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GEOLOGICAL REPORT, F GRID EXTENSIONS 1, 2, 3 - 87, EASTMAIN RIVER PROJECT

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Énergie et Ressources naturelles
Québec

GEOLOGICAL REPORT

SUMMER 1988 MAPPING

F GRID EXTENSIONS 1, 2, 3 - 87

EASTMAIN RIVER PROJECT, QUEBEC

VENTURE 332

PLACER DOME INC./MSV RESOURCES JOINT VENTURE

Ministère de l'Énergie et des Ressources
Service de la Géoinformation
Date: 20 FEV 1989
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SERV. M.E.R.
BUREAU DES MINES
QUÉBEC

AUGUST 1988
TORONTO, ONTARIO

R.J. KNOWLES
H. THIBOUTOT

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TABLE OF CONTENTS

cont'd.....

LIST OF DRAWINGS
(Bound Into Reports)

LIST OF DRAWINGS
(In Map Pockets)

Dwg. No.	Title	Scale
116-312	Eastmain Property	1:50 000
116-315	Regional Geological Compilation	1:50 000
116-96	Geological Compilation: Main Block	1:15 000
332-63A & B	Geology, F Grid Extension Grid 1-87	1:2 500
332-64A & B	Geology, F Grid Extension Grid 2-87	1:2 500
332-65	Geology, F Grid Extension Grid 3-87	1:2 500

GEOLOGICAL REPORT

SUMMER 1988 MAPPING

F GRID EXTENSIONS 1, 2, 3 - 87

EASTMAIN RIVER PROJECT, QUEBEC

VENTURE 332

PLACER DOME INC./MSV RESOURCES JOINT VENTURE

SUMMARY

Three grids were located in order to test for the potential extension of the gold mineralized horizon containing the A, B and C Zones in both east and west directions. Through the use of information obtained from geophysical surveys conducted in 1987 and detailed mapping conducted in 1988 and by projecting along geophysically-inferred stratigraphy from known geology on the main F Grid and it extensions (which include the I Grid), further conclusions can be deduced elaborating on information previously known about the areas on a reconnaissance level.

Essentially, the main gold mineralization stratigraphy hosting the A, B and C zones within the F Grid area does exist and is inferred by moderately to well defined geophysical anomalies to extend eastward from the C Zone across Grid 3-87 and the western part of Grid 2-87, including the I Grid. It then dissipates to very poorly

defined further east. A gold bearing stratigraphic horizon or unit on the I Grid, intersected in 1983 drilling, can be traced geophysically across all of Grid 2-87 and in part Grid 3-87. The economic potential east of F Grid is therefore very good.

No new information gained on the western extension Grid 1-87 would change previous interpretations. The main gold mineralized stratigraphy within the F Grid is truncated by felsic and intermediate intrusions north of the eastern part of Grid 1-87. The grid geology is comprised of 85% intrusive rock types and the remainder consists of primarily volcaniclastic sedimentary rocks which have not been found to contain any economic concentrations of gold in the area to date.

It is therefore recommended that detailed investigation should focus on the geophysical delineation of the two previously mentioned potentially economic horizons within F Grid Extensions 2-87 and 3-87. The results would facilitate a more precise planning of a substantial drill program. Further work within the F Grid Extension 1-87 area is not recommended at this time.

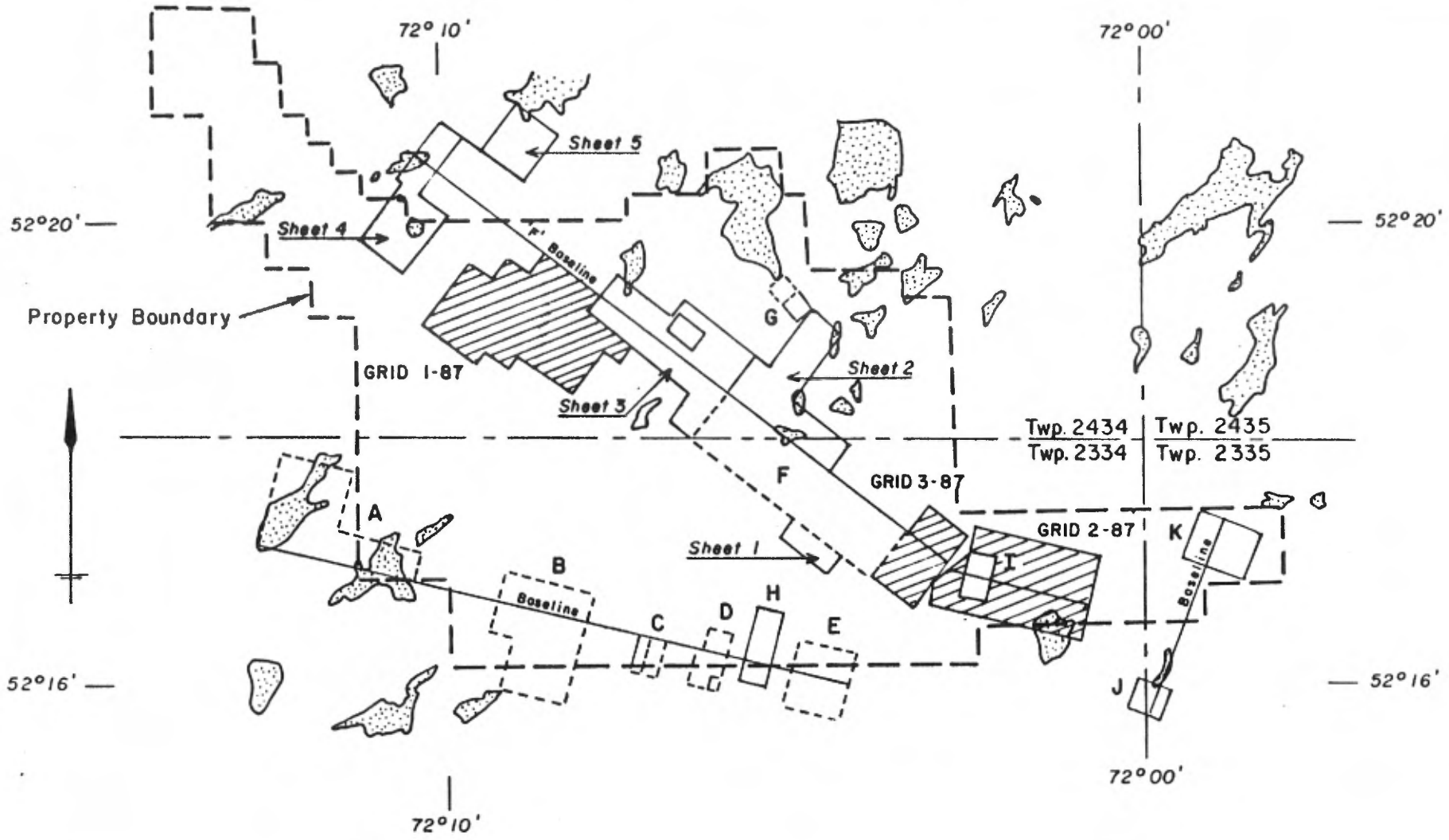
INTRODUCTION

Three grid extensions of F Grid were cut in 1987 in order to conduct geophysical surveys and geophysical mapping along the potential continuation, both east and west of the favourable mineralized horizon containing A, B and C Zones. Geophysical surveys were completed in the winter of 1987 and one grid was partially mapped during the summer of 1987. Geological mapping was completed on all three grids during June and July of 1988.

The report will outline information obtained from geological mapping on the three east and west 1987 extension grids of F Grid during the 1987/1988 summer programs and integrate geophysical data gathered during the spring of 1987. Conclusions and recommendations will follow.

GRID DESCRIPTION

Figure 1 outlines the 1987 F Grid extensions comprising a total of 101 line-kilometres. The extensions consist of three grids numbered 1-87, 2-87 and 3-87, representing respectively the west extension of the original F Grid, the east extension of the small, previously isolated I Grid, and a fill-in grid between the latter and the east end of F Grid. Grid lines have 100m separation with 1-87 and



1982 GRIDS

1983 GRIDS (Sheets 1 to 5 are extensions of the original F Grid)

1987 GRIDS

0 1 2 3 4 5

kilometres

Placer Dome Inc.

Proj. No. 332 - EASTMAIN, P.Q.

LOCATION MAP

Scale 1:100,000	Drawn J.W.	FIG. 1
Date AUG. 1988	NTS Ref. 33A/8	

3-87 sharing the F Grid baseline bearing of 125° and 2-87 sharing the I Grid baseline bearing of 100°. Table 1 summarizes the extension details. Essentially the grids were necessary to study in greater detail (geophysically and geologically), the potential east and west extensions of the stratigraphy hosting the main gold mineralization of A, B and C Zones, found on the F Grid

TABLE I

F GRID EXTENSIONS

SECTION NAME	TOTAL KM	LINES	CHAINAGE	CLAIMS COVERED	COMMENTS
1-87	1.50	16W - 18W	4S - 7S	398257 cls. 4-5 398258 cls. 1-2 411132 cls. 2-3	
	9.65	19W - 25W	4S - 15S	398257 cls. 4-5 411132 cls. 2-5 411141 cls. 2-4	
	7.35	26W - 29W	00 - 15S	411124 cls. 1-2 411125 cl. 5 411132 cls. 1-5 411133 cl. 1 411141 cl. 2	
	8.4	30W - 33W	00 - 18S	411123 cls. 4-5 411124 cls. 1-4 411125 cls. 3-5 411132 cl. 1 411133 cls. 1-2	
	8.9	34W - 37W	00 - 20S	411123 cls. 3-4 411124 cls. 3-5 411125 cls. 2-4 411133 cls. 2-3 411152 cl. 2	
	7.6	38W - 41W	4S - 20S	411123 cls. 1-3 411124 cls. 3-5 411125 cls. 1-3 411133 cl. 3 411152 cl. 2 411159 cls. 4-5	
	6.0	42W - 45W	8S - 20S	411116 cl. 5 411125 cl. 1 411159 cls. 3-5 411160 cl. 1 411168 cl. 1	
2-87	0.5	3W	3.5S - 6S	398258 cl. 5 398259 cl. 1	River Interference
	0.5	2W	2S - 6S	398258 cl. 5 398259 cl. 1	" "
	0.57	1W	1.25S - 6S	398258 cl. 5 398259 cl. 1 406854 cl. 5	
	0.9	0	00 - 6S	406854 cls. 4-5 406855 cl. 1	River and I Grid

...../2

TABLE I
Page 2

F GRID EXTENSIONS

SECTION NAME	TOTAL KM	LINES	CHAINAGE	CLAIMS COVERED	COMMENTS
2.87	0.962	1E	3.62N - 6S	406854 cls. 4-5 406855 cl. 1	Western edge of I Grid
	0.2	2E	7N - 8N	406855 cls. 1-2 406861 cl. 5	River Interference
	1.9	3E - 6E	4N - 8N	406855 cls. 1-2 406861 cl. 5 406862 cl. 1 406863 cl. 2	Northern end of I Grid
	1.5	2E - 6E	4S - 6S	406854 cls. 4-5 405862 cl. 3	Southern end of I Grid
	28.9	7E - 23E	8N - 6S	406862 cls. 1-5 406863 cls. 1-5 406864 cls. 1-4 406865 cls. 2-4 406866 cls. 1-2 414359 cl. 1 414360 cl. 1 414333 cl. 1 411300 cl. 1 411301 cl. 1	East of I Grid
3-87	0.225	47E	5N - 3.75N	406855 cls. 1-2	River
	1.275	46E	5N - 5.75S	398257 cl. 1 398258 cl. 5 406854 cl. 5 406855 cls. 1-2	River
	1.6	45E	5N - 9S	398245 cl. 1 398258 cl. 5 404974 cl. 1 406855 cls. 1-2	River
	12.3	44E - 38E	5N - 10S	398257 cl. 1 398258 cl. 5 404966 cls. 4-5 404973 cls. 4-5 404974 cl. 1 404975 cls. 3-4 406855 cls. 1-2	Joining with F Grid

LOCATION AND ACCESS (See Figure 2)

The Eastmain gold property is located 310 km northeast of Chibougamau, Quebec at 52° 18'N and 72° 05'W within Townships 2334 and 2335, Mistassini Territory, District of Abitibi East. Access to the project area in the summer is by float plane. Propair Inc. maintains a float base approximately 8 km southeast of Lake Albanel on the Temiscamie River. A 166 km all-weather gravel road links the airbase with Chibougamau. The property is a further 167 km northeast by air from the base. A Hughes 500D based in camp facilitates local access within the property area.

PREVIOUS WORK

The Eastmain property area has been previously explored by Placer in 1969-70, by Nordore Mining from 1974 to 1976, and again by Placer since 1980. The reader is referred to the 1982 F Grid report, Eastmain River Project, for the complete exploration history to December 1982 and in the summary of work sections of subsequent reports 1983 through 1987.

REGIONAL AND LOCAL GEOLOGY

The reader is referred to "Summary of Report 1983", regional geological compilation map at 1:50,000 scale,

FIGURE 2

GENERAL LOCATION MAP

EASTMAIN AREA , QUEBEC

Aug., 1988

Dwg. No. 116-161, and main block geological compilation map (newly updated) at 1:15,000 scale, Dwg. No. 116-96 included within. Greater detailed geological description can be found in the "Summary of Report on 1983 Exploration Program Eastmain River Project", pages 3-5.

The volcanic rocks within the Eastmain River Project area are classified into two cycles. Cycle 1 is represented by a mafic volcanic unit (1M) overlain by a felsic volcanic unit (1F). Cycle 2 consists of a single mafic volcanic unit (2M). The volcanic rocks are overlain by metasediments (S). These rocks are truncated by granite gneiss (GN) and granite (G), the latter being the younger and post-metamorphism. Metamorphism is upper greenschist to lower amphibolite facies. Volcanic rocks are overturned and at least two episodes of folding are recognized.

The F Grid lies within Cycle 1 volcanic rocks. The volcanic sequence is 2-4 km in thickness with individual units dipping north, 35° to 60°, south facing and trending northwesterly. To the northwest these volcanic rocks are truncated by a younger granitic intrusive body and to the southeast, the sequence is overlain by Proterozoic "Otish" sediments. Basalt, the predominant rock type, varies texturally as massive, pillowed, flow brecciated, porphyritic and variolitic. Minor felsic components consist of rhyolitic

flow/dyke, tuffs and pyroclastic rocks. Semiconcordant, massive to talcose ultramafic rock units (pyroxenite) exist within the sequence associated with the mineralized horizon.

GRID GEOLOGY

Summary

A total of approximately 25.5 man days were spent mapping with 10, 10.5 and 5 days on grids 1-87, 2-87 and 3-87, respectively. The area is relatively flat lying marked by eskers, terminal moraine sand mounds and minor hills, string bogs (at times extensive), as well as isolated localized wet-ground bogs. The area is cut by generally south to north flowing creeks and rivers. Till cover is reasonably thick and consistent and as a result, the abundance of outcrop on all three grids is quite sparse; therefore, the information obtained is limited.

Rock types encountered included granite, granodiorite, diorite, gabbro, mafic volcanic (primarily pillowed) flows, rhyolite tuff and volcaniclastic sediments. Bedding/foliation tends to strike 095° to 100° and dip north. Pillow top determinations indicate the units to be south facing, suggesting that they are overturned.

F GRID EXTENSION 1-87 (Refer to Dwg. No. 332-63 A&B)

Topography

The topography is generally flat lying with several very large string bogs and many smaller areas of wet ground and boggy patches. One large creek up to five metres wide cuts north - south through the centre of the grid and flows north. Several smaller creeks often associated with deep, 7.5-100m wide boulder based valleys flow towards the central creek. Till cover appears to be over 10-15m throughout most of the grid excepting the main creek valley. This is indicated by the depth of sharp sloped till valley walls. Exposed boulders are scarce. They seem to be concentrated, along the valley floors as boulder fields. Almost without exception, boulders are all rounded and mainly granitic to granodioritic in composition. Outcrops are not abundant with seven localities noted, only 3 of which were previously noted during reconnaissance mapping.

OUTCROP DESCRIPTIONS

The first two outcrop localities occur between Lines 34W and 35W from 1+50S to 3+50S. This rock type is hornblende granodiorite (1D) and is medium to coarse grained containing up to 25% hornblende (3mm laths), 60% fine

feldspar and 3% feldspar phenocrysts (5mm), minor quartz and biotite. Epidote occurs as fracture and joint fillings.

The more southerly outcrop locality contains from 10-20% xenoliths of mafic volcanic/intrusive rocks altered to gneissic schists. Quartz-carbonate-epidote veins and aplite fill jointing planes and include rust spots possibly from trace pyrite.

The third outcrop locality occurs between Lines 31W and 33W from 5+00S to 6+25S. This series of outcrops consists of intrusive rock units varying from 10-40m wide trending roughly 130° with contacts seeming to dip steeply northeast. From grid north to grid south rock units are fine to medium grained gabbro/diorite (3G/2D), medium to coarse grained hornblende granodiorite, coarse grained gabbro and medium to fine grained diorite. The gabbro/diorite unit is hornblende-rich, varies in grain size and is substantially altered. In some instances foliation is not clearly exhibited. The hornblende granodiorite unit is very similar to the rock type described in the second locality but contains up to 60% xenoliths of mafic intrusive rocks. Quartz veins, sometimes pyritic, fill joints and fractures. This unit appears to intrude the surrounding mafic units. An interesting 1-2m wide unit exists along the contact between the above described units. It is fragmental, mafic to

intermediate in composition and could possibly be a contact/chill margin breccia reaction zone. This unit could easily be mistaken for a volcaniclastic rock type if not for its immediate geological environment. The gabbro unit consists mainly of coarse grained hornblende and the diorite unit is composed of fine grained hornblende and feldspar crystals.

The fourth outcrop locality is between Lines 26W and 28W from 11+00S to 12+10S. This series of outcrops is intrusive in nature containing two rock types, one intruded by a second. The first and earlier rock unit is a diorite (2D) by composition but due to the abundance of pink feldspar phenocrysts (20%) ranging from 0.5mm to 1 cm in grain size, it is called a diorite feldspar porphyry (2DFP). This unit is cut by a coarse grained granite (1G) dyke about 30-40m wide, trending approximately 085° and dipping near vertical. The intruded unit is altered more so to grid south and east with the feldspar phenocrysts being drawn out into foliation planes parallel to sub-parallel to the intrusion. The foliation seems to dip 70° towards the intrusion on either side. In some instances the intruded unit is relatively unaltered, in other instances (grid south and east) alteration is such that it could be mistaken for medium grained altered volcaniclastic rocks.

The fifth outcrop locality is approximately at Line 27+60W and 14+85S. A small outcrop of fine grained diorite with trace pyrite is situated on a creek bank and bottom.

The sixth outcrop locality is between Lines 28+85W and 30W from 11+40S to 12+70S. This series of outcrops is located mainly along the central creek banks. The rock type is volcaniclastic sediments (VSCX), which are dark grey green, mafic to intermediate in composition, with fragments and clasts ranging from fine grained (<1mm) up to 12 cm in size. The rocks are moderately foliated at 054° to 060° dipping south where detectable, and clasts are elongated parallel to foliation trends. One outcrop of granite/granodiorite containing mafic xenoliths occurs. Trace pyrite is found disseminated on most outcrops.

The seventh locality is at Line 33+80W and 20+25S. The rock type is medium grained volcaniclastic sediment.

F GRID EXTENSION 2-87 (Refer to Dwg. No. 332-64 A&B)

Topography

The topography is primarily flat lying, reasonably well drained with one large hill cresting at Line 16+50E and the baseline. Joe Lake occupies over 1.2 km of line in the

southeastern end of the grid and is drained by a creek which flows northeast through two meadows which are subject to high rainfall flooding. A small pond and associated creeks drain the central north grid area and a small one metre wide creek runs through the southwest section of the grid draining west into the Ola River. The Ola River marks the western edge of the grid, averages approximately 20-30m wide and is fast flowing in a northerly direction with several waterfalls and sets of rapids.

There are numerous sand and boulder mounds covering the northwestern part of the grid. Scattered rounded to sub-angular boulders are common throughout the grid most of which have been glacially transported from north of the grid; however, some particularly angular and/or large house-size boulders seem to possibly be derived locally from within the grid area. Till thickness seems quite variable (1m to over 10m).

Outcrops are scattered with the majority located within 100m of and along the baseline, a group near the north central grid area and a group in the southwest part of the grid. Outcrops within the I Grid will not be discussed and the reader is referred to "Drilling and Geological Report on I Grid September 1983" for more information.

OUTCROP DESCRIPTION

The baseline outcrops occur from lines 0 to 1E and from 11E to 23E. They are all very similar and probably constitute the same geologic unit. Rock types consist of fine to medium grained mafic volcanic flows exhibiting massive, pillowed, pillow breccia, vesicular and variolitic textures. Trace pyrite can be seen associated primarily with pillow selvages. Foliation and bedding trend 090° to 100° with top determinations indicating in two instances, a southward facing direction. Dips are northward.

The north-central group of outcrops occur between lines 9+75E and 12+50E from 3+00N to 5+00N. The most northerly outcrop consists of two rock types with an approximate contact trending 095° and dipping 70° to the north. Medium grained diorite/granodiorite with trace pyrite comprises the north part and medium to coarse grained hornblende rich gabbro/diorite comprises the south part. Angular boulders of these same rock types occur 75-100m to the west of this outcrop and are probably locally derived from the same east-west trending unit. The remaining outcrops are massive to pillowed basalt with foliation trending 085° to 095° and dipping north. One outcrop contains

well developed, undeformed pillows for which top determinations indicate up to be in a south direction. Bedding is somewhat evident in two instances. A flow contact and a tuffaceous horizon both indicate a 090° to 100° trend parallel to sub-parallel to foliation and dipping at 50° to the north. Many probably locally derived angular basalt boulders can be found in the area. A sulphide-rich angular boulder of rhyolitic tuff was found in this area.

The southwestern group of outcrops consists of massive basalts with foliation trending 100°-105° dipping north.

Several rhyolitic tuff boulders with quartz veins and disseminated pyrite occur between Lines 1+70E and 2E at 5S.

F GRID EXTENSION 3-87 (Refer to Dwg. No. 332-65)

Topography

Topography is quite variable across the grid. A major esker dominates the majority of the grid with its spine essentially running down line 42E. Rolling sand hills and mounds cover the grid west of the esker. The remainder of the grid is reasonably flat lying. The Ola River marks the southeast and east edges of the grid and is fast flowing

northwardly with several waterfalls and sets of rapids. Outcrop is very sparse due in part to heavy till coverage and is located in only one area of the grid.

Outcrop is principally located between Line 46E and the Ola River water falls from 1S to 3S. Basalt is the only rock type with textures varying from vesicular pillowed to massive. Trace pyrite is found mostly associated with pillow selvages. Foliation or elongation of pillows trends 095° to 100°, dipping north. The southern most outcrop contains a quartz vein that is 1.5m wide with chloritic smears. No sulphides are visible. Boulders of gabbro occur in the northeastern part of the grid and may represent a nearby bedrock source.

MINERALIZATION

F GRID EXTENSION 1-87

Trace pyrite is observed on outcrops in several instances, only one of which warrants sampling. In a granodiorite outcrop at Line 35+50W and 3+00S minor rust spots occur in association with fracture fillings and xenoliths. Trace pyrite is assumed. An outcrop of granodiorite in association with units of gabbro and diorite at Line 32+8W and 5+25S contains more significant amounts of

pyrite. In particular a quartz vein filling a joint plane contains up to 10% pyrite. Grab sample 14952 was taken over a 4 cm width and values returned are 0.14 g/t Au and 0.8 g/t Ag; therefore, it is of no economic interest at this time. Disseminated pyrite up to 1% is noted on several outcrops of volaniclastic sediment between Lines 28+75W and 29+25W from 13+25S to 13+75S. A small diorite outcrop at Line 27+50W and 14+80S contained trace disseminated pyrite.

F GRID EXTENSION 2-87

Pyrite exists in trace amounts in rocks on this grid. Many of the near baseline outcrops of pillowed basalts particularly from Lines 0 to 1+50E, contain disseminated pyrite less than 0.5% within pillow selvages and fracture fillings. An outcrop of diorite/granodiorite contains up to 0.5% disseminated pyrite in spotty concentrations at Line 12+00E and 4+80N. Several angular boulders are worthy of note. At Line 12+12E and 4+29N an angular boulder of rhyolitic tuff contains 2% disseminated pyrite in a silicified matrix. Grab sample 14951 was taken and values returned are 0.21 g/t Au and 1.0 g/t Ag. The boulder may or may not be locally derived and therefore is not of immediate economic interest. Another series of angular boulders of

rhyolitic tuff with white quartz veins is located at Line 1+80E and 5+00S. Trace disseminated pyrite was noted.

F GRID EXTENSION 3-87

Trace pyrite is noted within pillow selvages on several outcrops between Line 46E and the Ola River. A 15m wide shear-bounded quartz vein is located at Line 36+60E and 2+40S. It is noted only because its trend is parallel to bedding/foliation and may indicate healed opening structures running along stratigraphic horizons in this grid area. Some of these could trap mineralization.

GEOLOGICAL INTERPRETATION INTEGRATING GEOPHYSICAL DATA

Summary

Magnetic and VLF geophysical surveys were conducted on the grids during the 1987 winter program. The reader is referred to "Geophysical Results, Winter 1987, on the Eastmain Grids 1, 2, 3-87", dated May 1987 by J.B. Boniwell, Excalibur International Consultants Ltd. Further observations and interpretations can be made now by incorporating information gained through the 1988 summer mapping program.

In general, as previously noted in the above referred report, magnetic "horizons" are extensively traceable on all three grids and therefore, have been included on the geology maps as thick dashed lines. On Grids 2-87 and 3-87 these magnetic horizons maybe indicative of pyroxenite, rhyolitic tuff and chert units. Certainly they seem to parallel stratigraphy. The magnetic horizon representing the projected extension of the C Zone mineralized horizon is denoted "MC". The boundaries of magnetically positive bands surrounding the magnetic horizons which probably represent geological stratigraphic units have also been included on the geology maps and indicated with an "m". On grid 1-87 gross rock types are assumed.

VLF data correlates extremely well with magnetic data on Grids 2-87 and 3-87 revealing the magnetic units to be consistently conductive. On Grid 1-87 and in part on Grid 3-87 structural information is obtained.

F GRID EXTENSION 1-87

Granitic rocks show a diminished magnetic signature when contrasted with mafic rock types. Granite plugs and

granitic domains were previously interpreted using 800 gammas as an interpretive magnetic contact across the northwestern portion of the grid. Granodiorite outcrops in the area of Lines 34W to 35W from 1+50S to 3+25S support this interpretation. This domain occupies approximately 25% of the grid area.

Magnetic horizon M3 tends to mimic the overall felsic intrusive outline of an approximately northeast-southwest oriented stretched S-shape. This horizon is well represented by a unit of gabbro/diorite which outcrops between Lines 31W and 33W at 5+25S. It is interesting to note that at this locality, gabbro and diorite units are represented by magnetic highs and a unit of granodiorite between the two is represented by a co-incident magnetic low demonstrating good correlation between geology and magnetic data. Other less continuous magnetic horizons seem to exhibit the M3 pattern thereby supporting the possibility that the general trend of rock units follows this stretched S-shape.

A magnetically inferred contact between the diorite/granodiorite domain and the Eastmain volcanic assemblages has been interpreted in continuation from the F Grid interpretations. This intrusive domain hosts the

magnetic horizons and constitutes as much as 60% of the grid area. Perhaps other magnetic horizons and extreme highs are indicative of additional gabbro units and bodies as previously observed in the M3 horizon group of outcrops. Additional granitic plugs have been delineated within this domain. This interpretation is supported by the presence of a significant, 40-50m wide generally east-west trending, granite dyke outcropping in the area of Line 27W and 11+50S and co-incident with a magnetic low signature. The 800 gamma level most accurately defines the contacts. Diorite feldspar porphyry outcrops on either side providing good magnetic contrast. The dyke can be magnetically traced both east and west of outcrop location. It is reasonably defined eastwardly until Line 21W where it emerges out of the diorite/gabbro/granodiorite domain into a domain where background magnetic susceptibility drops to a much lower threshold and is lost. To the west, the granite dyke leads to a possible granitic plug.

The volcaniclastic sediments exposed in proximity to Line 29W are associated with high magnetic values in contrast to those along strike on F Grid Line 4W. In fact their magnetic signature appears very similar to the diorites outcropping 200m to the east. Possibly the volcaniclastic sediments on this area are either part of a large roof

pendant or mega-xenoliths, thereby exhibiting the diorite magnetic high overprint or they contain metamorphically derived magnetite due to the dioritic intrusive event. Therefore, they may be included within the mafic to intermediate intrusive domain. It follows that only the extreme southwestern part of the grid, or remaining 15% may contain Eastmain volcanic assemblages. The intrusive/ volcanic contact possibly trends west immediately south of the grid following the stretched S-shape form thereby including the volcaniclastic sediment outcrop near Line 34W and 20S within the volcanic domain. The outcrop area does inhabit a magnetic low signature area.

VLF Fraser filtered data provides mainly structural information on this grid. Two major paralleling conductive bands trending north-northwest either correlate directly or closely parallel deep topographic linear depressions whose floors are carpeted with boulders. These features probably represent major fault or joint set breaks. Other more minor faults or joints trending west-northwest are seen geophysically and represented topographically by linear bogs, wet ground or depressions. Some spot highs are located over ponds and are probably caused by conductive clay sediments.

F GRID EXTENSION 2-87

At least three distinctive magnetic horizons exist trending approximately 100°, parallel to stratigraphy. The boundaries of magnetically positive bands containing these horizons possibly mark out three stratigraphic units.

The most grid northerly unit is about 150m wide to the west and narrows to 50m in the east. It is centred by one strong magnetic horizon between Lines 9E and 23E and contains two magnetic horizons between Lines 3E and 9E. VLF detected conductive anomalies were found to follow this same trend in a discontinuous yet consistent association about the magnetic horizons and especially about the southerly horizon within the western section of the unit. The unit was predicted to contain mafic to ultramafic intrusive rocks and this is in part supported by an outcrop, straddling the magnetic horizon at Line 12E, composed of gabbro/diorite and diorite/granodiorite with trace pyrite. Various gabbro boulders can also be found within this unit trend. A northeast-southwest trending break in the overall magnetic signature between Lines 7E and 11E can be interpreted as a normal fault producing about a 75m displacement. The southerly horizon to the west corresponds with the main horizon.

The central unit is 125m wide to the west and narrows to 75m in the east with one well defined magnetic horizon trending centrally along the unit. A corresponding consistent and strong VLF conductive anomaly essentially overprints the magnetic expression. No outcrops exist within this unit; however, it has been investigated in greater detail on the I Grid. The reader is referred to "Drilling and Geological Report on I Grid, September 1983" for details. Two holes were drilled within the I Grid in 1983 to investigate Max-Min anomalies. In hole I-83-22, pyroxenite, rhyolitic tuff and altered basalt units were intersected. One sampled intercept, of 21m of mineralized rhyolitic tuff containing 5% disseminated pyrrhotite, pyrite and trace chalcopyrite, returned a value of 6.34 g/t Au and 2.02 g/t Ag over 1.1m. Dips were noted at 35^{o} and when this intercept is projected up dip to surface, it meets the magnetic horizon. Hole I-83-31 was drilled at a steeper angle and terminated prior to the intersection of the above described rock types. One could generally assume than that the central unit is therefore, comprised of pyroxenite and rhyolitic tuff rock types with significant sulphides and gold values and thus a continued interesting target for exploration.

The grid south magnetic unit is well defined between Lines 2W and 7E and then dissipates becoming spotty and very poorly defined from Lines 7E to 23E possible due to pinching out of the unit. The unit and horizon can be traced from the C Zone on the F Grid east to this grid. The horizon was identified as "MC" in J.B. Boniwell's report only as far as the western edge of the I Grid. It does extend through the I Grid as far as Line 9E with reasonable confidence. VLF indicated anomalies do correlate with this magnetic unit only as far as Line 9E. The unit is 50m wide at Line 2W and 25m wide at Line 7E prior to pinching out. This unit in all probability will contain pyroxenite, rhyolitic tuff and perhaps cherty rock types although there is no evidence to date to support this.

F GRID EXTENSION 3-87

Three magnetic horizons and units exist consistent with and connecting to those on Grid 2-87. Magnetic signature within the north half of the grid has been obscured by thick esker related till cover. Interpreted north-south faulting offsets units by much as 100m. Faults have been located through the use of VLF data, the observed offset of magnetic horizons and the irregular shape of the river in this vicinity. Magnetic signature is obscured by

the esker in the south part of the grid. The projected extension of the C Zone mineralized horizon is well to moderately defined. No outcrop is present within the magnetic horizon units and therefore, no positive rock type correlation can be made. Numerous gabbro boulders do exist where the projected mafic to ultramafic intrusive unit is located providing evidence of possible continued consistent geology in all three units. Gentle folding is observed by using the magnetic horizons as stratigraphic guides. The axis trends approximately grid north-south down Line 41E and the fold limbs arch in a grid north direction.

VLF indicated conductivity is not as consistently correlative with magnetic trends possibly due to masking by overburden and topography.

CONCLUSIONS AND RECOMMENDATIONS

Although mapping within all three grids revealed no significant new mineralization, it did however enable a more reliable interpretation of geophysical data and by extrapolating known data from adjacent grids, a more complete picture has developed.

F GRID EXTENSION 1-87

The grid is underlain by approximately 25% granite and granitic rock types, 60% diorite, gabbro, and granodiorite and only 15% Eastmain volcanic assemblage rock types. The majority of volcanic rocks will consist of volcaniclastic sediments with minor mafic flows as interpreted by projecting F Grid information. The structural overprint on the grid is defined by the stretched S-shaped of the "M3" magnetic horizon. Mineralization associated with quartz veins proximal to the volcanic/intrusive contact area as found on F Grid is possible; however, lack of exposure and the fact that these veins are not easily detectable by geophysics makes them quite difficult to discover.

It is recommended:

1. At this stage in exploration that no further work be done as it is not probable that the main mineralized Eastmain volcanic assemblages even exist on the grid.

2. If the volcaniclastic sedimentary rocks are found to be auriferous, in the future, a geophysical/ geochemical program should be developed in order to study the potential of the grid underlain by these rock types.

3. Possible detailed litho-geochemical sampling could be conducted on known limited outcrops of volcaniclastic sediments, in order to test for their gold potential.

F GRID EXTENSION 2-87

Three distinctive magnetic horizons and units exist, accompanied by correlating VLF indicated conductivity. They potentially delineate stratigraphically significant geological units, designated north, central and south. The north unit appears to be composed mainly of mafic intrusive rocks. The central unit has been proven, through 1983 I Grid drill investigation, to be significantly auriferous and contains lithologies very similar to those intersected in drilling the mineralized zones on the F Grid. This is the most consistently defined unit. The south unit draws considerable interest since it potentially represents the eastern stratigraphic extension of the mineralized C Zone horizon. The geophysical signature of the this unit tends to dissipate easterly after Line 9E caused possibly by either the pinching out of the stratigraphic unit or masking due to overburden thickening. The former seems most likely. It should be noted however, that it is still detectable and that a geophysically strong re-appearance east of Grid 2-87 cannot be ruled out.

It is recommended:

1. Attention should be devoted primarily to the central and south units.

2. Geophysical surveys such as HLEM and possible I.P. should be conducted at 100m line-spacing, over the grid between Lines 1W and 9E from 4S to 4N. An HLEM survey should continue east to Line 23E from 1S to 4N. This may delineate conductors and concentrations of sulfides along the south unit until it dissipates and on the entire central unit. I.P. might indicate significant concentrations of disseminated sulfides which may not necessarily be strongly or discretely conductive.

   Total line km HLEM* - 11.4 @ $206/line km = $2,348.40
   (* includes I Grid)
   Total line km I.P. - 3.9 @ approx. $1,000/line km = $3,900.00

3. Drill hole I-83-31 should be deepened by 30m to 40m in order to intersect the auriferous rhyolitic tuff encountered in hole I-83-22.

4. Further drill holes should be located on both the central and south units using the results of the above

recommended geophysical surveys as a guide. This could involve 4 or 5 holes on the central unit and 3 or 4 holes on the south unit at lengths between 110m and 140m depending on dip of drilling chosen and the dip of stratigraphy (from 45° to 70°) realized. The above drilling could total a maximum of 1270m.

5. One or two speculative holes could be drilled to test for the gold potential of the north unit. Co-incident magnetic and VLF anomalies would be the best targets to choose. (Maximum total of 280m of drilling).

6. Should any of the three units prove to be significantly and consistently auriferous, the grid should be extended eastward, possibly as far as the J-K Grids, connecting O tie-line in order to further trace, at least geophysically, the units.

NOTE: A total of 1550m (5085 ft.) of drilling could be budgeted for.

F GRID EXTENSION 3-87

Three magnetic horizons and units exist consistent with and connecting to those observed on Grid 2-87. The north and central units are broken and offset, by assumed

faulting in the east part of the grid and obscured by deep overburden in the central part of the grid. VLF data is not as consistently correlative with magnetic trends probably in part due to thickness and type of overburden (esker and sand mounds). The south unit is more consistent and traceable onto the F Grid where it meets with the C Zone horizon. It is broken in two instances possibly due to overburden thickness (esker). VLF data although weak is more correlative to this unit. The units seem to exhibit a pattern of gentle folding with an axis oriented along Line 41E and arms arching gently northward.

It is recommended:

1. Attention be directed to the south unit which could potentially host mineralization similar to C Zone.

2. Geophysical surveys be conducted at 100m line-spacing on the grid between Lines 46E and 38E from 6S to 2S. HLEM would be done over this entire area and possibly if not already completed, continue towards C Zone on Grid F. I.P. could be applied from Lines 46E to 44E where the ground is more suitable (between the river and the esker). The esker will inhibit the effectiveness of the surveys, particularly I.P.

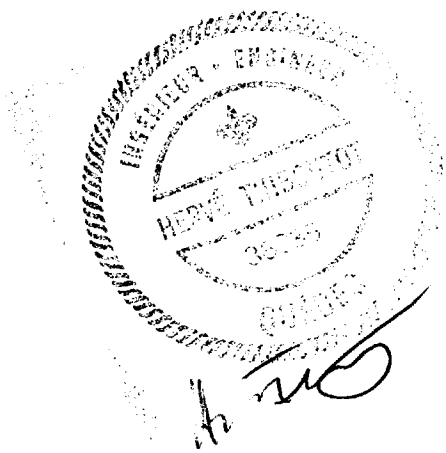
   Total line km HLEM = 3.6 @ $ 206 = $ 741.60
   Total line km J.P. = 1.2 @ $1,000 = $1,200.00

3. Approximately 3 or 4 drill holes would be located on the south unit based on the results of recommendation 2. This would test for the presence of economic gold concentrations. Budgets for 4 holes totalling 560m (1837 ft).

4. If on Grid 2-87 the central and/or north units are found to contain potential economic concentrations of gold, then these units should be pursued on Grid 3-87 first with geophysics followed by diamond drilling of selected targets.

NOTE:

Due to the presence of significant esker and associated glacial deposits on this grid, depth of overburden must be taken into consideration when conducting geophysical surveys and locating diamond drill holes.



Respectfully Submitted By

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