



42A06NE0442 63.4725 DELORO

010

**K<sub>A</sub>J Kian A. Jensen**  
Exploration and Consulting Services

Exploration Program

on the

Deloro Project

Deloro and Shaw Townships

Porcupine Mining Division

Ontario

for

DIPLOMAT RESOURCES INCORPORATED

by

Kian A. Jensen

Exploration and Consulting Services

September, 1985



42A06NE0442 63.4725 DELORO

010C

Table of Contents

	Page
Title Page	i
Table of Contents	ii
List of Figures	iii
List of Tables	iv
Introduction	1
Location and Access	2
Property	6
General Geology	7
Structural Geology	9
Previous Exploration Activities	10
Present Exploration Activities:	13
Main Shaft Area	13
North Adit	17
Green Carbonate Zone	20
West Shaft Area:	22
55 Foot Incline Shaft	22
65 Foot Incline Shaft	25
25 Foot Vertical Shaft	27
Iron Formation Eastern Extension	28
Diamond Drilling by Canamax	30
Discussion of Assay Results	32
Conclusions	34
Recommendations	36
Appendix	

List of Figures

	Page
Figure 1: Location Map	3
Figure 2: Claim Map - Deloro Township	4
Figure 3: Claim Map - Shaw Township	5
Figure 4: Location Map of Present Exploration Activities	14
Figure 5: Geology of the Main Shaft Area	
Figure 6: 125 Foot Level Plan, Main Shaft, Furness Gold Mine, May 11th, 1928, by H.R.M. Turner	
Figure 7: 125 Foot Level Plan, Main Shaft, Excello Gold Mine, March 27, 1935, by James Crookston	
Figure 8: North Adit - West Side	
Figure 9: North Adit - Plan	
Figure 10: North Adit - East Side	
Figure 11: Green Carbonate Zone	
Figure 12: Surface and Geological Plan of H.R.888, Novell Porcupine Gold Mines Limited	
Figure 13: West Shaft Area - 55 Foot Incline Shaft	
Figure 14: West Shaft Area - Iron Formation Eastern Extention	
Figure 15: Drill Section of Canamax Drill Holes 1043-14-3 & 4	
Figure 16: Drill Section of Canamax Drill Holes 1043-14-1 & 2	

List of Tables

	Page
Table 1: Sample Descriptions from the Main Shaft Area	16
Table 2: Sample Descriptions from the North Adit	18
Table 3: Sample Descriptions from the Green Carbonate Zone	21
Table 4: Sample Descriptions from the 55 Foot Incline West Shaft Area	24
Table 5: Sample Descriptions from the 65 Foot Incline West Shaft Area	26
Table 6: Sample Descriptions from the Iron Formation - Eastern Extension Zone, West Shaft Area	29

## INTRODUCTION

The present exploration activities commenced on July 12 and concluded on September 6, 1985. The activities included the investigation of three previously known areas which had been reported to contain gold bearing mineralization. The fourth area investigated was a green carbonate zone located during the present prospecting program conducted by Mr. W. MacRae and the author.

The slashing of the main shaft area and the west shaft area was conducted under the supervision of Exsics Exploration Limited. The stripping, dewatering of the old workings and trenching was conducted by Alquest Exploration Services Limited. The author was responsible for the geological mapping and sampling of the areas exposed by the stripping and trenching programs.

The main purpose of the present exploration activities was to collect, evaluate and field verify the existence of the reported gold bearing mineralization. Secondary objectives of the program was to locate new areas of possible gold bearing mineralization, and to evaluate the more interesting geophysical anomalies.

### LOCATION and ACCESS

The Deloro Project is located in the northeastern quadrant of Deloro Township and the northwestern quadrant of Shaw Township, Porcupine Mining Division, District of Cochrane, Ontario as shown in Figure 1. The claim group is outlined in Deloro and Shaw Townships, Figures 2 and 3 respectively.

The property is accessed by the "Langmuir Road" heading southward from South Porcupine for approximately 4.5 miles, then westwards for approximately 2.5 miles to the Main Shaft area.

Another access road is now available with permission from Dome Mines. This road departs from the "Timmins backroad" at the Deep Dome Townsite and leads southwards to the west sand pits. A new road presently under construction leads westwards for about 1/2 mile to the Deloro-Shaw Township line at about 1/4 mile north of the 5 mile post. When construction is completed, this road passes 75 feet from of the North Adit, 75 feet east of the Green Carbonate Zone and about 150 feet west of the 55 Foot Incline Shaft of the West Shaft Area.

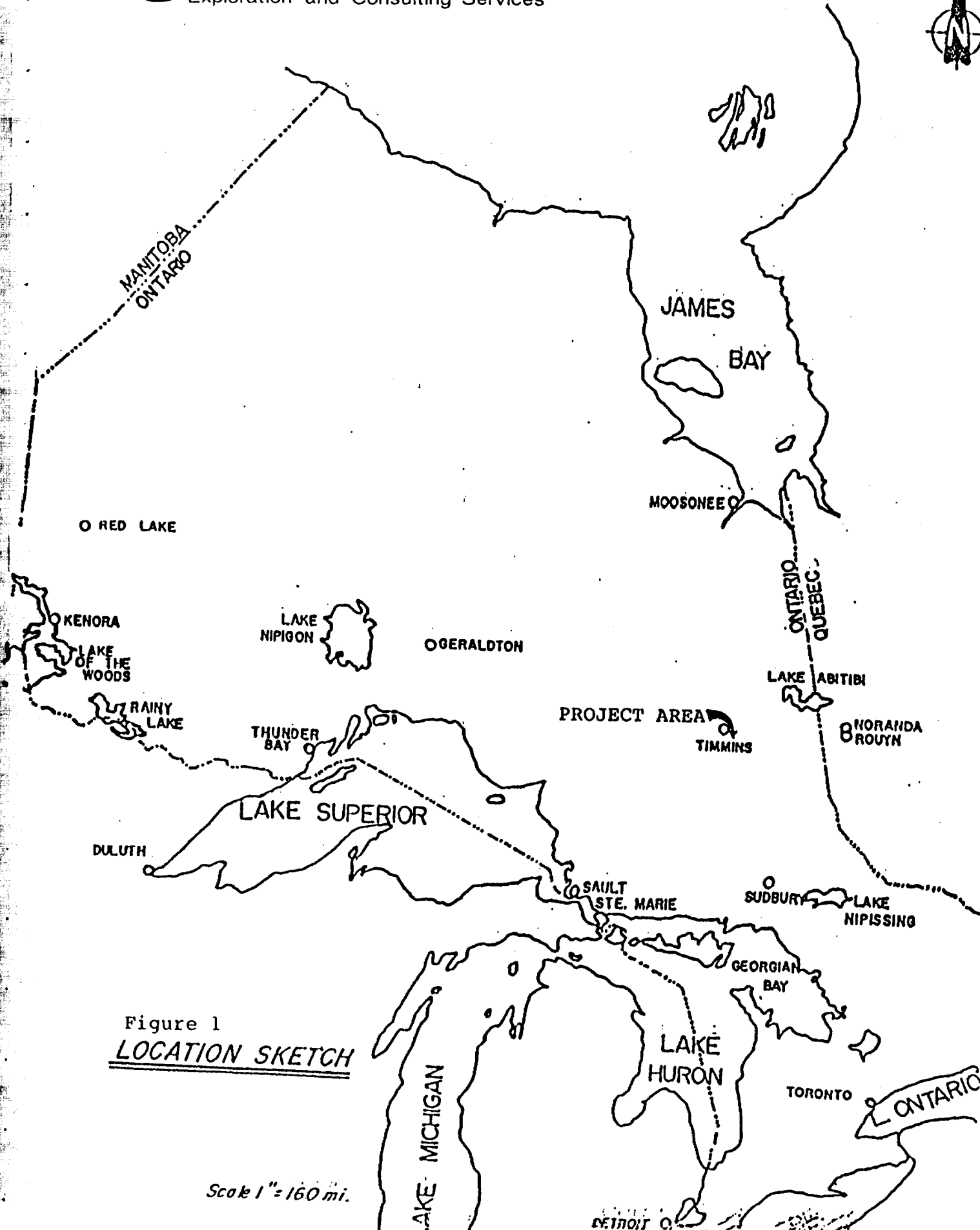


Figure 1  
LOCATION SKETCH

Scale 1" = 160 mi.







PROPERTY

The property consists of two groups of contiguous unpatented mining claims. The northern group of claims consists of 5 mining claims; P-758990, P-758991, P-833107, P-833108 and P-833110. The North Adit and the Green Carbonate Zone are located on claim P-758991. All the above mentioned claims are located in Deloro Township.

The southern group of mining claims are separated by a patented mining claim. This group consists of 12 unpatented claims of which 9 claims are located in Deloro Township, being; P-555626, P-555627, P-555628, P-555629, P-555630, P-567049, P-567050, P-567051 and P-567052; and 3 claims in Shaw Township, being; P-567427, P-567428 and P-567429. The Main Shaft is located on claim P-567428 and the West Shaft Area is on claim P-555626.

The topography is typical of the northern part of Deloro and Shaw Township. The low relief areas are generally consists of alder swamps and muskeg, while the areas of bedrock exposure generally not exceeding 50 feet in elevation, consists of mature second and third generation poplar, white and black spruce, with minor birch, fir and jack pine. The central portion of the claim group has been clear cut along the creek and is being used as a tailings spillway.

## GENERAL GEOLOGY

Deloro Township was mapped in detail by A.G. Burrows of the O.D.M. in 1915 and 1924; S.A. Ferguson in 1959 (North half); and in 1964 and 1965 by H.D. Carlson (1967). D.R. Pyke (1982) studied the geology of the Timmins area which included Deloro Township.

With the exception of a few diabase dikes and minor Middle Precambrian sedimentary rocks, all the bedrock in the Timmins area is of Early Precambrian (Archean) age. Early Precambrian metavolcanics in the area are divided into two groups, the Deloro and Tisdale Groups.

The Deloro Group is largely a calc-alkaline sequence, approximately 4,500 to 5,000 metres thick, and is composed mainly of flows of andesite and basalt in the lower part, and dacitic flows and dacitic and rhyrolitic pyroclastic rocks towards the top. Iron formation is common at or near the top of the group.

A major change in volcanism marks the beginning of the Tisdale Group. The basalt formation consists largely of ultramafic volcanic rocks and basaltic komatiites. This in turn

is overlain by a thick sequence of tholeiitic basalts. The uppermost formation is largely volcanoclastic and has a calc-alkaline dacite composition. The total thickness of the Tisdale Group is about 5,000 metres.

Metasediments of the Porcupine Group, consisting mainly of interlayered greywacke and siltstone with lesser conglomerate, form part of what is for the most part a turbidite sequence. Maximum thickness of the group is approximately 3,000 metres.

Large, generally sill-like bodies of dunite and lherzolite were emplaced almost entirely within the Deloro Group of volcanic rocks.

Minor subvolcanic quartz feldspar porphyry intrusions occur within a restrictive stratigraphic interval, suggesting that they in part may represent extrusive rhyolitic domes.

#### STRUCTURAL GEOLOGY

A major structural break, the Destor-Porcupine Fault, separates the Timmins area into two main structural domains. North of the fault, two periods of folding have been discerned; an original north-trending series of overturned folds were

subsequently refolded about an east-northeast axis. South of the fault, the Shaw Dome forms the main structural feature; the axis trending approximately east-west.

Other younger, yet regionally important faults also traverse the area; the Montreal River Fault, and the Burrows-Benedict Fault. The Montreal River Fault is parallel to and associated with the western boundary faults of the Colbalt Graben. This fault is trending in a northwest direction and bisects Shaw Township which is just east of Deloro Township.

The Burrows-Benedict Fault trends north-northwest across the Timmins area and merges with the Montreal River Fault near the west-central boundary of Tisdale Township. This fault displaces the Destor-Porcupine Fault approximately 1.0 miles (1.5 km) in a left lateral sense. This fault is located near the eastern Deloro Township boundary line.

As illustrated on Pyke's (1982) map (O.G.S. Map 2455), several parallel to sub-parallel faults exist in Deloro Township which may be related to either the Montreal River Fault or the Burrows-Benedict Fault or the Destor-Porcupine Fault. It has been geologically indicated that several of the diabase dikes have filled previous fault zones.

### PREVIOUS EXPLORATION ACTIVITIES

The previous exploration activities had been concentrated in three areas, 1) the Main Shaft, 2) the West Shaft Area, and 3) the North Adit.

Philadelphia Mining Syndicate was probably responsible for the vast amount of trenching and the north adit driven in the sulphide iron formation located on present day claim P-758991. It was reported that the face of the adit was quartz and assayed \$36.00 gold. (Timmins File T-271) The date of this work and the value per ounce of gold are unknown.

The southern group of claims were explored and developed from the early 1920's by the following companies:

Furness Gold Mines - incorporated in June, 1925

During their early involvement, this company is probably responsible for the numerous trenches and pits located in the sulphide iron formation on the former mining claim H.R. 888. At a later date, three shafts were sunk on the iron formation, these being from west to east, a 55 foot incline shaft, a 65 foot incline shaft and a 25 foot vertical shaft.

A total of 18 quartz veins were explored with veins 7 and 8

returning values of gold and reported to contain visible gold, and a narrow quartz vein located by the township boundary reported to contain visible gold and tellurides.

From February, 1927 to January, 1928, a two compartment shaft to a depth of 155 feet with a level established at 125 feet and 185 feet of drifting. Between January, 1928 to May, 1928 an additional 441 feet of drifting was done. It was reported that this work was done to locate the down dip extension of the "telluride vein" and the large sulphide "ore body" assumed to be north of the shaft. Figure 6 shows the extent of the underground workings at the time of closing.

Excello Mines Limited - incorporated in December, 1933

It is reported that the shaft was deepened to 185 feet and the total amount of underground drifting amounted to 1200 feet. It is unknown if this company dewatered the shaft and extended the drifting. Figure 7 shows the closing mine plans. This plan is similar to Figure 6 in all respect except the scale changed from 1 inch to 40 feet to 1 inch to 50 feet. Also, the underground plans are rotated approximately 20 degrees.

Other activities reported by this company includes some trenching and a limited amount of diamond drilling. It was reported that a vein which had a 10 foot pit sunk on it and was covered by a dump, carried very high values of gold.

Novell Porcupine Mines (Consolidated Novell Mines)

This is a limited amount of information pertaining to the activities of this company. The property was evaluated and many recommendations were made with very few being implemented.

More recent exploration work has been done on portions of the claim group by Augdome Mines in 1966 and Canamax from 1978.

Canamax conducted an airborne magnetic survey, geological mapping (southern group), detail mapping of the Main Shaft area and the West Shaft area, and diamond drilling.

The author does not know the details of any of the option agreements between Diplomat Resources Incorporated involving the southern and northern claim blocks.

Since the acquisition of the claim groups, Diplomat Resources Incorporated has conducted reconnaissance geophysical surveys and detail geophysical surveys, one diamond drill hole near the west property boundary, and slashing, stripping, trenching in the Main Shaft area to the West Shaft area.



### PRESENT EXPLORATION ACTIVITIES

The purpose of the present exploration activities covered by this report were to investigate the areas reported to have gold bearing mineralization. Primary targets were to locate the reported "45,000 ton of commercial ore", evaluate the iron formation and the associated quartz veining on the former claim H.R.888, the north adit, and to locate the "telluride vein".

The secondary targets were the newly located green carbonate zone and the geophysical anomaly north of tie line 41+00 North. This latter topic was conducted by Mr. W. MacRae and will not be discussed in this report.

Figure 4 illustrates the location with respect to the mining claims where the present exploration activities have been concentrated. These areas are discussed separately below.

#### MAIN SHAFT AREA:

Figure 5 shows the detail geology in the vicinity of the Main Shaft area. The geological units in the area of the shaft consists of carbonated mafic massive to tuffaceous fragmental units probably of the mafic calc-alkaline metavolcanic units. More commonly these would be called either andesites or dacites.

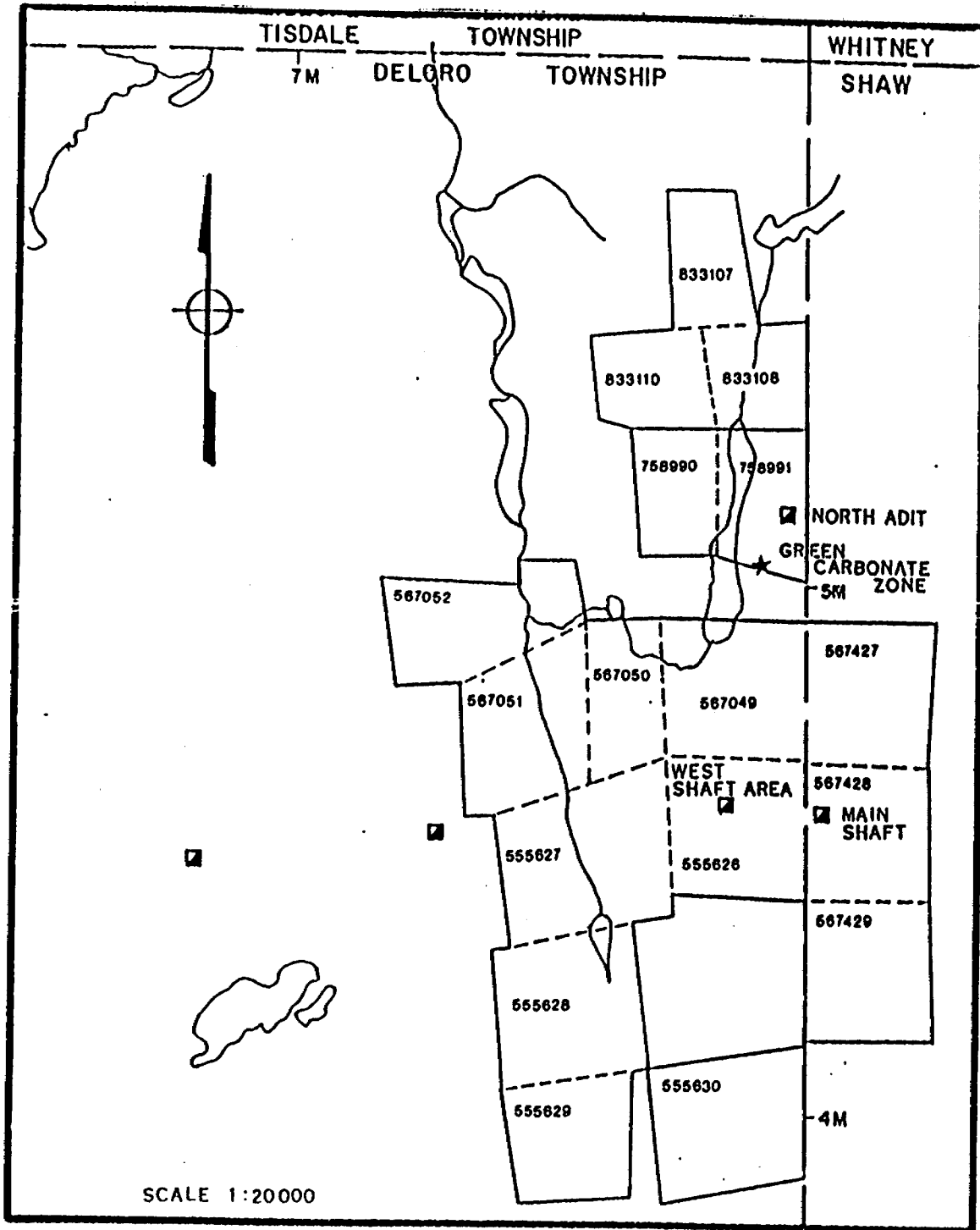


Figure 4: Location Map of Present Exploration Activities

A wide swamp exists to the north of the shaft. However, approximately 500 feet north, the lithological units appear to be either massive tuffaceous fragmental units within pillow metavolcanic.

West of the shaft, a wide fine grained, mafic olivine diabase dike intrudes the volcanics. About 150 feet west of the shaft, pillow andesite-dacites are found which grades into a fragmental unit further to the south. This would put an approximate displacement by the diabase of about 300 to 500 feet with the east portion moving north.

Previous sampling by the author of the sulphide iron formation east of the Main Shaft failed to produce encouraging assay results. The activities this summer consisted of trenching about 150 east of the Main Shaft to located the western extension of the sulphide iron formation. Due to the swampy ground conditions, the iron formation was not located.

The second objective of locating the "vein with visible gold and tellurides" which had a 10 foot pit sunk on it suspected to be near the dump also produced negative results. A pit was located NNW of the Main Shaft on the west side of the north trending dump. This pit was cleaned out, and chip samples were taken across the quartz stringer. The descriptions and assay results are shown in Table 1.

Table 1: Sample Descriptions from the Main Shaft Area

Sample Number	Type	Assay Au(opt)	Description
75396	12" Chip	Trace	Across 1.5" wide quartz stringer in massive to mafic tuffaceous fragments no visible sulphides. Sample from west wall of 8 foot pit located NNW of the main shaft.
75397	12" Chip	Trace	Across 3" wide quartz vein in mafic metavolcanics. Bottom of 8 foot pit located NNW of the main shaft.
75398	12" Chip	Trace	Across 1.5" wide quartz vein on east wall about 4 feet below ground level of the 8 foot pit NNW of the main shaft. Vein dipping 85 degrees south.

NORTH ADIT ZONE:

The North Adit zone was slashed, stripped, washed and examined. The adit itself was dewatered and sampled and detail mapped. Figures 8, 9 and 10 represent the West Side, Plan and the East Side of the adit respectively. Table 2 describes the samples and the assay results for the North Adit.

This adit was dewatered and sampled under the direction and supervision of Mr. J. Kirwin, P.Eng. during December, 1984.

The iron formation has a shallow dip to the north of about 20 degrees. The overlying metavolcanics are slightly carbonated and consists of tuffaceous to tuffaceous fragmentals of volcanic origin and grades into a more massive flow. The underlying volcanics appear to be slightly carbonated massive flows. The carbonatization increases near the sheared volcanics (sediments?) at the beginning of the ramp.

The iron formation consists of a siliceous sulphide facies with areas extremely enriched in magnetite. The most striking feature is the near vertical east-west striking fracture filling quartz stringers and veins within the iron formation. At the beginning of the ramp and about 1/2 way down the ramp, a wide white quartz vein was exposed. It is the opinion of the author

Table 2: Sample Descriptions from the North Adit

Sample Number	Type	Assay Au(opt)	Description
75379	0.9' Chip	0.010	Sample across stratigraphic thickness of cherty iron formation containing pyrite and pyrrhotite. North face of adit
75380	0.9' Chip	0.180	Located 1.5 foot east of 75379. Sample contains higher percentage of sulphides. Across true thickness.
75381	3' Chip	0.092	North face of adit, across true thickness of Iron Formation, pyrite most prominent sulphide.
75382	2' Chip	0.038	Located NE corner of North Face, True thickness of iron formation.
75383	3.5' Chip	0.002	Across iron formation on east wall
75384	3.5' Chip	0.020	Across iron formation on east wall parallel and 4" north of steeply dipping (south) quartz stringer 1 to 2 inch wide.
75385	1' Chip	0.016	Across 1-2" quartz stringer which cross cuts iron formation. East wall 1 foot above floor of adit.
75386	1' Chip	Trace	Across quartz vein, 3 feet above adit floor east wall.
75387	1.2' Chip	0.014	Across same vein as 75386, 8 inches above adit floor, east wall.
75388	1.5' Chip	Trace	Across large quartz mass or north striking quartz stringer on east wall.
75389	1.5' Chip	0.032	Across iron formation band with a large percentage of pyrite and pyrrhotite, west wall.
75390	1.5' Chip	0.052	Across same unit as 75389, 1.5 feet north, heavy sulphides and 1" quartz stringer.

Table 2: Continued

Sample Number	Type	Assay Au(opt)	Description
75391	0.5' Chip	Trace	True thickness of iron formation NW corner of north face, across siliceous quartz face.
75392	2.5' Chip	0.002	NW corner of north face, across iron formation with some quartz stringer material.
75393	2' Chip	0.040	West wall at entrance to underground section of adit. Across iron formation and metasediments with heavy sulphide content.
75394	1.5' Chip	0.251	Across quartz vein or pod in ramp floor, in mafic metavolcanics.
75395	1.2' Chip	Trace	Across quartz vein on ramp floor, trace to nil sulphide content.

that the underlying quartz vein in the metavolcanics is the feeder vein for those in the iron formation.

**GREEN CARBONATE ZONE:**

This carbonate zone was located in early July by Mr. W. MacRae during his prospecting efforts. The old trench of this zone is located at 30+25 North and 5+75 West and is on the west side of the Dome's south tailings road.

Figure 11 illustrates the geology and sample locations after the completion of the stripping and mucking of the old trench. Due to the amount of oxidation from weathering and the carbonatization, many areas were blasted to obtain fresh bedrock material for assaying. Table 3 describes the samples and the assay results for the Green Carbonate Zone.

It appears that the green carbonate zone may represent a zone of extreme shearing possibly related to the Burrows - Benedict Fault. The metavolcanics vary in the degree of carbonatization with the greatest amount in the vicinity of the two major quartz veins. The green carbonate is generally associated with the westerly quartz vein striking north - northwest.



Table 3: Sample Descriptions from the Green Carbonate Zone

Sample Number	Type	Assay Au(opt)	Description
75401	1.4' Chip	Trace	Across quartz vein with small ladder type quartz stringers, 5% fine pyrite <1% chalcopyrite.
75402	1.5' Chip	Trace	South of 75401, across greyish carbonate and 6" quartz vein, 5-7% pyrite, minor chalcopyrite.
75403	1' Chip	Trace	Across 6" of quartz vein and 6" of hanging wall. 3% combined pyrite and chalcopyrite.
75404	0.8' Chip	Trace	Across 0.4' of quartz vein and 0.4' of hanging wall green carbonate. Quartz vein contains banded chlorite, tourmaline and <2% sulphides
75405	1.5' Chip	Trace	6" from 75404, hanging wall green carbonate and sheared metavolcanics with 1/2" quartz stringer.
75406	10" Chip	Trace	Across banded quartz vein with chlorite, tourmaline, fuchsite and 2-3% chalcopyrite.
75407	8" Channel	Trace	Across banded quartz vein with 5% chalcopyrite.
75408	1' 8" Chip	Trace	Across 6" hanging wall green carbonate, 2" quartz vein, 4" green carbonate, 7" quartz vein with chalcopyrite, 1" foot wall volcanics
75439	1.5' Chip	0.010	Across quartz vein (4") and carbonated metavolcanics.
75440	2' Chip	Trace	Across south quartz vein, banded, and carbonated metavolcanics.
75441	3' Chip	Trace	Across carbonated, sheared metavolcanics with 4" quartz vein.
75442	1.2' Chip	Trace	Across carbonated volcanics.

The westerly vein is predominantly mineralized with chalcopyrite and minor amounts of fine grained pyrite. The easterly vein, bearing West-Northwest, is mineralized with cubic medium and fine grained pyrite with the odd speck of chalcopyrite.

The host rock, a sheared, carbonated metavolcanic, was void of mineralization. The relatively uncarbonated massive and pillow units located to the east of the zone were likewise unmineralized.

**WEST SHAFT AREA:**

Due to the long strike length of the sulphide iron formation and the various areas which had been reported to contain gold bearing mineralization, this area was subdivided into the follow: a) 55 Foot Incline, b) 65 Foot Incline, c) 25 Foot Vertical Shaft, and d) Iron Formation Eastern Extension. Figure 12 is a reproduction of the West Shaft Area drawn by W.H. Hansen and copied by H.T. Leslie (1940).

**a) 55 FOOT INCLINE SHAFT:**

Figure 13 illustrates the distribution of the quartz veins located in the incline shaft. Due to the amount of water

seepage the bottom 5 feet was not mapped or sampled. About 5 feet of material was removed from the shaft area and from the mapping of the incline, the total length of the incline is approximately 44 to 46 feet. Table 4 describes the samples taken from the incline shaft and the assay results.

The host rock exposed in this incline is a fine grained tuff to a tuffaceous mafic fragmental metavolcanic of either dacitic to andesitic composition. Approximately 100 feet north and 150 feet west of the incline, an outcrop of sulphide iron formation was located. A good exposure of the mafic pillow metavolcanics was located approximately 200 feet north of the incline shaft.

Generally, the tuffaceous fragmental unit was sparsely mineralized with pyrite. In the vicinity of the northwest - southeast striking and northeast dipping quartz vein, the sulphide content of the host rock increased to about 10%. This quartz vein appears to be a major vein system with pyrite mineralization ranging from trace to 10%.

The remainder of the quartz veins appear to cross-cut the stratigraphy and generally dip to the southwest. Tension fractures are filled by quartz stringers which cut the main quartz vein. These stringers dip to the southwest.

Table 4: Sample Descriptions from 55 Foot Incline, West Shaft Area

Sample Number	Type	Assay Au(opt)	Description
75416	Grab	Trace	Outcrop about 100 feet west of 55 foot incline, iron formation and quartz vein
75417	12"Chip	0.010	On strike of main quartz vein, roof of incline.
75418	12"Chip	0.004	Across main quartz vein and some wall rock, 2% pyrite.
75419	12"Chip	Trace	Across SW dipping bull white quartz vein, north west wall.
75420	20"Chip	0.002	South east wall, across SW dipping 3 parallel quartz stringers.
75421	12"Chip	Trace	Parallel to quartz vein and across heavy sulphide mineralization in mafic tuffaceous fragmentals, south east wall.
75422	1.5' Chip	Trace	Over narrow quartz vein with large flat face, dipping south west, south east wall.
75423	1' Chip	Trace	Across main quartz vein dipping north east, roof by north west wall.
75424	1' Chip	Trace	1.5' from 75423, 2% pyrite, across main quartz vein.
75425	1' Chip	Trace	Below 75424, footwall tuffaceous fragmentals with 3-5% pyrite.
75426	12"Chip	Trace	North dipping quartz stringer and carbonated sheared tuffaceous fragmentals.
75427	8"Chip	0.008	North east wall, across main quartz vein, 1-2% pyrite.

It is the opinion of the author that the secondary quartz veins cross cutting the stratigraphy are fracture filling with the main source being another main quartz vein possibly parallel to the main vein exposed in the incline.

b) 65 FOOT INCLINE SHAFT:

This incline shaft is located in the northwest corner of the "S" shaped trench. The incline follows the northward dip of the sulphide bearing iron formation, 20 degrees.

The incline is extensively timbered due to the shallow depth below surface. The distance from the north face (0+00) to the "S" shaped trench is only 20 feet. During the cleaning and mucking of this incline, several vertical timbers were encountered providing some proof that the shaft may have reached about 35 to 40 feet in length.

Table 5 describes the samples, location of the samples and the assay results. The distances were measured southwards from the north face to the entrance.

The exposed geology in the incline shaft appears to consist of a carbonatized mafic fragmental to tuffaceous fragmental unit stratigraphic above and below a siliceous sulphide bearing iron

Table 5: Sample Descriptions from the 65 Foot Incline,  
 West Shaft Area.

Sample Number	Type	Assay Au(opt)	Description
75409	1.2' Chip	0.008	At 13.0' marker west wall, across sulphide iron formation.
75410	1' Chip	0.008	At 6.0' marker west wall, across sulphide iron formation.
75411	0.8' Chip	0.004	NW corner of north face, 1' above iron formation, sample across west dipping quartz vein.
75412	1.5' Chip	Trace	North face, 4' east of centre line, across sulphide iron formation and large NW dipping quartz vein.
75413	2' Chip	Trace	At 13.0' marker east wall, across 3 quartz stringer in iron formation.
75414	1' Chip	0.036	At 6.0' marker east wall, across iron formation and quartz vein.
75415	2.5' Chip	Trace	At 7.0' marker east wall, across iron formation with numerous quartz stringers, 1 vein heavily mineralized with pyrite.

formation. The north face has several narrow quartz stringer cross cutting the iron formation. These stringers appear to be striking in a northerly direction and dipping to the west from 45 to 60 degrees. The east side of the incline indicates several quartz stringers parallel to and within the iron formation. This may be remobilized silica from the iron formation during metamorphism.

c) 25 FOOT VERTICAL SHAFT:

A vertical pit is located north of the section of the "S" shaped trench that has the 65 foot incline. As mentioned in the report by H.R.M. Turner, January 18, 1928, the test pit at or near the 25 foot shaft carried values and contained "tellurides". The present exploration activities consisted of cleaning out this 25 foot shaft only to find that it measured 8 feet below surface. At the present, it is impossible to determine if this is the test pit or the "25 foot vertical shaft".

The exposed geology indicates a flat lying iron formation of about 8 to 10 inches thick at surface overlying slightly carbonated mafic metavolcanics. No quartz veining was found in this pit or shaft.

d) IRON FORMATION - EASTERN EXTENSION:

The eastern extension of the iron formation is located eastward from the "S" shaped trench to the swampy ground. As reported by J. Crookston, the surface section of the "sulphide dyke" carried gold bearing mineralization from 25 feet to 145 feet east of the incline shaft. The higher assays were obtained from 85 feet to 145 feet east of the incline shaft.

Not knowing which incline shaft was inferred by the above statement, the northern branch of the "S" shaped trench which is located 85 to 145 feet from the 55 foot incline shaft was sampled by the author and Mr. Y. Collins in December, 1984, with negative results. It should be mentioned, during the mapping by Canamax, one sample from the eastern part of the northern section of the "S" shape trench was reported to assay 9.7 grams per ton.

If Mr. Crookston's measurements were from the 65 foot incline shaft, then the suspected zone of mineralization would be located east of the eastern end of the "S" shaped trench. This area was stripped, mapped and trenched to obtain fresh bedrock material for assaying. Figure 14 shows the geology of the stripped area and the locations of the samples. Table 6 describes the samples and the assay results for this area.



Table 6: Sample Descriptions from the Iron Formation  
Eastern Extension, West Shaft Area.

Sample Number	Type	Assay Au(opt)	Description
75328	1' Chip	0.012	Across stratigraphic thickness, sulphide iron formation.
75329	1' Chip	0.022	Same blasted area as 75428, across north trending quartz vein cutting sulphide iron formation.
75330	1' Chip	Trace	True thickness of pyritized carbonated overlying metavolcanics.
75331	1.5' Chip	Trace	Across north trending quartz vein minor sulphides and hydra-mica.
75332	1' Chip	0.002	Across quartz stringer and bleached carbonated, sheared metavolcanics.
75333	1' Chip	0.014	Across true thickness of sulphide iron formation.
75334	1' Chip	Trace	Same blasted trench as 75333, true thickness, carbonated and oxidized sulphided iron formation.
75335	1.5' Chip	Trace	Across true thickness of oxidized iron formation.
75336	1' Chip	0.038	Across stratigraphy of underlying metavolcanics with 1% pyrite.
75337	5.5' Chip	Trace	Along sulphide iron formation, SE side of trench.
75338	1.5' Chip	0.004	Same trench as 75337, across quartz vein trending north cutting volcanics and iron formation, with 3% pyrite in both.

From the exposed bedrock, it appears that the southern and northern iron formation both dip to the north at 20 degrees. The southern iron formation can be traced to the "S" shaped trench and pinches out in the vicinity of the sheared metavolcanics.

The northern iron formation consists of a carbonated sulphide facies. An east-west section of this iron formation has been intruded by quartz veins and stringers. From the sections exposed from trenching, the underlying metavolcanics host the veins and when in contact with the iron formation the quartz veins tend to either fill fractures or inject into and parallel to the layers of the iron formation. This is exemplified in the area from 20 to 40 feet north of the baseline from 50 to 60 feet, as shown in Figure 14.

#### DIAMOND DRILLING BY CANAMAX:

During 1981, Canamax drilled 4 holes in the vicinity of the West Shaft area, and one hole northeast of the main shaft. Figures 15 and 16 are the west and east drill sections, respectively for the West Shaft area.

The trenches and inclined shafts are project to these sections. The exact location of the drill holes were not found by the author and the Canamax grid was partially over grown and destroyed during slashing operations.

As shown in Figure 15, the lithological units intersected by the two drill holes were of dacite to andesite composition. In hole 1043-14-3, a 2 metre wide quartz vein was intersected giving values of 1.44 ppm of gold. Stratigraphically below this vein to the end of the hole, siciceous flows and tuffs were intersected and may represent the "iron formation". In hole 1043-14-4 brecciated and chert horizons were intersected and may represent another "iron formation" or chemical sediments. It is very doubtful that this section can be correlated to the suspected "iron formation" in hole 1043-14-3.

Further to the east, drill holes 1043-14-1 and 1043-14-2 were drilled in a scissor fashion. These holes were drilled under the "25 foot shaft" and the northern section of the "S" shaped trench. The upper section of hole 1043-14-2 appears to have intersected the iron formation with the highest value obtained being 0.03 ppm of gold. Hole 1043-14-1 appears to have been drilled down dip of the stratigraphy. This hole contained intermediate tuffs to tuffaceous andesite flows and did not yield any gold values.

Below the intersection of these two drill holes a value of 0.06 ppm of gold is associated with the alteration of the tuffs near a quartz stringer. Two sets of quartz vein stockworks were intersected from 63.5 to 72.0 and 78.0 to 84.0 metres from the

collar. The upper stockwork contained as high as 10% pyrite while the lower one is not as well mineralized.

Although the assay values were low, it does indicate the presence of mineralized zones with the potential of containing improved grades. Also, the drilling has indicated the presence of at least three sets of quartz vein stockworks in the eastern section and at least one major 2 metre wide quartz vein in the western section.

#### DISCUSSION OF ASSAY RESULTS

The assay certificates for the sampling covered by this report and collected by the author are located in the appendix. The certificate numbers are as follows: 14787, 1554 , 16491, 17942, B-579-85, and 16954. The later two certificates are the re-assaying of samples G75401 to G75408 for gold, copper and silver.

Of the four zones examined and sampled, the North Adit appears to be the most promising with values obtained from the ramp, the north face, and the high sulphide section of the iron formation exposed on the west wall.

Although these values from the North Adit are lower than those obtained during the sampling program supervised by

Mr. J. Kirwin, it confirms the presence of gold in the quartz stringers and a unit containing high sulphides within the iron formation.

The results of the green carbonate zone were more than disappointing as the host rock, structure, veining and mineralization appears favourable for gold mineralization.

The results from the West Shaft area including the 55 foot incline, the 65 foot incline and the stripped area proved disappointing. Two low values were obtained, one from the quartz stringer in the 65 foot incline and the other from the carbonated underlying metavolcanics in the stripped area.

The reported values from the work conducted in the 1930's and 1940's and the fact that visible gold was located must be re-evaluated. The grab sample by Canamax which assayed 9.7 grams per ton does indicate the presence of gold. However, the author was unable to obtain a description of the material that yielded this value.

The sampling of the pit NNW of the Main Shaft provided negative results.

### CONCLUSIONS

From the property exploration activities conducted this summer, several factors can be stated regarding the gold mineralization and past efforts.

Many discrepancies were found between the reported depths of the workings and those measured by the author. The only shaft in the West Shaft area that comes close to the reported depth is the 55 foot incline. The 65 foot incline falls drastically short of the footage reported. From the reports and the available maps from Furness Gold Mines and Excello Gold Mines, the 25 foot vertical shaft should have been located north of the northern section of the "S" shaped trench. Only a 8 foot pit was located which contained a 8 to 10 inch section of the iron formation and no quartz veins. This may be the "test pit" and the vertical shaft was filled in and covered by the dump material from the 65 foot incline shaft and/or the "S" shaped trench.

The close out underground mine plans by the Furness Gold Mine and the Excello Gold Mines for the Main Shaft also shows a discrepancy. When these plans are compared the measured distances from cross cuts are relatively the same. However, the maps have different scales and the Excello plans are rotated

about 20 degrees. Also, the reported amount of drifting varies substantially, from 626 to 1200 feet, and the depth of the shaft from 155 to 185 feet.

The reported gold mineralization is some what misleading. The wide mineralized zone of about 100 feet is suspected to be the flat dipping iron formation located in the West Shaft area. Poor bedrock exposure and the presence of the swamp can not provide the information to substantiate this statement.

The stated presence of visible gold associated with a few quartz veins has not been substantiated. In the West Shaft area some of the cubic pyrite associated with the quartz stringers are oxidized and may have been confused for visible gold. Also, the weathered and oxidized condition of the sulphide iron formation would make it ideal for the percipitation of gold from ground water solutions and from glacial activities.

The mystery of the southern part of the property is the "telluride vein". This vein was reported in the vicinity of the Main Shaft and was one of the reasons for sinking the shaft. However, conflicting reports have put the "telluride vein" with a 10 foot "test pit" at or near the 25 foot shaft. This would mean that the vein would be located in the West Shaft area.

Many notable mining companies were reported to have sampled this vein which contain spectacular values of gold. All efforts to date could not locate this vein. It was conveniently reported that the vein and sampling east of the diabase dike was covered by the dump. The only attempt conducted to date were the cleaning of a pit NNW of the Main Shaft and the trenching along the quartz vein located east and north of the Main Shaft.

As stated previously under the section "Discussion of Assay Results" the only area with higher than average gold values was the North Adit area. The West Shaft area possibly holds potential of better gold values based upon the structure and geological units exposed in the 55 foot incline shaft.

#### RECOMMENDATIONS

Based upon the exploration activities covered by this report, the previous work conducted by Diplomat Resources Incorporated and Canamax, it is the author's opinion that the potential of gold bearing mineralization warrants further work commitments in the vicinity of the North Adit and the West Shaft area.

Due to the geometry of the quartz veins and stringers associated with and underlying the iron formation of the North



Adit, a series of short diamond drill holes are proposed. The holes should be orientated to intersect the north-south trending quartz vein, the east-west striking steeply dipping quartz veins stringers in the iron formation and the shallow dipping iron formation. To obtain the basic information, a minimum of 3 diamond drill holes are required.

Despite the poor assay results from the West Shaft area, it is the opinion that the underlying quartz stringers may be derived from a feeder vein at depth. In the 55 foot incline shaft, the iron formation was not intersected. This formation may act as a chemical barrier for migrating hydrothermal fluids resulting in the possible deposition of gold bearing quartz veins either on the footwall of the iron formation or the fracture filling veins and stringers within the iron formation.

Based upon the available field data, the proposed diamond drill holes should be orientated to drill down dip of the tuffaceous fragmental unit hosting the numerous quartz veins and stringer. Also, several holes would be warranted to intersect the contact of the sulphide iron formation and the underlying metavolcanics along the exposed strike length of the West Shaft area from the 55 foot shaft to the east of the stripped area.

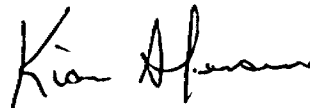
Finally, it is proposed to either diamond drill in the

vicinity of the Main Shaft to locate the "telluride vein" or to remove the dump. Either option would provide information pertaining to the existence of the vein. Also, the drill holes would provide and possibly verify the gold bearing mineralization obtained from the 125 foot level.

If the latter recommendation provides interesting gold values, the Main Shaft may warrant dewatering for the purpose of geological mapping and sampling.

If some or all of the above mentioned recommendations are implemented, the property status and future follow-up work would be recommended upon reviewing the results of the above mentioned programs.

Respectfully submitted,



Kian A. Jensen, B.Sc.  
Consulting Geologist/Geophysicist

Dated: September 24, 1985  
Timmins, Ontario.



## Kian A. Jensen

Exploration and Consulting Services

P.O. BOX 37, SOUTH PORCUPINE, ONTARIO, P0N 1H0  
TELEPHONE: OFFICE (705) 268-0111, RESIDENCE (705) 235-2301

### CERTIFICATE

With reference to my report on the Exploration Program on the Deloro Project for Diplomat Resources Incorporated dated September 24, 1985 .....

I, Kian A. Jensen, of the City of Timmins, Ontario, do hereby certify the following to be true and accurate to the best of my knowledge:

- 1) That I received an Honour B.Sc. degree in Earth Science, Geology Major from the University of Waterloo in 1975,
- 2) That I have been employed as a geologist and/or geophysicist by various exploration companies and consulting companies since 1978,
- 3) That I have been and still am a member in good standing in the following associations:
  - a) Society of Exploration Geophysicist - Associate, 1981
  - b) Geological Association of Canada - Fellow, 1983
- 4) That I am the author of the corresponding report, and have been actively exploring and prospecting in the Timmins area since 1981,
- 5) That I have no interest direct or indirect in the 17 mining claims comprising the property described in this report or in the shares of any company or companies in this joint venture on this property or the surrounding properties, nor do I expect to receive any directly or indirectly.

Dated this 24th day of September, 1985  
Timmins, Ontario.

Kian A. Jensen, B.Sc.  
Consulting Geologist/Geophysicist

REFERENCES

- Carlson, H.D.  
1967: Geology of Ogden, Deloro and Shaw Townships; Ontario Department of Mines, Open File Report 5012, 117p. Accompanied by Maps P.341, P.342 and P.343, scale 1 inch to 1/4 mile.
- Colvine, A.C. (editor)  
1983: The Geology of Gold in Ontario, Ontario Geological Survey Miscellaneous Paper 110, 278p.
- Ferguson, S.A.  
1959d: Deloro Township, Northeast Quarter, District of Cochrane, Ontario Department of Mines, Map P.12, scale 1 inch to 500 feet.
- Fyon, J.Andy, Crocket, J.H.  
1983 Gold Exploration in the Timmins Area - Using Field and Lithogeochemical Characteristics of Carbonate Alteration Zones; Ontario Geological Survey, Study 26, 56p.
- Hollinger Mines Limited  
Company Files on the Novell-Excello-Furness Property
- Hurst, M.E.  
1939: Porcupine Area, District of Cochrane, Ontario; Ontario Department of Mines, Map 47a, scale 1 inch to 2000 feet.
- Levinson, A.A.  
1974: Introduction to Exploration Geochemistry, Allied Publishing, Calgary, 612p.
- Ministry of Natural Resources, Resident Geologist Assessment Files  
T-1978 Canamax Exploration Limited (Amax of Canada Limited)  
T-764 Erie Canadian Mines Limited  
T-4 Excello Mines Limited  
T-271 Philadelphia Mining Syndicate
- Peters, W.C.  
1978: Exploration and Mining Geology, John Wiley & Sons, Toronto, 696p.
- Pye, E.G. and Roberts, R.G.  
1981: Genesis of Archean, Volcanic Hosted Gold Deposits, Symposium Held at the University of Waterloo, March 7, 1980, Ontario Geological Survey, MP 97, 175p.
- Pyke, D.R.  
1982: Geology of the Timmins Area, District of Cochrane; Ontario Geological Survey Report 219, 141p. Accompanied by Map 2455, scale 1:50,000.

APPENDIX

ASSAY CERTIFICATES



# BELL - WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187.

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. 14787

DATE: August 27, 1985

SAMPLE(S) OF: Rock(17)

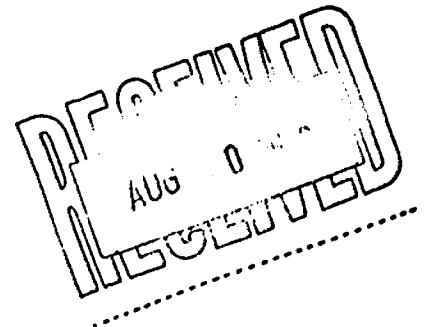
RECEIVED: August, 1985

SAMPLE(S) FROM: Mr. Kian A. Jensen, Box 37, S. Porcupine, Ontario.

<u>Sample No.</u>	<u>Oz. Gold</u>	<u>Oz. Silver</u>
G75379	0.010	Trace
G75380	0.180**	0.06
1	0.092	0.02
2	0.038	Trace
3	0.002*	Trace
4	0.020	Trace
5	0.016	Trace
6	Trace	Trace
7	0.014	Trace
8	Trace	Trace
9	0.032	0.06
G75390	0.052	0.11
1	Trace	Trace
2	0.002*	Trace
3	0.040	Trace
4	0.251**	0.06
5	Trace	Trace

\* Estimated.

\*\* Checked.



IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER 



# BELL - WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187.

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. 15548

DATE: August 30, 1985

SAMPLE(S) OF: Rock(18)


RECEIVED: August, 1985

SAMPLE(S) FROM: Mr. Kian A. Jensen, Box 37, S. Porcupine, Ontario.

<u>Sample No.</u>	<u>Oz. Gold</u>	<u>Sample No.</u>	<u>Oz. Gold</u>	<u>Oz. Silver</u>
G75396	Trace	G75407	Trace	
7	Trace	8	Trace	
8	Trace	9	0.008	Trace
G75401	Trace	G75410	0.008	Trace
2	Trace	1	0.004	Trace
3	Trace	2	Trace	Trace
4	Trace	3	Trace	Trace
5	Trace	4	0.036	Trace
6	Trace	5	Trace	Trace

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER 



# BELL - WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187.

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. 16491

DATE: September 5, 1985

SAMPLE(S) OF: Rock (12)

RECEIVED: September, 1985

SAMPLE(S) FROM: Mr. Kian Jensen  
Kian A. Jensen Exploration and Consulting Services

<u>Sample No.</u>	<u>Gold oz.</u>
G75416	Trace
7	0.010
8	0.004
9	Trace
G75420	0.002*
1	Trace
2	Trace
3	Trace
4	Trace
5	Trace
6	Trace
7	0.008

\* Estimate

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER 





# BELL - WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187,

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. 17942

DATE: September 16, 1985

SAMPLE(S) OF: Rock (15)

RECEIVED: September, 1985

SAMPLE(S) FROM: Mr. Kian Jensen  
Kian Jensen Exploration and  
Consulting Services

<u>Sample No.</u>	<u>Gold oz.</u>
G75428	0.012
9	0.022
G75430	Trace
1	Trace
2	0.002*
3	0.014
4	Trace
5	Trace
6	0.038
7	Trace
8	0.004
9	0.010
G75440	Trace
1	Trace
2	Trace

\* Estimate

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER 



BELL-WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187.

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. 16954

DATE: September 9, 1985

SAMPLE(S) OF: Rock (RE-CUTS) (8)


RECEIVED: August, 1985

SAMPLE(S) FROM: Mr. Kian Jensen  
Kian E. Jensen Exploration and  
Consulting Services

<u>Sample No.</u>	<u>Gold oz.</u>	<u>Silver oz.</u>
G75400	Trace	Trace
1	Trace	Trace
2	Trace	Trace
3	Trace	Trace
4	Trace	Trace
5	Trace	Trace
6	Trace	Trace
7	0.022	0.29
8	Trace	0.06

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER: 



BELL - WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187.

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. B579-85

DATE: September 12, 1985

SAMPLE(S) OF: Rock (8)

RECEIVED: August, 1985

SAMPLE(S) FROM: Mr. Kian Jensen  
Kian A. Jensen Exploration and  
Consulting Services

<u>Sample No.</u>	<u>Copper ppm</u>
G75401	14
2	212
3	208
4	16
5	20
6	460
7	4600
8	1580

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER 

63.4725

# Diplomat Resources Incorporated

## Deloro Project



**Kian A. Jensen**

Exploration and Consulting Services

P.O. BOX 37, SOUTH PORCUPINE, ONTARIO, P0N 1H0

TELEPHONE: OFFICE (705) 268-0111, RESIDENCE (705) 235-2301

September 24, 1985

DIPLOMAT RESOURCES INCORPORATED,  
205 - 1155 West Pender Street,  
Vancouver, British Columbia,  
V6E 2P4

Re: Exploration Program on the Deloro Project, in Deloro and  
Shaw Townships, Porcupine Mining Division, District of  
Cochrane, Ontario, dated September 24, 1985.

Gentlemen:

This letter is your authority to use the report on the  
Exploration Program on the Deloro Project located in Deloro and  
Shaw Townships, Porcupine Mining Division, District of Cochrane,  
Ontario, dated September 24, 1985 for any corporate purpose you  
deem necessary including its inclusion in whole or in part in  
any Company prospectus.

Yours sincerely,

Kian A. Jensen, B.Sc.  
Consulting Geologist/Geophysicist