A REPORT ON THE

LORRAINE PROPERTY

47°22'N, 78°59'W
NTS 31M/07
GABOURY TOWNSHIP
TIMISKAMING COUNTY
ROUYN-NORANDA MINING DISTRICT
PROVINCE OF QUEBEC

PREPARED FOR:

HINTERLAND METALS INC.

BY:

J. D. CHARLTON, P.GEO.
February 28, 2002 (Date of original report addressed to Hinterland Exploration Inc.)
January 31, 2003 (Date of restated report)

SUMMARY

The writer was retained by Hinterland Exploration Ltd. (now a wholly-owned subsidiary of Hinterland Metals Inc.) to prepare an independent geological report on its Lorraine Property, composed of 30 contiguous, unsurveyed mining claims covering a total area of 1266.68 hectares of Gaboury Township in the Timiskaming Region of western Quebec. Good vehicle access to the property is provided by a network of logging roads that is connected to Highway 62 located 4 km north of the property.

Hinterland Exploration Ltd. holds a 100% interest of the Lorraine property mineral rights whereas the surface rights are held by the Crown. The property includes the former Lorraine Mine workings, waste dump and tailings. These surface facilities were reclaimed and rehabilitated by the Quebec Ministry of Natural Resources and do not present an environmental liability to Hinterland as mining rights holder.

The property is located in the north central part of the Lac des Bois Group segment of the Belleterre-Angliers Greenstone Belt. The Lac des Bois Group forms an east trending belt of volcanic rocks and related intrusive rocks approximately 25 km long and up to 6 km wide. Tonalitic rocks underlie the northern part of the property. The remainder of the property is underlain by steeply dipping, south facing, primarily andesite to basalt flows and related gabbros and diorites. They exhibit upper greenschist to lower amphibolite facies metamorphism.

A strong spatial relationship between Cu-Ni-PGE mineralization and gabbroic rocks of the Belleterre-Angliers Greenstone Belt is well documented. Numerous showings have been identified including the former Lorraine Mine located in the eastern part of the property. From 1964 to 1968, the mine produced 661,480 tons with recovered grades of 0.90% Cu, 0.38% Ni, and 0.02 oz/ton Au, as well as unspecified amounts of silver, "platinoids" and cobalt. Production came from a single elongate massive sulphide lens found along a sheared gabbro-volcanic contact. The lens, relatively enriched in nickel and cobalt, contained mostly pyrrhotite with lesser pentlandite, pyrite, chalcopyrite and magnetite. A disseminated sulphide envelope relatively enriched in copper and consisting mostly of chalcopyrite with lesser pyrrhotite, sphalerite and magnetite surrounds the core mineralization.

The genesis of the Lorraine Mine sulphide deposit took place in two steps. A Cu-Ni body depleted in Os-Ir-Ru-Rh was lens was developed in a gabbroic intrusion by magmatic fractionation. The body was subsequently subjected to prograde followed by retrograde thermotectonic deformation resulting in hydrothermal redistribution of the sulphides into a pyrrhotite and pentlandite (Ni-Co) dominated, Pd-enriched core surrounded by a chalcopyrite (Cu) dominated, Au-Ag-Pt-Pd enriched envelope. This magmatic-hydrothermal hybrid deposit model implies exploration should target sites where the sulphides may have been deposited rather than where they may have originated.

The primary potential of the Lorraine Property is the strong possibility for more polymetallic massive sulphide bodies existing down plunge, down dip or en echelon from the former mine workings. In 1966-67 Lorraine Mining Co. Ltd. outlined an Inferred Mineral Resource of 14,000 tons grading 1.25% Ni and 1.03% Cu in a down-plunge position below the mine workings at the

-350 to -400 m elevation. There is also strong untested potential for significant gold, silver and PGE enrichment within the chalcopyrite rich, disseminated sulphide envelope surrounding the former mine workings.

Based on the strong polymetallic potential demonstrated by the most recent surveys and studies it is recommended that Hinterland Metals Inc. continue with an aggressive exploration program on the Lorraine property. The exploration program should be conducted in two phases, the second phase contingent upon positive results of the first phase. The total estimated cost of the proposed two-phase exploration program is $622,000.

Phase I of the proposed exploration program is comprised of a surface exploration program directed at generating targets outside the former Lorraine Mine area and detailed magnetic and induced polarisation coverage followed 2500 m of diamond drilling accompanied by down-hole geophysical surveys in the former Lorraine Mine area. Most of the drilling will be targeted on the down-plunge potentiel below the former mine workings. The stimated cost of the Phase I work is $317,000.

Phase II will consist of 3500 m diamond drilling accompanied by down-hole geophysical surveys at an estimated cost of $305,000. It is anticipated that most of the drilling will follow up significant Phase I drill results in the former Lorraine Mine area. However, a portion of the drilling will be reserved to test any targets generated by Phase I outside the mine area.

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CERTIFICATE OF AUTHOR

I, John D. Charlton, P. Geo. do hereby certify that:

1. I am Vice President of:

    Charlton Mining Exploration Inc.,
    2020 Brentwood Street,
    St. Lazare, Quebec, Canada
    J7T 2G5

2. I graduated with a degree in B. Sc (Geology) from the University of Western Ontario in 1973. In addition, I completed a year as a special student in Geology at the same university in 1974.

3. I am a member of the *Ordre des Géologues du Québec*, and a Fellow of the Geological Association of Canada.

4. I have worked as a geologist for a total of 27 years since my graduation from university.

5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

6. I am responsible for the preparation of sections 1 through 15 of the technical report titled "A Report on the Lorraine Property" and dated February 28, 2002, and restated January 31, 2003 (the "Technical Report") relating to the Lorraine property. I visited the Lorraine property on August 3 and 4, 2001, August 24, 2001, and September 9, 2001 for a total of 4 days.

7. I have not had prior involvement with the property that is the subject of the Technical Report.

8. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission

to disclose which makes the Technical Report misleading.

9. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.

10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 31st Day of January, 2003.

"J.D. Charlton"

J.D. Charlton, P.Geo.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION AND TERMS OF REFERENCE

The writer was retained by Hinterland Exploration Ltd. which is now a wholly-owned subsidiary of Hinterland Metals Inc. ("Hinterland") to prepare a geological report on its Lorraine Property situated in the Timiskaming region of western Québec. The purpose of the report is to provide an evaluation of the exploration potential of the property and to recommend an exploration program. The writer has updated this report and Statement of Qualifications to reflect the issuer as Hinterland Metals Inc. However, in all other respects this Report has an effective date of February 28, 2002: the date the report was originally completed.

The report is based on information obtained from a review of relevant reports and maps available from various sources cited throughout the report. Information concerning historical property exploration and production was derived mainly from the Québec Ministry of Natural Resources asssesment file database in Rouyn-Noranda, Québec and from a database obtained from Loubel Explorations Inc. The most recent work, completed by Hinterland Exploration Ltd. in autumn 2001, is summarized in this report based on information contained in three reports prepared for Hinterland Exploration Ltd. by various contractors.

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.

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. PROPERTY DESCRIPTION AND LOCATION

The Lorraine property covers an area of 1266.68 hectares within the Rouyn-Noranda Mining Division of Quebec. It is located approximately 10 km southeast of the village of Latulipe in the Timiskaming region of Quebec (Figure 1). The approximate centre of the property is described by 47°22' North Latitude and 78°59' West Longitude on N.T.S. Sheet 31M/07. The property includes 30 contiguous, unsurveyed mineral titles covering Lots 40 to 52, Range 3 and Lots 35 to 51, Range 4 of Gaboury Township (Figure 2). Mineral titles are described in Table 1 below.

Hinterland, through its wholly owned subsiduary Hinterland Exploration Ltd., holds a 100% interest in the property subject to a production royalty held equally by Mark Fekete of Val d'Or, Quebec and Fred Kiernicki of Kirkland Lake, Ontraio. The two-part production royalty consists of 2.0% Net Smelter Return royalty on all smeltable materials extracted from the property and a 2.0% Gross Overriding Receipts royalty on all diamonds extracted from the property.

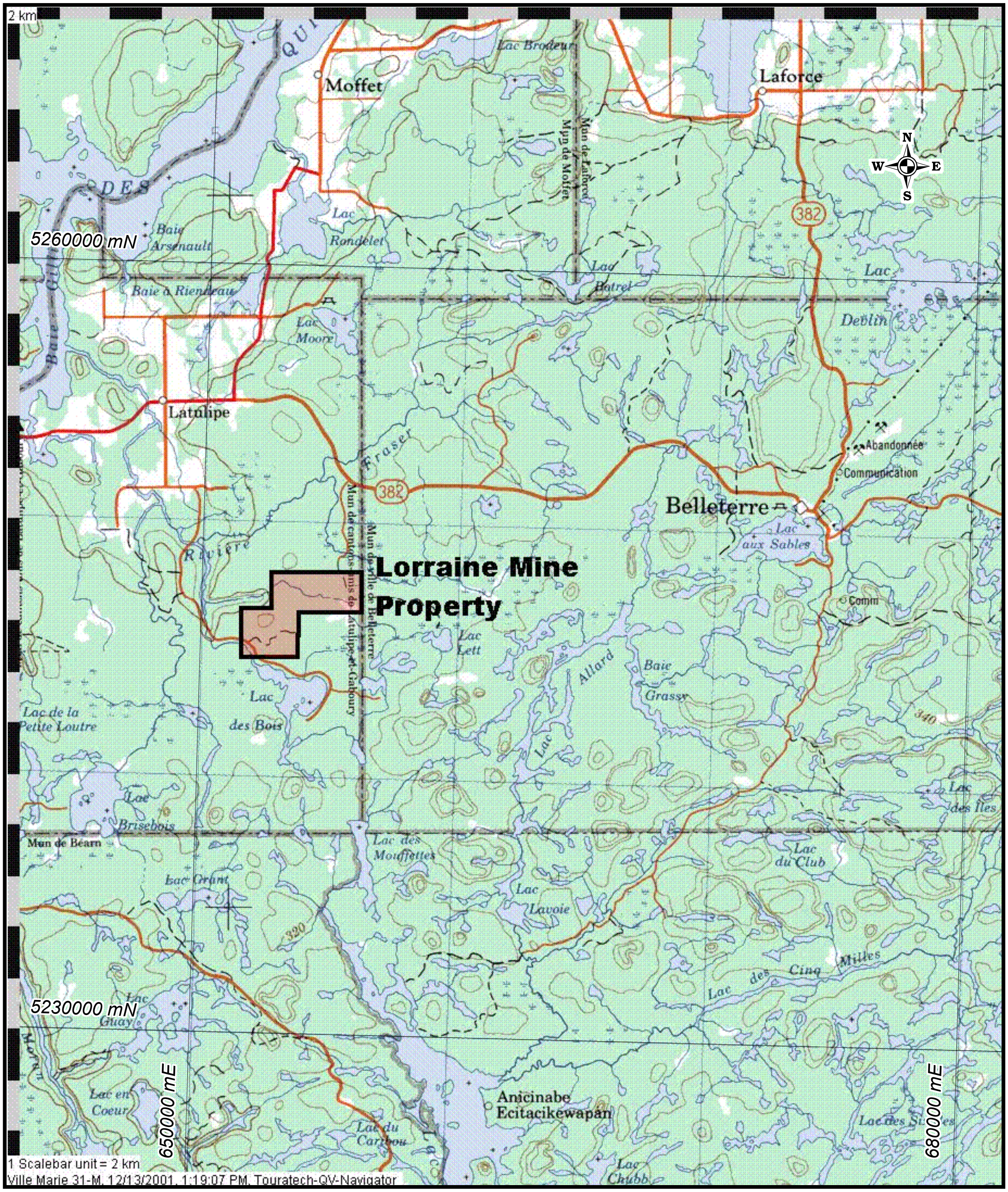
The surface rights for the area of the property are held by the Crown.. The property includes the former Lorraine Cu-Ni Mine workings, waste dump and tailings. These facilities were reclaimed by the Quebec Ministry of Natural Resources during the 1980's. The main concern of the Ministry is the tailings area which was at one time the source of acidic drainage into Lett

Creek and was covered and neutralized as part of the reclamation effort. The reclaimed tailings are legally classified as part of the surface domain until such time they are included in a mining concession or lease (Réal Marcotte, P. Eng., Quebec Ministry of Natural Resources – personal communication). As such, they do not present any legal or envirnomental liability to Hinterland, the current mineral rights holder, until such time Hinterland applies for a mining concession or lease. However, any damage to the tailing reclamation site caused by Hinterland's exploration work (perforation by diamond drilling for example) would expose Hinterland to certain liabilities including the costs to repairing the damage. With this in mind it is extremely important that Hinterland consult the Ministry before doing any work in the area of the tailings and that such work be done very carefully.

Work permits are not required for prospecting, linecutting and exploration surveys but permits must be acquired for trenching and diamond drilling. Work permits granted by the Quebec Ministry of Natural Resources for this level of exploration work are concerned primarily with the cutting or destruction of marketable timber. A stumpage fee will be charged for any trees cut that are deemed as marketable by the Ministry in order to carry out the trenching and diamond drilling recommended by this report. These permits are generally easy to obtain and are granted by annual term expiring on March 31 of each year.

Table 1 – Mineral Titles

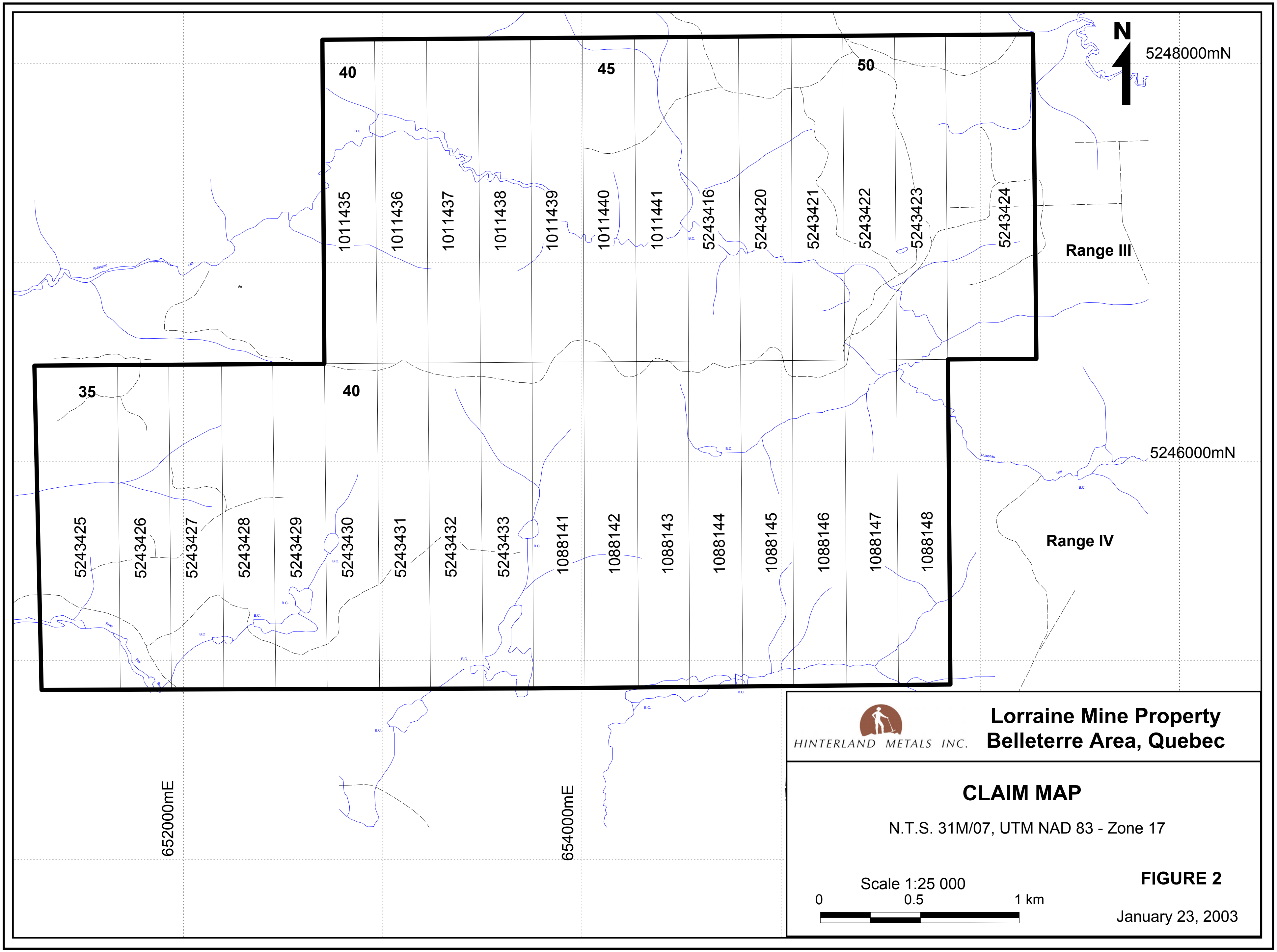
TITLE	NTS	TOWNSHIP	RANGE	LOT	AREA (HA)	EXIPIRY
CDC 1011435	31M07	GABOURY (CG005)	R0003	0040	42.38	2003-04-24
CDC 1011436	31M07	GABOURY (CG005)	R0003	0041	42.39	2003-04-24
CDC 1011437	31M07	GABOURY (CG005)	R0003	0042	42.40	2003-04-24
CDC 1011438	31M07	GABOURY (CG005)	R0003	0043	42.44	2003-04-24
CDC 1011439	31M07	GABOURY (CG005)	R0003	0044	42.46	2003-04-24
CDC 1011440	31M07	GABOURY (CG005)	R0003	0045	42.44	2003-04-24
CDC 1011441	31M07	GABOURY (CG005)	R0003	0046	42.45	2003-04-24
CL 5243416	31M07	GABOURY (CG005)	R0003	0047	40.00	2004-08-29
CL 5243420	31M07	GABOURY (CG005)	R0003	0048	40.00	2004-08-29
CL 5243421	31M07	GABOURY (CG005)	R0003	0049	40.00	2004-08-29
CL 5243422	31M07	GABOURY (CG005)	R0003	0050	40.00	2004-11-27
CL 5243423	31M07	GABOURY (CG005)	R0003	0051	40.00	2003-09-04
CL 5243424	31M07	GABOURY (CG005)	R0003	0052	68.00	2003-09-04
CL 5243425	31M07	GABOURY (CG005)	R0004	0035	40.00	2004-08-27
CL 5243426	31M07	GABOURY (CG005)	R0004	0036	40.00	2004-08-27
CL 5243427	31M07	GABOURY (CG005)	R0004	0037	40.00	2004-08-27
CL 5243428	31M07	GABOURY (CG005)	R0004	0038	40.00	2004-08-27
CL 5243429	31M07	GABOURY (CG005)	R0004	0039	40.00	2004-08-27
CL 5243430	31M07	GABOURY (CG005)	R0004	0040	40.00	2004-08-27
CL 5243431	31M07	GABOURY (CG005)	R0004	0041	40.00	2004-08-27
CL 5243432	31M07	GABOURY (CG005)	R0004	0042	40.00	2004-08-27
CL 5243433	31M07	GABOURY (CG005)	R0004	0043	40.00	2004-08-27
CDC 1088141	31M07	GABOURY (CG005)	R0004	0044	42.68	2004-04-26
CDC-1088142	31M07	GABOURY (CG005)	R0004	0045	42.73	2004-04-26
CDC-1088143	31M07	GABOURY (CG005)	R0004	0046	42.75	2004-04-26
CDC-1088144	31M07	GABOURY (CG005)	R0004	0047	42.73	2004-04-26
CDC-1088145	31M07	GABOURY (CG005)	R0004	0048	42.71	2004-04-26
CDC-1088146	31M07	GABOURY (CG005)	R0004	0049	42.70	2004-04-26
CDC-1088147	31M07	GABOURY (CG005)	R0004	0050	42.71	2004-04-26
CDC-1088148	31M07	GABOURY (CG005)	R0004	0051	42.71	2004-04-26



HINTERLAND METALS INC.
LORRAINE PROPERTY
Gaboury Township
N.T.S. 31M NAD 83, UTM17

0 5 10 km

Figure 1 - Location Map


N
5248000mN
5246000mN
40
45
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40
1011435
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1088141
1088142
1088143
1088144
1088145
1088146
1088147
1088148
Range III
Range IV
652000mE
654000mE
HINTERLAND METALS INC.
Lorraine Mine Property
Belleterre Area, Quebec
CLAIM MAP
N.T.S. 31M/07, UTM NAD 83 - Zone 17
Scale 1:25 000
0
0.5
1 km
FIGURE 2
January 23, 2003

Hin0001.wor

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

Good vehicle access is provided to the western and eastern parts of the property by a network of logging roads connected to Highway 62 located 4 km north of the property. The central portion of the property is only accessible on foot and/or by ATV (all-terrain vehicle) along a deteriorated logging road that follows the southern boundary of Range 3.

Historically the area of the Timiskaming clay belt, which extends eastward from from the town of Ville Marie to the village of Latulipe, was settled as farmland. Consequently, the infrastructure of the region is excellent. The nearby villages of Latulipe, Moffet and Belleterre offer good food, lodgings, supplies and general services and make it unnecessary to establish an exploration camp on the property. Linecutting, prospecting, geological, geophysical, trenching, analytical, drafting and drilling services are readily available in Val d'Or and Rouyn-Noranda both less than two hours away by highway. It is important to note that it is less than two hours to the Noranda smelter in Rouyn-Noranda and less than four hours to the Falconbridge and Inco smelters in Sudbury from the Lorraine Property by highway.

The property does not show much relief and is characterized by low rolling ridges ranging from elevations of approximately 295 m to maximum elevations of 335 m above mean sea level. These ridges are generally east trending and often show steep north-facing cliffs 10 to 30 m high that may present obstacles to exploration personnel. Numerous creeks drain the area of the property in a general east to west direction into the Fraser River watershed. Many of the creeks show broad areas of swamp and flooding caused by beaver dams. These areas also hinder exploration except in the winter months when they are well frozen. Mixed woods of spruce, fir, pine, poplar and birch with rare cherry and maple cover the property where logging has not taken place. Most of the property has been logged at various times over the past several decades. Thick brush of alder, willow and fir cover parts of the property that were logged by clear cutting.

Rock outcrops are fairly abundant but scattered intermittently throughout the area of the property. The best rock outcrops tend to be along the edge of ridges. Glacial deposits of sand and gravel cover much of the property. Glacial striae evident on many rock surfaces indicate that the last ice movement was from north-northeast to south-southwest.

The climate of the Timiskaming region is humid continental. Summers last from mid-May to mid-September with average daily temperatures of 15°C to 25°C. Heat waves with temperatures up to 35°C are not uncommon and may last one to two weeks. Winters are cold and last from mid-November to mid-April with average daytime temperatures ranging from 0°C to -15°C. Colder periods with temperatures -25°C or less rarely last for more than several days. Annual snow accumulations are typically one to two metres. Moderate temperatures and lack of foliage make both the spring and the fall good times to do surface exploration work. In the fall it is advisable to suspend exploration completely during the two weeks of moose hunting season for safety and public relations reasons. Improved access due to ground freezing makes winter the most convenient and least environmentally damaging time for diamond drilling.

5. EXPLORATION HISTORY

This discussion of the exploration history is based primarily on a review of all the statutory work files, reports and geoscientific data available at the regional office of the Quebec Ministry of Natural Resources in Rouyn-Noranda. It also draws on data contained in a data set compiled by International Thunderwood Ltd. This data set was transferred to Loubel Explorations Ltd. as part of an option agreement with Thundermin Resources Inc., a succesor company to International Thunderwood. Loubel kindly made the data available to the writer. Loubel has also granted permission to the writer to utilize certain information from their compilation reports on the neighbouring, geologically similar Kelly Lake and Thunder Properties.

The writer has not attempted to verify and does not assume responsibilty for the accuracy or completeness of any of the reports cited in the subsequent discussion of exploration history for the following reasons:

a) all of the reports were prepared well before National Instrument 43-101 defined the concept of a “qualified person” and laid out guidelines for technical reports;
b) many of the reports, particularily the Lorraine Mine drill logs, are either missing, imcomplete or illegible and:;
c) the age of many of the reports (some dating to the 1960’s) makes verfication impractical if not impossible.

Exploration activity in this area dates back to the 1930’s (Retty, 1931). Since that time three spikes of exploration activity have resulted in a relatively active, but discontinuous, exploration history in this region. The first major spike took place in the early to mid-1950’s. During the period 1953-57 the Kelly Lake Cu-Ni deposit (5.5 km eastsoutheast of Lorraine) was recognized and drilled to the 1,100 ft. (335m) depth in two intensive drilling campaigns. Also at that time, the Blondeau Ni-Cu zone (4.0 km southeast of the Lorraine Property) was discovered and drilled, and the Roy Zone (4.5 km east of the property) was drilled. The second spike occurred during the mid 1960’s through early 1970’s period of high base metal prices. The Lorraine Mine was discovered, developed, and mined in the period 1961-68. This discovery resulted in renewed exploration activity across the region. The third spike corresponded to the flurry of flow-through funded exploration activity in the late 1980’s. In spite of the misplaced goals of many exploration programs of this period, much valuable work was done, including geological mapping and geophysical programs on the Lorraine and Thundermin claim blocks.

Most of the previous work on the Lorraine Property was done in the area of the former Lorraine Mine (Figure 5). The deposit was discovered in 1961 by O’Brien Rivard, a prospector from nearby Belleterre (GM 12440 and GM 13964). Rivard sold his claims to Mespi Mines Ltd. and the claims were subsequently optioned to McIntyre Porcupine Mining Co. From 1962 to 1968 Lorraine Mining Co. Ltd, a subsidiary created by McIntyre, completed geophysical and geological surveys, drilled a minimum of 70 diamond drill holes from surface and underground, sunk a shaft to 975 feet, developed six levels and mined from the fourth level up to surface (GM 12548, GM 12773, GM 13153, 13249, GM 13163, GM 13697, GM 13540, GM 13586, GM 13593, GM 14306, GM 14192, GM 15470, GM 16891, GM 17117, GM 18842, GM 18911, GM 19229,GM 21150A, GM 21150-B, GM 22133, GM 22132, GM 23153, GM 23156, GM 23167, GM 25536, and Lorraine Mine Managers’ monthly reports).

Exploration and development of the Lorraine deposit took place in the period 1962-64. Exploration work included airborne and ground magnetic surveys, ground HEM surveys, limited induced polarization surveys, geologic mapping, trenching and exploratory diamond drilling. The property at the time covered a more extensive area than the current property and included a broad area of similar geology along strike to the east in Blondeau Township. The entire histroical property was covered by a cut grid with 400 foot line spacings (north-south orientation). Many areas within the property were covered by more detailed grids with 200 foot spacings. The HEM survey was conducted by Dominion Geophysics Ltd. using a Sheridan-Kelk Magniphase single frequency (1,000 cycles per second) EM unit with a 300 foot coil separation. This system successfully located the massive sulphide core of the main Lorraine ore zone, but was unsuccessful at locating additional sulphide zones within the current property limits.

Prospecting and trenching were successful in locating a number of mineralized zones. The best of these included several trenches staddling the Gaboury/Blondeau Township line (the current property boundary) some 600 m east of the Lorraine shaft. The McIntyre records show that this mineralization was not drilled at depth.

Production commenced in 1964 and the mine was shut down in June 1968. The pre-production ore reserve at Lorraine was 550,000 tons grading 1.57% Cu and 0.62% Ni (Descarreaux, 1967). The mine produced 661,480 tons of ore with recovered grades of 0.90% Cu, 0.38% Ni and 0.02 oz/ton Au and unspecified amounts of silver, PGE, and cobalt (Kish, 1971). Although Lorraine metallurgical records are not available, results from several metallurgical tests at the neighbouring Kelly Lake deposit, suggest that metal recovery rates were approximately 90% for Cu and 70% for Ni (Charlton, 2001). No quantification of cobalt and platinoid recoveries is available. The poor nickel recoveries at Kelly Lake were due to the majority of the nickel occurring in solid solution within massive pyrrhotite.

Mine production records clearly indicate an overall enrichment in nickel grades and a corresponding decrease in copper grades with depth at Lorraine. Five drill holes, drilled from the sixth level hangingwall drill drift, intersected ore grades and widths with high Ni:Cu ratios along the down-plunge extension of the main orebody at the -350 to -400 m elevation. Victor Popov, the mine geologist, used these holes to calculate a “drill indicated reserve” of 14,000 tons grading 1.25% Ni and 1.03% Cu /ton (GM 22133). The writer classifies this as an Inferred Mineral Resource according to National Instrument 43-101 standards. The bottom level of the mine is at 296m (975 feet) and no subsequent attempt was made to develop below this level.

Mine records also describe significant occurrences of gold mineralization in massive chalcopyrite/quartz veins on the lower two levels of the Lorraine (see section 7.0). These occurrences were pursued by drifting and limited underground drilling, but never developed.

After the main Lorraine orebody was mined through to surface, the mine was abandoned and the original claims were allowed to lapse. No work was recorded in the former mine area until 1981 when much of the original Lorraine property area in Gaboury and Blondeau Townships was restaked. Between 1981 amd 1983, Geoconseil Jack Stoch Ltd. filed 3 evaluation reports (GM 36989, GM 38771 and GM 39770). These reports summarized the production history and emphasized the significance of the undeveloped gold mineralization on the lower levels of the former mine. The Stoch property was optioned to Halo Centrex Inc. in 1983 who completed a compilation of previous work (GM 43679) and subsequently optioned the property to Abbey Exploration Inc in 1985. Preliminary geological mapping and sampling surveys were completed by Abbey (GM 43679, GM 44622, GM 44900, GM 47021, GM 47138 and GM 47193). Gold in shear zones and veins was the main target of this work. Widespread anomalous gold mineralization was identified and further work was recommended.

The Stoch property was then optioned to International Thunderwood Explorations Ltd. in 1988 and magnetic and mapping surveys (GM 46568 and GM 48145) were completed. Several strong magnetic anomalies were noted on the Lorraine portion of the grid. An induced polarization survey, gravity profiles, and deep drilling over the former Lorraine Mine area were recommended. This work was not undertaken despite Thunderwood's work on the nearby Blondeau Ni-Cu zone that demonstrated that induced polarization could successfully delineate semi-massive to disseminated sulphides of the type to be expected at Lorraine.

In 1996 Thunderwood inadvertently allowed the claims covering the former Lorraine Mine to lapse. The area was immediately staked and eventually acquired by Exploration Mirandor Inc. who completed three diamond drill holes adjacent to the old shaft (GM 55873). Two of the holes were drilled into void left by the old stopes. No core samples were collected and the purpose for this drilling is not evident. Shortly thereafter the claims were transferred to the drill contractor, Major Group Diamond Drilling Ltd., for unspecified reasons.

Major allowed the claims to lapse in June 2000 despite a large bank of surplus work credits. The area was immediately staked by Mark Fekete and Fred Kiernicki who then completed a cursory sampling program (Fekete, 2000) and subsequently optioned the property to Hinterland.

In the early 1990's the Quebec Ministry of Natural Resources took the decision to clean up the former Lorraine minesite and tailings. The shaft was capped, the site was leveled and a high perimeter fence was erected around the gaping hole where the main ore zone had been mined out to surface. The tailings, a source of high acid drainage into Lett Creek, were covered and neutralized.

Limited exploration was done to the west of the Lorraine deposit with no significant results (Figure 5). This work is summarized as follows. In 1965, Acme Gas and Oil completed mapping and geophysical surveys followed by two drill holes in the southern part of Lots 39 and 40, Range 3 (GM 16540 and GM 16541). In 1967-68, Terrex Mining Co. Ltd. completed mapping and geophysical followed by four diamond drill holes on the northern parts of Lots 36 to 43, Range 4 (GM 21884, GM 22299 and GM 23184). In 1981-90, Chabela Minerals Inc. completed geophysical surveys followed by five drill holes in the central part of Lots 40 to 44, Range 3 as part of a much larger property (GM 42471, GM 43496, GM 43768, GM 45444, GM 47573 and GM 50851).

6. Geological Setting

6.1. Regional Geology

The Lorraine property is located within the Belleterre-Angliers Greenstone Belt in the Pontiac Subprovince, the youngest, most southernmost greenstone belt in the Archean Superior Province of the Canadian Shield (Dimroth et al, 1983). This small volcano-sedimentary belt is situated just north of the Grenville Front and south of the Abitibi Greenstone Belt (Figure 3). The belt is divided into three parts known as the Baby, Lac des Bois and Belleterre Groups (Hocq, 1990). The northern part of the Baby Group consists of komatiitic basalts at the base, overlain by tholeiitic basalts that are in turn overlain by calc-alkali intermediate to felsic volcanic rocks and volcaniclastic sedimentary rocks (Imreh, 1978). The southern part of the Baby Group and the Lac des Bois and Belleterre groups lack any komatiitic rocks but include tholeiitic basalts and calc-alkali volcanic rocks (Auger, 1952, Kish, 1971 and Imreh, 1978).

Gabbros that contain Ni-Cu deposits intrude the tholeiitic basalts of all three groups and show a similar composition to the tholeiites. The gabbros and the volcano-sedimentary rocks in the belt appear to have experienced a similar degree of greenschist to amphibolite facies metamorphism and complex, polyphase deformation. The similarities in composition and tectonic history suggest that the gabbros and volcano-sedimentary rocks are syntectonic (Imreh, 1978 and Barnes et al, 1993b).

The granitic rocks that divide the belt can be separated into two groups based on composition. The first group consists of trondhjemite, tonalite and granodiorite (“TTG” type) and includes the Fugereville and Lac Devlin plutons and the Lac des Quinze Complex (gneissic). The second group includes monzodiorite, granodiorite, syenodiorite and syenite (“MMG” type) and includes the Lac Remigny, Lac Simard, Tour de Belleterre, Lac Maple and Lac Soufflot plutons.

Pontiac metasediments consisting mainly of greywackes border the Belleterre-Anglier Greenstone Belt to the north, south and east.

Several interpretations have been presented to explain the relationship between the Belleterre-Angliers belt and the surrounding rocks. Dimroth et al. (1983) and Imreh (1978) suggest the Belleterre-Angliers greenstones were deposited unconformably over the Pontiac metasediments as the final volcanic cycle of the southern Abitibi subprovince. Both groups were subsequently metamorphosed and deformed by the Kenoran Orogengy and cut by extensive syn- to post-kinematic plutonisim of both TTG and MMG affinity. Hocq (1990) and Rive et al. (1990) suggest that the belt was derived from the southern Abitibi subprovince and emplaced by thrusting over older Pontiac sediments and subsequently metamorphosed, deformed and cut by extensive syn- to post-kinematic plutonisim of both TTG and MMG affinity.

Sawyer et al. (1993) describe tectonic (shear type) contacts between Belleterre-Anglier greenstones and TTG type granitoids and Pontiac metasediments. And, based on comparitive age dates determined by others, suggest that the Belleterre-Angliers belt was emplaced from the north as a high-level thrust sheet over a suite of younger Pontiac metasediments imbricated with slices of older TTG type granitoids. Following emplacement, the Belleterre-Angliers and adjacent rocks were thermotectonically deformed by extensional shear processes marginal to domal or antiformal structures accompanied by sheets of syn-tectonic MMG type plutonism. They also infer from the work of others that the Belleterre-Angliers greenstones are younger and not genetically related to Abitibi volcanism. Instead, a band of thin, discontinuous ultramafic rocks found in the northern part of the Pontiac metasediments is suggested as a possible root to the komatiite flows in the northern part of the Baby Group.

6.2. LOCAL GEOLOGY

The area of the property covers part of the Lac des Bois segment of the Belleterre-Angliers Greenstone Belt. Retty (1931) first mapped the Lac des Bois area at a scale on one inch to one mile. The discovery and development of the Lorraine deposit in Gaboury Township and the Kelly Lake and Blondeau discoveries in Blondeau Township prompted detailed mapping of Gaboury and Blondeau Townships. Kish (1971) completed mapping at a scale of one inch to 1000 feet over the two townships in 1967.

The Lac des Bois greenstones form a belt of altered volcanic rocks and related intrusive rocks that extends some 25 km eastward from the south central part of Laverlochère Township to the central part of Blondeau Township (Figure 4). The belt is aprroximarely 6 km wide at its widest point and it is bordered to the north by tonalitic rocks belonging to the Fugereville Pluton (TTG) and to the south by metasediments probably belonging to the Pontiac Group. To the west it is covered by flat lying sediments of the Proterozoic Gowganda and Lorraine Formations. To the east it is truncated by the late syeno-monzonitic (MMG) Tour de Belleterre Pluton.

The volcanic rocks are predominately andesite to basalt flows. Pillow structures, amygdules and flow lines are common in these rocks. The andesites commonly grade from fine grained to dioritic or microgabbroic. Siliceous rocks are found locally within the intermediate to mafic lavas and include rhyolite to dacite flows, related pyroclastic tuffs and rare agglomerates. Sedimentary layers of chert, magnetite and iron formation are found near the south margin of the belt. Intrusive rocks related to the volcanics include gabbros and diorite. Leucocratic intrusive rocks cut both the Lac des Bois volcanics and intrusives. These intrusives include porphyrtic syenite, porphyrtic granite and quartz-porphyry. Narrow dykes of diabase, aplite and lamprophyre cut all the units mentioned above.

The metavolcanic rocks strike in an easterly direction through the belt and deep steeply to the south. Pillows indicate a facing direction the south, although local reversals have been noted (eg. Blondeau Zone area). Elongation of the pillows and foliation indicate deformation subparallel to the volcanic stratigraphy. Folds with northeast trending axes have been observed in the eastern part of the belt. These rocks show upper greenschist to lower amphibolite facies metamorphic deformation. Late regional scale fracturing has affected all the rocks in the area. Fractures and shears are developed predominantly in a northeasterly direction and less so in a northwesterly direction. The orientation of many of the lakes, ponds and creeks reflects this fracture pattern.

6.3. PROPERTY GEOLOGY

Granitic rocks (TTG granitoids) of the Fugereville Pluton underlie the northern part of the Lorraine property (Figure 5). The remainder of the property is underlain by Lac des Bois volcanics and related intrusives. The contact between these major rock units trends at 70° azimuth and is assumed to be subvertical. Kish (1971) recognized a front of chloritized or quartz bearing, granitized dioritic rocks adjacent to this contact which he termed "contact metadiorite". It is unclear whether these diorites belong to the tonalites or the greenstones although Kish (1971) suggests that they were Lac des Bois intrusives that were incorporated and altered by contact with the tonalites.

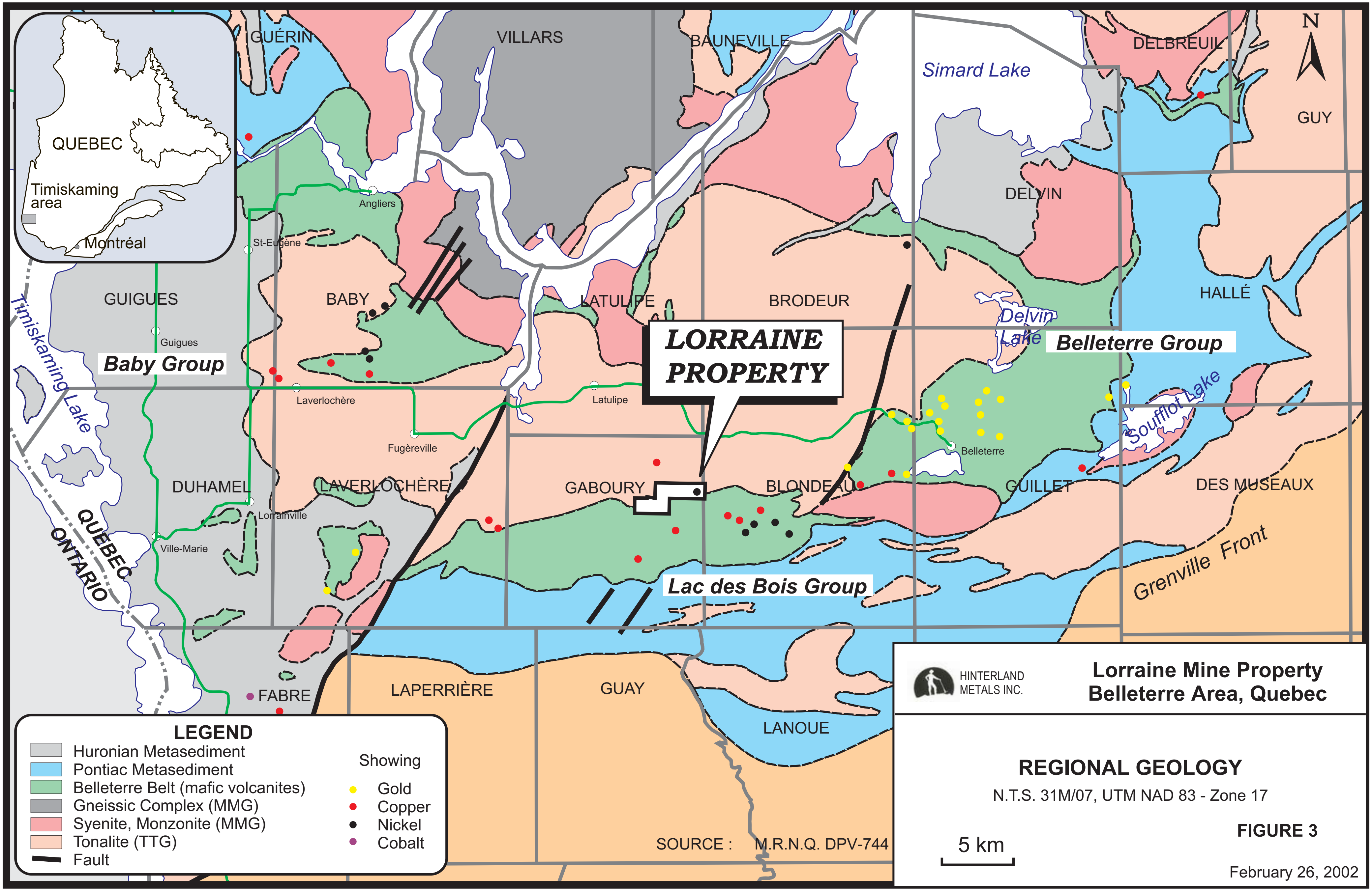
Most of the Lac des Bois rocks underlying the property are andesite to basalt flows. Both look almost identical in the field and for exploration purposes may be considered as the same unit. In hand sample they are typically fine-grained, bluish grey to green in colour and break into rough plates. Pillows, amygdules and flow lines are commonly observed in these rocks. Some of the andesite/basalt grades to diorite or microgabbro that forms distinct units. Small tracts of rhyolitic to dacitic flow rocks accompanied by tuffaceous rocks occur locally throughout the area of the property. These rocks are very fine grained, light coloured and hard to break.

Gabbros form irregular bodies in the metavolcanics scattered throughout the area of the property. They are most common in the area east of the former Lorraine Mine. They rarely display an ophitic primary texture and more often they are so altered that the primary textures are obliterated. In hand specimen they are typically fine to medium grained and dark green to grey. They are hard to break with a hammer because when they are struck they tend to powder rather then fracture cleanly. One can identify amphibole, plagioclase and, rarely, pyroxene and chlorite in coarser grained samples of the gabbro.

Diorites also form as irregular bodies and are otherwise very similar to the gabbros. Compared to the gabbros, they tend to be medium grey in colour as opposed to green and break easier into blocks when struck by a hammer. Plagioclase and secondary amphibole are easily identifiable as the main constituents of this unit and epidote is often abundent.

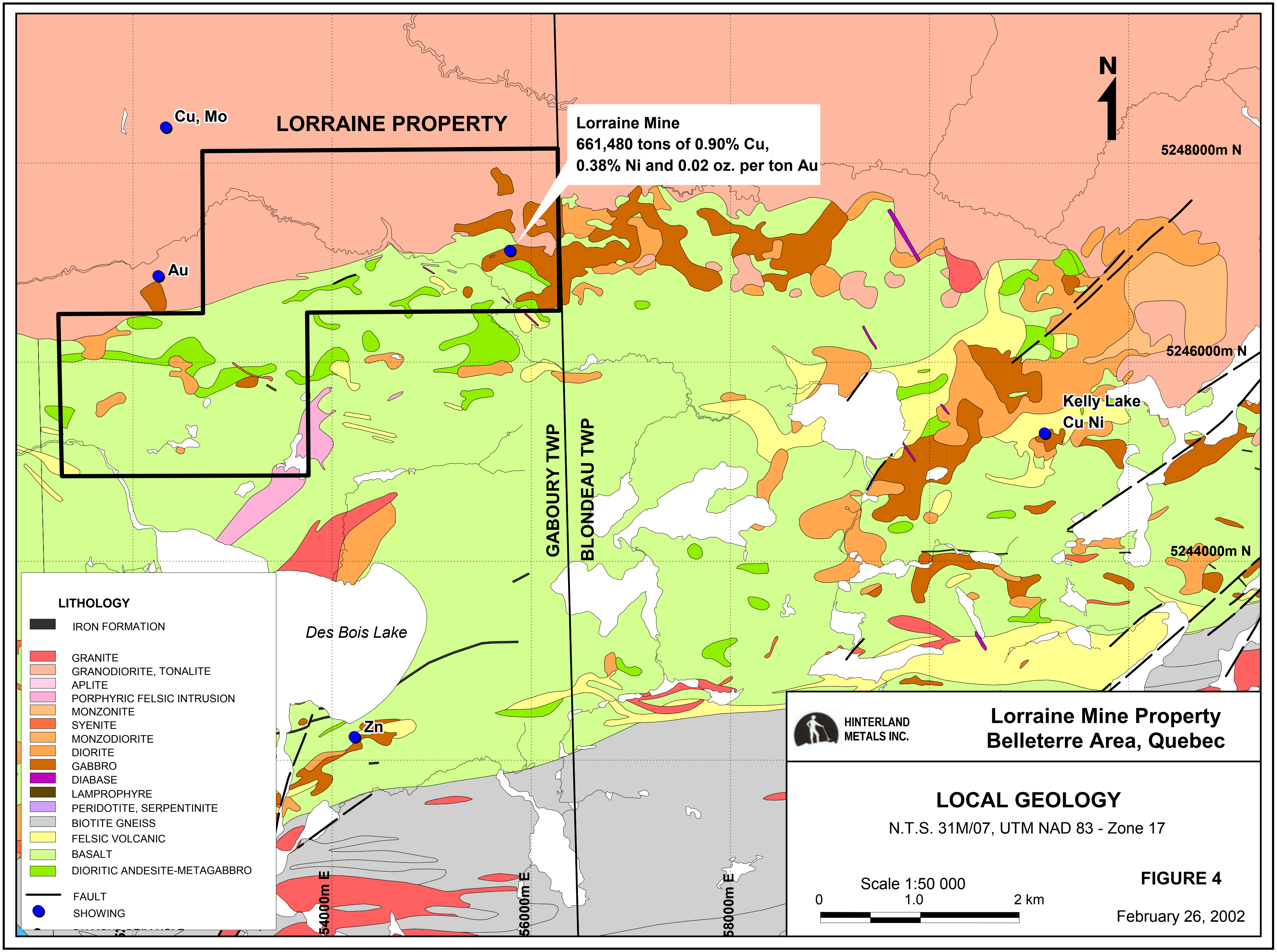
The granitic rocks north of the greenstones include mostly granodiorite with lesser albite granites. They are generally medium to coarse grained and pale to medium grey in colour. Weathered surfaces are rough to the touch due to preferential weathering of the main constituents of quartz and feldspar. Biotite is the main mafic mineral with incidental amounts of epidote, chlorite and amphibole.

Narrow dykes of diabase, aplite and lamprophyre are found everywhere on the property but are particularily evident southwest of the mine adjacent to Lett Creek. Narrow shears, breccias and quartz veins are commonly found within both the greenstones and the granitic rocks.

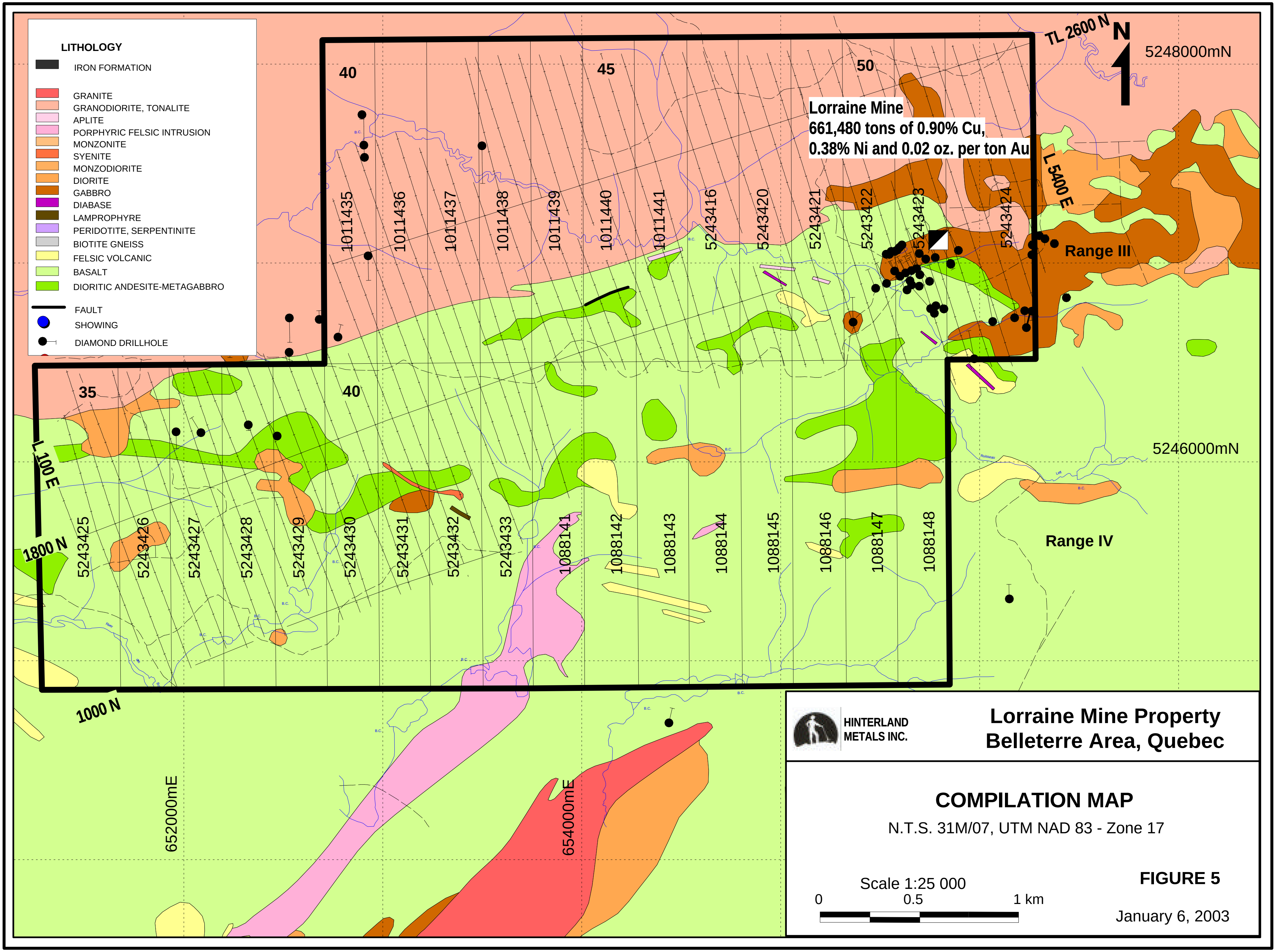


QUEBEC
Timiskaming area
Montréal
GUÉRIN
VILLARS
BAUNEVILLE
Simard Lake
DELBREUIL
N
GUY
Angliers
St-Eugène
DELVIN
GUIGUES
BABY
LATULIPE
BRODEUR
HALLÉ
Delvin Lake
Belleterre Group
Guigues
Baby Group
LORRAINE PROPERTY
Timiskaming Lake
Laverlochère
Latulipe
Soufflot Lake
Fugèreville
Belleterre
DUHAMEL
LAVERLOCHÈRE
GABOURY
BLONDEAU
GUILLET
DES MUSEAUX
Lorrainville
QUEBEC
ONTARIO
Ville-Marie
Lac des Bois Group
Grenville Front
FABRE
LAPERRIÈRE
GUAY
LANOUE
LEGEND
Huronian Metasediment
Pontiac Metasediment
Belleterre Belt (mafic volcanites)
Gneissic Complex (MMG)
Syenite, Monzonite (MMG)
Tonalite (TTG)
Fault
Showing
Gold
Copper
Nickel
Cobalt
SOURCE : M.R.N.Q. DPV-744
HINTERLAND METALS INC.
Lorraine Mine Property
Belleterre Area, Quebec
REGIONAL GEOLOGY
N.T.S. 31M/07, UTM NAD 83 - Zone 17
FIGURE 3
5 km
February 26, 2002

HIN0003.cdr


LORRAINE PROPERTY
Cu, Mo
Au
Lorraine Mine
661,480 tons of 0.90% Cu,
0.38% Ni and 0.02 oz. per ton Au
N
5248000m N
5246000m N
5244000m N
Kelly Lake
Cu Ni
GABOURY TWP
BLONDEAU TWP
Des Bois Lake
Zn
54000m E
56000m E
58000m E
LITHOLOGY
IRON FORMATION
GRANITE
GRANODIORITE, TONALITE
APLITE
PORPHYRIC FELSIC INTRUSION
MONZONITE
SYENITE
MONZODIORITE
DIORITE
GABBRO
DIABASE
LAMPROPHYRE
PERIDOTITE, SERPENTINITE
BIOTITE GNEISS
FELSIC VOLCANIC
BASALT
DIORITIC ANDESITE-METAGABBRO
FAULT
SHOWING
HINTERLAND
METALS INC.
Lorraine Mine Property
Belleterre Area, Quebec
LOCAL GEOLOGY
N.T.S. 31M/07, UTM NAD 83 - Zone 17
Scale 1:50 000
0
1.0
2 km
FIGURE 4
February 26, 2002

Hin0001.wor


LITHOLOGY
IRON FORMATION
GRANITE
GRANODIORITE, TONALITE
APLITE
PORPHYRIC FELSIC INTRUSION
MONZONITE
SYENITE
MONZODIORITE
DIORITE
GABBRO
DIABASE
LAMPROPHYRE
PERIDOTITE, SERPENTINITE
BIOTITE GNEISS
FELSIC VOLCANIC
BASALT
DIORITIC ANDESITE-METAGABBRO
FAULT
SHOWING
DIAMOND DRILLHOLE
Lorraine Mine
661,480 tons of 0.90% Cu,
0.38% Ni and 0.02 oz. per ton Au
TL 2600 N
N
5248000mN
5246000mN
L 5400 E
L 100 E
1800 N
1000 N
Range III
Range IV
40
45
50
35
40
1011435
1011436
1011437
1011438
1011439
1011440
1011441
5243416
5243420
5243421
5243422
5243423
5243424
5243425
5243426
5243427
5243428
5243429
5243430
5243431
5243432
5243433
1088141
1088142
1088143
1088144
1088145
1088146
1088147
1088148
652000mE
654000mE
HINTERLAND
METALS INC.
Lorraine Mine Property
Belleterre Area, Quebec
COMPILATION MAP
N.T.S. 31M/07, UTM NAD 83 - Zone 17
Scale 1:25 000
0
0.5
1 km
FIGURE 5
January 6, 2003

Hin0001.wor

7. Deposit Types

A number of Cu-Ni showings and deposits associated with synvolcanic gabbros have been documented in the Belleterre-Angliers belt (Figure 3) and some of these showings are known to contain significant platinum and palladium values (Barnes et al, 1993a and Barnes et al, 1993b). These occurences include:

a) the Alotta, Delphi, Lac Croche, Midrim and Patry showings on Aurora Platinum Corp.'s Belleterre-Midrim property in Baby Township;
b) the former Lorraine Mine on Hinterland Exploration Ltd.'s Lorraine property in Gaboury Township;
c) the Kelly Lake Deposit and the Blondeau Zone on the Loubel Explorations Inc.'s Kelly Lake Property in Blondeau Township;
d) the La Force showing on the Loubel Explorations Inc.'s property in Brodeur and Devlin Townships.

Magmatic nickel-copper sulphide-type deposits are hosted in a broad range of mafic and ultramafic bodies and show great diversity in size, grade, form and genesis. Eckstrand (1996) lists four subtypes including "Astrobleme-associated" (ex. Sudbury), "Rift and continental flood basalt-related" (ex. Norilsk), "Komatiite-hosted" (ex. Kambalda and Thompson) and "Other tholeiitic intrusion-hosted" (ex. Selebi-Pikwe and Lynn Lake). The Belleterre-Anglier Cu-Ni gabbros may be classed in the other tholeiitic intrusion-hosted subtype and indeed Exkstrand (1996) includes the Lorraine deposit as an example of this subtype.

The Lorraine Mine deposit has several characteristics that distinguish it from the other Cu-Ni showings in the Belleterre-Angliers belt (Bouchaib, 1992 and Barnes et al., 1993b). At Lorraine the Cu-Ni bearing sulphides occur as a lens of massive sulphide along an altered metagabbro/ sheared metavolcanic contact, whereas at the other showings the sulphides occur as disseminations at or near the margins of the gabbro bodies. Second, high Cu content and low IPGE ("Immobile Platinum Group Elements") contents and extremely fractionated PGE patterns distinguish the Lorraine sulphides. Cu-rich, IPGE-depleted sulphides are documented in many magmatic sulphide bodies and are collectively classed as Cu-rich sulphides. Their origin is subject to debate, however, between those who favour a magmatic origin to those who favour an origin by hydrothermal remobilization. Bouchaib (1992) addresses this debate by presenting both sides as possible deposit models for the Lorraine mineralization.

In the first or magmatic model, a sulphide liquid enriched in S, Cu, Pd, Pt, Au and Ag is developed by fractionation of a monosulphide solid solution. This liquid is relatively dense so that it settles near the bottom of the mafic intrusion below a cumulate enriched in Fe and IPGE. The liquid is subsequently injected along a lithological or structural contact or mechanically entrained into a structure after crystallization.

In the second or hyrdrothermal remobilization model, the metals are transported from the host intrusion by hydrothermal fluids generated by ductile tectonic and metamorphic events. Metal zoning and affinity is determined by the relative solubility of each metal in the hydrothermal fluids. More soluble Cu, Au, Ag and Zn migrate to the margins and precipitate as chalcopyrite leaving less soluble Ni and Co as a pyrrhotite+pentlandite core.

Both models suggest that the sulphide bodies were transported by varying degrees from their points of origin. Potential sulphide bodies may occur within or directly adjacent to the gabbros or they may be detached altogether from the gabbros. To the extent that the origin of the sulphides cannot be determined, exploration should target sites where the sulphides may have been deposited rather than where they may have originated. Therefore, the exploration focus should be on structural features in proximity to the gabbroic intrusions and not on the magmatic character of the gabbroic intrusions themselves.

Bouchaib (1992) adds as an interesting footnote the possiblity of an Os-Ir-Ru-Rh enriched sulphide existing at depth on the Lorraine property based on the depleted IPGE contents and extremely fractionated PGE patterns (Pd/Ir > 1000) of the Lorraine deposit.

8. MINERALIZATION

The Lorraine Mine deposit was mined between 1964 and 1968 with production documented at 661,480 tons of ore with recovered grades of 0.90% Cu, 0.38% Ni and 0.02 oz/ton Au and unspecified amount of silver, platinoids and cobalt (Kish, 1971). The deposit consisted of a single elongate massive sulphide lens up to 40 feet thick and 250 to 350 feet long found along a gabbro-volcanic contact. It had a strike of 065° azinuth, a dip of 70° to the south and an ENE plunge at an average of 55º. Bouchaib (1992) found that sulphide mineralization at Lorraine includes:

a) a semi-massive to massive sulphide core consisting mostly of pyrrhotite with lesser pentlandite, pyrite, chalcopyrite and magnetite relatively enriched in Ni and Co;
b) a disseminated sulphide envelope consisting mostly of chalcopyrite with lesser pyrrhotite and magnetite relatively enriched in Cu, Au, Ag and Zn and;
c) Pd and Pt of no systematic distribution and uncertain affinity.

Lorraine Mine production records clearly indicate a relative overall increase in nickel grade and corresponding decrease in copper grade with depth. However this must be qualified by the fact that the contours of the ore main zone shrank below the third level, such that it became uneconomic to mine below a point between the fourth and fifth level elevations. Although not stated in any of the available mine reports, the writer surmises that the main orebody segregated into chalcophile and nickel-rich zones below the fourth level elevation, which individually, became subeconomic. This is supported by the occurrences of several gold-bearing massive chalcopyrite-quartz veins on the fifth and sixth levels. Also, deep drilling at the -350 to -400 m elevations indicates the presence of a semi-massive to massive nickel-rich zone.

Victor Popov, the mine geologist, calculated a "drill indicated reserve" of 14,000 tons grading 1.25% Ni and 1.03% Cu /ton for this deep zone based on ore grade and width intersections found in five holes systematically drilled form the sixth level, hangingwall, exploration drift (603E). The writer classifies this as an Inferred Mineral Resource recognizing that the drill sections, including even a list of azimuths and dips of individual drill holes are not available. This zone displays a high tonnage potential, as exemplified by DDH U-6-69, which intersected an approximate true width of 22.5 m (74 ft.) grading 0.36% Cu and 0.23% Ni at the -

364 m (1197 ft.) elevation (Mine Manager's Report, March 1967). The available records (monthly mine managers' reports) indicate that there is good potential to expand this zone, particularly down-plunge.

The presence of PGE mineralization is well documented at the Lorraine Mine (Barnes et al, 1993a, Barnes et al, 199b and Bouchaib, 1992). However, no systematic exploration for PGE mineralization has been undertaken on the Lorraine Property to date.

Strong gold mineralization has also been identified at the Lorraine Mine. Descarreaux (1967) describes five copper and gold bearing quartz veins with visible gold in highly sheared basalt in the main drift on the six level with a combined average grade of 0.94 oz Au, 0.72 oz Ag, 2.75% Cu et 0.01% Ni per ton. Several monthly mine manager's reports refer to a second gold zone located in the exploration drift on the sixth level:

"Following completion of 601 South Cross-cut, 601 East and West drifts were advanced a combined total of 138 feet during the month along a fairly strong shear zone in fine grained lavas containing a narrow, broken, auriferrous quartz vein. Assays for a length of 92 feet averaged 1.32 ounces per ton gold, 1.19 ounces per ton silver, and 3.19% copper over a width of 0.92 feet." (Mine Manager's Report, July 1965)

"Going west, 601 W was extended 84 feet along the same zone of strongly sheared lava with minor dikelets of siliceous quartz-feldspar porphyry. Two en echelon quartz-calcopyrite veins were encountered which assayed 0.412 ounces of gold per ton, 0.65 ounces of silver per ton and 3.16% copper across a width of 1.68 feet for a length of 31feet. There is a blank gap of 48 feet between the east end of this vein and the western end of the previously reported vein." (Mine Manager's Report, August 1965)

"601 S X-Cut – Several short holes were drilled to check the vertical extent of the gold-bearing quartz-chalcopyrite vein in 601 drift. No veining was intersected above the level; however, one hole below the level intersected 3.2 feet of 1.56 oz./ton Au and .363 oz/ton Ag. A second hole intersected 2.2 feet of glassy quartz, but no assays are yet available." (Mine Manager's Report, June 1967)

"601 S X-Cut – Two holes below the one above the sixth level were drilled to check the vertical extent of a gold-bearing quartz-chalcopyrite vein. All holes cut a strong shear with weak mineralization over narrow widths. Drilling has been discontinued." (Mine Manager's Report, July 1967)

Hinterland obtained high gold values ranging from 1.3 to 13.8 g/t Au from sulphide bearing samples selected from the mine dump (Fekete, 2000). No systematic pursuit of gold mineralization has yet been undertaken on the Lorraine Property.

There are two other documented mineral occurrences on the property. The first showing straddles the east boundary of the property and consists of disseminated pyrite, pyrrhotite and chalcopyrite in sheared volcanic, gabbro and diorite. The Lorraine Mining Co. excavated 4 trenches and drilled five short holes in the 1960's and reported values up to 0.59% Cu and 0.69% Ni over 6.4 feet in a trench (GM 22132). The eastern half of this showing was mechanically stripped by Loubel Exploration Inc. in August 2001.

The second occurrence consists of a single drill intersection in Hole 39 reported as "a 6 inch band of quartz and pyrite assaying .075 oz. Au per ton and .02% Cu." (Mine Manager's Report, December 1966). This hole was drilled at a site located an unspecified distance southeast of the Lorraine shaft.

9. 2001 EXPLORATION

Hinterland completed a property wide exploration program from September 2001 to February 2002 and consisted of field work and laboratory studies. The field work included linecutting, magnetic surveying, induced polarization surveying, outcrop sampling and mechanical trenching. The goals of the field work were to establish exploration targets by means of geophysical surveys, to prospect and sample as many targets as possible and to test any favourable prospects by mechanical trenching. The laboratory work included petrography, ore microscopy and scanning electron microscopy (SEM) studies on a suite of five sulphide bearing rock samples selected from the Lorraine Mine waste dump. The goal of these studies was to identify the protolith of the rock hosting the sulphide minerlization, identify the sulphide assemblages and their genesis, and to identify the nature of the precious metals (PGE and gold) within the sulphides. The work was implemented and supervised by Hinterland Exploratation Ltd.'s then Vice President of Exploration, Mark Fekete, P.Geo. of Val d'Or, Quebec.

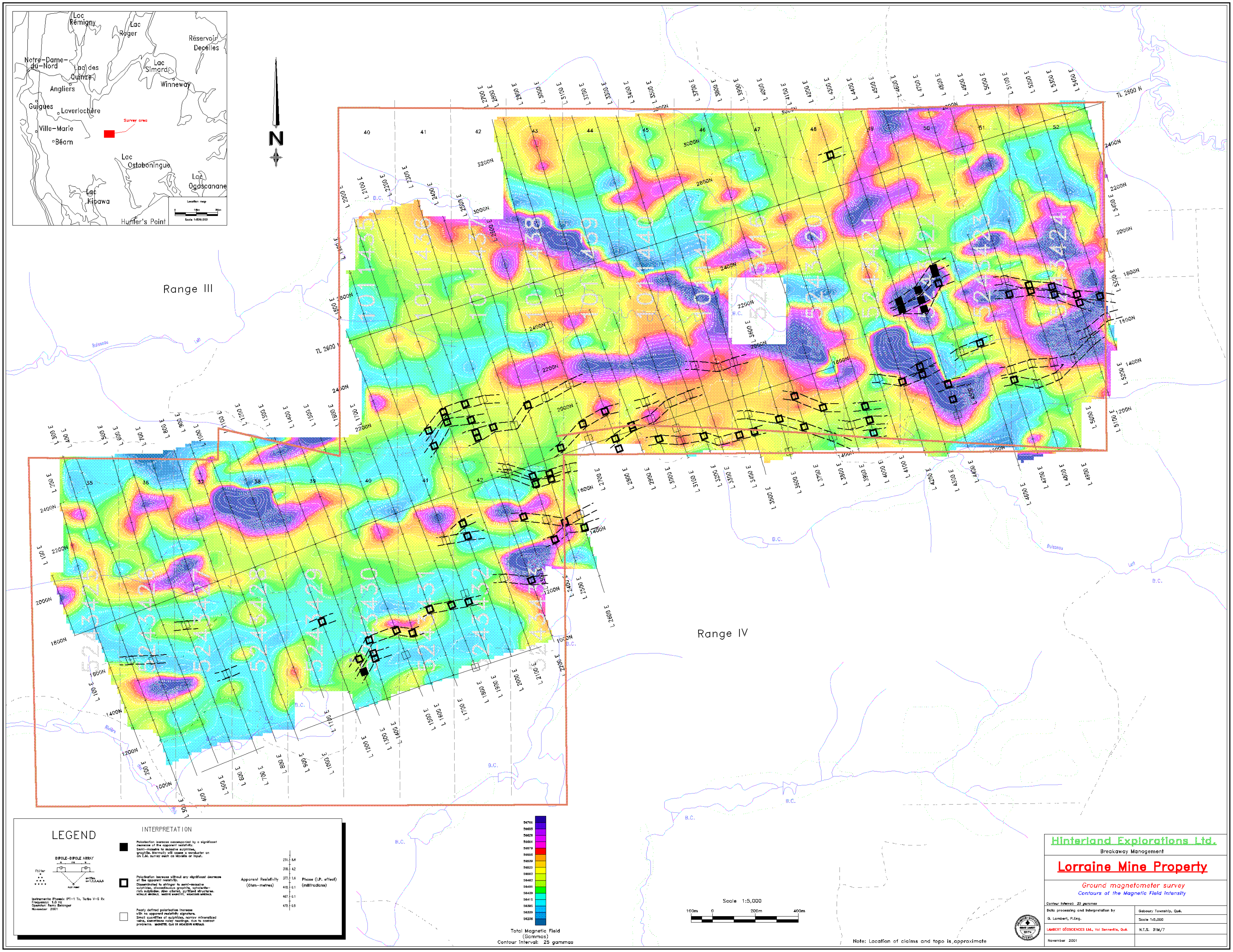
9.1. Geophysics

A grid consisting of 54 lines (L 1+00 mE to 54+00 mE) spaced every 100 m, with 25m stations, and oriented at 070° azimuth was cut during September/October, 2001. A total of 100.7 km of lines were cut including lines, base lines, tie lines, range lines and lot lines. Langis Plante, P.Eng. of Val d'Or, Quebec prepared a digital base map and corrected airphoto mosaic with digital topographic data purchased from the Québec Ministry of Natural Resources. The grid and subsequent work were plotted on the base map.

The magnetic survey was completed by Géophysique TMC Inc. of Val d'Or, Quebec in November 2001. Rémy Bélanger Geophysics of Rouyn-Noranda, Quebec completed the induced polarization survey in October and November 2001. A total of 82.0 km of magnetic data and 49.0 km of and induced polarisation data was collected. The data for both surveys was processed, plotted and interpreted by Gérard Lambert, P.Eng. of Val d'Or, Quebec. The full details and results of the surveys are presented in a report submitted to Hinterland on December 16, 2001 (Lambert, 2001). A compilation of the survey results is included in this report at 1:5000 scale (Figure 6).

A number of linear, moderately magnetic, east trending features were identified in the southern parts of Lots 43 to 48, Range 3 and the northern parts of Lots 35 to 43, Range 4. These features roughly correspond to bodies of "dioritic andesite-microgabbro" mapped by Kish (1971). The elevated magnetic quality of these bodies implies a gabbroic composition. These areas should be examined by prospecting. A narrow, discontinuous, relatively strong magnetic trend was detected from Lot 43 to 51, Range 3. This trend, generally oriented at 140° azimuth, lies south of and is parallel to Lett Creek. A series of diabase dykes has been mapped along this trend (Kish, 1971) and likely cause the elevated magnetic response. The area around the former Lorraine Mine shows numerous rounded to eliptical magnetic highs. The numerous gabbro bodies found in this part of the property cause this magnetic pattern.

Lambert (2001) interpreted the induced polarization data by categorising the chargeability responses as strong, moderate and weak. A strong response is defined as a marked polariztion increase accompanied by a significant decrease in the apparent resistivity. This type of response



Hinterland Explorations Ltd.
Breakaway Management
Lorraine Mine Property
Ground magnetometer survey
Contours of the Magnetic Field Intensity
Contour interval: 25 gammas
Data processing and interpretation by
G. Lambert, P.Eng.
LAMBERT GÉOSCIENCES Ltd., Val Senneville, Qué.
November 2001
Gaboury Township, Qué.
Scale 1:5,000
N.T.S. 31M/7
LEGEND
DIPOLE-DIPOLE ARRAY
Filter
a=25m
n=1,2,3,4,5,6
PLOT POINT
Instruments: Phoenix IPT-1 Tx, Turbo V-5 Rx
Frequency: 1.0 Hz
Operator: Remy Belanger
November 2001
INTERPRETATION
Polarisation increase accompanied by a significant decrease of the apparent resistivity.
Semi-massive to massive sulphides, graphite. Normally will cause a conductor on an E.M. survey such as Maxmin or Input.
Polarisation increase without any significant decrease of the apparent resistivity.
Disseminated to stringer to semi-massive sulphides, discontinuous graphite, sphalerite-rich sulphides. Also altered, pyritized structures. METALLIC MINERALS, MASSIVE MAGNETITE, MICACEOUS MINERALS.
Poorly defined polarisation increase with no apparent resistivity signature.
Small quantities of sulphides, narrow mineralized veins, sometimes noisy readings, due to contact problems. MAGNETITE, CLAY OR MICACEOUS MINERALS.
Apparent Resistivity
(Ohm-metres)
Phase (I.P. effect)
(milliradians)
Total Magnetic Field
(Gammas)
Contour Interval: 25 gammas
Scale 1:5,000
Note: Location of claims and topo is approximate
Range III
Range IV
Location map
Survey area
Lac Rémigny
Lac Roger
Réservoir Decelles
Notre-Dame-du-Nord
Lac des Quinze
Lac Simard
Winneway
Angliers
Guigues
Laverlochère
Ville-Marie
Béarn
Lac Ostaboningue
Lac Ogascanane
Lac Kipawa
Hunter's Point
TL 2600 N

is normally associated with semi-massive to massive sulphides or graphite and can usually be detected by electromagnetic methods such as MaxMin or INPUT. A moderate response is defined by a marked polarization increase without any significant decrease in the apparent resistivity. This type of response may be caused by disseminated to stringer to semi-massive sulphides but also by disseminated magnetite or micaceous minerals. Electromagnetic methods are generally not very effective at detecting these types of mineralization. A weak response is defined as a poorly defined polarization increase. This type of responses may be due to small quantities of sulphides, magnetite, clay or micaceous minerals or may be due to contact problems.

The induced polarization survey generated 75 chargeability responses in the moderate to strong category. These responses can be grouped into 22 distinct linear anomalies that are difficult to prioritize based on the available data. The higher resistivity (> 5,000 ohm-m at N=1) areas outlined by the resistivity survey are probably associated with bedrock ridges. These areas offer the best possibility of locating outcrops and subcrops by prospecting or mechanical trenching. Conversely, areas of low resistivity represent areas saturated with water (i.e. swamps or creeks) and areas of thicker overburden. These areas will probably be difficult to examine by either prospecting or trenching methods and will probably have to be tested by diamond drilling. The resistivity survey detected one very unusual area characterized by very low resistivity and two strong induced polarization responses. This anomalous area corresponds to the reclaimed tailings pond of the former Lorraine Mine. The remaining 20 linear chargeability anomalies offer good exploration targets and warrant further investigation.

9.2. Prospecting and Trenching

The prospecting, trenching and sampling program was carried out from late September to late November, 2001. This work was done by Mark Fekete, P.Geo. and prospectors Randon Ferderber of Val d'Or, Quebec and Fred Kiernicki of Kirkland Lake, Ontario. The full details and results of this work are presented in a report submitted to Hinterland on February 20, 2002 (Fekete, 2002). A compilation of the sample and trench locations is included in this report at 1:5000 scale (Figure 6).

The sampling procedure, security measures, sample preparations and analytical methods followed are described in detail by Fekete (2002) as follows:

> "A description of each sample including its location, sample type (i.e. grab, float etc.), rock type and mineralization was recorded (Appendix B). 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 samples were subsequently sealed in rice bags and delivered either directly or by bus to XRAL Laboratories ("XRAL") in Rouyn-Noranda, Quebec for analysis (Appendix C).
>
> XRAL prepared and analyzed each sample as follows. The entire sample was crushed to 90% -10 mesh. A 300 gram portion was split out with a Jones riffle and pulverized to 90% -200 mesh in a ring and puck type pulverizer. A one-assay ton (29.166 gram) portion was weighed from the pulp and analyzed for gold, platinum and palladium by lead bead Fire Assay with a Direct Current Plasma (DCP) Emission Spectroscopy finish. The lower detection limits for this method are stated by XRAL at 1 ppb Au, 10 ppb Pt and 1 ppb Pd. The upper detection limits are stated at 10,000 ppb for each metal. Gold values over 1000 ppb were automatically checked by XRAL with a second lead bead fire assay followed by a gravimetric finish. Platinum and palladium values over 1000 ppb were

automatically checked by XRAL with a second lead bead fire assay followed by DCP finish. Quality control was maintained by inserting one standard and one blank for every 28 samples in a batch as well as assaying 10% of samples in duplicate. A 0.50 gram portion was weighed from the pulp and analyzed for silver, copper, nickel and cobalt by partial acid digestion followed by Atomic Absorption (AA) finish. The lower detection limits for this method are stated by XRAL at 0.02 ppm Ag, 2 ppm Cu, 2 ppm Ni and 2 ppb Co. The upper detection limits are stated at 100 ppm Ag and 10,000 ppm for Cu, Ni and Co. Values over 100 ppm Ag and over 10,000 ppm Cu, Ni and Co were automatically checked by XRAL with a total acid digestion followed by AA finish. Quality control was maintained by inserting one standard and one blank for every 48 samples in a batch as well as analyzing 10% of samples in duplicate.

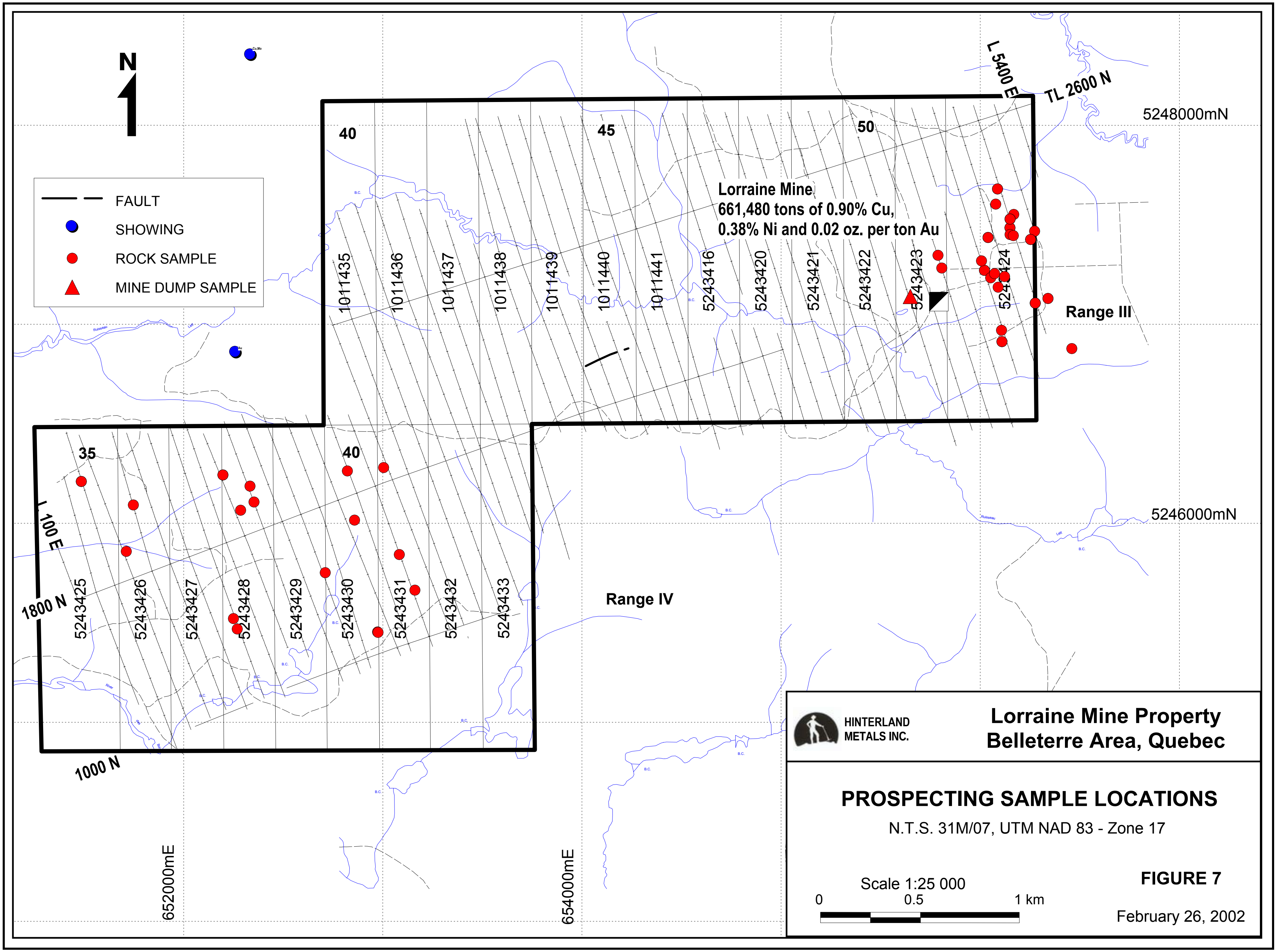
It is the writer's opinion that the sampling procedure, security measures, sample preparations and analytical methods described above were diligently followed and were adequate to meet industry standards commonly accepted for this level of exploration. The writer has relied upon the adequacy and accuracy of the analytical results and has not independently verified those results.

The prospecting effort was directed at the eastern and western parts of the property where logging roads provided the best access. The central part of the property was not prospected at all. Outcrops were infrequent and generally confined to low, intermittent ridges. Prospecting focused on areas between the grid lines and so sample sites were recorded with Garmin 12XL GPS receivers according to UTM co-ordinates based on the NAD 83, Zone 17 map projection and plotted on a 1:5000 scale plan map (Figure 7).

Fifty-five samples were collected from 44 prospecting sample sites. No significant discoveries were made although several trends are apparent from the sample data. Generally the better platinum, palladium, copper, nickel and cobalt values were obtained from gabbroic rocks. Gabbros with values of >1200 ppb Cu, >500 ppb Ni and >100 cobalt invariably show values of >27 ppb Pt+Pd. Five samples meet this description (28624, 28625, 28626, L026A and L026B) and show a range of 27 to 54 ppb). All of these samples contained visible sulphides including chalcopyrite and were collected from the old showing located on the eastern boundary of Gaboury Township. Two samples with high copper values but low nickel and cobalt values did not return significant PGE and are from rocks other than gabbros (L005 and L0029). Some weakly anomalous PGE values, ranging from 15 to 27 ppb Pt+Pd, were obtained from seven samples of gabbro and "volcanics" (probably fine-grained gabbros) mineralized with minor pyrite and pyrrhotite (L013A, L015, L028, L056, L060, L070, and 28631). These samples returned very low copper, nickel and cobalt values sugggesting that both pyrite and pyrrhotite contain PGE.

Weakly anomalous gold values ranging from 54 to 279 ppb Au were obtained in 11 samples. These elevated gold values were obtained from felsic dykes or usually sheared volcanics and gabbros. Except for an apparent affinity for copper, no other metal associations can be determined from the gold data.

Six trenches were completed in mid-November with an excavator. The bedrock in the trenches was cleaned by pressure pump, pick and shovel, mapped at a scale of 1:100 and systematically sampled. Based on favourable assay results, several sites in the trenches were subsequently blasted and sampled in early December.



N
FAULT
SHOWING
ROCK SAMPLE
MINE DUMP SAMPLE
40
45
50
35
40
L 5400 E
TL 2600 N
5248000mN
5246000mN
Lorraine Mine
661,480 tons of 0.90% Cu,
0.38% Ni and 0.02 oz. per ton Au
1011435
1011436
1011437
1011438
1011439
1011440
1011441
5243416
5243420
5243421
5243422
5243423
5243424
Range III
Range IV
L 100 E
1800 N
1000 N
5243425
5243426
5243427
5243428
5243429
5243430
5243431
5243432
5243433
652000mE
654000mE
HINTERLAND
METALS INC.
Lorraine Mine Property
Belleterre Area, Quebec
PROSPECTING SAMPLE LOCATIONS
N.T.S. 31M/07, UTM NAD 83 - Zone 17
Scale 1:25 000
0
0.5
1 km
FIGURE 7
February 26, 2002

Hin0001.wor

The first trench was done on L52+00 mE and targeted a linear induced polarization anomaly. The trench exposed a folded sequence of metabasalts interlayered with metagabbros and metadiorites. Strong shear zones were observed in the north and south ends of the trench. Anomalous gold values ranging from 105 to 1340 ppb Au and slighlty anomalous copper values reaching a maximum of 1540 ppb Cu were determined from samples of the gabbro. PGE, Ag, Ni and Co values are relatively low and of no interest. Selected grab samples of the sheared diorite returned gold values ranging from 108 to 5590 ppb. Chip samples collected across the blasted section returned a weighted average of 1.0 g/t Au over 5.0 m with values ranging from 16 to 6380 ppb Au.

The second trench was also done on L52+00 mE on the eastern boundary of the property just 100 m south of the first trench. The trench targeted a linear induced polarization anomaly coincident to the trend of a mineralized zone exposed in a trench excavated directly adjacent to the boundary by Loubel Explorations Inc. in August of 2001. Except for a narrow (~5 m) felsic dyke, only gabbro was exposed. The mineralized zone mentioned above was originally discovered by Lorraine Mining as described in Section 4. It crosses the northern end of the trench where one of Lorraine's original blast pits is evident. The northern limit of the zone could not be established due to a low area and small creek that prevented continued digging to the north.

The zone consists of coarse blebs of interconnected pyrite and pyrrhotite disseminated in dark green gabbro adjacent to a band of sulphide barren leucogabbro. The nature of the mineralization and sudden textural change in the gabbro suggest that the sulphide blebs may be of primary magmatic origin. The best sample returned only 1270 ppb Cu. Two very weakly anomalous platinum values were obtained.

The third trench was dug on L50+00 mE to test two closely spaced, linear induced polarization anomalies roughly corresponding to a sulphide zone found beside a logging road. The trench uncovered diorite bounded to the north and south by gabbro. The gabbro-diorite contacts are marked by shearing, mainly in the gabbro, and brecciation, mainly in the diorite. The assay results from 27 grab samples taken from the northern shear zone show weakly anomalous gold, PGE, silver and copper values.

The remaining three trenches failed to expose any mineralization of significance.

As part of the sampling program, 20 sulphide bearing samples were randomly selected by Mark Fekete from the Lorraine Mine waste dump in an attempt to establish some qualitative features about the mineralization. The following table summarizes the results:

Metal	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Ni ppm	Co ppm
Low	32	<10	4	0.8	638	257	53
High	2811	112	336	17.4	25900	7060	367
Average	1020	48	84	5.7	7718	1300	127

The metal averages in this table do not represent mineral resource or reserve grades. However, they do illustrate some features of the Lorraine mineralization:

a) copper is the dominant base metal;
b) gold is the dominant precious metal;
c) the average gold content is >1.0 g/t and adds significant value to the mineralization;
d) the average platinum to palladium ratio is 1:2 and;
e) the combined average of the platinum and palladium of 134 ppb is significant.

The plot of Cu against Au, Pt, Pd, Ag, Cu and Co (Figure 8) shows that Cu has a very strong positive correlation with Pd and Ag, a strong positive correlation with Pt and Au and a negative correlation with Ni and Co. A plot of Ni against Au, Pt and Pd (Figure 9) shows a moderate correlation with Pd, no correlation with Pt and a slightlty negative correlation with gold. A plot of Pd against Pt shows a weak positive correlation (Figure 10). To summarize these plots it may be said that:

a) gold, platinum and silver have a strong affinity with copper and a negative affinity with nickel suggesting that they are related to and restricted to copper-rich sulphides;
b) nickel and cobalt have a strong affinity suggesting that they occur together in nickel-rich sulphides (i.e. pyrrhotite and pentlandite);
c) palladium shows a positive correlation with both copper and nickel suggesting that it may be found in both copper-rich and nickel-rich sulphides and;
d) palladium shows only a weak positive correlation with platinum suggesting that the metals do not always occur together.

A comparison of the average Au, PGE, Ag and Cu values obtained in Trench 3 with the averages obtained from the Lorraine Mine dump samples shows a very close correlation (Figure 11). When the northern shear zone, which is subvertical and trends at 065° azimuth, is plotted at a larger scale it falls exactly on the projected trend of the Lorraine Mine deposit. The assay and structure evidence strongly supports the conclusion that the mineralization in Trench 3 is directly related to the Lorraine Mine mineralization.

9.3. Petrography and SEM Studies

In October 2001, Mark Fekete, selected a suite of five hand specimens from the Lorraine Mine dump. An attempt was made to obtain the complete range of mineralization exposed in the dump so each hand specimen was selected on the basis of its sulphide composition and texture. A portion of each sample was sent to XRAL Laboratories for analysis. XRAL followed the same crushing and pulverizing procedures and assay methods for gold, platinum and palladium as for the prospecting and trenching samples (Section 8.2). In addition, Fekete (2002) describes the following analytical procedures for each sample:

> "…, a 25.0 gram portion was weighed from the pulp and analyzed for Ru, Rh, Re, Os and Ir by nickel sulphide bead Fire Assay with a DCP finish. The lower detection limits for these elements are 1 ppb for Ru, Rh and Re, 3 ppb for Os and 0.1 ppb for Ir. Also, a 0.25 gram portion was weighed from the pulp and analyzed for 28 elements by partial acid digestion with an Induced Coupled Plasma Emission Spectroscopy finish. These elements, with their detection limits, are listed on the assay certificate (Appendix C). Quality control was maintained with checks, blanks and standards."

It is the writer's opinion that the sampling procedure, security measures, sample preparations and analytical methods applied to these five samples was diligently followed and is adequate to

Figure 8. Lorraine Mine Dump Samples - Correlation of Cu to Au, Pt, Pd, Ag, Cuy, Ni and Co

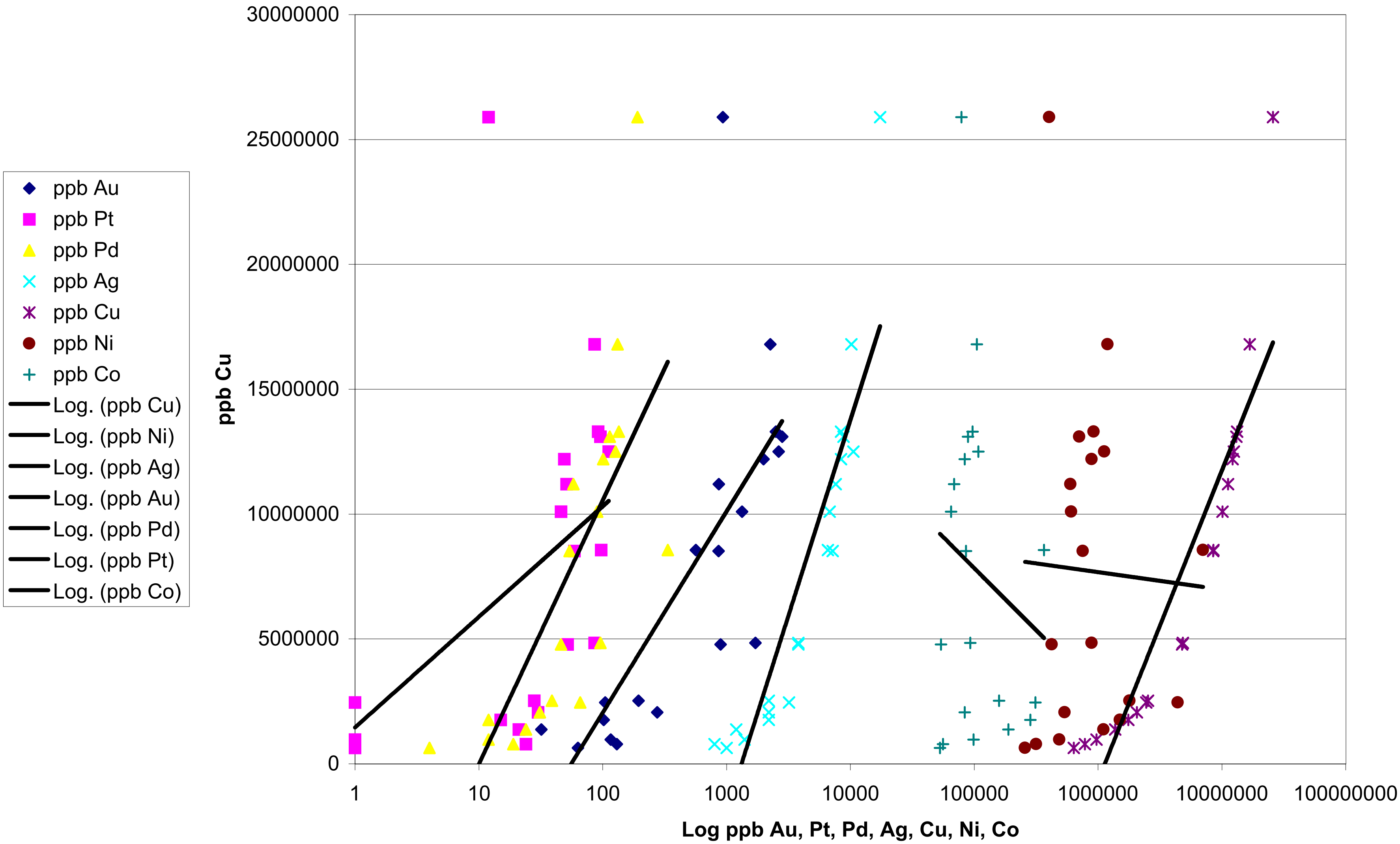


Figure 9. Lorraine Mine Dump Samples - Correlation of Ni to Au, Pt, Pd

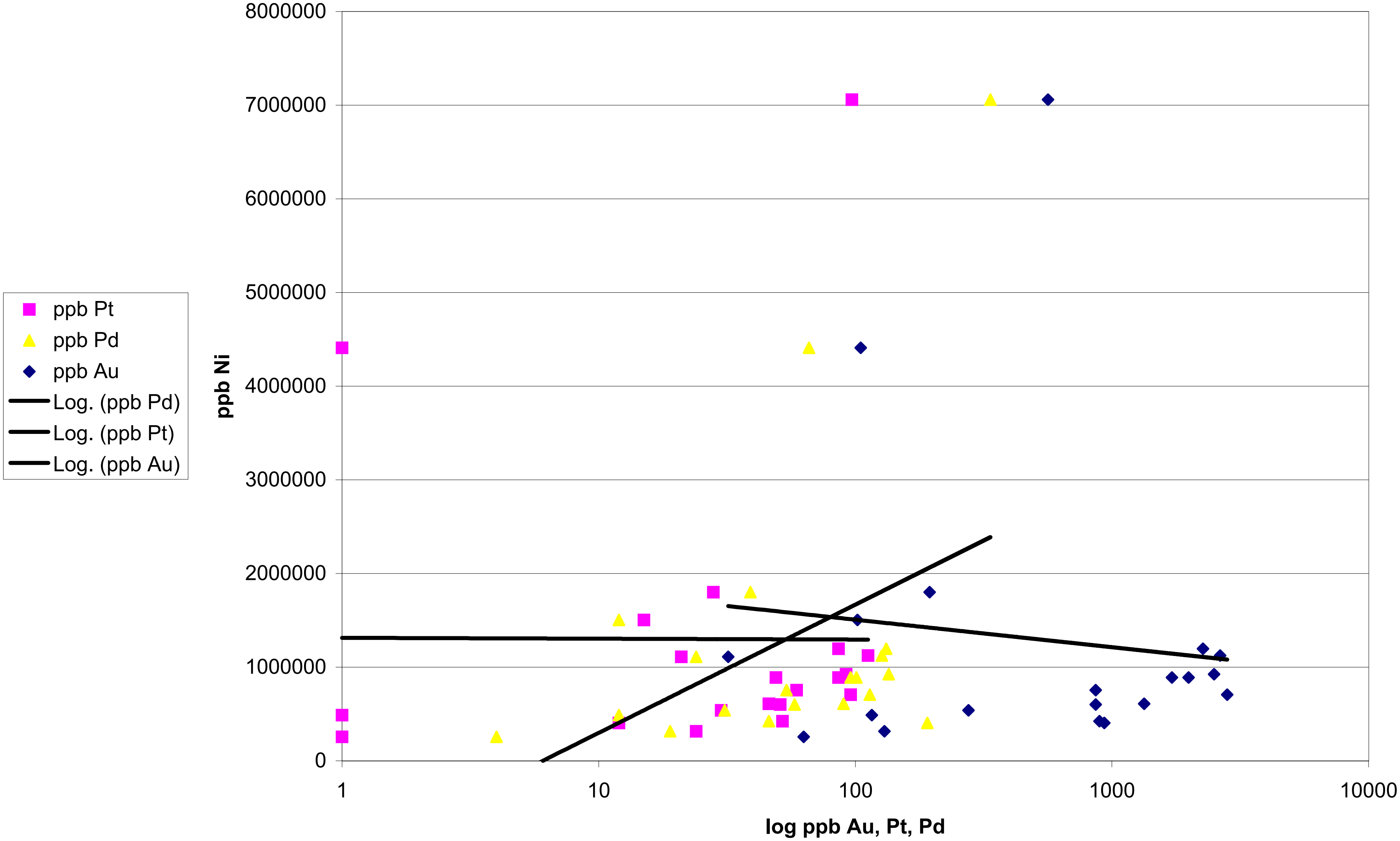


Figure 10. Lorraine Mine Dump Samples - Correlation of Pd to Pt

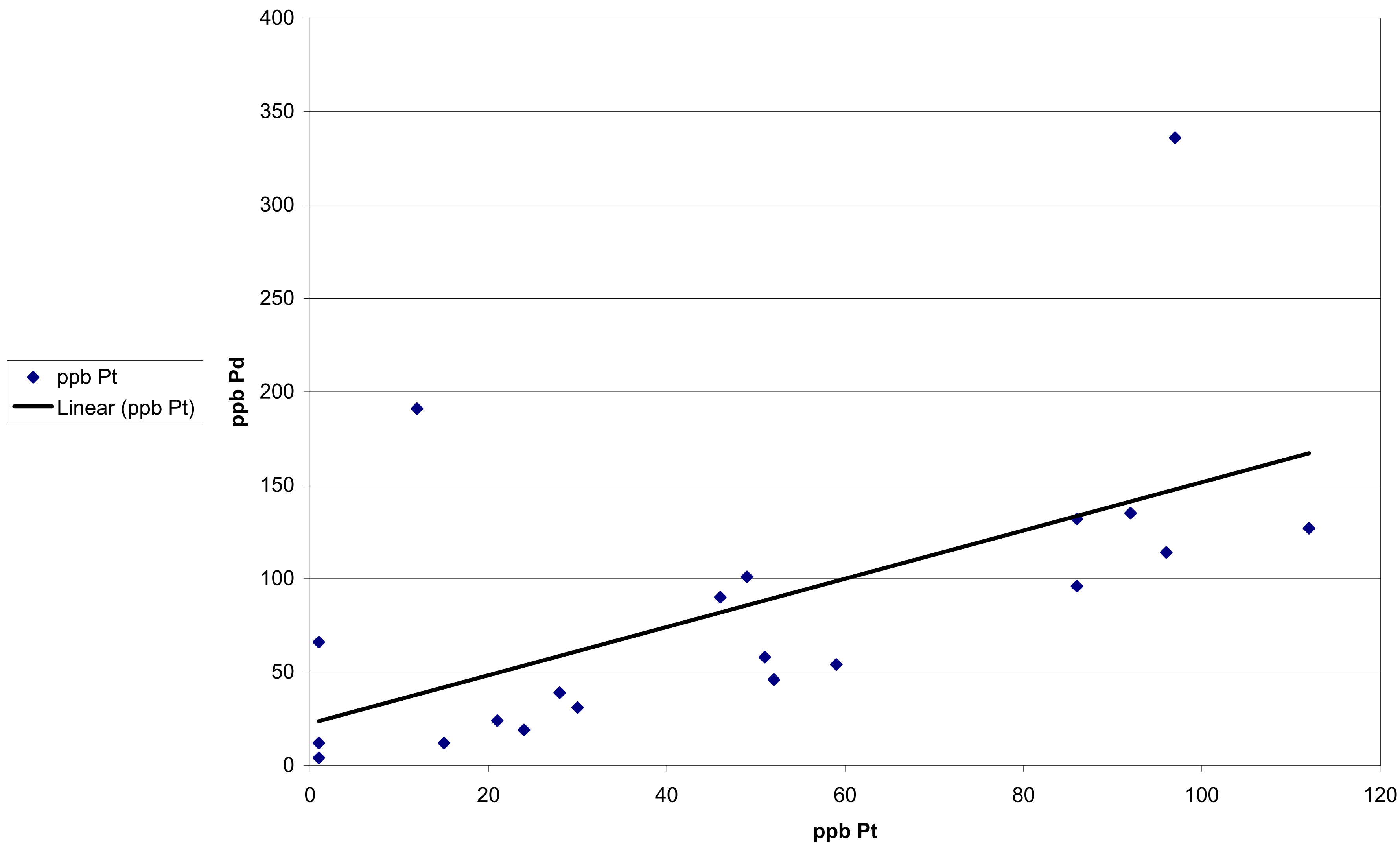
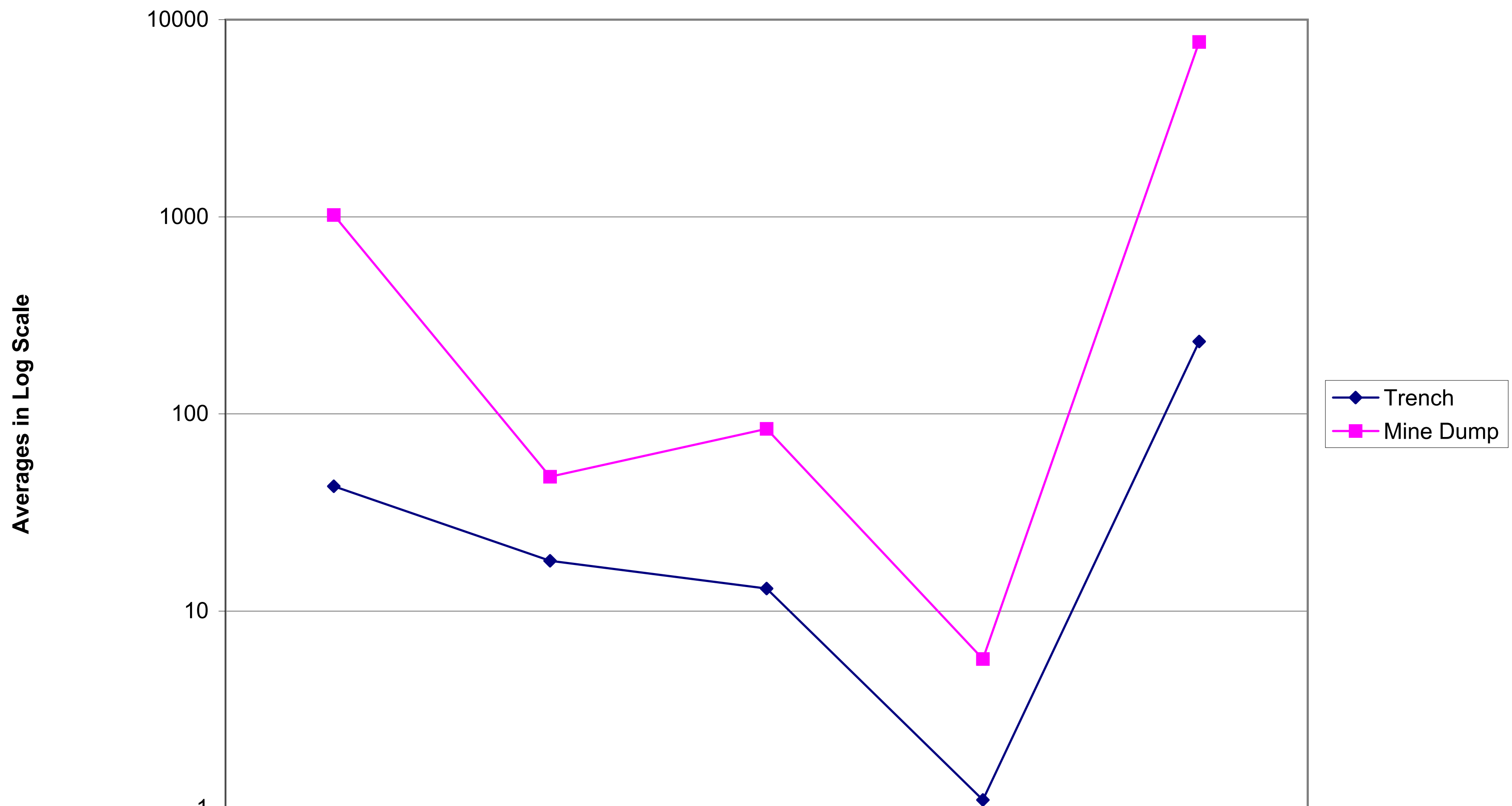


Figure 11. Comparison of Trench 3 to Mine Dump Sample Results



	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppb
Trench	43	18	13	1.1	233
Mine Dump	1020	48	84	5.7	7718

meet industry standards commonly accepted for this level of exploration. The writer has relied upon the adequacy and accuracy of the analytical results and has not independently verified those results.

The remaining portions of the samples were sent to Kishar Research Inc. in Ottawa, Ontario for petrography, ore microscopy and scanning electron microscopy studies. The full details and results of these studies are presented in a report submitted to Hinterland on January 30, 2002 (Kishar, 2002).

All five samples represent metamorphosed gabbro with an essential metamorphic assemblage of epidote+hornblende/actinolite+titanite/magnetite+quartz±biotite±feldspar. The least crystallized metagabbro micro-domains do not contain sulphide implying that all of the samples represent sulphide remobilization related to thermotectonism. Two metamorphic events are recognized as prograde to amphibolite facies followed by retograde transition into upper greenschist-lower amphibolite facies.

The epidote amphibolite facies is characterized by thorough recrystallization of the mafic intrusion with accompanying intensive Ca-metasomatism characterized by fine to medium grained epidote porphyroblasts and is accompanied by quartz+actinolite+titanite+trace carbonate±chlorite(?)+sulphide. This prograde recrystalliztion is not associated with a penetrative fabric at the scale of either hand specimen or thin section. Upper greenschist-lower amphibolite facies retrogression is recorded by the development of a penetrative fabric formed by chlorite rich foliation planes. Retrograde chlorite is Mg-rich and is stable with prograde epidote+hornblende/actinolite. Sulphide was remobilized during this retrograde event.

The sulphide bearing rocks were divided into four subtypes based on the amount and distribution style of the sulphides: LT-01 and -05 evenly disseminated; LT-03 interconnected moderately disseminated; LT-02 interconnected heavily disseminated to semi-massive breccia matrix sulphide; LT-04 massive breccia matrix sulphide. The sulphide-oxide assemblage in all subtypes is represented by the Fe-mineral assemblage of pyrrhotite+pentlandite+chalcopyrite+ pyrite+sphalerite+magnetite.

The sulphide types remobilized during prograde metamorphism include evenly disseminated sulphide (LT-01 and -05), the interconnected heavily disseminated to semi-massive breccia matrix sulphide (LT-04) and the massive breccia matrix sulphide (LT-05). The latter two types probably represent a textural continuum. Chalcopyrite is the most abundant sulphide associated with the intense prograde Ca-metasomatism (epidotization) event and is accompanied by varying amounts of pyrite+pyrrhotite+pentlandite+sphalerite. Relative amounts of different sulphides vary rapidly within and between sulphide types, indicative of formation due to thermotectonic processes. Chalcopyrite rich sulphide was injected into non-sulphide bearing gabbro resulting in a continuum of texture ranging from weakly fragmented into breccia matrix massive sulphide. Sphalerite abundance is directly related to chalcopyrite content.

The prograde mineral assemblage above was remobilized into chlorite rich foliation planes during upper greenschist-lower amphibolite facies retrogression. Chalcopyrite and sphalerite

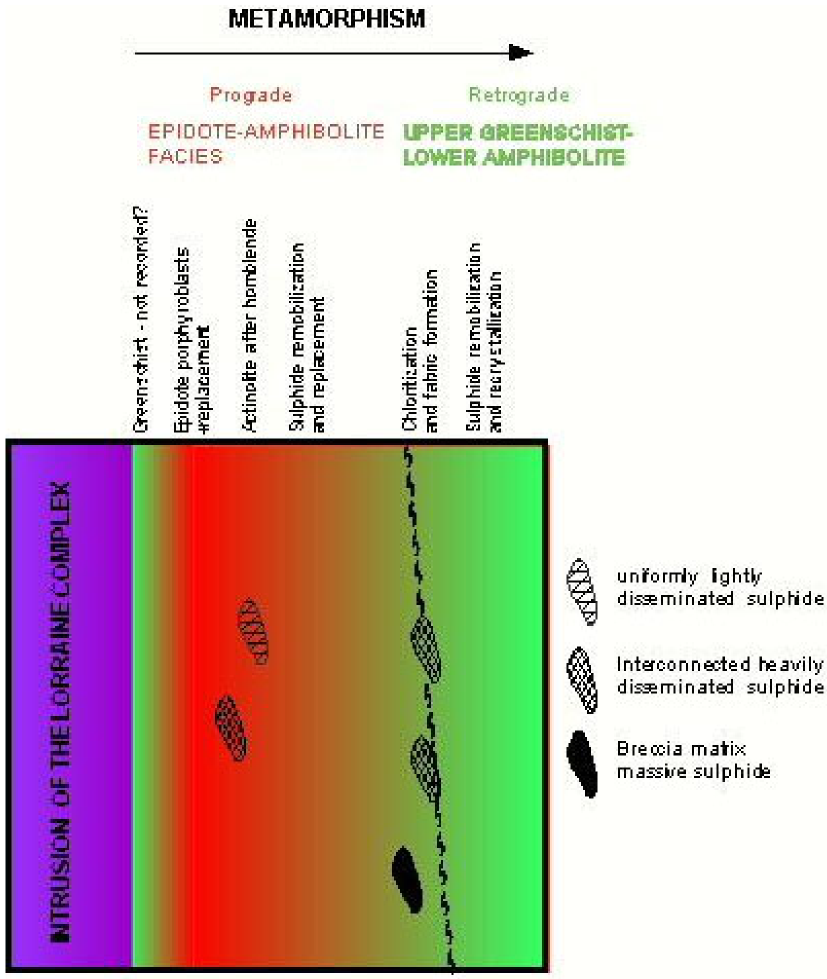


Figure 12. Diagrammatic metamorphic histrory of the Lorraine Intrusion (modified after Kishar, 2002)

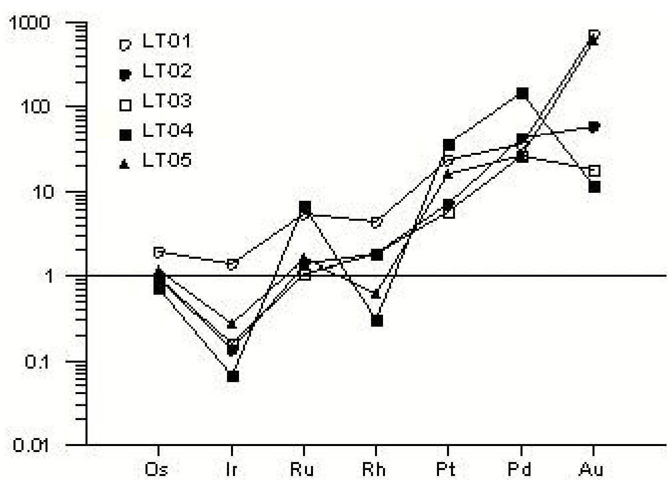


Figure 13. PGE Plot for sulphide/primitive mantle, Samples LT-01 to LT-05 (modified after Kishar, 2002)

show the greatest mobility. Retrograde sulphide is represented by interconnected moderately disseminated textures (LT-03).

A wide spectrum of telluride and bismuthide minerals was identified including hessite, volynskite, tellurobismuthite, melonite, Pt and/or Pd-bearing melonite, merenskyite with Ni (Pt+Pd) or Bi (Pd) phases and michenerite. Native gold and silver were also identified. These tellurides, bismuthides and native metals occur as inclusions in prograde and retrograde minerals, as inclusions in sulphides interpreted to be remobilized during prograde and retrograde events and along the grain boundaries of metamoprhic silicates and sulphides. The diversity of textural associations of these minerals clearly indicates that PGE+Au+Ag were, similar to the sulphides, remobilized and precipitated by prograde (i.e. Ca-rich epidote) and retrograde (i.e. Mg-rich chlorite) hydrothermal fluids.

Carignan et al (1993) determined Proterozoic (circa 2.1 Ga) lead isotope dates from a suite of Lorraine Mine sulphide samples. This surprising result indicates that a protracted thermotectonic history ranging from Archean to Proterozoic provided ample oppurtunuity for the Lorraine sulphides to be modified and recrystallized by hydrothermal processes.

The PGE concentrations for the sulphide samples were plotted against the primitive mantle. This plot clearly shows that the Lorraine sulphides are enriched in Pt and Pd compared to the primitive earth standard whereas the IPGE metals Os, Ir, Ru and Rh are depleted. This agrees with the data presented by Bouchaib (1992) and suggests the existence of an IPGE enriched sulphide existing at depth on the Lorraine property.

The Cu-Ni-PGE sulphides found at Lorriane are very similar to numerous other metamorphosed PGE-bearing deposits found in mafic-ultramafic complexes worldwide. The Konttijarvi layered mafic intrusion in Finland, the Kingash Massif in Siberia, the las Aguilas deposit in Argentina, the Abu Swayel deposit in Egypt, the Kambalda deposit in Australia and the Bacuri complex in Brazil are all cited as examples that illustrate the link between metamorphically generated hydrothermal processes and mineralogically complex Cu-Ni-PGE mineralization.

10. Adjacent Properties

The resurgence of exploration activity in the Timiskaming region was brought about by a dramatic increase in platinum and palladium prices in December 1999. Although the prices of these metals has declined significantly from their December 2000 high, solid demand for palladium and platinum is likely to continue.

Significant Cu-Ni-PGE drill intersections have been encountered and publically disclosed by Aurora Platinum Corp. on its Midrim and Belleterre properties (Aurora, 2000, 2001a and 2001b) located some 20 km northwest of the Lorraine Property. Diamond drilling is currently underway on Loubel Explorations Ltd.'s adjacent Kelly Lake property (Loubel, 2002). The writer has been involved in exploration of the Kelly Lake property and consequently has a thorough knowledge of the Cu-Ni mineralization found on that property.

The writer has not verified the information made public on either the Midrim-Belleterre or Kelly Lake properties and **any such information is not necessarily indicative of the mineralization on the Lorraine property**. However, this information does indicate the Belleterre-Angliers belt has solid potentiel for significant Ni-Cu-Co-Pt-Pd deposits in similar geological settings. In particular, the Lorraine property is well documented to contain Cu-Ni-PGE bearing sulphides in close spatial association with gabbroic intrusions and as such also offers similar potential.

11. MINERAL PROCESSING AND METALLURGICAL TESTING

To date, Hinterland has not completed any mineral processing and/or metallurgical testing on the Lorraine Mine Property.

12. MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

To date, Hinterland has not established a mineral resource or mineral reserve estimate for the Lorraine Property. Throughout this report reference is made to a “drill indicated reserve” of 14,000 tons grading 1.25% Ni and 1.03% Cu /ton calculated by Victor Popov, Mine Geologist in 1967 (GM 22133). The writer classifies this as an Inferred Mineral Resource according to the definition given the term by the CIM Standard on Mineral Resources and Reserve Definitions and Guidelines adopted by CIM Council on August 20, 2000. The quanity and grade of this resource was estimated on the basis of five drill hole intersections and reasonably assumed geological and grade continuity. Although it appears that the data used to calculate the resource was gathered through appropriate techniques, the age of the data makes verification of the data impossible.

The author cautions the the reader that by definition an Inferred Mineral Resource is an uncertain estimate determined with insuffiсeint confidence and must be excluded from estimates forming the basis of feasibility or other ecomomic studies. In the context of this report, the reader should consider the stated resource as an indication of mineral potential rather than an indication of economic potential.

13. CONCLUSIONS

A strong spatial relationship between Cu-Ni-PGE mineralization and gabbroic rocks of the Archean Belleterre-Angliers Greenstone Belt is well documented and emphasized by the recent success of Aurora Platinum Corp. on the Midrim and Belleterre properties (Aurora, 2000, 2001a and 2001b). Past production of copper, nickel and gold (silver, PGE and cobalt) from the Lorraine Mine point to the polymetallic potential of the Lorraine property.

The Lorraine Mine deposit consisted of a single elongate massive sulphide lens found along a sheared gabbro-volcanic contact. The lens, relatively enriched in nickel and cobalt, contained mostly pyrrhotite with lesser pentlandite, pyrite, chalcopyrite and magnetite. A disseminated sulphide envelope relatively enriched in copper and consisting mostly of chalcopyrite with lesser pyrrhotite, sphalerite and magnetite surrounds the core mineralization.

Assay results confirm that the Lorraine sulphides contain significant gold, silver, platinum, and palladium. Gold, silver and platinum show a strong correlation with copper suggesting that the disseminated sulphide envelope is relatively enriched with these metals. Palladium shows a strong correlation with both copper and nickel-cobalt suggesting that palladium may be found in both the massive nickel-cobalt sulphide-type and the disseminated copper sulphide-type. The Lorraine sulphides are IPGE depleted and show extremely fractionated PGE patterns

Petrography studies reveal that the Lorraine rocks underwent complex deformation consisting of an initial prograde stage of Ca-metasomatic (i.e. epidotization) transition to amphibolite facies followed by a secondary retrograde event of penetrative Mg-enriching (i.e. chloritization) regression to upper greenschist-lower amphibolite facies.

Ore microscopy studies indicate that the sulphides were remobilized by both metamorphic phases. The prograde event produced complex injection and brecciation textures ranging from evenly disseminated sulphides to interconnected heavily disseminated and semi-massive breccia matrix sulphides to massive breccia matrix sulphides. These textures are accompanied by complex sulphide assemblages dominated by chalcopyrite with with varying amounts of pyrite, pyrrhotite, pentlandite and sphalerite. The retrograde event saw the remobilization of the prograde sulphide assemblage into chlorite rich foliation planes. Chalcopyrite and sphalerite show the greatest mobility.

The metamorphic tenor of the host rocks and the wide range of textures, compositions and metal and silicate affinities shown by the sulphides suggest the formation of the Lorraine Mine sulphide deposit took place in two steps. A Cu-Ni body depleted in Os-Ir-Ru-Rh was lens was developed in a gabbroic intrusion by magmatic fractionation. The body was subsequently subjected to prograde followed by retrograde thermotectonic deformation resulting in hydrothermal redistribution of the sulphides into a pyrrhotite+pentlandite (Ni-Co) dominated, Pd-enriched core surrounded by a chalcopyrite (Cu) dominated, Au-Ag-Pt-Pd enriched envelope.

This magmatic-hydrothermal hybrid deposit model implies that the sulphide bodies were deposited elsewhere from their point of origin (i.e. potential sulphide bodies may occur within or directly adjacent to the gabbros or they may be detached altogether from the gabbros). Exploration should target sites where the sulphides may have been deposited rather than where they may have originated and therefore, the exploration focus should be on structural features in proximity to the gabbroic intrusions and not on the magmatic character of the gabbroic intrusions themselves.

The primary potential of the Lorraine property is the strong possibility for more polymetallic massive sulphide bodies existing down-plunge or downdip from the former main Lorraine orebody. In 1966-67, deep drilling by the Lorraine Mining Co. Ltd. outlined an Inferred Mineral Resource of 14,000 tons grading 1.25% Ni and 1.03% Cu (Popov, 1967) in a down-plunge position below the mine workings at the -350 to -400 m elevation. Drilling in the immediate vicinity of this resource indicates large tonnage potential at lower grades as exemplified by DDH U-6-69, which intersected an approximate true width of 22.5m (74 ft.) grading 0.36% Cu and 0.23% Ni. Unfortunately, drill sections and logs are no longer available. No PGE or cobalt grades are recorded with any of this drilling, but in this type of deposit higher nickel grades are accompanied by higher PGE contents. The recorded occurrence of small, unexpected pods of ore, en echelon from the main ore zone (mine managers' reports), creates the possibility that additional such zones may occur in the immediate vicinity of the former mine.

IPGE depletion and extreme fractionated PGE patterns in the Lorraine sulphides suggest that any possible sulphide bodies located at depth may be enriched in Os-Ir-Ru-Rh. There is also strong, thusfar untested, potential for significant gold, silver and PGE enrichment within the chalcopyrite rich, disseminated sulphide envelope surrounding the former mine workings.

The shear related, gold bearing quartz veins identified on the sixth level of the former mine also offer a promising exploration target. Exploration in the former Lorraine Mine area of the property will depend on detailed surface geophysical surveys, followed by drilling, followed by downhole geophysical surveys enhanced by computer based modelling.

The property wide prospecting, magnetic and induced polarization surveys completed by Hinterland to date have generated numerous targets for further exploration. Exploration of these targets will involve cursory prospecting followed by detailed geophysical and geochemical surveys followed by trenching, sampling and drilling. In accordance with the Lorraine Mine model, this part of the exploration effort must concentrate on linear structural features located near gabbroic intrusions.

The former Lorraine Mine tailings area, at one time the source of highly acidic drainage into Lett Creek, has been covered, dammed, and neutralized by the Québec Ministry of Natural Resources. The old tailings are legally classified as part of the surface domain and, as such, are not a legal liability to any current mining rights holder. Should they be included within the boundaries of a Mining Concession in the future, however, they will become the responsibility of the concession holder. Hinterland must leave the reclaimed tailings area completely undisturbed. Hinterland must also maintain the perimeter fence surrounding the stoped out area.

14. Recommendations and Proposed Budget

The known Cu-Ni-PGE potential of the Belleterre-Angliers Greenstone Belt, a review of the previous exploration work and the results of the most recent surveys clearly demonstrate the strong polymetallic potential of the Lorraine Property. It is the writer's opinion that the property is of sufficient merit to recommend that Hinterland Metals Inc. proceed with an aggressive exploration program on the Lorraine Property immediately. The exploration program should be conducted in two phases, the second phase contingent upon positive results in the first phase. The total estimated cost of the proposed exploration program is $622,000 and is detailed in Table 2 below.

Phase I of the proposed exploration program is comprised of surface exploration directed at generating targets outside the area of the former Lorraine Mine and detailed surface geophysical surveys followed by diamond drilling and down-hole geophysical surveys in the Lorraine Mine area. Work outside the mine area will involve prospecting, outcrop sampling and geochemical sampling followed by trenching, blasting and sampling at selected sites determined by the prospecting and sampling results. The work in the mine area will involve detailed magnetic and induced polarization coverage by cutting and surveying between the existing lines, resulting in a line spacing of 50 m over the selected area. It is also suggested that several lines be surveyed with a wider 50 m "n" spacing in order obtain better depth penetration. This will be followed by 2500 m of diamond drilling and downhole geophysical surveys accompanied by computer based modelling. Three of these holes should be targeted at the deep Lorraine Ni-Cu zone at the -350 to -400 m elevation and will be 550 to 600 m in length each. The remainder of this drilling should be targeted on induced polarization and magnetic anomalies, which may indicate small en echelon pods of Ni-Cu mineralization. This drilling will also target the shear-related gold mineralization previously identified on the sixth level. The estimated cost of the Phase I exploration is $317,000.

Phase II of the proposed exploration program will be contingent upon the results from Phase I. Any targets generated outside the mine area will be tested with follow-up diamond drilling. Encouraging results from the initial diamond drillling in the former Lorraine Mine area will warrant follow-up diamond drillling and down-hole geophysical surveys. A total of 3,500 m of follow-up diamond drilling, accompanied by down-hole geophysical surveys is recommended for Phase II at a total estimated cost of $305,000.

Table 2 - Cost Estimate of Recommended Program

Phase I	**Outside Mine Area**		**Amount**	**Rate**		**Cost**	**Phase Total**
	Geologist	30	days @	$350	per day	$10,500	
	Prospectors (2)	30	days @	$500	per day	$15,000	
	Trenching	30	hours @	$125	per hour	$3,750	
	Blasting	5	days @	$500	per day	$2,500	
	Equipment rentals	30	days @	$175	per day	$5,250	
	Food, lodgings & supplies	30	days @	$250	per day	$7,500	
	Rock and Soil Analyses	680	samples @	$25	per sample	$17,000	
	Report	5	days @	$350	per day	$1,750	
	Drafting	20	hours @	$50	per hour	$1,000	
	Permits	1	permit @	$500	per permit	$500	
	Lorraine Mine Area						
	Linecutting	15	km @	$350	per km	$5,250	
	Magnetic survey	15	km @	$100	per km	$1,500	
	Induced polarization survey	25	km @	$750	per km	$18,750	
	Drilling (NQ all incl. cost)	2500	m @	$76	per m	$190,000	
	Down-hole surveys	4	days @	$2,000	per day	$8,000	
	Subtotal					$288,250	
	Contingency (~10%)					$28,750	
						Total Phase I	**$317,000**
Phase II	**Diamond Drilling**						
	Drilling (NQ all incl. cost)	3500	m @	$76	per m	$266,000	
	Down-hole surveys	6	days @	$2,000	per day	$12,000	
	Subtotal					$278,000	
	Contingency (~10%)					$27,000	
						Total Phase II	**$305,000**
						Total Phase I & II	**$622,000**

15. References

Auger, P-E. 1952
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