 for ARCTURUS RESOURCES LTD.
- Eaton, W.D., 1997. Assessment Report #093587 for EXPATRIATE RESOURCES LTD.
- Franklin, J.M., 1996. Volcanic-associated massive sulphide base metals. *In* Geology of Canadian Mineral Deposit Types, (ed.) O.R. Eckstrand, W.D. Sinclair, and R.I. Thorpe; Geological Survey of Canada: Geology of Canada No. 8, p. 158-183
- Groat, L., 2003. Personal Communication dated October 1, 2003
- Gordey, S.P. and Makepeace, A.J., 1999. Yukon Digital Geology. S.P. Gordey and A.J. Makepeace (comps.), Geological Survey of Canada, Open File D3826, and Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Open File 1999-1(D).
- MacDonald, A.J., 1967. Assessment Report #019114 for NORTHLAKE MINES LTD.
- MacDonald, G., 1995. Assessment Report #093433 for MACDONALD, B., Aug/95.
- MacRobbie, P.A., 1996. Assessment Report #093332 for COMINCO LTD.
- Miller, A.L., 2003. Petrography, Ore Microscopy and Scanning Electron Microscope Investigation of Samples from the Helen Au-Ag Prospect and Chris Chrysoprase Prospect, Yukon
- Mortensen, J.K. (comp.), 1999. YUKONAGE, An isotopic age database for the Yukon Territory. *In* Yukon Digital Geology, S.P. Gordey and A.J. Makepeace (comps.), Geological Survey of Canada, Open File D3826, and Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Open File 1999-1(D),.
- Moyle, F. and Wesa, G.L., 1998. Assessment Report #093855 for PACIFIC BAY MINERALS LTD.
- Murphy, D.C., 1997. Preliminary geological map of the Grass Lakes area, Pelly Mountains, southeastern Yukon. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1997-3.



Murphy, D.C., 1998. Stratigraphic framework for syngenetic mineral occurrences, Yukon-Tanana Terrane south of Finlayson Lake: A Progress Report. *In* Yukon Exploration and Geology 1997, Exploration and Geological Services Division, Indian and Northern Affairs Canada, p.51-58.

Murphy, D.C. and Piercey, S.J., 1999. Geological map of parts of Finlayson Lake (105G/7, 8 and parts of 1, 2, and 9) and Frances Lake (parts of 105H/5 and 12) map areas, southeastern Yukon (1:100 000-scale). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1999-4.

Murphy, D.C. and Piercey, S.J., 2000. Syn-mineralization faults and their re-activation, Finlayson Lake massive sulphide district, Yukon-Tanana Terrane, southeastern Yukon. *In* Yukon Exploration and Geology 1999, D.S. Emond and L.H. Weston (eds.), Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 55-66.

Murphy, D.C., Colpron, M., Gordey, S.P., Roots, C., Abbott, J.G. and Lipovsky, P.S., 2001. Preliminary bedrock geological map of northern Finlayson Lake area (NTS 105G), Yukon Territory. Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Open File 2001-33, 1:100 000 scale.

Murphy, D.C., Colpron, M., Roots, C.F., Gordey, S.P. and Abbott, J.G., 2002. Finlayson Lake Targeted Geoscience Initiative (southeastern Yukon), Part 1: Bedrock geology. *In* Yukon Exploration and Geology 2001, D.S. Emond, L.H. Weston and L.L. Lewis (eds.), Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 189-207.

Piercey, S.J., 2001. Petrology and tectonic setting of felsic and mafic volcanic and intrusive rocks in the Finlayson Lake volcanic-hosted massive sulphide (VHMS) district, Yukon, Canada: A record of mid-Paleozoic arc and back-arc magmatism and metallogeny. Unpublished PhD thesis, University of British Columbia, 304 p.

Piercey, S.J. and Murphy, D.C., 2000. Stratigraphy and regional implications of unstrained Devonian-Mississippian volcanic rocks in the Money Creek Thrust Sheet, Yukon-Tanana Terrane, southeastern Yukon. *In* Yukon Exploration and Geology 1999, D.S. Emond and L.H. Weston (eds.), Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 67-78.

Piercey, S.J., Murphy, D.C., Mortensen, J.K. and Paradis, S., 2000. Arc-rifting and ensialic back-arc basin magmatism in the northern Canadian Cordillera: Evidence from the Yukon-Tanana Terrane, Finlayson Lake region, Yukon. *In* Slave-Northern Cordilleran Lithospheric Experiment (SNORCLE)-Lithoprobe Report 72, Vancouver, British Columbia, Lithoprobe Secretariat, p. 129-138.



Piercey, S.J., Murphy, D.C., Mortensen, J.K. and Paradis, S., 2001a. Boninitic magmatism in a continental margin setting, Yukon-Tanana Terrane, southeastern Yukon, Canada. *Geology*, vol. 29, p. 731-734.

Piercey, S.J., Paradis, S., Murphy, D.C. and Mortensen, J.K., 2001b. Petrological constraints on the tectonic setting of felsic volcanic-hosted volcanogenic massive sulfide (VMS) mineralization in the Finlayson Lake district, Yukon, Canada. *Economic Geology*.

Poulsen, K.H., 1996. Disseminated and replacement gold: in *Geology of Canadian Mineral Deposit Types*, (ed.) O.R. Eckstrand, W.D. Sinclair, and R.I. Thorpe: G.S.C., Geology of Canada No. 8, p.383-392

Roots, C.F., Harms, T.A., Simard, R.L., Orchard, M.J. and Heaman, L., 2002. Constraints on the age of the Klinkit assemblage east of Teslin Lake, northern British Columbia, Geological Survey of Canada, Current Research 2002-A7.

Sevensma, P.H., 1966. Prospectus Report for NORTH LAKE MINES LTD.

Sevensma, P.H., 1967. Assessment Reports # 019115 for NORTH LAKE MINES LTD.

Sevensma, P.H. and Heard, R.T., 1967. Assessment Reports # 060250 for NORTH LAKE MINES LTD.

Simandl, G.J., Paradis, S., and Birkett, T., 2001. Schist Hosted Emeralds: Mineral Deposit Profiles, B.C. Geological Survey, 5 pp.

Sinkankas, J., 1981. Emerald and Other Beryls: Geoscience Press, Prescott, Arizona, 665 pp.

Sliwa, A.S., and Nqaluluwe, C.A., 198. Geological Setting of Zambian Emerald Deposits: *Precambrian Research*, v. 25, p. 213-228.

Walton, L., 1996, Exploration Criteria for Gemstone Deposits and Their Application to Yukon Geology: INAC Open File 1996 2(G), 130 pp.

Wengzynowski, W.A., 1996. Assessment Report #093412 for EXPATRIATE RESOURCES LTD.

Wengzynowski, W.A., 1998. Assessment Report #093818 for EXPATRIATE RESOURCES LTD.

Wengzynowski, W.A., 1999. Assessment Report #093995 for EXPATRIATE RESOURCES LTD.

Woolham, R.W., 1997. Assessment Report #093655 for EXPATRIATE RESOURCES LTD.





**APPENDIX A**  
**SAMPLE DESCRIPTIONS**

## 2004 ROCKS Helen

| ID    | UTM mE | UTM Mn  | Elev. | Claim No. | Type  | Host | Chryso | Description  |
|-------|--------|---------|-------|-----------|-------|------|--------|--|
| 33646 | 396084 | 6808202 | 1883  | Helen     | Grab  | NA   | NA     | Rusty vuggy quartz vein trace sulfides, mica   |
| 33647 | 396115 | 6808165 | 1845  | Helen     | Grab  | NA   | NA     | Rusty brown quartz vein 3' wide 20' long, trace sulfides smokey grey quartz            |
| 33648 | 396161 | 6808151 | 1855  | Helen     | Grab  | NA   | NA     | Quartz vein - rusty 2-3' wide 15' long, trace sulfides smokey grey quartz              |
| 33649 | 396245 | 6808140 | 1860  | Helen     | Grab  | NA   | NA     | Very sheared & fractured, rusty weathered, some sulfides, mica (green) fibres          |
| 33650 | 396309 | 6808095 | 1843  | Helen     | Float | NA   | NA     | Rusty weathered boulders with sulfides, weakly magnetic                                |
| 33701 | 395070 | 6808772 | 1357  | Helen     | Float | NA   | NA     | Pegmatite - boulders with rusty quartz and mica  |
| 33702 | 395100 | 6808730 | 1364  | Helen     | Grab  | NA   | NA     | Rusty, purple coloured, weathered, micaceous, medium grained with quartz               |
| 33703 | 396090 | 6808254 | 1803  | Helen     | Float | NA   | NA     | Quartz vein - semi-massive chalcopyrite, arsenopyrite                                  |
| 33704 | 396080 | 6808235 | 1805  | Helen     | Grab  | NA   | NA     | Helen #2 - folded quartz vein with some arsenopyrite                                   |
| 33705 | 396085 | 6808230 | 1832  | Helen     | Grab  | NA   | NA     | Helen #2 - folded quartz vein with some arsenopyrite                                   |
| 33706 | 396005 | 6808765 | 1583  | Helen     | Grab  | NA   | NA     | Fine grained mafic - rusty with some sulfides  |
| 33707 | 396028 | 6808780 | 1579  | Helen     | Grab  | NA   | NA     | Blue grey mafic - rusty with fine grained pyrite, 070°/90°                             |
| 33708 | 396060 | 6808776 | 1580  | Helen     | Grab  | NA   | NA     | Blue grey mafic - rusty with fine grained pyrite, 070°/90°                             |
| 33709 | 396127 | 6808013 | 1883  | Helen     | Grab  | NA   | NA     | Rusty quartz vein - at top of hill, 170°/90° strike                                    |
| 33710 | 396172 | 3808108 | 1870  | Helen     | Float | NA   | NA     | Massive sulfide some chalcopyrite, near helicopter pad                                 |
| 33711 | 396111 | 6808202 | 1825  | Helen     | Grab  | NA   | NA     | Quartz vein - rusty  |
| 33712 | 396111 | 6808202 | 1825  | Helen     | Grab  | NA   | NA     | Quartz vein - rusty  |
| 33713 | 396086 | 6808238 | 1801  | Helen     | Grab  | NA   | NA     | Helen #2 - shallow trench beside smoky black qtz. Vn., highly ox. - arpy, py 010°/70°W |
| 33714 | 396065 | 6808286 | 1780  | Helen     | Grab  | NA   | NA     | Helen #1 - quartz with arsenopyrite - trench into footwall - chalcopyrite in wallrock  |
| 33715 | 396065 | 6808286 | 1780  | Helen     | Grab  | NA   | NA     | Helen #1 - quartz with arsenopyrite - trench into footwall - chalcopyrite in wallrock  |
| 33751 | 396303 | 6808413 | 1783  | Helen     | Grab  | NA   | NA     | Rusty brown, very weathered, small qtz veins, galena?                                  |
| 33752 | 396271 | 6808596 | 1737  | Helen     | Grab  | NA   | NA     | Rusty very weathered some quartz, trace sulfides                                       |
| 33753 | 396344 | 6808670 | 1753  | Helen     | Grab  | NA   | NA     | Quartz vein - rusty, weathered sulfides, 180°/90°, 14-16" wide                         |
| 33754 | 396340 | 6808788 | 1719  | Helen     | Grab  | NA   | NA     | Rusty quartz - very weathered, trace sulfides, mica, quartz stringers                  |
| 33755 | 396335 | 6808784 | 1720  | Helen     | Grab  | NA   | NA     | Gabbro? with quartz vein - rusty, some sulfides, mica, chlorite slightly magnetic      |
| 33756 | 396333 | 6808782 | 1710  | Helen     | Grab  | NA   | NA     | Gabbro? with quartz veins - weathered, rusty, trace sulfides                           |
| 33757 | 396339 | 6808866 | 1708  | Helen     | Grab  | NA   | NA     | Rusty quartz vein - very weathered, trace sulfides, mica, 180°/90°                     |
| 33758 | 399970 | 6807255 | 1646  | Gleam     | Float | NA   | NA     | Lampophyre with massive amounts of mica  |
| 33759 | 399899 | 6807418 | 1640  | Gleam     | Float | NA   | NA     | Rusty quartz - trace sulfides, mica, chlorite  |
| 33760 | 399934 | 6807406 | 1601  | Gleam     | Grab  | NA   | NA     | Quartz vein - chlorite with magnetite, some sulfides                                   |



**APPENDIX B**  
**ASSAY CERTIFICATES**

**BREAKAWAY**



**ALS Chemex**  
**EXCELLENCE IN ANALYTICAL CHEMISTRY**

ALS Canada Ltd.  
 212 Brooksbank Avenue  
 North Vancouver, BC V7J 2C1 Canada  
 Phone: 804 984 0221 Fax: 804 984 0218

To: **BREAKAWAY EXPLORATION MANAGEMENT**  
**INC.**  
**144-D PERREAULT AVE**  
**VAL-D'OR PQ J9P 2G3**

Page: 1  
 Finalized Date: 23-SEP-2004  
 Account: BREAK

**CERTIFICATE VA04059325**

Project:

P.O. No.:

This report is for 131 Rock samples submitted to our lab in Vancouver, BC, Canada on 2-SEP-2004.

The following have access to data associated with this certificate:

MARK FEKETE

**SAMPLE PREPARATION**

| ALS CODE | DESCRIPTION                     |
|----------|---------------------------------|
| WEI-21   | Received Sample Weight          |
| PUL-31   | Pulverize split to 85% <75 um   |
| SPL-21   | Split sample - riffle splitter  |
| CRU-31   | Fine crushing - 70% <2mm        |
| LOG-22   | Sample log/in - Red w/o BarCode |

**ANALYTICAL PROCEDURES**

| ALS CODE | DESCRIPTION                    | INSTRUMENT |
|----------|--------------------------------|------------|
| ME-ICP61 | 27 element four acid ICP-AES   | ICP-AES    |
| Cu-AA62  | Ore grade Cu - four acid / AAS | AAS        |
| Au-AA23  | Au 30g FA-AA finish            | AAS        |

To: **BREAKAWAY EXPLORATION MANAGEMENT INC.**  
**ATTN: MARK FEKETE**  
**144-D PERREAULT AVE**  
**VAL-D'OR PQ J9P 2G3**

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

**Signature:**



**ALS Chemex**  
EXCELLENCE IN ANALYTICAL CHEMISTRY

ALS Canada Ltd.  
212 Brockbank Avenue  
North Vancouver BC V7J 2C1 Canada  
Phone: 604 984 0221 Fax: 804 984 0218

To: BREAKAWAY EXPLORATION MANAGEMENT  
INC.  
144-D PERREAULT AVE  
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Page: 4 - A  
Total # Pages: 5 (A - B)  
Finalized Date: 23-SEP-2004  
Account: BREAK

**CERTIFICATE OF ANALYSIS VA04059325**

| Sample Description | Method Analyte Units LOR | WEI-21 Recvd Wt. kg | As ppm | Ag ppm | Al % | ME-ICP61 % | ME-ICP61 ppm | As ppm | Ba ppm | Be ppm | Bi ppm | ME-ICP61 % | ME-ICP61 ppm | Cd ppm | Co ppm | Cr ppm | Cu ppm | Fe %  | ME-ICP61 % | ME-ICP61 ppm | K %   |
|--------------------|--------------------------|---------------------|--------|--------|------|------------|--------------|--------|--------|--------|--------|------------|--------------|--------|--------|--------|--------|-------|------------|--------------|-------|
| 33625              |                          | 1.16                | <0.005 | <0.5   | 0.01 | 0.17       | <0.5         | 180    | 10     | 0.5    | <2     | 0.46       | <0.5         | 0.5    | 88     | 1610   | 8      | 4.52  | 0.01       | 0.01         | 0.01  |
| 33626              |                          | 1.88                | <0.005 | <0.5   | 0.01 | 2.27       | <0.5         | 110    | 10     | 0.5    | <2     | 13.86      | <0.5         | 0.5    | 41     | 679    | 1      | 3.37  | 0.01       | 0.01         | 0.01  |
| 33627              |                          | 1.30                | 0.283  | <0.5   | 0.01 | 0.25       | 283          | 140    | 10     | 0.5    | <2     | 0.89       | <0.5         | 0.5    | 68     | 1766   | 7      | 3.11  | 0.01       | 0.01         | 0.01  |
| 33628              |                          | 1.28                | 0.007  | <0.5   | 0.01 | 0.42       | 113          | 90     | 10     | 0.5    | <2     | 6.27       | <0.5         | 0.5    | 85     | 1615   | 2      | 4.14  | 0.03       | 0.03         | 0.03  |
| 33628              |                          | 0.86                | <0.005 | <0.5   | 0.01 | 4.97       | 84           | 800    | 10     | 0.5    | <2     | 5.97       | <0.5         | 0.5    | 21     | 311    | 13     | 4.82  | 0.30       | 0.30         | 0.30  |
| 33630              |                          | 0.82                | 0.076  | <0.5   | 0.01 | 0.25       | 9            | 220    | 10     | 0.5    | <2     | 0.37       | <0.5         | 0.5    | 89     | 1335   | 2      | 4.34  | 0.01       | 0.01         | 0.01  |
| 33631              |                          | 1.04                | <0.005 | <0.5   | 0.01 | 1.39       | <0.5         | 30     | 10     | 0.5    | <2     | 0.82       | <0.5         | 0.5    | 92     | 1470   | 14     | 4.83  | 0.01       | 0.01         | 0.01  |
| 33632              |                          | 0.92                | <0.005 | <0.5   | 0.01 | 0.89       | <0.5         | 10     | 10     | 0.5    | <2     | 12.45      | <0.5         | 0.5    | 63     | 877    | 9      | 3.59  | <0.01      | <0.01        | <0.01 |
| 33633              |                          | 0.86                | <0.005 | <0.5   | 0.01 | 4.18       | <0.5         | 290    | 10     | 0.5    | <2     | 10.60      | <0.5         | 0.5    | 28     | 284    | 46     | 4.60  | 1.45       | 1.45         | 1.45  |
| 33634              |                          | 1.00                | <0.005 | <0.5   | 0.01 | 7.99       | <0.5         | 220    | 10     | 0.5    | <2     | 3.23       | <0.5         | 0.5    | 37     | 125    | 1      | 6.33  | 0.40       | 0.40         | 0.40  |
| 33635              |                          | 1.12                | <0.005 | <0.5   | 0.01 | 1.10       | <0.5         | 60     | 10     | 0.5    | <2     | 9.07       | <0.5         | 0.5    | 64     | 1546   | 1      | 3.89  | 0.02       | 0.02         | 0.02  |
| 33636              |                          | 0.74                | <0.005 | <0.5   | 0.01 | 3.40       | <0.5         | 430    | 10     | 0.5    | <2     | 8.71       | <0.5         | 0.5    | 78     | 5080   | 3      | 3.82  | 1.12       | 1.12         | 1.12  |
| 33637              |                          | 0.88                | <0.005 | <0.5   | 0.01 | 0.86       | <0.5         | 20     | 10     | 0.5    | <2     | 4.48       | <0.5         | 0.5    | 65     | 1830   | 2      | 3.24  | 0.02       | 0.02         | 0.02  |
| 33638              |                          | 1.02                | <0.005 | <0.5   | 0.01 | 1.14       | <0.5         | 30     | 10     | 0.5    | <2     | 14.85      | <0.5         | 0.5    | 71     | 1715   | 21     | 3.91  | 0.07       | 0.07         | 0.07  |
| 33638              |                          | 0.80                | <0.005 | <0.5   | 0.01 | 5.77       | <0.5         | 50     | 10     | 0.5    | <2     | 8.67       | <0.5         | 0.5    | 40     | 687    | 6      | 5.28  | 0.02       | 0.02         | 0.02  |
| 33640              |                          | 0.80                | <0.005 | <0.5   | 0.01 | 1.64       | <0.5         | 30     | 10     | 0.5    | <2     | 11.00      | <0.5         | 0.5    | 26     | 822    | 2      | 3.07  | 0.07       | 0.07         | 0.07  |
| 33641              |                          | 1.06                | <0.005 | <0.5   | 0.01 | 6.70       | <0.5         | 40     | 10     | 0.5    | <2     | 6.81       | <0.5         | 0.5    | 55     | 180    | 69     | 8.14  | 0.01       | 0.01         | 0.01  |
| 33642              |                          | 0.86                | <0.005 | <0.5   | 0.01 | 6.13       | <0.5         | 320    | 10     | 0.5    | <2     | 5.84       | <0.5         | 0.5    | 43     | 671    | 73     | 5.24  | 1.14       | 1.14         | 1.14  |
| 33643              |                          | 0.88                | <0.005 | <0.5   | 0.01 | 6.58       | <0.5         | 20     | 10     | 0.5    | <2     | 6.66       | <0.5         | 0.5    | 24     | 99     | 71     | 3.74  | 0.04       | 0.04         | 0.04  |
| 33644              |                          | 0.94                | <0.005 | <0.5   | 0.01 | 1.88       | <0.5         | 10     | 10     | 0.5    | <2     | 2.72       | <0.5         | 0.5    | 78     | 1280   | 4      | 4.80  | 0.01       | 0.01         | 0.01  |
| 33645              |                          | 0.88                | <0.005 | <0.5   | 0.01 | 0.75       | <0.5         | 180    | 10     | 0.5    | <2     | 3.34       | <0.5         | 0.5    | 45     | 1055   | 3      | 4.45  | 0.16       | 0.16         | 0.16  |
| 33646              |                          | 1.10                | 0.289  | 1.8    | 0.01 | 5.73       | 192          | 270    | 10     | 0.5    | 511    | 0.48       | 1.0          | 2      | 176    | 2      | 25     | 2.31  | 1.88       | 1.88         | 1.88  |
| 33647              |                          | 1.04                | 0.037  | 59.6   | 0.01 | 0.38       | 25           | 20     | 10     | 0.5    | 4100   | 0.51       | 2.0          | 1      | 289    | 1      | 58     | 1.06  | 0.21       | 0.21         | 0.21  |
| 33648              |                          | 1.08                | 0.108  | 4.6    | 0.01 | 5.52       | <0.5         | 130    | 10     | 0.5    | 1485   | 0.45       | <0.5         | 2      | 241    | 2      | 80     | 1.40  | 0.88       | 0.88         | 0.88  |
| 33649              |                          | 0.78                | <0.005 | 1.2    | 0.01 | 8.11       | <0.5         | 200    | 10     | 0.5    | 14     | 1.48       | <0.5         | 13     | 154    | 154    | 268    | 1.89  | 0.80       | 0.80         | 0.80  |
| 33650              |                          | 1.26                | 0.015  | <0.5   | 0.01 | 8.10       | <0.5         | 130    | 10     | 0.5    | 54     | 10.35      | <0.5         | 0.5    | 18     | 43     | 148    | 6.52  | 0.41       | 0.41         | 0.41  |
| 33701              |                          | 1.06                | 0.007  | <0.5   | 0.01 | 6.41       | <0.5         | 210    | 10     | 0.5    | 10     | 0.29       | <0.5         | 0.5    | 1      | 252    | 9      | 1.00  | 3.66       | 3.66         | 3.66  |
| 33702              |                          | 0.58                | 0.012  | <0.5   | 0.01 | 3.40       | <0.5         | 180    | 10     | 0.5    | 10     | 0.57       | <0.5         | 0.5    | 5      | 236    | 28     | 1.60  | 0.78       | 0.78         | 0.78  |
| 33703              |                          | 1.34                | 3.41   | 2.8    | 0.01 | 1.21       | 2410         | 100    | 10     | 0.5    | 1855   | 0.13       | <0.5         | 87     | 185    | 1215   | 1215   | 12.75 | 0.87       | 0.87         | 0.87  |
| 33704              |                          | 0.94                | 0.865  | 2.1    | 0.01 | 1.79       | 774          | 130    | 10     | 0.5    | 426    | 1.01       | <0.5         | 24     | 348    | 72     | 2.14   | 1.20  | 1.20       | 1.20         | 1.20  |
| 33705              |                          | 1.20                | 2.08   | 1.4    | 0.01 | 0.24       | 6880         | 30     | 10     | 0.5    | 750    | 10.35      | <0.5         | 46     | 219    | 219    | 80     | 1.43  | 0.16       | 0.16         | 0.16  |
| 33706              |                          | 0.96                | 0.023  | <0.5   | 0.01 | 5.64       | 73           | 60     | 10     | 0.5    | 10     | 11.35      | <0.5         | 72     | 146    | 146    | 286    | 13.45 | 0.46       | 0.46         | 0.46  |
| 33707              |                          | 1.48                | <0.005 | <0.5   | 0.01 | 7.40       | 12           | 70     | 10     | 0.5    | 32.3   | 12.00      | <0.5         | 34     | 158    | 352    | 352    | 11.15 | 0.30       | 0.30         | 0.30  |
| 33708              |                          | 1.60                | <0.005 | 0.7    | 0.01 | 6.87       | 33           | 70     | 10     | 0.5    | <2     | 10.45      | <0.5         | 181    | 298    | 298    | 1130   | 13.65 | 0.41       | 0.41         | 0.41  |
| 33709              |                          | 0.84                | <0.005 | <0.5   | 0.01 | 1.83       | 6            | 80     | 10     | 0.5    | 92     | 0.10       | <0.5         | 9      | 328    | 328    | 22     | 0.68  | 1.00       | 1.00         | 1.00  |
| 33710              |                          | 1.84                | 0.008  | 1.3    | 0.01 | 1.57       | 421          | 50     | 10     | 0.5    | 11     | 0.52       | <0.5         | 27     | 47     | 47     | 2770   | 38.5  | 0.61       | 0.61         | 0.61  |
| 33711              |                          | 0.82                | <0.005 | <0.5   | 0.01 | 0.12       | <0.5         | 10     | 10     | 0.5    | <2     | 0.02       | <0.5         | 1      | 375    | 375    | 18     | 0.85  | 0.03       | 0.03         | 0.03  |
| 33712              |                          | 1.32                | <0.005 | <0.5   | 0.01 | 6.27       | 23           | 30     | 10     | 0.5    | <2     | 18.80      | <0.5         | 11     | 148    | 148    | 11     | 3.04  | 0.11       | 0.11         | 0.11  |
| 33713              |                          | 1.40                | 0.771  | 2.8    | 0.01 | 1.50       | 4140         | 70     | 10     | 0.5    | 743    | 0.53       | <0.5         | 38     | 545    | 545    | 211    | 5.24  | 1.36       | 1.36         | 1.36  |
| 33714              |                          | 1.64                | 0.122  | 28.4   | 0.01 | 6.60       | >10000       | 520    | 10     | 0.5    | 98     | 0.67       | 14.5         | 24     | 254    | 254    | 3230   | 10.65 | 4.80       | 4.80         | 4.80  |

← Chms → Helen →

# ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

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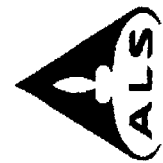
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Page: 4 - B  
 Total # Pages: 5 (A - B)  
 Finalized Date: 23-SEP-2004  
 Account: BREAK

## CERTIFICATE OF ANALYSIS VA04059325

| Sample Description | Method Analyte Units LOR | ME-ICP61 Mg % 0.01 | ME-ICP61 Mn ppm 5 | ME-ICP61 Mo ppm 1 | ME-ICP61 Na % 0.01 | ME-ICP61 Ni ppm 1 | ME-ICP61 P ppm 10 | ME-ICP61 Pb ppm 2 | ME-ICP61 S % 0.01 | ME-ICP61 Sb ppm 5 | ME-ICP61 Sr ppm 1 | ME-ICP61 Ti % 0.01 | ME-ICP61 V ppm 1 | ME-ICP61 W ppm 10 | ME-ICP61 Zn ppm 2 | Cu-AA02 Cu % 0.01 |
|--------------------|--------------------------|--------------------|-------------------|-------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|------------------|-------------------|-------------------|-------------------|
| 33625              |                          | 17.25              | 763               | <1                | 0.01               | 1695              | 10                | <2                | 0.01              | 9                 | 28                | <0.01              | 18               | <10               | 26                |                   |
| 33626              |                          | 8.90               | 1265              | 1                 | 0.01               | 800               | 80                | <2                | 0.01              | <5                | 385               | 0.05               | 70               | <10               | 25                |                   |
| 33627              |                          | 16.10              | 824               | 1                 | 0.01               | 1070              | 10                | 4                 | <0.01             | 172               | 68                | <0.01              | 22               | <10               | 36                |                   |
| 33628              |                          | 16.25              | 842               | <1                | <0.01              | 2190              | 10                | <2                | <0.01             | 84                | 578               | <0.01              | 25               | <10               | 25                |                   |
| 33629              |                          | 3.71               | 1545              | <1                | 1.17               | 98                | 560               | 2                 | <0.01             | 5                 | 134               | 0.47               | 148              | <10               | 53                |                   |
| 33630              |                          | 20.1               | 669               | <1                | 0.01               | 1805              | 10                | <2                | 0.01              | 65                | 30                | 0.01               | 22               | <10               | 35                |                   |
| 33631              |                          | 20.4               | 838               | <1                | 0.02               | 1910              | 60                | <2                | <0.01             | <5                | 4                 | 0.05               | 14               | <10               | 52                |                   |
| 33632              |                          | 15.10              | 2450              | <1                | <0.01              | 1080              | 50                | <2                | 0.10              | <5                | 74                | 0.02               | 30               | <10               | 22                |                   |
| 33633              |                          | 5.37               | 2180              | <1                | 0.02               | 108               | 80                | 3                 | <0.01             | 5                 | 175               | 0.13               | 150              | <10               | 215               |                   |
| 33634              |                          | 3.64               | 685               | 1                 | 2.21               | 51                | 370               | <2                | <0.01             | <5                | 67                | 0.55               | 270              | <10               | 15                |                   |
| 33635              |                          | 7.72               | 807               | 1                 | 0.02               | 1475              | 10                | <2                | 0.01              | <5                | 181               | 0.01               | 47               | <10               | 36                |                   |
| 33636              |                          | 5.14               | 984               | 1                 | 0.03               | 1275              | 30                | <2                | <0.01             | <5                | 305               | 0.02               | 97               | <10               | 71                |                   |
| 33637              |                          | 9.47               | 808               | 2                 | 0.01               | 978               | 10                | <2                | <0.01             | <5                | 93                | 0.02               | 39               | <10               | 37                |                   |
| 33638              |                          | 7.55               | 1085              | <1                | 0.02               | 1380              | 30                | <2                | 0.01              | <5                | 513               | <0.01              | 38               | <10               | 50                |                   |
| 33639              |                          | 8.34               | 1230              | <1                | 1.26               | 869               | 270               | <2                | 0.34              | <5                | 102               | 0.16               | 169              | <10               | 36                |                   |
| 33640              |                          | 5.81               | 908               | 1                 | 0.02               | 435               | 330               | <2                | 0.01              | <5                | 361               | 0.06               | 55               | <10               | 32                |                   |
| 33641              |                          | 2.12               | 941               | 1                 | 0.01               | 32                | 470               | <2                | 2.48              | <5                | 289               | 0.51               | 234              | <10               | 31                |                   |
| 33642              |                          | 4.46               | 1180              | <1                | 4.46               | 214               | 90                | <2                | 0.07              | 5                 | 103               | 0.18               | 194              | <10               | 40                |                   |
| 33643              |                          | 3.81               | 900               | <1                | 4.15               | 53                | 100               | <2                | 0.19              | <5                | 116               | 0.17               | 179              | <10               | 15                |                   |
| 33644              |                          | 18.50              | 938               | <1                | 0.07               | 1780              | 50                | <2                | 0.01              | <5                | 5                 | 0.05               | 36               | <10               | 52                |                   |
| 33645              |                          | 13.35              | 738               | <1                | 0.01               | 1070              | 20                | <2                | <0.01             | <5                | 122               | 0.01               | 45               | <10               | 40                |                   |
| 33646              |                          | 1.23               | 420               | 3                 | 1.88               | 21                | 360               | 127               | 0.02              | <5                | 62                | 0.15               | 110              | <10               | 274               |                   |
| 33647              |                          | 0.12               | 38                | 6                 | 0.01               | 37                | 10                | 1695              | 0.03              | <5                | 5                 | <0.01              | 2                | <10               | 188               |                   |
| 33648              |                          | 0.07               | 39                | 1                 | 2.82               | 15                | 80                | 102               | 0.04              | <5                | 159               | <0.01              | 1                | <10               | 70                |                   |
| 33649              |                          | 1.39               | 246               | 2                 | 4.70               | 78                | 200               | 9                 | 0.12              | <5                | 144               | 0.06               | 14               | <10               | 18                |                   |
| 33650              |                          | 2.15               | 2720              | <1                | 2.30               | 33                | 160               | 9                 | 0.65              | <5                | 745               | 0.06               | 70               | 90                | 217               |                   |
| 33701              |                          | 0.20               | 183               | 1                 | 1.40               | 14                | 280               | 28                | 0.02              | <5                | 60                | 0.06               | 7                | 10                | 11                |                   |
| 33702              |                          | 0.35               | 212               | 2                 | 1.12               | 13                | 180               | 8                 | 0.19              | <5                | 86                | 0.10               | 20               | <10               | 29                |                   |
| 33703              |                          | 0.64               | 183               | 21                | 0.03               | 242               | 130               | 178               | >10.0             | <5                | 21                | 0.09               | 19               | 70                | 116               |                   |
| 33704              |                          | 0.59               | 217               | 6                 | 0.14               | 21                | 200               | 100               | 0.17              | <5                | 33                | 0.20               | 44               | 460               | 68                |                   |
| 33705              |                          | 0.09               | 160               | 4                 | <0.01              | 15                | 10                | 25                | 0.35              | <5                | 13                | 0.01               | 2                | 40                | 5                 |                   |
| 33706              |                          | 3.08               | 2540              | <1                | 0.72               | 102               | 3040              | 6                 | 0.78              | <5                | 289               | 1.61               | 369              | <10               | 241               |                   |
| 33707              |                          | 2.06               | 7040              | 2                 | 1.15               | 68                | 2880              | 8                 | 1.79              | <5                | 537               | 0.88               | 210              | 20                | 229               |                   |
| 33708              |                          | 2.05               | 1870              | 1                 | 0.53               | 223               | 2810              | 12                | 5.09              | <5                | 477               | 2.02               | 167              | <10               | 170               |                   |
| 33709              |                          | 0.05               | 71                | 6                 | 0.33               | 48                | 120               | 24                | 0.05              | <5                | 14                | 0.02               | 8                | <10               | 24                |                   |
| 33710              |                          | 0.73               | 108               | <1                | 0.33               | 81                | 580               | 12                | >10.0             | <5                | 138               | 0.33               | 36               | 110               | 19                |                   |
| 33711              |                          | 0.05               | 28                | 1                 | <0.01              | 9                 | 10                | <2                | 0.13              | <5                | 4                 | 0.01               | 4                | <10               | <2                |                   |
| 33712              |                          | 0.75               | 878               | 1                 | 1.30               | 25                | 690               | 27                | 0.04              | <5                | 465               | 0.36               | 45               | <10               | 84                |                   |
| 33713              |                          | 1.31               | 281               | 13                | 0.04               | 29                | 140               | 74                | 0.97              | <5                | 21                | 0.14               | 36               | 220               | 32                |                   |
| 33714              |                          | 2.84               | 663               | 3                 | 1.21               | 38                | 770               | 1015              | 3.22              | 16                | 151               | 0.73               | 157              | 20                | 1435              |                   |

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**ALS Chemex**  
**EXCELLENCE IN ANALYTICAL CHEMISTRY**

ALS Canada Ltd.  
 212 Brooksbank Avenue  
 North Vancouver BC V7J 2C1 Canada  
 Phone: 604 984 0221 Fax: 604 984 0218

To: BREAKAWAY EXPLORATION MANAGEMENT  
 INC.

144-D PERREAULT AVE  
 VAL-D'OR PQ J9P 2G3

Page: 5 - A  
 Total # Pages: 5 (A - B)  
 Finalized Date: 23-SEP-2004  
 Account: BREAK

**CERTIFICATE OF ANALYSIS VA04059325**

| Method Analyte Units LOR | Sample Description | WEI-21 Recvd Wt. kg | AU-AA23 Au ppm | ME-ICP61 Ag ppm | ME-ICP61 Al % | ME-ICP61 As ppm | ME-ICP61 Ba ppm | ME-ICP61 Be ppm | ME-ICP61 Bi ppm | ME-ICP61 Ca % | ME-ICP61 Cd ppm | ME-ICP61 Co ppm | ME-ICP61 Cr ppm | ME-ICP61 Cu ppm | ME-ICP61 Fe % | ME-ICP61 K % |
|--------------------------|--------------------|---------------------|----------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|---------------|--------------|
|                          | 33715              | 1.34                | 0.884          | 37.6            | 4.00          | >10000          | 170             | 1.7             | 180             | 0.38          | 7.6             | 34              | 185             | 950             | 14.30         | 3.21         |
|                          | 33751              | 0.76                | <0.005         | <0.5            | 7.93          | 387             | 660             | 1.3             | 3               | 5.41          | <0.5            | 19              | 184             | 46              | 6.12          | 1.47         |
|                          | 33762              | 0.62                | <0.005         | <0.5            | 7.57          | 133             | 190             | 3.8             | <2              | 2.33          | <0.5            | 7               | 199             | 96              | 5.18          | 0.63         |
|                          | 33753              | 1.34                | <0.005         | <0.5            | 1.34          | 154             | 90              | 1.6             | <2              | 0.04          | <0.5            | 2               | 243             | 29              | 1.30          | 0.56         |
|                          | 33764              | 0.94                | <0.005         | <0.5            | 4.43          | 22              | 320             | 3.0             | <2              | 0.25          | <0.5            | 1               | 286             | 17              | 1.40          | 1.52         |
|                          | 33765              | 0.92                | <0.005         | <0.5            | 8.42          | 58              | 1320            | 3.9             | <2              | 5.20          | <0.5            | 17              | 151             | 71              | 6.18          | 4.32         |
|                          | 33766              | 1.04                | 0.014          | <0.5            | 5.46          | 20              | 570             | 0.8             | 7               | 3.87          | <0.5            | 2               | 142             | 129             | 6.39          | 4.71         |
|                          | 33767              | 1.00                | <0.005         | <0.5            | 5.50          | 12              | 1030            | 3.0             | 3               | 3.83          | <0.5            | 18              | 247             | 18              | 5.74          | 3.31         |
|                          | 33768              | 0.46                | <0.005         | <0.5            | 7.70          | 16              | 760             | 2.8             | 2               | 5.43          | <0.5            | 37              | 252             | 5               | 9.15          | 3.00         |
|                          | 33769              | 1.04                | <0.005         | <0.5            | 11.10         | 26              | 20              | 1.1             | 2               | 12.85         | <0.5            | 12              | 226             | 16              | 6.09          | 0.06         |
|                          | 33760              | 0.52                | <0.005         | 2.8             | 5.94          | 18              | 50              | 2.0             | 8               | 12.15         | <0.5            | 26              | 215             | 24              | 7.60          | 0.29         |

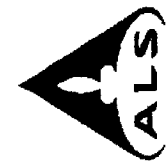
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Page: 5 - B  
 Total # Pages: 5 (A - B)  
 Finalized Date: 23-SEP-2004  
 Account: BREAK

**CERTIFICATE OF ANALYSIS VA04059325**

| Method Analyte Units LOR | ME-ICP61<br>Mg<br>% | ME-ICP61<br>Min<br>ppm | ME-ICP61<br>Mo<br>ppm | ME-ICP61<br>Na<br>% | ME-ICP61<br>Ni<br>ppm | ME-ICP61<br>P<br>ppm | ME-ICP61<br>Pb<br>ppm | ME-ICP61<br>S<br>% | ME-ICP61<br>Sb<br>ppm | ME-ICP61<br>Sr<br>ppm | ME-ICP61<br>Ti<br>% | ME-ICP61<br>V<br>ppm | ME-ICP61<br>W<br>ppm | ME-ICP61<br>Zn<br>ppm | Cu-AsB2<br>Cu<br>% |
|--------------------------|---------------------|------------------------|-----------------------|---------------------|-----------------------|----------------------|-----------------------|--------------------|-----------------------|-----------------------|---------------------|----------------------|----------------------|-----------------------|--------------------|
| 33715                    | 0.88                | 252                    | 3                     | 0.83                | 26                    | 390                  | 1376                  | 6.83               | 45                    | 104                   | 0.27                | 58                   | 10                   | 644                   | 0.01               |
| 33751                    | 2.85                | 1495                   | 1                     | 1.88                | 39                    | 1280                 | 12                    | 0.05               | <5                    | 231                   | 1.71                | 249                  | <10                  | 90                    |                    |
| 33752                    | 1.97                | 492                    | 4                     | 1.54                | 8                     | 580                  | 5                     | 0.14               | <5                    | 332                   | 0.72                | 233                  | 20                   | 58                    |                    |
| 33753                    | 0.09                | 75                     | 3                     | 0.02                | 7                     | 40                   | <2                    | 0.03               | <5                    | 4                     | 0.04                | 7                    | <10                  | 6                     |                    |
| 33754                    | 0.13                | 180                    | 2                     | 1.80                | 8                     | 80                   | <2                    | 0.12               | <5                    | 26                    | 0.07                | 4                    | <10                  | 7                     |                    |
| 33755                    | 1.06                | 1475                   | 2                     | 0.82                | 15                    | 2480                 | 10                    | 0.87               | <5                    | 177                   | 1.67                | 198                  | 10                   | 36                    |                    |
| 33756                    | 0.88                | 1185                   | 1                     | 0.86                | 5                     | 80                   | 9                     | 0.88               | <5                    | 156                   | 0.09                | 8                    | <10                  | 32                    |                    |
| 33757                    | 0.72                | 1240                   | 1                     | 0.46                | 24                    | 1210                 | 8                     | 0.05               | <5                    | 119                   | 0.97                | 122                  | 10                   | 43                    |                    |
| 33758                    | 4.15                | 1075                   | 2                     | 0.55                | 68                    | 970                  | 4                     | 0.01               | <5                    | 282                   | 1.08                | 304                  | <10                  | 120                   |                    |
| 33759                    | 1.39                | 618                    | <1                    | 1.04                | 29                    | 1920                 | 258                   | 0.05               | <5                    | 1890                  | 0.70                | 102                  | <10                  | 63                    |                    |
| 33760                    | 4.50                | 1225                   | <1                    | 0.55                | 49                    | 580                  | 1130                  | 0.08               | <5                    | 1030                  | 0.71                | 178                  | <10                  | 158                   |                    |

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**APPENDIX C**

**AURORA GEOSCIENCES MEMORANDUM**

**BREAKAWAY**



**Whitehorse Office**  
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## MEMORANDUM

**To:** Mark Fekete  
Hinterland Metals Inc.

**Date:** 27 Oct 2004

**From:** Mike Power

**Re:** Helen Property - HLEM Survey

This memorandum is a survey operations report describing a horizontal loop electromagnetic (HLEM) survey conducted at the Helen Property in the Finlayson Lake area, southeastern Yukon Territory. The survey was performed for Hinterland Minerals Ltd. to delineate vein-hosted massive sulphide mineralization.

**a. Crew and equipment.** The geophysical survey was performed by Casey Adshead, C.E.T. assisted by a helper provided by Hinterland Metals Inc. The crew was equipped with the following instruments and equipment:

**Instruments:** 1 - Apex Parametrics MaxMin I-10 with MaxMin Computer (MMC) equipped with 50, 100 and 150 m cables. (s/n 10359)

**Data processing:** 1 - P-866 laptop  
1 - HP340C colour printer.  
1 - Garmin GPS72 GPS receiver

**Other equipment:** 1 - Globalstar Sat phone.  
1 - Electronic repair tools

**b. Survey specifications.** The HLEM survey was performed according to the following specifications:

**Coil spacing:** 100 m

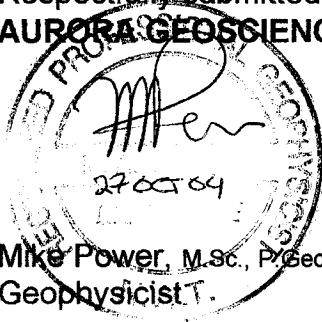
|                             |  |
|-----------------------------|--|
| <u>Station spacing:</u>     | 25 m   |
| <u>Frequencies:</u>         | 1760 Hz  |
| <u>Terrain corrections:</u> | Slope chain method using oriented coils (ie. tilt corrected in the field). Short coil errors introduced by irregular topography were removed during data processing. |

The HLEM method requires that the coils be held a constant distance apart and be coplanar. In steep irregular terrain, the coils will frequently be less than the nominal coil spacing (short coiling) and may not be coplanar. These variations in coil geometry produce strong in-phase errors and must be removed from the data before plotting and interpretation. The method used to mitigate these effects requires a slope chained grid and requires the operator to measure the station to station terrain slope in percent with a clinometer. This is normally done by the receiver operator who was in the lead position on the surveys. The correct slope required to maintain the coils coplanar is the arithmetic average of the station to station slopes in the interval between the two coils. The operators hold the coils coplanar during the surveys by holding their coils at this orientation which is calculated and displayed for each reading station by the Maxmin MMC. The effect of short coiling created by irregular topography was removed with Apex Parametrics data processing software (MMCFIX1). The numerical method is described in Varre (1990)(pp AII-3-4).

**c. Results.** The final corrected HLEM data is appended to this report as an ASCII text file (HELEN HLEM.TXT) together with the UTM registration points collected by the crew in the field (HELEN UTM.TXT). The data has been registered to UTM Zone 9N (NAD1983) coordinates by linear interpolation from the measured line end points and base line intersections. Figure 1 (attached in 4 copies) is a stacked profile plot of the HLEM data plotted at 1:2500. The in-phase component is shown as a solid red line and the quadrature component is shown as a dashed red line. The data is plotted with zero coincident with the survey line and values plotting above / to the left of the line are positive.

A single conductor defined solely by the in-phase component is shown in blue (Anomaly A-1). This anomaly has a low amplitude response, minimal excess width and virtually no quadrature component. It appears that the source may be a deep, highly conductive body or, alternatively a shallow magnetically susceptible body. Specimens of the vein material should be checked to determine their magnetite content and perhaps resolve this ambiguity. The asymmetry in the in-phase response suggests that the source body dips to the southwest at a moderate angle.

Respectfully submitted,  
**AURORA GEOSCIENCES LTD.**



Mike Power, M.Sc., P.Geoph.  
Geophysicist T.

/attach.



**APPENDIX D**  
**STATEMENT OF COSTS**

**BREAKAWAY**

## 2004 Breakdown Helen Summary

| Geophysics                   | Outside<br>Yukon<br>(non-eligible) | Inside<br>Yukon<br>(eligible) |              |
|------------------------------|------------------------------------|-------------------------------|--------------|
| Aurora Geosciences (max-min) |                                    | \$ 1,875.00                   |              |
| D. Ferderber                 |                                    | \$ 1,500.00                   |              |
| R. Grenier                   |                                    | \$ 2,400.00                   |              |
| J. Small (expediting)        |                                    | \$ 785.00                     |              |
| Food and Lodgings            | \$ 32.13                           | \$ 996.58                     |              |
| Food and Lodgings            |                                    | \$ 108.28                     |              |
| Camp rental                  |                                    | \$ 600.00                     |              |
| Supplies                     |                                    | \$ 37.96                      |              |
| Supplies                     |                                    | \$ 3.13                       |              |
| Gas, airfare etc.            | \$ 1,607.83                        | \$ 129.97                     |              |
| Truck Rentals                |                                    | \$ 150.00                     |              |
| Helicopter                   |                                    | \$ 792.00                     |              |
| Helicopter                   |                                    | \$ 1,089.00                   |              |
| Helicopter                   |                                    | \$ 2,574.00                   |              |
| Beaver                       |                                    | \$ 520.00                     |              |
| VLF Rental                   |                                    | \$ 75.00                      |              |
|                              | \$ 1,639.96                        | <b>\$ 13,635.92</b>           | \$ 15,275.88 |

| Prospecting                  | Outside<br>Yukon<br>(non-eligible) | Inside<br>Yukon<br>(eligible) |              |
|------------------------------|------------------------------------|-------------------------------|--------------|
| M. Fekete                    | \$ 1,320.00                        | \$ 1,320.00                   |              |
| D. Ferderber                 | \$ 1,050.00                        | \$ 2,700.00                   |              |
| R. Grenier                   | \$ 1,050.00                        | \$ 3,300.00                   |              |
| J. Small                     |                                    | \$ 37.50                      |              |
| Food and Lodgings            | \$ 623.75                          | \$ 960.24                     |              |
| Camp Rental                  |                                    | \$ 1,000.00                   |              |
| Supplies                     |                                    | \$ 301.15                     |              |
| Assays - analysis (estimate) |                                    | \$ 930.00                     |              |
| Assays - analysis            |                                    | \$ 22.46                      |              |
| Assays - shipping            |                                    | \$ 135.58                     |              |
| Gas, Airfare etc             | \$ 1,761.10                        | \$ 247.68                     |              |
| Truck Rentals                | \$ 100.00                          | \$ 150.00                     |              |
| Helicopter                   |                                    | \$ 7,227.00                   |              |
| Beaver                       |                                    | \$ 325.00                     |              |
| Hand-held radios             |                                    | \$ 50.00                      |              |
| Sat phone rental             |                                    | \$ 80.95                      |              |
| Sat phone usage              |                                    | \$ 334.70                     |              |
|                              | \$ 5,904.85                        | <b>\$ 19,122.26</b>           | \$ 25,027.11 |

Total Inside Yukon **\$ 32,758.18**