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Forfatter Palmer, D		Dato År april 2002	Bedrift (Oppdragsgiver og/eller oppdragstaker) Tertiary Gold Limited Tertiary Minerals plc Steffen Robertson and Kirsten (Canada) INC	
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Råstoffgruppe Malm/metall	Råstofftype Pt Pd Au			
Sammendrag, innholdsfortegnelse eller innholdsbeskrivelse The survey covers Block A: mutingsområdene Kalkkipahta 1-24 og blokk I: Unna Galluvaras 1-27. In block A, the survey failed to locate additional metapyroxenite and no further work was undertaken, but in the Gallujavre property, Block I, the sutrvey was successfull in locating zones of high chargeability, and a number of potential sulphide conductors were delineated. In response to the success of the EM programme an initial drilling program of 600m is proposed for the Gallujavre area.				

TERTIARY MINERALS plc

3CT009.00

Finnmark Project, Northern Norway

**Geophysical Surveys – Porsvann (Block A) and
Gallujavre (Block I) Areas**



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Finnmark Project, Northern Norway

Geophysical Surveys – Porsvann (Block A) and Gallujavre (Block I) Areas

Prepared for:

Tertiary Minerals plc

Sunrise House
Hulley Road, Hurdsfield Industrial Estate
Macclesfield, Cheshire SK10 2LP, UK.

Prepared by:

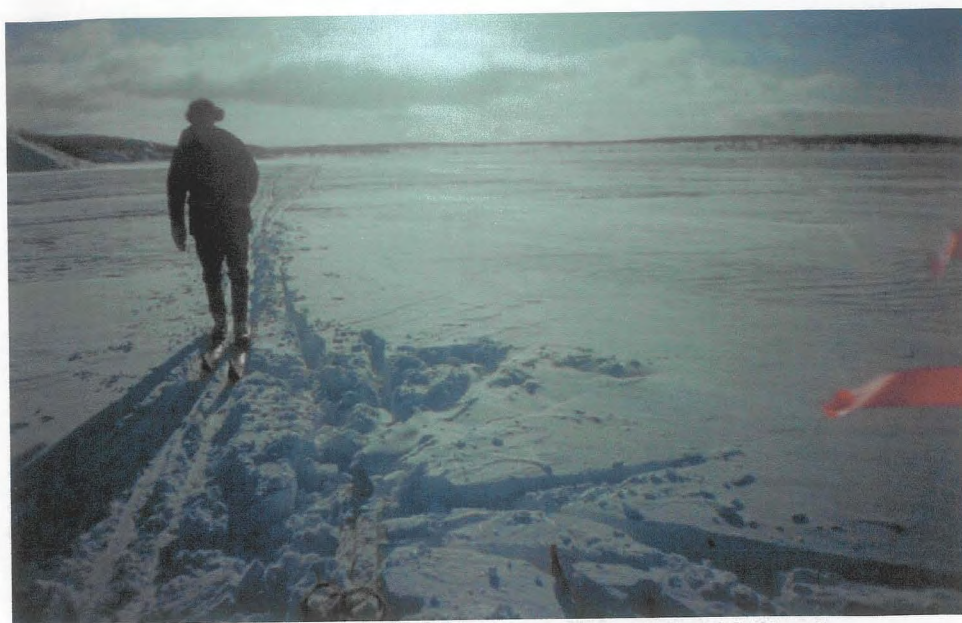
D. Palmer, Ph.D.

STEFFEN ROBERTSON AND KIRSTEN (CANADA) INC.

Suite 606, 357 Bay Street
Toronto, ON M5H 3T9
Tel: (416) 601-1445 • Fax: (416) 601-1450
E-mail: geodavep@hotmail.com Web site: www.srk.com

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Frontispiece



Gallujavre baseline – looking south from Line 13 North

Summary

The Finnmark Project comprises 179 claims, staked as 10 blocks (A-J) by Tertiary Minerals plc, which target mafic and ultramafic rocks of the Karasjok Greenstone Belt (KGB) within the Finnmark Region of Northern Norway. The KGB comprises a narrow zone of metamorphosed Archean sedimentary, volcanic and minor intrusive rocks, including ultramafic lithologies, which stretch from Northern Finland to the town of Lakselv, Norway, and covers a distance of approximately 160 km, ranging in width from 20 to 40 km (Often, 1985). A number of sulphide showings have been identified in ultramafic intrusives on the Tertiary Minerals claims, and studies by the Norwegian Geological Survey (NGU) have shown that mineralization is often anomalous in Platinum Group Elements (PGE). SRK Consulting evaluated the claims during the 2001 field season through field mapping, lithogeochemical sampling and regional prospecting and several areas were identified as prospective for Pt-Pd mineralization. Follow-up geophysical investigations were planned for two of the priority areas, Block A and Block I, during the winter of 2002. This programme was designed to accomplish two goals: 1) identify possible extensions of mineralized host rocks in the Porsvann area of Block A utilizing a magnetic survey; and 2) identify potential sulphide conductors within ultramafic rocks of the Gallujavre area.

The most interesting area of Block A is a small metapyroxenite body which hosts disseminated chalcopyrite-pyrrhotite mineralization containing up to 6.8 g/ton combined Pt-Pd. Owing to its limited extent a magnetic survey was undertaken to define hidden extensions of the horizon to the north and south. The survey failed to locate additional metapyroxenite and no further work was undertaken.

Between 1978 and 1982 Sydvaranger A/S identified a number of Ni-Cu showings within a serpentinized ultramafic horizon in the Gallujavre area, consisting of up to 5% disseminated pyrrhotite-chalcopyrite with minor pentlandite, mackinawite and violarite (Grammelvtvedt, 1979). Current fieldwork indicates that mineralization is also anomalous in Pt-Pd, returning values of up to 2.15 g/ton combined Pt-Pd from lithogeochemical samples taken in 2001. A previous airborne VLF survey identified a geophysical conductor, however, a shallow drill hole intersected only barren metasediment. In 1982, Sydvaranger completed a Turam EM survey, which delineated a number of conductors, most of which follow geological boundaries. Drill-testing of two cross-cutting anomalies resulted in only weak sulphide mineralization. In order to better evaluate EM conductors on the Gallujavre property Tertiary Minerals carried out a number of test surveys, over known mineralization and previously identified conductors, utilizing three electromagnetic (EM) methods, MaxMin II horizontal-loop EM (HLEM), Induced Polarization (IP) and Gradient (Self Potential) methods, in conjunction with magnetic measurements. The tests were designed to evaluate the effectiveness of the various EM methods for delineating previously identified conductors. MaxMin II profiles failed to locate previous Turam anomalies, while gradient measurements show a broad anomalous zone, which covers the eastern margin of the intrusive. Owing to the positive results from the IP survey, a full grid was established over the area and covered

by a gradient-array survey. The survey was successful in locating zones of high chargeability, and a number of potential sulphide conductors were delineated. A dipole-dipole-array IP survey was completed over the most interesting anomalies on lines 13, 14 and 15. Results of the IP survey were interpreted by Vision Exploration of Timmins, Canada (Appendix I).

In response to the success of the EM programme, an initial drilling program of 600m is proposed for the Gallujavre area, and is designed to test the gradient/dipole-dipole anomalies, as well as surface mineralization. Four holes, totaling 600m, are recommended to test the anomaly between lines 16N and 6N.

Abbreviations/Units

This report uses standard System International (SI) units. The coordinate system used for georeferencing is UTM WGS 84 (Zone 35W for the Finnmark region), with units of meters, and structural data is given in degrees, using the right hand rule convention (dip is always to the right of the strike measurement). For planar features strike measurement is always given first, followed by dip, and for linear features, such as fold axes, it is dip/dip angle.

Some common abbreviations found in the text are defined as follows:

KGB	Karasjok Greenstone Belt
NGU	Norges Geologiske Undersokelse (Norwegian Geological Survey)
SINTEF	Foundation for Scientific and Industrial Research (Norwegian University of Science and Technology)
PGE	Platinum Group Elements
PGM	Platinum Group Minerals
ppm/ppb	parts per million/billion
UM	ultramafic
Amph	amphibolite
EM	Electromagnetic (geophysical)
SP	Self-Potential (geophysical)
IP	Induced Polarization (geophysical)
MSL	Mean Sea Level (0m)
NOK	Norwegian Krona (monetary)
---	Concentrations below detection (for ease in viewing geochemical data)

Table of Contents

FRONTISPIECE.....	III
SUMMARY.....	IV
ABBREVIATIONS/UNITS.....	VI
TABLE OF CONTENTS.....	VII
LIST OF FIGURES.....	IX
LIST OF PHOTOS.....	IX
LIST OF TABLES.....	IX
1. INTRODUCTION.....	1
1.1 PROPERTY LOCATION AND ACCESS.....	3
1.2 TOPOGRAPHY/CLIMATE.....	5
1.3 REGIONAL GEOLOGY (FROM REPORT OF ACTIVITIES, 2001).....	5
1.4 ECONOMIC GEOLOGY (FROM REPORT OF ACTIVITIES, 2001).....	6
1.5 METHODOLOGY.....	7
1.6 WORK PROGRAM.....	7
2. PORSVANN (BLOCK A) GEOPHYSICAL PROGRAMME.....	8
2.1 INTRODUCTION.....	8
2.2 LOCATION AND ACCESS.....	8
2.3 TOPOGRAPHY.....	8
2.4 GEOLOGY (FROM: REPORT OF ACTIVITIES, 2001).....	8
2.4.1 Relationship between Porsvann Metapyroxenite and Gabbro.....	10
2.5 ECONOMIC GEOLOGY.....	12
2.6 PREVIOUS GEOPHYSICAL SURVEYS.....	12
2.7 GEOPHYSICAL GRID.....	15
2.8 GEOPHYSICAL DATA.....	15
2.9 CONCLUSIONS/RECOMMENDATIONS.....	17
3. GALLUJAVRE (BLOCK I) GEOPHYSICAL PROGRAMME.....	18
3.1 INTRODUCTION.....	18
3.2 LOCATION AND ACCESS.....	18
3.3 TOPOGRAPHY.....	19
3.4 GEOLOGY (FROM REPORT OF ACTIVITIES, 2001).....	19
3.5 ECONOMIC GEOLOGY (FROM REPORT OF ACTIVITIES, 2001).....	19
3.6 PREVIOUS WORK.....	21
3.7 GEOPHYSICAL GRID.....	21
3.8 METHODOLOGY.....	24
3.9 GEOPHYSICAL RESULTS.....	25
3.10 CONCLUSIONS/RECOMMENDATIONS.....	29
4. CONCLUSIONS.....	31
4.1 PORSVANN.....	31
4.2 GALLUJAVRE.....	31
5. REFERENCES.....	34

APPENDIX I.....	35
APPENDIX II	38
APPENDIX III.....	39
APPENDIX IV	40
APPENDIX V	41
APPENDIX VI.....	42
APPENDIX VII.....	44

List of Figures

Figure 1.1 Regional Location Map.....	p.2
Figure 2.1 Block A Geological Map.....	p.9
Figure 2.2 Porsvann – Detailed Geology.....	p.11
Figure 2.3 Porsvann - Previous work.....	p.14
Figure 2.4 Porsvann – Magnetic Survey (contoured).....	p.16
Figure 3.1 Block I Geological Map.....	p.20
Figure 3.2 Gallujavre – Panoramic view of Lake.....	p.22
Figure 3.3 Gallujavre – Magnetic Survey (contoured).....	p.23
Figure 3.4 Gallujavre – MaxMin II profiles.....	p.26
Figure 3.5 Gallujavre – IP survey – chargeability (contoured).....	p.27
Figure 3.6 Gallujavre – IP profiles (L6, 13, 14, 15, 16N).....	p.28
Figure 3.7 Gallujavre – IP survey – resistivity (contoured).....	p.30

List of Photos

Frontispiece (Gallujavre Lake).....	p.iii
Photo 2.1 Porsvann – disseminated sulphides in metapyroxenite.....	p.13
Photo 2.2 Porsvann – Malachite staining on western limb of metapyroxenite.....	p.13

List of Tables

Table 1.1 Tertiary Minerals Claim Blocks.....	p.4
Table 2.1 Porsvann – Grid point locations.....	p.15
Table 3.1 Gallujavre – Grid point locations.....	p.24
Table 3.2 Gallujavre – proposed diamond drill hole locations.....	p.31

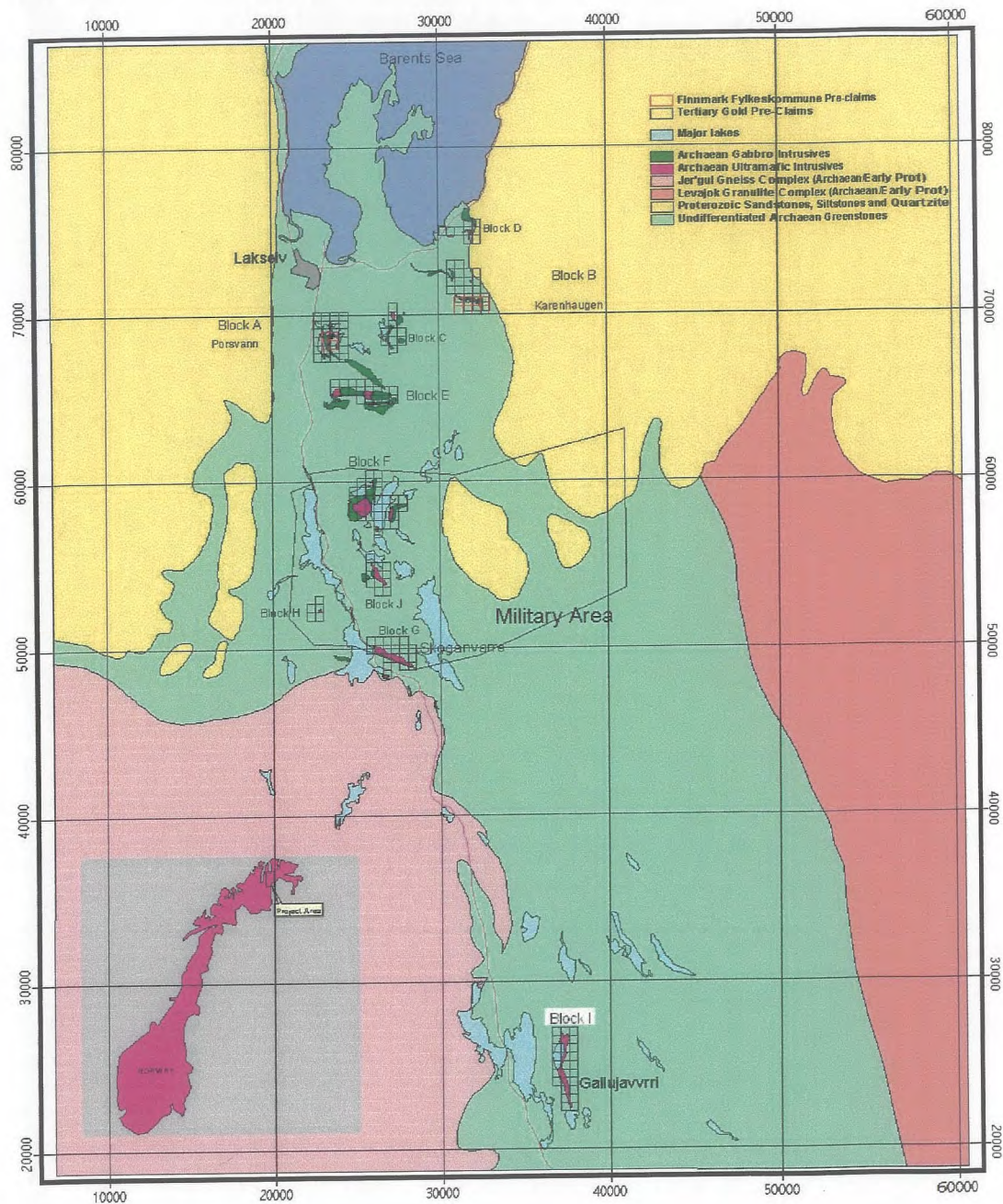
1. Introduction

Owing to the successful identification of PGE-prospective mineralization on Tertiary Minerals' Finnmark properties in Northern Norway during the 2001 field mapping program, a geophysical programme was undertaken over two of the priority areas, Porsvann (Block A) and Gallujavre (Block I). The objectives of the surveys were to locate possible extensions of the Porsvann sulphide showing on Block A and to identify geophysical conductors on Block I, which may be caused by sulphide mineralization. This report covers a two-week site visit made by SRK Consulting to the areas of the geophysical survey, carried out by Geovista A/S during February and March, 2002, and an interpretation of the geophysical results. Excerpts of descriptive geology from the 2001 Report of Activities (Palmer, 2001) have been included in this report, while a detailed description of geophysical methodology and instrumentation are provided in a supplementary report submitted by the geophysical contractor (Geovista A/S). An interpretation of the geophysical data by Vision Exploration, Canada, is included as Appendix I.

The Finnmark Project comprises 179 non-contiguous pre-claims staked in 10 Blocks, which selectively target mafic/ultramafic lithologies in the Karasjok Greenstone Belt (KGB), which have been identified as potential hosts of PGE mineralization (Fig. 1.1). The KGB forms part of the Karasjok-Levajok tectonic belt, an extensive north-south trending mobile belt, which also includes the Levajok Granulite Complex and the Tanalev Migmatite Complex (Braathen and Davidsen, 2000) (Fig. 1.1) and comprises a narrow zone of metamorphosed Archean sedimentary, volcanic and minor intrusive rocks, which stretch from Northern Finland to the town of Lakselv, Norway. The belt extends for approximately 160 km, ranging in width from 20 to 40 km (Often, 1985). To the south the belt continues for another 150 km into Finland where it is known as the Kittilä Greenstone Belt (Rastas, 1980; Gaál et al., 1978).

The Finnmark region has been the site of sporadic mineral exploration since the end of the First World War when interest in the areas hydrothermal copper showings was first shown. During the 1970's and 80's mineral exploration focused on gold, with Sydvaranger A/S completing the most ambitious programme in the Finnmark area. No economic metal deposits were discovered, however, this work did reaffirm the presence of anomalous amounts of base and precious metal mineralization in the area, and included a new Ni-Cu discovery in the Gallujavre area. Recent studies by the NGU in the area have revealed its potential for hosting PGE mineralization and Tertiary Minerals is the first company to carry out exploration for PGE in the region.

During the 2001 field season an extensive mapping and prospecting program was completed in the Finnmark region for Tertiary Minerals plc by SRK Consulting. The program was designed to evaluate the potential for platinum and palladium mineralization in mafic/ultramafic rocks of the Karasjok Greenstone Belt (KGB), and resulted in recommendations for further work in a number of areas. The current

Figure 1: Finnmark Project Summary**Figure 1.1 Regional location Map for the Finnmark project**

programme (February-March, 2002) was initiated in response to these recommendations and comprises magnetic and electromagnetic surveys over two of the priority areas, Porsvann (Block A) and Gallujavre (Block I).

The Porsvann area (Block A) contains a small body of metapyroxenite, which hosts up to 5% disseminated chalcopyrite-pyrrhotite mineralization, occurring as lenticular zones, typically near the margins of the intrusive. Owing to the limited size of known mineralization, approximately 2.3 line km of magnetic measurements were taken, designed to evaluate the potential for both northerly and southerly extensions of the mineralized metapyroxenite body. An Induced Polarization survey was scheduled for the area if positive results were obtained from the magnetics.

The Gallujavre occurrence consists of a number of surface sulphide showings consisting of primary, disseminated pyrrhotite-chalcopyrite mineralization hosted by a metamorphosed olivine-bearing ultramafic. The most significant result of metamorphism was the replacement of olivine by serpentine and magnetite. The showings were first discovered by Sydvaranger A/S in 1978 following a soil geochemistry program, which traced the sulphide mineralization. Subsequent work by Sydvaranger included geophysics, airborne VLF and ground Turam surveys, followed by a seven-hole shallow drilling program, which tested the VLF conductor, two cross-cutting Turam anomalies and surface mineralization. Drill results were variable with disseminated sulphide mineralization similar to the surface showings intersected in five of the seven holes. In 2001, Tertiary Minerals completed a ground mapping and lithogeochemical sampling program on the Gallujavre property that identified anomalous values of PGE, up to 2.15 g/ton Pt+Pd, associated with sulphide mineralization. During the current programme a grid of approximately 19 line km was established in the vicinity of the sulphide showings, over which EM and magnetic surveys were run. In order to identify potential mineralization in the subsurface three EM surveys were selected as part of an initial test in order to determine the most effective method for identifying sulphide mineralization, and included MaxMin II horizontal loop (HLEM), Induced Polarization (IP) and gradient surveys. A magnetic survey was run in conjunction with the EM programme, and was initially planned to cover the northern and southern extensions of the horizon, but, owing to time limitations, was only completed over the main grid.

1.1 Property Location and Access

In January 2001 Tertiary minerals registered 179 pre-claims (500x500m each) in the Finnmark Region of Northern Norway as 10 unique blocks, designated from A to J (Fig 1.1). Table 1.1 provides a listing of the claim blocks, their respective locations, number of claims and areas. Part of the Tertiary Minerals land position include 45 claims (Blocks A and B) optioned from the Finnmark County Council for NOK180 000, and a 1.25% net smelter return royalty on any production. Claims can be maintained for a period of seven years, subject to an annual payment of NOK 750 per claim, on the anniversary date each year.

The Finnmark Project claims are located in the northern portion of the Finnmark area of northern Norway between the towns of Karasjok (south) and Lakselv (north) (Fig. 1.1). The properties are within the Karasjok Greenstone Belt, and are covered by map sheets 2035III (Blocks A, B, C, D), 2034IV (Blocks E, F, G, H, J) and 2034II (Block I) of the Norges Geografiske Opmåling series M711. All claim blocks are situated between the

Table 1.1 Tertiary Minerals Claim Blocks

BLOCK #	ha	# OF CLAIMS	Mapsheet #	UTM ZONE	EASTING	NORTHING
A	600	24	2035III	35W	422500	7770000
					422500	7767000
					424500	7770000
					424500	7767000
B	525	21	2035III	35W	430500	7773000
					431000	7770000
					432500	7772500
					433000	7770000
C	250	10	2035III	35W	426500	7770500
					426500	7767500
					428000	7770500
					428000	7767500
D	225	9	2035III	35W	430000	7775500
					430000	7778500
					432500	7775500
					432500	7774000
E	475	19	2034IV	35W	423500	7766000
					423500	7764500
					427500	7766000
					427500	7764500
F	825	33	2034IV	35W	424500	7760500
					424500	7756500
					428000	7760500
					428000	7756500
G	475	19	2034IV	35W	425500	7750500
					425500	7748000
					428500	7750500
					428500	7748000
H	125	5	2034IV	35W	422000	7753000
					422000	7751500
					423000	7753000
					423000	7751500
I	675	27	2034II	35W	436500	7727000
					436500	7722000
					438000	7727000
					438000	7722000
J	300	12	2034IV	35W	425500	7755500
					425500	7753000
					427000	7755500
					427000	7753000
Total	4475	179				

UTM coordinates (WGS 84, Z35W): E422 000 to E438 000, and N7 775 500 to N7 722 000, covering a distance of 50km north-south and 16km east-west.

The town of Lakselv provides the most convenient location from which to access the properties, located within 30 km of nine of the ten property blocks (Block I is 50km to the south). The town of approximately 2500 people is well equipped and serviced, and is centered on a large airport used by both military and civilian aircraft. There are three flights daily to and from Oslo (via Tromsø, Norway) on SAS airlines and daily flights from Helsinki, Finland on the Finnish carrier Finnair, during the summer tourist season. Lakselv's position in the northern coastal region also allows for deep-water harbour facilities, which are currently found approximately 10 km from the town center.

1.2 Topography/Climate

The Karasjok Greenstone Belt falls within the Lakselv river valley, a highly glaciated terrain, which is dominated by high relief and up to 80% rock exposure in the north and a gently rolling topography with increasing depth of glacial deposit cover, and corresponding lack of rock exposure (5-30%), to the south. The area is typical of glaciated terrains containing numerous poorly drained swamps and lakes. Rock outcroppings in the area have been highly scoured in a north-south direction, illustrating the last ice movement. The Lakselv river valley is bounded to the east and west by Caledonian Nappes (up to 1200m above MSL), younger strata dominated by sedimentary rock in thrust contact with the underlying greenstone terrane. Pine trees comprise the dominant trees in the area, with forest density increasing from Block J southwards. Birch trees also abundant, and are more common in low-lying, poorly drained areas.

At a latitude of approximately 70° north, the climate of the Finnmark area is surprisingly temperate, with summer highs reaching the mid twenty degree Celsius range. The winter temperatures average between -20 to -30°C, with moderate snowfall amounts, giving accumulations of typically one meter. Positioned along the far northern coastline, Lakselv and surrounding areas receive high winds, which can cause severe drifting of snow in the winter months. Visibility is also reduced at these times due to white out conditions. The fjord itself ices over in the winter, possibly due to the low salinity of the fjord waters, typically half that of regular seawater (30ppm Cl⁻).

1.3 Regional Geology (from Report of Activities, 2001)

The Karasjok Greenstone Belt (Fig. 1.1), which forms part of the Precambrian Baltic Shield, comprises the westernmost and lowermost tectonostratigraphic level of the Paleoproterozoic Lapland-Kola orogenic belt. This tectonic belt is composed of three easterly dipping segments, the KGB, the underlying Archean Jer'gul gneiss complex, which nonconformably bounds the KGB to the west, and is in partial thrust contact, and the overthrust Tanaelv Migmatite Complex, which forms the KGB's eastern boundary

(Often, 1985; Braathen and Davidsen, 2001) (Fig 1.1). Supracrustal rocks related to the KGB continue to the south of the Finnish border, and are referred to as the Kittilä Greenstone Belt (Often, 1985; Gea, 1978), while in the north the KGB is bounded by overlying Cambrian sediments. As well, the northernmost portion of the tectonic belt is in partial cover by the overthrust Caledonian Nappes. The KGB itself consists of a linear sequence of medium-grade metamorphic Archean (2.1-1.7 Ga) supracrustals that extend for approximately 150 km from the northern border of Finland to Northern Norway. The division of the KGB is complicated by the interpretations of numerous authors (Often, 1985; Siedlecka, 1985; Braathen and Davidsen, 2001), and the work of Often (1985) is used here owing to its simplicity and more regional context. Often (1985) has divided the KGB into five formations, from base to top: 1) the Vuomegielas Formation, comprising fine-grained amphibolites, mica schists and possible metakomatiites; 2) the Skuvvanvárri, consisting of clastic sedimentary rocks, in places displaying primary depositional contact with the underlying Jer'gul Gneisses; 3) intermediate tuffaceous volcanics, mafic volcanics and metakomatiites, with minor sediments of the Gål'lebaike Formation; 4) the Bakilvárri Formation, made up of mafic and ultramafic volcanic rocks; and 5) the mafic volcanics and intrusives, mica schists and metakomatiites of the Rai'tegår'zi Formation (Fig. 1.1). The latter three formations are collectively referred to as the Iddjajav'ri Group (Often, 1985).

1.4 Economic Geology (from Report of Activities, 2001)

Economic interest in the area can be traced back to the early 18th century, with early prospecting for alluvial gold, which was reported from the Karasjok area (Often, 1985). However, the Finnmark Area, particularly the KGB, has undergone organized, although sporadic, mineral exploration since the turn of the century, with a focus on gold and copper mineralization. No economic deposits have been found to date. Three types of mineralization can be discerned in the KGB, and consist of stratiform, stratabound and Ni-Cu sulphides associated with intrusives igneous rocks. Stratiform mineralization comprises two types, sulphidic horizons in volcanic successions of the Iddjajav'ri Group and banded iron formation (BIF) restricted to the central stratigraphic levels of the Bakilvárri and Gål'lebaike Formations. The former consist of thin (~1m) lenses and layers of massive pyrite/pyrrhotite, with minor base metal sulphides, and in the south often grade laterally from BIF. The associated rust zones can be 30m thick and extend for several kilometers, with larger horizons often associated with graphite-bearing rocks. BIF are frequently found in the southern-central sections of the KGB and are composed of magnetite and/or hematite, with minor base metal sulphides, although iron silicate and carbonate facies are also present (Often, 1985). Quartzite is the typical host for these deposits, although they are often associated with graphitic horizons. There also seems to be a close association of BIF with komatiite, which may have provided the thermal requirements of the exhalative systems (Often, 1985). Stratabound mineralization comprises numerous types in the KGB, all with Cu, and minor gold, as the dominant commodities, although PGE are now recognized in some occurrences. The Raitevarri Cu-Au deposit consists of disseminated pyrite/pyrrhotite and chalcopyrite in a dioritic

gneiss of the Gål'lebaike Formation approximately 25km southwest of Karasjok. The unit is up to 250m thick and can be traced for 10km along strike, although cupriferous zones are only found locally as 10-50m thick lenses. Little work has been done on the area, although a porphyry copper model is employed to explain the deposit by earlier workers (Sydvaranger A/S). Disseminated copper mineralization is also found within amphibolites (intrusive and extrusive in origin) in the Porsanger area, and includes the Porsvann and Karenhaugen showings (see below). Mineralization is dominated by chalcocite, although Cu-Fe sulphides are also common. Associated with the amphibolite hosted copper mineralization in the Porsanger area are stratabound vein-type deposits, consisting of high-grade chalcopyrite, bornite, digenite and chalcocite in quartz. The third classification of mineralization is the Ni-Cu sulphide occurrences related to mafic/ultramafic rocks. Little is known about these occurrences as no economic mineralization has been discovered. The Gallujavre showing is probably the best example of this type, consisting of interstitial pyrrhotite-chalcopyrite-Ni-sulphide mineralization in a meta-olivine-pyroxene intrusive.

1.5 Methodology

For field location the Garmin GPS XL12 units was used. This system is capable of geopositioning with accuracies of typically less than 5 meters when data is collected in "Average" mode. GPS locations were always corroborated with topographic map references to local physiographic features. The UTM coordinate projection WGS 84 was used, with all work carried out in zone 35W. Earlier work by other companies sometimes utilized a local projection, ED50, which can be translated into WGS 84 with the following formula:

$$E_{WGS84} = E_{ED} - 42m$$

$$N_{WGS84} = N_{ED} - 195m$$

1.6 Work Program

This report covers the period February 25 – March 12, 2002 when SRK Consulting made a site visit to the Block A and Block I properties in order to supervise establishment of the Porsvann and Gallujavre grids and to monitor geophysical data acquired from the initial test profiles. Geophysical surveys were carried out by a four-man crew from Geovista A/S (Sweden), while geophysical interpretations were made by the author and Vision Exploration (Canada), an exploration service company experienced in IP data interpretation.

2. Porsvann (Block A) Geophysical Programme

2.1 Introduction

Block A comprises one of two blocks in the Finnmark area selected for geophysical investigations. The Porsvann showing consists of disseminated pyrite/pyrrhotite and chalcopyrite mineralization in a metapyroxenite host and, owing to topography, is not exposed to the north or south of the main body. A magnetic survey was undertaken in the area to locate possible hidden extensions of the horizon to the north and south. To this effect a grid totaling 2.3 line km was established in order to test for buried sections of the metapyroxenite.

2.2 Location and Access

Block A consists of 24 contiguous claims situated between NW, SW, NE and SE corners located at UTM coordinates E422500, N7770000; E422500, N7767000; E424500, N7770000 and E424500, N7767000, respectively. Access to the property is by car from the E6 highway, then on foot by way of the Karalaks Lodge or the Lakselv water reservoir, in the south and north, respectively. The area is easily accessed by skidoo during the winter months, although a permit is required.

2.3 Topography

Block A contains approximately 60-70% rock exposure, and is characterized by a number of north-south trending ridges, giving less than 200m of relief. Several large lakes are situated between ridges, and numerous small lakes and swamps dot the countryside. Scarce, stunted pine trees and low bushes make up the majority of vegetation in the area.

2.4 Geology (from: *Report of Activities, 2001*)

Abundant outcrop on Block A has provided strong geological control for this property (Fig. 2.1). The area is dominated, in the west, by a thick (1500m) sequence of metasedimentary rocks, quartzo-feldspathic schists and greywacke, containing large (up to 400m thick) horizons of augened, foliated and flaser textured gabbroic rocks and thin (<200) ultramafic horizons consisting of talc schist and one body of coarse-grained metapyroxenite (Porsvann showing). Mafic and ultramafic rocks are concordant to stratigraphy, and often in thrust contact with the sediments. To the east, interlayered amphibolite and metasedimentary rocks, including conglomerates and mica schists, with thicknesses ranging between 50 and 250m, characterize the property.

Ultramafic rocks in Block A comprises three types: a massive to moderately foliated deep green coarse-grained amphibolite (after pyroxenite), commonly referred to as the metapyroxenite; a green medium-grained, well foliated talc schist; and a fine- to medium-

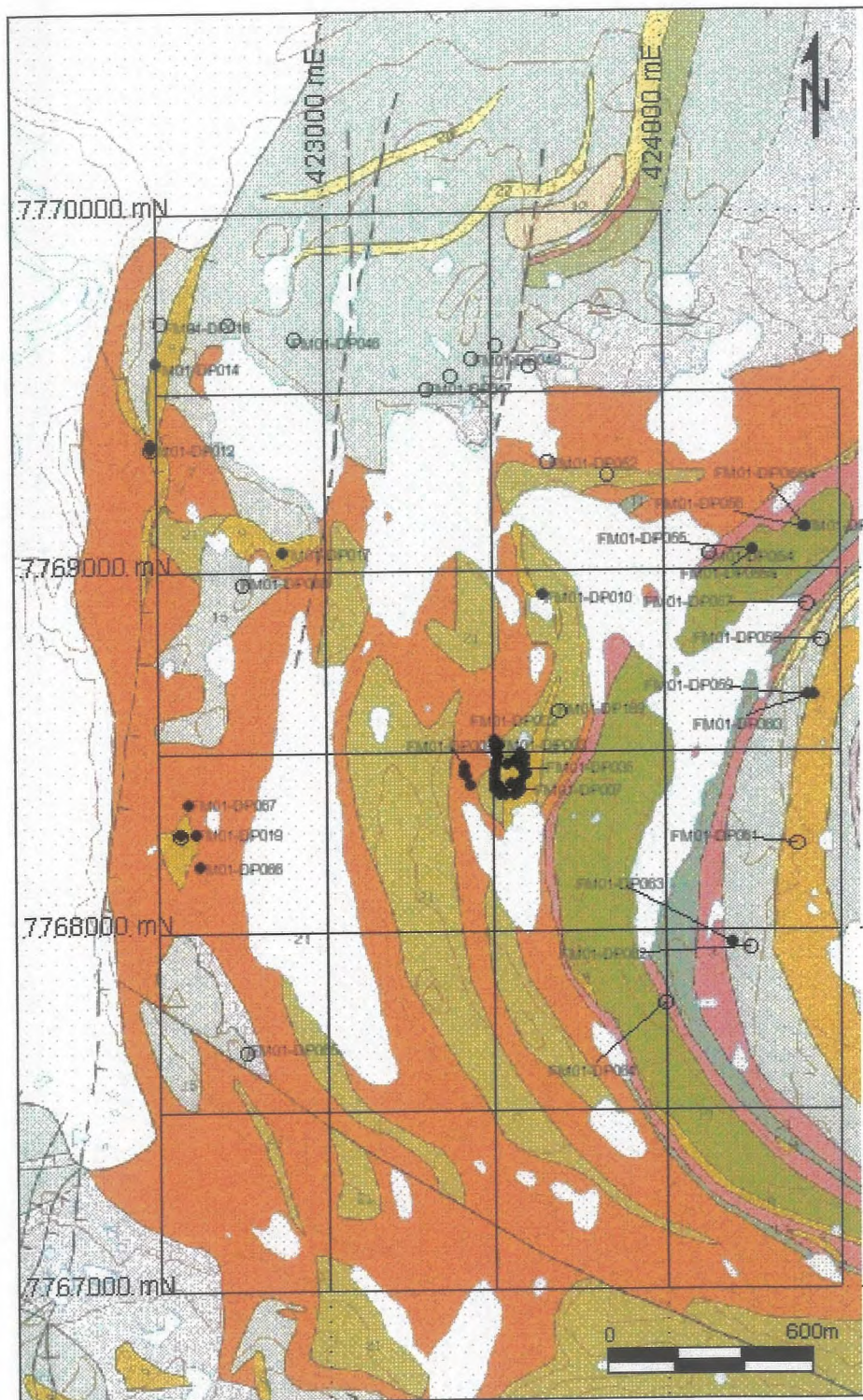


Figure 2.1 Geology of Block A (Porsvann showing located at area of high sample concentration, central map area). See Appendix VII – Geological Legend - for explanation of geological formations.

grained poorly foliated talcose amphibolite. At least two generations of magmatism can be distinguished, based on mineral textures and structure, with the latter two ultramafic types often found in close association, and possessing similar characteristics, and the metapyroxenite being very dissimilar, and occurring as a unique body. Mafic rocks include amphibolite-feldspar rocks of gabbroic composition, often displaying augen to flaser textures, and well foliated, banded feldspathic amphibolites, interpreted to be basaltic flows.

The metapyroxenite, which is unique to Porsvann, consists of a fresh looking, coarse-grained (up to 1cm) amphibolite rock, which has a deep green colour resulting from minerals tentatively identified as tremolite/actinolite and possibly magnesian arfvedsonite. The unit varies between massive and well foliated, with the latter developed more strongly near the margins of the intrusive, and the former more typical of the interior of the metapyroxenite. Sulphide mineralization, consisting of pyrite/pyrrhotite and chalcopyrite is developed locally, occurring as discrete pods within the metapyroxenite (Fig 2.2).

The ultramafic unit is in contact to the west with quartzo-feldspathic schists and to the east with a gabbro displaying augen to flaser textures. Detailed mapping suggests that the body has been folded by D2 or D3 folding events producing a knot of metapyroxenite, folded upon itself and exhibiting dextral movement. The area may also have been influenced by D4 brittle faulting (Fig 2.2). This folding causes the thickness of the horizon observed in regional scale mapping. Axial planes are north to northwest-trending, and dip to the east.

2.4.1 Relationship between Porsvann Metapyroxenite and Gabbro

The association between the mafic and metapyroxenite lithologies is poorly understood, however, these two lithologies show a distinct spatial association (Fig 2.2). Along the northern limb of the metapyroxenite, a complete section can be observed from metasediments to gabbro. Contact relationships are sharp between metasediments and ultramafic, however there is a noticeable change in foliation between the two lithologies as this contact is approached. To the east the S1 foliation in the ultramafic is approximately east-west and steeply dipping to the south, however, as the contact is approached the ultramafic foliation is warped to conform to the S1 orientation of the metasediments, which strike north-south and dip shallowly to the east. The relationship between the ultramafic and gabbro to the east are concordant, with the penetrative fabric identical in the two lithologies. As well, primary contact relationships are evident in some sections between the metapyroxenite and gabbro, with increasing feldspar content discernible in both ultramafic (5-10%) and gabbro (up to 40%). The latter relationship is indicative of contamination, from thermal erosion, between the ultramafic and the gabbro. As no cumulate textures are observed, it is unlikely that the two lithologies are directly related, and the ultramafic was most likely intruded as a sill along the gabbro contact. Given igneous textures and structural observations, a model is envisaged where

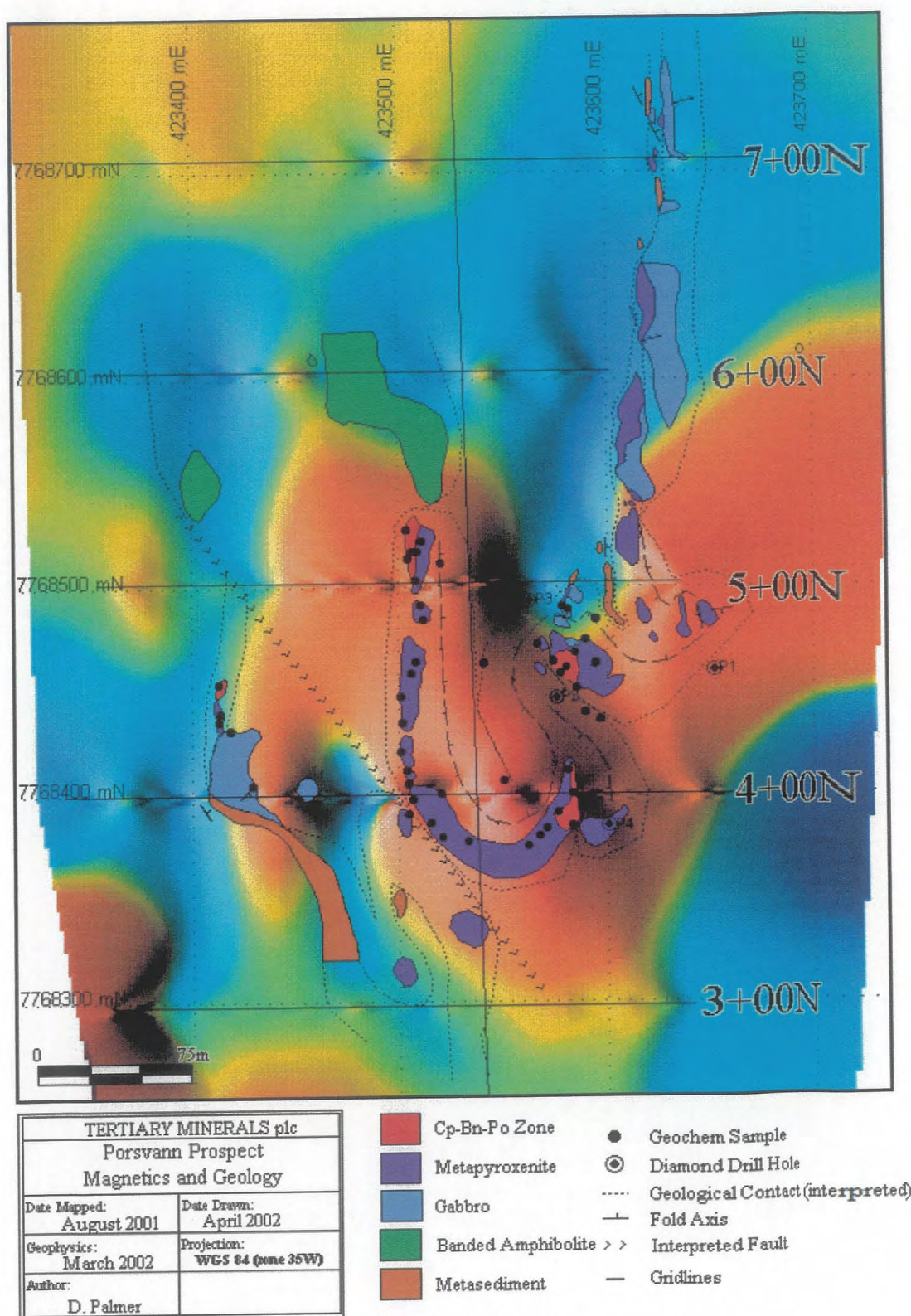


Figure 2.2 Total field magnetics and geology of the Porsvann area

metapyroxenite magma was injected along the gabbro and were thrust, together, onto the metasediments. This model explains both the textural relationship between gabbro and ultramafic, as well as the differences in foliation observed between the mafic and ultramafic units and the shallowly dipping metasediments.

2.5 Economic Geology

The Porsvann showing falls within the stratabound mineralization-type classification and consists of disseminated pyrite/pyrrhotite and chalcopyrite hosted by metapyroxenite (Photo. 2.1) within the Lower KGB. Mineralization occurs as fine to blebby disseminations of sulphides in amounts up to approximately 3% (FM01-DP216), with an average of <2%, with chalcopyrite occurring in trace to equivalent amounts, compared to Fe-sulphides. Malachite is a common alteration product on exposed surfaces (Photo. 2.2).

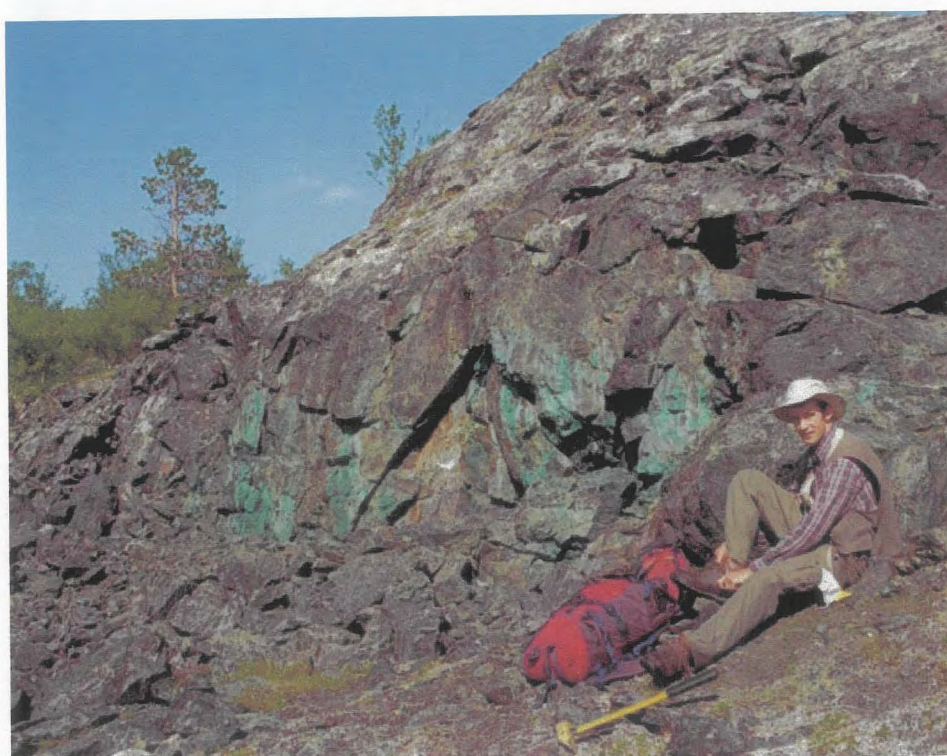
Sulphides occur in local concentrations within the metapyroxenite, and show no strict spatial association, occurring along the margins and interior of the intrusive. However, when F2 folding is taken into account, it appears that most mineralization is found along the footwall contact of the intrusive (Fig. 2.2). A possible explanation for this may be related to the thrust contact interpreted at the footwall contact of the ultramafic with the metasediment, which provided a conduit for mineralizing fluids. A wholly hydrothermal origin for sulphide mineralization is unlikely, as the basal sections of the ultramafic were probably enriched in primary sulphides during emplacement. However, the western extremity of the intrusive contains abundant sulphide mineralization concentrated along cross cutting joints, which suggest that mineralization is in part remobilized. As well, observations of other sections of footwall mineralization indicate mineralization is locally associated with secondary carbonate, further evidence for hydrothermal activity along the basal contact. Although no pervasive alteration haloes are observed at the footwall contact, PGE values are high in areas exhibiting remobilized textures, and hydrothermal concentration may have played a role in mineralization at Porsvann.

2.6 Previous Geophysical Surveys

In the early 90's the NGU carried out ground geophysical surveys (IP/resistivity and self-potential) over the Porsvann mineralization. The IP/resistivity and self-potential (SP) surveys were undertaken to delineate the known mineralization and identify new targets. Baselines, trending 393° magnetic, were established with profile spacing between 25 and 100m. Readings were taken at 12.5 and 25m spacing, depending on the results received, using gradient and pole-pole arrays. IP anomalies coincide with the known mineralization (Fig. 2.3), both on surface and in drilling, with an indicated depth of at least 100m. To the west of the showing IP anomalies are present in gabbro, however, no explanation was found during surface mapping of the 2001 programme.



Photograph 2.1 – Disseminated pyrite-chalcopyrite in metapyroxenite



Photograph 2.2 – Malachite-stained face, western limb (Porsvann)

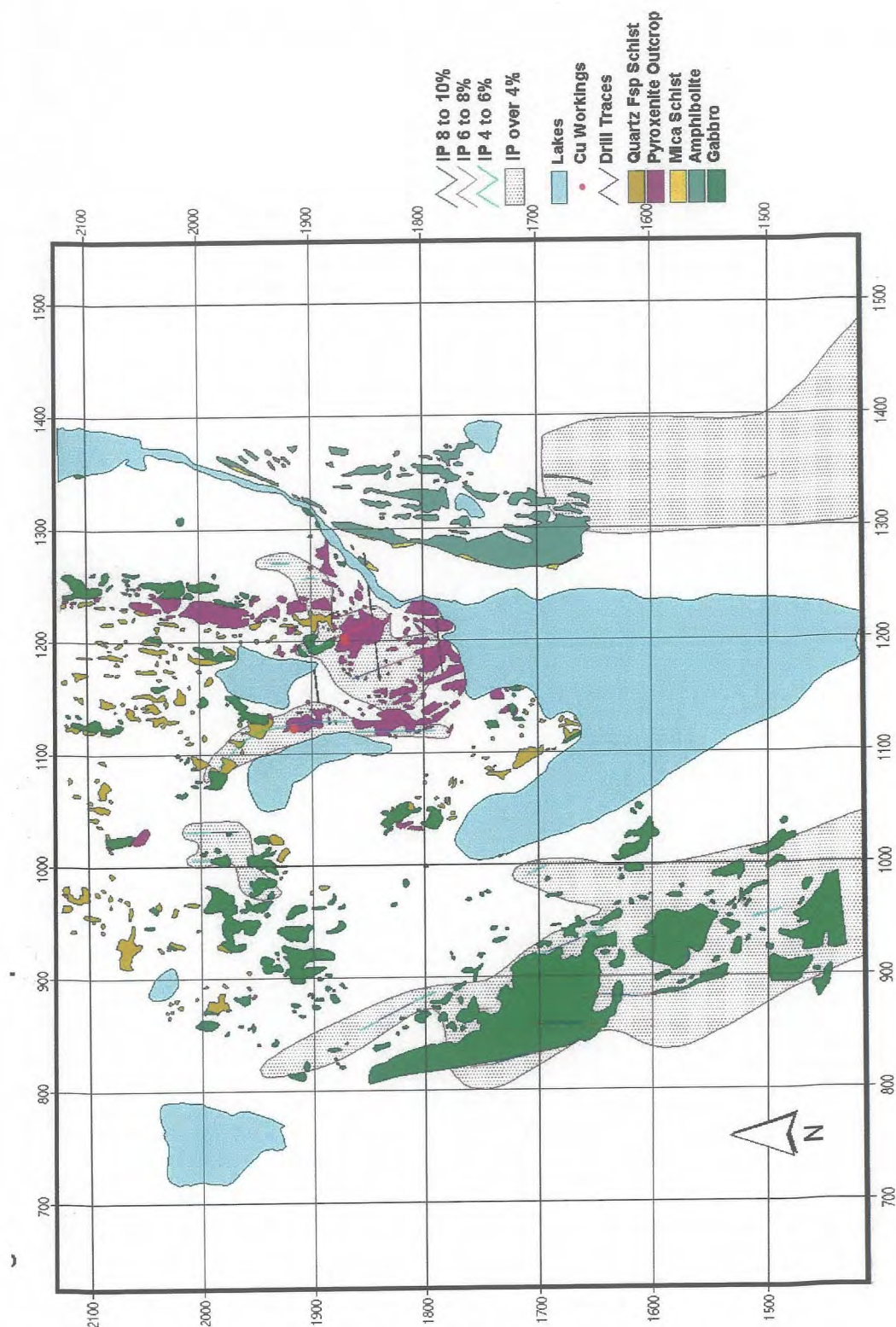


Figure 2.3 Previous work compilation for the Porsvann area

2.7 Geophysical Grid

In order to identify potential extensions of the metapyroxenite, the host of known mineralization, a north-south baseline of 800m was established which transects the exposed portions of the unit. East-west trending cross lines were constructed at 100m spacing with stations at 5m intervals. Line 0+00 was approximately 300m south of the exposed metapyroxenite and covers most of the lake, for which no geological data is available. The northern extent of the grid is approximately 200m distant from the main metapyroxenite body. Gridline and baseline endpoint locations are presented in Table 2.1 and Figure 2.4.

Table 2.1 Endpoint locations for Porsvann gridlines and baseline

Grid East (Station)	Grid North (Line)	Easting (WGS 84)	Northing (WGS 84)
140W	0	423410	7767992
0	0	423550	7767992
140E	0	423690	7767992
140W	100	423407	7768094
0	100	423547	7768094
120E	100	423667	7768094
160W	200	423384	7768196
0	200	423544	7768196
110E	200	423654	7768196
180W	300	423361	7768298
0	300	423541	7768298
100E	300	423641	7768298
200W	400	423338	7768400
0	400	423538	7768400
120E	400	423658	7768400
180W	500	423355	7768502
0	500	423535	7768502
100E	500	423635	7768502
180W	600	423352	7768604
0	600	423532	7768604
70E	600	423602	7768604
180W	700	423349	7768706
0	700	423529	7768706
140E	700	423669	7768706
200W	800	423326	7768807
0	800	423526	7768807
200E	800	423726	7768807

2.8 Geophysical Data

The Porsvann grid was surveyed using a Gemcom proton magnetometer with Data presented as raw and corrected values (Appendix II). Magnetic data was corrected for diurnal variations with base station readings and are based on a relative scale in nano-Teslas (nT). For the Porsvann grid measurements were taken at 5m intervals, providing high-resolution magnetic data.

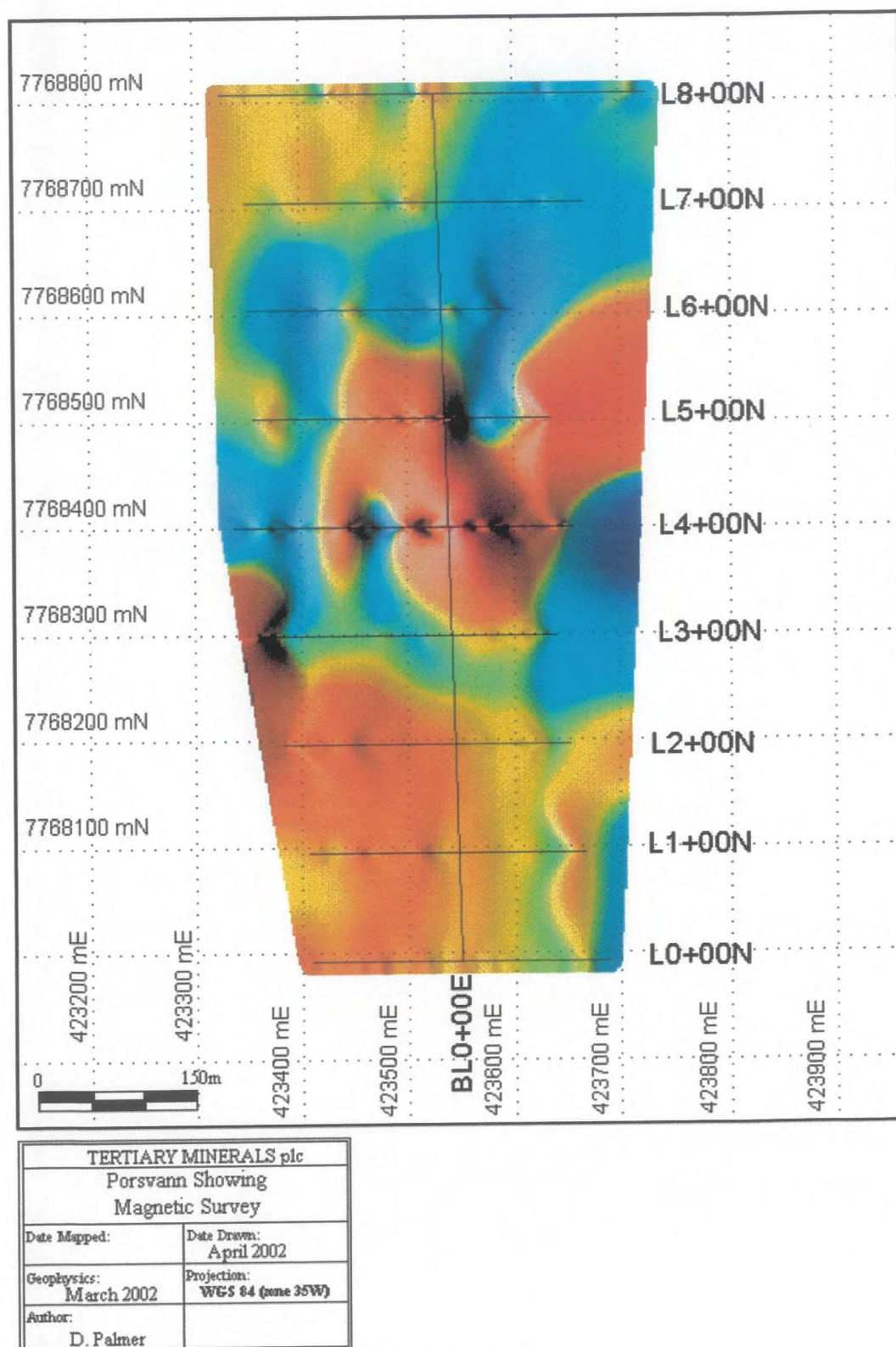


Figure 2.4 Magnetic survey of the Porsvann grid

The metapyroxenite occurs as a magnetic high on lines 3+00N to 5+00N, and conforms to previous geological mapping (Fig. 2.2). No significant extensions of the metapyroxenite to the north are identified, with the unit pinching out at line 7+00N, while a southern extension is absent (Fig 2.4). The magnetic anomaly to the east of the main body is an aberration due to gridding cell size and is therefore not a true representation of this areas magnetic signature. An area of lower magnetic susceptibility occurs to the south of the metapyroxenite on line 3+00N, and represents the southern end of the mineralized horizon. An area of high magnetic readings is found along the western and southwestern margins of the grid and is interpreted to be the banded amphibolites, which occur in this area.

2.9 Conclusions/Recommendations

Magnetic surveys have shown the metapyroxenite body at Porsvann to be limited in size with no significant extensions to the north or south of the exposed horizon. Owing to the lack of positive results, a scheduled IP survey was cancelled and no further work was undertaken in the area. Given its limited size and the sporadic nature of mineralization, no further work is recommended for the Porsvann Prospect at this time.

3. Gallujavre (Block I) Geophysical Programme

3.1 Introduction

The Gallujavre showing represents the most primary mineralization in the Finnmark properties, and consists of interstitial pyrrhotite-chalcopyrite intergrowths in an olivine-bearing ultramafic intrusive. The occurrence falls under the ultramafic intrusives-hosted nickel-copper classification of mineralization, consisting of low-grade nickel copper (<0.6% Ni+Cu), although Ni tenors are high in sulphide mineralization. Significant exploration has been undertaken in the area, including geophysical surveys and diamond drilling. This initial work neglected PGE mineralization, however, later surface sampling by the NGU indicates anomalous values (up to 440 ppb Pt+Pd), and concentrations of up to 2.15ppm Pt+Pd were returned for samples taken during 2001. The objective of the present survey is to locate EM conductors, which may represent sulphide mineralization, within the Gallujavre lake area. To accomplish this, a number of test EM surveys will be run in order to determine the most effective geophysical method for identifying sulphide conductors. In order to evaluate data effectively, test surveys were positioned over areas of known surface mineralization and previously identified EM conductors. The central grid (Main Grid), comprising approximately 19 line km, will then be surveyed using the most effective method(s). A magnetic survey was scheduled on grids northwest and southeast of the Main Grid, however time restrictions made it impossible.

3.2 Location and Access

Block I consists of 27 contiguous claims forming a roughly rectangular block oriented north-south, and situated between NW, SW, NE and SE corners located at UTM coordinates E436500, N7727000; E436500, N7722000; E438000, N7727000 and E438000, N7722000, respectively. Access to the property is by car via Highway 6, (50km south of Lakselv, 20km north of Karasjok) and then by boat to the eastern shore of Lake Iddjavar'ri, from where it is a one kilometer walk east to the property. Caution should be exercised in boating on Lake Iddjavar'ri as numerous shoals and submerged rocks provide hazards. An ATV-accessible track runs through the property, and along the Gallujavre occurrence, originating 7-8km south (unsure of starting location). Mineralised outcrop occur on an island near the eastern shore of Gallujavre Lake, and can be waded to (1.25m deep). During winter months the property is accessed by snowmobile, from Lake Iddjavar'ri and along the power lines that pass to the west of Gallujavre Lake. Care should be taken as lakes, although frozen, often have a layer of water between the ice and snow, which make passage difficult with heavily loaded snowmobiles and sleds. Owing to the deep snow in this area a long and wide track snowmobile is best in avoiding problems with access.

3.3 Topography

The topography of Block I is comprised rolling terrain and is heavily forested. Trees consist of pine with subordinate birch. Till cover is much thicker in this area than for the northern blocks, and the amount of rock exposure is greatly reduced (5%). Fortunately, however, the ultramafic host rocks at Gallujavre were resistant to erosion and form numerous, isolated highs which are exposed in the northern half of the property. Decreasing elevation to the south resulted in a loss of outcrop. Typical of well covered, rolling topography are the numerous lakes and swamps in the area, all of which trend in a north-south direction.

3.4 Geology (from Report of Activities, 2001)

The geology of Block I represents a simple sequence of from west to east, metasediments, which host the Gallujavre intrusive and Ni-Cu mineralization, and gabbro (Fig. 3.1). Metasediments consist of meta-arenites and arkoses trending north south and dipping to the east. Within the metasediment stratigraphy is a thick (500m) ultramafic sill composed of poorly differentiated amphibolite containing up to 30% serpentine+magnetite porphyrocrysts after olivine, with the amphibole groundmass representing an original pyroxenitic liquid. In the north it was observed that olivine contents are highest towards the western margin of the intrusive, while feldspar increases to the eastern contact with the gabbro, suggesting some settling of olivine in the magma. The base of the intrusion is therefore interpreted to be the western margin of the intrusive. The gabbro body to the east, which appears to be in contact with the ultramafic, is composed of approximately 30% pale green-white plagioclase interstitial (intercumulus?) to green coarse-grained amphibole. The gabbro is massive and barren of sulphide mineralization. Similarities between Block E cumulate rocks and the gabbro and ultramafic in Block I are noted, with the only real difference being serpentine content (up to 90% at Block E). It is possible they represent a contemporaneous or genetically related intrusive event. Host rocks are similar, although Gallujavre may represent a slightly higher stratigraphic level in the KGB.

3.5 Economic Geology (from Report of Activities, 2001)

The ultramafic intrusive at Gallujavre hosts sporadic surficial sulphide mineralization consisting of up to 5% interstitial chalcopyrite and pyrrhotite, which is often intergrown. Sulphides occur as irregular blebs and disseminations at silicate grain boundaries, ranging in size from 1 to 10mm. Although only pyrrhotite and chalcopyrite were discerned in hand sample, microscopic investigations by Sydvaranger, indicate that pentlandite, mackinawite and violarite also occur in the sulphide assemblage (Grammelvtvedt, 1979).

Mineralization is found in isolated outcrops and cannot be traced for more than 10m in one direction, owing to the irregular spacing of rock exposures. Four sulphide occurrences, two of which were previously unknown, were found during mapping, and

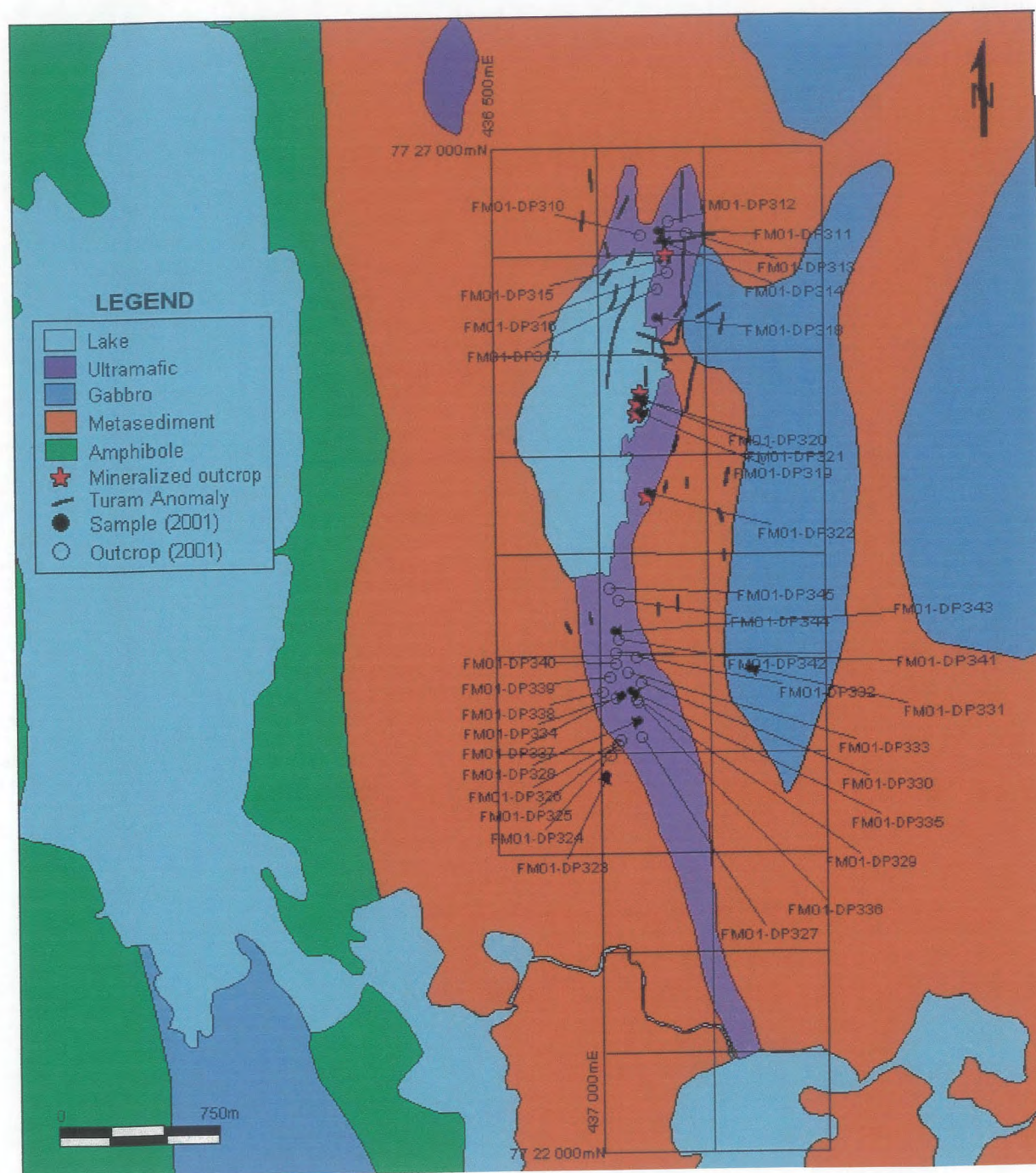


Figure 3.1 Geology of Block I (Gallujavre)

range over a total distance of approximately 850m along the strike of the metapyroxenite (Fig 3.1, Fig 3.2). At least one other occurrence was found by previous workers, but could not be located by the author in 2001.

3.6 Previous Work

The mineral potential of Gallujavre was first investigated by Sydvaranger A/S during the period 1978 to 1982, following the discovery of disseminated Cu-Ni mineralization hosted by ultramafic intrusives in the area. Drilling was undertaken on the intrusive in 1978 and 1979, and five holes were completed based on geophysical anomalies (Fig. 3.3). In 1978, holes 1o, 1v, 2, 2b and 2c were drilled with a small, portable rig for a total of 50.2m (holes were drilled from two collar locations 1 and 2, with several holes drilled at differing azimuths). All holes show copper and nickel mineralisation averaging 0.2 to 0.3% combined with highs of up to 0.6%. In 1979, DDH 3, 4 and 5 were drilled (307m), targeting geochemical and geophysical anomalies (Fig. 3.3). In the north, DDH 3 intersected 30m of weakly mineralized ultramafic, with a shear zone carrying the greatest amount of sulphides. Drill hole 4 (107.4m) was collared to the east of the ultramafic, and was directed towards the east where it intersected only gneiss. It was designed to test a VLF anomaly indicated by an airborne survey. Hole number 5, which was also testing a VLF anomaly, intersected a breccia zone associated with the gneiss-ultramafic contact, and 15m of Cu-Ni mineralization averaging 0.2% combined Ni-Cu. Further geophysical surveys, consisting of Turam, were completed over the area in 1982 and delineated a number of anomalies parallel to, and cross-cutting, the intrusive. Two of the strongest cross cutting anomalies on the eastern shore of the lake were targeted for further drilling, intersecting only weak mineralization in the intrusive (DDH6, 7). No further work was undertaken.

3.7 Geophysical Grid

Owing to the presence of disseminated, PGE-bearing sulphide mineralization in a serpentine-magnetite bearing ultramafic a grid totaling approximately 19 line km, designated as the main grid, was established over the known mineralization, previously identified geophysical conductors, as well as ultramafic rocks to the north and south. A 2.5 kilometer, north-south baseline transecting Gallujavre Lake was constructed with cross lines positioned at 100m intervals (Fig. 3.2). Stations were set at 25m intervals on cross lines, with magnetic readings taken every 12.5m, and EM measurements at 25m intervals. Line lengths vary between 500 and 750m, and were designed to extend past the eastern and western contacts of the ultramafic unit (Table 3.1; Fig. 3.3)

Two additional grids were to be constructed to the northwest and southeast of the main grid, referred to as the north and south grids, respectively, however due to time constraints were not permitted. The grid data has been included as Appendix VI in the

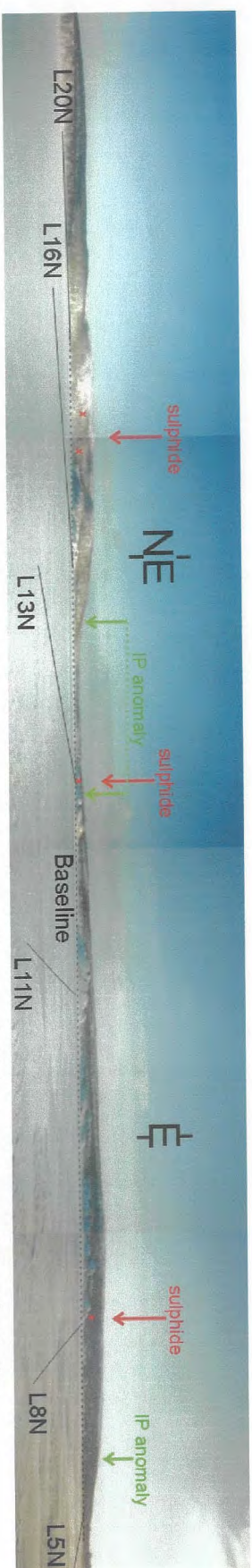


Figure 3.2 Panoramic view of Gallijavre looking East, showing gridlines, sulphide occurrences (x) and priority IP anomalies (green arrows)

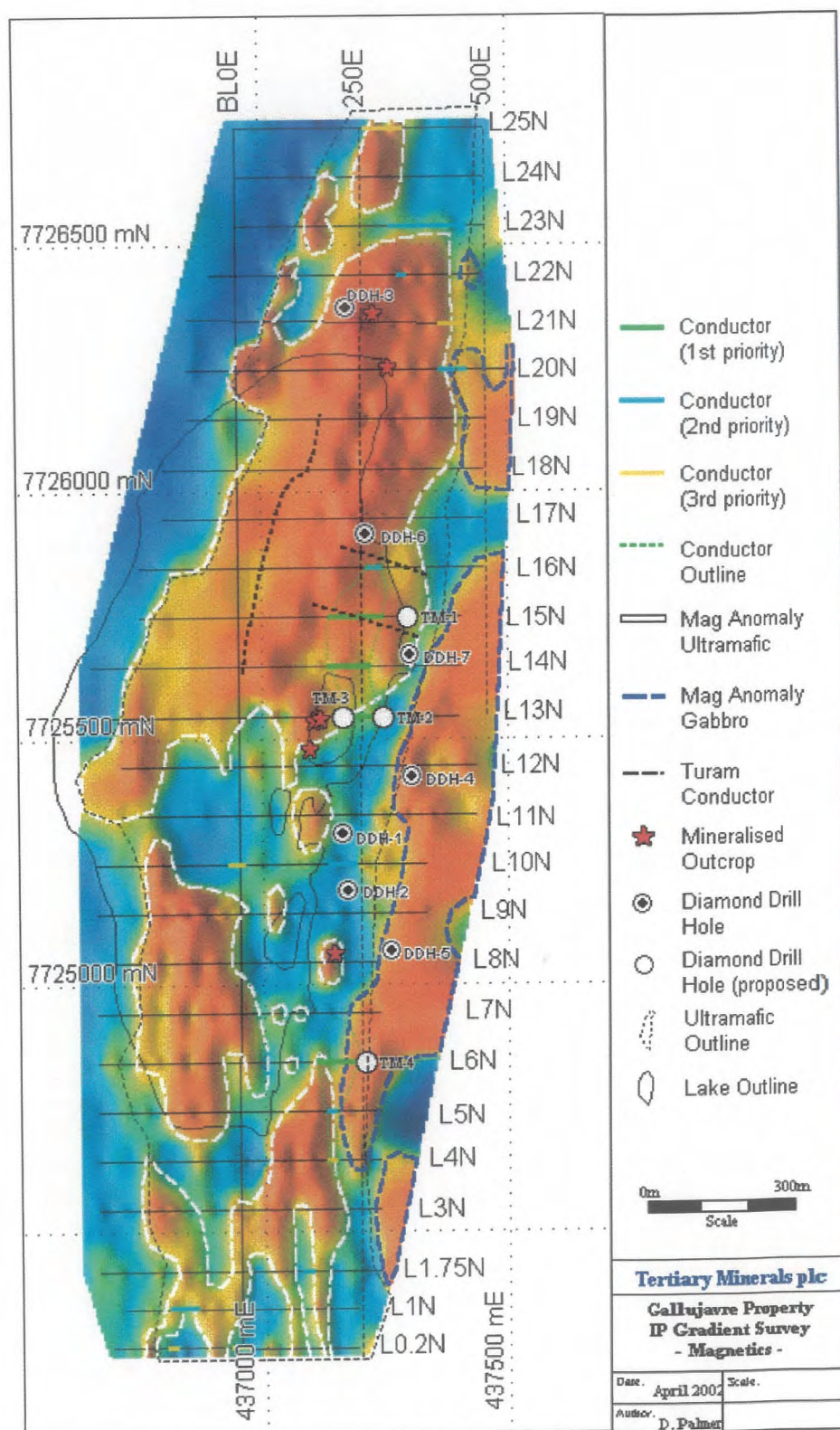


Figure 3.3 Gallujavre Geophysical data and diamond drill hole locations

event the survey can be implemented in the future. These grids were positioned over potential extensions of the ultramafic horizon, interpreted from Airborne geophysical surveys conducted by the NGU.

Table 3.1 Endpoint locations for Gallujavre Main Grid

Line	End West	End East	Length (m)	Easting (West)	Northing (West)	Easting (East)	Northing (East)
25	0	500	500	436954	7726745	437454	7726759
24	0	500	500	436954	7726644	437451	7726651
23	0	500	500	436953	7726542	437447	7726545
22	-50	500	550	436902	7726451	437447	7726427
21	-100	550	650	436856	7726348	437500	7726336
20	-100	550	650	436859	7726256	437492	7726176
19	-100	500	600	436853	7726154	437446	7726119
18	-150	500	650	436803	7726047	437447	7726081
17	-150	500	650	436805	7725965	437448	7725948
16	-200	500	700	436756	7725853	437454	7725833
15	-200	450	650	436754	7725746	437407	7725745
14	-200	450	650	436653	7725647	437406	7725649
13	-250	450	700	436655	7725540	437403	7725551
12	-250	500	750	436701	7725451	437453	7725409
11	-250	500	750	436701	7725350	437450	7725306
10	-300	400	700	436655	7725241	437353	7725240
9	-300	400	700	436655	7725134	437352	7725161
8	-300	300	600	436655	7725055	437250	7725048
7	-300	300	600	436654	7724951	437253	7724935
6	-300	300	600	436655	7724855	437251	7724836
5	-300	300	600	436655	7724738	437252	7724743
4	-300	300	600	436654	7724654	437248	7724668
3	-300	300	600	436652	7724570	437252	7724542
1.75	-300	300	600	436654	7724420	437253	7724423
1	-250	250	500	436706	7724356	437207	7724341
0.2	-250	250	500	436707	7724270	437203	7724264

3.8 Methodology

In order to identify all potential conductors within the Gallujavre Main Grid a number of initial test lines (L13, 14, 15 and 21) were constructed over which two types of EM survey were to be run. These surveys included MaxMin II and Induced Polarization (IP), with a gradient-self potential array. The objective behind the test surveys were to delineate previously identified Turam EM anomalies and disseminated sulphide mineralization observed in outcrop. The MaxMin II survey is more suited to the identification of massive sulphide conductors, while an IP survey should produce anomalies over disseminated sulphide mineralization. Following measurement of the test lines a decision was made as to the most effective programme with which to survey the entire Main Grid. In areas containing strong geophysical conductors a dipole-dipole array IP survey would then be used to further evaluate the anomalies. A full magnetic

survey was run in conjunction with EM. Results from all surveys are provided in Appendices III, IV and V.

3.9 Geophysical Results

Results from the magnetic survey clearly delineate the contacts between lithological units, with the ultramafic horizon represented by the central magnetic high and the eastern gabbro by the magnetic anomaly along the eastern portion of the grid (Fig. 3.3). Areas of magnetic low are interpreted to be metasediments, into which the intrusives were emplaced. The irregular outline of the magnetic high, interpreted as ultramafic, suggests that the intrusive is discontinuous, and in the area between lines 0.2 and 13N, is in contact, to the east and west, with metasediment.

Initial EM test lines were measured on lines 13, 14, 15 and 21 of the Gallujavre grid owing to their proximity to known mineralization and previously identified Turam conductors. The MaxMinII was configured with a coil spacing of 100m, with four frequencies (440, 880, 1760, 3520 Mhz) measured at each 25m intervals along the east-west grid lines. Survey results were disappointing, with less than 2% change in inphase or quadrature responses in most profiles (Fig. 3.4), indicating the absence of conductive bodies. Turam anomalies were not located/delineated. The absence of a negative quadrature response, i.e., overburden conductor, in profiles is surprising given that lines transect Gallujavre lake and continue on land. However, low-salinity lake water and the absence of clay in lake sediments may provide an explanation for the flat profiles (Geovista, pers. comm.). Test lines measured with gradient-array IP identified a broad zone of chargeability along the eastern flank of the ultramafic, ranging in width from 250m in the center to 500m at the northern and southern extremities. The anomalous zone also shows increased resistivity, and may indicate metamorphic/hydrothermal alteration of the ultramafic horizon in this area. The chargeability and resistivity highs are consistent with the breakdown of mafic minerals to magnetite and serpentine, respectively.

Owing to the positive results obtained by the gradient-array survey, the entire grid was measured and revealed the continuation of the chargeability anomaly along the entire eastern flank of the ultramafic unit (Fig. 3.5). Within the anomalous zone a number of potential metallic conductors can be discerned, occurring as chargeability increase with a coincident decrease in resistivity, typically off the edge of high magnetic anomalies. The most prominent occur on lines 6, 13, 14 and 15 (Fig. 3.6), and range in width from 50 to 100m (see profile for station locations). The anomalies consistently occur along a ridge of chargeability, which forms a kilometer long spine along the eastern ultramafic-gabbro/metasediment contact between lines 16N and 6N. A number of isolated, lower priority anomalies occur elsewhere on the grid (Fig. 3.5), and are characterized by their narrow width, lower chargeability, increased resistivity, or the lack of coincidence between chargeability and resistivity.

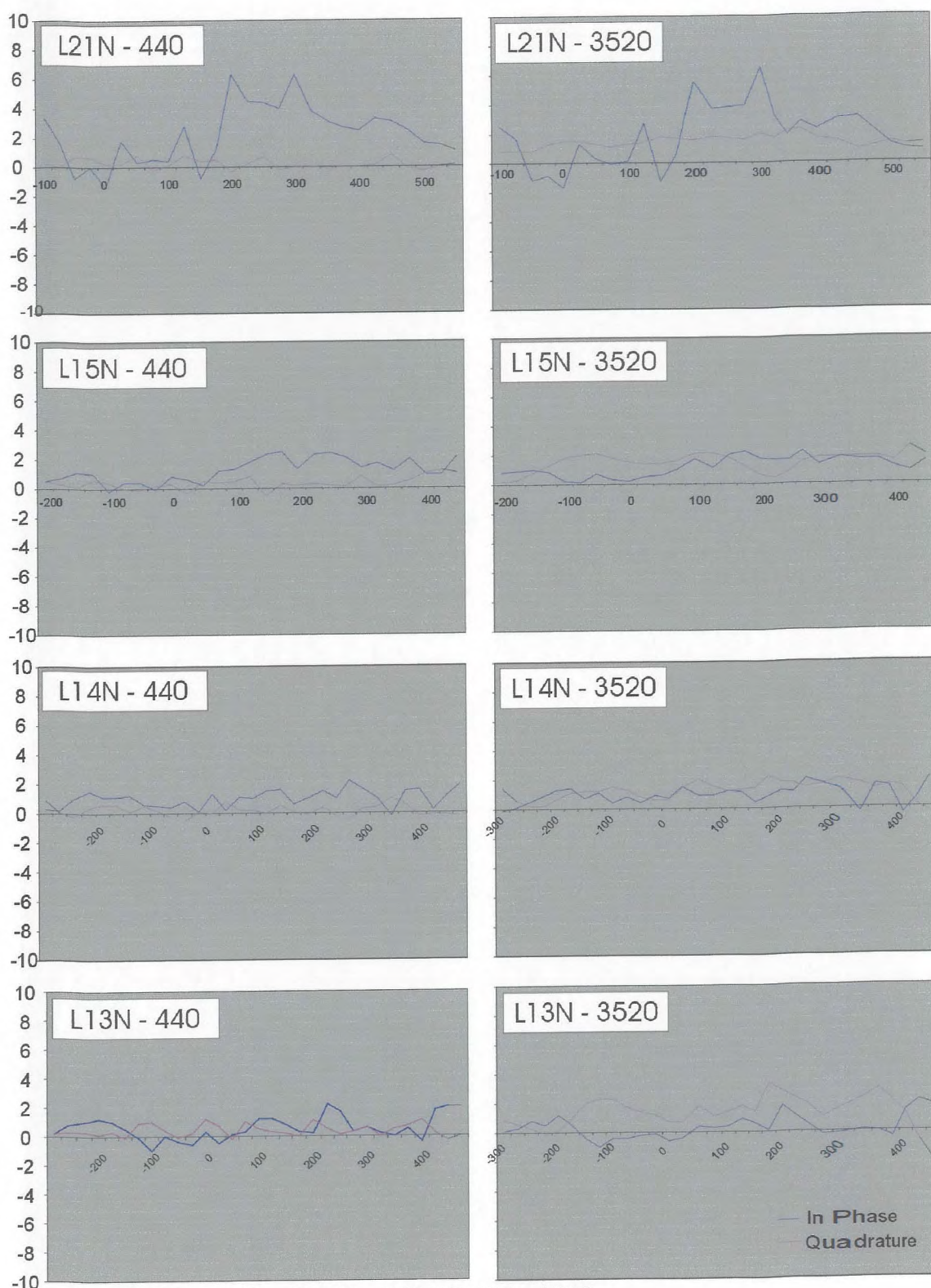


Figure 3.4 MaxMin II profiles – Test lines 13N, 14N, 15N and 21N

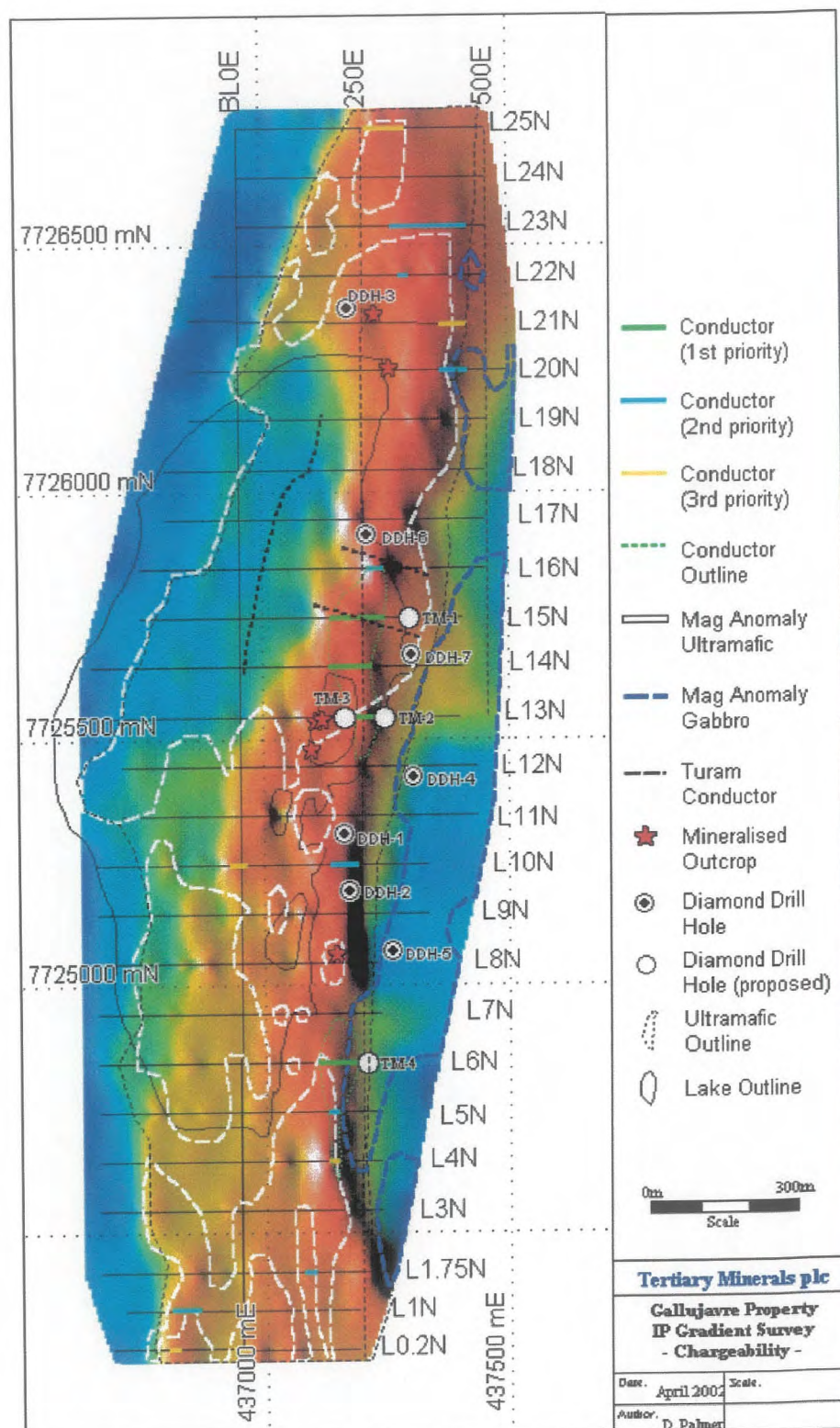
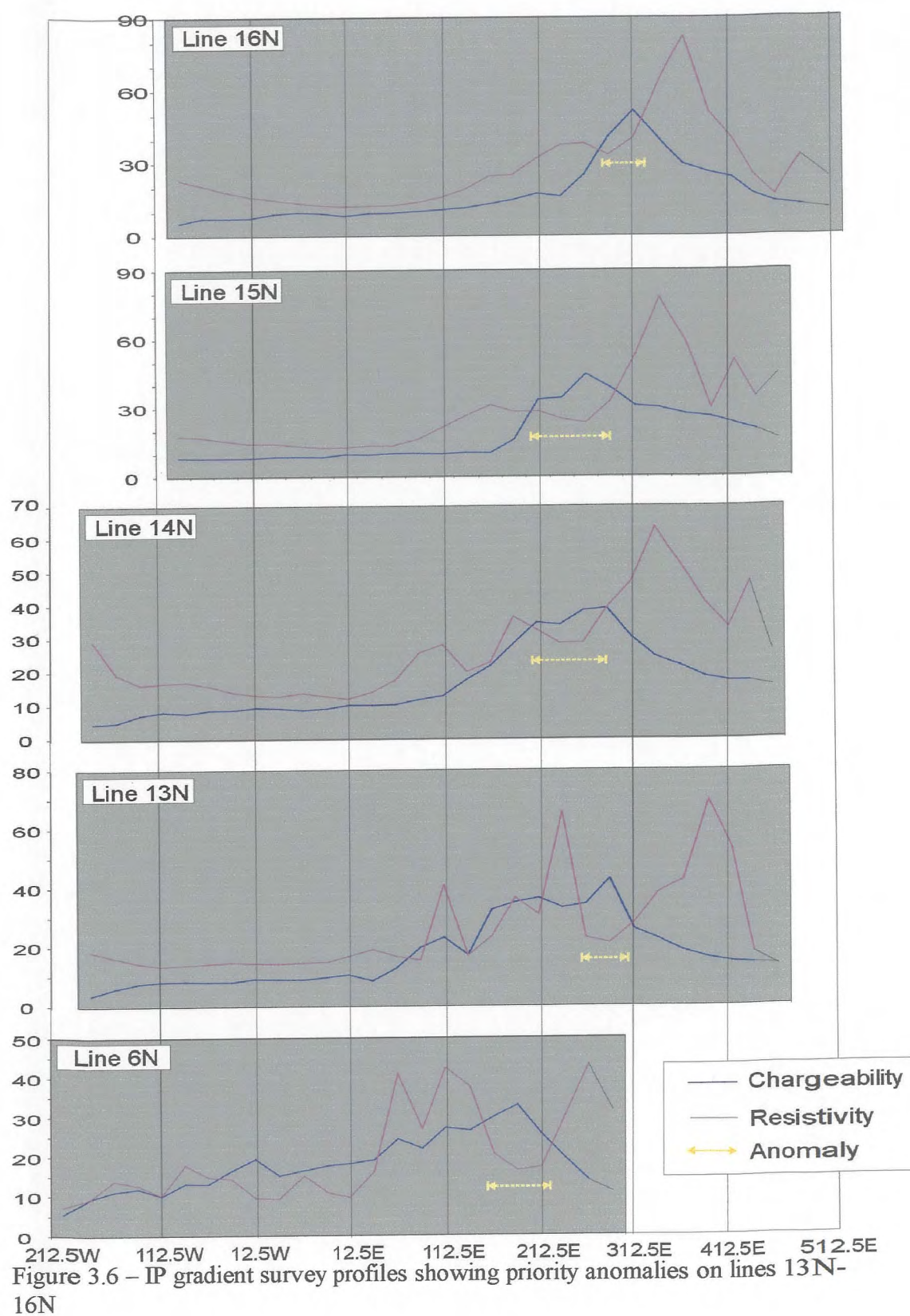


Figure 3.5 IP gradient survey (chargeability), geophysical anomalies and drill hole location data for Gallujavre Grid



3.10 Conclusions/Recommendations

The magnetic survey of the Gallujavre grid clearly delineates the contacts of the ultramafic horizon with metasediments to the west and gabbro-metasediments to the east. The ultramafic appears to be discontinuous between lines 0.2 and 13N, and shares both contacts with metasediment. The gradient data would suggest otherwise, showing a continuous anomaly from lines 0.2 to 25N. One answer may lie in differing grades of metamorphism and the formation of metamorphic magnetite during decomposition of olivine. However, the unmetamorphosed ultramafic should still be of stronger magnetic character than surrounding quartzitic metasediments, and the question remains unresolved. MaxMin II results indicate that absence of concentrated zones of sulphide in the ultramafic, while a gradient survey indicates a zone of increased chargeability suggesting the potential for disseminated sulphide mineralization, and therefore PGE. A chargeability-high coincides with the eastern contact of the ultramafic and occurs as a narrow (150-250m), kilometer long, pronounced ridge between lines 6N and 16N. This ridge also correlates well with surface sulphide showings, which are located either along the ridge, or more typically, on the western edge of the anomaly. As the ultramafic horizon dips to the east, the chargeability highs may be indicating stronger mineralization down-dip from the exposed mineralization. The most appealing anomaly is located within the chargeability crest between lines 13 and 16N, from stations 162.5E to 287.5E and occurs as a zone of low resistivity, ranging in width from 50 to 100m (Fig. 3.7). In the northern part of the grid two sulphide showings have been identified and occur within the broad anomalous zone, however, they correlate to areas of increased resistivity and are, in this respect, dissimilar to the southern occurrences.

Although the IP data indicates the presence of disseminated mineralization, the cause of the anomaly may be Fe-bearing sulphide or oxide minerals. The presence of both species is well documented in the area, however, the coincident chargeability high-resistivity low anomalies occurring on lines 13N to 16N are characterized by lower magnetic susceptibility than in the surrounding area. The lower magnetic values associated with conductive anomalies suggests that sulphides, and not magnetite, are responsible.

The occurrence of sulphide showings with elevated (up to 2.15 ppm Pt+Pd) PGE in close proximity to a narrow zone of high chargeability and lower resistivity provide tangible evidence for the presence of a zone of sulphide mineralization between lines 13N and 16N. This horizon can be measured to a depth of at least 75m, the limit of the survey, and continues south along strike to line 6N, although resistivity values increase away from the priority anomaly. A diamond drill programme is recommended for this zone, with preliminary testing of the L13-L16 anomaly, followed by testing of the anomaly to the south between lines 13N and 6N. Table 3.2 and Figure 3.5 present location and orientation data for a proposed 600m drill program, which provides an initial evaluation of the anomalous ridge. Depending on results, a second phase of drilling may be required to test additional targets not covered by the preliminary programme.

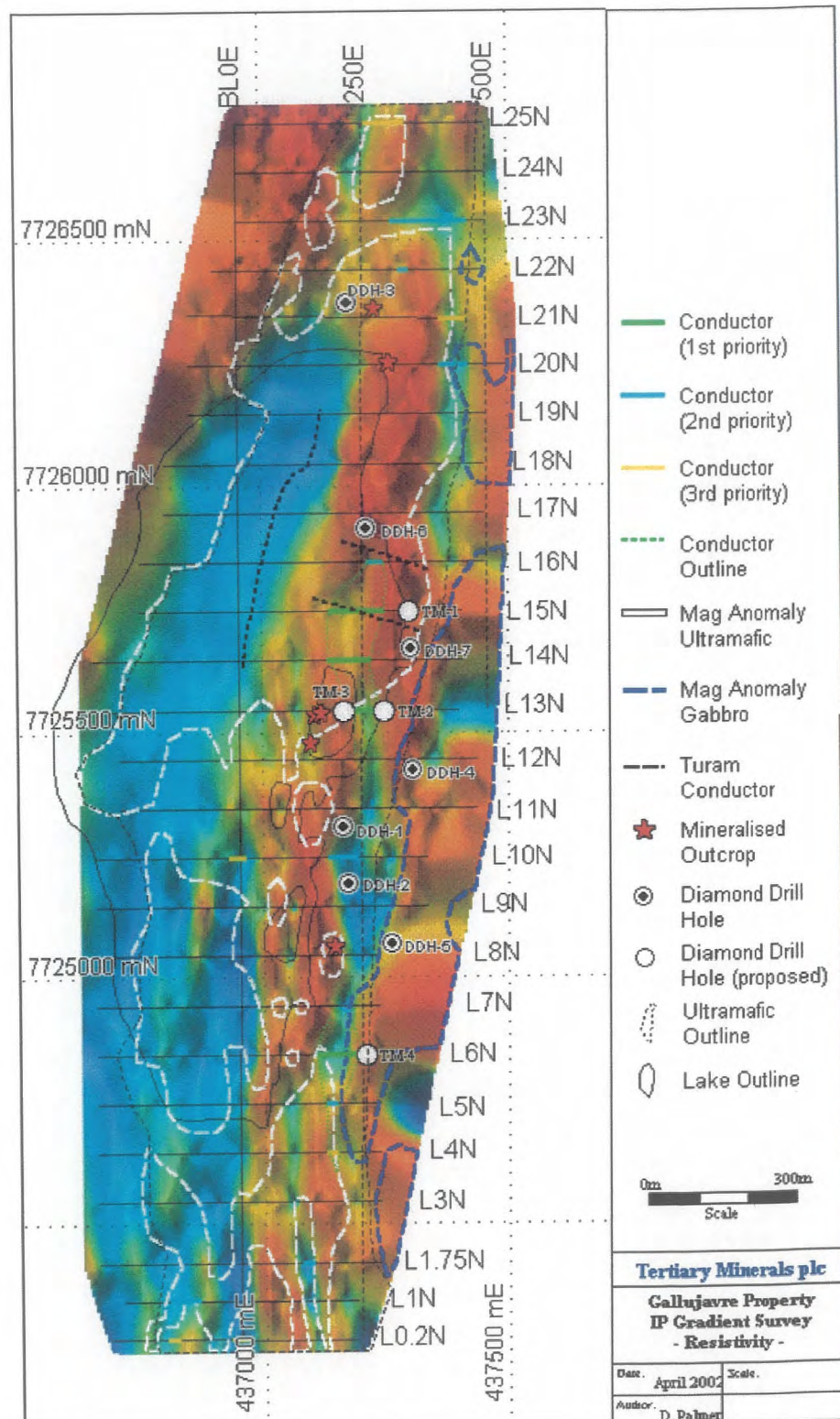


Figure 3.7 IP gradient survey (resistivity), geophysical anomalies and drill hole location data for Gallujavre Grid

Table 3.2 Proposed diamond drill hole locations

Name	Easting	Northing	Azimuth	Inclination	Depth
DDH-TM-1	437300	7725745	270	-45	200
DDH-TM-2	437250	7725540	270	-45	125
DDH-TM-3	437165	7725540	270	-45	125
DDH-TM-4	437210	7724840	270	-45	150

Diamond drill hole TM-1 is designed to test the thickest part of the priority anomaly on line 15N (Fig 3.5), and should intersect the horizon between 110 and 160m depth (75-115m vertical depth). Placement of the drill hole is based on summer drilling, and therefore can only test the anomaly below the range of the gradient data. Evaluation of this section of the anomaly at shallower depths will require winter drilling on the lake surface. Holes TM-2 and TM-3, are designed to test the main anomalous zone as well as footwall ultramafic in an east-west fence. Hole TM-2 will test the priority anomaly at approximately 40m depth, while TM-3 will test near surface expressions of potential mineralization, and a thicker sequence of the footwall. The final hole, TM-4, will be used to evaluate the southern strike extension of the anomaly along line 6N, where a 1st priority anomaly exists.

The ultramafic horizon extends in both north and south strike directions and if positive results are obtained from diamond drilling the extensions of this unit should be thoroughly evaluated. It is recommended that the evaluation start with the magnetic survey initially scheduled for these north and south grids (appendix VI), and be followed by a gradient-array IP survey to define potential chargeability anomalies.

4. Conclusions

4.1 Porsvann

The Porsvann showing consists of disseminated pyrrhotite-chalcopryrite mineralization, hosted by an isolated metapyroxenite sill, which contains concentrations of up to 6.8 ppm Pt+Pd. A magnetic survey was completed over the area to evaluate the potential for unexposed extensions of the horizon to the north and south, however, no continuations were observed in the data. No further work is recommended for Porsvann at this time.

4.2 Gallujavre

A number of interesting electromagnetic anomalies were delineated within ultramafic rocks of the Gallujavre Lake area in Block I, and are in close proximity to sulphide showings identified as being highly anomalous in PGE (up to 2.15ppm Pt+Pd). A metamorphosed ultramafic sill hosts the mineralization, consisting of disseminated chalcopryrite and pyrrhotite, and is characterized by up to 30% serpentine+magnetite representing decomposition of cumulate olivine. The showings were first discovered in

1978 by Sydvaranger A/S, and received significant attention, including EM geophysical surveys and a seven-hole shallow drilling programme. Initial drilling targeted surface showings as well as cross-cutting EM anomalies, however, the current geophysical data suggests that the most prospective areas along strike were not drill-tested.

An initial programme of four lines each of MaxMin II and gradient IP were undertaken on lines 13N-15N and 21N of the grid, with no anomalies recognized by the former and several identified by the latter survey. A gradient-array IP survey was then completed over 25 lines covering the main Gallujavre occurrence and the northern and southern strike extensions of the ultramafic horizon. The area is distinguished by a prominent ridge of high chargeability, which occurs along the entire eastern contact of the intrusive where surveyed. Although resistivity is also high in this area, a number of coincident chargeability highs and resistivity lows are observed. The best of these priority anomalies occur on lines 13N to 16N and on line 6N, and are spatially associated with sulphide exposures. The success of the IP survey, and failure of the MaxMin II test, in delineating conductive zones indicates that potential mineralization is probably disseminated in nature and, therefore, highly prospective for PGE.

Given the occurrence of an extensive electromagnetic anomaly in close proximity to sulphide mineralization a diamond drill programme of four holes totaling 600m is proposed to evaluate the prospective area. The four holes target approximately one kilometer of the strike length of the anomaly between lines 6N and 16N, an area identified as having the greatest potential for hosting mineralization. The first hole, TM-1, targets the thickest portion of the anomalous zone, on line 15N, and will test the horizon between 75 and 110m vertical depth. A set of two holes, TM-2 and TM-3, will test the same zone at shallower depths between lines 13 and 14 as well as possible down-dip extensions of surface mineralization and footwall zones. The final hole targets a broad IP anomaly on line 6N, which is located on the southern end of the chargeability anomaly. This exploratory program is designed to provide an initial evaluation of the geophysical anomalies as well as known sulphide mineralization.

This report:

3CT009.00

Finnmark Project, Northern Norway

Geophysical Surveys – Porsvann (Block A) and Gallujavre (Block I) Areas;

has been prepared by:

STEFFEN. ROBERTSON AND KIRSTEN (CANADA) INC.

David Palmer, Ph.D.
Consultant Geologist

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APPENDIX I

Induced Polarization Interpretation

GEOPHYSICAL RESULTS

The following is a brief interpretation of the geophysical data obtained from the magnetometer, HLEM and Induced Polarization Surveys carried out on the Finnmark Project.

The main area of interest is a linear chargeability anomaly outlined by the gradient array Induced Polarization survey that is 3-4 times above background. This zone extends generally north-south across most of the grid area and is situated primarily to the east of the base line. Although its width varies from line to line, the strongest part of this feature strikes from roughly L175N/250E to L25N/300E, appearing to remain open in both directions.

Both the resistivities and the magnetics associated with this zone tend to suggest that its response may be contact related. Within the north half of the grid the chargeable zone is situated along the eastern flank of an area of erratic magnetic highs coincident with a resistivity high that occupy much of the central portion of the grid between L14N and L22N. This erratic magnetic signature, which is 3000nT above background, is typical of geological units such as ultramafics or gabbro.

Within the southern half of the grid the IP parallels the western limit of a similar magnetic and resistive unit that is situated between L6N and L14N. Due to the fact that this feature occur along the extreme eastern edge of the grid complete coverage was not possible. As a result, the eastern limits of this feature remain unknown. However based on the limited magnetic and IP coverage it would appear to be marking a second geological unit similar to that previously discussed.

Where the response to the south of L13N differs from that to the north is that within this part of the grid the strongest IP chargeabilities occur along the eastern flank of a resistivity high. This resistivity high does not have the coincident magnetic high that occurs to the north. This resistive zone may be responding to areas of silicification or alteration.

The IP target discussed thus far is based on the strongest chargeability responses. However, on most of the lines covered the IP zone is weaker but much broader, particularly in the central and northern parts of the grid. In these areas the IP shows chargeable zones that are up to 300 meters in width. These exaggerated widths may be the result of weaker parallel zones or localized folding. The three lines that were surveyed with Dipole-Dipole array provided data in pseudo-section form, which is much more effective in delineating areas that may be responding to parallel or multiple zones.

The HLEM conducted over the grid failed to detect any significant areas of conductivity.

RECOMMENDATIONS AND CONCLUSIONS

As discussed under the results portion of this report, the geophysical program conducted on the Finnmark Project was successful in outlining an anomalous zone that is worthy of follow-up work.

The geophysical data has shown that the strongest part of the IP anomaly is coincident with what the resistivities and magnetics suggest is the contact between geological units. The strong, erratic magnetics encountered are typical of geological units such as ultramafics or gabbro.

The fact that the HLEM survey did not outline any conductors leads one to believe the IP is most likely responding to contact related disseminated sulphides.

At least one line should be tested with a diamond drill hole. The fact that the zone is in excess of 300 meters in width in many areas makes it difficult to prioritize what area to test. At this point in time it would seem one of the more favorable targets would be where the zone occurs on L15N. Here the IP anomaly narrows but continues to show a strong response, which occurs along a fairly distinct contrast in the resistivities and magnetics. It would appear to have a near vertical dip and is approximately 125 meters in width extending from 150E to 275E. This feature could be tested with a diamond drill hole approximately 200 meters in length drilled grid east at -45 degrees, collared at 137E.

As mentioned earlier, the broad IP response may be the result of parallel zones or localized folding. The pseudo-sections provided by the Dipole-Dipole I.P. survey are far more effective for delineating multiple zones such as the ones that may exist here. Additional I.P. coverage using a Dipole-Dipole array should be considered if the diamond drill results warrant it.

Should this initial drill hole return favorable results the data should be looked at in further detail and number of other areas tested.

APPENDIX II

File: AppendII_Porsvann_Mag.xls

APPENDIX III

File: AppendIII_Gallujavre_Mag.xls

APPENDIX IV

File: AppendIV_Gallujavre_MaxMin.xls

APPENDIX V

File: AppendV_Gallujavre_IP.xls

APPENDIX VI

Proposed Grids – Gallujavre North and South

Appendix VI-I Endpoint locations for Gallujavre North Grid (proposed)

Line	End West	End East	Length (m)	Easting (West)	Northing (West)	Easting (East)	Northing (East)
6000	-2000	-1250	750	434955	7730251	435705	7730251
5750	-2000	-1250	750	434955	7730001	435705	7730001
5500	-2000	-1250	750	434955	7729751	435705	7729751
5250	-2000	-1250	750	434955	7729501	435705	7729501
5000	-2000	-1250	750	434955	7729251	435705	7729251
4750	-2500	-1250	1250	434455	7729001	435705	7729001
4500	-2500	-1250	1250	434455	7728751	435705	7728751
4250	-2500	-1000	1500	434455	7728501	435955	7728501
4000	-2500	-1000	1500	434455	7728251	435955	7728251
3750	-2500	-1000	1500	434455	7728001	435955	7728001
3500	-2500	-500	2000	434455	7727751	436455	7727751
3250	-1750	-500	1250	435205	7727501	436455	7727501
3000	-1750	-500	1250	435205	7727251	436455	7727251
2750	-1500	-500	1000	435455	7727001	436455	7727001
2500	-1500	-500	1000	435455	7726751	436455	7726751
2250	-1500	-500	1000	435455	7726501	436455	7726501
2000	-1000	-500	500	435955	7726251	436455	7726251
1750	-1000	-500	500	435955	7726001	436455	7726001
1500	-1000	-500	500	435955	7725751	436455	7725751
1250	-1000	-500	500	435955	7725501	436455	7725501

Appendix VI-II Endpoint locations for Gallujavre South Grid (proposed)

Line	End West	End East	Length (m)	Easting (West)	Northing (West)	Easting (East)	Northing (East)
-250	-500	500	1000	436455	7724001	437455	7724001
-500	-500	500	1000	436455	7723751	437455	7723751
-750	-500	750	1250	436455	7723501	437705	7723501
-1000	0	2500	2500	436955	7723251	439455	7723251
-1250	0	2500	2500	436955	7723001	439455	7723001
-1500	0	1000	1000	436955	7722751	437955	7722751
-1500	1500	2500	1000	438455	7722751	439455	7722751
-1750	1500	2500	1000	438455	7722501	439455	7722501
-2000	1500	2500	1000	438455	7722251	439455	7722251
-2250	2000	4000	2000	438955	7722001	440955	7722001
-2500	2000	4000	2000	438955	7721751	440955	7721751
-2750	2000	4000	2000	438955	7721501	440955	7721501
-3000	2000	4000	2000	438955	7721251	440955	7721251
-3250	2000	4000	2000	438955	7721001	440955	7721001
-3500	2000	4000	2000	438955	7720751	440955	7720751
-3750	2000	4000	2000	438955	7720501	440955	7720501
-4000	2000	4000	2000	438955	7720251	440955	7720251
-4250	3000	4000	1000	439955	7720001	440955	7720001
-4500	3000	4500	1500	439955	7719751	441455	7719751
-4750	3000	4500	1500	439955	7719501	441455	7719501
-5000	3000	4500	1500	439955	7719251	441455	7719251
-5250	3000	4500	1500	439955	7719001	441455	7719001
-5500	3000	4500	1500	439955	7718751	441455	7718751
-5750	3500	4500	1000	440455	7718501	441455	7718501

APPENDIX VII

Geological Legend

KARASJOK GREENSTONE BELT

Metamorphosed Plutonic and Hypabyssal Rocks

-  Massive gneiss of granitic to tonalitic composition (intrusive origin uncertain)
-  Granite 1
-  Granite 2
-  Leucocratic granodiorite to diorite
-  Intermediate augen gneiss
-  Dioritic to leucogabbroic schlieren gneiss
-  Magnetite diorite (leucogabbro)
-  Gabbro
-  Ultramafic intrusives

Metavolcanic and Metasedimentary Rocks

-  Quartzitic to quartzofeldspathic schist
-  Feldspathic and impure quartzofeldspathic schist
-  Micaschist/conglomerate
-  Garnet micaschist, often graphitic
-  Marble, calc-silicate rocks and carbonate-rich sediments
-  Intermediate, banded rock/dioritic schist
-  Banded amphibolite (high-Mg basalt often included)
-  Fine- to medium-grained homogeneous amphibolite
-  High-Mg basalt (normally not separated)
-  Komatiite, amphibole-chlorite schist
-  Rusty weathering horizon, including massive sulphide

BASEMENT ROCKS

-  Granitic to granodioritic intrusions and gneisses

*To be used with property scale geology maps (Norwegian Geological Survey, NGU)