

Summary report
on the
**Potential for
Platinum Group Elements**

at the
**Hawk Ridge Property
Québec**

for
Troymin Resources Ltd.

by
D.A. Beauchamp, P.Geol.

June 2001

N.T.S.:	24K/13 and 24N/04
PROVINCE:	Québec
LATITUDE:	59°00' North
LONGITUDE:	69°40' West
MINING DIVISION:	Côte Nord/Nouveau Québec

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Appendix 4:	Geochemical Analyses – Other Areas

Summary

The Hawk Ridge Property is located in northern Quebec on the west coast of Ungava Bay and within 15 km of tidewater and seaport facilities. Relief is moderate and rock exposure is excellent.

The area has been explored for copper-nickel massive sulphides. Three small deposits of high-grade mineralization containing up to 6% nickel and 3% copper were discovered at the Hopes Advance North, Gamma-Schindler and Pio Lake Zones. At the Hopes Advance Main Zone, a resource of 47 million tonnes of 0.5% Cu and 0.2% Ni that could be exploited by open pit mining methods has been outlined.

Airborne and ground geophysical mag and EM surveys have been carried out over the area. Many conductors have been identified and drilled. The core was analysed for nickel and copper, and several narrow but high grade sections of massive sulphides were intersected in several locations on the property. Many drill holes intersected disseminated copper-nickel mineralization near the contact between peridotite and porphyritic gabbro.

Selected surface grab samples and irregular sampling in core have identified many highly anomalous values for platinum and palladium, none of which have been followed up.

At Hopes Advance North Zone, several grab and core samples of massive sulphides returned values of 200-4360 ppb Pt and 1063 –11,300 ppb Pd.

At Hopes Advance Main Zone, mostly surface samples were analysed and several returned values of 100-460 ppb Pd and slightly lower values for Pt. A limited soil survey over this area confirmed values of up to 106 ppb Pt and 782 ppb Pd near the region where disseminated copper-nickel mineralization was outlined.

The soil survey also identified another region at least 400m by 200m underlain mostly by gabbro and peridotite north of Hopes Advance North where more than 20 samples of talus or soil returned anomalous values of 60-1060 ppb Pt, 65-1020 ppb Pd and 51-460 ppb Au. The area was prospected and drilled but no significant copper-nickel values were intersected. Core samples from this area was not analysed for PGEs.

At the Gamma Zone, one of several drill holes in a mineralised section returned a weighted average of 4.3% Cu and 1.6% Ni over 3.8m of core. Of the few PGE analyses from the core several show values of 200-220 ppb Pt and all samples assayed contain 118-939 ppb Pd.

Grab samples from massive chalcopyrite, pentlandite and pyrrhotite bounded by mafic and ultramafic sills at the Schindler Zone showed values of up to 1230 ppb Pd.

At the Pio Lake Zone, two lenses of massive sulphides were partially mined. Drilling identified several zones of massive sulphides in basalt and iron formation and disseminated sulphides at the contact between porphyritic gabbro and peridotite. Grab and core samples contain up to 490 ppb Pt and 3050 ppb Pd.

The numerous occurrences of PGEs identified to date have not been evaluated or followed up. The addition of PGE mineralization could make some of the copper-nickel deposits economic.

Introduction

The purpose of this report is to summarize the geology and work conducted to date at the Hawk Ridge Project, and to describe the potential for platinum group elements (PGEs) on the property.

The property is located in northern Québec and is owned 100% by Troymin Resources Ltd. Since the 1960's the property has been explored for massive sulphides and three zones of high-grade copper and nickel ore have been discovered: Hopes Advance North Zone, Schindler Zone and Pio Lake Zone.

Other zones include the Hopes Advance Main Zone where a reserve of 47 million tonnes containing 0.5% copper and 0.2% nickel as disseminated mineralization has been delineated and the Gamma Zone where high grade copper and nickel have been outlined at the base of a gabbroic sill.

To date, most of the work conducted on the property has been in the search of massive or disseminated copper-nickel mineralization and, over the 40 years of exploration in the area, little systematic work has been carried out to evaluate the potential for platinum group elements (PGE) or to follow up anomalies of PGEs. All results for PGE analyses available for the property are presented in appendices to this report along with other pertinent results.

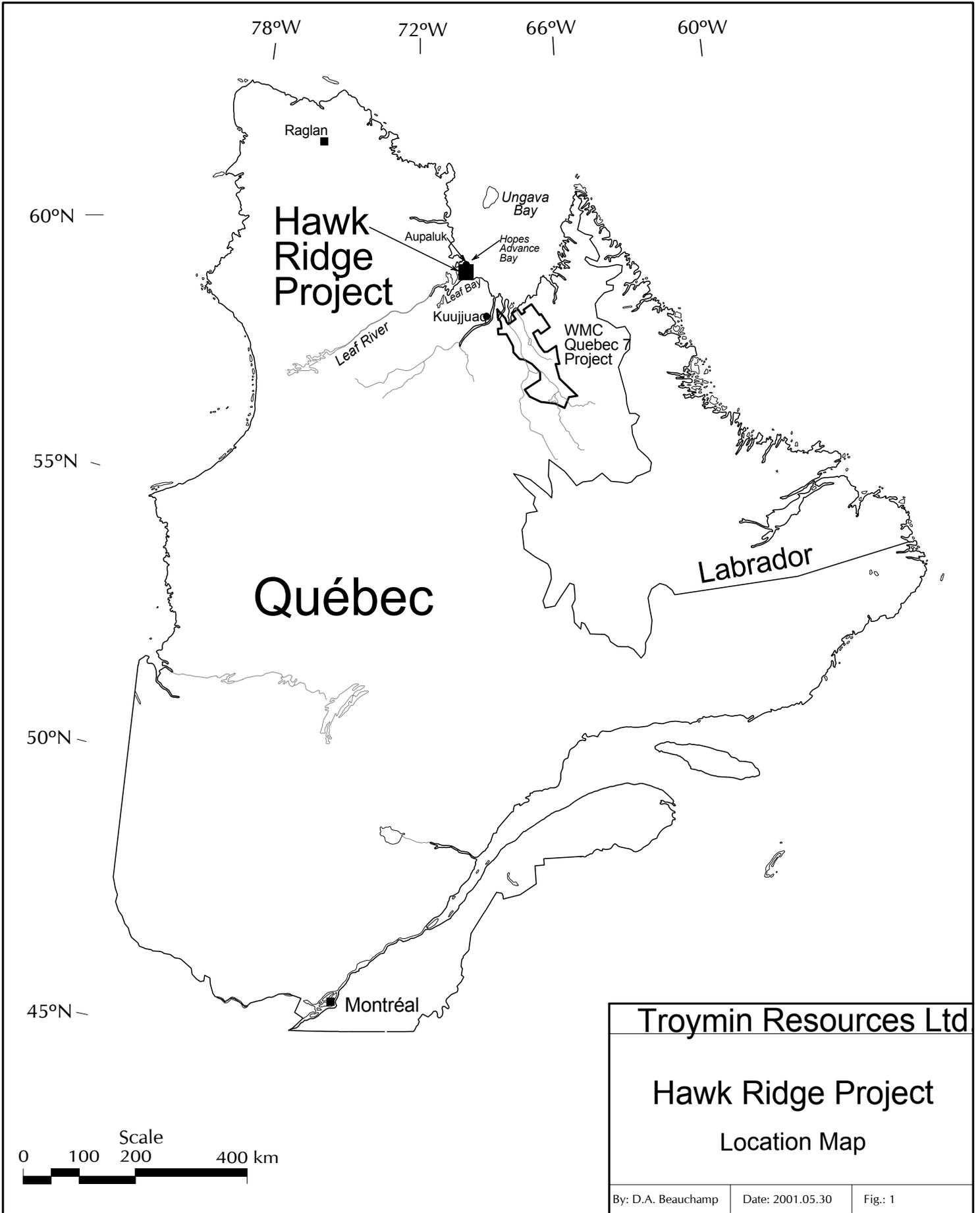
Data presented in this report is taken from internal reports of work conducted for Troymin Resources Ltd. Additional background information presented here is from assessment reports and from published provincial government reports.

Location and Access

The property is located in northeastern Québec at the eastern edge of the Ungava region. It is centred at 59°00'N, 69°40'W in NTS areas 24N/04 and 24K/13. On the west coast of Ungava Bay, it is bounded to the south by Leaf Bay and to the north by Hopes Advance Bay (Fig. 1).

Formerly known as Fort Chimo, Kuujuaq is a typical northern town with a population of about 1600 that can provide most of the supplies and services for exploration. It is supplied by ocean ships throughout the summer. Kuujuaq can be reached by regular airline service from Montreal. From there, floatplanes can be chartered to reach the Hawk Ridge Property, a distance of about 110 km to the northwest.

About 15 km northeast of the property on the coast of Ungava Bay, the hamlet of Aupaluk also has seaport facilities. This port was used to ferry drilling equipment to the property in 1996 and 1997. From Aupaluk the property can be reached by all-terrain vehicle during the summer and by skidoo during the winter. The ice-free season on Ungava Bay is from about mid-June to mid-October.



Property Description

The Hawk Ridge Property currently encompasses one exploration permit in three sections, and 21 mineral claims in the mining district of *Côte Nord et Nouveau Québec*.

The exploration permit and claims are currently being converted into map-designated claims now available under Quebec's new mining laws. New claims were recently added on the Hopes Advance North block. After conversion, the property will consist of 306 claims in three blocks. At this latitude claims now have an area of about 44.9 ha. Available assessment credits are listed in Table 1. The location of the claims and the zones of interest are shown in Fig. 2.

Table 1: Claim Status

Hawk Ridge Project	Assessment		Area
	per Claim	Total	
Hopes Advance North Zone			
9 claims: Hopes Advance North and Main	\$141,772	\$1,275,947	404 ha
48 claims	\$8,448	\$405,516	2,153 ha
<u>117 claims</u>			<u>5,154 ha</u>
174 claims		\$1,681,464	7,711 ha
Gamma-Schindler Zone			
10 claims: Gamma-Schindler	\$55,500	\$555,000	449 ha
<u>73 Claims</u>	\$8,448	<u>\$616,722</u>	<u>3,274 ha</u>
83 Claims		\$1,171,722	3,723 ha
Pio Lake Zone			
9 claims: Pio Lake	\$64,872	\$583,850	404 ha
<u>40 claims</u>	\$8,448	<u>\$337,930</u>	<u>1,794 ha</u>
49 claims		\$921,780	2,198 ha
Total Project			
306 claims		\$3,774,966	13,632 ha

In each block of claims greater assessment credits are concentrated in core claims where zones of mineralization have been identified.

The total assessment credit of \$ 3.8 million is sufficient to keep the initial 189 claims on the property in good standing until at least 2013 without any further work. Assessment may be borrowed from these claims to keep many of the newer claims in good standing when they come up for renewal. After 2013, assessment credits in the core claims will still be more than \$ 2 million and this amount can be shared with neighbouring claims. A renewal fee of \$ 80 per claim must be paid every two years.

Hopes
Advance
North
Zone

Hopes Advance
North
Hopes Advance
Main

69° 40' W
+ 59° 10' N



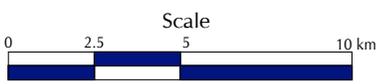
Gamma Zone
Schindler Zone

Gamma-Schindler
Zone

Pio Lake
Zone

 Gabbro

 New claims outline



Pio Lake
Deposit

Troymin Resources Ltd.

Hawk Ridge Project
Claim map

Physiography and Climate

At Hawk Ridge, topographic relief is moderate and elevations range from 50 to 200m a.s.l. The area is north of the tree line and is underlain by extensive permafrost.

Typical weather is cold in the winter and warm during the summer. About 300 kilometres northwest of Hawk Ridge, Falconbridge Ltd. has operated the Raglan copper-nickel mine for several years.

The property has more than 90% rock exposure over several of the zones of mineralization identified to date.

Previous Exploration

The earliest reports of exploration in the region were in the early 1950's along the Labrador Trough (New Quebec Orogen) north from Schefferville where large iron ore deposits had been found. This region was later explored for copper and nickel in 1961 when a group led by Falconbridge discovered copper-nickel mineralization at the Hopes Advance North and Main Zones as well as the Schindler Zone.

In 1971, Esso Minerals and Falconbridge conducted additional geological surveys and diamond drilling in the area, resulting in the discovery of the massive sulphides at the Pio Lake Zone. In 1984, Falconbridge identified several copper-nickel showings in the area. D. Larkin staked claims over the Hopes Advance North Zone and conducted a soil geochemical survey over these areas.

From 1995 to 1997, Troymin Resources Ltd. conducted airborne and ground magnetic and electromagnetic surveys, geological surveys, and drilled about 117 holes in the search for copper-nickel sulphides.

Regional Geology

The property is located in the northern part of the Labrador Trough, now referred to as the New Quebec Orogen. This Orogen is the eastern extension of the Trans-Hudson Orogen, an early Proterozoic collisional zone that borders the Superior Province and extends from the Thompson Nickel-Copper Belt in Manitoba across Hudson Bay, through to the Cape Smith Fold Belt of northern Quebec, where Falconbridge operates the Raglan Mine, and then south along the Labrador Trough.

The New Quebec Orogen is a belt about 800 km long trending north-northwest that separates the Superior Province from the Churchill/Rae Province to the east. The volcanic and sedimentary rocks are dated at 1.8 to 2.1 Ga and have been folded and thrust toward the southwest (Fig. 3).

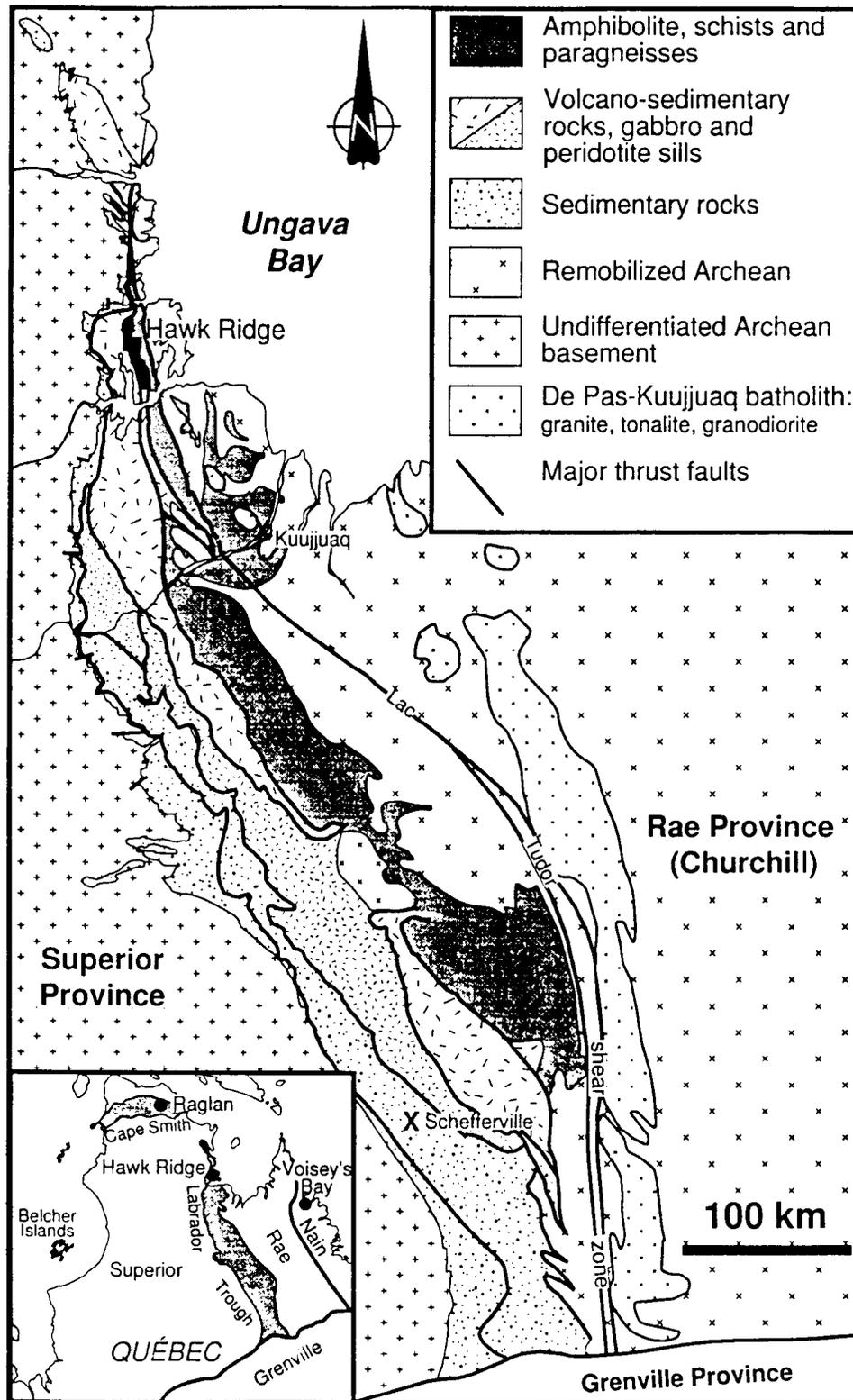


Figure 3. General geology of the Labrador Trough with location of the Hawk Ridge property (modified from Skulski et al., 1993).

The rocks of the New Quebec Orogen can be grouped into three regions:

1. A Western Belt of para-autochthonous sedimentary rocks forming the base of the sequence that unconformably overly the Superior Craton;
2. A Central Belt of allochthonous sedimentary and volcanic rocks;
3. An Eastern Hinterland Belt of Archean rocks metamorphosed to amphibolite and granulite facies.

Also during the Proterozoic, rocks of the Central Belt were intruded by peridotite, pyroxenite and porphyritic tholeiitic gabbro.

Property Geology

At the Hawk Ridge Property, all lithologies are from the Central Belt (Fig.4). In the northern part of the Labrador Trough, the Denault Dolomite is the only unit of the Western Belt present. At Hawk Ridge, the base lithology overlying the Superior Craton is from the Central Belt and is represented mostly by orthoquartzite, banded iron formation and minor turbidites.

The eastern part of the property is underlain by oxide iron formation, thick turbidites and an upper sulphide iron formation that are covered by a thick sequence of tholeiitic basalts. The basalts have been overlain by siltstone and sandstone.

Porphyritic tholeiitic gabbro and peridotite sills have intruded rocks in the New Quebec Orogen. These sills are thought to be comagmatic with the tholeiitic basalts described above and are host to most of the copper and nickel mineralization in the New Quebec Orogen.

In a study of the important characteristics of important massive nickel-copper sulphide deposits in 1997, Dr. A.J. Naldrett of the University of Toronto made a comparison between Noril'sk, Voisey's Bay and the Hawk Ridge Property (Table 2).

Table 2: Comparison Between Major Ni-Cu Sulphide Deposits and Hawk Ridge

Criteria	Noril'sk	Voisey's Bay	Hawk Ridge
Olivine-rich magma	Yes – Picrite	Yes – Troctolite	Yes – Peridotite
Source of sulphur	Yes – Evaporites	Yes – Tasiuyak gneiss	Yes – Upper Iron Formation
Evidence of interaction with country rocks	Yes – Taxitic Gabbro and chemical data	Yes – Basal Breccia Sequence	Yes – S isotopes and S:Se ratio
Magma Conduit	Yes – Marked by thickened zones of picrite and taxitic gabbro	Yes – Feeder sheet	? – Zones of Peridotite and Igneous Breccia

Dr. Naldrett noted that “mineralization at Hawk Ridge is associated with early Proterozoic sills that have intruded sulphide-rich sediments and iron formation. Drilling identified zones of Cu-Ni mineralization within these sills and there is abundant evidence that interaction between the magma and sulphur-bearing country rocks has played a role in sulphide formation”.

The report went on to state that “lessons from Noril’sk and Voisey’s Bay i.e. the importance of reaction between magma and country rocks and the role of magma conduits in concentrating sulphide, are being used in prioritising new drill targets. Lenses of peridotite and igneous breccia noted in the mapping in 1996 at Hawk Ridge may well mark zones of high magma flow and will be focus areas this summer. Recent petrographic studies have also confirmed a troctolitic dyke in the Pio area representing a younger intrusive event possibly of similar age to Voisey’s Bay mineralising event”.

Mineralization

Significant disseminated and massive copper-nickel mineralization has been identified in several deposits in the New Quebec Orogen. Several of these deposits are listed in Table 3.

Table 3: Significant Copper-Nickel Deposits of the New Quebec Orogen (Clark, 1987)

Name	Tonnage	Cu (%)	Ni (%)
Retty Lake	1,360,000	1.50	0.67
Pogo	692,600	1.00	0.65
Centre	91,400	1.26	0.75
Blue Lake	506,400	0.66	0.50
Chance Lake	649,400	0.66	0.89
Aulneau Lake	1,088,000	2.02	0.45
Erickson 1	519,700	1.12	0.32
Leslie 2	693,900	1.56	0.33
Chrysler 2	1,890,000	1.98	0.66
Soucy C	129,700	0.72	0.22
<i>Hopes Advance Main Zone</i>	47,000,000	0.50	0.20
<i>Schindler Disseminated Zone</i>	5,100,000	0.76	0.26
<i>Schindler Massive Zone</i>	not calculated	Up to 7%	Up to 3%

The three deposits highlighted in bold italic text are located on the Hawk Ridge Property. The resource calculation for Hopes Advance Main Zone has been updated from a recent prefeasibility study undertaken for Troymin Resources Ltd and is open at depth. Other preliminary calculations of resources for occurrences at Hawk Ridge are presented in table 4.

Table 4: Preliminary Calculations of Copper-Nickel occurrences at Haw Ridge

Name	Tonnage	Cu (%)	Ni (%)
Pio Lake East Lens	17,000	5.9	0.2
Pio Lake West Lens	26,500	6.4	3.0
Gamma Zone	250,000	2.4	0.9
Hopes Advance North	110,000	2.5	0.9

Table of Formations
Northern Labrador Trough

Region		Formation	Rock Type
Labrador Trough	Central Belt	Thévenet	Siltstone, sandstone
		Hellancourt	Tholeiitic Basalt
		Peridotite, pyroxenite and porphyritic tholeiitic gabbro	
		Upper iron Formation	Graphitic Schist
		Upper Baby Formation	Turbidites
		Middle Baby Formation	Iron Formation (Algoman)
		Lower Baby Formation	Turbidites
	Western Belt	Denault	Dolomite
Superior Craton		Archean	Granite, Gneiss

Troymin Resources Ltd.

Hawk Ridge Property

Table of Formations

Results of Exploration

An airborne magnetic and electromagnetic survey was carried out over the property in 1996 and many magnetic and EM anomalies were identified. In 1996 and 1997, follow-up field exploration was concentrated over the major conductors. Reconnaissance work was carried out throughout the region but more detailed activities were focused on the Hopes Advance North and Main, Gamma-Schindler and Pio Lake Zones (Fig. 5).

Previous operators in the area have reported that a gravity survey had been conducted over this area and that positive anomalies had been identified, but attempts at locating copies of the survey have been unsuccessful. A regional map of a government survey shows that a local positive gravity anomaly is present at Hopes Advance North (Fig. 5a).

Hopes Advance Area

Hopes Advance North Zone

At Hopes Advance North, the copper-nickel mineralization consists of massive and disseminated sulphides in a zone about 70m long striking north-northwest. At the north end of this zone, a separate section of mineralization is associated with graphitic schist and gabbro near a unit of peridotite that has been thrust from the east (Fig. 6).

Toward the south, massive, stockwork and disseminated chalcopyrite and pyrrhotite mineralization are associated with graphitic schist and with porphyritic gabbro. Extensive trenching in the early 1960's returned grades of up to 6.34% Cu and 1.09% Ni over 17.3m in the massive sulphide section.

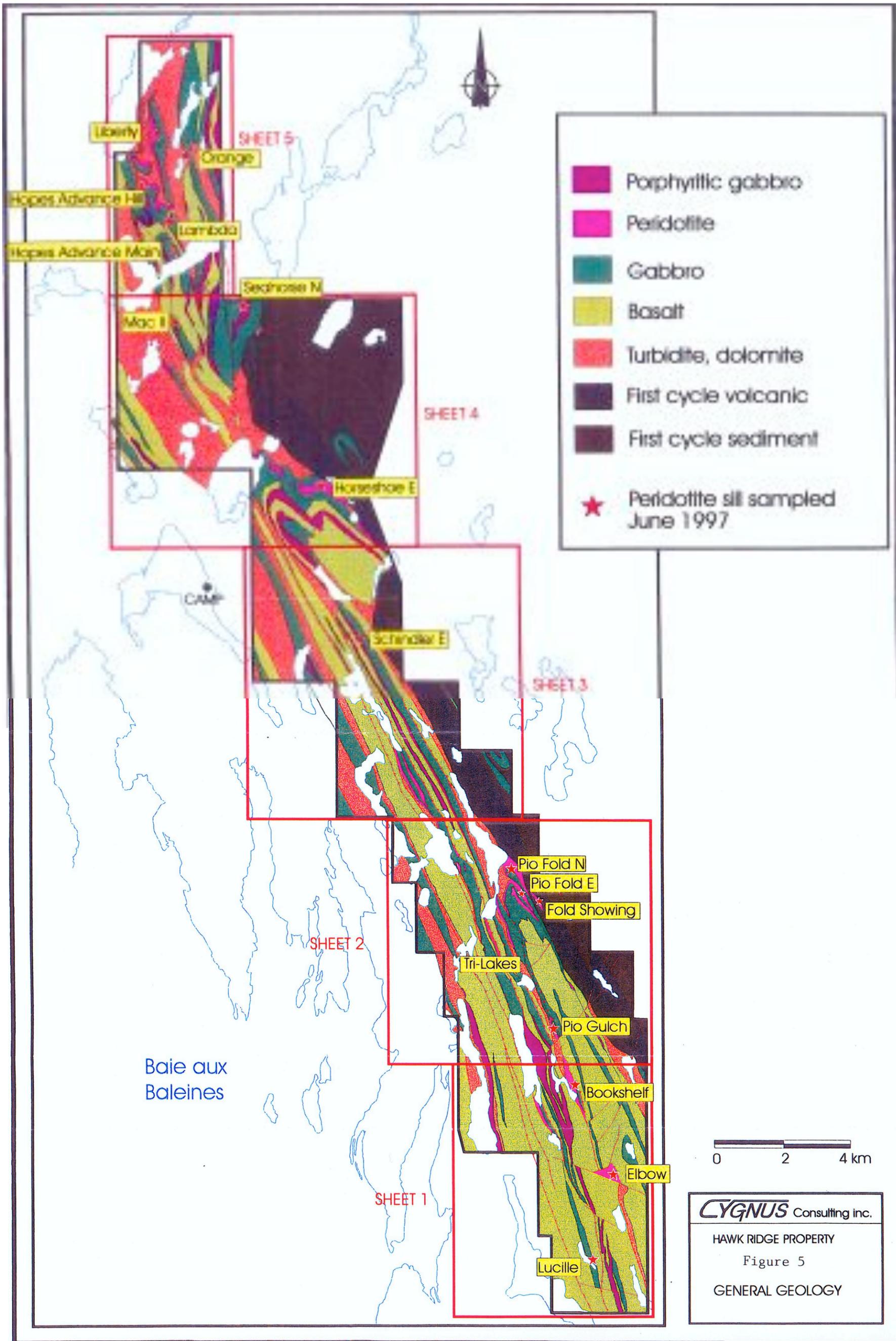
In 1962, four holes were drilled for about 600m at Hopes Advance North Zone. In 1996, 26 drill holes were collared into this area for 3111m and in 1997 an additional four holes were drilled for 764m (Fig. 7).

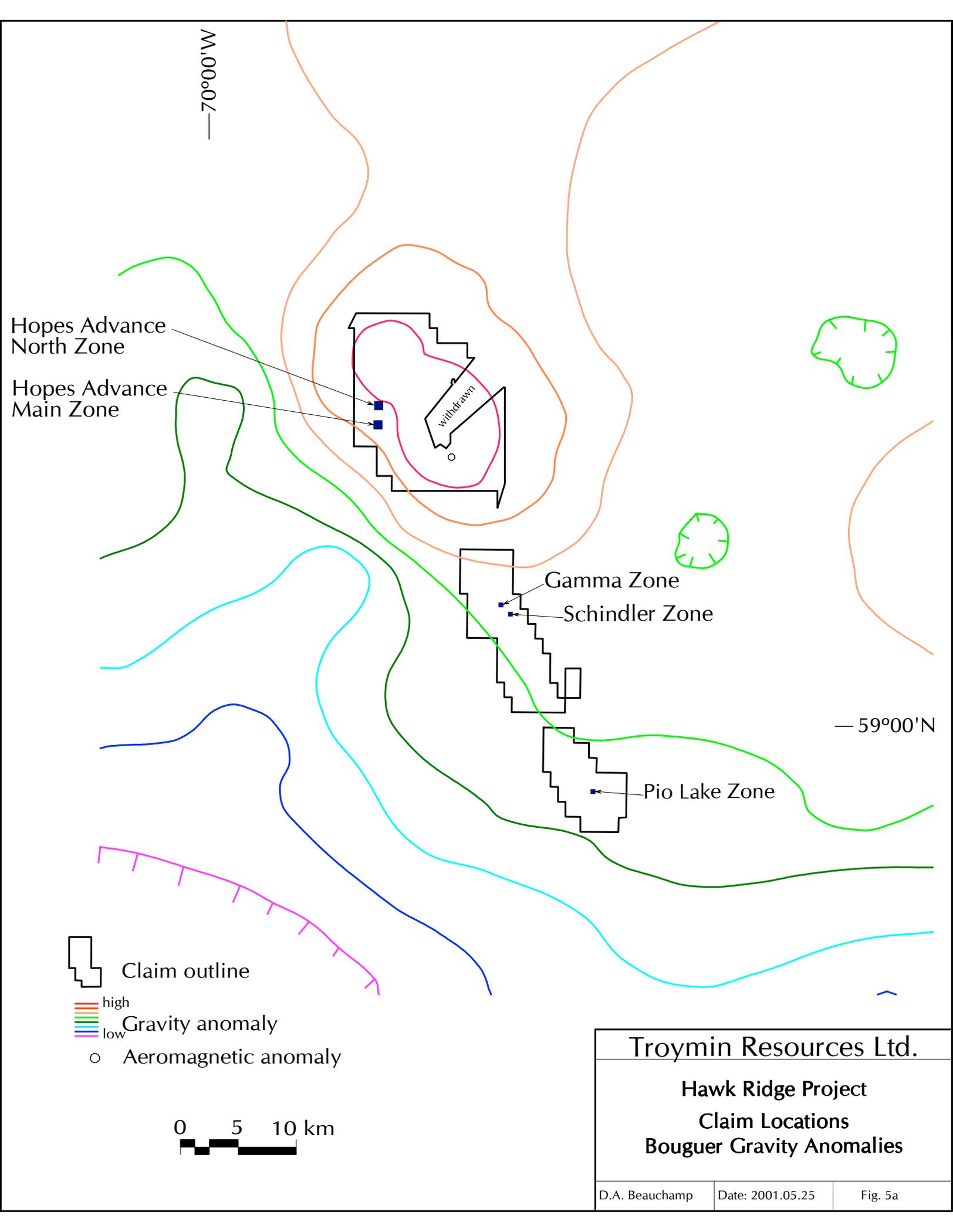
The copper and nickel mineralization occurs in an antiformal structure that plunges steeply at 160° 70°. The sulphides occur in a tabular body on the truncated western limb of the structure that dips steeply to the east-northeast.

PGE Data

Government geologists reported values of 140-400 ppb Pt and 120-910 ppb Pd from eight sulphide-rich grab samples near gabbro and amphibolite from the massive sulphide section at the Hopes Advance North Zone (Wares and Goutier, 1989).

Another grab sample containing massive chalcopyrite contains 4.4 g/T Pt and 11.3 g/T Pd (Appendix 1). Two of the rock samples from gabbro containing 5-15% sulphides also contain 1.5 and 1.6 g/T Au. The exact location of the samples was not recorded.





—70°00'W

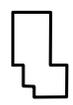
Hopes Advance North Zone
 Hopes Advance Main Zone

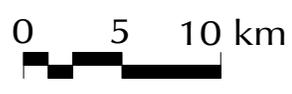
Withdrawn

Gamma Zone
 Schindler Zone

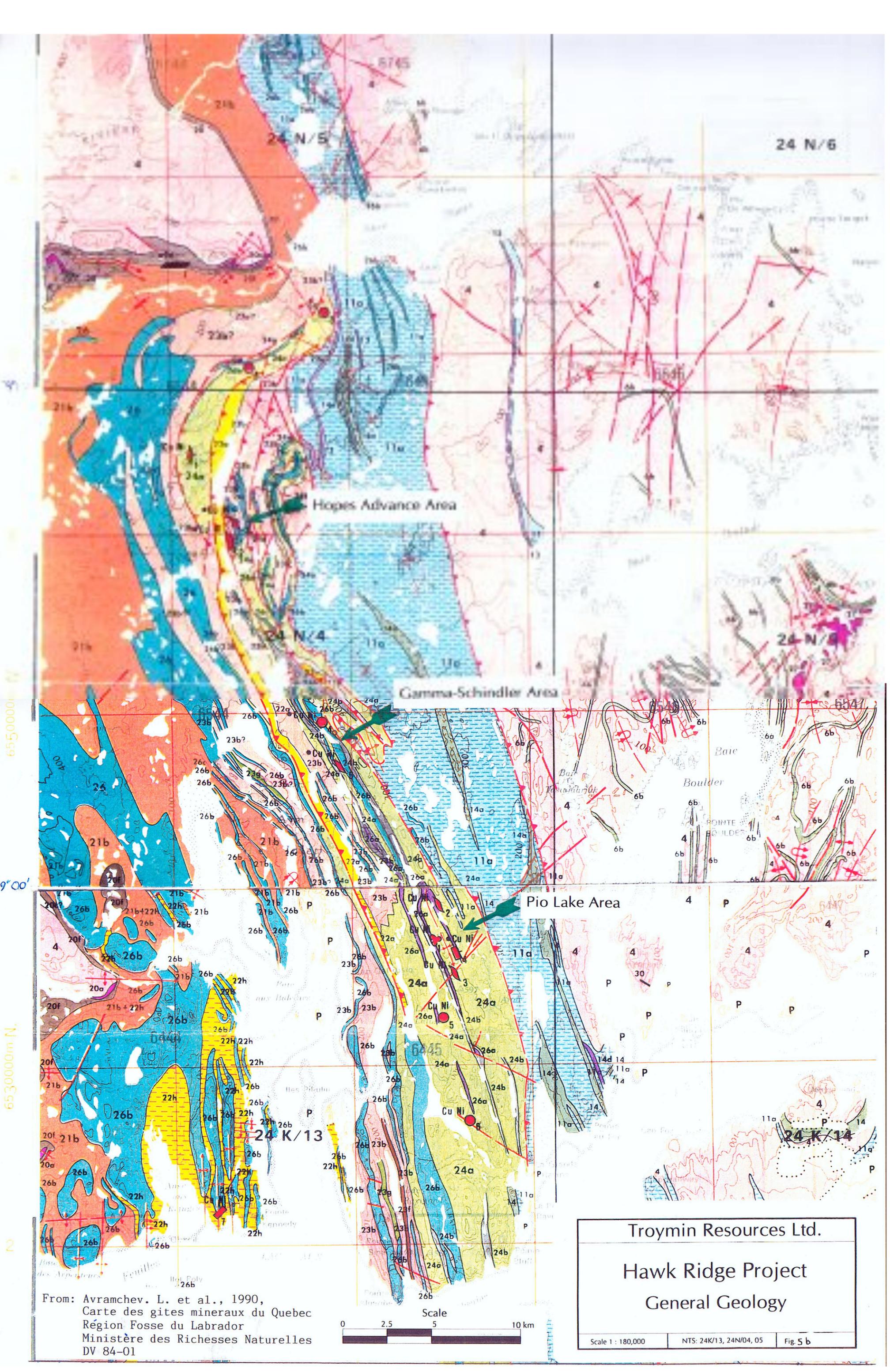
Pio Lake Zone

—59°00'N

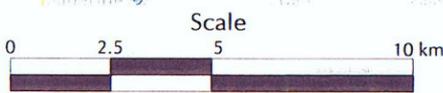
-  Claim outline
-  high
-  low
-  Aeromagnetic anomaly



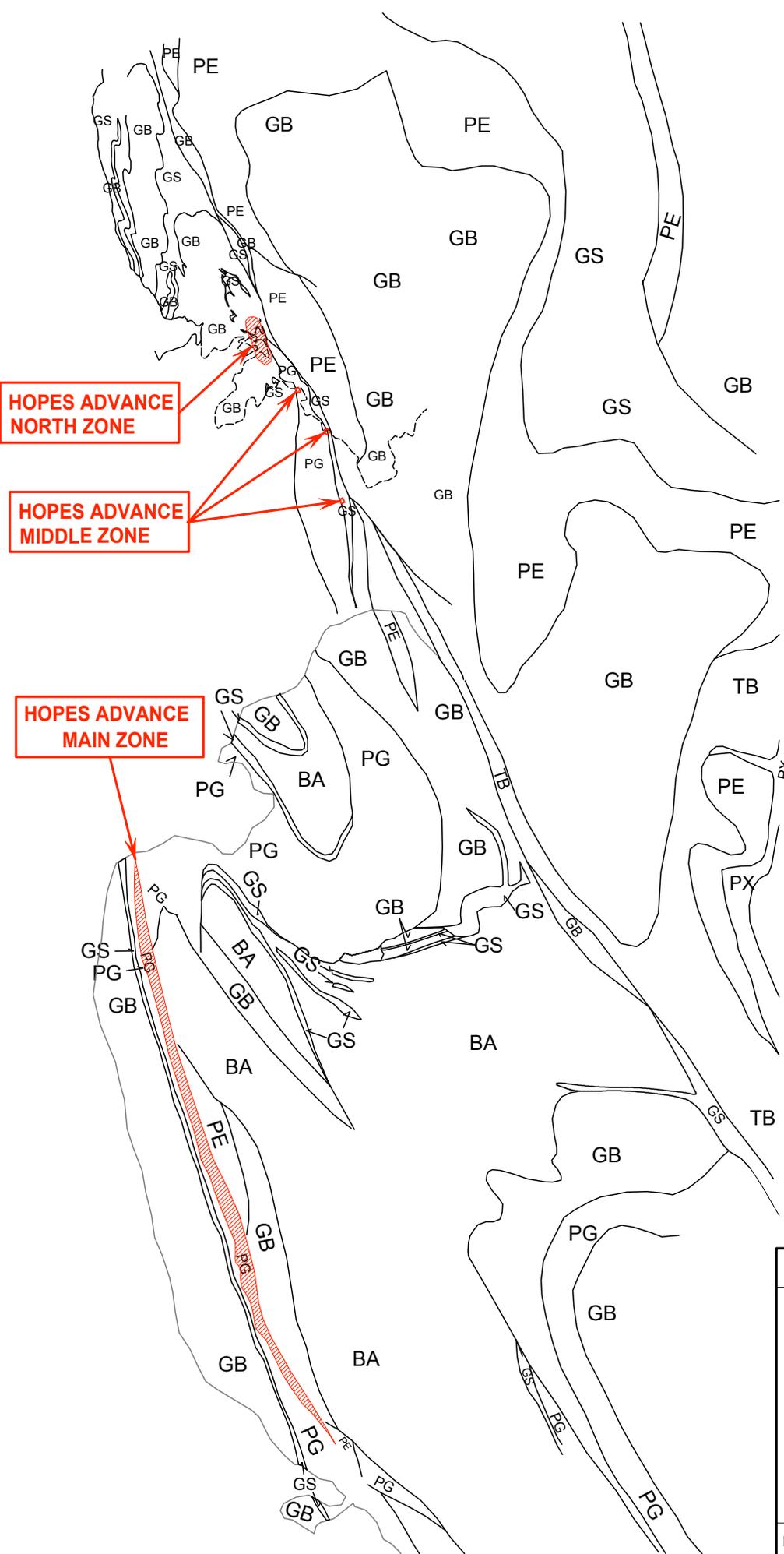
Troymin Resources Ltd.		
Hawk Ridge Project		
Claim Locations		
Bouguer Gravity Anomalies		
D.A. Beauchamp	Date: 2001.05.25	Fig. 5a



From: Avramchev, L. et al., 1990,
 Carte des gites minéraux du Québec
 Région Fosse du Labrador
 Ministère des Richesses Naturelles
 DV 84-01



Troymin Resources Ltd.		
Hawk Ridge Project		
General Geology		
Scale 1 : 180,000	NTS: 24K/13, 24N/04, 05	Fig. 5 b



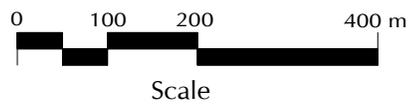
**HOPES ADVANCE
NORTH ZONE**

**HOPES ADVANCE
MIDDLE ZONE**

**HOPES ADVANCE
MAIN ZONE**

Legend

- PE Peridotite
- PX Pyroxenite
- PG Porphyritic Gabbro
- GB Gabbro
- BA Basalt
- TB Turbidite
- GS Graphitic Schist
- Mineralized Zone

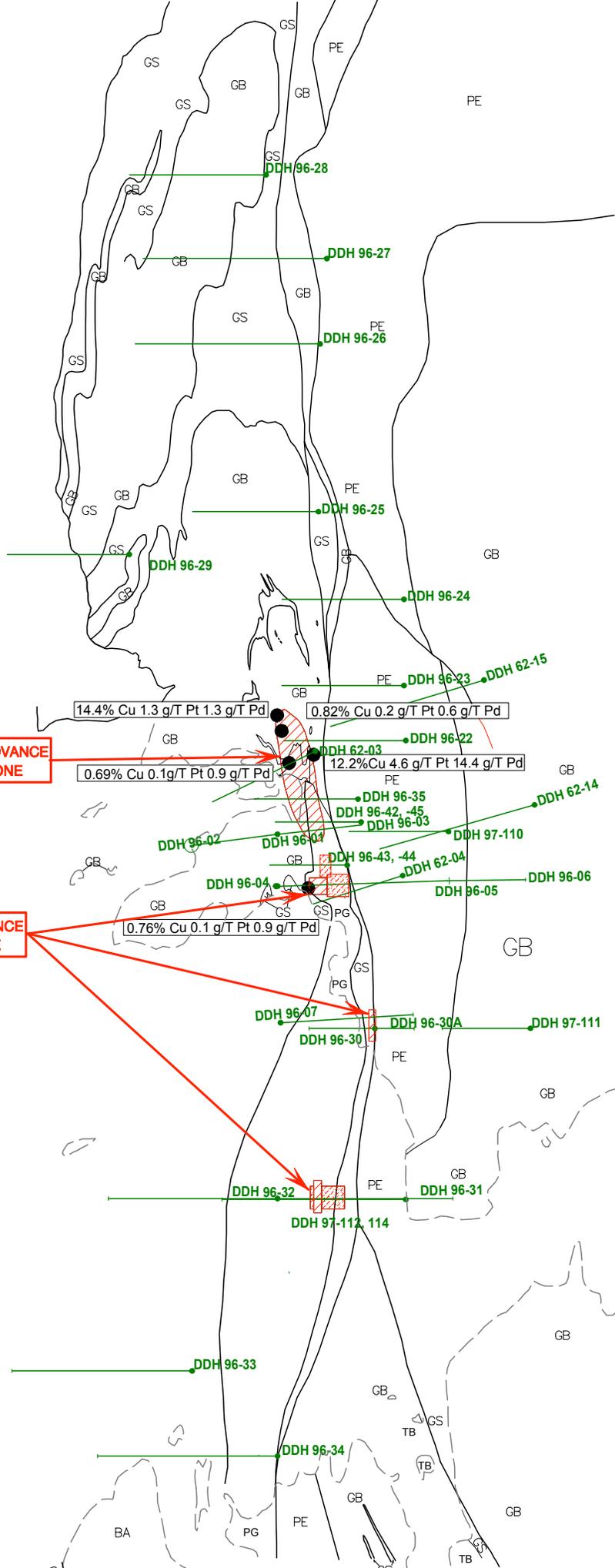


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Hawk Ridge Project

Hopes Advance Area

Geology



HOPES ADVANCE NORTH ZONE

HOPES ADVANCE MIDDLE ZONE

LEGEND

- Collar and trace of a drill hole
- DDH 96-24
- Intrusive Rocks**
- GB Gabbro
- PE Peridotite
- PG Porphyritic gabbro
- PX Pyroxenite
- STRATIGRAPHY**
- Hellancourt Formation
- BA Pillow and massive basalt, mafic pyroclastics
- GS Graphitic schist
- Baby Formation**
- GS Upper iron formation (graphite/grunerite schists + pyrrhotite)
- TB Turbidite (biotitic phyllite)
- Grab sample and assay
- 12.2%Cu 4.6 g/T Pt 14.4 g/T Pd
- Massive copper-nickel mineralization
- Disseminated copper-nickel mineralization



Troymin Resources Ltd.

**Hopes Advance North and Middle Zones
Geology
Diamond Drill Holes**

In drill hole HR 96-03, the following PGE results were obtained:

1.3 g/T Pd over 0.88m at 37.17m;

3.5 g/T Au over 1.2m at 45.8m;

1.0 g/T Pt, 2.8 g/T Pd, and 2.1 g/T Au over 1.0m at 71.05m;

1.1 g/T Pd over 5.0m at 78.0-83.0m;

more than 100 ppb Pt and more than 100 ppb Pd from 19.45m of core in two intervals.

Because the structure in this area is complex, HR 96-03 may have been drilled downdip for part of the hole (Fig. 8). Only zones containing massive sulphides were analysed for PGEs.

None of the core from other drill holes at Hopes Advance North Zone was assayed for PGEs and none of the high values identified were followed up.

Hopes Advance Main Zone

A gossan about 800m long and 30m wide is the surface expression of disseminated sulphide mineralization that occurs near the top of a unit of porphyritic gabbro separated by a thrust zone from peridotite, gabbro and basalt in the hanging wall. The porphyritic gabbro is about 75m thick, dips about 50° ENE and overlies a pyrrhotite-rich iron formation 5-10m wide (Figs. 10 and 11). The porphyritic gabbro extends further to the southeast for at least 700m.

The mineralization at Hopes Advance Main Zone consists of up to 6% disseminated chalcopyrite and pyrrhotite, mostly interstitial to the large plagioclase crystals near the top of the porphyritic gabbro. In a prefeasibility study, a mining engineer calculated that a resource of 47 million tonnes grading 0.5% Cu and 0.2% Ni is present at Hopes Advance Main Zone. The orebody is open at depth.

Sampling of the core at the Hopes Advance Main Zone was based mostly on the presence of visible sulphides in the core and sampling stopped when visible sulphides decreased. A few assays taken at depth show that similar copper and nickel values may extend to the bottom of the porphyritic gabbro. Further sampling could broaden the resource available near surface and increase the resource at the Hopes Advance Main Zone.

PGE Data

Porphyritic gabbro and peridotite grab samples taken from surface by Wares and Goutier (1990) returned many anomalous values of 100-460 ppb Pd. Three random samples from the gabbro in HR 96-17 and HR 96-18 gave 1-11 ppb Pt and Pd.

Hopes Advance Middle Zone

Drilling conducted between Hopes Advance North and Hopes Advance Main Zones intersected several sections of massive and disseminated copper-nickel sulphides in graphitic schist and at the contact region between peridotite and porphyritic gabbro (Fig. 7).

In the fence of holes immediately south of the Hopes Advance North Zone, massive and disseminated mineralization were identified in drill hole HR 96-43 in the porphyritic gabbro and in the underlying graphitic schist. Although the porphyritic gabbro was not sampled in drill hole HR 96-44, additional mineralization was intersected in the sedimentary unit. (Several intervals are presented in Table 5)

Similarly, HR 96-06 shows massive mineralization in the metasedimentary and pyroxenite units above the porphyritic gabbro. The porphyritic gabbro was not sampled for disseminated mineralization.

In HR 96-30, 96-30A and 96-07 massive sulphides were encountered in the graphitic schist, the most important of which is given in Table 5. The porphyritic gabbro was not sampled.

Further south the mineralization in HR 97-112 consists of disseminated mineralization in the peridotite and porphyritic gabbro and a zone of massive sulphides. Similar intersections of disseminated sulphides were identified in HR 96-31 and 97-114.

None of the drill holes south of HR 97-112 crosses the peridotite-porphyritic gabbro contact.

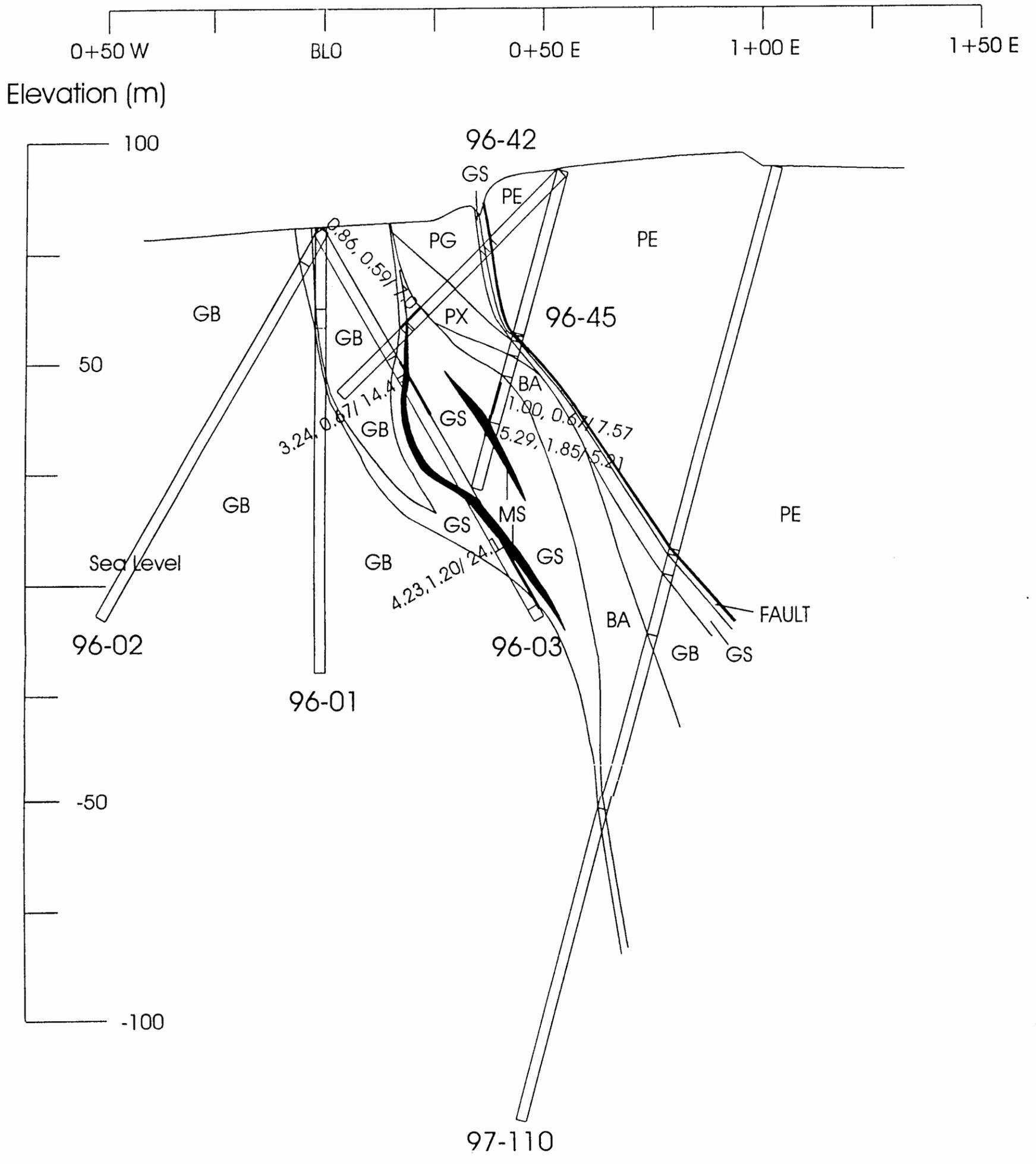
Table 5: Analyses of core intervals in the Hopes Advance Middle Zone

Drill Hole	From	To	Interval	Cu%	Ni%	Notes
HR 96-43	19.95	25.34	5.39	0.78	0.19	Porphyritic gabbro
	28.33	29.24	0.91	2.10	0.72	Massive sulphides in graphitic schist
HR 96-44	40.00	52.34	12.34	1.58	1.05	Massive sulphides in graphitic schist
HR 96-06	25.80	49.0	13.20	1.15	1.47	Massive sulphides in graphitic schist
	49.00	61.50	12.50	0.30	0.08	Pyroxenite
HR 96-30	29.87	32.55	2.68	2.74	0.33	Graphitic schist
HR 96-30A	74.95	85.14	6.52	1.67	0.79	Graphitic schist
HR 96-07	75.50	76.10	0.60	2.30	1.30	Contact Gabbro schist
HR 97-112	57.50	78.50	21.00	0.49	0.18	Peridotite and porphyritic gabbro
	78.50	85.00	6.50	2.30	1.90	Massive sulphides
HR 96-31	65.97	85.70	19.73	0.40	0.14	Peridotite and porphyritic gabbro
HR 97-114	63.50	87.50	24.00	0.50	0.19	Peridotite and porphyritic gabbro

PGE Data

At Hopes Advance Middle Zone the few massive sulphides sampled from drill holes HR 96-05, HR 96-06 and HR 96-07 returned < 5-206 ppb Pt and 132-380 ppb Pd.

In drill hole HR 97-112, semi-continuous analyses for PGEs identified a zone of mineralization containing up to 385 ppb Pt and 154-1463 ppb Pd over a 24.5m section in porphyritic gabbro, peridotite and massive sulphides (Fig. 9; Appendix 1). The interval with highest PGEs contains 1.46 g/T Pd and 0.27 g/T Pt over 0.5m.



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HAWK RIDGE PROPERTY
 HOPE'S ADVANCE 1 NORTH
 VERTICAL X-SECTION
 0+35 SOUTH



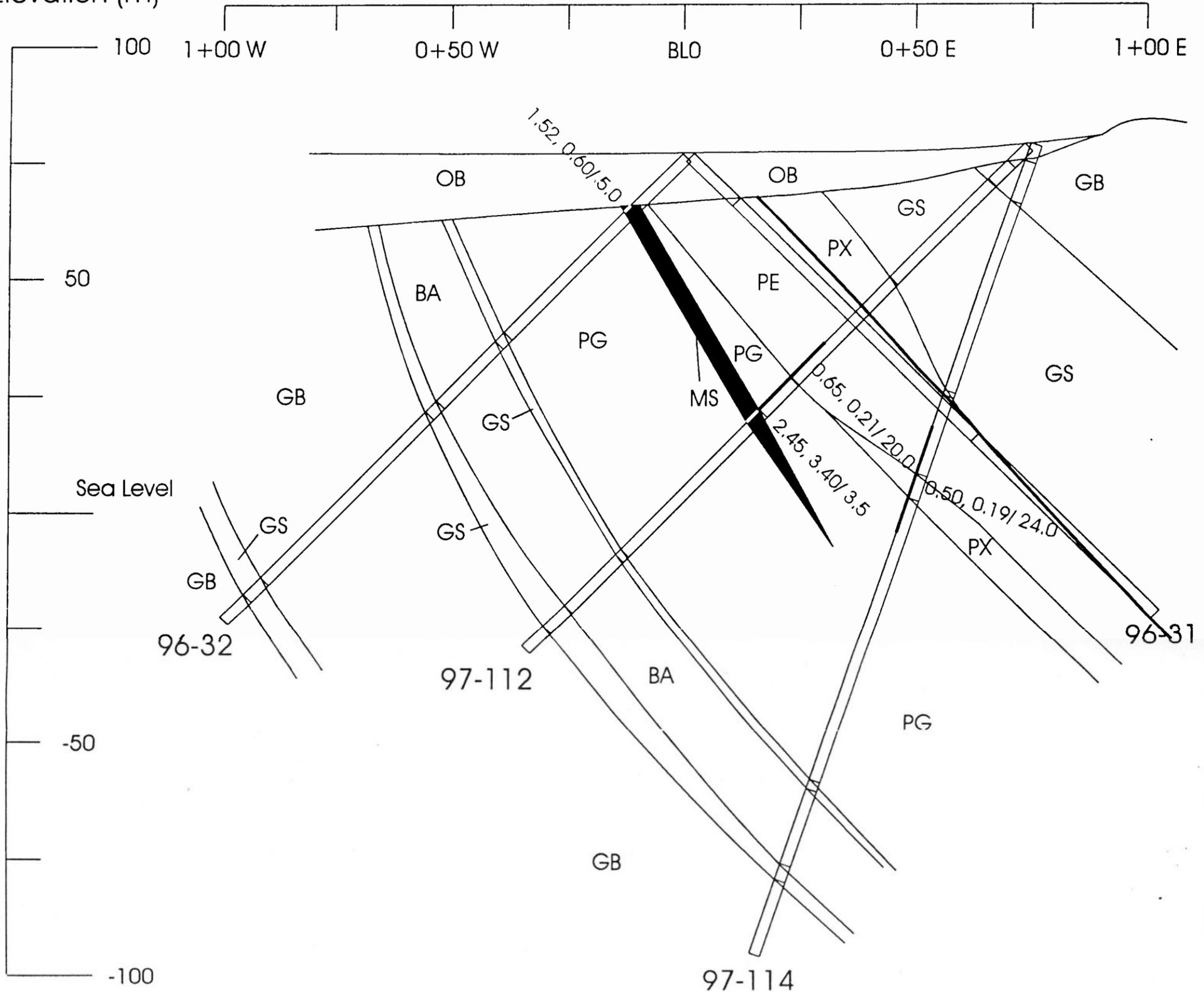
SCALE 1:1,000

N.B. Assays reported as weighted averages of Cu (%) and Ni (%) over intercept length in meters

- MS MASSIVE SULPHIDES
- DS DISSEMINATED SULPHIDES
- GB GABBRO
- OG OPHITIC GABBRO
- PG GLOMEROPORPHYRITIC GABBRO
- MG PLAGIOCLASE-PHYRIC GABBRO
- PX PYROXENITE
- PE PERIDOTITE
- BA BASALT
- BI BASALT-HOSTED IRON FORMATION
- GS GRAPHITIC SCHIST

Fig. 8 Hopes Advance 1 North Cross-Section

Elevation (m)



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Consulting Inc.

HAWK RIDGE PROPERTY
HOPE'S ADVANCE 1 NORTH
VERTICAL X-SECTION
2+50 SOUTH



SCALE 1:1,000

N.B. Assays reported as weighted averages of Cu (%) and Ni (%) over intercept length in meters

MS	MASSIVE SULPHIDES
DS	DISSEMINATED SULPHIDES
GB	GABBRO
OG	OPHITIC GABBRO
PG	GLOMEROPORPHYRITIC GABBRO
MG	PLAGIOCLASE-PHYRIC GABBRO
PX	PYROXENITE
PE	PERIDOTITE
BA	BASALT
BI	BASALT-HOSTED IRON FORMATION
GS	GRAPHITIC SCHIST

Fig. 9 Hopes Advance North
Cross-Section DDH 97-112
(Mungall and Wares, 1997)



2406C1: 0 ppb Au, 5 ppb Pt, 10 ppb Pd
 2406C3: 44 ppb Au, 20 ppb Pt, 78 ppb Pd
 2406C4: 17 ppb Au, 20 ppb Pt, 86 ppb Pd
 2406C5: 110 ppb Au, 60 ppb Pt, 210 ppb Pd
 2406C6: 7 ppb Au, 20 ppb Pt, 100 ppb Pd
 2406C7: 4 ppb Au, 5 ppb Pt, 6 ppb Pd
 2406C8: 1 ppb Au, 5 ppb Pt, 4 ppb Pd

2406D1: 32 ppb Au, 5 ppb Pt, 150 ppb Pd
 2406D2: 30 ppb Au, 50 ppb Pt, 59 ppb Pd

2406G3: 9 ppb Au, 20 ppb Pt, 93 ppb Pd
 2406G4: 28 ppb Au, 50 ppb Pt, 180 ppb Pd
 2406G5: 16 ppb Au, 20 ppb Pt, 95 ppb Pd
 2406G6: 39 ppb Au, 50 ppb Pt, 280 ppb Pd
 2406G7: 5 ppb Au, 5 ppb Pt, 8 ppb Pd
 2406G8: 1 ppb Au, 5 ppb Pt, 1 ppb Pd
 2406G9: 73 ppb Au, 5 ppb Pt, 13 ppb Pd

HR 96-16
HR 96-19

HR 96-15

BA

HR 96-14

2406B: 27 ppb Au, 40 ppb Pt, 180 ppb Pd

HR 96-08
HR 96-21

HR 62-01

HR 96-09

HR 96-17

HR 96-10

HR 96-18

HR 96-20

HR 96-11

HR 62-02

HR 96-12

HR 96-13

GB

PG

GB

BA

Legend



Mineralized zone

- BA Basalt
- GB Gabbro
- PE Peridotite
- PG Porphyritic Gabbro
- GS Graphitic Schist
- GB Gabbro

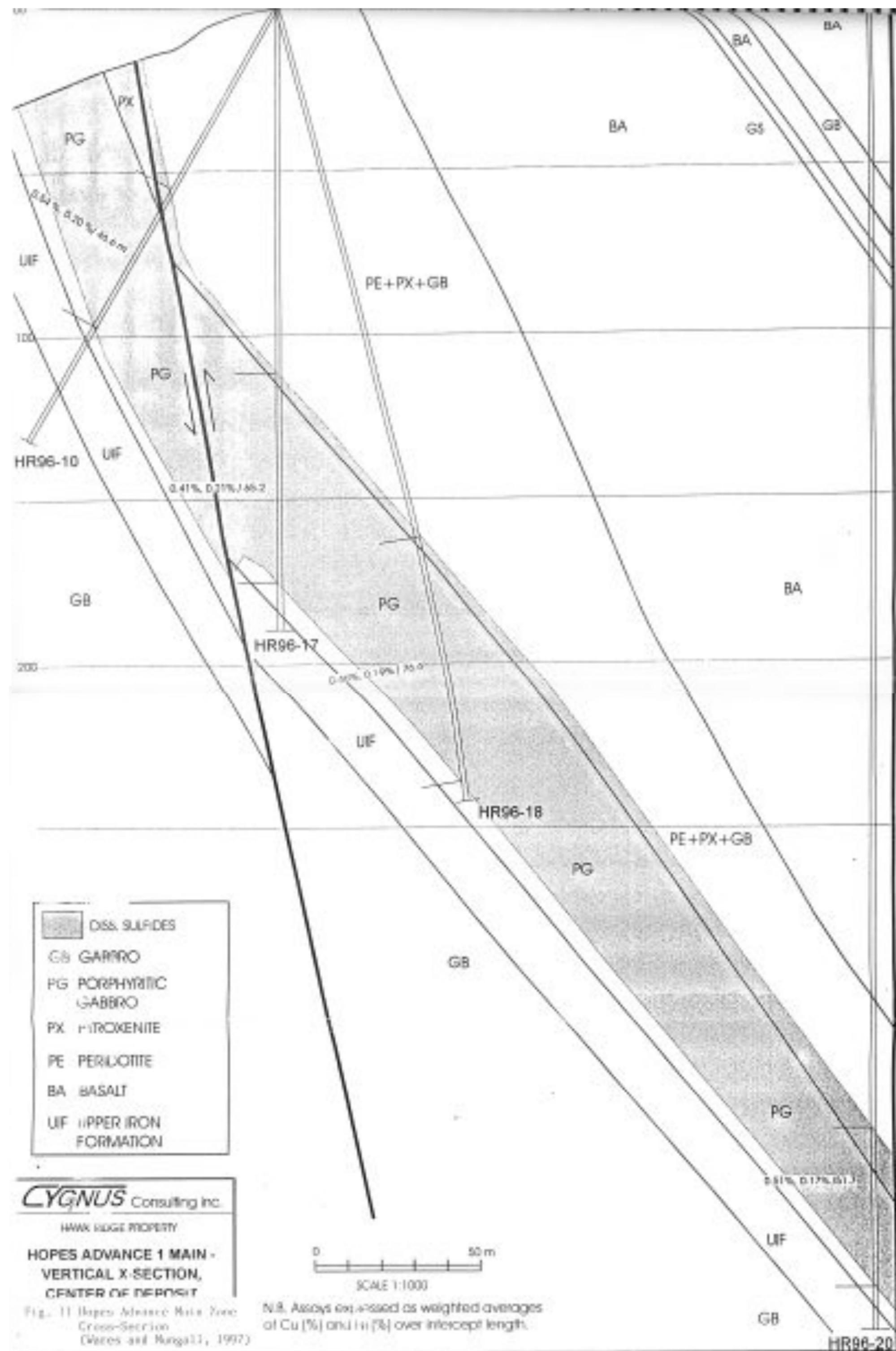
● 2406G9: 73 ppb Au, 5 ppb Pt, 13 ppb Pd
 Sample number and analyses

—●— Drill hole and extension
 HR 96-13



Troymin Resources Ltd.

Hawk Ridge Project
 Main Zone
 Geology, Rock Geochemistry
 and Drill Hole Locations



CYGNUS Consulting Inc.
 HAWK RIDGE PROPERTY
 HOPES ADVANCE 1 MAIN -
 VERTICAL X SECTION,
 CENTER OF DEPOSIT

Fig. 11 Hopes Advance Mine Zone
 Cross-Section
 (Cox and Murgall, 1997)

N.B. Assays expressed as weighted averages
 of Cu (%) and Ni (%) over intercept length.

HR96-20

Geochemical Survey at Hopes Advance Area

A soil and talus chip sampling survey was conducted over the Hopes Advance North and Main Zones. A total of 332 samples were collected and analysed for platinum, palladium, gold and rhodium. Following is a summary of anomalous results:

12 samples contain 50-1060 ppb Pt	(mean of all samples 3 ppb Pt)
49 samples contain 51-1020 ppb Pd	(mean of all samples 10 ppb Pd)
11 samples contain 51- 460 ppb Au	(mean of all samples 14.4 ppb Au)
1 sample contains 26 ppb Rh	(mean of all samples 2.3 ppb Rh)

These anomalous samples are concentrated mostly in two areas. Near Hopes Advance Main Zone, anomalous values for palladium, platinum, gold and the anomaly for rhodium are concentrated within 100m of the zone of mineralization, except in the northern and southern parts where they extend about 140m away from the mineralised zone (Fig. 12).

The second region containing many anomalies is from an area extending to about 400m north and northwest of the Hopes Advance North Zone where many samples reported 85-1020 ppb Pt, 60-1060 Pt and 51-460 ppb Au over lithologies represented mostly by peridotite and gabbro. This anomalous region is open to the north of the area sampled.

Other samples containing anomalous palladium are present east and northeast of the Hopes Advance North Zone in areas underlain mostly by, or bordering onto gabbro and peridotite. Follow-up work was not carried out on any of these platinum, palladium or gold anomalies.

Gamma and Schindler Zones

The Gamma and Schindler Zones are located in the central block of claims and are about 500m apart.

Gamma Zone

The Gamma Zone contains massive sulphides with up to 4.56% Cu and 1.44% Ni over 3.5m of core in iron formation located immediately below a porphyritic gabbro sill. The pyrrhotite-rich iron formation has been injected with massive pyrrhotite-chalcopyrite-pentlandite and by chalcopyrite stockworks.

The zone is about 55m long, 1-2m wide on outcrop. Diamond drilling has outlined a steeply dipping zone at least 50m long that has been tested to about 300m down dip and is open at depth. (Figs. 13-15; Appendix 2).

PGE Data

Grab samples from Wares and Goutier (1990) returned up to 1230 ppb Pd in massive sulphides. Only short intervals of drill holes HR 96-54 and 97-105 were tested for PGEs. Sampling in HR 96-105 gave 200 ppb Pt and 950 ppb Pd over 1.7m in two samples from a massive sulphide section in porphyritic gabbro, and 241 ppb Pd over at least 2.9m in two samples from the porphyritic gabbro 15m above. From sulphides in graphitic schist from HR 96-54 values of 624 ppb Pd were obtained over a 1.64m interval in two samples.

HOPES ADVANCE NORTH ZONE

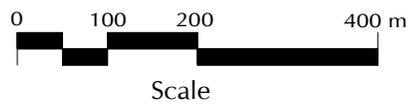
HOPES ADVANCE MIDDLE ZONE

HOPES ADVANCE MIDDLE ZONE



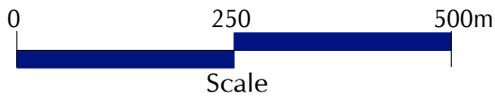
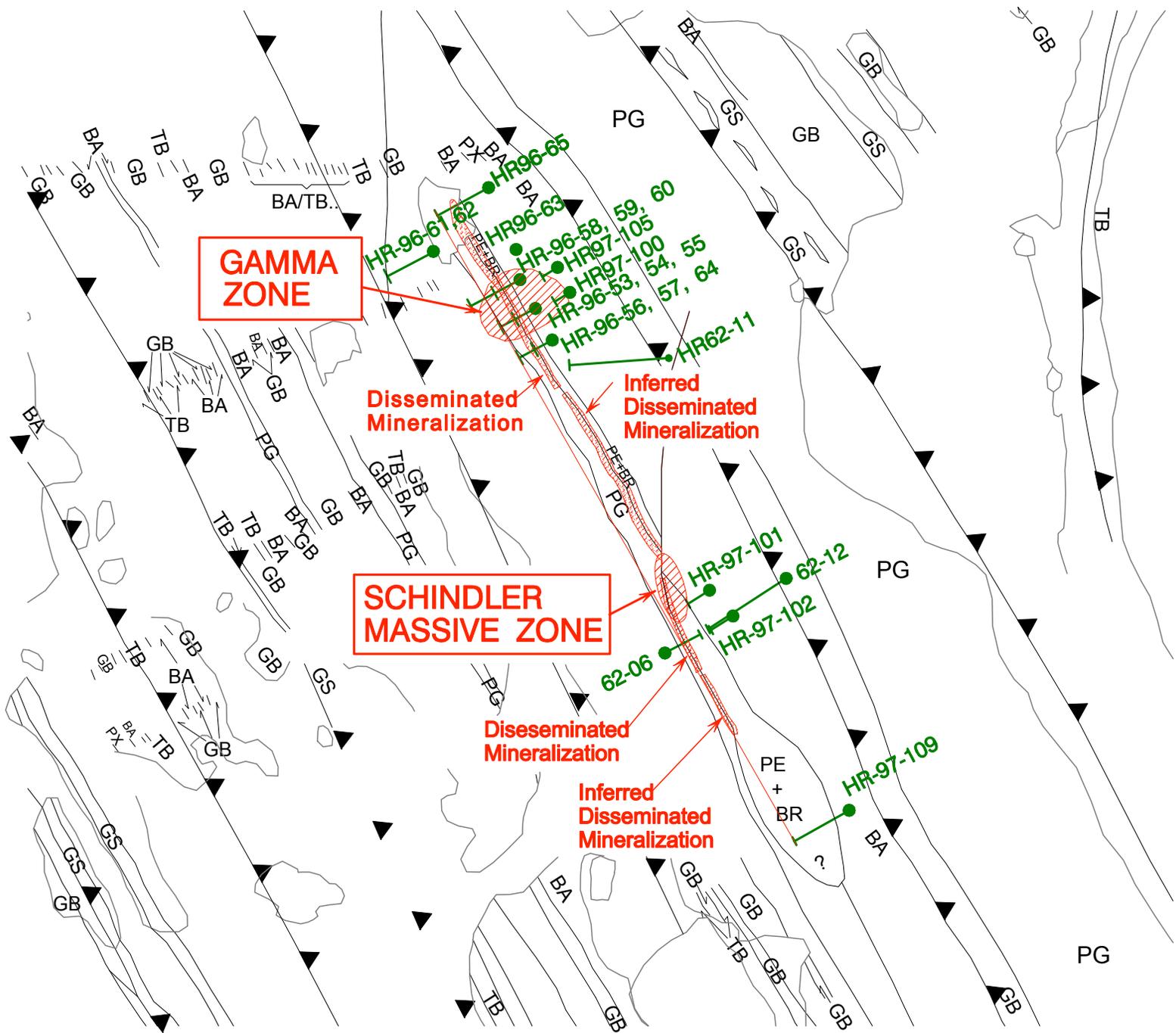
Legend

- PE Peridotite
- PX Pyroxenite
- PG Porphyritic Gabbro
- GB Gabbro
- BA Basalt
- TB Turbidite
- GS Graphitic Schist
- Sample location
- Anomalous results in ppb:
 - 145 Palladium: > 50 ppb
 - 118 Platinum: > 50 ppb
 - 26 Rhodium: > 10 ppb
 - 215 Gold: > 50 ppb
- Mineralized Zone



Troymin Resources Ltd.

Hawk Ridge Project
 Hopes Advance Area
 Geology
 Soil Geochemistry



Legend

- PE Peridotite
- PX Pyroxenite
- PG Porphyritic Gabbro
- GB Gabbro
- BA Basalt
- TB Turbidite
- GS Graphitic Schist
- BR Breccia
- ▲ Thrust Fault
- Drill Hole and projection

HR-97-102

Massive copper-nickel mineralization

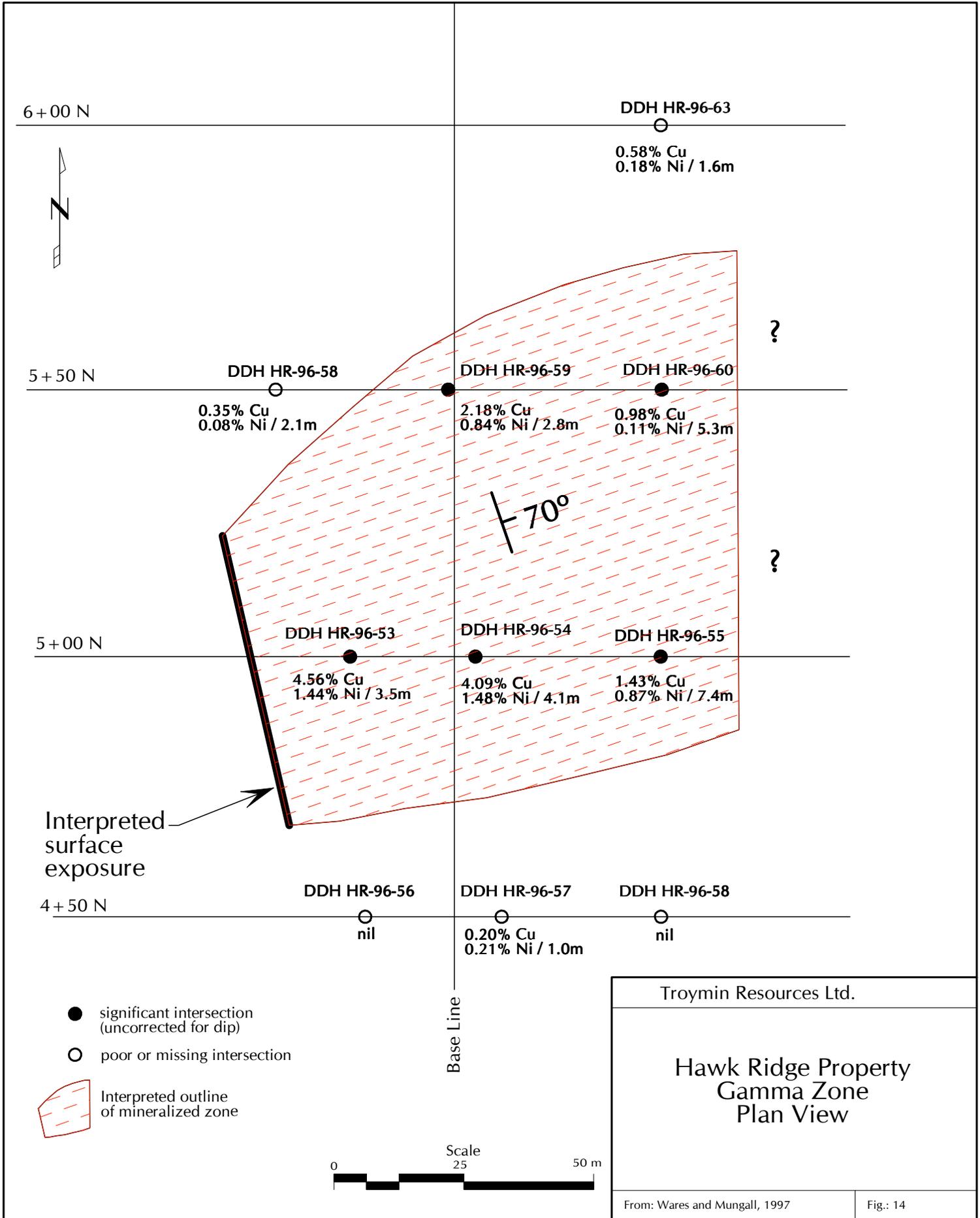
Disseminated copper-nickel mineralization

Troymin Resources Ltd.

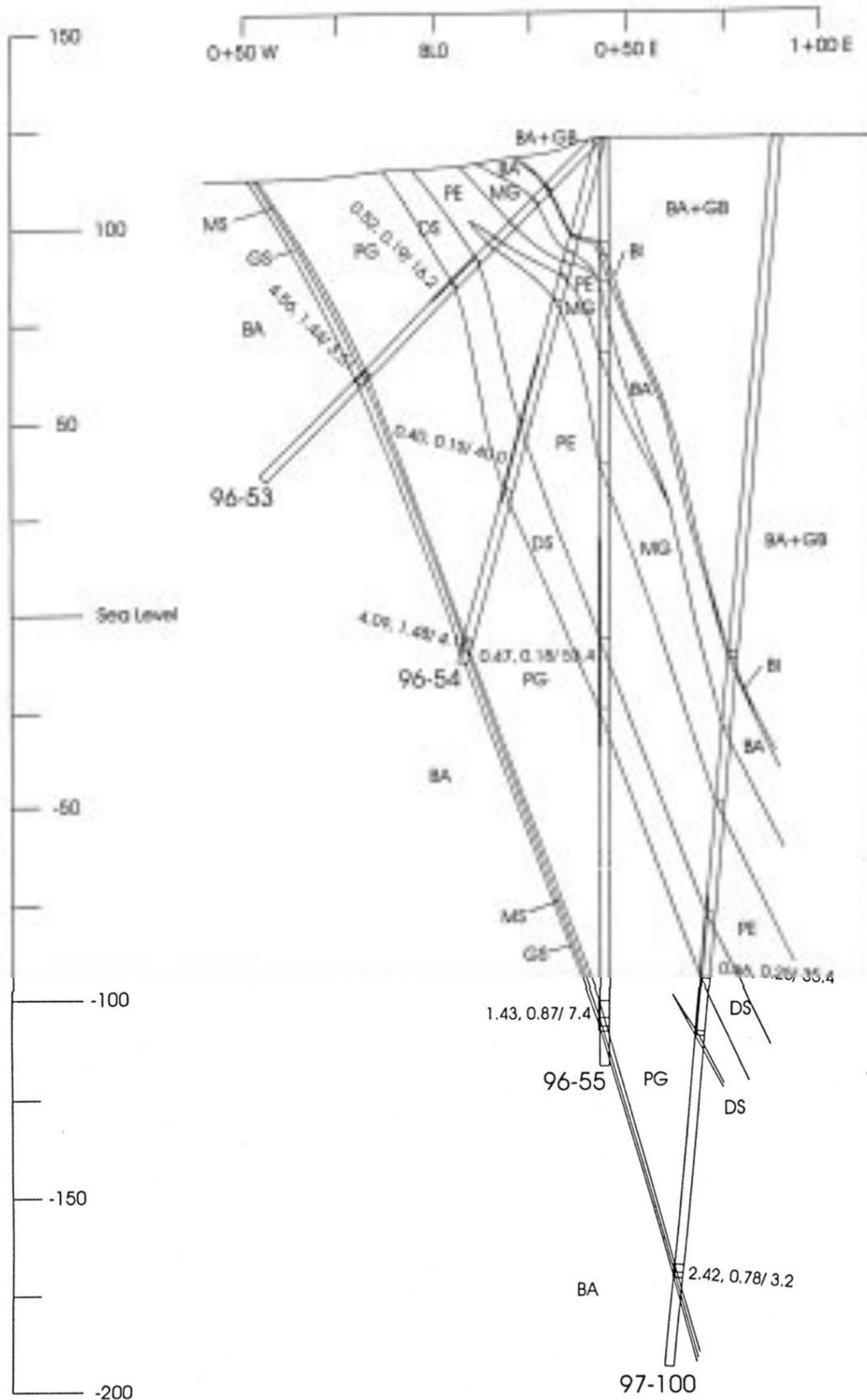
Hawk Ridge Project
Gamma-Schindler Zone
Geology

Date: 2001.06.01

Fig. 13

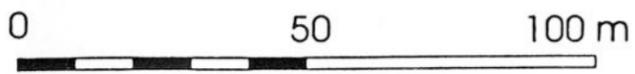


Elevation [m]



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HAWK RIDGE PROPERTY
GAMMA ZONE
VERTICAL X-SECTION
5+00 NORTH



SCALE 1:1,000

N.B. Assays reported as weighted averages of Cu (%) and Ni (%) over intercept length in meters

- MS MASSIVE SULPHIDES
- DS DISSEMINATED SULPHIDES
- GB GABBRO
- OG OPHITIC GABBRO
- PG GLOMEROPORPHYRITIC GABBRO
- MG PLAGIOCLASE-PHYRIC GABBRO
- PX PYROXENITE
- PE PERIDOTITE
- BA BASALT
- BI BASALT-HOSTED IRON FORMATION
- GS GRAPHITIC SCHIST

Fig. 15 Gamma Zone Cross-Section (Wares and Mungall, 199...)

Schindler Zone

At the Schindler Zone massive and disseminated sulphide mineralization have been identified.

The Schindler Massive Zone is a high-grade lens of massive chalcopyrite and pyrrhotite that contains up to 7% Cu and 3% Ni, and is hosted by porphyritic gabbro. The lens is semi-concordant at the contact between a peridotite sill and porphyritic gabbro. In the region the ultramafic sill cuts across basalt and porphyritic gabbro. The sill is continuous over at least 10 km and is little deformed (Fig. 13).

The disseminated mineralization at Schindler extends for about 850m on strike, over a thickness of 8-14m mostly in the porphyritic gabbro near the contact with peridotite (Fig. 16). The mineralization is strikingly similar to that identified at Hopes Advance Main Zone. The mineralization has been identified in drill holes at six locations along this belt.

Representative grades of disseminated mineralization are 0.64% Cu and 0.23% Ni over 14.10m in drill hole HR-97-101 and 0.40% Cu and 0.15% Ni over 12.5m in HR 97-102. The mineralization is continuous both laterally and vertically.

Disseminated and stockwork sulphide mineralization are also present in a diatreme breccia in an area about 10m by 30m. A fine-grained gabbro contains up to 11.6% Cu in pyrrhotite and chalcopyrite.

PGE Data

At the Schindler Zone, the only assays for PGEs are from surface samples of massive sulphides reported by Wares and Goutier (1990). Values of 110-1230 ppb Pd are reported from 16 of the 25 grab samples analysed, two of which also have 120 and 150 ppb Pt.

Pio Lake Zone

Located in the southern claim block, the Pio Lake Zone was discovered in the 1960's and was partially mined in 1980-1982. It is composed of massive pyrrhotite-chalcopyrite-pentlandite in a fault-bounded section in the West Lens, and of disseminated to laminated chalcopyrite-pyrrhotite mineralization in sheared basalt and sulphide-rich iron formation in the East Lens (Fig. 17).

The area is underlain by basalt that has been structurally deformed and overturned into a fold about 1.5 km wide and 4 km long that plunges south-southeast. A fault extends for at least 2000m to the south but is truncated by a later northeast-trending structure about 100m north of the Pio Lake Zone.

Troymin carried out a short drill program on the zone in 1995. Additional drilling in 1996 confirmed the presence of massive sulphide mineralization to the north of the deposit in altered basalt. Drilling at HR 96-73 encountered grades of 2.72% Cu and 0.32% Ni over 2.28m, and in HR 96-90 2.0% Cu and 0.34% Ni over 4.6m in altered basalts north of the northeast-trending fault.

In a drill hole south of the Pio Lake Zone disseminated copper-nickel mineralization at the contact between peridotite and porphyritic gabbro was intersected. In an overturned synform collared into the porphyritic gabbro and drilled into the peridotite the core returned 0.66% Cu and 0.23% Ni over 28.55m in HR 96-77. The nearby hole HR 96-78 was collared into the lower part of the porphyritic gabbro but was not sampled.

The thickness of the mineralised section in HR 96-77 may be much greater because both starting and ending samples of the core section analysed are mineralised. This mineralization is identical in lithology and style to that described at the Hopes Advance Main Zone, Hopes Advance Middle Zone and at Schindler disseminated.

PGE Data

Five grab samples taken from massive sulphides in the West Lens contain 130-490 ppb Pt and 1030-3050 ppb Pd. Eight rocks from the East Lens reported 530-1800 ppb Pd and in other areas at the Pio Lake Zone, values of up to 1580 ppb Pd were identified in quartz veins (Wares and Goutier, 1990).

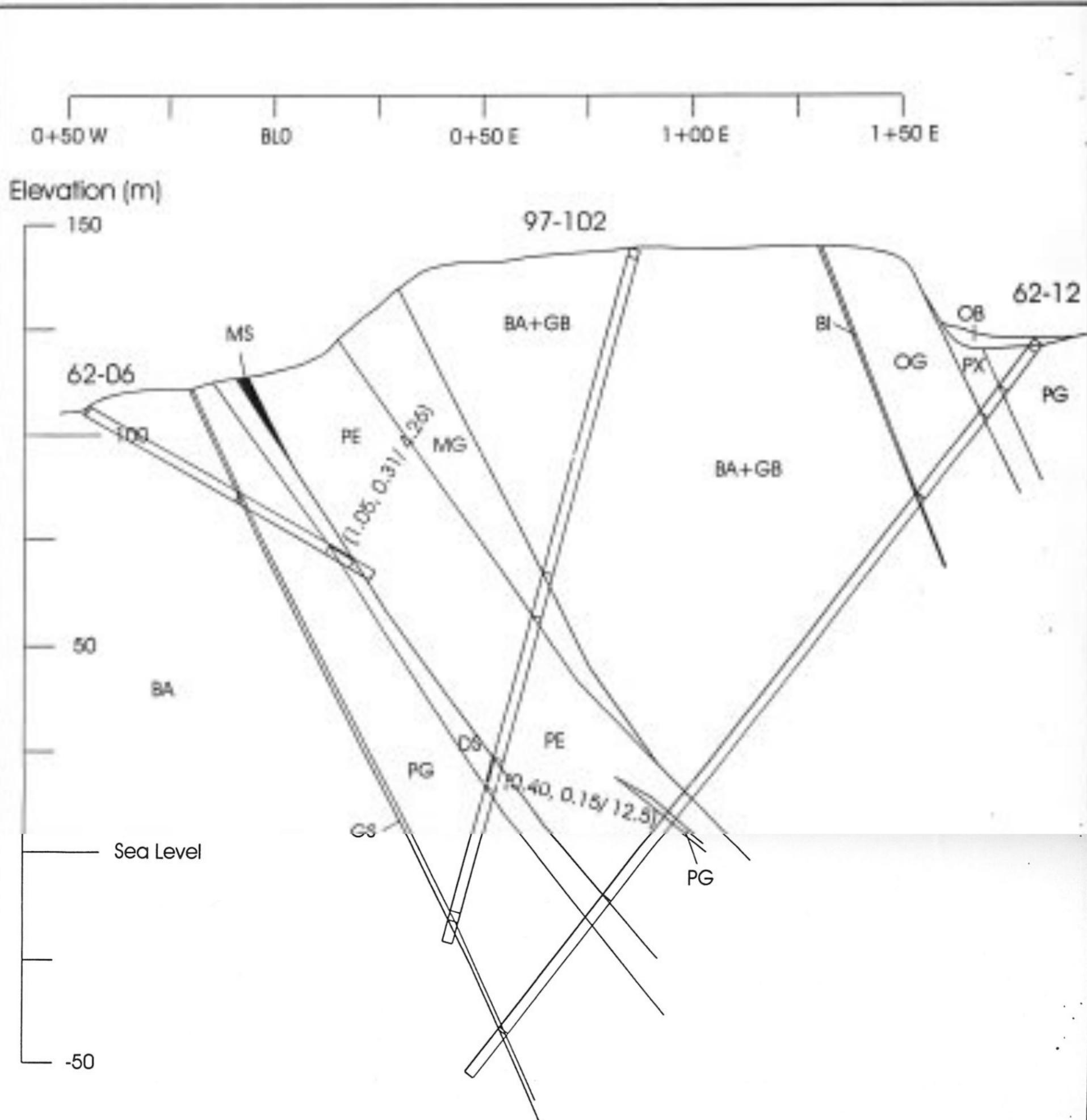
Core from the 1995 drilling at the Pio Lake Zone shows several anomalies of palladium and platinum. At 15.38m in drill hole HR95-03, massive sulphides contain 1204 ppb Pt and 2132 ppb Pd over 30 cm in massive sulphides. Another sample at 16.34m contains 745 ppb Pt, 2412 ppb Pd over 76 cm. The average for this section is 549 ppb Pt and 1522 ppb Pt over 1.72m (Figs. 17-19; Appendix 3).

In drill holes HR 96-72, HR 96-73 north of the Pio Lake Zone massive sulphides in the basalt returned results of up to 94 ppb Pt and 428 ppb Pd over 1.1m intervals. In the porphyritic gabbro of HR 96-77 values of 195 and 265 ppb Pd were obtained from the disseminated sulphides.

Other Areas

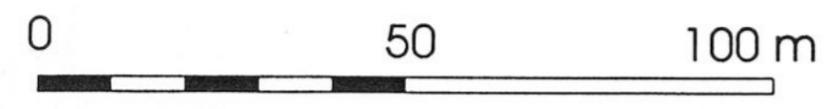
Only a few other samples from the property were analyzed for PGEs. These include three samples from the core at the Mac 1 showing, located about 1250m southeast of the Hopes Advance Main Zone (Fig. 5) where an average of 81 ppb Pt and 416 ppb Pd were reported along with 1.17% Cu and 0.46% Ni over 3.0m (Appendix 4). The core contains disseminated sulphides but no other section of the core was analyzed for PGEs.

For research purposes PGEs were also determined in grab samples from several other unmineralized areas of the property. These results returned 0-0.04% Cu, 0-0.07% Ni, 0-12 ppb Pt and 0-29 ppb Pd.



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HAWK RIDGE PROPERTY
SCHINDLER SHOWING
VERTICAL X-SECTION
0+60 SOUTH

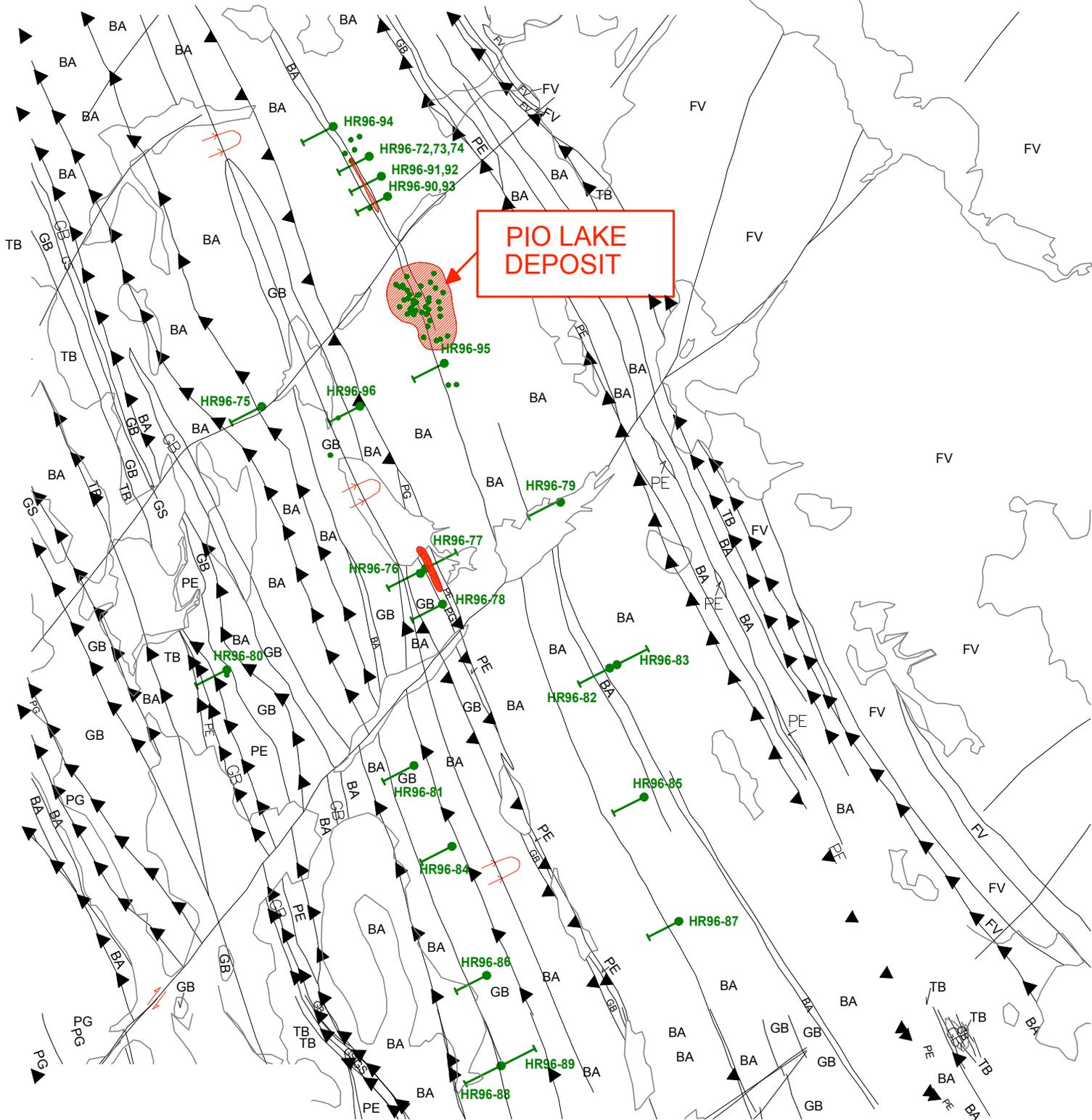


SCALE 1:1,000

N.B. Assays reported as weighted averages of Cu (%) and Ni (%) over intercept length in meters

- MS MASSIVE SULPHIDES
- DS DISSEMINATED SULPHIDES
- GB GABBRO
- OG OPHITIC GABBRO
- PG GLOMEROPORPHYRITIC GABBRO
- MG PLAGIOCLASE-PHYRIC GABBRO
- PX PYROXENITE
- PE PERIDOTITE
- BA BASALT
- BI BASALT-HOSTED IRON FORMATION
- GS GRAPHITIC SCHIST

Fig. 16 Schindler Zone
Cross-Section
(Mungall and Wares, 1997)



Legend

- PE Peridotite
- PX Pyroxenite
- PG Porphyritic Gabbro
- GB Gabbro
- BA Basalt
- TB Turbidite
- GS Graphitic Schist
- BR Breccia
- ▲ Thrust Fault
- Drill Hole and projection
- HR-97-102 Drill Hole
- Massive copper-nickel mineralization
- Disseminated copper-nickel mineralization



Troymin Resources Ltd.

Hawk Ridge Project
PIO Lake Zone
Geology

Date: 2001.04.02

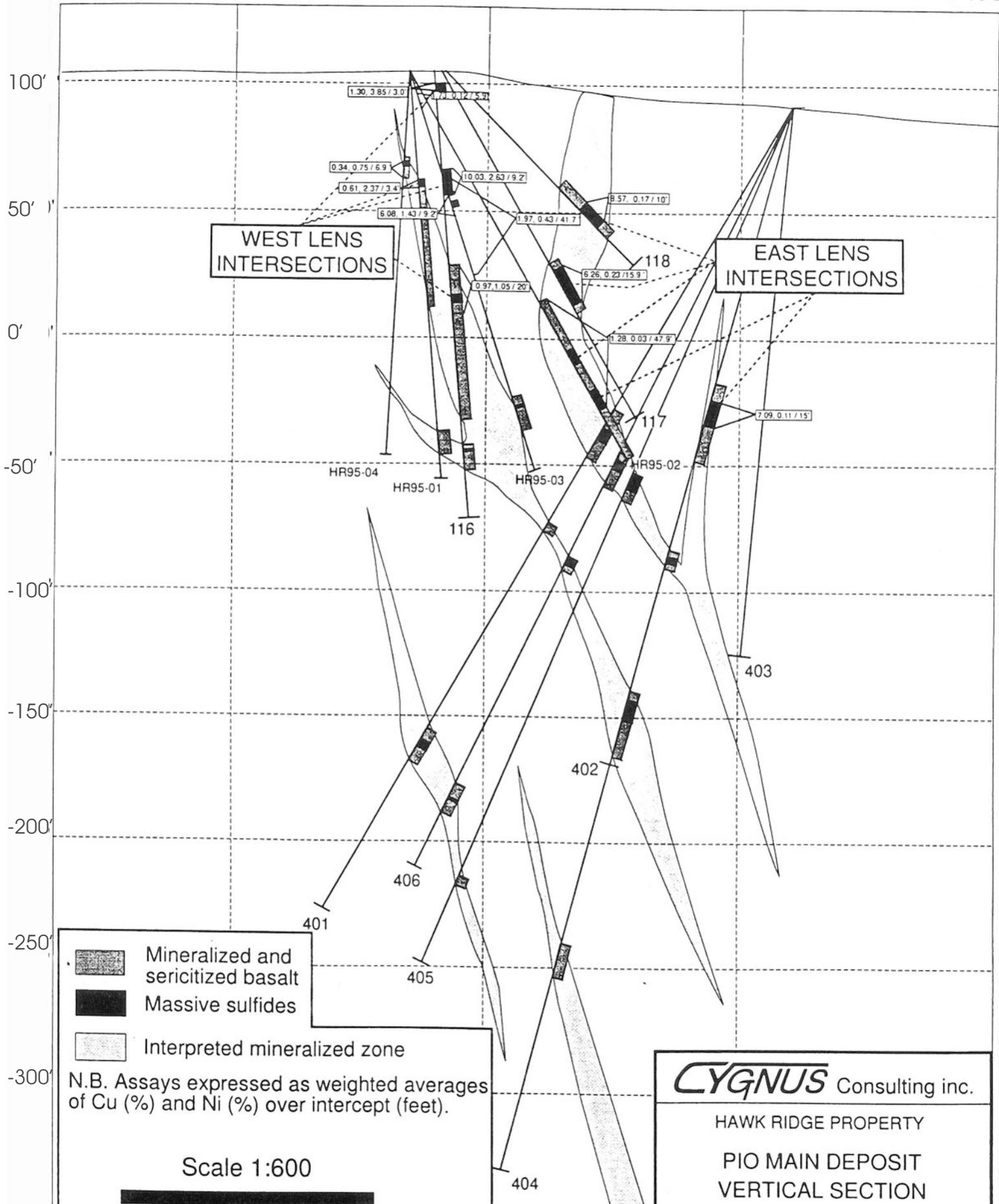
Fig. 17

1+00 W

0E

1+00 E

2+00 E



WEST LENS INTERSECTIONS

EAST LENS INTERSECTIONS

-  Mineralized and sericitized basalt
-  Massive sulfides
-  Interpreted mineralized zone

N.B. Assays expressed as weighted averages of Cu (%) and Ni (%) over intercept (feet).

Scale 1:600



100 ft.

CYGNUS Consulting inc.

HAWK RIDGE PROPERTY

PIO MAIN DEPOSIT

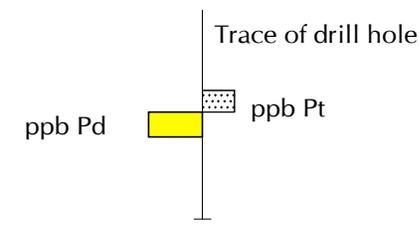
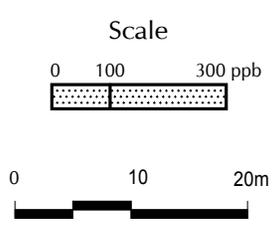
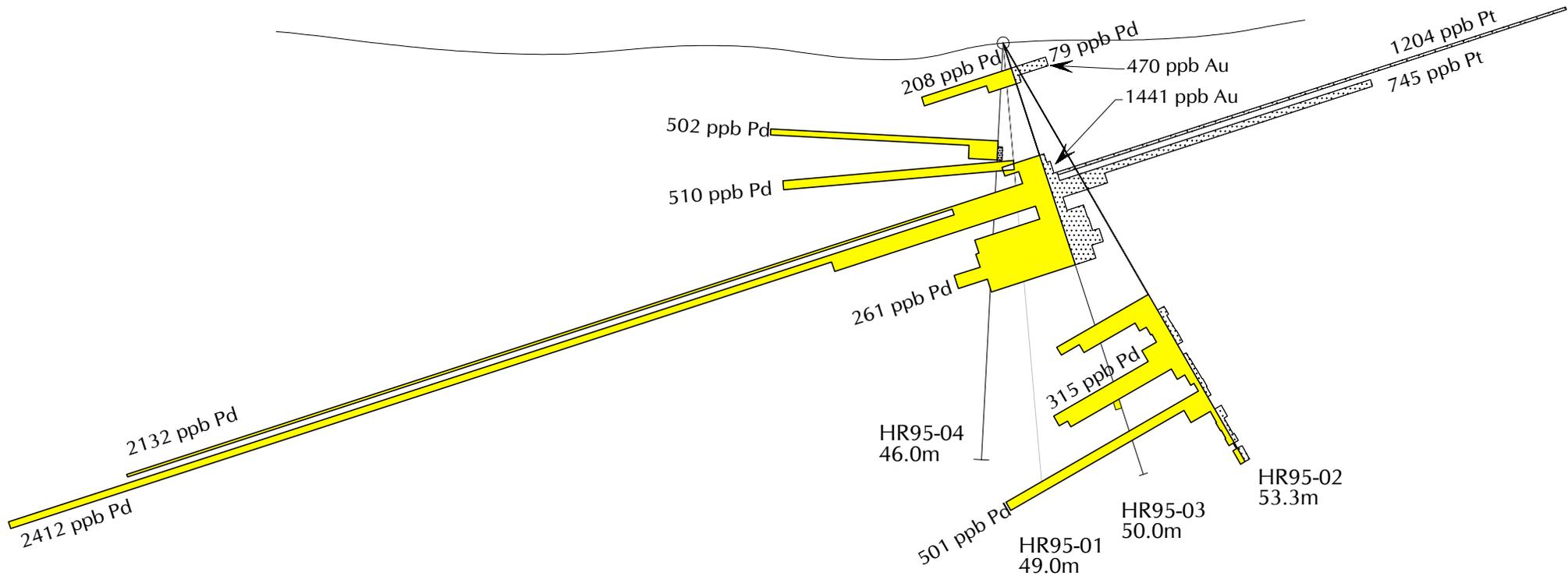
VERTICAL SECTION

Fig. 18 Pio Lake Zone 50+25 N

Cross-Section

(Wares, 1996)

Date: March 12, 1997



Troymin Resources Ltd.		
Pio Lake Project		
Platinum and Palladium Geochemistry		
Drill Holes HR95-01 to HR95-04		
By: DA Beauchamp	Date: 2001.02.13	Fig. 19

Platinum Group Elements Potential

In a recent study of the geochemistry of PGEs mineralization at Hawk Ridge commissioned by Troymin Resources Ltd., Prof. J. Mungall of the University of Toronto concluded that all PGE and gold occurrences on the property were deposited from immiscible sulphide liquids.

The study showed that sulphides were derived from a ferropicritic system that acted as the feeder for the overlying basalt flows, and fractional crystallization in the sulphides led to the concentration of platinum, palladium, copper and gold in the residual liquid. The PGEs, copper and gold were preferentially deposited as disseminated sulphides and were then trapped in the porphyritic gabbro.

If an unexposed feeder were mineralised, evidence for this mineralization could be present in the overlying basalts or sills that were emplaced through the mineralized feeder. The basalts or sills from which the mineralization had been extracted could be depleted in PGEs. The basalt flow itself would not be the target, but could indicate that its source feeder is mineralized.

For this reason Prof. Mungall suggests that the basalts should be prospected for disseminated copper. Because the occurrences would be copper-rich rather than iron-rich, the PGE-rich mineralization may not have visible a surface gossan. He proposes that undiscovered nickel-rich massive sulphides bodies could be present at Hopes Advance North and Schindler Zones.

Conclusions

Although moderately well explored for massive sulphides, the Hawk Ridge Property has not been adequately investigated for Platinum Group Elements. The following factors summarize the reasons to believe that the potential for disseminated PGEs has not been fully tested on the property:

1. The area has been explored mainly for massive copper-nickel mineralization using geophysical surveys that were optimized to identify massive sulphides;
2. Many values of 1000-4000 ppb Pt and 1000-11,000 ppb Pd are associated with massive sulphides from core and surface grab samples;
3. Background analyses of 100-1000 ppb platinum and palladium are common in massive and disseminated sulphides in gabbro, peridotite and pyroxenite;
4. More than 20 anomalies of PGE and gold are present in soils near known disseminated copper-nickel mineralization at the Hopes Advance Main Zone;
5. About 20 anomalies in soils of up to 1060 ppb Pt, 1020 ppb Pd and 460 ppb Au are present in an area about 400m long and 200m wide in an area where massive sulphides were not identified north of the Hopes Advance North Zone;
6. Recent research in geochemistry at the Hawk Ridge Property provides a better understanding of the nature and the relationship between PGEs, gold and copper mineralization;
7. Several new prospective areas have been identified for disseminated PGEs.
8. None of the PGE anomalies and occurrences identified to date has been adequately evaluated, and many require additional work to fully explore their potential. Most of these PGE anomalies have not had any follow-up work.

The work done to date at the Hawk Ridge Property provides an excellent base on which to plan exploration for PGEs, and the availability of drill core and the excellent surface exposure in the mineralized zones of interest make this an ideal project.

At the Hawk Ridge Property there is a very good possibility of identifying PGE mineralization that could complement the already-established copper and nickel resources identified to date on the property. The addition of PGE credits could make some of these deposits economic.

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1997: Final report on the 1996 Exploration Program, Hawk Ridge Property, Labrador Trough, Quebec; Internal report for Troymin Resources Ltd.; 50p.

Appendix 1
Geochemical Analyses
Hopes Advance Area

Sample Number	Rock Type	from	to	interv.	Cu %	Ni %	Co %	Ag ppm	Au ppb	Pt ppb	Pd ppb	Rh ppb	Ir ppb	Os ppb	Ru ppb	S ppb
---------------	-----------	------	----	---------	------	------	------	--------	--------	--------	--------	--------	--------	--------	--------	-------

Hopes Advance

Rocks: Hopes Advance

RW-1406D16-88	Peridotite - sheared				0.16	0.01	0.003	0.0	16	5	5					
RW-1409A2-88	Schist - black, 1% chalcopyrite				0.31	0.04	0.003	0.0	24	5	26					
RW-1413-88	Schist - black 10% sulphides				0.06	0.01	0.001	0.0	1	5	23					
RW-2403A-88	Peridotite - 5% sulphides				0.29	0.10	0.010	0.0	16	20	81					
RW-2403C-88	Peridotite - 2% sulphides				0.18	0.09	0.013	0.0	52	20	77					
RW-2405I-88	Pyroxenite				0.01	0.04	0.005	0.0	28	5	6					

Rocks: Hopes Advance North

RW-1409C-88	Gabbro - 5% pyrrhotite - chalcopyrite				0.89	0.18	0.009	1.0	30	40	120					
RW-1409D-88	Amphibolite - 5% pyrrhotite-chalcopyrite-pyrite				0.78	0.15	0.008	1.5	63	60	230					
RW-1409F-88	Amphibolite - 1% sulphides				0.76	0.02	0.002	2.5	110	140	910					
RW-1409J1-88	Sulphides - Massive				2.16	1.81	0.110	3.5	36	290	210					
RW-1409J2-88	Sulphides - Massive				2.41	1.99	0.100	4.0	26	400	310					
RW-1409J3-88	Siltstone - 50% chalcopyrite				9.89	0.02	0.001	15.0	390	350	340					
RW-1409J4-88	Gabbro - 5%pyrrhotite- chalcopyrite				2.93	0.01	0.001	8.5	1,600	220	540					
RW-1409J5-88	Gabbro - 15% sulphides				6.88	0.04	0.001	8.0	1,500	140	90					
RW-1409J6-88	Gabbro - 5% Pyrrhotite- chalcopyrite				1.10	0.20	0.010	1.0	27	140	200					
RW-1409J7-88	Gabbro - 30% sulphides				8.23	0.01	0.001	11.0	290	220	560					
RW-1409J8-88	Graphitic Schist - 5% sulphides				0.63	0.47	0.009	0.0	52	5	67					
RW-1409J9-88	Siltstone-laminated, biotite, 5% sulphides				0.76	0.31	0.007	1.0	13	5	49					
RW-1409J10-88	Sulphides - Massive- chalcopyrite				12.20	0.01	0.001	63.0	250	4,360	11,300					

Core: Hopes Advance North HR96-03

624101	Sulphides	33.53	34.70	1.17	0.02	0.01	0.002	0.1	3	3	10					
624102	Sulphides	34.70	36.36	1.66	0.15	0.21	0.007	0.3	3	3	110					
624103	Sulphides	36.36	37.17	0.81	1.69	0.28	0.011	4.3	41	46	269					
624104	Sulphides	37.17	38.05	0.88	0.88	2.80	0.033	5.7	16	390	1,348					
624105	Sulphides	38.05	38.53	0.48	2.80	0.90	0.019	6.1	21	137	438					
624106	Sulphides	38.53	39.16	0.63	1.44	0.20	0.008	6.6	105	123	260					
624107	Sulphides	39.16	40.14	0.98	3.50	0.75	0.016	8.6	26	118	302					
624108	Sulphides	40.14	41.14	1.00	3.40	0.84	0.018	8.6	52	198	835					
624109	Sulphides	41.14	42.08	0.94	4.00	0.74	0.017	9.7	55	259	768					
624110	Sulphides	42.08	44.36	2.28	4.60	0.63	0.012	16.7	34	206	604					
624111	Sulphides	44.36	45.80	1.44	7.80	0.74	0.013	17.7	205	3	55					
44.36-45.8	Sulphides	44.36	45.80	1.44					283	127	0	1	0	0	34	18.2
624112	Sulphides	45.80	47.00	1.20	6.50	0.74	0.014	16.0	3,499	3	211					
624113	Sulphides	47.00	48.74	1.74	0.76	0.09	0.005	3.8	80	3	118					
624114	Sulphides	48.74	49.10	0.36	1.52	0.51	0.013	3.4	12	9	20					
624115	Sulphides	71.05	72.05	1.00	3.50	3.20	0.037	5.8	2,120	1,014	2,767					
624116	Sulphides	72.05	73.05	1.00	1.31	2.70	0.032	7.6	16	232	1,292					
624117	Sulphides	73.05	74.00	0.95	3.90	2.40	0.032	10.7	7	432	936					
624118	Sulphides	74.00	75.00	1.00	2.30	3.00	0.034	6.3	8	460	656					
624119	Sulphides	75.00	76.00	1.00	3.90	2.80	0.036	7.9	19	484	664					
75-76	Sulphides	75.00	76.00	1.00	3.90	2.80			15	308	498	103	39	53	230	33.5
624120	Sulphides	76.00	77.00	1.00	6.20	2.30	0.026	11.6	35	485	714					
624121	Sulphides	77.00	78.00	1.00	7.80	2.40	0.025	12.3	46	472	736					
624122	Sulphides	78.00	79.00	1.00	12.70	1.57	0.017	18.1	73	524	1,063					
624123	Sulphides	79.00	80.00	1.00	13.70	1.35	0.019	33.8	120	503	1,257					
79-80	Sulphides	79.00	80.00	1.00					133	511	1,152	30	6	7	76	27.2

Sample Number	Rock Type	from	to	interv.	Cu %	Ni %	Co %	Ag ppm	Au ppb	Pt ppb	Pd ppb	Rh ppb	Ir ppb	Os ppb	Ru ppb	S ppb
624124	Sulphides	80.00	81.00	1.00	10.30	1.08	0.017	16.3	50	330	815					
624125	Sulphides	81.00	82.00	1.00	8.70	2.30	0.028	18.2	102	486	1,303					
81-82	Sulphides	81.00	82.00	1.00					86	484	1,283	60	8	11	104	34.1
624126	Sulphides	82.00	83.00	1.00	6.60	2.70	0.029	14.8	128	760	1,126					
624127	Sulphides	83.00	83.30	0.30	5.90	1.00	0.015	11.4	154	427	446					
624128	Sulphides	83.30	84.30	1.00	1.75	0.18	0.006	3.8	314	3	100					
624129	Sulphides	84.30	85.30	1.00	0.67	0.14	0.006	2.1	197	3	35					
624130	Sulphides	85.30	86.30	1.00	1.52	0.08	0.004	4.1	27	3	30					
624131	Sulphides	86.30	87.30	1.00	2.10	0.09	0.005	5.6	18	3	20					
624132	Sulphides	87.30	88.30	1.00	2.60	0.10	0.005	8.8	57	3	39					
87.3-88.3	Sulphides	87.30	88.30	1.00					18	10	41	0	0	0	14	4.3
624133	Sulphides	88.30	89.30	1.00	1.14	0.06	0.004	3.6	21	3	13					
624134	Sulphides	89.30	90.30	1.00	2.20	0.11	0.006	7.2	28	3	42					
624135	Sulphides	90.30	91.30	1.00	0.96	0.05	0.003	3.5	17	3	14					
624136	Sulphides	91.30	92.30	1.00	1.44	0.05	0.003	6.0	70	3	19					
624137	Sulphides	92.30	93.30	1.00	0.74	0.03	0.003	2.5	18	3	20					
624138	Sulphides	93.30	94.30	1.00	3.60	0.04	0.003	15.3	16	3	108					
93.3-94.3	Sulphides	93.30	94.30	1.00					9	7	111	0	0	0	11	4.2
624139	Sulphides	94.30	95.15	0.85	0.91	0.09	0.005	3.3	53	3	66					

Rocks: Hopes Advance Main

RW-2406B-88	Peridotite-5% sulphides				0.41	0.10	0.007	0.0	27	40	180					
RW-2406C1-88	Peridotite-basalt-brecciated				0.04	0.01	0.001	0.0	0	5	10					
RW-2406C3-88	Peridotite				0.12	0.13	0.009	0.0	44	20	78					
RW-2406C4-88	Gabbro with sulphides				0.31	0.11	0.005	0.0	17	20	86					
RW-2406C5-88	Gabbro with sulphides				0.89	0.26	0.010	0.0	110	60	210					
RW-2406C6-88	Gabbro with sulphides				0.36	0.08	0.005	0.0	7	20	100					
RW-2406C7-88	Gabbro				0.02	0.02	0.002	0.0	4	5	6					
RW-2406C8-88	Gabbro				0.01	0.01	0.003	0.0	1	5	4					
RW-2406D1-88	Graphitic Schist - 20% sulphides				0.06	0.05	0.011	0.0	32	5	150					
RW-2406D2-88	Sulphides- Massive				0.10	0.08	0.016	0.0	30	5	59					
RW-2406E1-88	Graphitic Schist - 20% sulphides				0.09	0.04	0.016	0.0	1	5	69					
RW-2406G3-88	Peridotite - 5% sulphides				0.10	0.02	0.003	0.0	9	20	93					
RW-2406G4-88	Peridotite - 5% sulphides				0.31	0.06	0.004	0.0	28	50	180					
RW-2406G5-88	Gabbro with sulphides				0.47	0.14	0.006	0.0	16	20	95					
RW-2406G6-88	Gabbro with sulphides				0.64	0.30	0.011	0.0	39	50	280					
RW-2406G7-88	Gabbro with sulphides				0.09	0.03	0.004	0.0	5	5	8					
RW-2406G8-88	Gabbro - 2% sulphides				0.04	0.01	0.002	0.0	1	5	1					
RW-2406G9-88	Sulphides- Massive in phyllite				0.41	0.03	0.036	0.0	73	5	13					
RW-2416A-88	Peridotite - 5% sulphides				0.52	0.02	0.002	0.0	56	64	460					

Core: Hopes Advance Main HR96-17

96-17	Gabbro	91.92			0.01	0.08			1	1	5	0	0			1
96-17	Gabbro	103.00			0.01	0.05			1	3	6	0	0			1

Core: Hopes Advance Main HR96-18

96-18	Gabbro	29.00			0.02	0.05			2	3	11	0	0			N.D.
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Sample Number	Rock Type	from	to	interv.	Cu %	Ni %	Co %	Ag ppm	Au ppb	Pt ppb	Pd ppb	Rh ppb	Ir ppb	Os ppb	Ru ppb	S ppb
Core: Hopes Advance Middle HR96-05																
624144	Sulphides	82.02	83.19	1.17	5.20	0.33	<0.01	13.9	35	<5	253					
624145	Sulphides	83.19	84.19	1.00	1.99	0.26	<0.01	4.5	45	<5	132					
Core: Hopes Advance Middle HR96-06																
624150	Sulphides	35.80	36.13	0.33	7.10	1.07	0.033	21.2	56	147	305					
624151	Sulphides	36.13	37.00	0.87	4.90	0.31	0.012	8.3	1,138	80	177					
624155	Sulphides	40.70	41.73	1.03	1.79	0.48	<0.01	3.6	32	<5	245					
624158	Sulphides	44.00	45.00	1.00	1.45	0.53	<0.01	3.6	3	<5	230					
624161	Sulphides	47.00	48.00	1.00	1.20	0.67	<0.01	2.4	6	<5	274					
Core: Hopes Advance Middle HR96-07																
624177	Sulphides	75.50	76.10	0.60	2.30	1.23	0.037	5.7	259	206	380					
Core: Hopes Advance Middle HR97-112																
60.5-62	Peridotite	60.50	62.00	1.50	0.45	0.13			13	51	191	3	0	1	9	1.1
63.5-65	Peridotite	63.50	65.00	1.50	0.38	0.17			8	46	201	5	1	1	5	1.0
66.5-68	Peridotite	66.50	68.00	1.50	0.40	0.18			9	43	184	6	1	1	3	1.5
69.5-71	Peridotite	69.50	71.00	1.50	0.55	0.21			24	56	195	5	1	1	12	1.6
72.5-74	Gabbro-PG	72.50	74.00	1.50	0.88	0.32			34	59	191	8	2	3	23	3.0
75.5-77	Gabbro-PG	75.50	77.00	1.50	0.64	0.22			10	43	154	4	1	1	15	2.1
78.5-80.5	Gabbro-PG	78.50	80.50	2.00	1.90	0.13			31	60	156	7	2	2	22	2.7
80.5-81	Sulphides	80.50	81.00	0.50	4.10	1.98			60	139	414	50	10	12	57	20.3
81-81.5	Sulphides	81.00	81.50	0.50	6.91	1.65			959	272	1,463	49	11	15	55	2.7
81.5-82	Sulphides	81.50	82.00	0.50	3.83	2.49			72	67	963	40	7	9	60	22.2
82-82.5	Sulphides	82.00	82.50	0.50	0.93	4.19			6	9	489	32	3	4	24	28.1
82.5-83	Sulphides	82.50	83.00	0.50	0.62	4.80			1	6	412	15	1	1	17	30.4
83-83.5	Sulphides	83.00	83.50	0.50	0.55	5.00			1	19	398	9	1	0	0	31.1
83.5-84	Sulphides	83.50	84.00	0.50	0.23	3.66			1	385	649	19	2	3	25	32.2
84-84.5	Gabbro-PG	84.00	84.50	0.50	3.70	0.18			8	236	529	7	2	3	18	4.8
84.5-85	Gabbro-PG	84.50	85.00	0.50	1.47	0.22			47	28	246	10	2	2	0	3.5

Appendix 2
Geochemical Analyses
Gamma and Schindler Zones

Sample Number	Rock Type	from	to	interv.	Cu %	Ni %	Co %	Ag ppm	Au ppb	Pt ppb	Pd ppb	Rh ppb	Ir ppb	Os ppb	Ru ppb	S ppb
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Schindler-Gamma Zone

Rocks: Schindler

RW-2601A4-88	Peridotite - 3% chalcopyrite and pyrrhotite				0.42	0.06	0.590		56	40	210					
RW-2601A5-88	Peridotite - sheared - 2% sulphides				0.04	0.06	0.006		5	20	79					
RW-2601A6-88	Gabbro - 5% sulphides				0.28	0.11	0.007		26	30	120					
RW-2601A7-88	Gabbro - 5% sulphides				0.21	0.03	0.002		16	20	74					
RW-2601A8-88	Gabbro - 1% sulphides				0.31	0.08	0.004		32	20	77					
RW-2601B1-88	Peridotite - sheared				0.02	0.02	0.004		45	5	24					
RW-2601B2-88	Gabbro - 10% sulphides				2.20	0.01	0.001		140	150	450					
RW-2601C1-88	Gabbro - 20% pyrrhotite and chalcopyrite				2.99	0.37	0.041		74	5	430					
RW-2601C2-88	Gabbro - 20% pyrrhotite and chalcopyrite				2.53	0.22	0.026		64	5	110					
RW-2601C3-88	Gabbro - 5% pyrrhotite and chalcopyrite				0.79	0.51	0.057		35	5	49					
RW-2601C4-88	Gabbro - 10% chalcopyrite				2.11	0.17	0.023		420	20	110					
RW-2601C5-88	Gabbro - 20% chalcopyrite				6.40	0.07	0.011	5.0	130	5	240					
RW-2601D1-88	Peridotite - 5% pyrrhotite and chalcopyrite				0.83	0.25	0.009		46	50	290					
RW-2601D2-88	Gabbro - 5% sulphides				0.70	0.24	0.009		19	40	100					
RW-2601E1-88	Gabbro - 10% sulphides				2.81	0.10	0.008		31	120	280					
RW-2601E-88	Graphitic Schist with sulphides				0.04	0.01	0.003		3	5	4					
RW-2601F10-88	Basalt - 1% sulphides				0.22	0.01	0.002		9	10	11					
RW-2601F2-88	Schist - 0.1% sulphides				0.01	0.04	0.005		42	5	1					
RW-2601F3-88	Peridotite				0.01	0.09	0.011		13	5	20					
RW-2601F4-88	Schist - chlorite				0.11	0.03	0.003		10	30	130					
RW-2601F5-88	Gabbro - 5% sulphides				0.67	0.10	0.007		21	40	140					
RW-2601F6-88	Pyroxenite - 5% sulphides				0.63	0.23	0.010		43	79	250					
RW-2601F7-88	Gabbro - 10% sulphides				1.00	0.09	0.006		11	40	130					
RW-2601G3-88	Sulphides- Massive				7.13	3.45	0.130	7.0	5	5	1,230					
RW-2601G4-88	Sulphides- Massive				6.02	3.68	0.140	6.5	27	5	990					
3498	melagabbro	Schindler upper			0.02	0.03			4	2	9	0	0			0

Core: Gamma HR96-54

626927	Graphitic Schist	132.79	133.78	0.99	3.30	0.20	0.013		44	36	118	9	3		8	5.4
626928	Massive Sulphides	133.78	134.93	1.15	1.04	3.50	0.138		15	220	645	114	42		140	37.6
626929	Graphitic Schist	134.93	135.42	0.49	5.60	1.77	0.055		43	218	577	54	18		58	26.2
626930	Graphitic Schist	135.42	136.03	0.61	2.70	0.47	0.021		26	2	250	1	0		1	7.0
626931	Massive Sulphides	136.03	136.57	0.54	14.00	1.01	0.033		34	2	459	2	0		2	24.6
626932	Graphitic Schist	136.57	136.86	0.29	0.83	0.33	0.014		20	8	131	1	0		0	3.5

Core: Gamma HR97-105

609251	Porphyritic Gabbro	225.95	227.44	1.49	1.12	0.36	0.000		94	56	252	12	3		8	2.7
609252	Porphyritic Gabbro	227.44	228.85	1.41	1.25	0.30	0.000		61	56	231	11	3		8	2.8
609262	Massive Sulphides	242.43	243.30	0.87	3.40	1.84	0.000		45	203	972	32	7		13	11.4
609263	Massive Sulphides	243.30	245.00	1.70	0.78	2.50	0.000		42	198	939	29	7		12	11.4

Appendix 3
Geochemical Analyses
Pio Lake Zone

Sample Number	Rock Type	from	to	interv.	Cu %	Ni %	Co %	Ag ppm	Au ppb	Pt ppb	Pd ppb	Rh ppb	Ir ppb	Os ppb	Ru ppb	S ppb
Pio Lake																
Rocks: Pio Lake West Lens																
RW-014B-88	Sulphides- Massive				15.50	2.02	0.081	25.0	37	130	1,950					
RW-014C-88	Sulphides- Massive-banded				15.80	2.72	0.099	27.0	63	290	2,740					
RW-100C-88	Sulphides- Massive-banded				18.20	2.48	0.086	32.0	65	250	3,050					
RW-100E-88	Sulphides- Massive				2.33	4.74	0.150	2.5	16	140	1,440					
RW-110A-88	Sulphides- Massive				3.74	3.51	0.130	6.0	7	200	1,030					
Rocks: Pio Lake East Lens																
RW-100G-88	Laminated sulphides and schist				5.85	0.22	0.009	12.0	20	5	690					
RW-100K-88	Schist with chalcopryrite				11.80	0.13	0.005	17.0	55	10	940					
RW-100Q-88	Laminated sulphides and schist				19.20	0.06	0.003	27.0	130	5	1,580					
RW-100R-88	Laminated and folded sulphides and schist				19.40	0.08	0.003	29.0	81	10	530					
RW-100S-88	Laminated sulphides and schist				16.40	0.13	0.005	24.0	160	5	850					
RW-100T-88	Sulphides - aphanitic, folded				9.45	0.18	0.007	17.0	95	5	1,100					
RW-100U-88	folded sulphides and blavk schist				13.80	0.09	0.003	20.0	160	5	540					
RW-100W-88	Laminated and folded sulphides and schist				13.90	0.12	0.005	22.0	130	5	1,800					
Rocks: Pio Lake Quartz Veins																
RW-14A-88	Quartz Vein - chalcopryrite				1.42	0.08	0.001	1.0	140	10	23					
RW-100N-88	Quartz Vein with chalcopryrite				0.22	0.02	0.001	0.3	1	5	23					
RW-100Z-88	Quartz Vein and laminated sulphides				1.71	0.09	0.004	25.0	100	5	1,580					
Rocks: Pio Lake Altered Basalt																
RW-100A-88	Basalt, chlorite, 10% disseminated chalcopryrite				6.08	0.32	0.012	7.0	2,800	130	390					
RW-100J-88	Basalt, chlorite, 10% disseminated chalcopryrite				4.12	0.45	0.017	4.5	540	170	570					
Rocks: Pio Lake Phyllite shear zones in basalt																
RW-008-88	Basalt-sheared, 5% pyrrhotite				0.02	0.01	0.004	0.3	14	10	14					
RW-009A-88	Basalt-sheared, folded, 2%pyrrhotite				0.17	0.03	0.001	0.3	4	10	5					
RW-120B-88	Breccia - pyrrhotite				0.11	0.02	0.007	0.3	6	10	6					
RW-1900F-88	Basalt, albitized, sheared, 5% pyrrhotite				0.23	0.04	0.009	0.3	7	20	28					
RW-1900G-88	Basalt, albitized, sheared, 5% pyrrhotite				0.03	0.01	0.004	0.3	2	5	5					
RW-1900N-88	Breccia - pyrrhotite				0.06	0.02	0.012	0.3	16	20	10					
Rocks: Pio Lake Porphyritic Gabbro																
RW-011A-88	Gabbro - 5% sulphides				1.31	0.31	0.018	0.3	32	60	220					
RW-011C-88	Gabbro - 5% sulphides				1.24	0.23	0.013	1.5	24	100	340					

Sample Number	Rock Type	from	to	interv.	Cu %	Ni %	Co %	Ag ppm	Au ppb	Pt ppb	Pd ppb	Rh ppb	Ir ppb	Os ppb	Ru ppb	S ppb
Core: Pio Lake HR95-01																
474751	Semi-massive sulphide	13.00	14.00	1.00	0.61	2.37	0.060	2.1	282	<5	510	<5	<1	<10	<50	
474752	Sheared Basalt	17.00	18.00	1.00	0.03	0.03	<0.01	<0.7	4	11	15					
Core: Pio Lake HR95-02																
474753	Sheared Basalt	32.00	33.00	1.00	0.83	0.04	0.010	2.9	7	<5	233					
474754	Sheared Basalt	33.00	34.00	1.00	3.54	0.06	<0.01	8.0	1,441	<5	187					
474755	Sheared Basalt	34.00	35.00	1.00	0.30	<0.01	<0.01	<0.7	10	17	57					
474756	Sheared Basalt	35.00	36.00	1.00	0.34	<0.01	<0.01	<0.7	5	12	40					
474757	Sheared Basalt	36.00	37.00	1.00	0.10	<0.01	0.010	<0.7	<1	13	37					
474758	Sheared Basalt	37.00	38.40	1.40	1.58	0.02	<0.01	2.8	29	14	74					
474759	Semi-massive sulphide	38.40	39.65	1.25	1.69	0.17	0.010	4.3	75	<5	315					
474760	Semi-massive sulphide	39.65	40.38	0.73	7.21	0.13	<0.01	14.0	107	8	294	<5	<1	<10	<50	
474761	Sheared Basalt	40.38	41.70	1.32	1.29	0.01	<0.01	1.7	11	9	38					
474771	Sheared Basalt	41.70	43.00	1.30	0.08	0.02	<0.01	<0.1	<1	10	19					
474772	Sheared Basalt	43.00	44.00	1.00	0.07	0.01	<0.01	0.3	<1	11	11					
474762	Massive py-po breccia	44.00	45.05	1.05	1.16	0.04	0.020	3.1	98	9	501	<5	1	<15	<60	
474763	Sheared Basalt	45.05	46.60	1.55	0.54	0.05	0.020	1.3	19	<5	60					
474773	Sheared Basalt	46.60	48.00	1.40	0.08	0.02	<0.01	<0.1	2	17	11					
474774	Sheared Basalt	48.00	49.00	1.00	0.20	0.02	<0.01	0.2	4	8	13					
474775	Sheared Basalt	49.00	50.00	1.00	0.05	0.02	<0.01	<0.1	1	8	11					
474776	Sheared Basalt	50.00	50.90	0.90	0.02	0.01	<0.01	<0.1	3	11	13					
474764	Semi-massive sulphide	50.90	51.60	0.70	0.45	0.07	<0.01	<0.7	2	<5	2					
474777	Sheared Basalt	51.60	53.30	1.70	0.08	0.01	<0.01	<0.1	1	12	11					
Core: Pio Lake HR95-03																
474778	Chloritized Basalt	2.90	3.90	1.00	2.03	0.05	<0.01	5.5	470	79	208					
474779	Chloritized Basalt	3.90	4.70	0.80	1.35	0.08	<0.01	3.3	27	11	64					
474780	Chloritized Basalt	13.00	14.00	1.00	1.05	0.09	<0.01	2.8	13	10	87					
474781	Chloritized Basalt	14.00	15.38	1.38	0.31	0.07	<0.01	0.8	7	18	55					
474765	Massive Sulphides	15.38	15.68	0.30	21.50	1.29	0.050	61.7	26	1,204	2,132	<5	2	<30	<80	
474766	Quartz Vein	15.68	16.34	0.66	1.97	0.04	<0.01	3.8	13	25	220					
474767	Chloritized Basalt	16.34	17.10	0.76	5.84	4.27	0.140	12.1	4	745	2,412	23	4	<10	<60	
474768	Chloritized Basalt	17.10	18.20	1.10	4.50	0.35	0.010	11.1	57	124	509					
474782	Chloritized Basalt	18.20	19.70	1.50	0.15	0.05	<0.01	<0.7	7	20	43					
474783	Chloritized Basalt	19.70	21.20	1.50	0.96	0.18	<0.01	2.6	37	58	194					
474784	Chloritized Basalt	21.20	22.70	1.50	1.03	0.16	0.010	2.6	53	60	201					
474785	Chloritized Basalt	22.70	24.20	1.50	1.14	0.20	0.010	2.8	80	75	261					
474786	Chloritized Basalt	24.20	25.70	1.50	1.00	0.25	0.010	2.8	201	48	194					
474787	Chloritized Basalt	40.85	42.30	1.45	0.51	0.03	<0.01	<0.7	4	<5	14					
Core: Pio Lake HR95-04																
47469	Massive Sulphides	10.80	11.45	0.65	0.17	1.95	0.010	0.5	14	<5	502					
47470	Sheared Basalt	11.45	12.90	1.45	0.40	0.21	<0.01	0.4	5	11	63					

Sample Number	Rock Type	from	to	interv.	Cu %	Ni %	Co %	Ag ppm	Au ppb	Pt ppb	Pd ppb	Rh ppb	Ir ppb	Os ppb	Ru ppb	S ppb
Core: Pio Lake HR96-72																
627195	Massive Sulphides	52.92	53.30	0.38	1.46	1.00	0.037		12	20	391	5	1		2	28.6
627196	D/L	53.30	54.31	1.01	1.98	0.20	0.009		10	48	80	3	1		2	7.0
Core: Pio Lake HR96-73																
627205	D/L	64.42	65.55	1.13	4.47	0.12	0.002		8	94	78	14	4		10	8.6
627206	Massive Sulphides	65.55	66.70	1.15	1.01	0.52	0.026		71	78	428	16	7		21	34.7
Core: Pio Lake HR96-77																
627223	Porphyritic Gabbro	50.30	56.22	5.92	0.76	0.29	0.014		22	53	195	5	2		5	3.0
627225	Porphyritic Gabbro	56.22	62.05	5.83	1.00	0.31	0.016		24	74	265	9	2		5	2.7

**Appendix 4
Geochemical Analyses
Other Areas at Hawk Ridge Property**

Sample Number	Rock Type	from	to	interv.	Cu %	Ni %	Co %	Ag ppm	Au ppb	Pt ppb	Pd ppb	Rh ppb	Ir ppb	Os ppb	Ru ppb	S ppb
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Mac 1

Core: Mac 1 HR96-37

626815	Disseminated Sulphide	27.50	28.50	1.00	0.48	0.54			22	90	303	9	3		5	8.7
626816	Disseminated Sulphide	28.50	29.50	1.00	1.13	0.48			40	67	381	8	2		3	8.0
626817	Disseminated Sulphide	29.50	30.50	1.00	1.90	0.36			183	86	563	12	2		3	6.9

Rocks: Mac 1

3431	melagabbro	Mac2			0.02	0.02			0	2	0	0	0	0	0	
3432	melagabbro	Mac2			0.02	0.01			2	2	3	N.D.	0		N.D.	

Rocks, various locations

2024	Glomeroporphyritic Basalt				0.04	0.01			1	2	3	0	0			0
2066	Glomeroporphyritic Basalt				0.03	0.01			1	2	2	N.D.	0			N.D.
3051	Bacchus - Basalt				0.00	0.01			N.D.	3	5	N.D.	N.D.			N.D.
3063	Baby Formation - Basalt				0.00	0.00			N.D.	N.D.	0	N.D.	N.D.			N.D.
3064	Baby Formation - Basalt				0.00	0.01			N.D.	0	0	N.D.	N.D.			N.D.
3072	Basalt				0.01	0.01			1	4	0	0	0	0	5	
3152	Basalt				0.00	0.01			1	1	1	N.D.	N.D.			N.D.
3168	Hellancourt Basalt				0.01	0.05			4	9	11	1	1			1
3183	Hellancourt Basalt				0.01	0.02			4	12	9	1	0			0
3184	Hellancourt Basalt				0.00	0.02			2	10	5	1	0			0
3215	Hellancourt Basalt				0.01	0.04			5	10	0	1	0	0	7	
3216	Hellancourt Basalt				0.00	0.05			1	12	12	1	1			2
3217	Hellancourt Basalt				0.01	0.05			1	11	7	1	1			1
3218	Hellancourt Basalt				0.04	0.07			1	9	13	1	1			2
3320	Hellancourt Basalt				0.02	0.01			4	9	13	0	0			N.D.
3324	Hellancourt Basalt				0.00	0.01			2	10	12	1	0			0
3424	Seahorse Area: Glomeroporphyritic Basalt				0.03	0.04			1	5	29	1	0	0	7	
3425	Seahorse Area: Glomeroporphyritic Basalt				0.01	0.03			1	3	11	0	0			N.D.