1992 OPAP

(ONTARIO PROSPECTORS ASSISTANCE PROGRAM)

REPORT SUBMISSION

FOR

JOHN KEVIN FILO

DAVID V. JONES

MARK KEAN (PREVIOUSLY SUBMITTED SECTION #6 WITH M. KEAN FINAL SUBMISSION FORM)

DATE: November 25, 1992

BY: J. K. FILO, P.Geo
and D. V. JONES, BScF

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GENERAL INFORMATION

DATE: Project Completion November 25, 1992

NAMES: The report involves six separate prospects (Figure #1). Five of the prospects were worked as joint ventures between J. K. Filo and D. V. Jones, while the remaining project was shared between J. K. Filo and M. Kean.

CHANGES TO PROPOSED PROJECT:

Several changes were made to the original proposal whereby some areas were not worked in as much detail, while other projects were completed more extensively. Also, two new project areas were added to the program after consultation with the OPAP Incentives Office.

All changes were made using a marketing strategy of developing the projects to a stage, suitable to generate interest by companies who may be potential optionees. The following details summarize the major changes to the proposal (all of which were on projects by Messrs. Filo and Jones).

(A) A major geophysical survey (VLF-EM16) was proposed for the two claim groups in Strathy Township (Net Lake claims and Alfredo Lake claims). This was cancelled for two reasons:

(i) Net Lake claims yielded excellent prospecting results early in the project, which allowed it to be brought to an "optionable" stage.

(ii) Alfredo Lake claims were not worked in favour of two other acquired properties (Nova Township and Fripp Township) which both needed assessment work more urgently and also seemed to provide better chances of future optioning.

(B) Denyes Township claims were originally only going to have a limited amount of prospecting traverses completed, however, due to the extraordinary assay results received early in the project, it was decided to initiate a detailed "plugger drill" dust sampling program. This resulted in considerably more time to be spent on the claims than originally planned.

(C) D. Jones originally proposed an individual geophysical survey on the Whitney Township claim group, however, this project was dropped due to the late notification of receiving the OPAP Grant. Since the claims are all located on Porcupine Lake it was not possible to make use of safe ice conditions for the survey.

LOCATION AND ACCESS :
GEOLOGY :
WORK DONE :
RESULTS AND RECOMMENDATIONS :
These sections are compiled on a property-by-property basis in the proceeding report.

CERTIFICATE

I, J. K. Filo of 535 Bartleman, Timmins, Ontario, do hereby certify that:

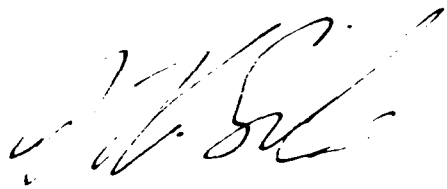
i) I personally worked on a series of OPAP projects in conjunction with Messrs. Kean and Jones; these projects included prospects in Halcrow, Denyes, Net Lake, Fripp, Nova and Langmuir/Carman.

ii) I provided geological in-put on all of these projects and provided geological expertise where necessary; I personally carried out all core logging and wrote the geology and interpretational sections of the reports pertaining to the above mentioned projects.

iii) I hold an Honours Bachelor of Science degree in geology from Laurentian University, Sudbury, Ontario (1980) and I am a member of the Association of Professional Engineers and Geoscientists of British Columbia.

iv) I have practised my profession as both a mine and exploration geologist continuously since graduation. I have worked for various mining and exploration companies including Texasgulf Exploration Inc., Urangasellschaft Canada, Amax Potash, Cominco, Pamour Porcupine Mines, Nerco Con Mines and various junior companies.

v) I hold some interest in all of the property mentioned above.



J. K. Filo, HBSc., P.Geo

1) Halcrow Prospect ①
2) Denyes Prospect ②
3) Net Lake Prospect ③
4) Fripp Prospect ④
5) Nova Prospect ⑤
6) Langmuir/Carman Prospect ⑥

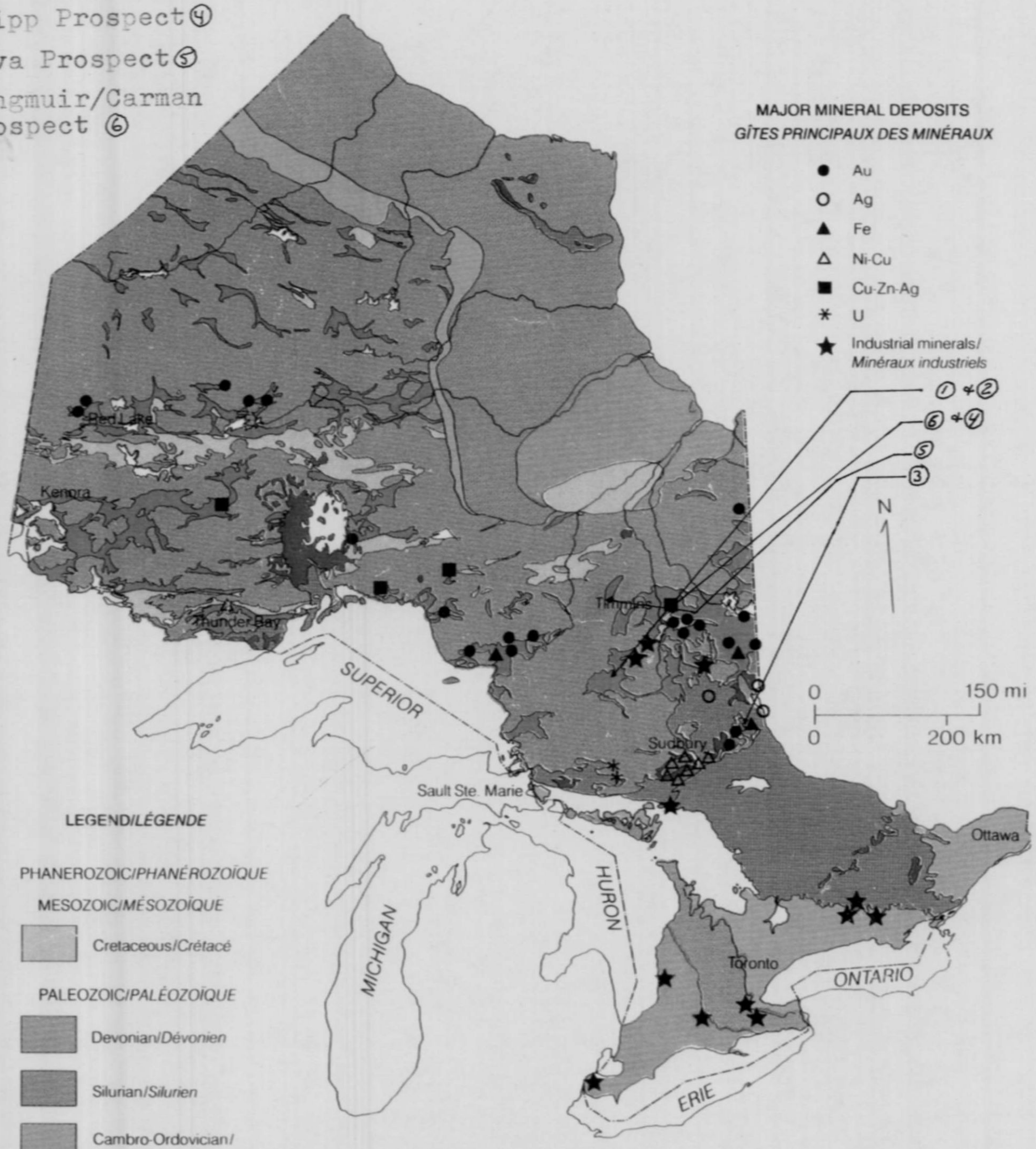


Fig.#1 General Location Map

SECTION #1

HALCROW PROPERTY

(J. K. FILO and D. V. JONES)

WORK DONE: (Details on accompanying report)

1. Prospecting Traverses (2.1 km)
2. Physical Work:
   - (a) hand stripping and cleaning old pits and trenches
   - (b) sampling

INTRODUCTION

During the field season of 1992, Messrs. D. Jones & K. Filo investigated reported gold mineralization on their Halcrow Prospect within the Swayze Greenstone Belt.

This prospecting was initiated to examine previous work in the field first hand and substantiate reported values. An account of the findings from this work and recommendations are documented within the following portions of this text.

PROPERTY, LOCATION AND ACCESS

The prospects consists of 4 contiguous claims numbered 1175913 to 1175916 inclusive in the extreme north central portion of Halcrow Township (Fig. #S1-1&2). Access to the property is attained by heading west of Timmins on Highway 101. A network of new logging roads into the Swayze Belt from Highway 101 allows access to a long lake "A" (Fig. #S1-3) between the two to three mile posts on the Halcrow/Crockett Township boundary. From this lake it is a short walk or canoe trip to the subject property. Alternatively a float plane can be taken from Ivanhoe Lake near Folyet and one may utilize Lake A for float plane access.

PROPERTY HISTORY

This prospect was originally known as the Lyell-Beidlman occurrence and this showing was worked since the 1930's. Donovan (O.G.S. Report 63) has a description of the main occurrence by a previous Government Geologist Rickaby in 1934. This excerpt is as follows:

> ...The principal showings occur...about one mile north of the north end of Shunsby lake. The country rock consists of sediments, including conglomerate of the Swayze series, which have been intruded by large dikes or bosses of reddish syenite porphyry, and later by narrow dikes of mica lamprophyre. The porphyry body in which the showings occur has a width of at least 800 feet from north to south; its length cannot be determined owing to overburden. A series of trenches over a length of 200 feet shows a fracture zone in the porphyry striking approximately east and west. The fractures have been filled with quartz in the form of narrow veinlets, and the porphyry has been replaced by moderate amounts of pyrite and arsenopyrite.

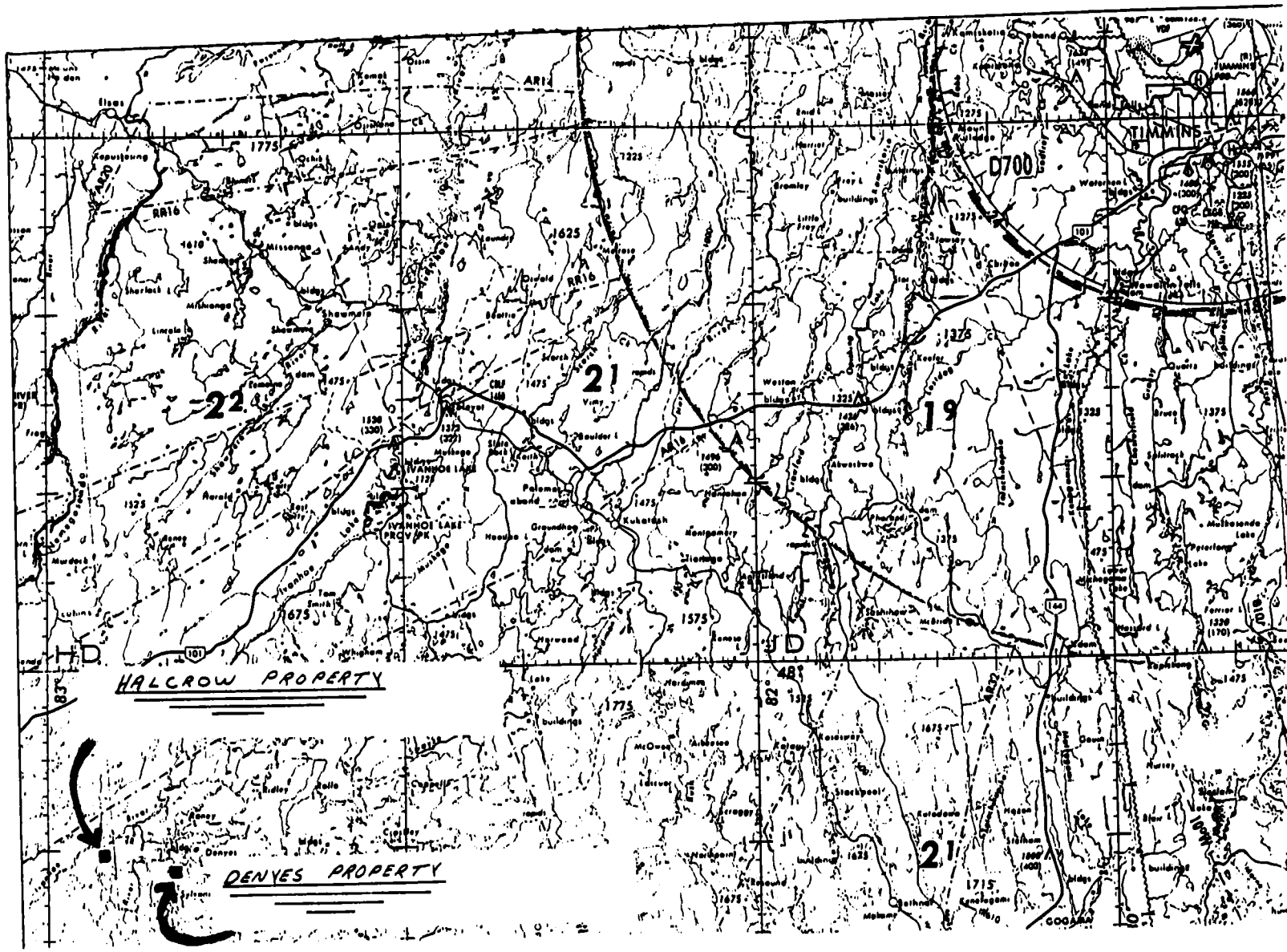


FIGURE # S1-1

Location of Halcrow and Denyes Properties

(copied from VFR Navigation Chart Air 5009-Timmins)

> One hundred feet north another fracture zone with a northeast strike shows a similar condition but with more quartz and heavier mineralization over widths up to 3 feet or more. The linear extent of this fracture has not been determined.
>
> The oxidized material from these two zones pans gold very freely, and some fine native gold was noted in one place. Selected grab samples from these showings are reported to give high values in gold. Two chip samples taken across 18 inches and 24 inches in the north pit have 0.03 ounces per ton in gold. The owners plan further extensive surface work on this property in the near future.

After the 1930's there is relatively little documented work. In 1966 Dalhousie Oil and Gas put a few holes into this prospect with an x-ray drill; holes ranged in length from 35' - 100' and the total program was 400'. Sulpetro in 1981 researched the Dalhousie work further and found that no significant values were obtained in the drilling. However, Sulpetro did some re-sampling of the pits and attained a gold value of 4.35 grams/tonne Au. (Assessment File # 2472). Sulpetro also carried out a VLF-EM survey, HL-EM survey and a magnetometer survey. The geophysicists felt there was some correlation with the geophysics and mineralized zones. But, due to the disseminated nature of the mineralization an induced polarization (I.P.) survey was recommended to help define the best areas to drill in the vicinity of the main showing and evaluate other areas of interest. This I.P. work was never carried out and the project was dropped for no apparent reason.

GENERAL GEOLOGY

There is relatively a small amount of exposure on this prospect. Government geology maps (Map 2120, Fig. #S1-3) and assessment file maps (Sulpetro) suggest the property is underlain by east-west striking mafic volcanics, sediments and felsic volcanics. This suite of volcanics is intruded by reddish quartz feldspar porphyry and grey feldspar porphyry. During the course of prospecting this author personally examined the porphyry units and confirmed the presence of sediments (conglomerate) reported by Rickaby (1934) and Donovan (O.G.S. Map 2120, Fig. #S1-3). The sediments were sheared and shear orientations ranged from 040°Az to

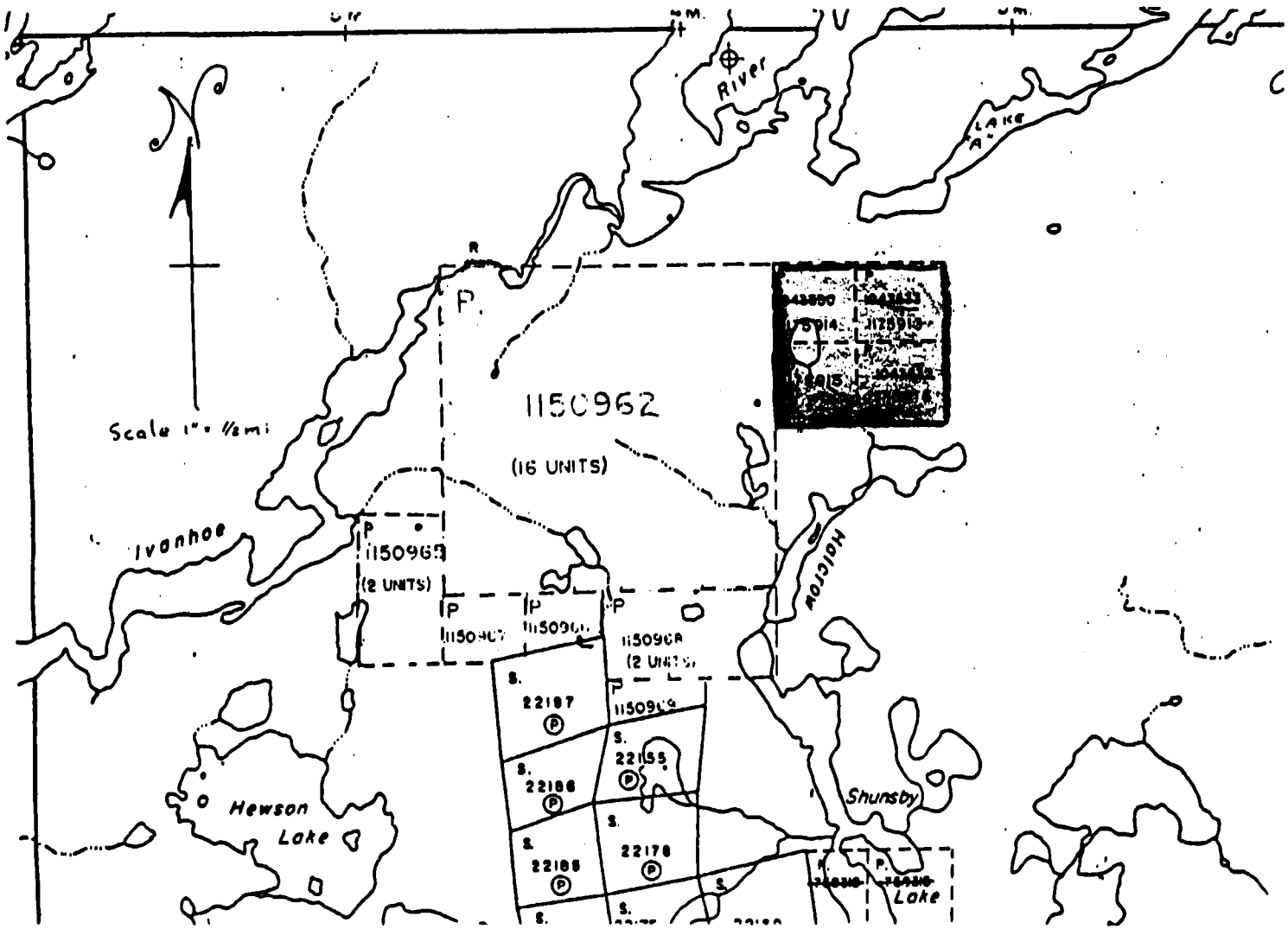


Fig. 31-2

Claim Location Map for

Holcrow Prospect

070° Az.

This structural deformation is probably related to the Kapuskasing High which exists a short distance from this prospect (Reference OGS Map 2221). It is quite likely that substantial deformation occurred on this prospect, this may not be readily evident due to limited exposure. Such deformation is usually spacially associated with gold deposits. A more detailed account of the geology on this prospect is given by Beecham (1981) and this may be referred to in Assessment File T-2471.

DISCUSSION OF PROSPECTING WORK

Upon location of the trenches on this prospect a preliminary examination of the trenches was made and representative sampling carried out. The majority of time was spent on the main occurrence (Fig. #S1-4) where Sulpetro obtained a gold value of 4.35 grams/tonne Au. Substantial trenching was carried out by previous owners at this location. These pits and trenches where roughly 2-4 m in depth and in many instances there was substantial caving. Considerable time was spent selecting representative samples from these pits and trenches by sorting through the old muck piles as well as digging sluff material from the walls.

The values obtained from sampling on this property including the main showing area were very poor; the more anomalous values ranged from 0.01 oz/ton to 0.042 oz/ton Au. Other values were significantly less. None of the values were as high as the 4.35 grams/tonne Au obtained from Sulpetro. Mineralization, namely fine disseminated sulphide usually 2% pyrite, was noted and some narrow quartz stringers were seen as well. The mineralization in the pit areas is local and not pervasive. Results to date suggest there is some association between the gold and sulphide.

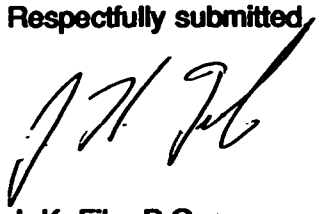
The lack of more significant assays and pervasive mineralization in the main showing area and the low values in a quartz vein in the sediments prompted prospecting efforts to be curtailed on this claim block.

CONCLUSIONS AND RECOMMENDATIONS

Prospecting efforts on the Halcrow Prospect showed that gold values on the main zone were anomalous at best and did not attain values comparable to Sulpetro's 4.35 grams/tonnes Au. Mineralization (pyrite) appears to be very sporadic and when it is present it is usually found to be fine and disseminated. Limited sampling carried out by the prospectors suggest there may be some correlation between gold mineralization and pyrite.

In light of the fact there is anomalous gold located within a rather large porphyritic intrusive system there is the possibility that a deposit may exist along strike or at depth proximal to the main showing or in association with the geophysical targets obtained by Sulpetro. In light of the fact that this area is now reasonably accessible by road, a possible further evaluation of the main zone and Sulpetro targets could be done via mechanized stripping instead of I.P. as recommended by Sulpetro. This would allow for better sampling and a "hands on" evaluation of the Sulpetro targets. Further work on this project would be contingent upon the results of this preliminary program.

Respectfully submitted,



J. K. Filo, P.Geo.

BIBLIOGRAPHY FOR HALCROW PROPERTY

Beecham A.W. (Sulpetro)

1981: Geological Mapping, Halcrow Township Claims, Project 3383.1, Claims P565751 - P565754, P565775 and P565779 Porcupine Mining Division Ontario; Assessment File T - 2471

Donovan J.E.

1968: Geology of the Halcrow - Rideout area, District of Sudbury; Ontario Department of Mines, Geological Report 63, 43p. Accompanied by Maps 2120 and 2121, Scale 1" = ½ mile

Dalhousie Oil and Gas

1966: Diamond Drill Logs, Assessment File T - 2103

Lai K. (Sulpetro)

1981: Horizontal Loop electromagnetic, VLF and Magnemeter Surveys, Project 3381.1 Claims P565751 to P565754, P565775 and P565779, Porcupine Mining Division, Assessment File T-2472

Ontario Geological Survey

Chapleau-Folyet Geological Compilation Map 2221 Scale 1:250,000

APPENDIX S -1

SAMPLE DESCRIPTION

AND

ASSAY RESULTS

ACCURASSAY LABORATORIES
A DIVISION OF BARRINGER LABORATORIES LIMITED, REXDALE, ONTARIO
BOX 426
KIRKLAND LAKE, ONTARIO, CANADA P2N 3J1
TEL.: (705) 567-3361

President: Dr. GEORGE DUNCAN, M.Sc., Ph. D., C. Chem (Ont.), C. Chem (U.K.), M.C.I.C., M.R.S.C., A.R.C.S.T.

45439

Certificate of Analysis

D.V. Jones
P.O. Box 1513
SOUTH PORCUPINE, Ontario
P0N 1H0

June 24

Work Order # : 920203
Project :

SAMPLE NUMBERS Accurassay	Customer	Copper ppm	Nickel ppm
255755	H-1	25	
255756	H-2	13	
255757	H-3	38	
255758	H-4	26	
255759	H-5	170	
255760	H-6	13	
255761	H-7	97	
255762	H-8	23	
255763	H-9	28	
255764	H-10	10	
255765	S-1	410	38
255766	S-2	140	77
255767	S-3	96	22
255768	S-4	340	54
255769	S-5	1.253%	180

HALCROW TWP PROJECT

NET LAKE PROSPECT

ASSOCIATION OF THE CHEMICAL PROFESSION
CHARTERED
Dr. G. Duncan
CHEMIST
ONTARIO

Per: G. Duncan

ACCUR AY LABORATORIES
A DIVISION OF BAF LABORATORIES LIMITED, REXDALE, ONTARIO
KIRKLANI BOX 426
ONTARIO, CANADA P2N 3J1
(705) 567-3361
President: Dr. GEORGE DUNC. Ph. D., C. Chem (Ont.), C. Chem (U.K.), M.C.I.C., M.R.S.C., A.R.C.S.T

45434 # Certificate of Analysis

D.W. Jones
P.O. Box 1513
SOUTH PORCUPINE, Ontario
P0N 1H0

June 24

Work Order # : 920203
Project :

SAMPLE NUMBERS Accurassay	Customer	Gold ppb	Gold Oz/T	
255755	H-1	<5	<0.001	
255756	H-2	10	<0.001	
55757	H-3	486	0.014	
255758	H-4	170	0.005	
255759	H-5	344	0.010	
255760	H-6	1455	0.042	
255761	H-7	78	0.002	
255762	H-8	30	0.001	
255763	H-9	19	0.001	
255764	H-10	31	0.001	
255764	H-10	32	0.001	Check
255765	S-1	6	<0.001	
255766	S-2	<5	<0.001	
255767	S-3	<5	<0.001	
255768	S-4	8	<0.001	
255769	S-5	62	0.002	
255769	S-5	51	0.001	Check

ALLBUN TWP PROSPECT

NETLAKE PROSPECT

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
Dr. G. Duncan
CHEMIST

LF-30

Per: G. Duncan

SAMPLE DESCRIPTION

H - 1 (Grab)	• 95% quartz and altered wallrock along vein salvage, no significant sulphide noted
H - 2 (Grab)	• Quartz vein with no significant sulphide
H - 3 (Grab)	• fine to medium grained quartz - feldspar porphyry pink to red in colour with 1-2% fine pyrite
H - 4 (Grab)	• 49% quartz and 49% quartz - feldspar porphyry, phenocrysts not as pronounced, quartz appears as quartz eyes. 2% sub-hedral pyrite in sample
H - 5 (Grab)	• pinkish grey quartz - feldspar porphyry, minor pyrite and chalcopyrite 1-2% combined
H - 6 (Grab)	• pinkish - grey quartz feldspar porphyry, minor disseminated pyrite 1-2%
H - 7 (Grab)	• fine to medium grained quartz feldspar porphyry, mainly grey in colour with a slight tinge of pink, rare speck of pyrite
H - 8 (Grab)	• grey and pink quartz - feldspar porphyry with 3% fine pyrite disseminated throughout it
H - 9 (Grab)	• good quartz feldspar porphyry pink in colour, rare speck of pyrite noted, some limonite on fractures
H - 10 (Grab)	• grey medium grained - feldspar porphyry, no significant sulphide noted, very minor quartz stringer

SECTION #2

DENYES TOWNSHIP

(J. K. FILO and D. V. JONES)

WORK DONE: (Details on accompanying report)

1. Physical Work:

   (a) plugger drilling and sampling

   (b) geological mapping

   (c) dust, chip and grab sampling

INTRODUCTION

During the 1992 field season Messrs. Jones and Filo carried out prospecting work on a 6 claim block in the northeast sector of Denyes Township.

Work on the property consisted mainly of prospecting, some geological mapping; and plugger dust, grab and chip sampling in the vicinity of the main mineralized gold occurrences. The work was carried out in order to take advantage of new exposure from recent stripping by previous owners Glen Auden Resources who did very minimal sampling.

Details of the prospecting work and sampling are presented within the following sections of this report.

PROPERTY, LOCATION AND ACCESS

The Denyes Prospect consists of six contiguous mining claims with the NW sector of Denyes Township (Fig. #S1-1 and #S2-1) numbered 1175907 to 1175912 inclusive. Access to the prospect may be attained by travelling west on Highway 101 from Timmins and accessing a network of new logging roads into Raney Township, just north of Denyes Lake. From this point of access is available via trails and canoe through Denyes Lake and a hook-shaped lake labelled B on Fig. #S1-3. Alternatively, float plane access is available to Lake B from Ivanhoe Lake near Folyet, Ontario.

PROPERTY HISTORY

This occurrence was originally worked in the 1930's by Erie Canadian and Sylvanite Mines. The original name for the prospect is the Sylvanite occurrence. Erie Canadian and Sylvanite did a substantial amount of work on the main showing area including trenching and channel sampling. This work is documented in assessment File T-2072. This assessment file shows two chip sampled mineralized zones and the values quoted on these zones are 3.30/7.1 feet wide for 60.5 feet of strike length and 5.80/3.4 feet wide for 119.5' of strike length. This author believes numbers 3.30 and 5.80 to represent values in dollars for 1935 (map date) or $35.16 gold in 1935 or .093 and .165 oz/ton Au. Some drilling was also carried out on this

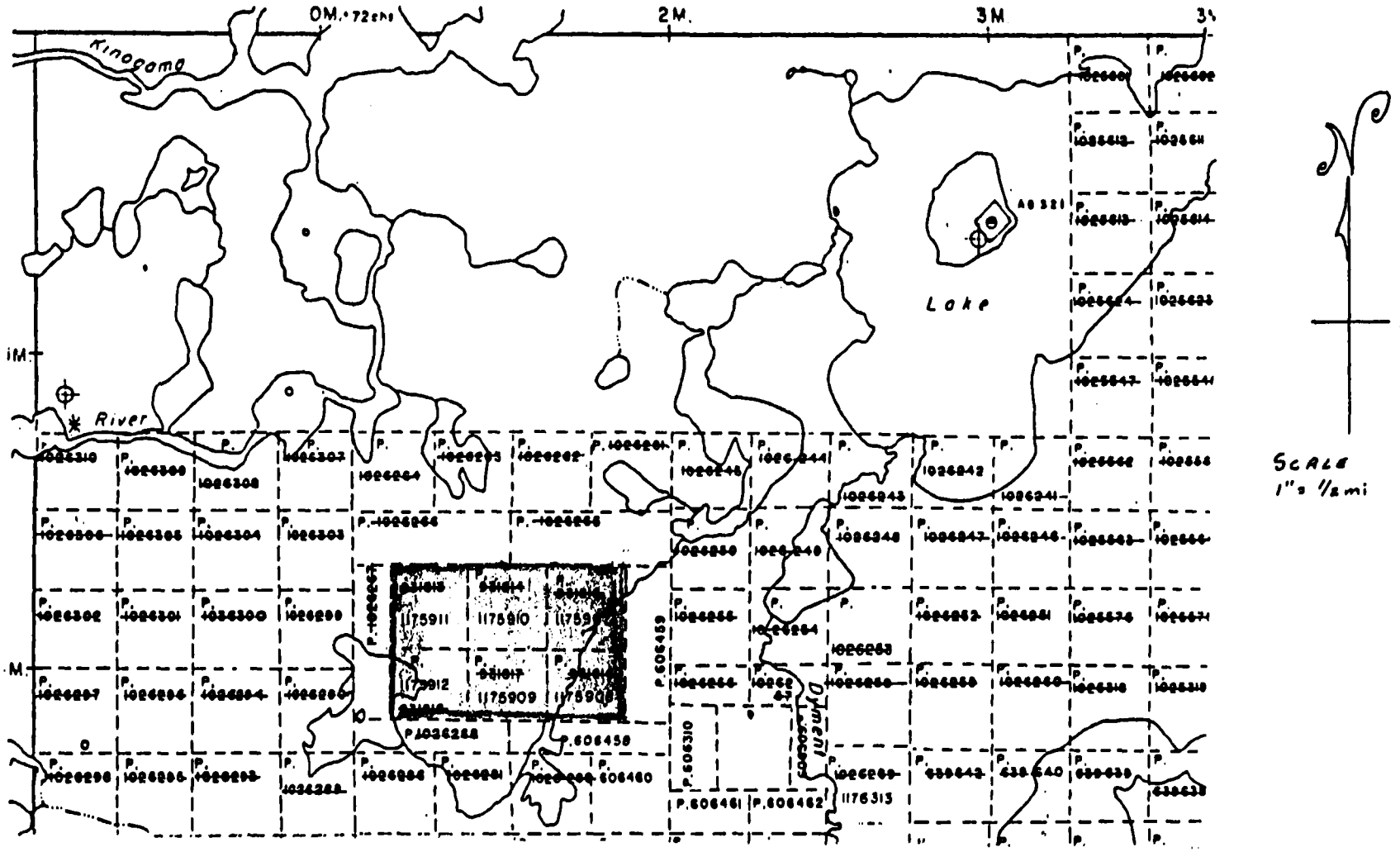


Fig. 32-1

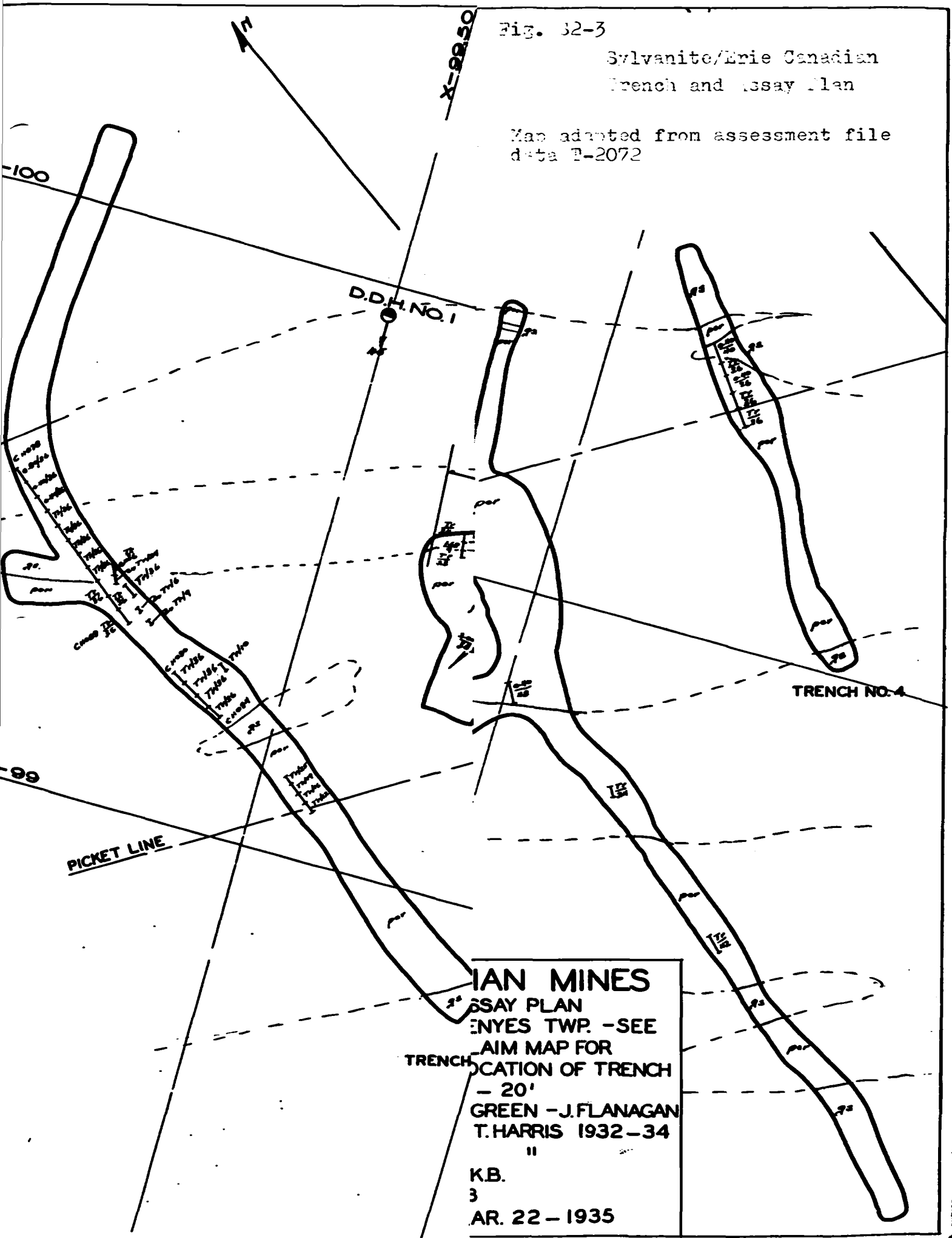
Claim Map of

Denyes Prospect

Fig. 32-3

Sylvanite/Erie Canadian
Trench and Assay Plan

Map adapted from assessment file
data T-2072



occurrence but no logs or assays are available, the author saw some of these old drill collars holes #3 and #5 shown in Fig. #S2-3.

Little work was carried out on this occurrence after the 1930's. Two major mining companies and one junior company worked it to a limited extent since 1930's. Falconbridge in 1974 mapped and sampled the prospect (Assays File T - 2068). Their results were not as promising as the Erie Canadian/Sylvanite sampling. The best result was 0.22 oz/ton over an 8.5 foot width and a strike length of 16 feet. With these results Falconbridge dropped the prospect. John Mansville, the next owner, carried out geophysical surveys including magnetics, VLF-EM and a radiometric survey over the entire prospect. They also mapped the property and did some limited sampling. John Mansville's best reported value from preliminary sampling was 0.202/ton Au over a 5 foot width.

Glen Auden from 1987-1989 did extensive stripping around the main showing as well as preliminary geophysics over the entire property. Glen Auden also mapped the main showings and carried out limited sampling. Their geologists and geophysicists recommended an induced polarization survey over the prospect.

It should be noted that in Glen Auden's assessment file (T-3036) report values quoted from Erie Canadian and Sylvanite are reported in oz/ton, and nowhere on any of the old maps does it designate values as oz/ton. This substantially elevates the values for this prospect and it is this authors belief that the numbers on old maps are in dollars and cents at $35.16 gold typical of the period.

GENERAL GEOLOGY

The property was mapped by John Mansville in 1982 (assessment file T-2538). The extreme eastern portion of the present day claims (1175907 and 1175908) are the only claims to contain limited out crop. It is evident from Mansville's mapping that the property is underlain by a sequence of intercalated felsic and mafic volcanics as well as sediments. These units appear to have been intruded by a pink quartz feldspar porphyry unit which in some instances

is sheared and sericicitized. Gold mineralization appears to be associated with quartz veining and sulphide on the contact of a major feldspar porphyry unit and volcanics.

A more detailed account of the subject property geology is presented by Falconbridge and John Mansville in assessment files T-2068 and T-2651 respectively. Reference may be made to these files for further information.

DISCUSSION OF PROSPECTING WORK

The Denyes prospect was one of two prospects examined by Messrs. Jones and Filo in the Swayze Greenstone Belt.

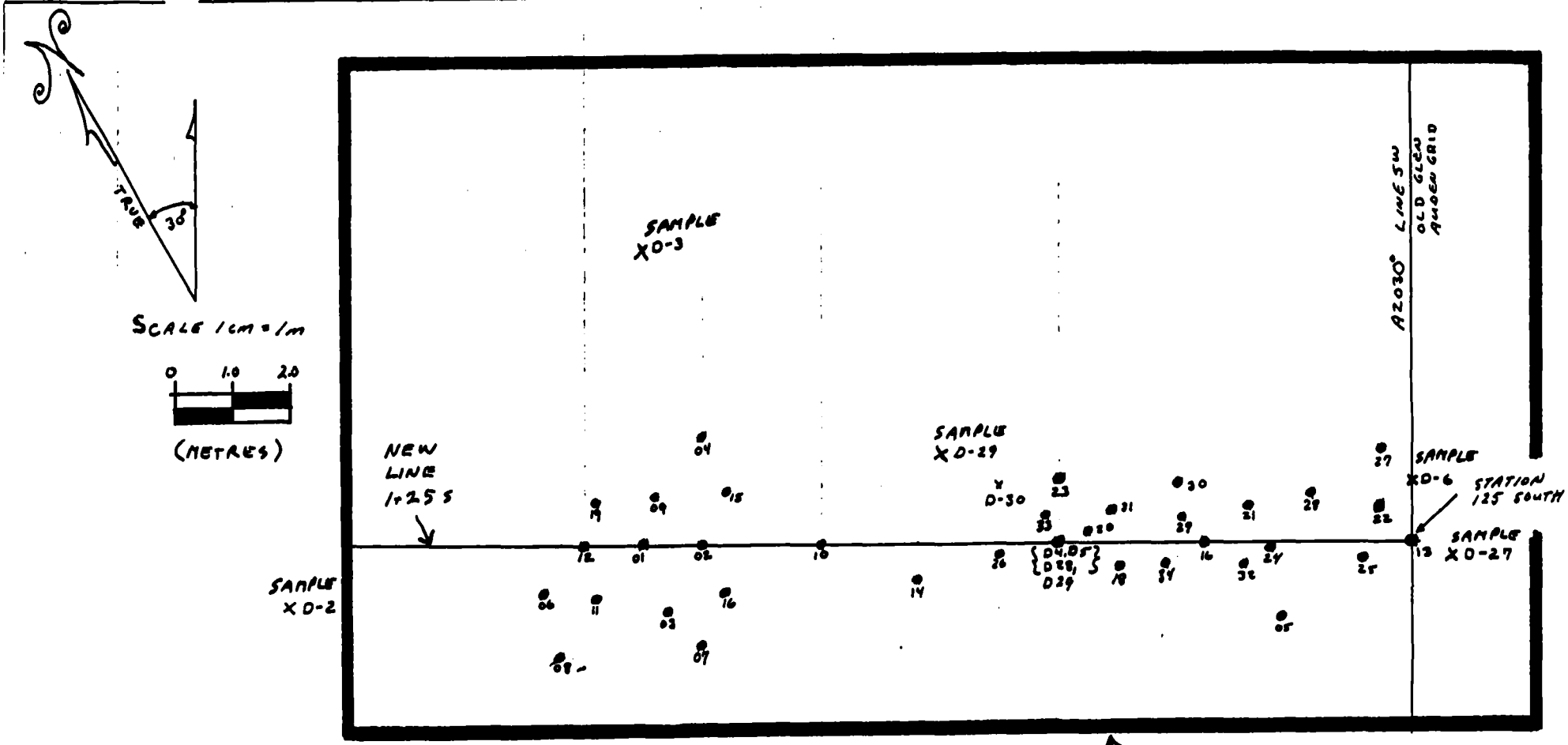
Initial work on this prospect consisted of re-sampling the known gold occurrences on the prospect and as well, on new exposure from mechanized stripping carried out by the previous owner (Glen Auden Resources). Extremely favourable results were obtained form initial samples D1-D16 inclusive. The better samples including anomalous values ranged from 363 ppb to 29005 ppb.

With fairly encouraging values from preliminary sampling it was decided that a more extensive sampling program was warranted. The main sampling effort was concentrated on area A on the old Erie Canadian Map (Fig. #S2-3) and surrounding wall rock exposed recently by mechanized stripping.

This showing area (Fig. #S2-2, 3, 4) consisted of a main quartz feldspar porphyry unit and sheared mafic volcanic unit. Sulphides existed principally along the contact, however numerous quartz veinlets and stringers were noted within the porphyry unit proximal to the main vein. The quartz stringers and veinlets were not sulphide bearing.

A plugger dust sampling program was used to evaluate both the more recently stripped area as well as the original Erie Canadian/Sylvanite zone. This was done in an attempt to hopefully expand the known mineralized zone.

Unfortunately, the dust sampling was not encouraging. No significant values were obtained in the dust within the Erie Canadian/Sylvanite vein or the adjacent porphyry wall rock



AREA "A" : ENLARGED VIEW OF INSET SHOWN ON FIGURE S2-2.

LEGEND

- ● PLUGGER DUST HOLE SAMPLE LOCATION (HOLES = 0.5 METRE DEPTH)
- 30 LOCATION
- X O-2 - GRAB SAMPLE LOCATION

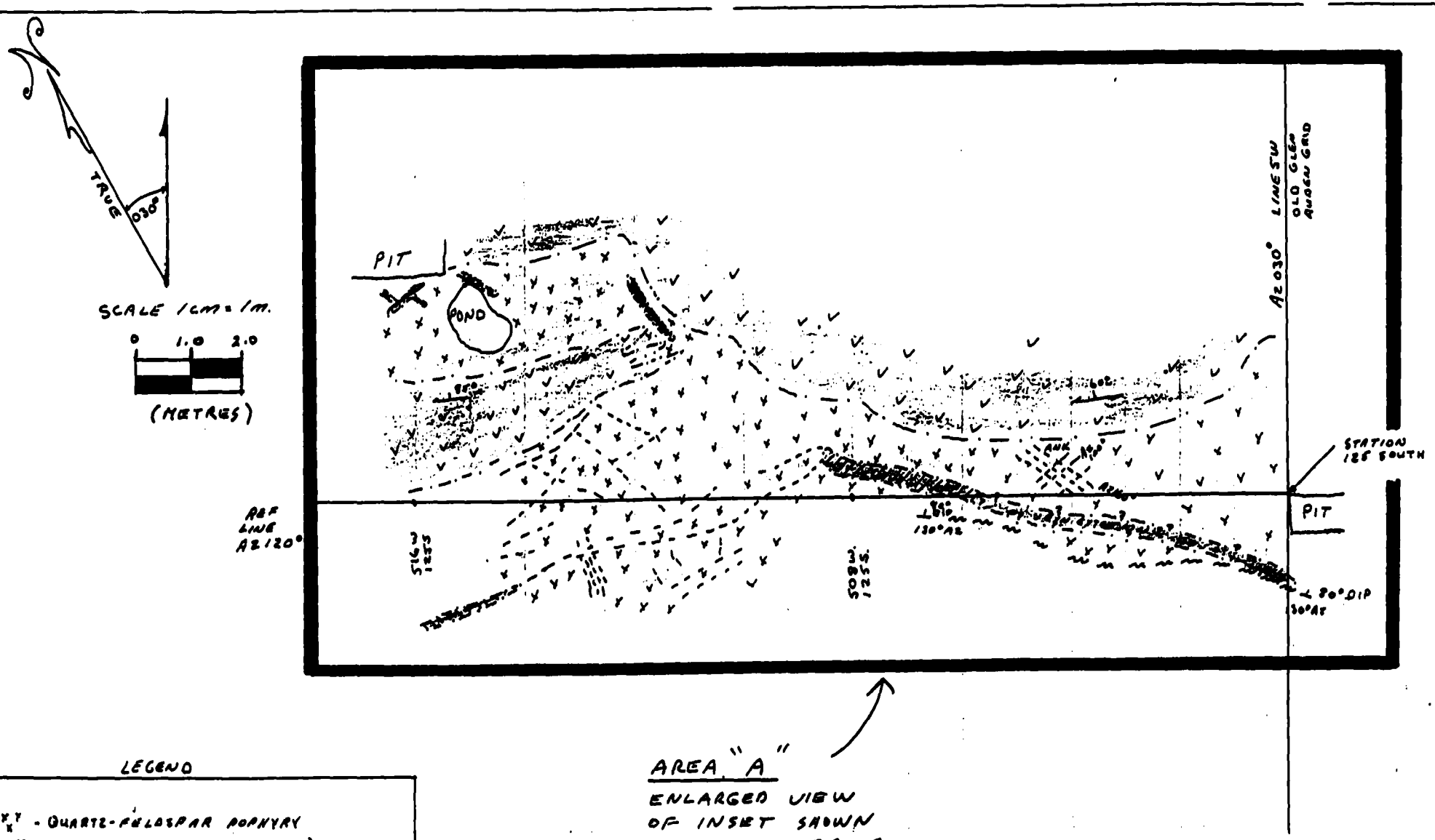
* NOTE
ALL SAMPLES SHOULD BE PREFIXED WITH 2247 i.e 224701, 224702 ETC. TO CORRESPOND WITH ASSAY SHEET IN APPENDIX (ORIGINAL)

SAMPLE VALUES

PLUGGER DUST SAMPLES IN GRAMS PER METRIC TONNE						GRAB IN ppb	
01	0.01	13	NIL	25	0.50	02	NIL
02	0.01	14	0.05	26	0.03	03	13166
03	NIL	15	NIL	27	0.01	04	28806
04	0.13	16	0.07	28	0.05	05	480
05	0.01	17	0.04	29	0.11	06	165
06	NIL	18	0.84	30	0.28	027	1982
07	0.03	19	0.01	31	1.11	028	29
08	NIL	20	0.29	32	0.14	029	51,921
09	0.01	21	0.04	33	0.36	030	1822
10	NIL	22	NIL	34	0.82		
11	0.01	23	0.68				
12	0.07	24	0.12				

FIG # S2-4

DETAILED SAMPLE LOCATION MAP FOR AREA A DEN YES PROSPECT



AREA "A"

ENLARGED VIEW OF INSET SHOWN ON FIGURE S2-2

LEGEND

- Quartz-feldspar porphyry
- Mafic volcanic (sheared)
- Quartz vein
- Stringer quartz veinlet
- Minor fault
- Dip & strike of contact
- Dip & strike of shear
- Ank - Ankerite

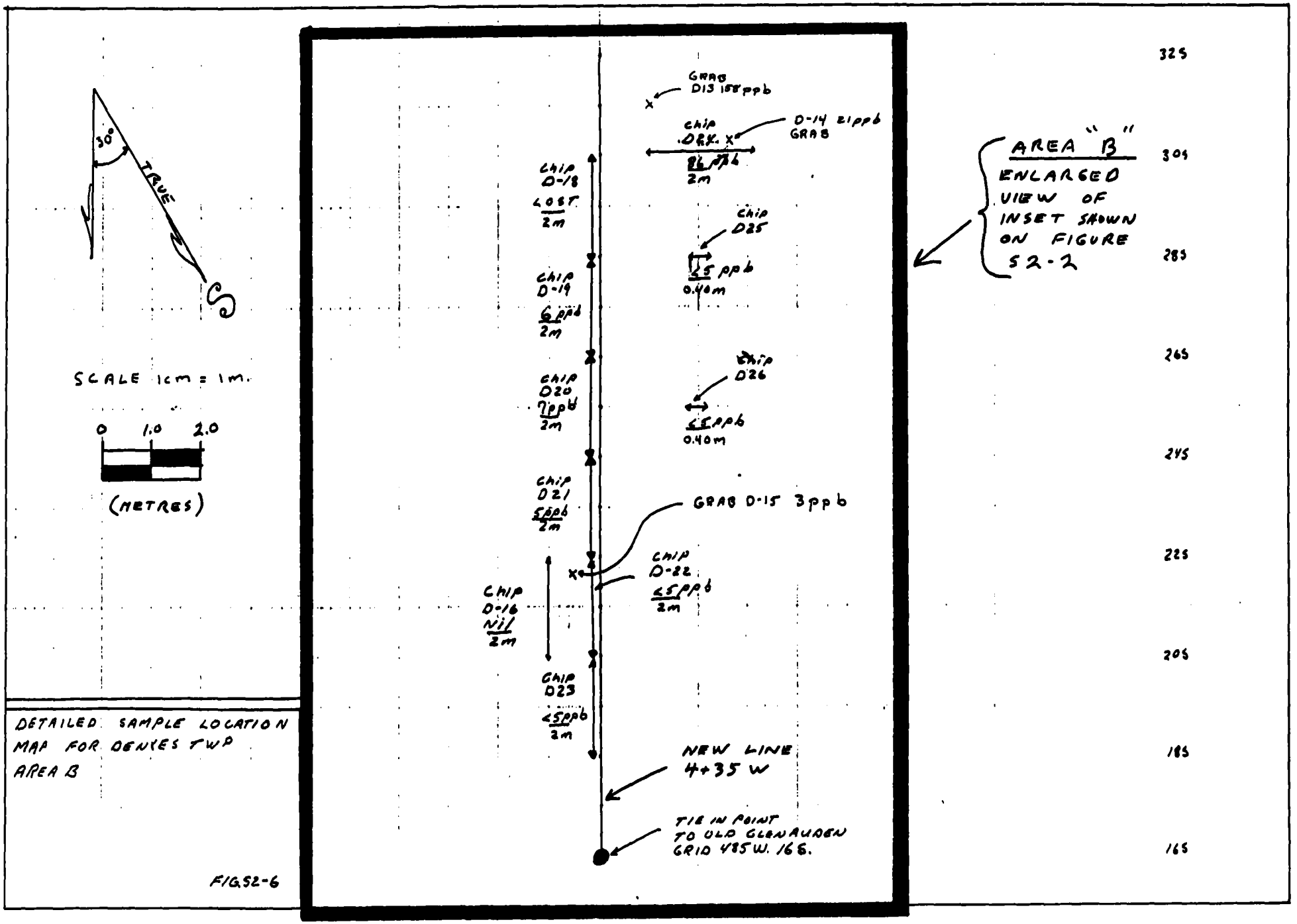
FIG. # S2-5

GEOLOGICAL SKETCH MAP FOR AREA A DENVES PROSPECT

with veins. This situation was somewhat puzzling considering original grabs on this showing suggested good gold values existed here. Initially it was suspected that there may have been problems with the sampling technique but extreme care was taken when sampling was done. However, plugger dust sampling was discontinued and a few more type samples (D-27 to D-30) were taken from Area A. This sampling consisted of taking a sample of vein material with sulphides; vein material with no sulphides; and quartz vein material with sulphides, and some altered quartz feldspar wall rock. (D-27 to D-29 inclusive). A sample of volcanic wall rock with some quartz and 10% pyrite (fly rock from Area A) was also taken (D-30). Every sample with pyrite contained at least anomalous gold, values ranged from 0.05 oz/ton to 1.5 oz/ton Au. Sample D-28 with quartz and no pyrite had extremely low values. The area in which there are high gold values appears to be isolated within a narrow pyrite rich zone with quartz on the contact between the porphyry body and volcanics. This zone is about 30cm wide maximum.

From all of the sampling data to date in Area A, it is evident that quartz veining within the porphyry or volcanics and/or quartz veins along the contact without sulphides do not carry significant gold values.

A second sampling effort was initiated a short distance southeast of sample site A; this second sample site was designated Site B (Figs. S2-2, 6, 7). Initial sampling (D-15 - D-16) was not promising in this area, however, visually structure and quartz veining suggested something could have been overlooked and a second round of sampling was carried out. This second round of sampling consisted of chip sampling a very contorted, sheared feldspar porphyry unit and a quartz vein running along its contact. Unfortunately, all values were extremely poor. This final sampling project concluded the field work and prospecting program on the Denyes Township Prospect.



DETAILED SAMPLE LOCATION MAP FOR DENIES TWP AREA B

FIG 52-6

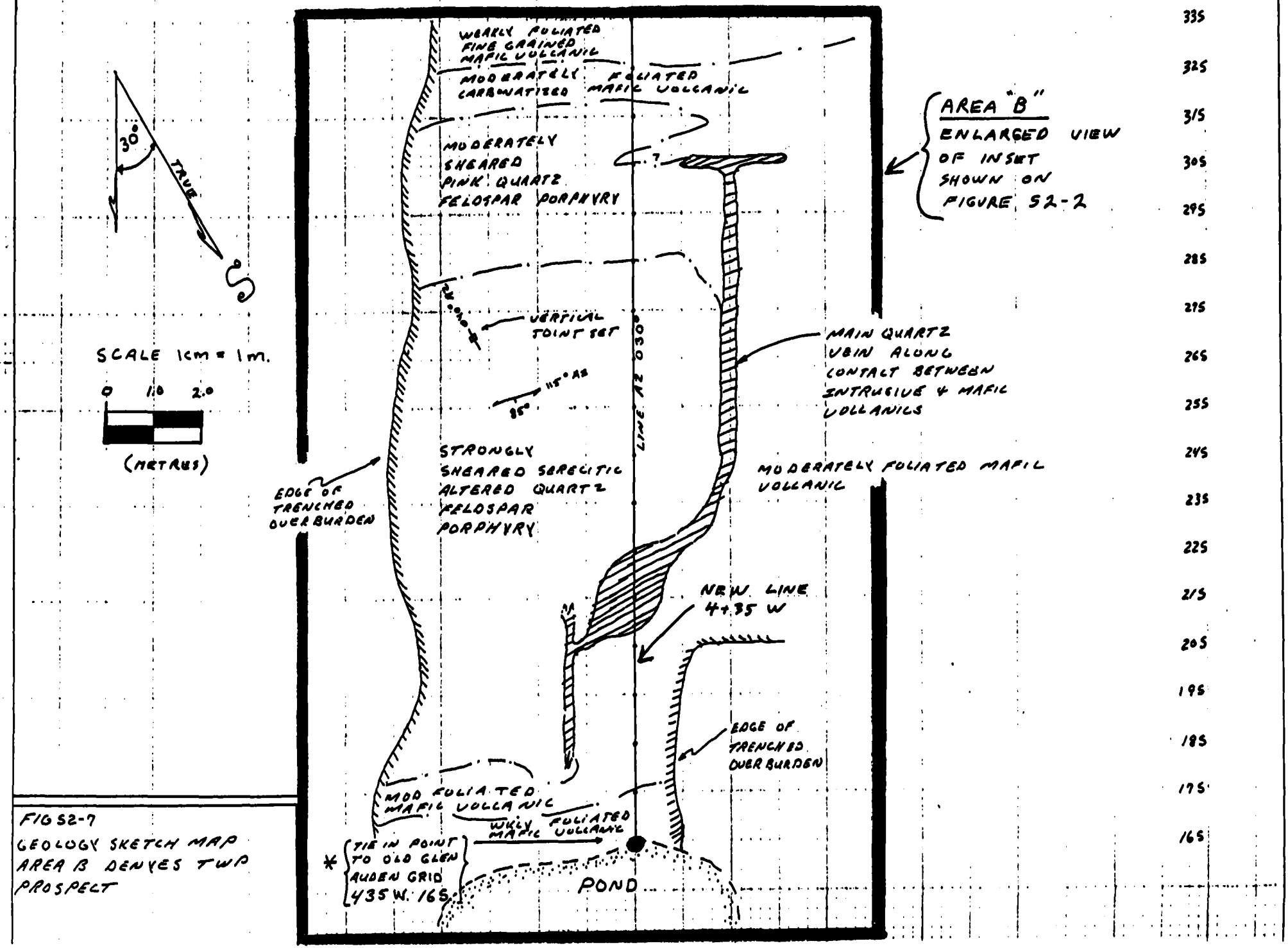


FIG 52-7
GEOLOGY SKETCH MAP
AREA B DENYES TWP
PROSPECT

CONCLUSIONS AND RECOMMENDATIONS

It is apparent that gold values on the Denyes project are related to narrow sulphide rich quartz bearing shear zones proximal to the contact of feldspar porphyry bodies and sheared mafic volcanics. The original Sylvanite/Erie Canadian zones appear to be too narrow to be of economic significance. However, the fact that there is high grade gold associated within pyritic rich zones bodes well for further exploration; it is possible that similar systems which may be larger may exist on the property. Further, it is obvious that little work has been done to explore for such systems outside the main showing area. These pyritic quartz shears are likely targets for conventional geophysics such as VLF-EM and/or induced polarization.

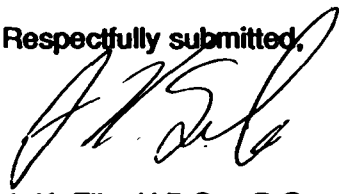
This author recommends the following program to further evaluate this property:

i) rehabilitate the old grid and carry out geophysical surveys including induced polarization and VLF-EM. A gamma ray spectrometer survey should also be considered. These surveys would help locate potential sulphide bearing zones proximal to feldspar-porphyry bodies.

ii) upon completion of these surveys targets could be prioritized for mechanized stripping and sampling as there is winter road access for heavy equipment.

iii) further work including diamond drilling would be contingent on the results of the first portion of the program.

Respectfully submitted,



J. K. Filo, H.B.Sc., P.Geo

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Abernathy, R.K., 1987, Report on the Property of Glen Auden Resources Limited, Denyes Township, Porcupine Mine Division, District of Cochrane

Donovan, J.E., 1968, Geology of the Halcrow Rideout Area, District of Sudbury, Ontario; Ontario Department of Mines Geological Report 63, 43p. Accompanied by Maps 2120 & 2121, Scale 1" = ½ mile

Erie Canadian, 1932-1940, Sketch Maps of Trenches and Assay Plan (Assessment File T-2072)

Evelegh, F. J., 1982, Report on Geophysical Surveys, Sylvanite Group of Claims, Denyes Township, Porcupine Mining Division, Province of Ontario, Johns Manville Canada Inc. (Assessment File T-2538)

Evelegh, F. J., 1985, Report on Geological and Radiometric Surveys, Sylvanite Group of Claims, Denyes Township, Porcupine Mining Division, Province of Ontario, Johns Manville Canada Inc. (Assessment File T-2656)

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APPENDIX S2

SAMPLE DESCRIPTION

AND

ASSAYS

SAMPLE DESCRIPTION

D - 1 (Grab)	• quartz veinlets (stringers) in quartz feldspar porphyry pink, minor fine cubic pyrite in wall rock and veinlets
D - 2 (Grab)	• quartz feldspar porphyry (pink) minor pyrite 1-2%
D - 3 (Grab)	• quartz carbonate zone with shear, cubic coarse pyrite and fine disseminated pyrite (15-20%) quartz content 20-25% approximately
D - 4 (Grab)	• contact zone between porphyry and sheared volcanic, quartz carbonate with 15-20% pyrite (10% quartz content)
D - 5 (Grab)	• bull white quartz adjacent contact of quartz / carbonate zone, main vein present on showing
D - 6 (Grab)	• altered sericite quartz-feldspar porphyry with fine sulphide and quartz veining, sulphide content 2-4%
D - 7 (Grab)	• quartz carbonate, some grey black volcanic within a shear, 10-15% cubic pyrite, minor quartz
D - 8 (Grab)	• quartz vein on contact of feldspar porphyry and sheared volcanic
D - 9 (Grab)	• quartz carbonate, fine pyrite 10-15% (possible fly rock from trenching)
D - 10 (Grab)	• contact between sheared porphyry and volcanic minor quartz and sulphide
D - 11 (Grab)	• sericitic quartz - feldspar porphyry and volcanic, some quartz stringers and sulphide content 4-5%
D - 12 (Grab)	• quartz vein on contact of porphyry and sheared volcanic
D - 13 (Grab)	• quartz carbonate vein minor sulphide, sample on contact between sheared volcanic and extremely sheared altered sericitic feldspar porphyry
D - 14 (Grab)	• quartz vein in sheared altered quartz feldspar sericitic porphyry host
D - 15 (Grab)	• chip sample of sheared feldspar porphyry, sericitic, no significant sulphide
D - 16 (Grab)	• chip sample of sheared feldspar porphyry, sericitic, no significant sulphide
D - 17	• no such sample

D - 18 (Chip)	• sheared sericitic, carbonated quartz feldspar porphyry (sent for assay but lost)
D - 19 (Chip)	• as in D - 18
D - 20 (Chip)	• as in D - 18
D - 21 (Chip)	• as in D - 18
D - 22 (Chip)	• sheared sericitic carbonated quartz feldspar porphyry with veining 60% quartz, 40% quartz-feldspar porphyry
D - 23 (Chip)	• as in D - 18
D - 24 (Chip)	• quartz vein chip, no significant sulphide noted
D - 25 (Chip)	• as in D - 24
D - 26 (Chip)	• as in D - 24
D - 27 (Grab)	• 90% quartz vein material with 5-10% sub-hedral pyrite
D - 28 (Grab)	• quartz vein, with a speck of pyrite almost 100% quartz
D - 29 (Grab)	• quartz vein 3-4% sub-hedral pyrite, some altered minor quartz feldspar porphyry wall rock in vein as well
D - 30 (Grab)	• silicified grey volcanic with some quartz and fine sulphide, 10% disseminated pyrite, minor chalcopyrite, possible fly rock not from proposed location may be a few meters away

NOTES

i) chip samples within seen on map

ii) samples 225701 - 224734 are dust samples, lithology for these samples is shown in sketches in figures (S2-4,5)

Swastika Laboratories

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Assaying - Consulting - Representation

Established 1928

Assay Certificate

2W-0878-PA1

Company: **K. FILO**

Date: AUG-21-92

Project:

Attn:

Copy 1. 535 BARTLEMAN, TIMMINS P4N 4X2
2. FAX 235-2474

We hereby certify the following Assay of 34 PULP samples submitted AUG-14-92 by .

Sample Number	Au g/tonne	Au check g/tonne
224701	0.01	
224702	0.01	
224703	Nil	
224704	0.13	0.12
224705	0.01	
224706	Nil	
224707	0.03	
224708	Nil	
224709	0.01	
224710	Nil	
224711	0.01	
224712	0.07	
224713	Nil	
224714	0.05	
224715	Nil	
224716	0.07	
224717	0.04	
224718	0.84	0.96
224719	0.01	
224720	0.29	
224721	0.04	
224722	Nil	
224723	0.68	0.89
224724	0.12	
224725	0.50	
224726	0.03	
224727	0.01	
224728	0.05	
224729	0.11	
224730	0.28	

Certified by Donna Gardner

P.O. Box 10, Swastika, Ontario P0K 1T0
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Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Assay Certificate

2W-0878-PA1

Company: **K. FILO**
Project:
Attn:

Date: AUG-21-92
Copy 1. 535 BARTLEMAN, TIMMINS P4N 4X2
2. FAX 235-2474

We hereby certify the following Assay of 34 PULP samples submitted AUG-14-92 by .

Sample Number	Au g/tonne	Au check g/tonne
224731	1.13	1.11
224732	0.14	
224733	0.30	
224734	0.82	0.82

Certified by Donna Gardner

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Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Dewlks Twp

Geochemical Analysis Certificate

2W-0516-RG1

Company: **K. FILO**

Date: **MAY-29-92**

Project:

Attn:

We hereby certify the following Geochemical Analysis of 16 ROCK samples submitted MAY-27-92 by .

Sample Number	Au PPB	Au check PPB
D1	843	
D2	Nil	
D3	13166	13508
D4	28800	29005
D5	480	209
D6	165	
D7	5143	5897
D8	363	
D9	230	
D10	761	
D11	4224	4565
D12	31	
D13	158	
D14	21	
D15	3	
D16	Nil	

Certified by Donna Gardner

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46108 # Certificate of Analysis

Filo, Mr. J.K.
535 Bartleman St.
Timmins, Ontario
P4N 4X2

October 2 92

Work Order # : 920356
Project :

SAMPLE NUMBERS Accurassay	Customer	Gold ppb	Gold Oz/T	
260178	D-19	6	<0.001	
260179	D-20	7	<0.001	
260180	D-21	5	<0.001	
260181	D-22	<5	<0.001	
260182	D-23	<5	<0.001	
260183	D-24	86	0.002	
260184	D-25	<5	<0.001	
260185	D-26	<5	<0.001	
260186	D-27	1782	0.052	
260187	D-28	29	0.001	
260187	D-28	54	0.002	Check
260188	D-29	51921	1.511	
260189	D-30	1822	0.053	
260189	D-30	2010	0.058	Check

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
Dr. G. Duncan
CHEMIST

LF-30

Per: G. Duncan

ORIGINAL

SECTION # 3

NET LAKE PROPERTY

(J. K. FILO and D. V. JONES)

WORK DONE: (Details on accompanying report)

1. Prospecting:

   (a) shoreline traverses (6.6 km)

   (b) cleaning and sampling old pits

   (c) compass traverses (5.3 km)

INTRODUCTION

During the 1992 field season Messrs. Filo and Jones evaluated the Net Lake base metal prospect. Upon a cursory examination of the property two new claims (3 units) were staked. Substantial copper mineralization and a gossan zone were found along the shore of Net Lake which is the border of the subject property. Prospecting was later carried out on the newly staked claims and some of the other claims as well. Prospecting efforts were limited on this area as it was felt that the excellent mineralization found was significant enough to option this prospect. At the time of writing this report negotiations to option this prospect were being carried out as the prospect had been reviewed by a number of companies.

An account of the work carried out to date on the Net Lake prospect is presented within the text of this report. Recommendations for further work are also laid out.

PROPERTY, LOCATION AND ACCESS

The Net Lake prospect consists of six contiguous claims or 26 units (Fig. S3-2). The prospect is crosscut by Highway 11, the subject property is approximately 7 km north of the Town of Temagami. This area has excellent infrastructure for mining including power, rail lines, roads and manpower.

PROPERTY HISTORY

The exploration history of this project is documented in point form as follows:

1934: Strathy Basin Mines Ltd. carried out prospecting work over the prospect in association with Erie Canadian Mines. Assessment File data shows that on an old claim TRT 4449 a dyke had been discovered with a rusted zone seventy feet wide; this rusted zone in 1934 was reported to have values of $7.50 combined gold, copper and nickel (1934 prices). Limited work appears to have been carried out on this zone and there is no further work documented.

1959-1960: Golfields Mining carried out a primitive airborne electromagnetic survey and magnetic survey over the property. They drilled one hole on present day claim 1189083 and intersected mainly andesite? and zones of stringer sulphides with pyrite and pyrhotite and chalcopyrite, no assays were reported.

1970: E. L. McVeigh owned a portion of the present subject block during 1970, including the area covered previously by Strathy Basin Mines. McVeigh carried out geophysical

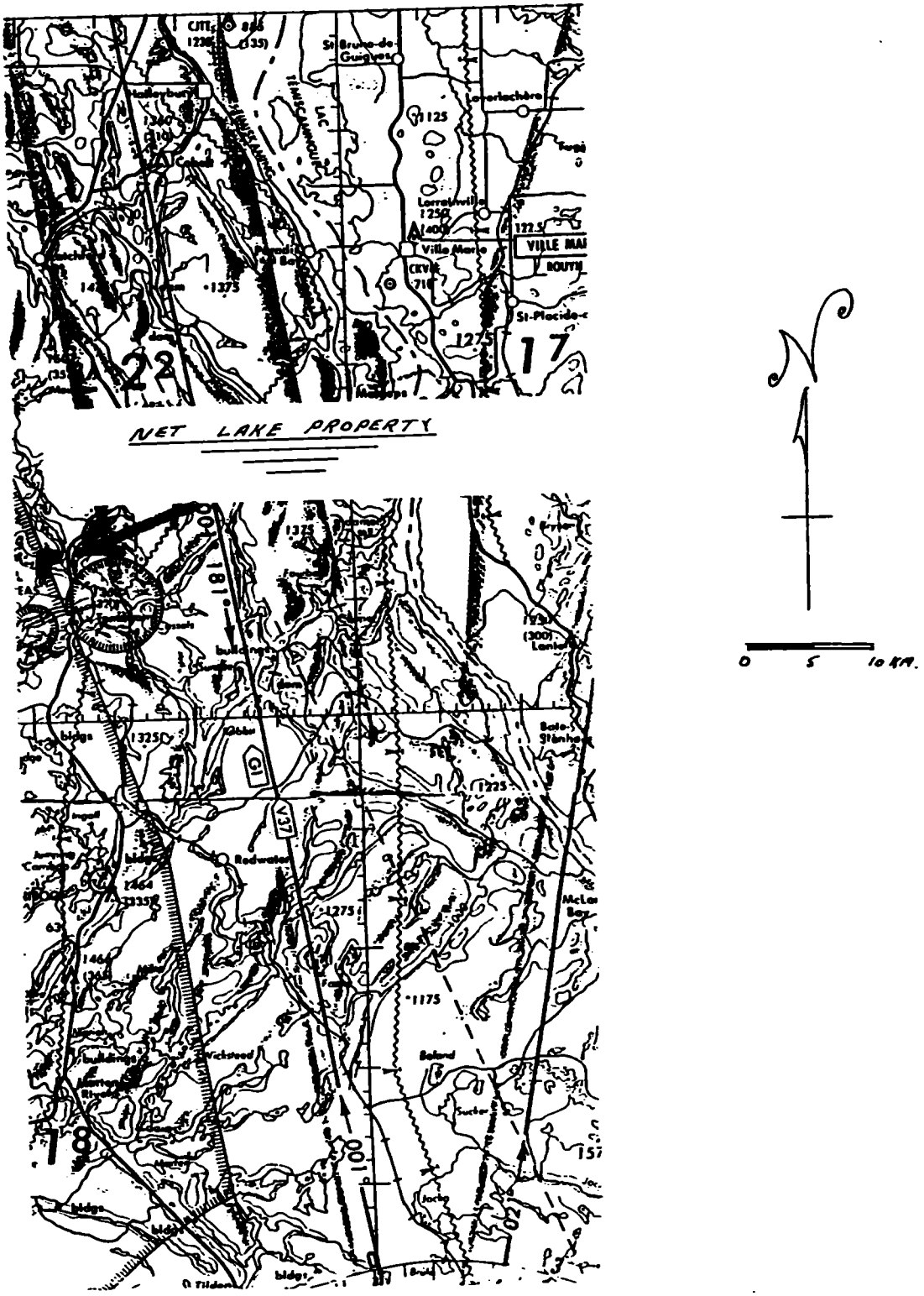


Fig. 3-1

Location Map for Net Lake Prospect

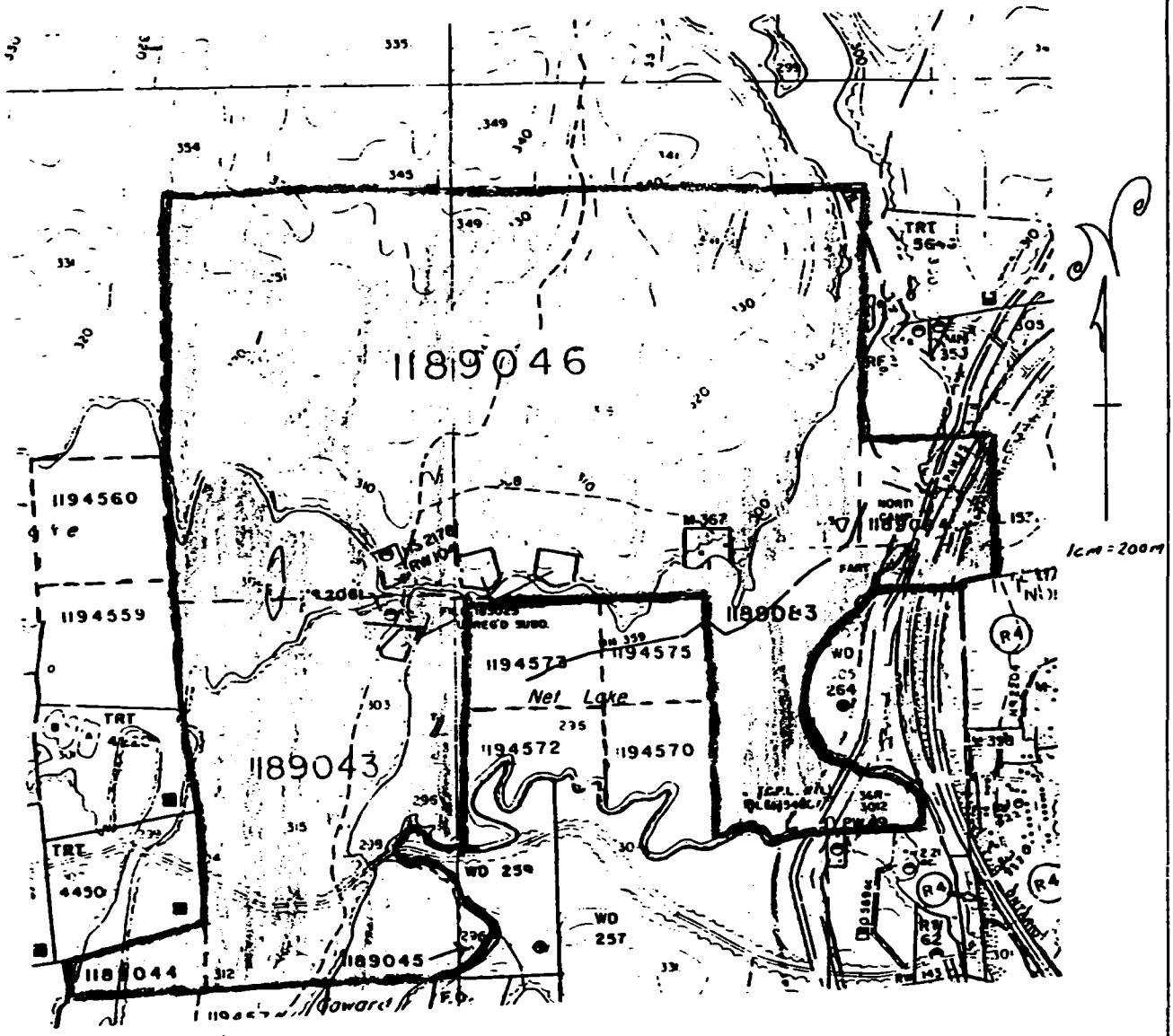


Fig. 33-2

Claim Location Map for Net Lake Prospect —

surveys over Strathy Basin's mineralized zone and reported no conductive zones but one of his maps show a pit in this area possibly Strathy Basin Mines pit.

1974-1975: In the early 1970's Inco staked a large portion of the present subject claims. They carried out magnetic and electromagnetic surveys as well as mapping and drilling on the subject claims and Inco's adjoining patents. Assessment file data shows Inco intersected mineralized zones ranging from 10' to 150' in thickness, scattered chalcopyrite and sphalerite are noted in logs, some logs do not contain assays. There appears to be more than one zone of mineralization as well.

After Inco completed its work Strathy Township was under the Indian Caution and no significant work was carried out on the subject property area except further geophysics. Eventually, claims in this area lapsed and were obtained by Messrs. Filo and Jones after the Indian Caution was lifted.

PROPERTY GEOLOGY

The general geology of the Net Lake prospect is shown on O.G.S. Map 2323 (Fig. S3-3). This property is underlain by a series of intercalated NNE striking felsic and mafic volcanics. These volcanics have been intruded by various intrusives including granites and a more mafic Nippissing diabase sill.

A number of N-NE trending faults are also present, one such major fault strikes under Net Lake.

Potential economic mineralization namely Cu-Zn VMS style mineralization is associated with the mafic felsic contacts along the east shore of Net Lake.

A more detailed account of the general geology is presented in Inco assessment file and O.G.S. Report G.R.163. These reports may be referred to for further details.

DISCUSSION OF PROSPECTING WORK

Initial prospecting efforts in the vicinity of the Net Lake claims led to the discovery of a well mineralized pit with chalcopyrite and a gossan zone 200-250m in length along the east shore of Net Lake. Claims 1189083 and 1189084 were staked to expand the original Net Lake block to cover new zones of interest.

Prospecting on the present Net Lake claim group consisted of lakeshore prospecting

particularly along Net Lake's east boundary to examine the gossan zone along the lake. Prospecting was also carried out to examine other felsic volcanics along the shores of Net Lake in search of new zones similar to that found on Net Lake's east shore. Traverses were also made to examine areas proximal to the area in which Strathy Basin Mines reported gold, copper and nickel mineralization in an intrusive unit. A narrow intrusive (2-3") mineralized with pyrite and minor chalcopyrite? was noted. A number of old trenches were also found in this general vicinity but values were low (See Fig. S3-4 & Appendix I).

Also, an examination of the shore line proximal to a nickel occurrence on OG.S. Map 2323 was made (claim 1189045). Values from this area were also low (Fig. S3-5).

As stated previously, prospecting efforts were curtailed early in area in favour of other prospects. It was felt that with the extremely promising VMS Cu-Zn target on this prospect, it would be readily sold. Thus exploration funds were diverted to other OPAP projects in need of work.

CONCLUSIONS AND RECOMMENDATIONS

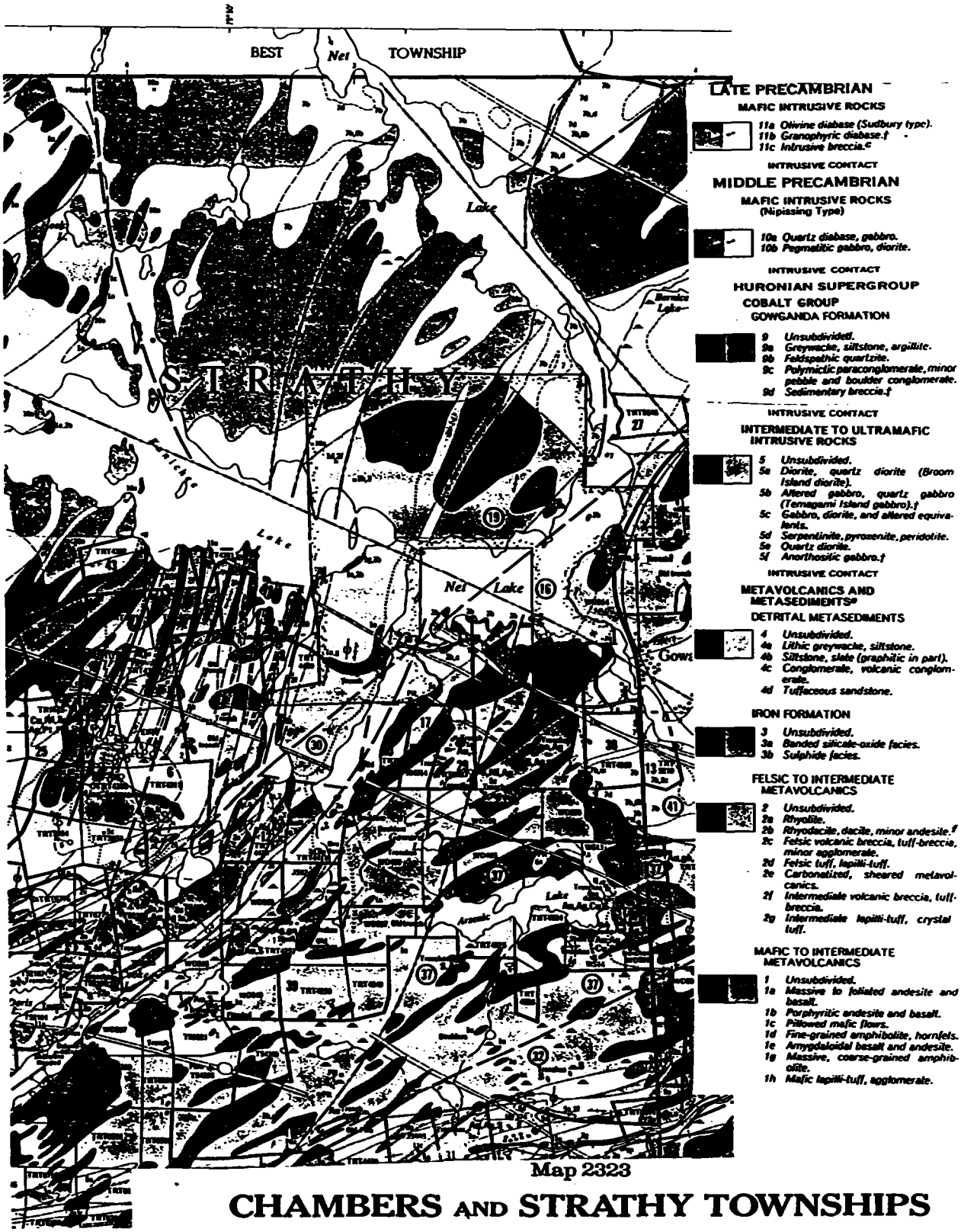
Research and prospecting efforts have shown there is a very interesting Cu-Zn VMS target along the east shore of Net Lake on claims 1189083 and 1189084. The best value obtained by the prospectors on the gossan zone along Net Lake was 1.25% Cu. It should be noted that Granges Inc. on a property examination obtained 1.5% Cu and 1.8% Zn. There seems to be a good conductor roughly 1200 metres long associated with this zone(s)? and roughly 1000 metres of this exists on the subject property under Net Lake. Inco tested this conductor sporadically along strike with four holes and intersected significant sulphide in at least two separate lenses, these lenses contained numerous specks of chalcopyrite and sphalerite throughout them. These zones and possible other zones within the felsic packages in and around Net Lake should be pursued further utilizing state of the art ground and downhole geophysics and lithogeochemistry to fully evaluate this area at depth and along strike.

Further prospecting and geological work should be carried out in conjunction with the work

on the Cu-Zn zone to evaluate the other reported nickel and nickel-copper occurrences on this property more fully.

Respectfully submitted,

J. K. Filo, H.BSc.



Map 2323

CHAMBERS AND STRATHY TOWNSHIPS

NIPISSING DISTRICT

FIGURE S3-3 General Geology Map for Net Lake Prospect. (compiled from O.G.S. Map 2323 - Chambers & Strathy Twps).

BIBLIOGRAPHY

Assessment File Data:

i) Strathy Basin Mines (1934) Prospecting and Geological Surveying

ii) Goldfields Mining (1959-1960) Airborne Geophysical Surveys and Diamond Drilling

iii) E. L. McVeigh (1970) Ground Geophysical Surveying

iv) Inco (1974-1975) Geophysical Surveying, Geological Survey and Diamond Drilling

Bennett, G., 1978, Geology of the Northeast Temagami Area, District of Nippissing; Ontario Geological Survey Report 163, 128p. Accompanied by Maps 2323 and 2324, scale 1" = ½ mile (1:31,680) and 1 chart

APPENDIX S - 3

SAMPLE DESCRIPTIONS AND ASSAYS

SAMPLE DESCRIPTIONS

S-1 gossan zone within weakly sheared altered felsics (rhyodacite), some sericite alteration, pyrite 3-5% disseminated

S-2 fine grained massive mafic volcanic, gossan zone with 5% pyrite

S-3 gossan zone with 2-3% pyrite, massive dacitic unit

S-4 dacitic unit with gossan, very fine grained 5-7% pyrite finely disseminated

S-5 fly rock from pit, full of chalcopyrite 3-5% fine grained dacitic host rock

S-6 zone of almost massive pyrite and pyrhotite, gossan zone

S-7 flow brecciated fine grained andesite/basalt?, silicious in places, minor quartz and sulphide

S-8 very fine grained andesite/basalt?, grey black in colour, gossan 1-3%, clots and fine pyrite, gossan zone

S-9 as in Sample S-8, some quartz, this sample contained some quartz

S-10 shear zone within mafic lava, quartz and 20-30% pyrite

S-11 small 1.5' wide zone of quartz with hematite stain 3-5% fine pyrite, fine grained massive andesite host

S-12 lost

S-13 fine grained mafic volcanic with 2-3% fine pyrite

S-14 small granodiorite dyke with pyrite, 3-5% speck of chalcopyrite and galena?

S-15 intermediate to felsic volcanic, foliation noted 3-5% fine pyrite

S-16 mafic volcanic (chloritic?) chips taken from air track drill crew from pipeline drilling on Net Lake, no sulphides

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President: Dr. GEORGE DUNCAN, M.Sc., Ph. D., C. Chem (Ont.), C. Chem (U.K.), M.C.I.C., M.R.S.C., A.R.C.S.T

45439 # Certificate of Analysis

D.V. Jones
P.O. Box 1513
SOUTH PORCUPINE, Ontario
P0N 1H0

June 24 9

Work Order # : 920203
Project :

SAMPLE NUMBERS Accurassay	Customer	Copper ppm	Nickel ppm
255755	H-1	25	
255756	H-2	13	
255757	H-3	38	
255758	H-4	26	
255759	H-5	170	
255760	H-6	13	
255761	H-7	97	
255762	H-8	23	
255763	H-9	28	
255764	H-10	10	
255765	S-1	410	38
255766	S-2	140	77
255767	S-3	96	22
255768	S-4	340	54
255769	S-5	1.253%	180

HALCROW TWP PROJECT

NETLAKE PROSPECT

ASSOCIATION OF THE CHEMICAL PROFESSION ONTARIO
CHARTERED
Dr. G. Duncan
CHEMIST

Per: G. Duncan

ACCUR AY LABORATORIES
A DIVISION OF BAF LABORATORIES LIMITED, REXDALE, ONTARIO
KIRKLANI BOX 426
ONTARIO, CANADA P2N 3J1
(705) 567-3361
President: Dr. GEORGE DUNC., Ph. D., C. Chem (Ont.), C. Chem (U.K.), M.C.I.C., M.R.S.C., A.R.C.S.T.

45434 # Certificate of Analysis

Page: 1

D.W. Jones
P.O. Box 1513
SOUTH PORCUPINE, Ontario
P0N 1H0

June 24

Work Order # : 920203
Project :

SAMPLE NUMBERS Accurassay	Customer	Gold ppb	Gold Oz/T	
255755	H-1	<5	<0.001	
255756	H-2	10	<0.001	
55757	H-3	486	0.014	
255758	H-4	170	0.005	
255759	H-5	344	0.010	
255760	H-6	1455	0.042	
255761	H-7	78	0.002	
255762	H-8	30	0.001	
255763	H-9	19	0.001	
255764	H-10	31	0.001	
255764	H-10	32	0.001	Check
255765	S-1	6	<0.001	
255766	S-2	<5	<0.001	
255767	S-3	<5	<0.001	
255768	S-4	8	<0.001	
255769	S-5	62	0.002	
255769	S-5	51	0.001	Check

// ALLBOW TWP PROSPECT

NETLAKE PROSPECT

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
Dr. G. Duncan
CHEMIST

LF-30

Per: G. Duncan

ACCURASSAY LABORATORIES
A DIVISION OF BARRINGER LABORATORIES LIMITED, REXDALE, ONTARIO
BOX 426
KIRKLAND LAKE, ONTARIO, CANADA P2N 3J1
TEL.: (705) 567-3361

President: Dr. GEORGE DUNCAN, M.Sc., Ph. D., C. Chem (Ont.), C. Chem (U.K.), M.C.I.C., M.R.S.C., A.R.C.S.T

45447

Certificate of Analysis

June 25 92

D.V. Jones
P.O. Box 1513
SOUTH PORCUPINE, Ontario
P0N 1H0

Work Order # : 920203A
Project :

SAMPLE NUMBERS Accurassay	Customer	Zinc ppm
255765	S-1	310
255769	S-5	99

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
Dr. G. Duncan
CHEMIST

Per: _____

ASSAYERS
LABORATOIRES/LABORATORIES
DIVISION DE/OF ASSAYERS CORPORATION LTD.
780, AV. DU CUIVRE, C.P. 665, ROUYN-NORANDA (QUÉBEC) J9X 5C6 TÉL.: (819) 797-4653 FAX: (819) 797-4501

Certificat/Certificate

2R-1496-RG1

Comp: **J. K. FILO**
Proj:
Attn:

Date: SEP-10-92

Nombre D'Echantillons/No. of Samples:
Soumis le/Submitted: SEP-08-92

No. D'Echantillon / Sample Number	AU PPB	AU CH'KS PPB	AU CH'KS PPB	AG PPM	CU PPM	NI PPM	PB PPM	ZN PPM
S-6	367	384	350	*	4770	*	*	55
S-7	10			*	111	*	*	53
S-8	47			*	153	489	*	62
S-9	91			*	74	91	*	59
S-10	236			*	168	204	*	69
S-11	61			*	22	*	*	26
S-12	6			*	*	*	*	*
S-13	29			*	188	*	*	48
S-14	36			0.8	307	*	8	1240
S-15	33			*	33	*	*	64

Certifié par/Certified by _____

J.J. Landers

CTA

SECTION # 4

FRIPP TOWNSHIP

(J. K. FILO and D. V. JONES)

WORK DONE: (Details on accompanying report)

1. Linecutting - 3.07 km cut
2. Geophysical Surveys:
   - (a) HLEM - 444 Hz and 1777 Hz (2.35 km on cut grid)
   - (b) VLF-EM16 (2.1 km on cut grid; 0.35 km on flagged grid)
3. Prospecting:
   - (a) compass traverses (11.3 km)
   - (b) on cut grid (3.07 km)
   - (c) cleaning and sampling old pits and trenches

INTRODUCTION

During the 1992 field season Messrs. Jones and Filo worked their Fripp Township nickel prospect located SSW of Timmins, Ontario.

Exploration efforts consisted of prospecting and geophysics. The majority of exploration was concentrated on five claims in the northeast corner of the block where there are nickel occurrences and geophysical targets. A few other prospecting traverses were carried out as well over areas deemed to be favourable as a result of recent Government airborne surveys and other base metal occurrences.

The results of the exploration work to date are presented within this brief report along with pertinent conclusions and recommendations.

PROPERTY, LOCATION AND ACCESS

The property is fairly large and consists of 28 contiguous claims or 61 units in Fripp Township. An outline of the prospect with claim numbers is shown in Fig. #S5-1. Access to the property is via Pine Street south from Timmins. After travelling approximately 25 kms beyond the Timmins dump, there is a main logging road and a series of trails which are oriented NNW. Access from Pine Street to the subject property is via this series of trails which lead to Bruce Lake which is within the property boundary.

PROPERTY HISTORY

The present day subject property including the nickel occurrence made up portion of a large block of claims controlled and worked by Hollinger Consolidated Gold Mines in the 1960's and 70's for Cu, nickel and gold. Hollinger carried out magnetic and electromagnetic surveys over the prospect and did drilling to test E-M conductors and the known nickel occurrence, very limited assay data is available for any of the work.

Eventually Hollinger dropped the entire block claims with the exception of 5 patents shown in Fig, #S4-2. These patents contain a deposit approximately 55,000 tons at 2% Cu according to a recently published assessment report by Falconbridge (assessment file T-3482). Falconbridge

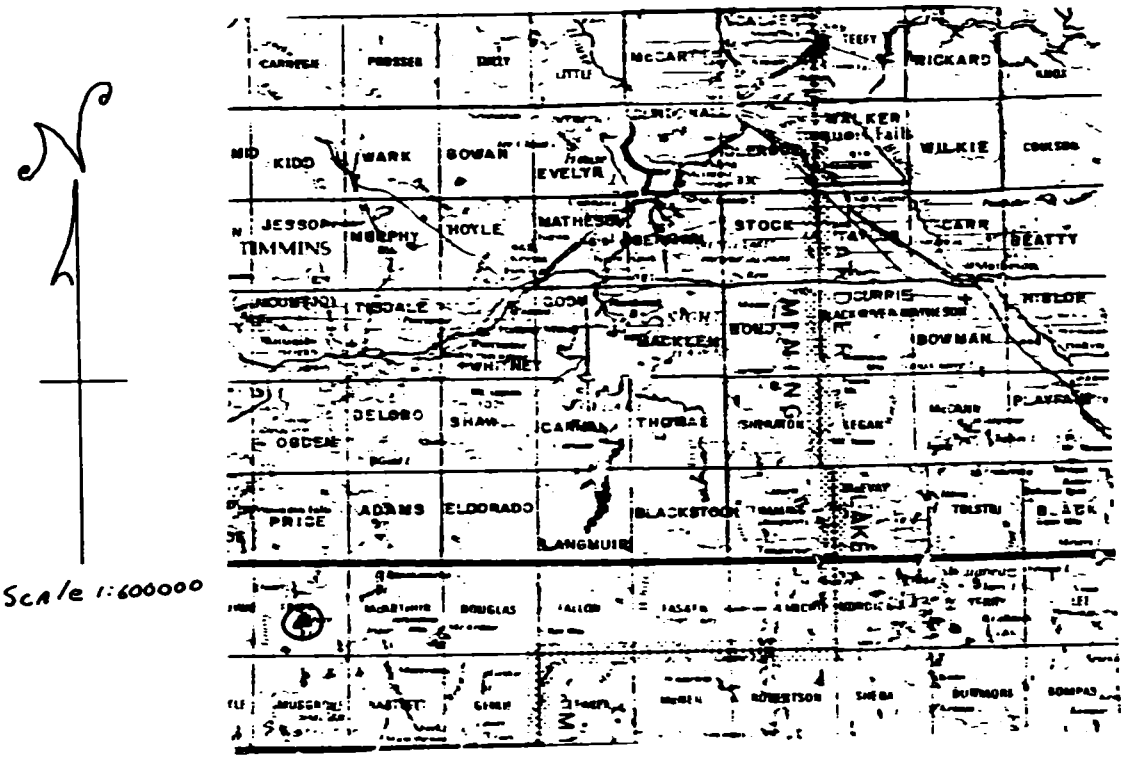

Fig. 3A-1

Location Map For Fripp Prospect (A)

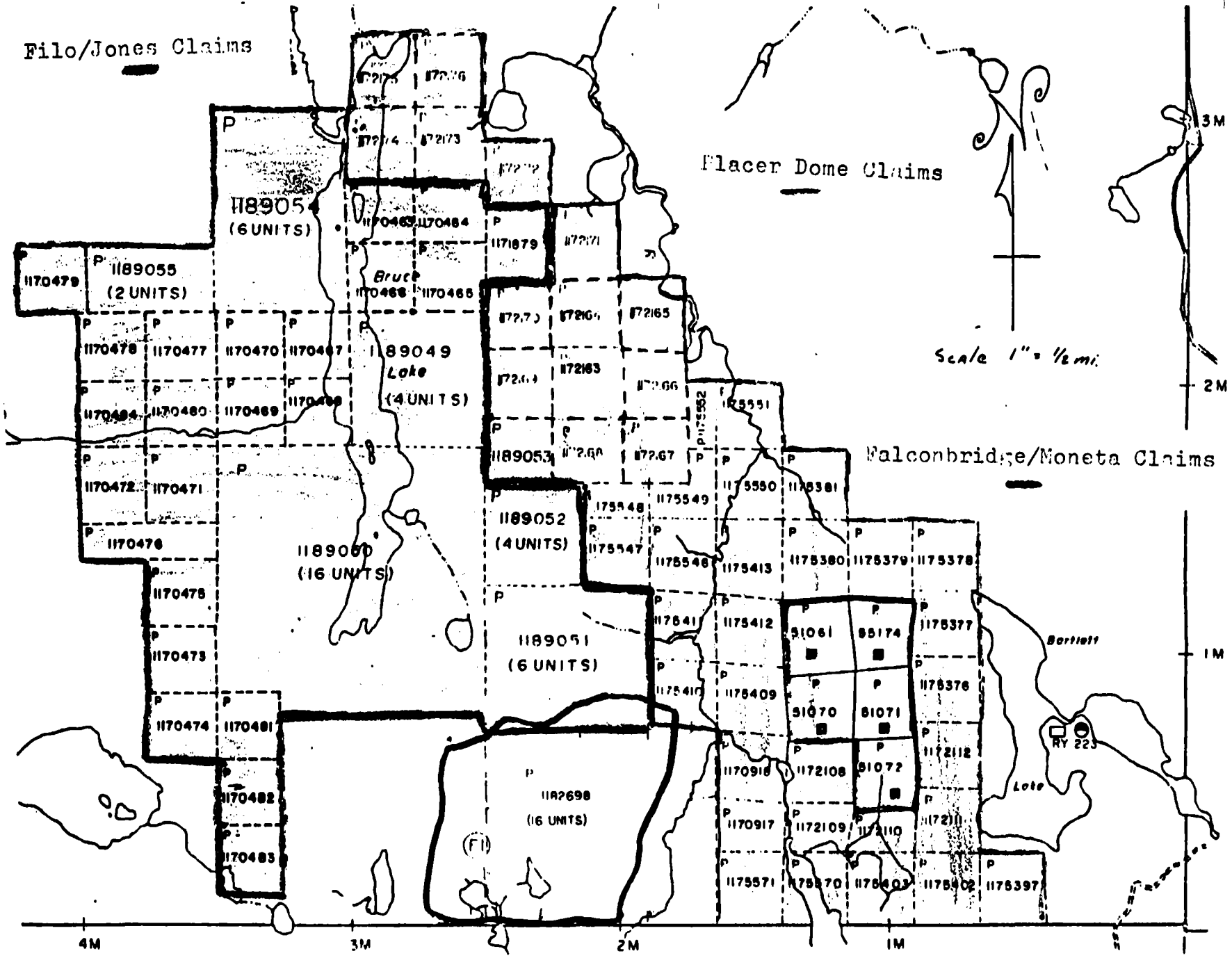

Fig. 34-2

Claim Map For Fripp Prospect

suggests this deposit may be structurally controlled and/or porphyry related mineralization.

Similar types of mineralization were found on the present subject block shown in site B of Fig. #S4-4 and 5.

No significant deposits of nickel were found by Hollinger and eventually all exploration efforts in this area by Hollinger ceased.

In the 1970's Consolidated Tache Mines and Investment Limited examined the area containing the known nickel occurrence (Site A on Fig. S4-4). They noted the disseminated nature of the mineralization and carried out and I.P. survey over a large block of claims including the present day claims 1170463 - 1170465 inclusive and claim 1171879. These claims host two significant induced polarization anomalies proximal to the main nickel showing. The Consolidated Tache Mines Company for no apparent reason despite positive recommendations did not pursue the targets further. (Assessment File 1592)

In 1990 the Ontario Government flew airborne geophysical surveys over Fripp Township. This data showed strong magnetics and an in-put target proximal to the known nickel showing. Similar targets were found in other portions of the property as well with strong magnetics and in-put conductors. (O.G.S. Map 81389)

This briefly summarizes the work on this prospect right up to the present program.

GENERAL GEOLOGY

A mapping project was carried out over the subject property as part of Hollinger's property mapping program in this area in the 1960's and 1970's. Much of this data is basically duplicated on the regional Government Compilation Map 2205 (Fig. S5-3). The property is predominantly underlain by granodiorite/diorite; within this granodiorite there are some ultramafic/mafic units whose origin is not certain; this author believes that there are both intrusive bodies as well as volcanic flows. These units are well outlined in the recent airborne magnetic survey by the Ontario Government (O.G.S. Map 81389).

The O.G.S. Map 2205 (Fig. #S5-3) also shows some sediments in the extreme North West

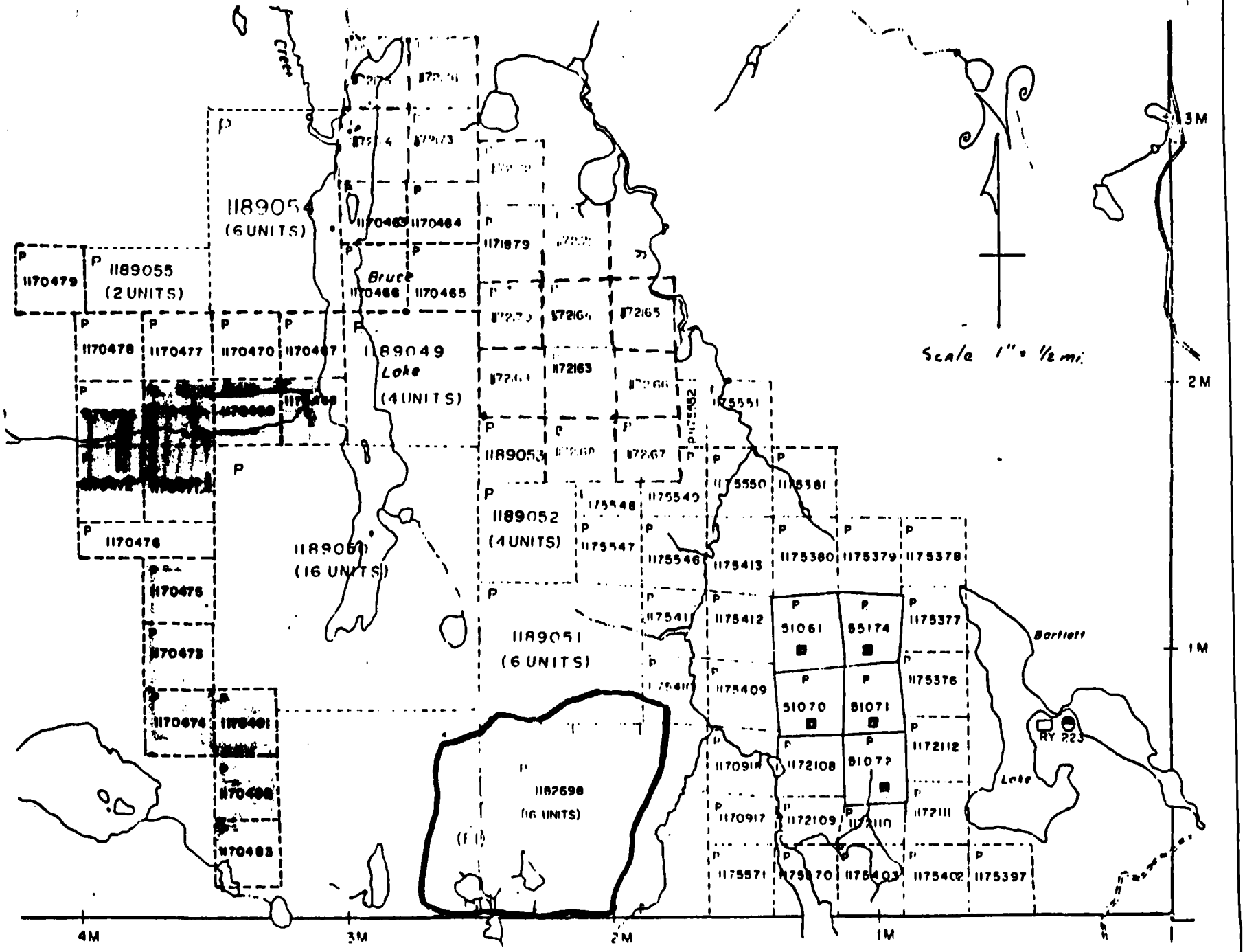

Fig. 34-4
Fripp Prospecting Areas A B C

section of the property.

Government maps further show the presence of the Mattagami River cutting through Bruce Lake within the eastern portion of the subject block. A number of splays are also shown off of this main fault.

A more detailed picture of the geology is presented in the Hollinger Access File T-702 by Dr. John Kirwan, this may be referred to for further information.

DISCUSSION OF PROSPECTING AND GEOPHYSICAL EXPLORATION PROGRAM

As stated previously, in light of the fact that this block was rather large, exploration efforts were concentrated on three specific claim areas (Fig. S4-4) which have been designated A, B, C. Work was concentrated on these areas as there were known occurrences of base metals and/or new anomalies from the government airborne.

The exploration efforts on this prospect are described on an area-by-area basis.

Area A

Area A is shown in Fig. S4-4 and S4-5. This area contains the original Hollinger nickel occurrences. The best sample obtained by this author was .47% nickel, recent sampling by companies who examined this prospect as a potential option obtained values as high as 0.5% nickel. The exposed mineralized zones are associated with coarse grained ultramafic rocks. However, these showings do not appear to be directly associated with any of the known geophysical anomalies on the prospect.

In light of the lower grade values on the main showing and the lack of a geophysical response with it, further efforts were initiated to examine other areas of Area A with strong geophysical responses. These responses were from induced polarization (I.P.) survey by Consolidated Tache and the recent O.G.S. airborne survey. Little exposure exists where two anomalies are present but some prospecting was carried out and an attempt was made to confirm the old responses with VLF-EM and HLEM. Weak responses were obtained on the HLEM survey

over the strongest part of Consolidated Tache I.P. anomaly or claim 1170464 and a second Consolidated Tache I.P. anomaly and coincident government airborne anomaly on claim 1171879. A VLF-EM anomaly was found proximal to the HLEM anomaly on claim 1171879 as well. In the vicinity of the VLF-EM anomaly prospecting showed the existence of ultramafic intrusive(?) rocks.

It is this author's opinion that from field evidence and the airborne magnetic signature the two weak HLEM anomalies are situated within ultramafic rocks and thus a favourable host for nickel sulphides. Thus, perhaps a pulse EM survey should be considered to further evaluate the known anomalies and if favourable profile is found the anomalies should be drilled.

Area B

Area B (Fig. S4-4, S4-6) exists along a creek and possible fault system (O.G.S. Map 2205) west of Bruce Lake.

This area was explored extensively in a number of drill campaigns by Hollinger. Recent prospecting located a number of old drill sites, an old copper showing in a vein and numerous old pits along the creek. A number of new airborne anomalies are present just south of the creek, some of those were evaluated. The main reason for re-examination of this area was the fact that Hollinger found mineralization similar to that found on claims presently being explored by Falconbridge with 55,000 tons at 2% copper.

Unfortunately, the only value of significance obtained in Area B was 3900 ppm Cu (FP-92-1) at the old Hollinger Cu pit, extremely low gold values were found here. An airborne target was found to be associated with iron formation (FP-92-2), no significant base metals or precious metals were noted here. Similarly, numerous old pits usually associated with iron formation were found proximal to the creek, these areas had no significant values. (see Fig. S4-6)

It is this author's opinion that Area B is still of interest mainly due to Cu mineralization in Hollinger logs over substantial widths and the presence of a deposit in a similar lithology and environment a short distance away. Unfortunately, the only way to evaluate this area further would be I.P. to look for disseminated chalcopyrite and drilling, further prospecting in this area

would not likely be effective.

Area C

This area was investigated to examine the presence of a number of airborne targets. The only airborne that could be adequately examined was the strongest one (Fig. S4-4 and S4-7).

In the vicinity of the airborne some rather unusual geology was observed. Observations included gabbroic unit which is contact with iron formation and is well mineralized (pyritic) conglomerate. The trend of these units and associated mineralogy suggests these units may be the cause of the airborne in the showing vicinity and the trend of weaker airbornes as well in Area C. Unfortunately, no significant precious metal or base metal values were found in any of the old workings in this area.

CONCLUSIONS AND RECOMMENDATIONS

It is this author's opinion that exploration efforts should be continued in Area A to evaluate geophysical targets via pulse E-M and drilling to test for Cu-Ni sulphides if the pulse E-M survey is favourable. Further, if possible an I.P. survey should be considered for Area B to try to find concentrations of disseminated mineralization. If positive results are obtained from the I.P. survey drilling should be carried out to test I.P. zones for disseminated copper mineralization.

Respectfully submitted,

J. K. Filo, H.BSc., P.Geo

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Hollinger Consolidated, 1962-1988, Reports on Drilling, Geology, Geophysics by Various Hollinger Geologists (Assessment File T-702)

Houle, M. V., 1991, Report on the Moneta-Fripp Property (Project 8210) Fripp-Musgrove Townships Timmins Area, 1991, Exploration Program (Assessment File T-3482)

Ontario Geological Survey, 1990, Geophysical and Geochemical Series Map 81412, Scale 1:20,000

Geophysical Program

Mr. K. Filo retained the services of Exsics Exploration Limited to perform an electromagnetic survey over several cut lines located on the east shore of Bruce Lake, Fripp Township in the Porcupine Mining Division of Timmins, Ontario.

The purpose of the program was to test the property for structure favourable for base metal deposition. The survey was completed over three select lines which were cut on the claim group. Refer to the enclosed grid map for the orientation of the lines.

Surevy Procedure

The survey was completed using the Apex Parametrics, MaxMin II system. Specifications for the system can be found as Appendix A.

The survey utilized a 100 meter coil seperation and two frequencies were read. The high frequency, 1777 hz, reacts well (Fig. 54-9) to near surface, weak zones were as the low frequency, 444 hz, reacts well to deeper buried more subtle zones (Fig. 54-10).

The coil seperation would result in a search depth range of 50 to 60 meters as well as a side seeking range of 50 meters, on each side of the line read.

Surevy Results

The survey was successful in locating one weak zone striking north-south across lines 300ms and 200ms. A second questionable feature was noted on line 200ms at 425me on the higher frequency only.

At this writing, a follow-up program should be considered for the first feature situated at 775-800me. This program should consist of a deep-em survey using a 400m x 400m transmit loop or the moving coil deep -em system. This type of survey would enhance any weak structure or better define any deep rooted zone. The penetration of this survey should be between 100 and 200 meters.

Should the follow-up program be successful in locating the zone, then drilling should be considered,

Respectfully submitted

J.C.Grant, C.E.T., F.G.A.C.

APPENDIX S-4A

SAMPLE DESCRIPTIONS AND ASSAYS

SAMPLE DESCRIPTIONS

FP-92-1	quartz vein (95%) with some diorite? wallrock 1-2% chalcopyrite
FP-92-2	sulphide rich section of iron formation, gossan 10-15% pyrite
FP-92-3	fine grained black massive mafic/ultramafic unit with minor pyrite
FP-92-4	as in FP-92-3 but some magnetite as well as pyrite
FP-92-5	sulphide zone, consisting of mainly massive pyrite and pyrhotite and minor chalcopyrite (fly rock from trench)
FP-92-6	mainly quartz vein material with gossan stains
FP-92-7	iron formation with 65% magnetite and 15% pyrite in oxidized zone
FP-92-8	fine grained pyrite (20%) and magnetite (5%) in fine grained black matrix; possible mafic/ultramafic unit
FP-92-9	medium grained unit with feldspar and pyroxene, unit considered to be a gabbro
FP-92-10	gossan zone remnant vugs and pebbles sub-rounded, possible sedimentary conglomerate
FP-92-11	same as FP-92-8
FP-92-12	gossan zone with extensive sulphide mineralization and gossan, rounded pebbles noted in pit, sedimentary conglomerate host
FP-92-13	heavily oxidized gossan zone with some unoxidized pyrite
FP-92-20	medium-grained metamorphosed mafic unit with pyrite 10-15% and magnetite 10-18%, associated with gossan zone
FP-92-21	pure magnetite (iron formation)
FP-92-22	schistose garnet bearing mafic rock from gossan zone, minor pyrite 1-2%, rare speck of chalcopyrite
FP-92-23	Hornblende-Feldspar gneiss with 3-5% disseminated pyrite
FP-92-24	schistose micaceous black mafic rock with some gossan
FP-92-25	black medium- to fine-grained metamorphosed mafic volcanic?, some gossan noted
Fripp Pit #1	sample of gossan material with pyrite and pyrhotite, minor chalcopyrite in ultramafic intrusive unit (medium-grained, sulphides 20%)
Fripp Pit #3	sample of medium-grained mafic/ultramafic intrusive gossan stained, 15-20% pyrite pyrhotite

Fripp Pit #4	very course-grained black pyroxonite (ultramafic) with minor fine stringers of sulphide 1% maximum

*NOTE: ALL SAMPLES ARE GRABS

SECTION # 5

NOVA TOWNSHIP

(J. K. FILO and D. V. JONES)

WORK DONE: (Details on accompanying report)

1. **Geological field mapping on picket lines previously cut in fall of 1991 (Scale 1:2,500) (65 km total grid traversed)**

INTRODUCTION

As part of their 1992 OPAP prospecting program, Messrs. Filo and Jones carried out geological mapping and some prospecting on their Nova Township base metal property. This work was carried out in order to better evaluate the geology, and examine a number of mineral occurrences on the property (Figs. S5-3 and S5-4).

The data obtained during the course of this examination along with pertinent recommendations are presented within the following portions of this text.

PROPERTY, LOCATION AND ACCESS

This property consists of 20 contiguous mining claims or 30 units as shown in Fig. S5-2 and it is located in Nova Township roughly 80 kilometres NNW of Timmins, Ontario (Fig. S5-1). Access to the subject property is via all-weather logging road from Malette's Mill in Timmins, Ontario, just off of Highway 101 west. From Malette's Mill it is approximately 95km to the prospect on a series of logging roads which lead to the northern boundary of the property.

PROPERTY HISTORY

Limited exploration work has been carried out on the subject property to date. The details on the current documented history for this claim is presented in point form as follows:

Area Mines 1964 (Assessment File T-879)
Area Mines carried out prospecting and trenching; one drill hole was drilled to test a pyritic zone with minor Cu-Zn mineralization. This hole was located within the central portion of the present subject block. This hole intersected a series of metasediments, chlorite-grunerite schists and quartzite?, with sulphides including pyrite, pyrhotite, minor chalcopyrite and magnetite.

Canamax 1972 (Assessment File T-721)
Canamax carried out extensive airborne surveys in Nova and adjoining townships and staked a portion of the present subject property. Subsequent ground follow-up showed the presence of felsic volcanics associated with sulphides and minor zinc mineralization. This zone also had a related E-M anomaly, but no drilling was carried out, the claims eventually lapsed.

Filo & Associates 1991
In 1991, Filo & Associates picked up a series of claims covering airborne anomalies from the 1990 O.G.S. airborne survey. These claims covered the old Canamax and Area Mines showings. In September of 1991 the ground was optioned to Orofino Resources.

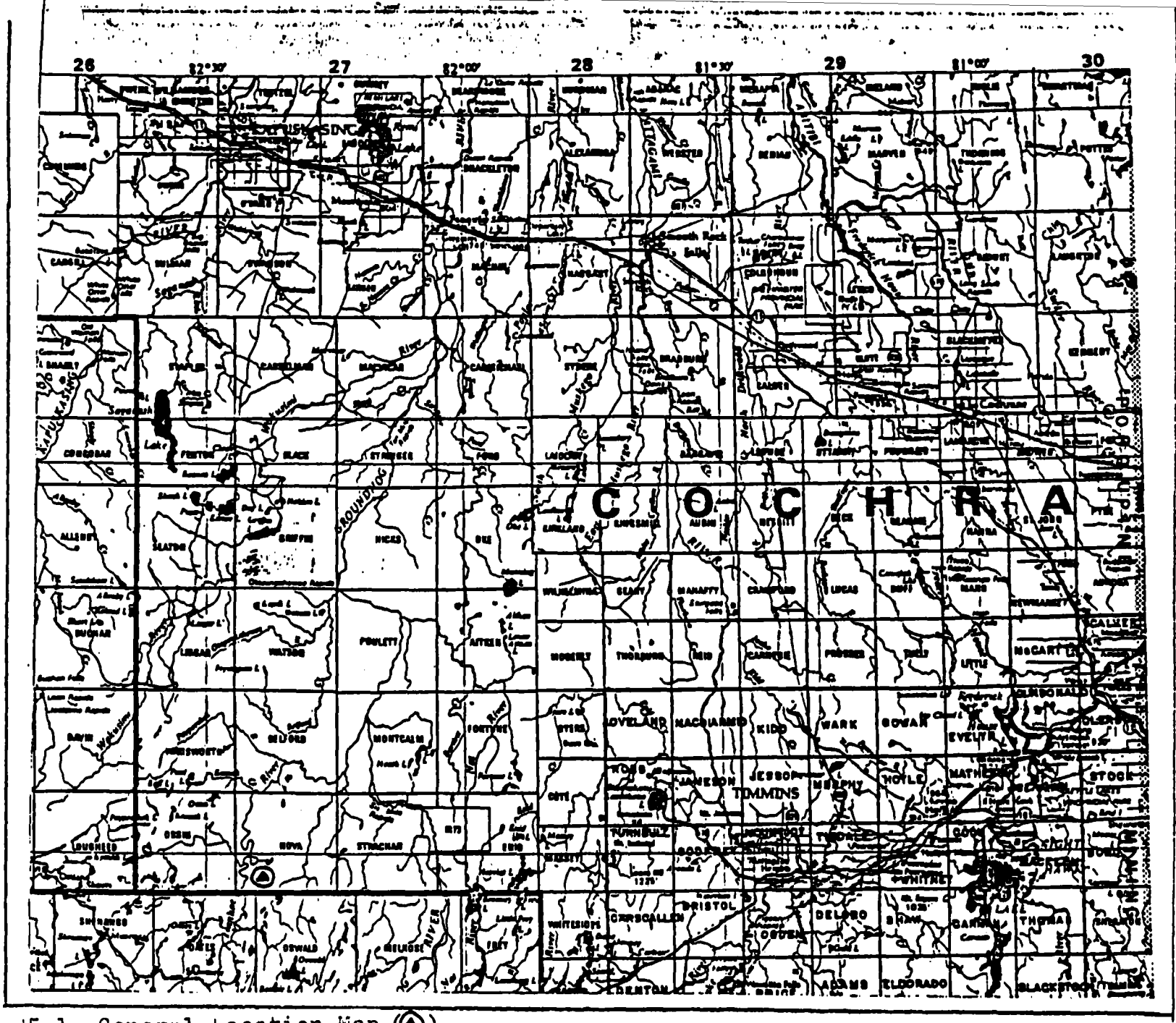

Fig. 35-1 General Location Map (▲)

Nova Twp. Scale: 1:600,000

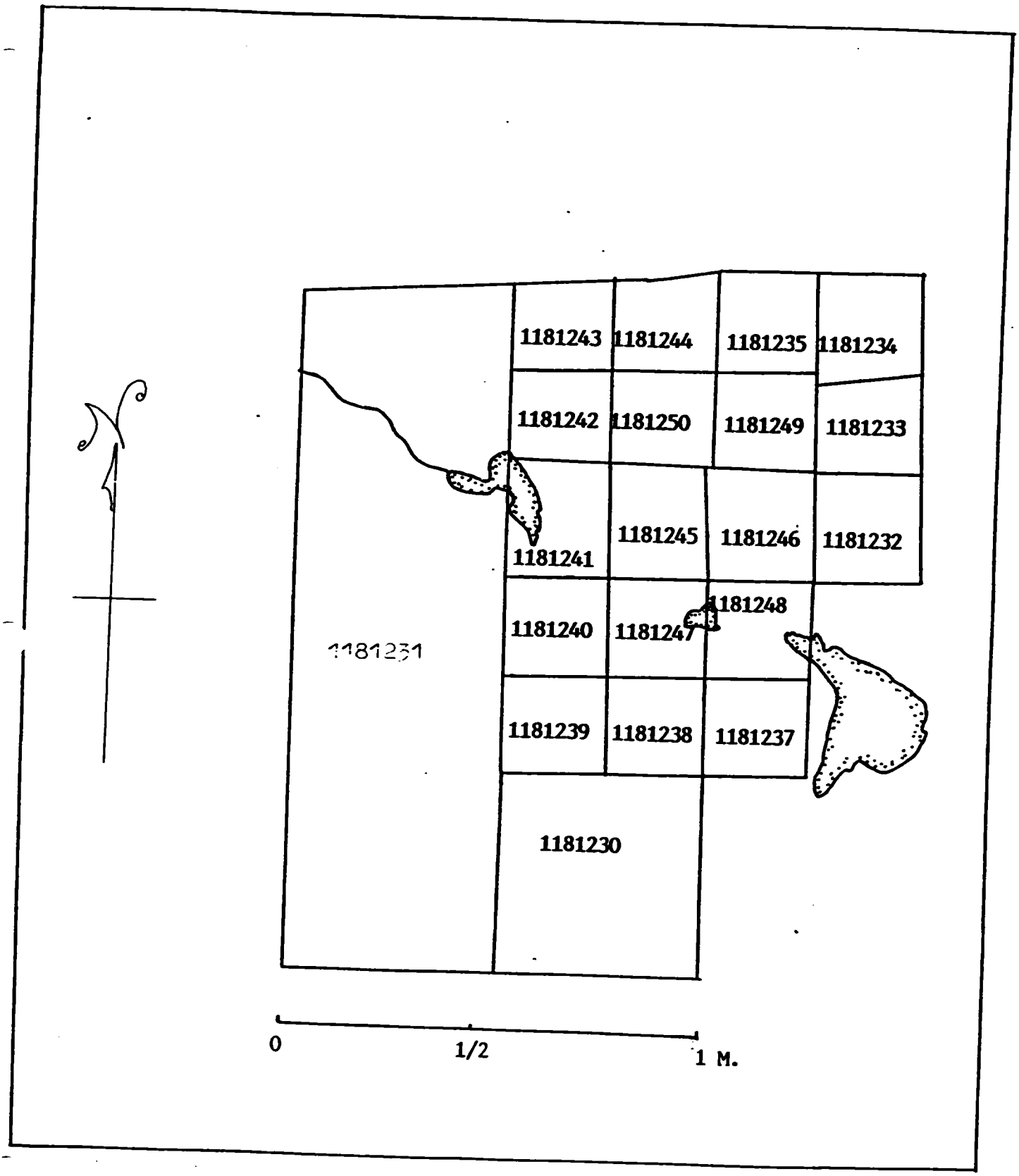

Fig. 35-2 Claim Location Map
Nova Township Prospect

Orofino carried out line cutting, geological work, and airborne geophysical re-interpretation. The ground was then turned back to Filo & Associates in September of 1992. The work carried out was not filed for assessment and was not public information at the time this report was written.

PROPERTY GEOLOGY

The Nova Township prospect was remapped and prospected further, to document the property geology and examine a number of mineralized occurrences on the property. The old Orofino control grid was utilized to pinpoint sample and outcrop locations.

The Nova prospect exists a short distance from a major regional structure known as the Kapuskasing High. Research by the Ontario Department of Mines (O.D.M. Miscellaneous Paper 10) suggests that this area was a structurally active zone caused by the rotation of the continental block on either side of the zone. As a result, there was fairly extensive deformation within this zone and surrounding area.

On the subject property, approximately 10 miles away, there has been from the Kapuskasing High, substantial metamorphism of the lithological units. The majority of the subject property has a metamorphic grade that is almadine-amphibolite. In many instances, the original lithology has been totally changed by metamorphism but in some areas particularly east of Reference Lake there are some remnant textures and some idea of the original composition of the lithology can be ascertained.

The complex magnetic picture (O.G.S. Map 81364) suggests there has been extensive folding and faulting on the property during metamorphic events associated with the Kapuskasing High. Evidence to support this fairly complex structure was attained during the mapping program despite fairly limited exposure. The structural picture on this property is discussed in greater detail later in this section.

Lithology Details

The Nova prospect contains six basic lithology groups: metafelsic volcanics, metamafic volcanics, metasediments, felsic intrusives, mafic intrusives and high grade metamorphic rocks.

I) Metafelsic Volcanics

The units which fall into this group are rhyolitic sericite schist, dacite tuff, and chert. Only one exposure of rhyolitic sericite schist exists on this prospect. This unit is strongly foliated and aphanitic and ranges in colour from greenish to bleached white. Quartz eyes and minor fushite were also noted. Previous whole rock geochem analysis substantiated that this unit is indeed a rhyolite geochemically. (Visits by prospective companies)

The dacitic tuff has a bleached weathered surface and no fragments. The tuff could be considered an ash tuff. The weathered surface of this unit is bleached white in colour. The fresh surface is grey to dark grey. It sometimes contains quartz eyes and the unit is usually strongly foliated. It is most likely that this foliation is principally a result of metamorphic processes and not a remnant primary tuffaceous feature. In two instances (L2E 100N and L7E 1050N) this dacitic tuff unit becomes extremely foliated and boudinaged and at L2E 100N it eventually grades into a hornblende feldspar gneiss, with substantial feldspar content, both plagioclase and potassic feldspar making up at least 50% of the gneissic unit. This leads the author to believe that some of more felsic gneissic rocks are metamorphic equivalents of the dacitic tuffs. Some tiny red garnets, usually a few millimetres in diameter, are present in gradational transition zones.

The chert horizons that appear are basically bleached white in colour or brecciated with a grey black silicious matrix. The chert horizons may also contain argillaceous horizons and/or metamorphic equivalents of those horizons, i.e. micaceous schists, quartz, feldspar garnet schists. In one instance (L7E 1050N) substantial massive pyrite and pyrrhotite are found within this chert horizon. This area could be termed cherty-sulphide facies iron formation in this one area.

II) Metamafic Volcanics

Only on outcrop of this unit was found on L12E 125S. This unit is grey black and fine grained to aphanitic. The unit is foliated and some gossan (minor) is associated with the one exposure noted.

iii) Metasediments

Most of the quartzite exposures found exist west of the line zero south of Reference Lake. For the most part, these are bleached white units that are weakly foliated. The fresh surface is white to light grey in most instances and they have a "sugary texture". The units appear to be mainly made up of quartz (80-90%) and some biotite. In one instance, a quartzite unit (L2W 250N) was somewhat more grey in colour and contained less quartz. This sample may be approaching sub-greywacke according to Pettijohn's classification of sedimentary rocks.

iv) Felsic Intrusives

This category is made up of granite, granodiorite, pegmatite, and quartz veins. The granitic rocks are feldspar rich (40%) and pink in colour, at least 30% of the feldspar content being potassium feldspar. The remainder of the rock is mainly quartz with minor mafic minerals.

v) Mafic Intrusives and High Grade Metamorphic Rocks

It is difficult to speculate as to what those units were prior to metamorphism; their present composition is explained by the names given to the specific units. It is this author's opinion that the hornblendite and hornblende garnet gneiss units probably represent mafic extrusive or intrusive rocks originally. Mafic remnants relatively unaltered were found to be associated with these units. From field evidence on the subject property and comments by Bennett et al (O.D.M. Miscellaneous Paper 10) it is suspected that the more feldspathic and silicious gneissic rocks are indicative of felsic flows or tuffs and/or sedimentary sequences.

GEOLOGICAL INTERPRETATION

There is a distinct difference in lithology and the metamorphic imprint in the area west of Reference Lake and the area east of the lake. It is this author's opinion that there is a major fault present here running N-S through the lake. This might help to explain the distinct change in lithology, foliation and strata orientation. Lithological units west of the lake are, for the most part, gneissic and have definitely undergone higher pressure/temperature conditions than those east of Reference Lake. The west side of the fault is believed to have dropped while the east side has

been thrust upwards.

On the east side of Reference Lake, north of the baseline exposures of chert associated with sulphide facies iron formation (pyrite, pyrhotite) are found. Between lines 4E and 6E and north of tie line 800N the chert horizon is tightly folded into a series of asymmetrical folds (Fig. S5-3). It is this author's opinion that these chert horizons are related to a chert exposure on Line 275E ST100N suggesting that these folded chert sequences make up a series of smaller folds within a major anticlinorium or synclinorium or fold sequence. This might explain the complex magnetics shown on government airborne maps for this area (O.G.S. Map 81364).

The combination of the cherty exhalite horizon and sulphide facies iron formations with minor chalcopyrite and zinc (Canamax, Area Mines) proximal to sericitic felsic volcanics and felsic tuffs (Fig S5-3) is a favourable environment for volcanagenic massive sulphide deposits. The cherty exhalite and sulphide facies iron formation may be indicative of a vent area where massive sulphides may be deposited. Some conductive (O.G.S. Map 81364) horizons are seen to be proximal to this environment and these require evaluation by drilling to test for Cu-Zn sulphide mineralization. Similar favourable sequences may exist south of the baseline, under extensive overburden; possibly a continuation of the fold sequence and lithology north of the baseline. Conductive horizons are present in this area as well.

West of Reference Lake, most of the original lithological composition prior to metamorphism cannot be ascertained. However, this author suspects that since there is some evidence of original felsics volcanics at L5W 275N there may be extensive felsics east of Reference Lake which are presently represented by quartzite units and/or gneissic units. Quartzite units are found SSW of Reference Lake. This concept of quartzite units being metamorphosed felsics has been postulated in other base metal camps where ore bodies are in close proximity to them (i.e., Sherridon, Manitoba or Manitouwadge, Ontario). Thus, much of area west of Reference Lake may have been ignored in the past because of the metamorphic imprint and the quartzites were taken to be "quartzites" and not metafelsic volcanics.

Input E-M conductors are associated with the lithology described above west of Reference Lake suggesting that there is potential for VMS deposits west of the lake as well. Further, an input conductor was also found to be associated with a mafic intrusive unit, this area will also have to be examined for Ni-Cu sulphides.

South of the baseline most of the prospective areas where input conductors exist, there is no outcrop and only spruce bog and swamp. This author suspects that similar lithology extends south of the baseline where there are also numerous untested airbornes which will have to be evaluated.

CONCLUSIONS

From both geophysical evidence and geology, it is evident that a favourable volcanic environment exists on the Nova Prospect for volcanagenic massive sulphide deposits.

This author believes that there are distinct similarities in the geology relative to known distal exhalative deposits in higher grade metamorphic terrain such as those found in Sherridon, Manitoba and Manitouwadge, Ontario. Such similarities include cherty sulphide facies iron formation with associated gneissic and sericitic rhyolites such as those found at Geco in Manitouwadge. There are also hornblende garnet gneissic rocks in contact with quartzite units. Usually these contacts are associated with a number of pyrite and pyrhotite occurrences. This environment is similar to that found in Sherridon, Manitoba at the formerly producing Sherritt Gordon Mine. The reader may review the papers on these deposits as shown in the bibliography.

Further, the prospect also contains documented occurrences of copper and zinc, and a series of new and unexplored conductors which may be indicative of a Cu-Zn volcanogenic massive sulphide deposits.

RECOMMENDATIONS

The following recommendations should be considered for this prospect:

i) carry out a HLEM survey and magnetic survey over the property to define airborne conductors and help with any further geological interpretation.

ii) carry out diamond drilling in esker or swamp covered areas where priority conductors exist and no other work can be done to further enhance or write-off these conductors. It would be advisable to carry out drilling on the conductors south of the baseline during winter as this area is covered in spruce bog and it is fairly wet.

iii) a stripping, trenching, and sampling program should be considered for the area around L5E 1050N. Also trenching and sampling should be considered for the area around L5W 275N as well to test mineralized areas associated with the quartzite units southwest of Reference Lake. Other trenching and sampling priorities could be assigned when full assay results are completed as budgeting permits.

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APPENDIX S - 5

SAMPLE DESCRIPTIONS AND ASSAYS

SAMPLE DESCRIPTIONS

Nova 92-1
- (500W/265N)
- intermediate to felsic volcanic (dacitic)
- gossan zone, 4-5% pyrite

Nova 92-2
- (175W/350N)
- hornblende feldspar gneiss
- 1-2% pyrite

Nova 92-3
- (440E/870N)
- fine grained serecitic rhyodacite with 3-5% fine pyrite, some fushite and quartz eyes noted

Nova 92-4
- (490E/935N)
- cherty sulphide iron formation
- 10% pyrite

Nova 92-5
- (450E/935N)
- cherty sulphide zone
- 10-15% pyrite

Nova 92-6
- (490E/930N)
- cherty sulphide facies iron formation
- 20-30% pyrite, minor magnetite

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BOX 426
KIRKLAND LAKE, ONTARIO, CANADA P2N 3J1
TEL.: (705) 567-3361

President: Dr. GEORGE DUNCAN, M.Sc., Ph. D., C. Chem (Ont.), C. Chem (U.K.), M.C.I.C., M.R.S.C., A.R.C.S.T.

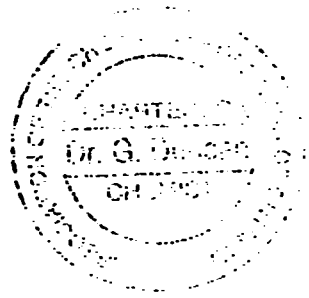
46255 # Certificate of Analysis

D.V. Jones
P.O. Box 1513
SOUTH PORCUPINE, Ontario
P0N 1H0

November 3

Work Order # : 920400
Project :

SAMPLE NUMBERS Accurassay	Customer	Copper ppm	Zinc ppm
261094	NOVA-1	120	140
261095	NOVA-2	74	25
261096	NOVA-3	14	39
261097	NOVA-4	40	67
261098	NOVA-5	19	80
261099	NOVA-6	56	510



LF-30

Per: _____

ORIGINAL

ACCURASSAY LABORATORIES

A DIVISION OF BARRINGER LABORATORIES LIMITED, REXDALE, ONTARIO
BOX 426
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President: Dr. GEORGE DUNCAN, M.Sc., Ph. D., C. Chem (Ont.), C. Chem (U.K.), M.C.I.C., M.R.S.C., A.R.C.S.T.

46254 # Certificate of Analysis

N.V. Jones
P.O. Box 1513
SOUTH PORCUPINE, Ontario
P0N 1H0

November 2

Work Order # : 920400
Project :

SAMPLE NUMBERS Accurassay	Customer	Gold ppb	Gold Oz/T	
261094	NOVA-1	<5	<0.001	
261095	NOVA-2	7	<0.001	
261096	NOVA-3	<5	<0.001	
261097	NOVA-4	24	0.001	
261098	NOVA-5	<5	<0.001	
261099	NOVA-6	20	0.001	
261099	NOVA-6	27	0.001	Check

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
Dr. G. Duncan
CHEMIST

LF-30

Per: G. Duncan

ORIGINAL

SECTION # 6

LANGMUIR/CARMAN

(J. K. FILO and D. V. JONES)

WORK DONE: (Details on accompanying report)

1. Prospecting - resampled old trenches and grab sampling
2. Recovery and sampling of old drill core
3. Diamond drilling (245 feet)

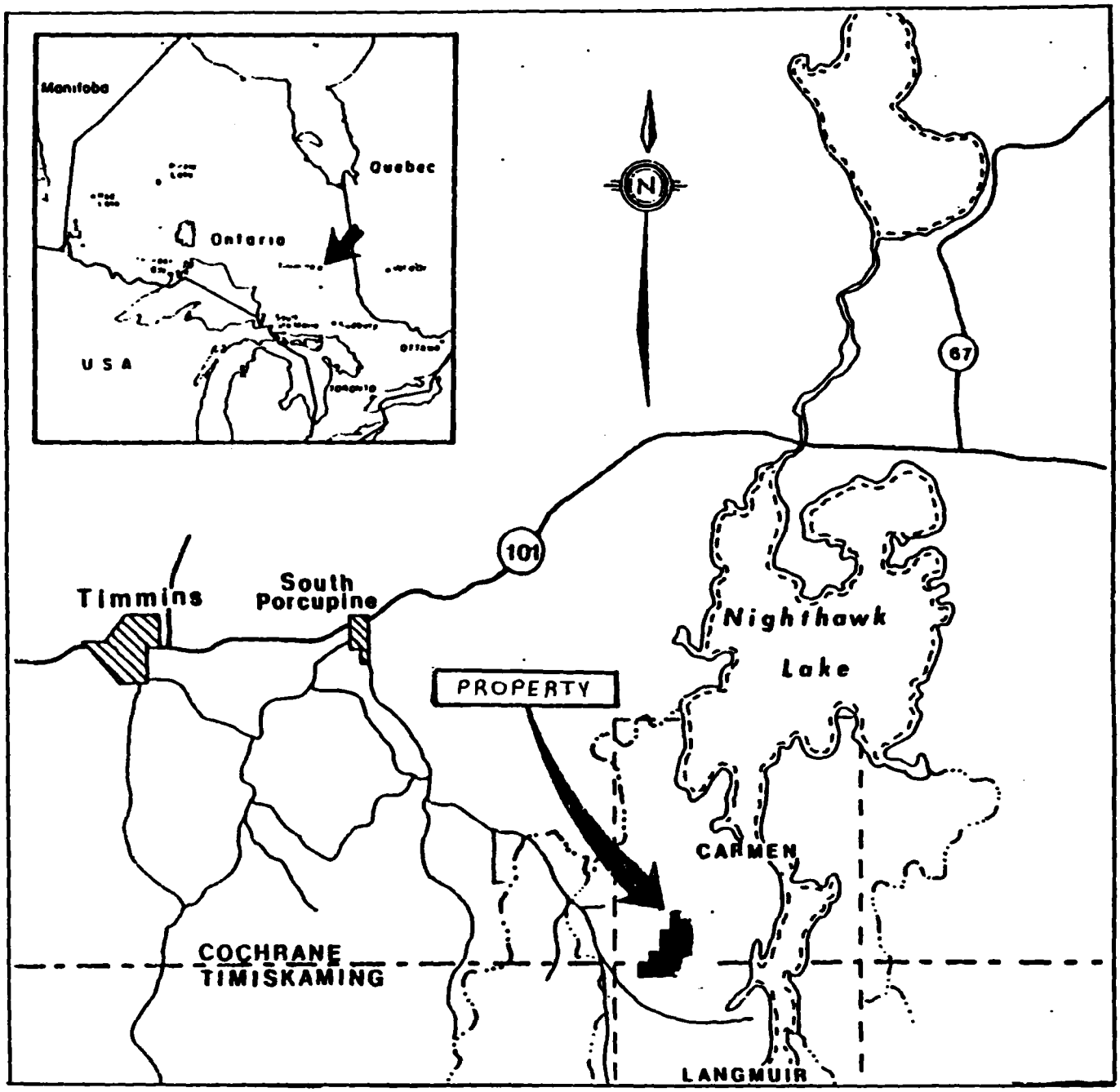


Fig. 36-1

General Location Map For Langmuir/ Carman Prospect

Scale: 1cm=2.5 km.

INTRODUCTION

In 1992 Messrs. Kean and Filo carried out exploration work on their Langmuir and Carman Township gold prospect. Work on the prospect consisted of prospecting, recovery of old core for re-sampling and diamond drilling to evaluate new geological ideas.

Results from this program were fairly encouraging with the highlight being the intersection of visible gold in one of the two new drill holes. A more substantial; and detailed account of the program is presented within the following text of this report along with further recommendations for follow-up work.

PROPERTY, LOCATION AND ACCESS

The property consist of 17 contiguous claims as shown in Langmuir and Carman Township (Fig. #S6-1,2). This prospect is located in both Langmuir and Carman Townships SSE of the City of Timmins centre. Access to the property is via the old Langmuir Mine road and a series of old bush roads throughout the property as shown in Fig. #S6-1.

PROPERTY HISTORY

Initial work on this prospect was carried out by Dumont Nickel in 1962 (assessment file T-690). Dumont tested a strong electromagnetic anomally for base metals and intersected iron formation. A section of this iron formation assayed 0.67 oz/ton Au over a core length of 6 feet (present claim 792481). This zone was considered significant by Messrs. Kean and Filo and seven original claims were staked to cover the zone.

In 1986 the prospect was optioned to Golden Pheasant Resources who staked an additional 29 claims. Golden Pheasant then carried out an extensive exploration program including ground geophysics (mag and I.P.), mapping and 1411m. of diamond drilling. Golden Pheasant did not locate any economic gold values in the iron formation proximal to the Dumont hole despite intersecting pyrrhotite and pyrite bearing quartz veins in the iron formation (Hole 88-2). However Golden Pheasant did intersect significant gold values in two other iron formations

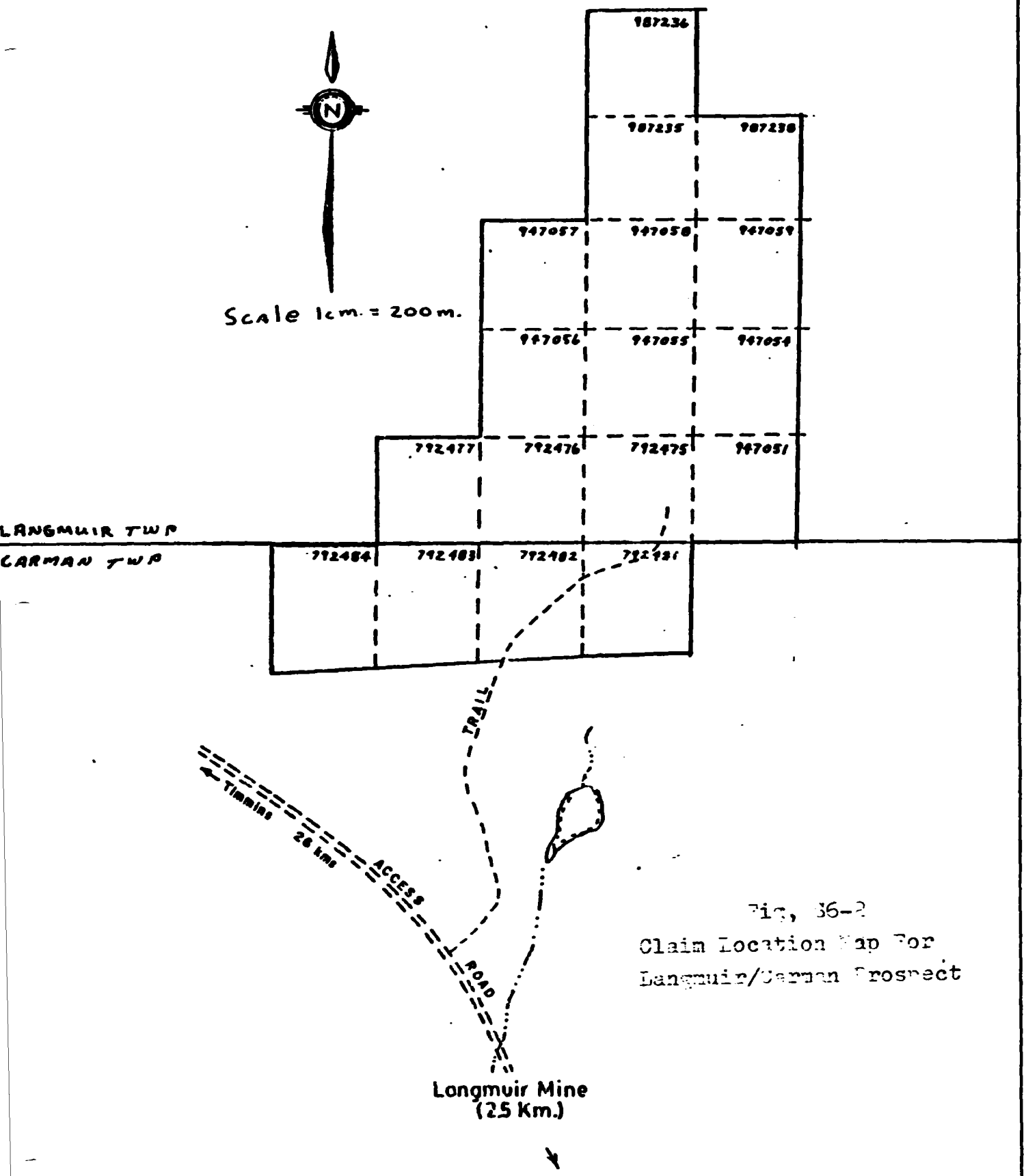


Fig. 36-2
Claim Location Map For
Langmuir/Carman Prospect

designated zones B & C in Fig. #S6-3. These values were .185 oz/ton Au over 0.9m (Hole 88-5) and 0.24 oz/ton Au over 1.08m (Hole 88-8) for zones B & C respectively.

Eventually the Golden Pheasant option was dropped and the entire block of claims reverted back to Mr. Filo and Mr. Kean. Of the original 36 claims, 19 claims from the block were optioned to Timmins Nickel while remaining 17 claims with gold values (Fig. S6-2) make up the area of the present gold exploration program (OPAP 1992).

PROPERTY GEOLOGY

A general geological picture of the geology underlying the subject property is shown on the adapted O.G.S. Map 2455 (Fig. #S6-4). This geological picture is supported by property mapping by Golden Pheasant.

Work by Golden Pheasant suggests that the present subject block is underlain by basic to intermediate volcanics, some minor felsic volcanics and iron formation. The units have been intruded by a variety of intrusive dykes including quartz feldspar porphyry, diabase and olivine diabase.

O.G.S. mapping suggests the prospect lies south of the inferred Shaw Dome anticlinal axis; consequently formations on the subject property trend north-south generally and dip eastward.

The present subject property is underlain principally by mafic volcanics; Golden Pheasant Mapping showed both massive and porphyritic units are present. Primary structures within volcanics were not readily discernable and thus it was difficult to determine structural information. In some instances distinct contacts between iron formation and the volcanics was evident. The iron formations strike north and north-north east. This north-north east trend to the stratigraphy is believed to be the general trend for the property.

Fairly minimal amounts of structural information were obtained possibly due to lack of exposure and a rather indiscernable magnetic survey.

The magnetic survey was rather unclear due to overshadowing affects of units with

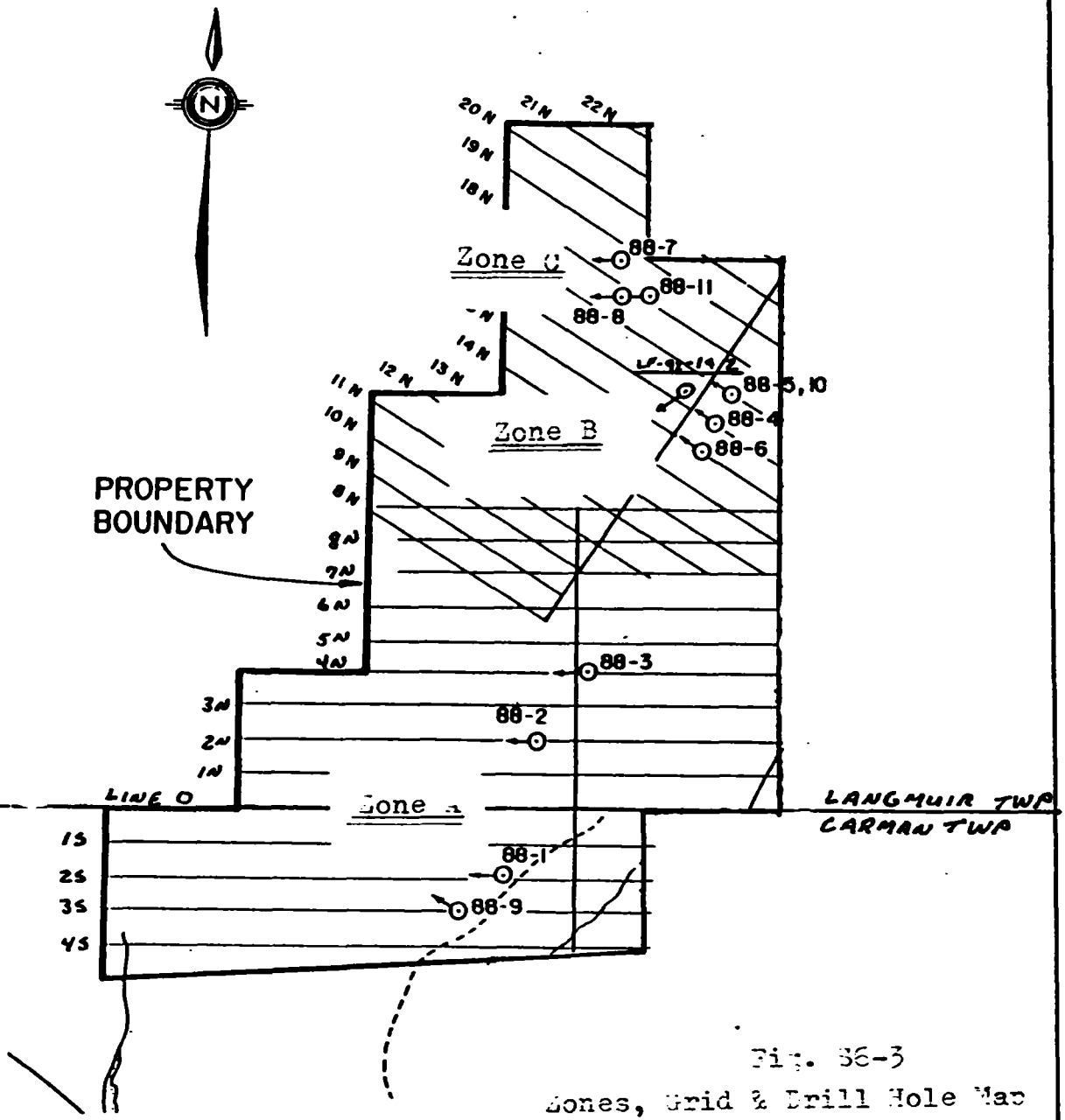


Fig. 86-3

Zones, Grid & Drill Hole Map

Langmuir/Carman Prospect

Scale 1cm = 200m

accessory magnetite and units with a high magnetic affinity such as diabase. However, Golden Pheasant geologists did document one shear system proximal to the township line associated with some green carbonate and minor quartz. Some Golden Pheasant geologists (Croone, N.C. 1989) felt that the porphyritic intrusive (i.e. feldspar porphyry) may have been the mechanism that contributed to the deposition of gold in the iron formation. Such an intrusive and/or similar one may have provided structural conduits in the iron formation for gold to be deposited.

DISCUSSION OF PROSPECTING AND DRILL PROGRAM

The initial proposal for this prospect was to re-drill the old Dumont Nickel Hole and carry out prospecting of other zones.

With this in mind a thorough search of assessment file data, 1960's vintage air photo's and a field search was made in an attempt to locate the old collar. The old collar was not found and it was felt by the prospectors that since an accurate location could not be realistically determined the drill target area should be reprioritized. Thus a further evaluation of known occurrences was made to determine the best area to drill.

Further during the examination of assessment file it was noted that holes 88-1 to 88-3 were left in the bush. It was felt that it would be of interest to re-examine these holes and if possible find them and deposit them in the core library so that a full spectrum of core from the subject property would be available.

The main work on this prospect was conducted on zones A and B (Fig. #S6-3).

A variety of samples were taken from the main pits on zone (Fig. #S6-5 & S6-5A) and an examination of the structure was made as well. It was noted that the better values came from narrow pyrite quartz stringers, which cross-cut the iron formation. At zone A, in the vicinity of sample MK-6 (Fig. #S6-5), it was noted there were a number of larger quartz veins, these veins had silicifications extending outwards from these veins.

It was felt by this author that the target model for this property was cross-cutting quartz veins with associated silicification and pyritization along iron formation bands, these systems are

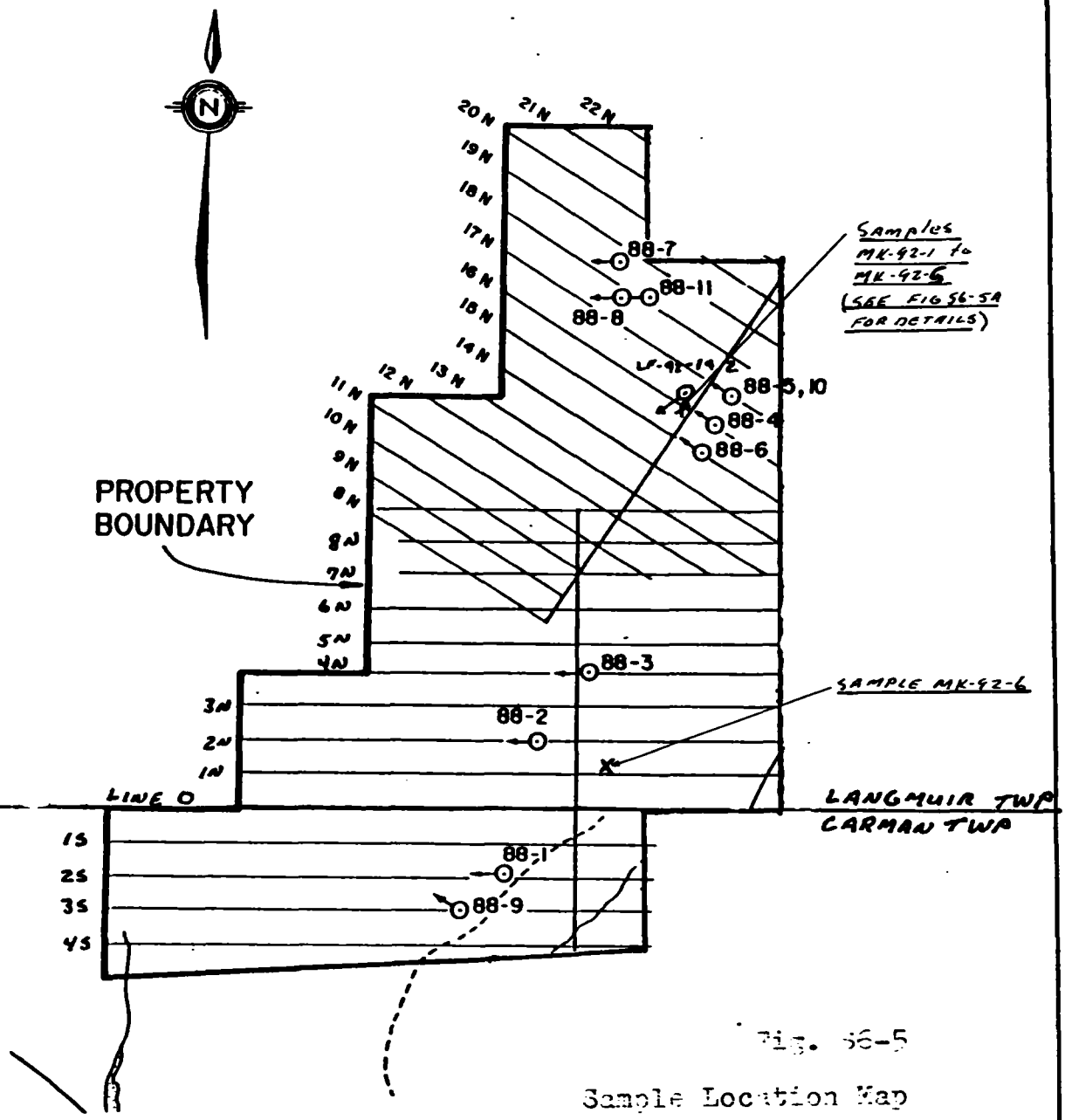


Fig. 56-5

Sample Location Map

Langmuir/Carman Prospect

Scale 1cm = 200m.

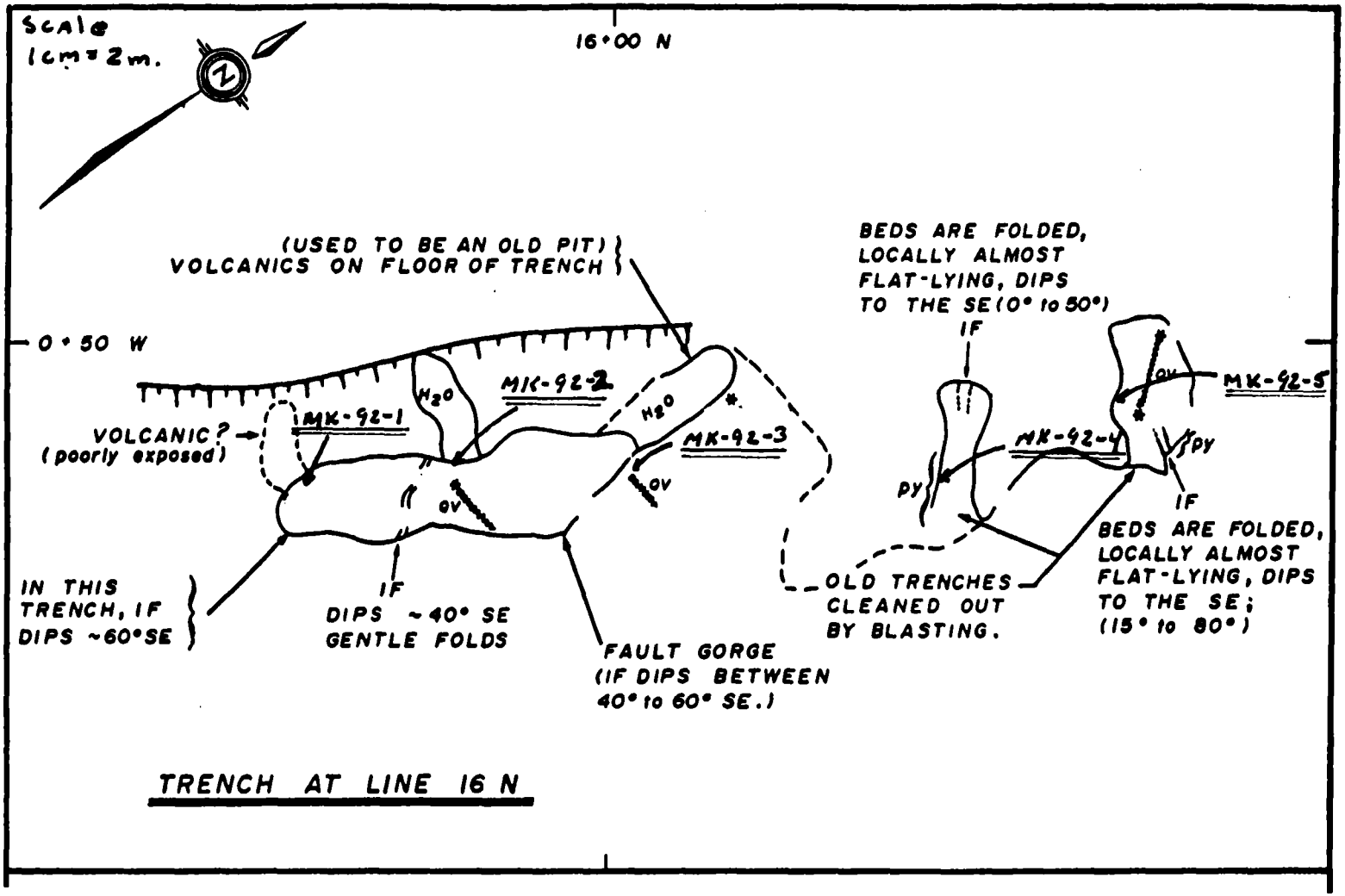


Fig. 36-5A

Detailed Location Map
For Zone B
Adapted From Golden
Pheasant Assessment File
Data

distinctly located within shears or fractures that "cross-cut" the iron formation.

The author believes this is a realistic model for gold mineralization in iron formations around the Shaw Dome from past experience on similar prospects in the area including the Carshaw and Malga deposits.

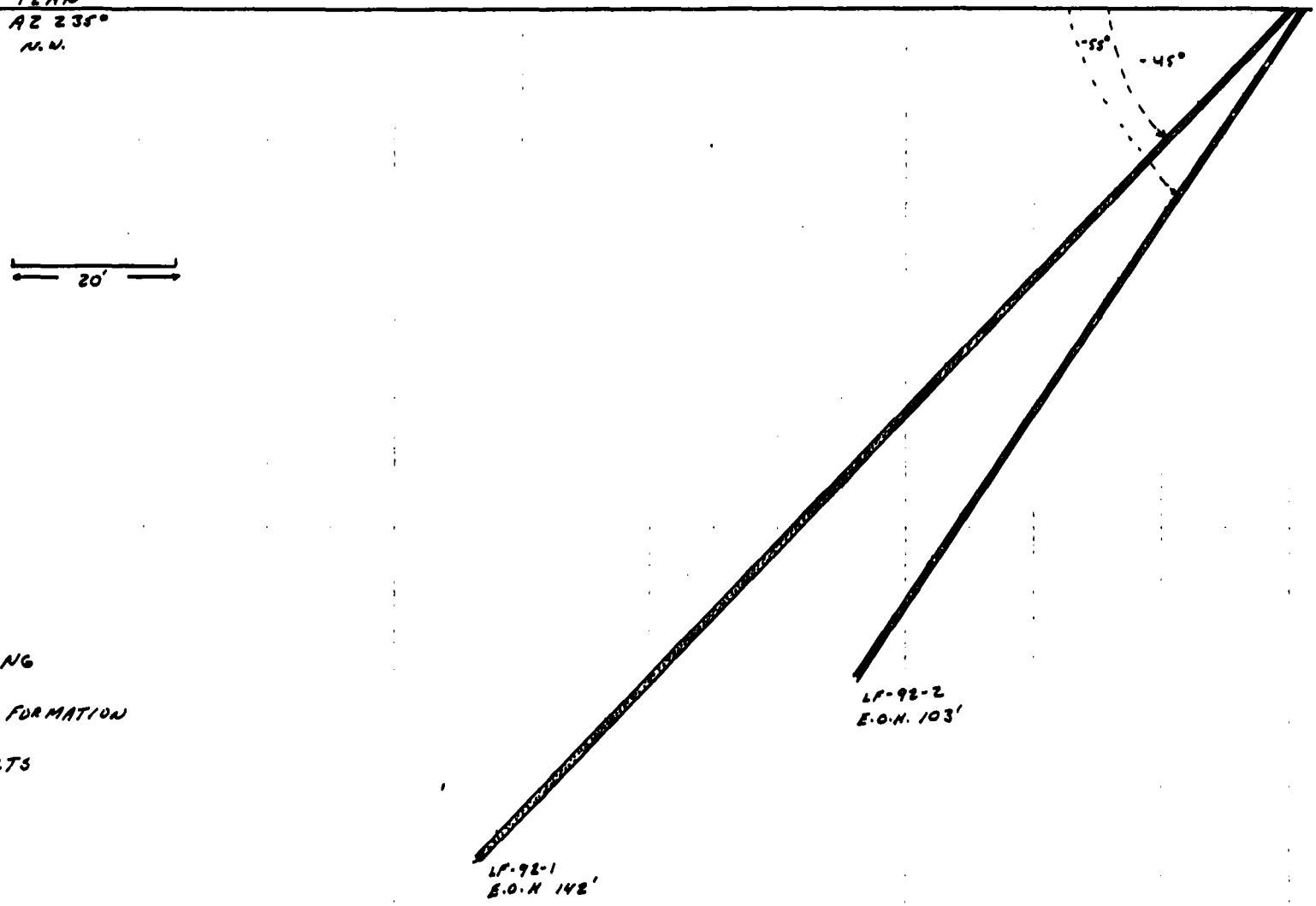
To evaluate such a deposit properly drilling would have to be done parallel to the iron formations and thus at right angles to the structure and quartz chutes. In the past all drilling was done at right angles to the iron formation to explore for a stratiform or "Lupin Style" gold bearing iron formation.

Thus, recent drilling was laid out parallel to the iron formation at Az 235 ° which allows the hole to cut across potential gold bearing chutes. Holes LF-92-1 and LF-92-2; intersected quartz and silicified iron formation in the tops of the holes. Visible gold was noted in hole LF-92-2. The quartz vein and silicious iron formation contained pyrrhotite and pyrite mineralization in both holes. Assay values in LF-92-1 and LF-92-2 were anomalous in Au at best, note that the visible gold was not put in with the LF-92-2 samples.

After the recently drilled core was logged a review and comparison of intersections was made between holes LF-92-1 and LF-92-2, and mineralized gold bearing sections form older previously drilled holes 88-5 and 88-7 stored at the regional core library. Similarly, a visual examination and comparison was made to the aforementioned holes with the mineralized intersection of pyrite and pyrrhotite bearing quartz vein in iron formation from recently recovered hole 88-2. A distinct similarly exists between all intersection i.e. quartz vein in iron formation with the better values in holes 88-5 and 88-7 associated with more sulphide rich sections of the quartz. Hole 88-2 had significant pyrite and pyrrhotite as well as quartz but poor values. This core was recently re-assayed and once again insignificant gold values were obtained.

Geological evidence to date suggests that gold bearing vein systems (structurally controlled) cross-cut the iron formations and gold occurs within these veins in the iron formation. There also appears to be lower grade gold values associated with silicified pyritized iron formation

SURFACE PLAN
SECTION AZ 235°
LOOKING N.W.



LEGEND

- CASING
- IRON FORMATION
- BASALTS

FIG # S6-6
LANGMUIR / CARMAN
PROSPECT
DRILL HOLE SECTION

BY TKF & M. KEAN

adjacent those veins. Further, it is apparent that not all veins cutting the iron formation are gold bearing despite similarities in minerology. An examination of holes 88-5 and 88-7 suggested there were two periods of quartz injection, one type of vein milky white in colour and one more clear to grey in colour. This type of situation leads the author to believe that there was more than one period of veining and perhaps only certain periods of deposition were gold bearing. This may help to explain the similarities in vein systems and the values obtained in the different holes despite the similarities.

CONCLUSIONS AND RECOMMENDATIONS

It is this author's opinion that this prospect has the potential to host narrow vein quartz bearing gold ore chutes within the evaluated known gold occurrences keeping in mind the structural picture on this prospect.

The following recommendations should be considered:

i) drill a few more holes in the vicinity of known gold occurrences at right angles to the strike of the iron formation to cross-cut veins at a better angle.

ii) have a geophysicist examine the mag data to locate areas that the iron formations have thickened due to structure. These areas may contain gold bearing systems. If they do, they may be of significant tonnage as the thicker the iron formation, the greater the depth extent of the vein, as there appear to be little or no gold outside the iron formation.

Respectfully submitted,

J. K. Filo, H.BSc., P.Geo

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APPENDIX S6-A

SAMPLE AND DESCRIPTIONS

AND

ASSAYS

SAMPLE DESCRIPTIONS

MK-92-1 (Grab)	• sulphide facies iron formation, gossan zone, crenulated cherty bands and quartz strangers of pyrite 1-2%
MK-92-2 (Grab)	• magnetic (oxide facies iron formation) with quartz, 60:40 respectively, 2-3% cubic pyrite in veins of quartz
MK-92-3 (Grab)	• quartz veinlet in iron formation with 40-50% pyrite, possible speck of VG?
MK-92-4 (Grab)	• sample consists of quartz intercalated with sulphide and oxide facies iron formation host rock, wall rock to quartz 70:30 ratio, roughly 15% pyrite in this sample
MK-92-5 (Grab)	• quartz vein in sulphide facies iron formation with quartz (20%), roughly 10% pyrite and 10% pyrhotite as well, and a clot of bornite
MK-92-6 (Grab)	• sample mainly sugary pyrrhotite textured quartz/calcite replacement of iron formation band, minor oxide facies iron formation (2-3%) and (2-3%) cubic pyrite in replacement band.

A series of samples 224801 to 224820 were taken from drill core, these sample description are recorded with enclosed logs.

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Assaying - Consulting - Representation

Established 1928

Assay Certificate

2W-0879-RA1

Company: **M. KEAN**

Date: AUG-21-92

Project:

Attn:

Copy 1. BOX 2120, TIMMINS, P4N 7X8
2. FAX 268-7411

We hereby certify the following Assay of 5 ROCK samples submitted AUG-14-92 by .

Sample Number	Au oz/ton	Au check oz/ton
MK-92-1	0.006	
MK-92-2	0.060	
MK-92-3	0.326	0.338
MK-92-4	0.035	
MK-92-5	0.058	

Certified by Donna Gardner

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244 FAX (705) 642-3300

ASSAYERS
LABORATOIRES/LABORATORIES
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Certificat/Certificate

2R-1638-RG1

Comp: M.KEAN
Proj:
Attn: J.K.FILO

Date: OCT-13-92

Nombre D'Echantillons/No. of Samples:
Soumis le/Submitted: SEP-28-92

No. D'Echantillon / Sample Number	AU PPB	AU CH'KS PPB	AU CH'KS PPB	AU OZ/TONNE	AU CH'KS OZ/TONNE	AU CH'KS OZ/TONNE
224801	44					
224802	25					
224803	*			0.032	0.032	0.032
224804	380					
224805	448					
224806	56					
224807	125					
224808	54					
224809	7					
224810	8					
224811	25					
224812	88					
224813	52					
224814	34					
224815	59					
224816	170					
224817	31					
224818	17					
224819	9					
224820	8					
MK-92-6	56	48	64			

*Certifié par/Certified by*_____

J.J. Landers

APPENDIX 6-B

DRILL LOGS

THE MINING ACT – MINISTRY OF NATURAL RESOURCES
Ontario

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE ▶ HOLE NO. LF-1-92 | PAGE NO. 1

DRILLING COMPANY: L SALO	COLLAR ELEVATION: —	BEARING OF HOLE FROM TRUE NORTH: 235°	TOTAL FOOTAGE: 142	DIP OF HOLE AT: — collar — 45°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM: SEE SKETCH FIG #5
DATE HOLE STARTED:	DATE COMPLETED:	DATE LOGGED:	LOGGED BY: J.K FILO P. Geo	ft	MAP REFERENCE NO.:
EXPLORATION CO., OWNER OR OPTIONEE: M KEAN & J K FILO		DATE SUBMITTED:	SUBMITTED BY (Signature): J.K. Filo	ft	CLAIM NO.: 987238
				ft	LOCATION (Tp., Lot, Con. OR Lat. and Long.): LANGMUIR/CARMAN TWPS SEE SKETCH
				ft	PROPERTY NAME: MK GOLD PROSPECT

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE *	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS + ppb Au	ASSAYS +	ASSAYS + oz/ton Au
0	6'	CASING					–	–	–			
6	16	IRON FORMATION	· consists bands of magnetite with quartz			224803	6'	8'	2'			.032
			veins & minor sections of altered wall rock			224404	8'	10'	2'	380		
			(ie country rock (basalt) ratios 20:35:45,			224405	10'	12'	2'	448		
			basalt, magnetite & quartz respectively			224806	13'	15'	3'	56		
			- core angles are variable from 30° to			224807	15'	16'	1'	125		
			70° to core axis									
			· some evidence of folding of quartz veins									
			at 85°; pyrite & pyrrhotite clots & stringers in veins									
			- note beyond 12' volcanics (basalt) intercalated									
			with iron formation (magnetite) and									
			little or no quartz present			224808	30'	33'	3'	54		
			- lower contact along a slip @ 45°									
			to CA									
16.	43.3	BLEACHED BASASALT	-except for the first few inches of this									
			unit the unit is light grey color									
			giving it a bleached appearance									
			- the unit is fine grained with a few									
			minor medium grained sections noted over									
			0.5' foot intervals, on fresh broken surface									
			unit is more of a greenish-grey color									
			- a few minor quartz vesicles noted in									
			this section									
			- joints (minor) generally at 45° to core axis									
			- unit has wedge, lower contact (fault ground up)									
43.3	142	[illegible]	- greenish grey unit, roughly the first six feet									
			from 43.3 to 49' fairly fine grained massive			224809	48'	49'	1'	7		
			unit with specks of calcite throughout it,			224810	100.5	102.5'	2'	8		
			beyond 49' to 54 unit becomes coarser grained,									
			(gabbroic texture), gradational relationship between									
			finer & coarser grained material									

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

\+ Additional credit available. See Assessment Work Regulations.

Ontario

THE MINING ACT – MINISTRY OF NATURAL RESOURCES

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO.	PAGE NO.
LF-1-92	2

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY		ft | °		LOCATION (Tp., Lot, Con. OR Lot. and Long.)	
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)		ft | °		PROPERTY NAME	
					ft | °			
					ft | °			

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE *	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS +
			- from 84 to 84 still massive basalt mainly finer grained but some slightly coarser sections, still sub-trachoidal calcite noted throughout section, joints mainly @ 35-40° to c.a., very minor pyrite noted at @ 84.5'							
			- from 84 to 100' no significant change, still interpolated phases of coarse & fine grained basalt, still subhedral calcite present							
			- from 100' to 142' no change, as described previously from 84-100							
			- very minor shear zone from 100.35 to 102.35 with some minor quartz stringers, shearing oriented 80° to c.a., also very weak shear with very minor quartz stringers from 105.5 to 107.5							
			E.O.H. 142							

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

+ Additional credit available. See Assessment Work Regulations.

Ontario

THE MINING ACT – MINISTRY OF NATURAL RESOURCES

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE ▶ HOLE NO. LF-92-2 | PAGE NO. 1

DRILLING COMPANY: L SALO		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH: 235°	TOTAL FOOTAGE: 103	DIP OF HOLE AT: collar -55°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM: SEE SKETCH	MAP REFERENCE NO. / CLAIM NO.: 987238
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY: J.W. Filo P. Geo		ft / °		LOCATION (Tp., Lot, Con. OR Lot. and Long.): LANGMUIR/CAIRMAN TWPS SEE SKETCH
EXPLORATION CO., OWNER OR OPTIONEE: M. KEAN & J.K. FILO		DATE SUBMITTED	SUBMITTED BY (Signature): J.K. Filo		ft / °		PROPERTY NAME: MK GOLD PROSPECT

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE *	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS + AQ6 Au	
0	7'	CASING									
						224811	7'	9'	2'	25	
7	13.5	IRON FORMATION	- this section is composed of magnetite QUARTZ & some altered volcanic material in roughly the ratios 45:35:20 for QUARTZ, magnetite & altered volcanic material - clots of pyrite and pyrhotite found in QUARTZ & one fleck of visible gold @ 11.5' - VARIABLE core angles ranging from 80° to C.A. to 45° to C.A., some evidence of vein being folded right at 7' - lower CONTACT at 25° to C.A.			224812	9'	11'	2	88	
						224813	11	13.5	1.5	52	
13.5	19.0	BASALT (SHEARED)	- weakly sheared greyish-green fine GRAINED unit, FABRIC oriented at roughly 30° to C.A., this section has some minor pyrite @ 19', a few minor QUARTZ clots & blebs are present, this QUARTZ is minor								
19.0	45.0	WEAKLY BLEACHED MASSIVE BASALT	- this unit has coarse & fine grained sections, the majority of the unit is fine grained, calcite flecks noted throughout unit, a few QUARTZ blebs noted as well, these are minor								

* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

+ Additional credit available. See Assessment Work Regulation

Ontario

THE MINING ACT – MINISTRY OF NATURAL RESOURCES

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE ▶ HOLE NO. LF-92-2 | PAGE NO. 2

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
					collar			
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY		ft		LOCATION (Tp., Lot, Con. OR Lat. and Long.)	
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)		ft		PROPERTY NAME	
					ft			

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE *	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS +
45	103	MASSIVE BASALT	- greenish coloured unit fine and medium grained - sections interbedded subhedral calcite noted throughout unit. - note @ 49' definite slip with minor QUARTZ oriented 70° to C.A. - from 64 to 103 unit becomes distinctly medium grained with some coarser grained almost gabbroic sections - - still lots of subhedral QUARTZ/CALCITE in this unit from 64' to 103 - also very small QUARTZ veinlets in this last section 1"-2" & rare flecks of pyrite							
			E.O.H. 103'							

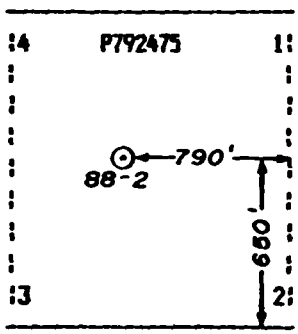
* For features such as foliation, bedding, schistosity, measured from the long axis of the core.

+ Additional credit available. See Assessment Work Regulations.

DIAMOND DRILL LOG - JAMES WADE ENGINEERING LTD.

Hole No: 88-2
Page : 1

Property Owner: Golden Pheasant Resources Ltd.
Grid location: 2+00N/1+23W
Azimuth: 270 degrees, Grid West
Length: 89 m
Dip: -55 degrees @ 0m, -54 @ 89m
Core Size: BQ
Claim No: P792475
Elevation: Surface
Township: Caman
Drill Company: McKnight Diamond Drilling
Started: April 5, 1988
Completed: April 9, 1988
Logged by: R. Anderson
Date Logged: April 9, 1988



Hole location in claim

From (m)	To (m)	Description	From (m)	To (m)	Tag Number	Gold (ppb)	Silver (ppm)
0.0	12.1	Casing, overburden					
12.1	14.3	Altered Diorite. Dark grey with white speckles which could be magnetite altering to carbonate. Non-magnetic, slightly calcareous. medium-grained. Becomes paler near lower contact.	13.3	14.3	018	10	
14.3	14.6	Quartz vein. White with pyrite and calcite-filled fractures. Approximately 5% pyrite. Oriented at 90 degrees to core axis.	14.3	14.6	019	30	
			14.6	15.6	020	nil	
			15.6	16.5	021	40-60	
14.6	18.5	Sheared zone, with light and dark alternating bands of andesite and quartz-carbonate. Some folding. Bands are oriented at 50 to 70 degrees to core axis and are 1-5 cm thick. Pyrite, 5%, as irregular blebs in the quartz-carbonate. Minor euhedral grains of pyrite up to 3 mm. in diameter.	16.5	17.5	022	20	
			17.5	18.5	023	10	
			18.5	19.5	024	nil	
18.5	89	Altered andesite. Carbonate altered. Lacks the white flecks of the previous diorite. Varying amounts of carbonate alteration and calcite content. Dark green-grey, medium-grained. Foliated at 60 degrees to core axis. Relatively uniform. Crystal boundaries are generally poorly defined. Pyrite, 1-2%, as minor stringers near upper contact and/or euhedral grains up to 5 mm. in diameter. Minor, pink to white, quartz-carbonate veins up to 5 cm thick. Randomly oriented.	28	29.6	224801	44 *	
			45.2	45.5	224802	25 *	
		38 - coarser grained below this point with mafic minerals clearly altered to chlorite.					

* NOTE, Log adapted from Golden Pheasant Log Resampled sections 224 sample number series J. McG

R. Anderson

T.3135

From (m)	To (m)	Description	From (m)	To (m)	Tag Number	Gold (ppb)	Silver (ppm)
		Altered diorite (cont.)					
		41.25-41.8 pink, calcareous, aplite-like vein with sub-angular chloritic zenolith, 5 cm in diameter.					
		61.2 Fracture, clayey. With relatively heavy chlorite alteration. Start to get silicification zones alternating with carbonate alteration. Also get better crystal definition but this does not appear to be related to the alteration.					
89		End of Hole. Problems removing the casing. Casing left in hole.					

R. Anderson

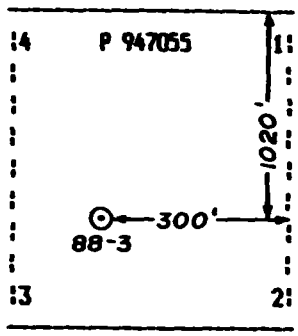
T.3135

DIAMOND DRILL LOG - JAMES WADE ENGINEERING LTD.

Hole No: 88-3

Property Owner: Golden Pheasant Resources Ltd.
Grid location: 4+00N/0+22E
Length: 92.7m
Core Size: BQ
Claim No: P947055
Township: Carman
Started: April 9, 1988
Logged by: R. Anderson

Azimuth: 270 degrees, Grid West
Dip: -55 degrees @ 0m, -54 @ 92.7
Elevation: Surface
Drill Company: McKnight Diamond Drilling
Completed: April 10, 1988
Date Logged: April 10,1988



Hole location in claim

From (m)	To (m)	Description	From (m)	To (m)	Tag Number	Gold (ppb)	Silver (ppm)
0.0	5.0	Casing, overburden					
5.0	10.2	Altered andesite flow or diorite. Green-grey with white flecks. Medium-grained, slightly calcareous, non-magnetic. White flecks appear to be dolomite. Becomes paler downhole. Foliated at 45 degrees to core axis. Trace of fine disseminated pyrite.	9.3	10m	224814	34 *	
			10	10.8m	224815	54 *	
			10.8	11.8m	224816	190 *	
		Near lower contact the rock is very chloritic and the foliation steepens to near parallel to the core axis.					
10.2	12.9	White quartz vein with white calcite. With 5-10% stringers of pyrrhotite and 3% blebs of pyrite. Some irregular fracturing. Black iregular shale like zone, compatible with sulphide facies exhalite.	9.2	10.2	025	10	
			10.2	10.9	026	40	
			10.9	11.9	027	40-20	
			11.9	12.9	028	20	
12.9	92.7	Altered andesite flow. Grey-green with poorly defined crystal rims. Fine to medium-grained. Pyrite, disseminated, up to 3%. Foliated at 50 degrees to core axis. Non-magnetic	12.9	13.9	029	nil	
			14.6	15.6	030	nil	
			15.6	15.9	031	20	
			15.9	16.9	032	10	
			16.9	17.5	033	20	
		15.6-15.9, 17.1 - Stringer-like zones of calcite with 5-10% pyrite, mostly as blebs, some euhedral grains.					
		Approximately 10%, irregular, up to 1/2 cm carbonate veins. Mafic minerals clearly altered to chlorite.					
		30-35 Calcareous with irregular calcite veins with pyrite and pyrrhotite, 5%.	30.7	31.7	034	10	
			31.7	32.7	035	nil	
			32.7	33.7	036	10	
		47-50 - 1 cm carbonate-filled vesicles. Crystals rims are better defined.	33.7	34.7	037	10	
		72.3-72.8 - Quartz-carbonate vein, pink, oriented at 20 degrees. No sulphides.					

NOTE
* Log adapted from Golden Pheasant Log Resampled Sections 224 Sample number series J.H.F.B

R. Anderson

T.3135

From (m)	To (m)	Description	From (m)	To (m)	Tag Number	Gold (ppb)	Silver (ppm)
		Rock is very uniform. Foliated at 45 degrees.					
		77 - 80.5 Green-pink, carbonate and quartz. Contorted, calcareous. Possible flow breccia zone. Trace of disseminated pyrite.	79.5	80.5	038	nil	
		Finer grained below 85					
92.7		End of hole					
			41.95	41.85m	224817	31	
			92.20	93.65m	224818	17	
			76.45	76.95m	224819	9	
			77.8	78.6m	224820	8	

NOTE Log adapted from Golden Pheasant Log Resampled Sections 224 sample series

T 3135

LEGEND

- CLAIM POST (LOCATED, ESTIMATED)
- CLAIM LINE
- BUILDINGS (SMALL, LARGE)
- SWAMPY OPEN AREAS
- BOUNDARY OF MAJOR FOREST CHANGE OR TOPOGRAPHIC TRANSITION
- AREA OF OUTCROP
- PROSPECTING TRAVERSE (COMPASSED)
- PROSPECTING TRAVERSE (MOTOR BOAT - ALONG SHORELINE)
- MAIN BUSH ROAD
- SMALL BUSH ROAD
- HIGHWAY
- GAS PIPELINE
- RAILWAY
- OLD PIT

0 25 50 75 100
(METRES)
SCALE

TRUE N

W.P #1 - 1189046, 100 m EAST

NET LAKE

LINE TAG

DOCK

W.P #2 - 1189046, 620 m. SOUTH

1189046
(15 UNITS)

MEDIUM GRAIN PINK GRANITE
QUARTZ STRINGERS (NO SULPHIDES)

SPRUCE BALSAM BIRCH

BOULDER SHORELINE

RIDGE ALONG LAKE SHORE (MIXED FOREST)

TRAVERSED AREA TO SEARCH FOR FELSIC OUTCROP SHOWN ON O.G.S. GEOLOGY MAP 2323. (NON. LOCATED)

W.P CEDAR

HIGH GROUND

LOWER POPLAR

SANDY HIGH

SEVERE BUDWORM KILL - BLOWDOWN

LEVEL GROUND

SEVERE BLOWDOWN WITH DENSE YOUNG GROWTH (BALSAM + ALDERS) DIFFICULT TO SEE GROUND FOR OUTCROP

THICK NEW BALSAM + ALDER

DOWN SLOPE

SMALL HILL

BOULDER SHORELINE (DENSE FOREST TO EDGE WATER)

MINOR GOSSAN BURNS

ISLAND

RHYODACITIC TUFFS (ASH TUFFS/LAPILLI)

MEDIUM - GRAIN GABBRO. RARE SULPHIDES

CLEARED AREA

MOSTLY BOULDER SHORELINE (NO OUTCROP)

THICK YOUNG BALSAM POPLAR

W.P #2 - 118906, 340 m. EAST

DOCK

LINE TAG

BEACH

THICK BALSAM + ALDERS

LOW FLAT SHORELINE (ALDER)

BEAVER LODGE

SMALL ALDER

PATCHY CEDAR ALONG EDGE OF WATER

FLAT - LOW GROUND

ALDERS, ASH + CEDAR

LOW BALSAM + SPRUCE

ROCKY SHORELINE (NO OUTCROP)

1189084

SAMPLE 5-5
1.25% Cu

OLD PIT = 3 METRES DIAMETER 2.5 METRES DEEP GOSSAN LOOK. THROUGH OUT PIT WITH 10-15% COMBINED PYRITE, PYRRHOTITE + CHALCOPYRITE. HOST ROCK = FINE GRAIN DACITIC UNIT - LIGHT GREY

FELSIC UNIT ADJOINING GOSSANS AND INTO LAKE. APHANITIC BLEACHED RHYOLITE

GOSSAN DACITIC BASALT UNIT FINE GRAIN GREY 5% FINE DISSEM. PYRITE

SAMPLE 5-4

ROCKY SHORELINE WITH LITTLE OUTCROP ADJOINING WATER (= CLAIM LINE) MANY JAGGED BOULDERS WITH GOSSAN STAINS

1189083
(2 UNITS)

NET LAKE

GOSSAN ZONE AT WATERS EDGE - MASSIVE DACITIC UNIT - FINE GRAIN 2-3% PYRITE

SAMPLE 5-3

ALONG EDGE OF WATER: FINE GRAIN MASSIVE MAFIC VOLCANICS IN GOSSAN - 5% PYRITE

SAMPLE 5-2

ALONG EDGE OF WATER: GOSSAN ZONE, WEAKLY SHEARED, ALTERED FELSICS (RHYODACITE?) SOME SERICITE ALTERATION 3-5% DISSEMINATED PYRITE

SEVERAL GOSSAN STAINED BOULDERS ALONG SHORELINE

SAMPLE 5-1

PIPELINE CLEARED GRASSY RIGHT-OF-WAY

NO OUTCROP ALONG SHORE - ROCKY BOULDERS

GAS PIPELINE CONSTRUCTION BARGE - DIAMOND DRILL

SAMPLE 5-16
CHIPS FROM AIR TRACK BARGE DRILL - DEPTH UNKNOWN, MAFIC VOLCANICS (CHLORITIC?) NO SULPHIDES

OUTCROP AT EDGE LAKE FINE GRAIN MAFIC VOLCANICS, MINOR HEMATITE

NO OUTCROP MOSTLY BOULDER SHORELINE

HIGH GROUND MIXED FOREST

CLEARED

LINE TAG 1189083 (400 m. WEST P #2)

STEEP 8' HIGH CLIFF RISING OUT OF LA HR. MASSIVE FINE GRAIN GREY MAFICS RARE PYRITE + QUARTZ STRINGERS - SOME HEMATITE STAINS.

TINY QUARTZ STRINGERS IN MAFIC OUTCROP AT EDGE OF LAKE

CLEARED GRASSY PIPELINE RIGHT-OF-WAY

GAS PIPELINE (BURIED)

KANICHEE MINE ROAD

PIPELINE RIGHT OF WAY

W.P #4 - 1189045, 260 m. WEST

CEDAR

GRASSY OPEN AREA

THICK SMALL BALSAM

THICK YOUNG POPLAR + BALSAM

LOW SPRUCE

CEDAR

ALDER CEDAR SPRUCE

BALSAM SPRUCE UP SLOPE

FINE GRAIN MAFIC VOLC ON EDGE OF SMETAE HILL

DOWN SLOPE

MAFIC VOLCANICS (FINE GRAIN)

WET CEDAR

WET CEDAR

BEACH + BOAT LANDING

PUBLIC PICNIC SITE

HWY 11

FIGURE # 53-4

PROSPECTING TRAVERSES
NET LAKE - EAST SECTION

DATE SEPT. 12/92	SCALE: 1:2500	
DRAWN: D. JONES	FIELD WORK J.K. FILO + D. JONES	

200

3206MM01 12 OPEZ-277 DENTES


PROSPECTING TRAVERSES
NET LAKE - WEST SECTION
DATE NOV 5/92
SCALE 1/2500
DRAWN D JONES
FIELD WORK J K Filo + D Jones
0 25 50 75 100
SCALE (METRES)
LEGEND
1189046
1189045
1189044
KANICHEE LAKE
NET LAKE
GOWARD LAKE
KANICHEE MINE ROAD
BRIDGE
TRUE N
BARREN RHYODACITE VOLCANIC / TUFF NO SULPHID OR GOSSANS
SAMPLE S-15
WITH SOME APPROACHING DACITE.
SOME FOLIATION
MEDIUM GRAIN INTRUSIVE UNIT (GABBRO ?) NO SULPHIDES
NO OUTCROP ALONG SHORE
LOW ALDER
POPLAR BALSAM
LOW ALDERS + POPLAR
RAPIDS
FINE GRAIN MAFIC (ANDESITE ?)
DACITE - MASSIVE
LOW WET
ASH + CEDAR
POPLAR BALSAM SPRUCE
OCCASSIONAL LOW AREAS CEDAR + ALDER
NO OUTCROP ALONG SHORE
ISLAND HAS SCATTERED SMALL SCRUB
NO OUTCROP
MIXED FOREST (PINE SPRUCE BIRCH)
GENTLE SLOPE TO SHORE
HIGH GROUND
OCCASIONAL WHITE PINE
NO OUTCROP
SMALL RIDGE PINE-POPLAR, BIRCH
SHORELINE AT EDGE OF WATER
RIDGE PINE SPRUCE
LOW SPRUCE BALSAM CEDAR
LOW WET SPRUCE CEDAR
THICK BALSAM SPRUCE
THIN MOSS COVERING MEDIUM GRAIN DIORITE
PINE SPRUCE
CEDAR
LOW, WET CEDAR + SPRUCE
LOW CEDAR
GREY MAFIC FINE GRAIN
ALDERS
WET
BALSAM THICK
MASSIVE MAFIC GREY, FINE GRAIN
SMALL GRANODIORITE DYKE WITH 3-4% PYRITE SPECKS
GALENA
SAMPLE S 14
SURVEY PIN #2 TRI 4120
10 METRE DROP
HIGH RIDGE, MUCH DEAD BALSAM + UNDERBRUSH
FINE GRAIN MAFIC 2-3% FINE PYRITE SAMPLE S 13
FINE GRAIN BASALT, MINOR PYRITE
ANDESITE WITH QUARTZ STRINGERS
MASSIVE BASALT
RIDGE POPLAR + UNDER BRUSH
OVERBURDEN TRENCH NO OUTCROP AT NORTH END
FELSIC - MAFIC CONTACT
SHEARED SERECITIC FELSICS
WEAKLY BANDED TUFFACEOUS APHANITIC RHYOLITE (STRIKE @ 020°)
RHYO - DACITE
OUTCROP AT EDGE OF WATER = GREY-MAFIC
SMALL RIDGE PINE BALSAM
UP SLOPE
LOW ALDERS
FINE GRAIN MAFIC GREY
BOAT LANDING
POPLAR ALDERS
POPLARS + UNDERBRUSH
ROCKY SHORELINE (NO OUTCROP)
ALDERS WET
WEAKLY FOLIATED ANDESITE WITH TINY BLACK QUARTZ VEINLETS (340° STRIKE)
MAFIC VOLC. (ANDESITE, FINE GRAIN APHANITIC).
HIGH RIDGE PINE
ROCKY SHORE (NO OUTCROP)
STEEP TO SHORELINE
CREEK
TRENCHES IN OVERBURDEN 1 METRE WIDE, .5 DEEP
PINE FLAT
PINE BALSAM DRY
FINE GRAIN MAFIC MASSIVE ANDESITE
MAFIC LAVA SHEAR WITH QUARTZ. 20-30% PYRITE
SAMPLE S 10
+ SAMPLE S-11
SAMPLE S 6
SAMPLE S-7
1.5 METRE DIAMETER, 2 m DEEP OLD PIT ON EDGE OF CLAIM LINE WITH 70-80% SULPHIDES ZONE (STRIKING 012°)
WALL ROCK = FINE GRAIN ANDESITE ? BRECCIA ? SILICEOUS IN SECTIONS WITH MINOR SULPHIDES + QUARTZ
GOSSAN OUTCROP AT EDGE OF LAKE - VERY FINE GRAIN ANDESITE / BASALT GREY BLACK, 1-3% CLOTS OF PYRITE
SAMPLE S-8
SAMPLE S-9
SURVEY PIN #1 TRI 4415
HIGH GROUND
LOW CEDAR WET
DRY
GENTLE HILLS
FINE GRAIN MASSIVE MAFIC (GREY)
SPRUCE BIRCH FLAT
UP SLOPE
PINE SPRUCE
HILL (POPLAR PINE)
FINE GRAIN GREY ANDESITE
MIXED FOREST BIRCH BALSAM SPRUCE
ANDESITE WEAKLY FOLIATED (N S) FINE GRAIN
ALDER ALONG EDGE OF ROAD
SPRUCE PINE BIRCH
ANDESITE FINE GRAIN
WET CEDAR
FINE GRAIN MASSIVE ANDESITE OCCASIONAL PYRITE AND RARE STRINGERS OF QUARTZ
LOW BALSAM + CEDAR
HIGH RIDGE PINE SPRUCE BIRCH
BALSAM PINE SPRUCE
STEEP / METRE CLIFF
SCATTERED OUTCROP FINE GRAIN GREY MAFICS RARE SPECKS OF PYRITE
LOW ASH
ALDERS
LOW ASH + CEDAR
RIDGE-PINE+SPRUCE
FINE GRAIN FELSIC VOLCANICS NO SULPHIDES
LOW CEDAR (DENSE) ALONG SHORE (NO OUTCROP)

FIG # 52-2 DENYES PROSPECT

GRID MAP, AREAS OF DETAILED WORK & OTHER SAMPLE LOCATIONS

DATE: SEPT. 4 /92
DRAWN. D. JONES & J.H. PIGG

D-9 X - SAMPLE LOCATION
AREA A, B - AREAS WITH DETAILED WORK & SAMPLING
□, ■ - UNLOCATED, LOCATED POST
- - - - AREA OF STRIPPED OUTCROP (PREVIOUS BULLDOZER WORK - GLENMORE RESOURCES)

* NOTE DATA TAKEN FROM FIELD (A.S. Pigg & D. Jones) & VERIFICATION OF OLD GRID ORIENTATION FROM ASSESSMENT FILES

TRUE

0 25 50m
SCALE 1:2500

L11+50W
L10+00W
TL4+00N
L8+50W
L7+00W
L6+00W
L5+00W
L4+00W
BL0+00
L3+00W
TL4+00N
L1+50W
BL0+00

CLAIM 1175911
CLAIM 1175910
CLAIM 1175907
CLAIM 1175909
CLAIM 1175912
CLAIM 1175908
LAKE

AREA "A"
ENLARGED VIEW OF DETAILS ARE ON FIGURES 52-4 AND 52-5

AREA "B"
ENLARGED VIEW OF DETAILS ARE ON FIGURES 52-7 AND 52-6

435 W BL0

SAMPLE D-1
SAMPLE D-2
SAMPLE D-3
SAMPLE D-7
NEW LINE 1+45 S
SAMPLE D-12
SAMPLE D-11
SAMPLE D-10
SAMPLE D-9
NEW LINE 4+35 W

CLAIM
1175914

LARGE JACKPINE + POPLAR (MUCH UNDER BRUSH)

MUCH JACKPINE - POPLAR
HIGHER GROUND WITH OCCASIONAL OUTCROP

SAMPLE H-1 : 95% QUARTZ + ALTERED WALLROCK ALONG UBIN SALVAGE NO SULPHIDES

OLD TRENCH
15 METRES LONG × 0.25 DEEP × 1 METRE WIDE
QUARTZ VEIN IN SEDIMENTS

SAMPLE H-2
BARREN QUARTZ

SHEARED SEDIMENTARY CONGLOMERATE

OLD PIT
SAMPLE H-4
QUARTZ - FELDSPAR
2% SUB-HEDRAL PYRITE

SAMPLE H-3 : WEST WALL OF OLD PIT
QUARTZ - FELDSPAR PINK - RED, 1 - 2% PYRITE

DRY - ESKER

JACK PINE - POPLAR

SEDIMENTARY CONGLOMERATE

HIGH HILL
NO OUTCROP

SAMPLE H-5 :
FLYROCK FROM OLD PIT - PINK GREY QUARTZ - FELDSPAR PORPHYRY . MINOR PYRITE + CHALCO PYRITE

OLD DRILL HOLE AZIMUTH 180°

DRY ESKER

UP-SLOPE

PINE ALDERS

SLOW WET

ALDER

LOW SPRUCE

CLAIM
1175913

OLD PIT WITH MUCH BLOWDOWN AND YOUNG GROWTH IN IT
SAMPLES H-9 - QUARTZ FELDSPAR PORPHYRY - SPECKS OF PYRITE
SAMPLE H-10 - GREY MEDIUM GRAIN FELDSPAR PORPHYRY WITH MINOR PYRITE - OCCASIONAL QUARTZ STRINGER

FINE - EASY QUARTZ FELDSPAR PORPHYRY 1-2% MINOR DISSEMINATED PYRITE

LAKE

SAMPLE H-7
GREY QUARTZ FELDSPAR PORPHYRY RARE PYRITE TAKEN ALONG WEST WALL OF OLD PIT
2 METRES DEEP
×
3 METRES DIAMETER

SAMPLE H-8
GREY + PINK QUARTZ FELDSPAR PORPHYRY 3% FINE PYRITE. SOUTH WALL OF LONG PIT
2 METRES DEEP
×
2 M. WIDE
×
6 M. LONG

HIGHER GROUND

MUCH UNDER BRUSH

JACKPINE POPLAR SPRUCE

OCCASSIONAL OUTCROP

GENTLY ROLLING HILLS

MAINLY SEDIMENTARY CONGLOMERATE

MUCH BLOWDOWN JACKPINE - SPRUCE

CLAIM
1175915

CLAIM
1175916

TRUE

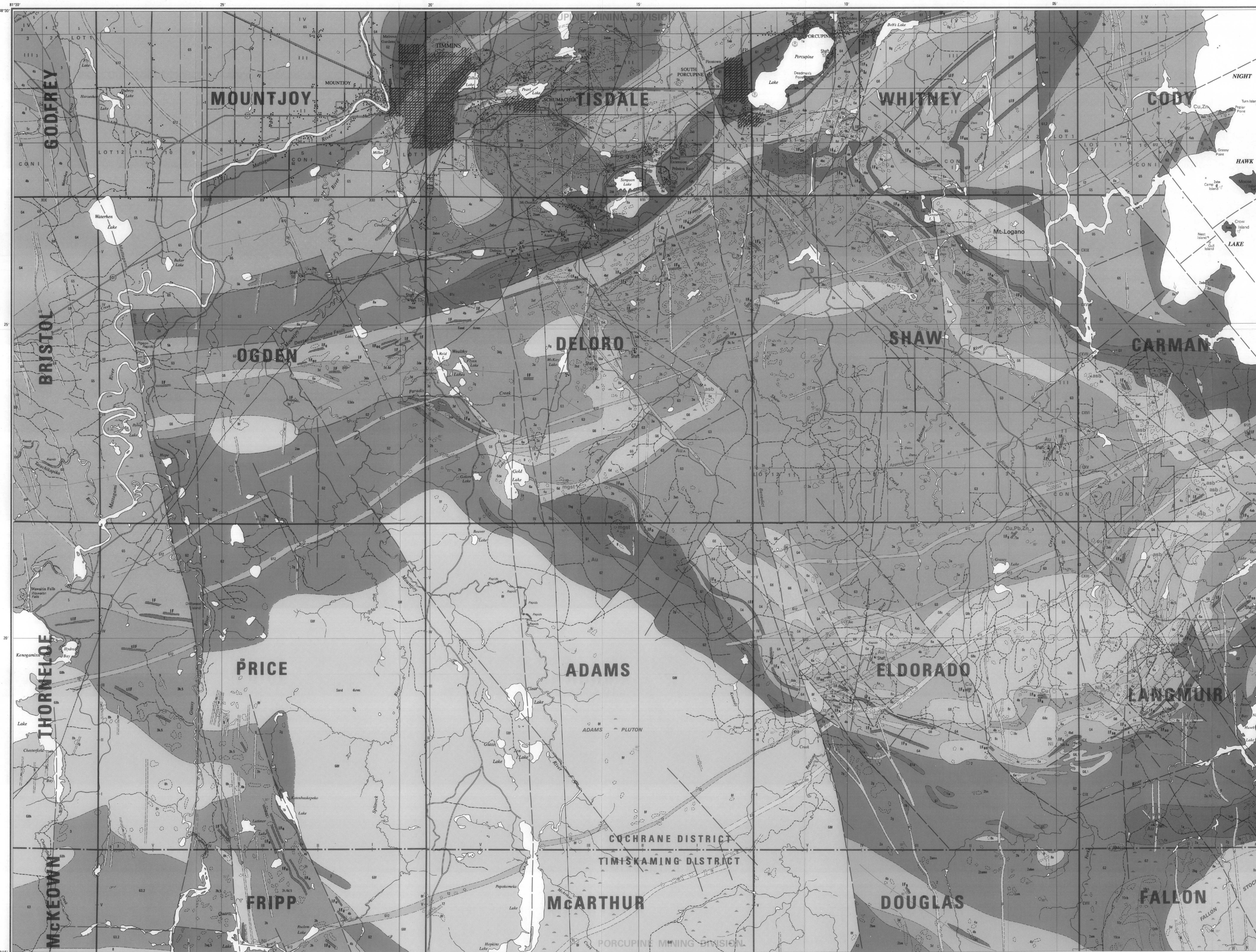
FIGURE # 51-4

PROSPECTING TRAVERSES
HALCROW PROPERTY

DATE: JUNE 19/92	SCALE: 1:2500
DRAWN: D. JONES	FIELD WORK: J.K. FILO + D. JONES

■, □ CLAIM POST (LOCATED, ESTIMATED)
—— —— CLAIM LINE
• • • • • PROSPECTING TRAVERSE (COMPASSED)
OLD PITS OR TRENCHES
BOUNDARY OF MAJOR FOREST CHANGE OR TOPOGRAPHIC TRANSITION.

0 25 50 75 100
(METRES)



Scale 1:50 000

Metres 1000 0 1 2 3 4 5 6 7 Kilometres

Chains 80 40 0 1 2 3 Miles

LEGEND

PHANEROZOIC

CENOZOIC

QUATERNARY

PLEISTOCENE AND RECENT

Clay, sand, gravel, till.

UNCONFORMITY

PRECAMBRIAN

LATE PRECAMBRIAN

MAFIC INTRUSIVE ROCKS[a]

12 *Olivine diabase.*

INTRUSIVE CONTACT

MIDDLE PRECAMBRIAN

MAFIC INTRUSIVE ROCKS[a]

11 *Quartz diabase.*

INTRUSIVE CONTACT

HURONIAN SUPERGROUP

COBALT GROUP

GOWGANDA FORMATION

10a *Arkose.*
10b *Wacke.*
10c *Argillite.*
10d *Conglomerate.*

UNCONFORMITY

EARLY PRECAMBRIAN (ARCHEAN)

MAFIC INTRUSIVE ROCKS[a]

9 *Diabase.*

INTRUSIVE CONTACT

FELSIC INTRUSIVE ROCKS

8 *Unsubdivided.*
8a *Quartz and/or feldspar porphyry.*
8b *Felsite.*
8c *Hornblende-biotite trondhjemite.*
8d *Porphyritic monzonite.*
8e *Contaminated mafic-rich zone associated with 8d.*
8f *Porphyritic granodiorite.*
8g *Equigranular leucocratic granodiorite.*
8h *Hornblende diorite, quartz diorite.*
8i *Diorite, quartz diorite containing minor blue opaline quartz.*

INTRUSIVE CONTACT

METAMORPHOSED MAFIC INTRUSIVE ROCKS

7 *Unsubdivided.*
7a *Gabbro.*
7b *Quartz gabbro.*
7c *Pegmatoidal gabbro.*

INTRUSIVE AND GRADATIONAL CONTACT

METAMORPHOSED ULTRAMAFIC INTRUSIVE ROCKS

6 *Unsubdivided.*
6a *Serpentinized dunite-peridotite.*
6b *Serpentinized lherzolite.*
6c *Pyroxene-hornblendite.*
6d *Carbonatized.*
6e *Talc-magnesite alteration.*

INTRUSIVE CONTACT

METAVOLCANICS AND METASEDIMENTS

METASEDIMENTS

5 *Unsubdivided.*
5a *Conglomerate.*
5b *Lithic wacke.*
5c *Siltstone.*
5d *Lithic arenite.*

CALC-ALKALIC METAVOLCANICS

FELSIC CALC-ALKALIC METAVOLCANICS

4 *Unsubdivided.*
4a *Massive flows.*
4b *Tuff, lapilli-tuff.*
4c *Schistose, sericitic.*
4d *Breccia.*
4e *Rusty weathering.*
4f *Carbonatized.*

MAFIC CALC-ALKALIC METAVOLCANICS

3 *Unsubdivided.*
3a *Massive flows.*
3b *Pillowed flows.*
3c *Amygdaloidal flows.*
3d *Tuff, lapilli-tuff.*
3e *Breccia.*
3f *Sheared.*
3g *Carbonatized.*
3h *Amphibolitized.*

THOLEIITIC METAVOLCANICS

2 *Unsubdivided.*
2a *Massive flows.*
2b *Pillowed flows.*
2c *Amygdaloidal flows.*
2d *Variolitic flows.*
2e *Tuff, lapilli-tuff.*
2f *Breccia.*
2g *Amphibolitized, epidote veined.*
2h *Carbonitized.*
2j *Sheared.*
2k *Pillow breccia.*
2m *Dominantly Fe-tholeiitic composition.*
2n *Dominantly Mg-tholeiitic composition.*

KOMATIITIC METAVOLCANICS

1 *Unsubdivided.*
1a *Massive, polysutured, serpentinized peridotitic komatiite flows.*
1b *Olivine spinifex-textured peridotitic komatiite flows.*
1c *Massive basaltic komatiite flows.*
1d *Pyroxene-spinifex-textured basaltic komatiite flows.*
1e *Pillowed flows.*
1g *Carbonatized.*
1h *Steatized.*
1j *Sheared.*
1k *Chloritized.*

IF *Iron formation (subscripts O, S and C denote whether the oxide, sulphide or carbonate ironstone respectively, is dominant).*

Carbonatized rock of undetermined origin.

[a]*Where definite age relationships have not been established for a diabase dike, an Early, Middle or Late Precambrian age has been assigned on the basis of the trend of the dike.*

The letter "G" preceding a rock unit number, for example, "GIF" indicates interpretation from geophysical data in drift covered areas.

SOURCES OF INFORMATION

Geology from published maps of the Division of Mines, unpublished maps and reports of mining companies; and supplementary mapping by D. R. Pyke and assistants, 1973.
Geology is not tied to surveyed lines.

Assessment files, Ministry of Natural Resources.

Base map derived from maps of the Forest Resources Inventory, Ontario Division of Lands.

Cartography by C. A. Harris and assistants, Surveys and Mapping Branch, 1981.

Magnetic declination in the area was approximately 8° W 1973.

Information from this publication may be quoted if credit is given to the Ontario Division of Mines. It is recommended that reference to this map be made in the following form:

Pyke, D. R.
1982: Timmins Area, Ontario Geological Survey Map 2455, Synoptic Series scale 1:50 000. Geology and compilation, 1973.

Motor road, with Provincial Highway number if applicable.
Minor road, surface condition variable.
Trail, winter road or portage.
Railway.
Electric power transmission line.
Building, built-up area.
Elevation in feet. 1092
Pit (sand, gravel).
Esker.

International, provincial boundary, approximate position only.
Regional municipality, territorial district, boundary approximate position only.
Geographic township boundary, base or meridian line, with milepost; approximate position only. VI
Surveyed line, approximate position only.
Mining Division, boundary approximate position only.
Indian Reserve, Provincial Park, boundary approximate position only.
Swamp, inundated land.

SYMBOLS

Glacial striae.
Small bedrock outcrop.
Area of bedrock outcrop.
Bedding, top unknown; (inclined, vertical).
Bedding, top (arrow) from grain gradation; (inclined, vertical, overturned).
Lava flow; top (arrow) from pillows shape and packing (good, poor).
Lava flow; top (arrow) from variation in size of olivine blades forming spinifex texture or from chilled and fractured flow top.
Foliation; (horizontal, inclined, vertical).
Lineation with plunge.
Geological boundary, observed.
Geological boundary, position interpreted.
Geological boundary, deduced from geophysics.
Lineament or fault.
Anticline, syncline, with plunge.
Seaplane base.
Producing mine.
Past producing mine.
Mineral occurrence.

PRODUCING MINES

Aunor Gold Mines Ltd.
1 Aunor mine .... Au,Ag
2 Dome Mines Ltd. .... Au,Ag,Cu
Noranda Mines Ltd.
3 Langmuir Mine .... Ni
Pamour Porcupine Mines Ltd.
4 McIntyre mine .... Au,Ag,Cu

PAST PRODUCING MINES

Associated Porcupine Mines Ltd
5 Gillies Lake mine .... Au,Ag
6 Porcupine Paymaster mine .... Au,Ag
Aunor Gold Mines Ltd
7 Delnite mine .... Au
8 Cincinnati Porcupine Mines Ltd .... Au
9 Fuller Mine .... Au
10 Hollinger Mines Ltd .... Au,Ag
Hollinger Mines Ltd
11 Crown mine .... Au,Ag
12 Vipond mine .... Au,Ag
13 Kenilworth Mines Ltd (Naybob mine) .... Au,Ag
Nakhodas Mining Co. Ltd.
14 Bowmen mine .... asb
15 Faymar mine .... Au
New Hope Porcupine Gold Mines Ltd.
16 De Santis mine .... Au,Ag
17 Porcupine Lake Mine .... Au,Ag
Porcupine Mines Ltd
18 Moneta mine .... Au
Preston Mines Ltd.
19 Preston mine .... Au,Ag
20 New York mine .... Au
Romfield Building Corp Ltd.
21 Buffalo Ankerite mine .... Au,Ag
Westfield Minerals Ltd.
22 Coniaurum mine .... Au,Ag

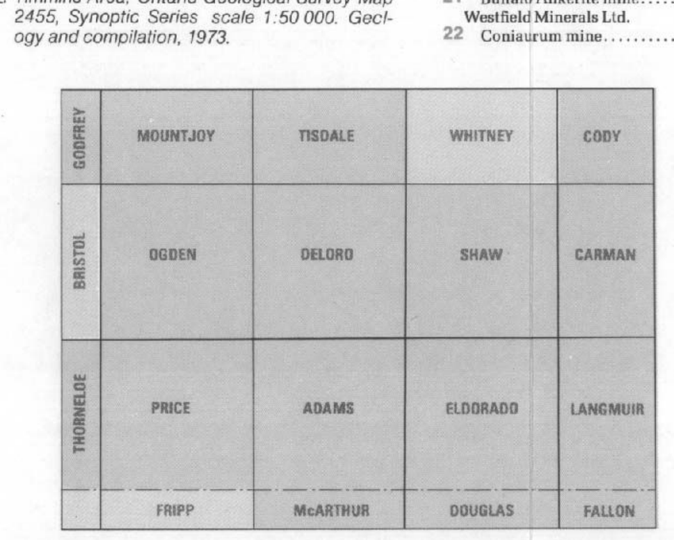


Fig. S6-4

Geology Map Adapted From
Government Map 2455
Langmuir/Carman Prospect

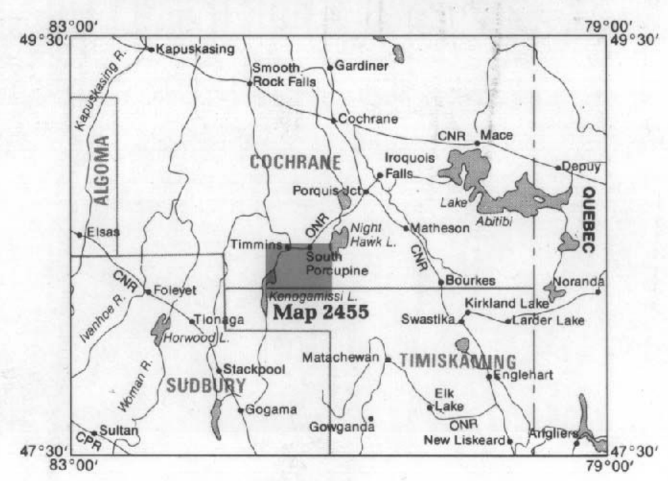
Ministry of Natural Resources Ontario

Ontario Geological Survey

Map 2455

TIMMINS

PRECAMBRIAN GEOLOGY
Scale 1:50 000



Aeromagnetic reference 293G
N.T.S. reference 42A/6

Published 1982

METAL AND MINERAL REFERENCES

Ag .... *Silver*
asb .... *Asbestos*
Au .... *Gold*
Cu .... *Copper*
mgst .... *Magnesite*
Ni .... *Nickel*
Pb .... *Lead*
talc .... *Talc*
Zn .... *Zinc*

MINERAL PRODUCTION AND RESOURCES

Economic gold deposits were first discovered in the Timmins area in 1909. Since that time some 37 mines (22 of which are located in the map area) have produced a total of 56,000,000 ozs of gold, to rank Timmins as the largest gold mining camp in North America. Average grade of gold has been 0.254 ozs from the milling of 216,000,000 tons of ore.

Currently there are two producing gold mines in the area; McIntyre Porcupine Mines Limited and Dome Mines Limited, which have accounted for about 40 percent of the entire gold production from the Timmins camp. The largest producer was Hollinger Mines Limited, which suspended operations in the Timmins area in 1969. Other major past producers of notable importance include Aunor Gold Mines Limited, Associated Porcupine Mines Limited–Paymaster Mine, Delnite Mines Limited, Preston Mines Limited, and Romfield Building Corporation Limited–Buffalo Ankerite Mine.

Economic Geology

Gold: Ferguson et al. (1968) have given a comprehensive description of the gold-bearing veins and mines of Tisdale Township, and Carlson (1967) of the mines and showings of Deloro and Ogden Townships. Virtually all the production from the area has been from the metavolcanics north of the Destor-Porcupine Fault. Most of the auriferous quartz veins tend to be along anticlinal axes, and most are in close proximity to stocks of quartz-feldspar porphyry (Ferguson et al 1968).

Copper: A copper ore body (8 million tons, 0.7 percent copper) (Pyke and Middleton 1970) occurs in a sub-volcanic (Hurst 1936) quartz-feldspar porphyry on the property of McIntyre Gold Mines Limited in south central Tisdale Township. The ore zone consists of a number of steeply plunging ore shoots in a zone 300 feet (91 meters) wide and 1,200 feet (365 meters) long. The porphyry is extensively sheared and sericitized and contains abundant gypsum and anhydrite in and around the ore zones. Mineralization consists mainly of chalcopyrite and bornite.

Magnesite: Locally, large bodies of ultramafic rocks have been replaced by carbonate, minor talc and quartz. The large deposit of magnesite in southern Deloro Township suggests that other carbonated ultramafic rocks in the area may also contain substantial quantities of magnesite.

Nickel: The Langmuir Property Nickel Mine of Noranda Mines Limited was brought into production in 1973. The ore zone averages about 20 feet (6 meters) thick and occurs at the base of a medium-grained serpentinized peridotite about 200 feet (60 meters) thick. Massive sulphide mineralization tends to occupy depressions at the base of the serpentinite and is overlain by a halo of disseminated sulphide mineralization. Footwall rocks consist of massive andesite or fine-grained peridotite. Ore minerals consist of both pentlandite and millerite, the latter being most abundant at the northern end of the ore body where the footwall rocks are ultramafic rather than andesitic.

The general stratigraphic interval at which the Langmuir Property ore zone is located is approximately the same interval at which the McWatters Deposit and Hart Deposit are located (Pyke and Middleton 1970). That is, at or near the base of the second volcanic cycle in the area, as defined approximately by the cessation of intermediate to felsic volcanism with associated iron formation development, and the onset of ultramafic volcanism. This contact can be traced intermittently around much of the southern part of the Shaw Dome, thereby providing a useful guide for exploration. This is also the same stratigraphic interval at which the Texmont Mine occurs in Bartlett and Geikie Townships (Pyke 1973a).

Asbestos: Narrow veinlets of asbestos occur in both the intrusive and extrusive ultramafic rocks, but are invariably best developed in the former. In general, this relationship seems to be true throughout the Timmins-Kirkland Lake area, as both the Reeves Mines (Milne 1972) and the Munro Mine (Satterly 1951) occur in intrusive sill-like bodies of ultramafic rocks. The limited production from the Timmins area has all been from the intrusive sills in central Deloro Township.

GEOLOGICAL MAP COVERAGE

Detailed mapping: scales 1" to ¼ mile, 1" to ½ mile.

Semi-detailed and reconnaissance mapping: scales 1" to ¾ mile, 1" to 2 mile.

ONTARIO
DIVISION OF MINES
HONOURABLE LEO BERNIER, Minister of Natural Resources
W. Q. MACNEE, Deputy Minister of Natural Resources
G. A. Jewett, Executive Director, Division of Mines E. G. Pye, Director, Geological Branch

PRODUCING MINES

1 Dome Mines Ltd. (Qb, 9c) .... Au, Ag, Cu
Dominion Foundries and Steel Ltd.
2 Adams mine (Sa, 9d) .... Fe
Ecstall Mining Ltd.
3 Kidd Creek mine (Qb, 9b) .... Zn, Cu, Pb, Ag
4 Hallnor Mines Ltd. (Qb, 9b) .... Au, Ag
Harrison Drilling and Exploration Co. Ltd.
5 Potter (Munro Copper) mine (Rb, 9b) .... Cu, Zn
6 Hedman Mines Ltd. (Rb, 9b) .... asb
Hollinger Mines Ltd.
7 Ross mine (Rb, 9c) .... Au, Ag
8 Jameland Mines Ltd. (Qa, 9b) .... Cu, Zn
9 Kam-Kotia Mines Ltd. (Qa, 9b) .... Cu, Zn
Kerr Addison Mines Ltd.
10 Kerr Addison mine (Sa, 9d) .... Au, Ag
11 McIntyre Porcupine Mines Ltd. (Qb, 9c) .... Au, Ag, Cu
12 Pamour Porcupine Mines Ltd. (Qb, 9b) .... Au, Ag
Siscoe Metals of Ontario Ltd.
13 Miller Lake-O'Brien mine (Ra, 10b) .... Ag, Co, Ni, Cu
Siscoe Metals of Ontario Ltd.—Castle Division
(lease from McIntyre Porcupine Mines Ltd.)
14 Castle No. 1 mine (Ra, 10b) .... Ag, Co
15 Tegren Goldfield Ltd. (Rb, 9d) .... Au, Ag
16 Texmont Mines Ltd. (Qb, 9d) .... Ni
Upper Canada Mines Ltd.
17 Macassa mine (management agreement with Willroy Mines Ltd.) (Rb, 9d) .... Au, Ag

PAST PRODUCING MINES

18 Amity mine (Sa, 9d) .... Cu
Argosy Mining Corp. Ltd.
19 Raven River mine (Sa, 9d) .... Au, Ag
20 Ashley Gold Mining Corp. Ltd. (Ra, 9d) .... Au, Ag
Associated Arcadia Nickel Corp. Ltd.
21 Toburn mine (Rb, 9d) .... Au, Ag
Associated Porcupine Mines Ltd.
22 Gillies Lake mine (Qb, 9c) .... Au, Ag
23 Paymaster mine (Qb, 9c) .... Au, Ag
24 Aunor Gold Mines Ltd. (Qb, 9c) .... Au
Banner Porcupine Mines Ltd.
25 Scottish Ontario mine (Qb, 9b) .... Au, Ag
26 Barry-Hollinger mine (Sa, 9d) .... Au, Ag
Broulan Reef Mines
27 Bonetal mine (Qb, 9b) .... Au, Ag
28 Bonwhit mine (Qb, 9b) .... Au
29 Broulan mine (Qb, 9b) .... Au, Ag
30 Reef mine (Qb, 9b) .... Au, Ag
31 Canadian Jamieson Mines Ltd. (Qa, 9b) .... Zn, Cu
Canadian Johns-Manville Co. Ltd.
32 Barton Creek mine (Rb, 9b) .... asb
33 Munro mine (Rb, 9b) .... asb
34 Cincinnati-Porcupine Mines Ltd. (Qb, 9c) .... Au
Consolidated Bidcop Mining Co. Ltd.
35 Bidgood Kirkland mine (Sa, 9d) .... Au, Ag
Consolidated Morrison Exploration Ltd.
36 Morrison mine (Ra, 10b) .... Ag, Co
37 Davidson-Tisdale Mines Ltd. (Qb, 9b) .... Au, Ag
38 Delnite Mines Ltd. (Qb, 9c) .... Au, Ag
39 Ethel Copper Mines Ltd. (Rb, 10b) .... Cu, Ag, Au
Falconbridge Nickel Mines Ltd.
40 Hoyle mine (Qb, 9b) .... Au, Ag
41 Fuller mine—Edwards Claim (Qb, 9c) .... Au
Gateford Mines Ltd.
42 Crescent Kirkland mine (Rb, 9d) .... Au, Ag
43 Golden Gate mine (Rb, 9d) .... Au, Ag
Geo-Pax Mines Ltd.
44 Ryan Lake mine (Ra, 10a) .... Cu, Au, Ag, Mo
45 Hollinger Consolidated Gold Mines Ltd. (Qb, 9c) .... Au, Ag, W
Hollinger Consolidated Gold Mines Ltd.
46 Crown mine (Qb, 9c) .... Au, Ag
47 Vipond mine (Qb, 9c) .... Au, Ag
48 Hugh-Pam Porcupine Mines Ltd. (Qb, 9b) .... Au, Ag
Hydra Explorations Ltd.
49 Night Hawk Peninsular mine (Ra, 9c) .... Au, Ag
Kenilworth Mines Ltd.
50 Naybob mine (Qb, 9c) .... Au, Ag
Kerr Addison Mines Ltd.
51 Chesterville Larder Lake mine (Sa, 9d) .... Au, Ag
52 Kirkland Townsite Gold Mines Ltd. (Rb, 9d) .... Au, Ag
53 Lake Shore Mines Ltd. (Rb, 9d) .... Au, Ag
Langis Silver and Cobalt Mining Co. Ltd.
54 Casey Cobalt mine (Sa, 10b) .... Ag, Co, Ni, Cu
55 Dolphin-Miller mine (Sa, 10b) .... Co, Ag
Levega Mines Ltd.
56 Bishop, Caleta and Kenora mines (Ra, 10b) .... Ag
57 Matachewan Consolidated Mines Ltd. (Ra, 10a) .... Au, Ag
Mirado Nickel Mines Ltd.
58 Cathroy Larder (Yama) mine (Sa, 9d) .... Au, Ag
59 Moffat-Hall Gold Mines Ltd. (Sa, 9d) .... Au, Ag
60 Moneta Porcupine Mines Ltd. (Qb, 9c) .... Au, Ag
61 Morris Kirkland Gold Mines Ltd. (Sa, 9d) .... Au, Ag
62 Munro-Croesus mine (Rb, 9b) .... Au, Ag
Nakhodas Mining Co. Ltd.
63 Bowman mine (Qb, 9c) .... asb
64 Faymar mine (Qb, 9c) .... Au, Ag
New Hope Porcupine Gold Mines Ltd.
65 De Santis mine (Qb, 9c) .... Au, Ag
Noranda Mines Ltd.
66 Alexo mine (Ra, 9b) .... Ni, Cu
Omega Gold Mines Ltd.
67 Canadian Associated Goldfields mine (Sa, 9d) .... Au, Ag
68 Crown Reserve mine (Sa, 9d) .... Au, Ag
69 Patterson Copper mine (Sa, 9d) .... Cu, Ag
70 Preston Mines Ltd. (Qb, 9c) .... Au, Ag
71 Porcupine Lake mine (Qb, 9c) .... Au, Ag
Romfield Building Corp. Ltd.
72 Buffalo Ankerite mine (Qb, 9c) .... Au, Ag
73 Rustex Mining Corp. (Ra, 10b) .... Ag, Co
Silverclaim Lake Mines Ltd.
74 Shane-Darragh mine (Rb, 10b) .... Ag, Co
Siscoe Metals of Ontario Ltd.
75 Bonsall mine (Ra, 10b) .... Ag
76 Millerett mine (Ra, 10b) .... Ag, Co
Siscoe Metals of Ontario Ltd.—Castle Division
(lease from McIntyre Porcupine Mines Ltd.)
77 Capitol mine (Ra, 10b) .... Ag, Co, Ni
78 Castle-Tretheway mine (Ra, 10b) .... Ag, Co
79 Walsh mine (Ra, 10b) .... Ag, Co
Siscoe Metals of Ontario Ltd. (lease from Manridge Mines Ltd.)
80 Mann mine (Ra, 10b) .... Ag
81 Reeve-Dobie mine (Ra, 10b) .... Ag
82 Sylvanite Gold Mines Ltd. (Rb, 9d) .... Au, Ag
Teck Corp. Ltd.—Teck Hughes Mining Division
83 Kirkland Lake mine (Rb, 9d) .... Au, Ag
84 Teck-Hughes mines (Rb, 9d) .... Au, Ag
85 Tretheway-Ossian mine (Sa, 10a) .... Cu
86 Tyranite Mines Ltd. (Qb, 10b) .... Au
Upper Canada Mines Ltd.
87 Upper Beaver (Argonaut) mine (management agreement with Lake Beaverhouse Mines Ltd. (Sa, 9d) .... Au, Cu, Ag
88 Upper Canada mine (Sa, 9d) .... Au, Ag
89 United Obalski Mining Co. Ltd. (Qa, 9c) .... Cu
Westfield Minerals Ltd.
90 Coniaurum mine (Qb, 9c) .... Au, Ag
91 Wright-Hargreaves Mines Ltd. (Rb, 9d) .... Au, Ag
92 Young-Davidson Mines Ltd. (Ra, 10a) .... Au, Ag

The list of past-producers is limited to mines with metal production valued in excess of $25,000.

MINERAL PRODUCTION AND RESOURCES

In 1971, mines located within the Timmins-Kirkland Lake sheet produced gold, silver, cobalt, copper, zinc, lead, nickel, iron, cadmium, sulphur and asbestos. Barite is soon scheduled for production in Yarrow Township. The area also contains deposits of molybdenum, uranium, tungsten, bismuth, palladium, platinum, magnesium, nepheline, marl, sand and gravel. Two kimberlite dikes are known to occur; one in McCool Township, another in Gauthier Township.

Gold is produced at the Porcupine (Timmins), Kirkland Lake-Larder Lake mining camps, and in Hislop Township southeast of Matheson. Former production included the Matachewan and Elk Lake camps.

The largest producer of silver is the Kidd Creek mine north of Timmins. Silver is also recovered at all the producing gold mines, in addition to the operating mines in the Gowganda area. Former production included the Matachewan, Elk Lake and Cobalt (Casey Township) areas.

Zinc, copper, lead, cadmium and sulphur are produced by Ecstall Mining Limited (Kidd Creek mine). Copper and zinc are produced in the Kamiskotia area west of Timmins and at the Potter mine east of Matheson. Copper is also produced at the McIntyre Porcupine mine near Timmins, the Miller Lake-O'Brien mine near Gowganda and the Upper Beaver mine near Larder Lake. Minor copper has also been produced in the Elk Lake, Matachewan and Gowganda areas. Minor lead-zinc was formerly produced in the Matachewan area.

Nickel production commenced in 1971 at the Texmont mine located south of Timmins. Noranda Mines Limited will shortly be producing nickel from Langmuir Township, southeast of Timmins. Nickel was formerly produced at the Alexo mine, located northeast of Timmins.

Iron ore is produced at the Adams mine of Dominion Foundries and Steel Limited, located in Boston Township, south of Kirkland Lake.

Nearly all the asbestos production has come from the area east of Matheson, and most of this has been from the Munro mine, a past producer of Canadian Johns-Manville Company Limited. Hedman Mines Limited is producing asbestos in Warden Township, and Canadian Johns-Manville is currently preparing a property for production in Garrison Township; both localities are east of Matheson.

Cobalt is produced in the Gowganda area, and was formerly mined in the Elk Lake and Cobalt (Casey Township) areas.

Total value of mineral production from the map area to the end of 1969 was approximately $3,551,000,000. Quantity of minerals produced is as follows:

Gold	85,508,683 oz.	Copper	532,850,393 lbs.
Silver	130,249,224 oz.	Zinc	1,500,900,863 lbs.
Cobalt	1,726,139 lbs.	Lead	53,223,216 lbs.
Cadmium	6,808,922 lbs.	Nickel	174,287 lbs.
Tungsten	454,866 lbs.	Asbestos	370,209 tons
Molybdenum	11,393 lbs.	Iron	5,609,583 tons
		Sulphur	26,788 tons

HOW TO OBTAIN ADDITIONAL INFORMATION

Published geological maps covering this sheet are indicated on Index Maps 2079, 2080 and 2081 of the Ontario Division of Mines, Ministry of Natural Resources, Toronto, and on Index sheets 31, 32, 41, and 42 of the Geological Survey of Canada, Department of Energy, Mines and Resources, Ottawa.

Published geological reports covering this sheet are listed in Bulletin No. 25 of the Ontario Division of Mines, Ministry of Natural Resources and in the Index of Publications, Geological Survey of Canada, 1961, 1970.

Topographic maps of the area can be obtained from the Division of Lands, Ministry of Natural Resources, Toronto, or the Topographic Survey, Department of Energy, Mines and Resources, Ottawa.

Air photographs may be obtained from the Silviculture Section, Division of Lands, Ministry of Natural Resources, Toronto, Ontario, or from the National Air Photographic Library, Department of Energy, Mines and Resources, Ottawa.

Aeromagnetic maps covering this sheet can be obtained from the Geological Survey of Canada. Partial coverage may be obtained from the Ontario Division of Mines.

The name and ownership of many mineral occurrences shown on this sheet are given on Map 2148, Ontario Mineral Map, 1968.

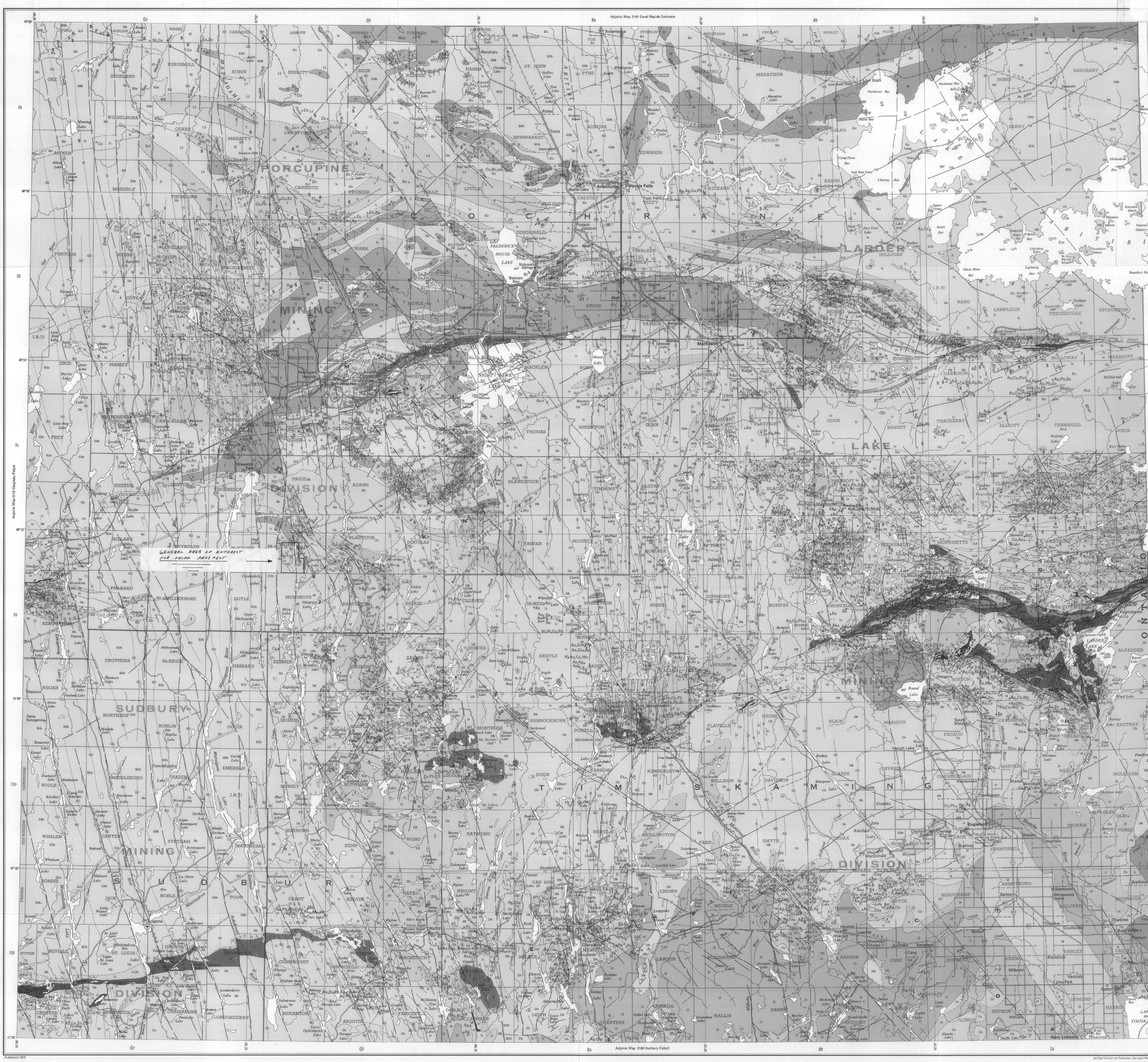
Information on geology, mines and mineral occurrences may be obtained at the office of the local Resident Geologist (Timmins, Kirkland Lake or Sudbury).

Mining claim maps and general information can be obtained at the office of the Mining Recorder at Timmins, Kirkland Lake, or Sudbury, or at the Division of Lands, Toronto.

Up-to-date information on current developments of the mineral industry can be obtained from the annual review of the Division of Mines and in the Annual Report of the Resident Geologists at Timmins, Kirkland Lake, and Sudbury, published in the early months of each year.

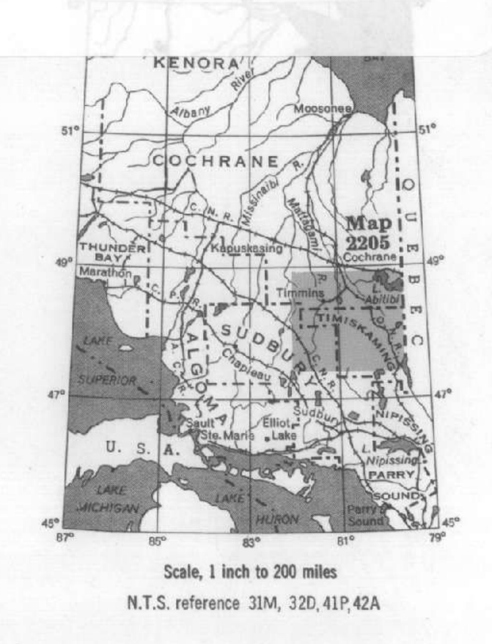
METAL AND MINERAL REFERENCE

Ag	Silver	ma	Marl
asb	Asbestos	Mo	Molybdenum
Au	Gold	ne	Nepheline
ba	Barite	Ni	Nickel
Bi	Bismuth	Pb	Lead
Cd	Cadmium	Pd	Palladium
Co	Cobalt	Pt	Platinum
cr	Chromite	ra	Radioactive minerals
Cu	Copper	U	Uranium
Fe	Iron	W	Tungsten
fl	Flourite	Zn	Zinc
Mg	Magnesium		



Published 1973

Lambert Conformal Projection, Standard Parallels 44°30′ and 53°30′



Scale, 1 inch to 200 miles
N.T.S. reference 31M, 32D, 41P, 42A

LEGEND

CENOZOIC

PLEISTOCENE AND RECENT
Till, varved clay, sand, gravel, peat.

UNCONFORMITY

MESOZOIC

19 *Kimberlite: dikes.*

INTRUSIVE CONTACT

PALEOZOIC

LOWER AND MIDDLE SILURIAN
18 *Thornloe Formation: limestone, dolomite, sandstone. Wabi Formation: limestone, shale.*

MIDDLE AND UPPER ORDOVICIAN
17 *Dawson Point Formation: shale. Farr Formation: limestone. Bucke Formation: limestone, shale. Guigues Formation: sandstone.*

UNCONFORMITY

PRECAMBRIAN

LATE PRECAMBRIAN
MAFIC INTRUSIVE ROCKS
16 *Diabase: dikes.*

INTRUSIVE CONTACT

MIDDLE PRECAMBRIAN
ALKALIC INTRUSIVE ROCKS
15 *Syenite, nepheline syenite.*

MAFIC INTRUSIVE ROCKS[a]
14 *Diabase, granophyre: sheets and dikes.*

INTRUSIVE CONTACT

HURONIAN SUPERGROUP
COBALT GROUP
Lorrain Formation
13 *Quartzite, arkose.*

Gowganda Formation
12 *Unsubdivided.*
12a *Firstbrook Member: argillite, greywacke, siltstone, arkose.*
12b *Coleman Member: conglomerate, arkose, greywacke, quartzite, argillite.*

UNCONFORMITY

EARLY PRECAMBRIAN
MAFIC INTRUSIVE ROCKS[b]
11 *Diabase: dikes.*

INTRUSIVE CONTACT

FELSIC INTRUSIVE ROCKS[c]
10a *Quartz porphyry, quartz-feldspar porphyry, feldspar porphyry, granophyre, felsite*[d]
10b *Trondhjemite, granodiorite, quartz monzonite: simple batholiths and stocks*[d]
10c *Trondhjemite, granodiorite, quartz monzonite, quartz diorite, aplite, pegmatite, migmatite: complex batholiths.*
9 *Syenite, monzonite, feldspar porphyry*[d]

METAMORPHOSED MAFIC AND ULTRAMAFIC ROCKS[e]
8 *Gabbro, diorite, lamprophyre.*
7 *Peridotite, dunite, pyroxenite, serpentinite*[f]

INTRUSIVE CONTACT

METASEDIMENTS[g]
6 *Conglomerate, greywacke, siltstone, slate, argillite*[h]
5 *Greywacke, siltstone, slate, argillite and minor pebble conglomerate*[j]

METAVOLCANICS[g]
ALKALIC METAVOLCANICS[h]
4 *Trachyte, leucitic trachyte; flows, tuff, breccia.*

ULTRAMAFIC METAVOLCANICS[k]
3 *Serpentinized dunitic and peridotitic flows.*

FELSIC METAVOLCANICS[j]
2 *Unsubdivided.*
2a *Pyroclastic rocks.*
2b *Flows.*

INTERMEDIATE AND MAFIC METAVOLCANICS[j]
1 *Unsubdivided.*
1a *Intermediate flows.*
1b *Intermediate pyroclastic rocks.*
1c *Mafic flows and pyroclastic rocks.*

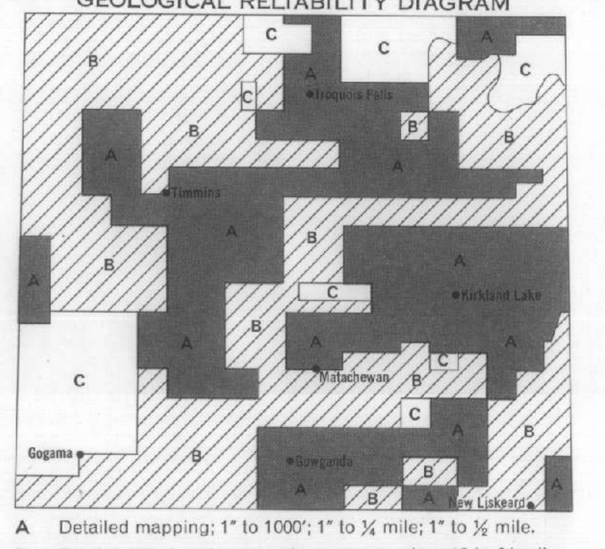
IF *Iron formation and ferruginous chert (occurs as a member of stratigraphic units 1, 2, 4, and 5).*
S *Sulphide mineralization.*

[a] *Formerly classified as Nipissing in part.*
[b] *North-trending dikes are part of Matachewan swarm.*
[c] *Formerly classified as Algoman.*
[d] *Several ages; some units appear to be intrusive equivalents of volcanic formations whereas others ...*

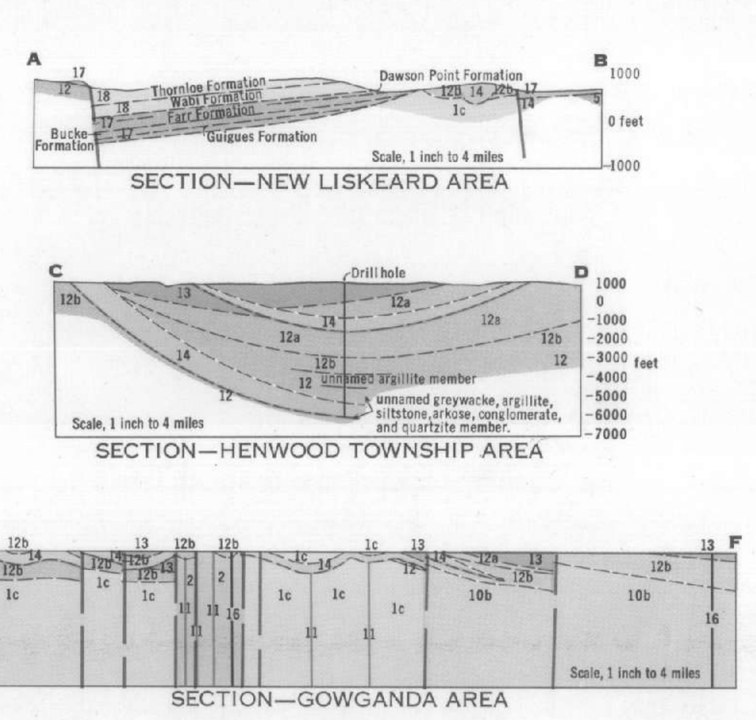
SYMBOLS

Geological boundary.
Synclinal axis.
Anticlinal axis.
Fault.
Lineament.
Altitude in feet above mean sea level.
Railway with station or flagstop.
Provincial highway.
Motor road.
Other road.
Aircraft landing facilities.
Larger community.
Smaller community.
Producing mine.
Past producing mine.
Mineral occurrence.
Resident Geologist's, Mining Recorder's offices, Kirkland Lake, Timmins.
SUDBURY *Mining Division with boundary.*
Interprovincial boundary.
District boundary.
Township boundary.
A B *Line of section.*

GEOLOGICAL RELIABILITY DIAGRAM



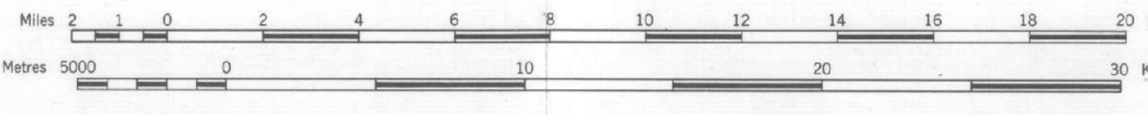
A Detailed mapping.
B Semi-detailed and reconnaissance mapping.
C Mostly unmapped.
In those areas designated on the reliability map as B or C, geological contacts were generally drawn in from limited geophysical and (or) diamond drill hole information.

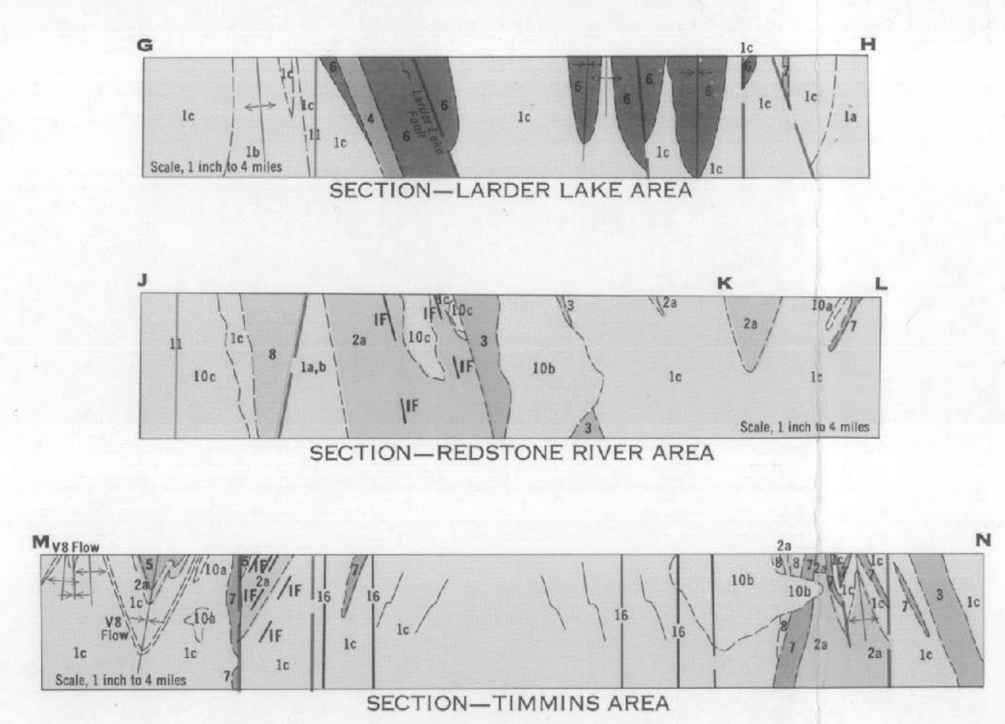


SECTION—NEW LISKEARD AREA
SECTION—HENWOOD TOWNSHIP AREA
SECTION—GOWGANDA AREA

Map 2205
TIMMINS-KIRKLAND LAKE
Geological Compilation Series
COCHRANE, SUDBURY AND TIMISKAMING DISTRICTS

Scale 1:253,440 or 1 Inch to 4 Miles





SECTION—LARDER LAKE AREA
SECTION—REDSTONE RIVER AREA
SECTION—TIMMINS AREA

SOURCES OF INFORMATION

Geological compilation by D. R. Pyke, L. D. Ayres, and D. G. Innes, 1970, 1971. Previous compilation by Ginn, et al, Map 2046, 1964.

Geology from published maps of the Ontario Division of Mines, Geological Survey of Canada, and unpublished maps of mining companies.

Cartography by C. Harris and assistants, Division of Lands, Ministry of Natural Resources, 1972.

Base maps compiled from National Topographic Series, sheets 31 M/NW; 32 D/NW; 32 D/SW; 41 P/NW; 41 P/NE; 42 A/NE; 42 A/NW; 42 A/SW; 42 A/SE.

THE MAP INDEX

The red letters and numbers in the borders provide a location reference system based on that of Map 2024, Ontario Mineral Map.

Fig. 81-3
General Geology Map
For
Halcrow and Denyes
Adapted from O.G.S.
Map 2120

ONTARIO
DEPARTMENT OF MINES
HON. G. C. WARDROPE, *Minister of Mines*
D. P. Douglass, *Deputy Minister* J. E. Thomson, *Director, Geological Branch*

SYMBOLS

- Glacial striae.
- Esker.
- Small bedrock outcrop.
- Area of bedrock outcrop.
- Bedding, top unknown; (inclined, vertical).
- Bedding, top (arrow) from grain gradation; (inclined, vertical, overturned).
- Lava flow; top (arrow) from pillows shape and packing.
- Schistosity; (horizontal, inclined, vertical).
- Gneissosity, (horizontal, inclined, vertical).
- Lineation with plunge.
- Geological boundary, observed.
- Geological boundary, position interpreted.
- Fault; (observed, assumed).
- Drag folds with plunge.
- Anticline, syncline, with plunge.
- Vein, vein network.
- Trail, portage, winter road.
- Shaft; depth in feet.
- Township boundary with mile post, approximate position only.
- Property boundary, approximate position only.
- Claim line, surveyed, approximate position only.
- 1 Location of mining property, surveyed. See list of properties.
- ⑦ Location of mining property, unsurveyed. See list of properties.

LIST OF PROPERTIES AND OCCURRENCES

1. Belcher Mining Corporation Ltd.
2. Derraugh occurrence.
3. Dyment Lake occurrence.
4. Goldstar Explorations Ltd.
5. Lyall-Beidelman occurrence.
6. Shunsby occurrence.
7. Sylvanite occurrence.

SOURCES OF INFORMATION

Geology by J. F. Donovan and assistants, 1964.
Geology is not tied to surveyed lines.

Map No. 230A, Ridout Sheet, Geological Survey of Canada, by R. C. Emmons and E. Thomson, 1929.
Map No. 1063A, Sudbury, Geological Survey of Canada, 1958.
Map No. 43b, Swayze Gold Area, Ontario Department of Mines, by H. C. Rickaby, 1934.

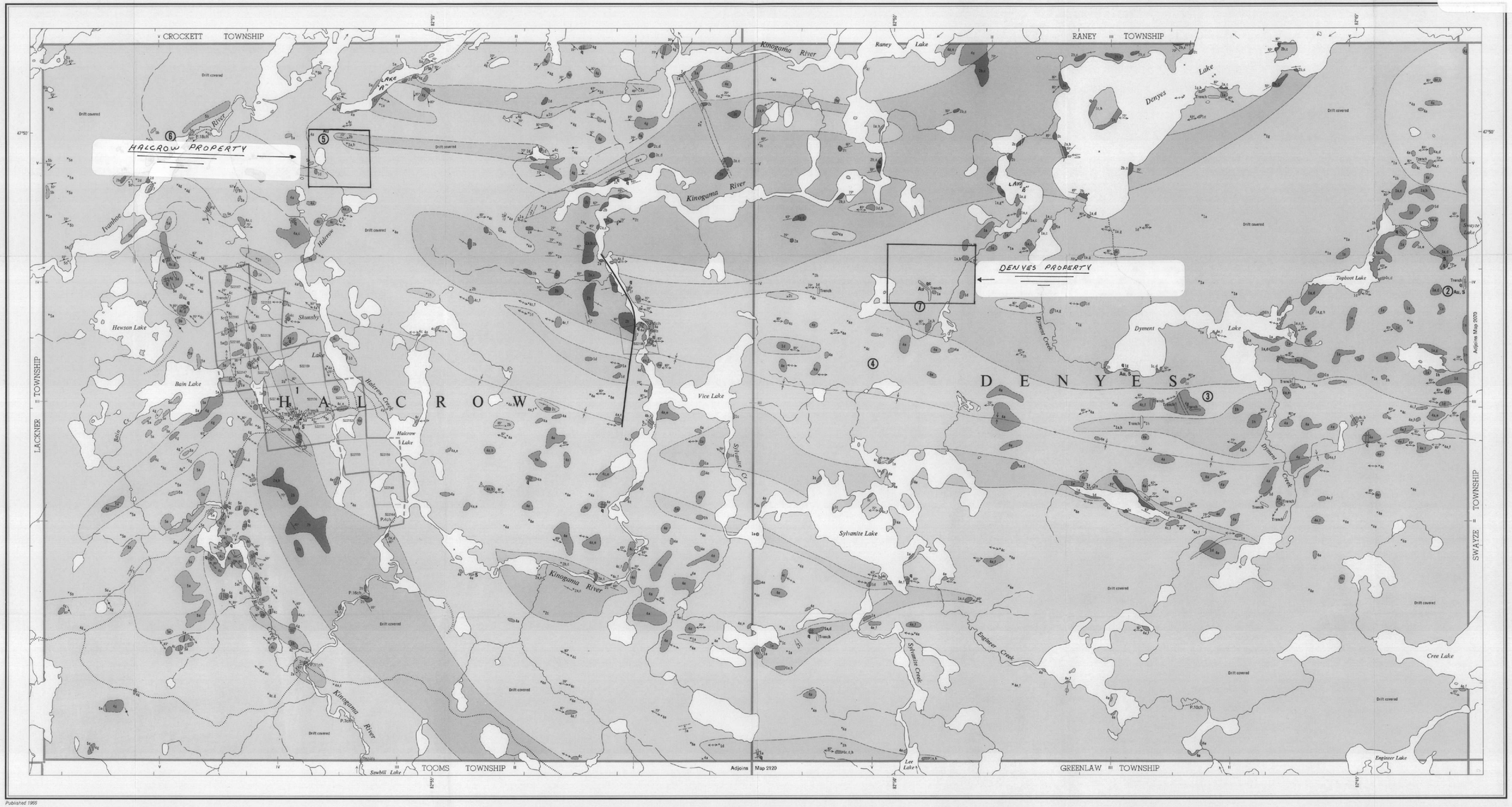
O.D.M.-G.S.C. aeromagnetic maps 2245G, 2246G.

Preliminary maps, P.258, Halcrow Township; P.259, Denyes Township, scale 1 inch to ¼ mile, issued 1964 and P.885, Ridout Sheet, scale 1 inch to 2 miles, issued 1965.

Cartography by F. W. Dawson, D. W. Robeson, Ontario Department of Mines, 1966.

Base map derived from maps of the Forest Resources Inventory, Ontario Department of Lands and Forests, with additional information by J. F. Donovan.

Magnetic declination in the area was approximately 7° W., 1965.



Published 1966

Map 2120

HALCROW and DENYES TOWNSHIPS

SUDBURY DISTRICT

Scale 1:31,680 or 1 Inch to ½ Mile

Chains 80 60 40 20 0 1 2 Miles
Metres 1000 0 1 2 3 Kilometres
Feet 1000 0 5,000 10,000 Feet

Scale 1 inch to 50 miles
N.T.S. reference 41 O/15

LEGEND

CENOZOIC*

RECENT
Stream and swamp deposits.

PLEISTOCENE
Sand, gravel, till.

UNCONFORMITY

PRECAMBRIAN**

INTRUSIVE ROCKS
LATE BASIC INTRUSIVE ROCKS

7 — *7 Diabase.*

INTRUSIVE CONTACT

INTERMEDIATE TO ULTRABASIC INTRUSIVE ROCKS§

6 — *6a Diorite, gabbro.*
6b Lamprophyre.
6c Serpentinite.

INTRUSIVE CONTACT

GRANITIC ROCKS

5 — *5a Massive granite, syenite, quartz monzonite.*
5b Gneissic granite, gneissic quartz monzonite.
5c Granodiorite, quartz diorite.

INTRUSIVE CONTACT

INTERMEDIATE TO BASIC VOLCANIC ROCKS

4 — *4a Massive andesite, basalt.*
4b Pillowed andesite, basalt.
4c Chlorite-hornblende-feldspar schist.
4d Basic tuff.
4e Grey massive andesite.
4f Volcanic breccia.
4g Amphibolite, hornblende-mica-feldspar schist.
4h Diorite, gabbro (flows or intrusions).
4j Porphyritic andesite, basalt.

3 — *3a Banded iron formation.*
3b Schistose iron formation.

SEDIMENTARY ROCKS

2 — *2a Shale, argillite, slate.*
2b Conglomerate.
2c Quartzite, greywacke, arkose.
2d Paragneiss, mica-hornblende-plagioclase-quartz schist.

ACID VOLCANIC ROCKS

1 — *1a Massive rhyolite.*
1b Acid tuff.
1c Volcanic breccia.
1d Sericite-quartz-feldspar schist.
1e Banded rhyolite.
1f Silicified rhyolite.
1g Porphyritic (quartz) rhyolite.
1h Feldspar porphyry.

C C C — *Carbonatized rock.§*

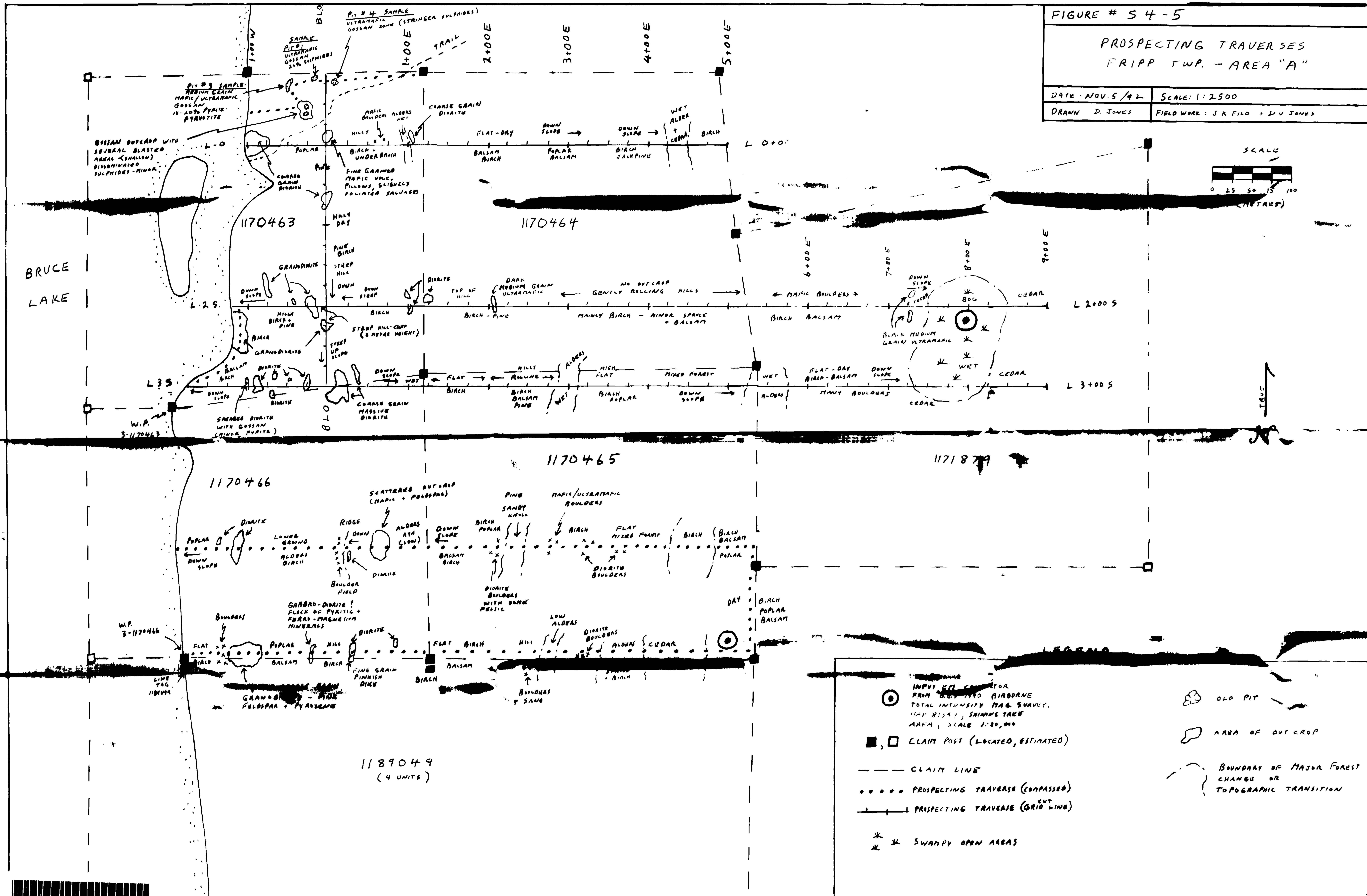
asb	*Asbestos.§*
Au	*Gold.*
carb	*Carbonate.§*
Cu	*Copper.§*
q	*Quartz.*
qc	*Quartz-carbonate.*
S	*Sulphide mineralization.*

*Unconsolidated deposits. Cenozoic and recent deposits are represented by the lighter coloured parts of the map.
**Bedrock geology. Outcrops and inferred extensions of each rock map unit are shown respectively in deep and light tones of the same colour. Where in places a formation is too narrow to show colour and must be represented in black, a short black bar appears in the appropriate block.
§Occurs only on the companion sheet.

FIGURE # S4-6

PROSPECTING TRAVERSES

FRIPP TWP. - AREA "B"



32D08NW0112 OP92-272 DENYES

1170475

1170473

1189050
(16 UNITS)

1170474

1170481

1170482

1170483

PIT "A": HEAVY GOSSAN ZONE
2 METRES DEEP
120° STRIKE

3 METRE HIGH HILL OF GOSSAN STAINED OUTCROP WITH THIN MOSS COVERING

5 METRE HIGH PEAK OF STRIPPED GOSSAN - ROCK

FLYROCK

SAMPLE FP-92-5

SAMPLE FP-92-11

SAMPLE FP-92-8

SAMPLE FP-92-9

SAMPLE FP-92-10

0.5 METRE WIDE QUARTZ VEIN 110° STRIKE

SAMPLE FP-92-7

SAMPLE FP-92-6

N

INSET SCALE: 1 CM = 5 METRES

PIT "A": ENLARGED INSET

THICK ALDER

SMALL CREEK

0.5 METRE DEEP TRENCHES CUTTING THROUGH HEAVY GOSSAN ZONE

ALDER WET

PINE - SPRUCE POPLAR - BAY -

HILL

PIT "C": 1 METRE DEEP AT EAST END OF TRENCH - HEAVY GOSSAN ZONE TRENDING 120° - SAMPLE FP-92-13.

SAMPLE FP-92-12

PIT "B" 2 METRE DEEP - HEAVY GOSSAN - CONTACT WITH GOSSAN CONGLOMERATE ZONE - SEVERE WEATHERING.

DENSE HAZEL-NUT

PINE BIRCH

GENTLE HILLS

THIN MOSS COVERED OUTCROP MAFIC/ULTRAMAFIC. (SOME GOSSAN STAINS)

HILL

CEDAR SPRUCE (LOW-WET)

LOW SPRUCE

JACK PINE
SPRUCE - HIGH GROUND

CEDAR ALDER

CEDAR SPRUCE - WET

POPLAR

LOW FLAT-WET GULLY CEDAR

COARSE GRAINED GRANODIORITE RUBBLE LIKE WEATHERED TEXTURE

GRANODIORITE

JACK PINE HILLS

NO OUTCROP

FLAT GROUND
SPRUCE
BALSAM
BIRCH

SMALL OUTCROP GRANODIORITE

EDGE OF ESKER

SMALL RIDGE OF GREY-BLACK FINE TO MEDIUM GRAIN MAFIC/ULTRA MAFIC (SOME MAGNETITE?)

JACK PINE POPLAR

ROLLING SANDY HILLS
JACKPINE

SCATTERED OUTCROP GRANODIORITE

JACK PINE

70 METRES

270°

180°

PENNINSULA TIP

EAST SHORE LINE

LAKE

CREEK

GRANODIORITE (PINKISH)

OUTCROP

JACK PINE (DRY)

SPRUCE

JACK PINE (DRY)

DIORITE

COARSE GRAINED DIORITE

BOULDER BED

PINE - SPRUCE POPLAR

LOW WET SPRUCE

DIORITE

DIABASE DIKE

SPRUCE LOWLAND (WET)

WET ALDER SPRUCE

JACKPINE

GENTLE HILLS

PINE BIRCH

JACK PINE BIRCH HILL

NO OUTCROP

WET ALDERS

BIRCH - PINE

ROLLING HILLS SANDY

NO OUTCROP

DIABASE DIKE

BIRCH - PINE

PINE BIRCH

ALDER WET

BOULDERS

PINE - SPRUCE

DRY

JACK PINE

JACK PINE

ROLLING HILLS

STRONG COMPASS VARIATION

DIORITE MASSIVE COARSE GRAINED

NO OUTCROP

ROLLING HILLS

PINE SPRUCE

QUARTZ

ALDER CEDAR

JACK PINE

DIORITE

TRUE N

LEGEND

- INPUT EM CONDUCTOR (FROM O.G.S. 1990 AIRBORNE TOTAL INTENSITY MAGNETIC SURVEY MAP 81394, SHINING TREE AREA, SCALE 1:20,000)
- CLAIM POST (LOCATED, ESTIMATED)
- AREA OF OUTCROP
- PROSPECTING TRAVERSE (COMPASSED)
- CLAIM LINE
- OLD PIT
- OLD TRENCH
- BOUNDARY OF MAJOR FOREST CHANGE OR TOPOGRAPHIC TRANSITION.
- SWAMPY OPEN AREAS

SCALE (METRES)
0 25 50 75 100 125

FIGURE # S 4-7

PROSPECTING TRAVERSES
FRIPP TWP. - AREA "C"

DATE: NOV. 8/92	SCALE: 1:2500
DRAWN: D. JONES	FIELD WORK: J.K. FILO + D. JONES

2+00W 1+00W BL 0+00 1+00E 2+00E 3+00E 4+00E 5+00E 6+00E

W.P. #4-1170463

← NOT SURVEYED →

L 0+00

L 0+00

L 2+00S

L 3+00S

1170463

1170464

BRUCE LAKE

#3-1170463
#4-1170461

WEAK ANOMALY

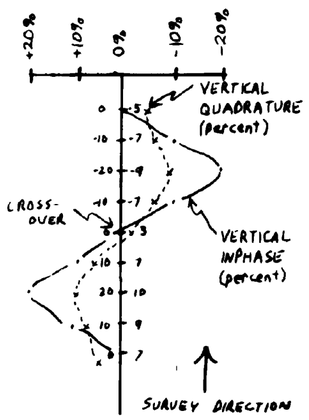
WEAK ANOMALY

1170466

1170465

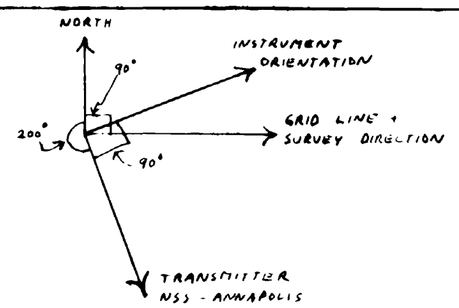
2+00W 1+00W BL 0+00 1+00E 2+00E 3+00E 4+00E 5+00E 6+00E

LEGEND



0 50 100 150
SCALE (METRES)

INSTRUMENT: GEONICS EM-16 VLF (SERIAL #16875)
TRANSMITTER STATION. NSS ANNAPOLIS
FREQUENCY: 21.4 KHz
PARAMETRES MEASURED: Inphase Dip Angle + Quad
OPERATOR: D. JONES
VERTICAL SCALE 1cm=20%



LOCATED CLAIM POST ■
UNLOCATED CLAIM POST □

CUT GRID LINE

COMPASS GRID LINE

BL 0+00

10+00E

W.P. #4-1170463

L 0+00

1170463

L 2+00S

L 3+00S

W.P. #3-1170463 #4-1170461

1171879

1170466

BL 0+00

9+00E

10+00E

MAX-MIN II

+20 +25 +15 +20 0 0 -15 -10 -30 -15 -30 -15 -15 -10 0 0 +15 +20 +20 +25

CONDUCTOR AXIS

IN-PHASE

OUT-OF-PHASE

LEGEND

INSTRUMENT: Apex Parametrics Max-Min II
MODE: Maximum Coupled, Horizontal Loop Survey
PARAMETRES MEASURED: Inphase (%)
Out of phase (%)
FREQUENCY: 444 Hz
COIL SEPARATION: 100m
OPERATOR: D Laforest
PROFILE SCALE: 1cm=20%

LOCATED CLAIM POST ■
UNLOCATED CLAIM POST □

CUT GRID LINE
COMPASS GRID LINE

FIGURE # 54-10 (METRES)

EXSICS EXPLORATION LTD
PO Box 1880, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont
Telephone 705-267-4151

CLIENT K. FILO + D. JONES
PROPERTY: FRIPP TOWNSHIP PROPERTY
TITLE
MAX MIN II 444 Hz
Date: OCT 1990 Scale 1:5000 NTS
Drawn P.G. Interp. J.C. Grant Job No. 8

320

FILE # 55-4

GEOLOGICAL SURVEY
NOJA TOWNSHIP
(SECTION 6 — NORTH PART)

DATE: NOV 21/82	SCALE: 1:2500
DRAWN: D. JONES	FIELD WORK: D. JONES + [illegible]

SCALE (METRES)
0 25 50 75 100 125 150

ACCESSIBILITY OF SPACE SITE SOURCES

330

↓ ROBBINS SECTION 6 — SOUTH PART ↓

↓ ADSINS SECTION 6 — SOUTH PART ↓


ADDINS SECTION B — NORTH PART
BL ZERO
L 800 S
POND
ESKER
SPRUCE BOG
GRASS AREA
BLACK SPRUCE
1181246
1181232
118123
1181239
1181247
1181248
1181238
1181237
MAP SYMBOLS
SCALE (METRES)
0 25 50 75 100 125
FIGURE # 55-3
GEOLOGICAL SURVEY
NOVA TOWNSHIP
(SECTION A - SOUTH PART)
DATE ...V. 12/92
SCALE : 1:2500
DRAWN D. JONES
FIELD WORK: D JONES + K FILO