42A06NW8408 2.4330 DELORO

010

REPORT ON A GEOLOGICAL SURVEY

RECEIVED
NOV 27 1981
MINING LANDS SECTION

DELORO-4

PROJECT 1043-14

NTS: 42-A-6

AMAX MINERALS EXPLORATION

Timmins, Ontario
October, 1981

P. Lickley

SUMMARY

During June of 1981, a geological survey was conducted on a group of twelve (12) claims along the border of Deloro and Shaw townships, in the District of Cochrane, Ontario.

The property is underlain by intermediate flows and tuffs which contain the occasional unit of agglomerate iron formation and/or sedimentary beds. Quartz veins at varying attitudes penetrate all lithologies in the claims area.

A major quartz vein system which is enclosed by a narrow pyritic-sediment unit is the only anomalous feature in the claims area. (trace to .25 oz/ton Au.)

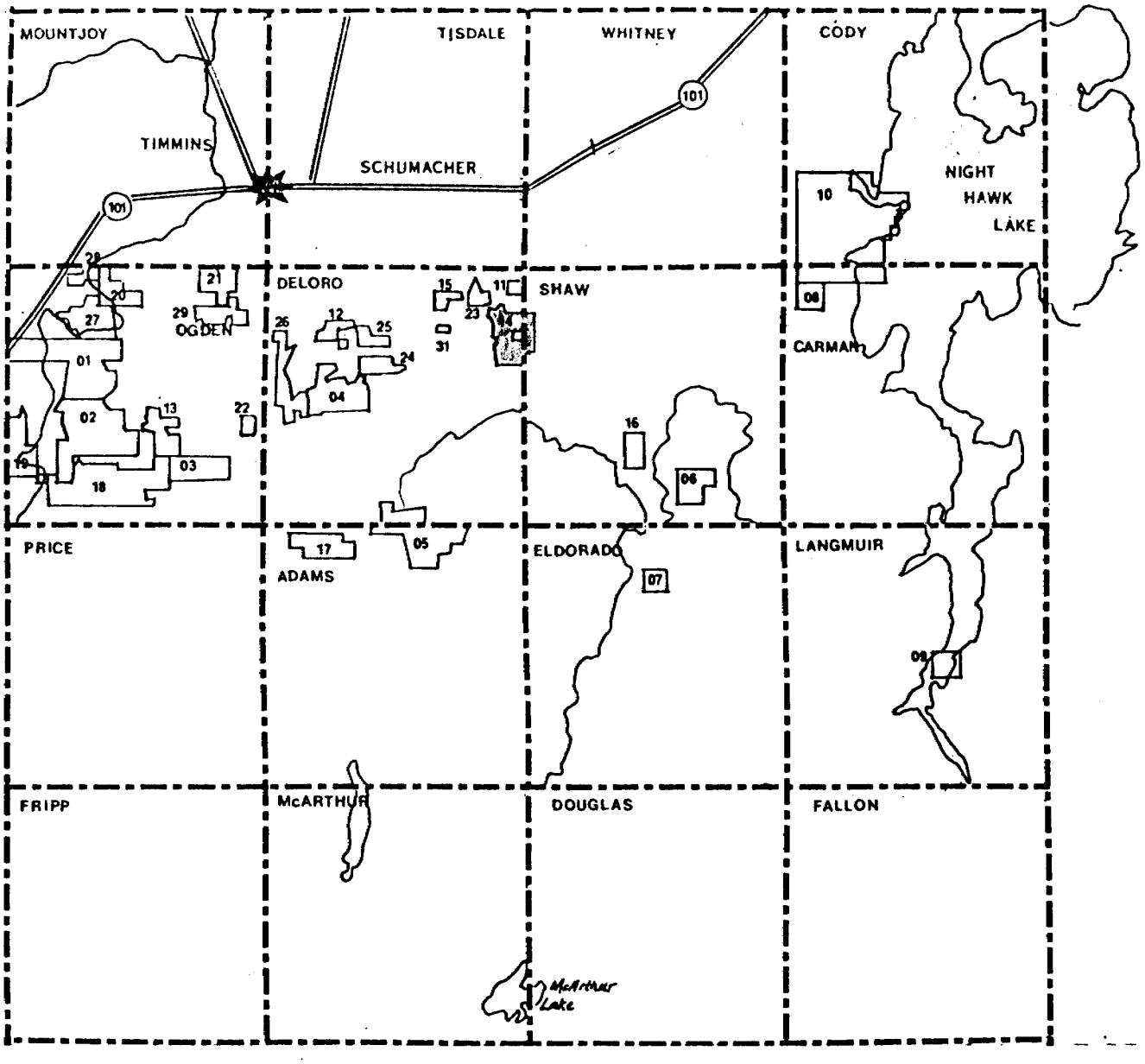
Further detailed sampling should be undertaken and a ground geophysical survey should be conducted across this zone. This additional data would aid in locating the most favourable drill targets along the zone. The zone should be drilled to reveal its economic potential at depth.

INTRODUCTION

A detailed geological survey was carried out on a group of twelve (12) claims in Deloro and Shaw townships during June of 1981. The claim numbers are P-567427 - 29, Shaw township as well as P-555626-30, P-567049 - 52 in Deloro township.

Two Aerodat airborne electromagnetic anomalies located along the western edge of the claims were followed up using ground geophysics in July, 1980. The anomalies were interpreted as iron formation.

The property was staked on the basis of positive assessment data and previous work, not on the basis of the Aerodat anomalies.

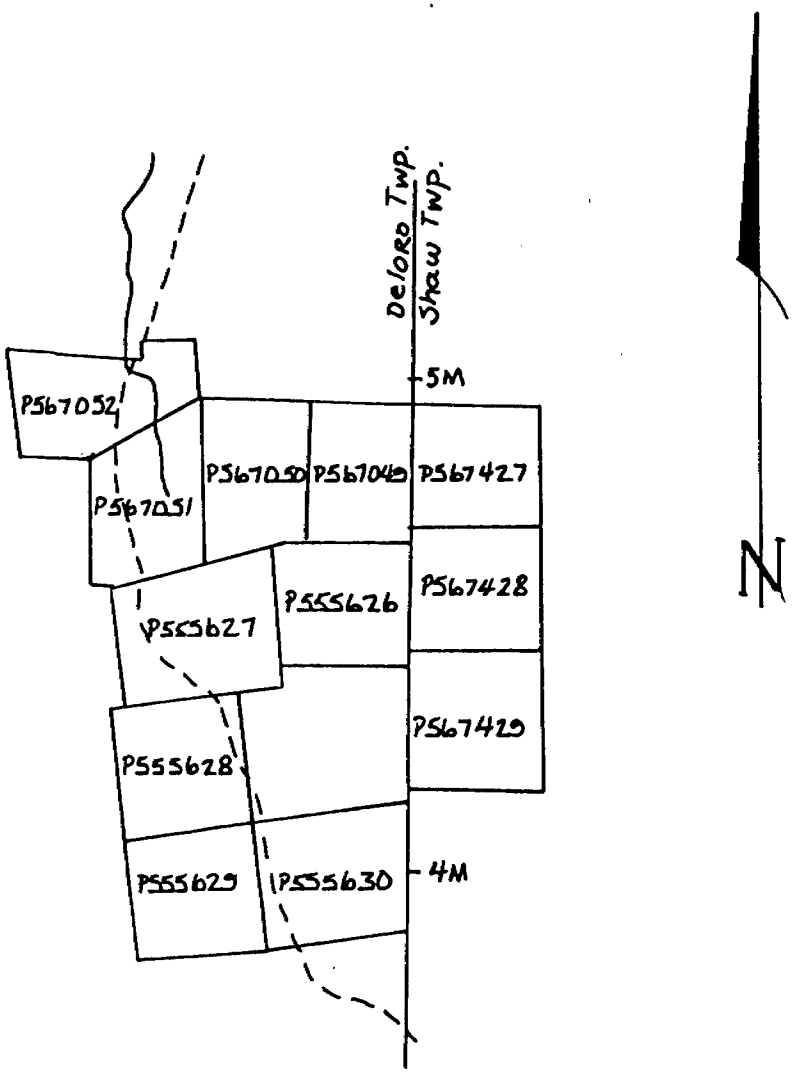


LOCATION MAP

Project 1043-14

DELORO-4

1"= 4 miles



CLAIM MAP

Project 1043-14

DELORO-4

Deloro Township

1"=½ Mile (approx.)

LOCATION AND ACCESS

The claim group is situated along the boundary between Deloro and Shaw townships, in the District of Cochrane, Ontario.

The property is accessible by gravel road, south from South Porcupine for six kilometres then west on a bush road near the township boundary.

TOPOGRAPHY AND RESOURCES

The relief on the property is moderate. Large outcrop hills are separated by low swamp.

Vegetation consists of mixed wood stands, mature jack pine and poplar on the hills and tag alders in the swamps. Beaver ponds, swamps and old open shafts could adequately supply water for drilling on most areas of the claims.

PREVIOUS WORK

From the Assessment Files

This area was extensively worked in the 1910's and 1930's. No assessment data is available from 1910 but in the 1930's, six separate companies worked the area. The majority of the assessment filed wasfor Excello Mines Limited in 1934. At this time the area was extensively stripped and trenched and a shaft was sunk to a

TABLE OF FORMATIONS

CENZOIC

Quaternary

Recent

Swamp and stream deposits

Pleistocene

Till, clay, sand, gravel

Unconformity

PRECAMBRIAN

Mafic Intrusive Rocks

Olivine diabase, quartz diabase

Intrusive Contact

Huronian Supergroup

Gowganda Formation, Cobalt Group

Arkose, wacke, argillite, conglomerate

Unconformity

ARCHEAN

Mafic Intrusive Rocks

Diabase

Intrusive Contact

Felsic Intrusive Rocks

Quartz feldspar porphyry, granite, diorite, granodiorite

Metamorphosed Mafic Intrusive Rocks

Gabbro, quartz gabbro

Intrusive and Gradational Contact

Metamorphosed Ultramafic Intrusive Rocks

Serpentinized diorite, peridotite

Intrusive Contact

METAVOLCANICS AND METASEDIMENTS

Metasediments

Conglomerate, lithic wacke, iron formation

Metavolcanics

Felsic Calc Alkalic metavolcanics

Massive, fine-grained flows, tuff, lapilli tuff, breccia

Mafic Calc-alkalic metavolcanics

Massive, fine-grained flows, pillowed flows, tuff, lapilli tuff and breccia, sheared, carbonated pyroclastics

Tholeiitic Metavolcanics

Massive to medium grained flows, pillowed flows and flow breccia, minor tuff, lapilli tuff and breccia

Komatiitic Metavolcanics

Peridotite, olivine spinifex, carbonate and talc alteration

depth of 300 feet. A total of 1200 feet of drifting was also reported to have been undertaken on the 300 foot level. Assays from 2-1623 $/ton at $20/ounce of gold were reported and visible gold was supposedly quite common. Two shafts were reported on the west end of their proposed ore zone and were sunk in 1910. The gold was reported to be in quartz veins and in sedimentary sulphide host and wall rocks. The sulphide sediment-quartz zone was reported to have half a mile of strike length. Fifteen (15) pits or trenches and two (2) shafts working a total of 17 vein systems were reported in the claims area.

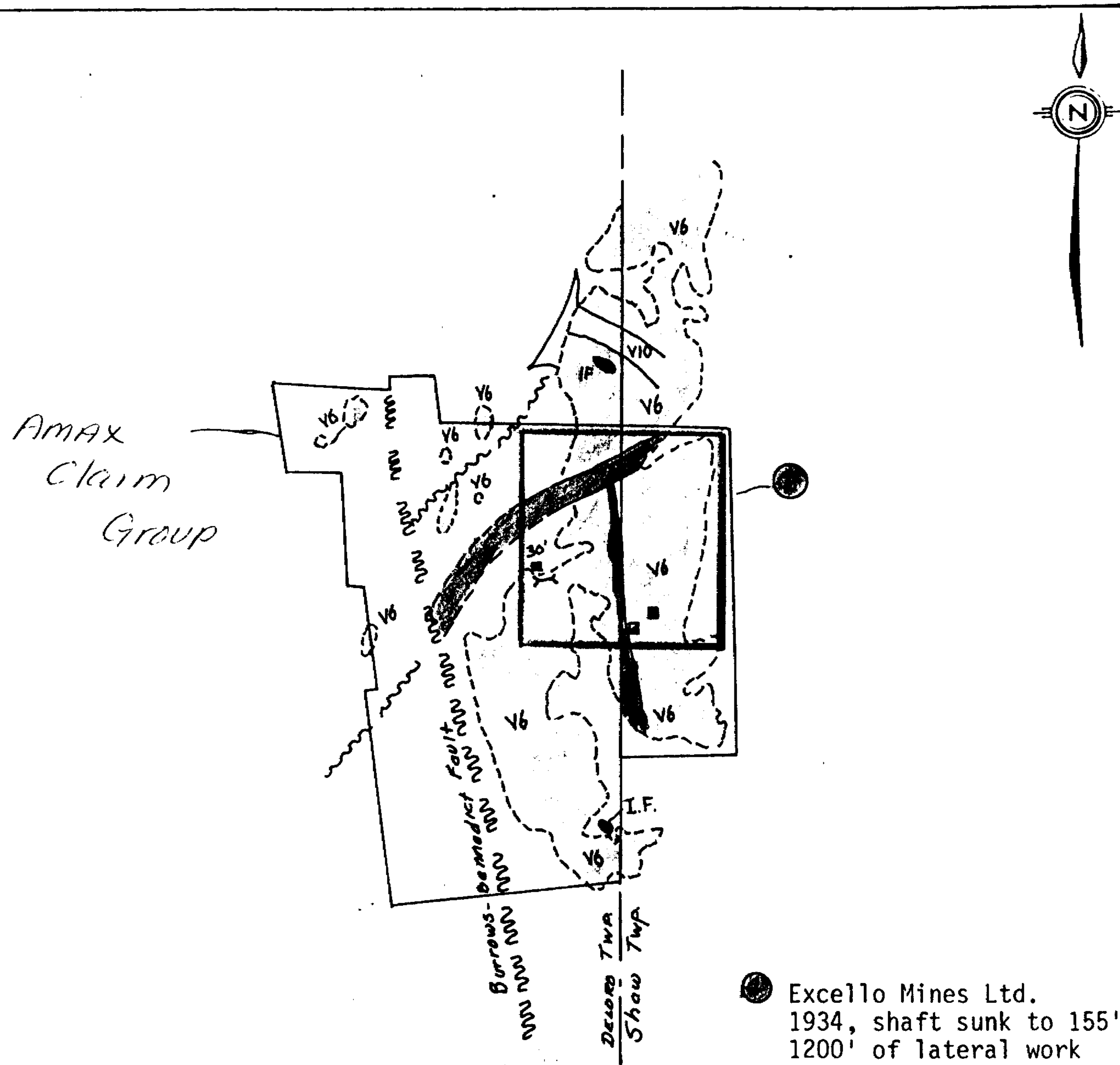
In the Field

Over twenty (20) trenches and pits were found sampling quartz veins, sulphide sediments and iron formations on these claims. Most of these are located in the claims bordering the township boundary.

Four (4) shafts have been located near the sulphide sediment-quartz vein zone. Two open shafts, sunk prior to 1910, are located on the west end of the sulphide sediment zone near the west border of claim P-555626. Two cemented over shafts, sunk prior to 1940 were located on the east end of the sulphide sediment zone near the west boundary of claim P-567428. Dumps accompany all shafts.

SURVEY METHOD

The survey was conducted by A. Plackitt, D. Messenger, D. MacLean and P. Lickley during June of 1981. Air photographs at a scale of 1:30,000 and photo blowups, at a scale of 1:5,000 were used



Excello Mines Ltd.
1934, shaft sunk to 155'
1200' of lateral work
done. Trenching, geo-
logical mapping also.

LEGEND

- V6 Andesite
- V10 Agglomerate
- 4 Diabase
- IF Iron Formation
- Fault (interpreted)
- Outcrop boundary
- Geological contact - interpreted
  - observed
- Shaft
- Trench

AMAX MINERALS EXPLORATION

PROJECT: DELORO (1043)
GROUP : 1043-14, Deloro-4
TWP : Deloro
Survey : Compilation
Date : August, 1981
SCALE : 1" = ½ mile

as control. Claim lines and traverse lines, at 400 foot intervals, were run using pace and compass.

REGIONAL GEOLOGY

The volcanic rocks of the Timmins area consist of the Deloro Group and the younger overlying Tisdale Group.

The Deloro Group is confined to a large domal structure centred in Shaw township. The group grades from andesite and basalt flows in the lower portion to dacite and rhyolite flows and pyroclastics near the top. A major change in volcanism marks the beginning of the Tisdale Group, the Lower Volcanic Formation of which is marked by serpentinized ultramafic flows.

The Destor-Porcupine Fault is the major structural feature in the area, along with the Porcupine Syncline to the north and the Shaw Dome to the south of the fault.

PROPERTY GEOLOGY

The property is primarily underlain by intermediate flows and tuffs of the Upper Deloro Group. The flows and tuffs generally contain large agglomeratic blocks and are interbedded with the occasional agglomerate, iron formation and/or sedimentary unit. Occasional pillowing in andesite flows indicates that bedding strikes at about 120^{o} and dips north. Magnetite iron formation is present in the very south east corner of the claims whereas pyritic sediments and magnetite-pyrite iron formation are found in the north-central claims area.

Two sets of diabase dykes intrude the claims area. The north striking dykes are medium to fine grained and massive whereas the east-west striking dykes are coarse grained and are less mafic in composition.

Several sets of quartz veins penetrate all lithologies in the claims area. Veining commonly contains tourmaline and more rarely fuchsite, pyrite and chalcopyrite. Veins with sulphides usually contained trace gold values though most vein systems are completely barren.

The only vein system which contains anomalous amounts of gold is a system which follows the narrow pyritic sediment unit in the east-central claims area. The quartz vein in these sediments contained consistent trace to nil gold values whereas the altered sediment host contained up to 9ppm. (.25 oz/t) and .5ppm (.015 oz/ton) gold in two instances in the vicinity of the vein. Both samples were from the large trench south of the two open shafts in claim P-555626. Sulphide sediments otherwise contain low to trace amounts of gold. This sediment zone is the sulphide ore body of the Excello Mine workings and the quartz vein and sulphide zone assays in the assessment data have not been reproduced in our detailed mapping and sampling program.

CONCLUSIONS AND RECOMMENDATIONS

The property 1043-14 is underlain by intermediate flows and tuffs with occasional agglomerate, iron formation and sedimentary units, all of the Upper Deloro Group.

Several sets of quartz veins penetrate the claims area but only one set, following a narrow pyritic sedimentary unit, is significantly mineralized. Economic mineralization is only apparent in one sample from the pyritic sediment host or wall rock (.25oz/ton). Gold values from this zone are generally low to trace.

It is recommended that further work be done on the pyritic sediment-quartz vein zone which yielded trace to economic gold assay values. Trenches and veins in the near vicinity of this zone should be resampled. A grid should be cut across this zone and ground geophysical surveys should be conducted to aid in further locating drill targets. Drilling should be undertaken to evaluate the anomalous zone's economic potential.

J. MacPherson
for
P. Lickley

Timmins, Ontario
October, 1981

2.3797

APPENDIX A

SCHEDULE OF CLAIMS

PROJECT 1043-14

DELORO-4

Claim Group	Township	Number	Claim Numbers	Recording Date
1043-14 Deloro-4	Deloro	12	P-555626	April 8, 1980
			P-555627	April 8, 1980
			P-555628	April 8, 1980
			P-555629	April 8, 1980
			P-555630	April 8, 1980
			P-567049	May 27, 1980
			P-567050	May 27, 1980
			P-567051	May 27, 1980
			P-567052	May 27, 1980
	Shaw		P-567427	May 27, 1980
			P-567428	May 27, 1980
			P-567429	May 27, 1980

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

Deloro + # 481

42A06NW8408 2.4330 DELORO

900

1043-14

The Mi... — Do not use shaded areas below.

Type of Survey(s)	Township or Area
Geological Survey	Deloro & Shaw
Claim Holder(s)	**Prospector's Licence No.**
Amax of Canada Limited	A-38495
Survey Company	**Survey Dates (linecutting to office)** Day / Mo. / Yr. — Day / Mo. / Yr.	**Total Miles of line Cut**
Amax Minerals Exploration	06 / 81	
Name and Address of Author (of Geo-Technical report)		
Peter Lickley, 255 Algonquin Blvd. West, Timmins, Ontario. P4N 2R8		

Special Provisions Credits Requested

Instructions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical - Electromagnetic	
	Geophysical - Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	Geophysical - Radiometric	
	Geophysical - Other	
	Geological	20
	Geochemical	

Man Days

Instructions		Days per Claim
Complete reverse side and enter total(s) here	Geophysical - Electromagnetic	
	Geophysical - Magnetometer	
	Geophysical - Radiometric	
	Geophysical - Other	
	Geological	
	Geochemical	

Airborne Credits

Note: Special provisions credits do not apply to Airborne Surveys.		Days per Claim
	Electromagnetic	
	Magnetometer	
	Radiometric	

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures $ ÷ 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	555626	20
	555627	20
	555628	20
	555629	20
	555630	20
	567049	20
	567050	20
	567051	20
	567052	20
	567427	20
	567428	20
	567429	20

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NOV 3 0 1981
MINING LANDS SECTION

RECORDED
NOV 25 1981
Receipt No.

Total number of mining claims covered by this report of work: 12

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
240	Nov. 25/81	
	Date Approved as Recorded	Regional/Branch Director
	June 16, 1982	

Report Completed

Date of Report	Recorded Holder or Agent (Signature)
November 29, 1981	Rosemary Kitley

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying

Joseph MacPherson

255 Algonquin Blvd. West, Timmins, Ont. P4N 2R8

Date Certified: Nov 24/81

Certified by (Signature): J. MacPherson

1362 (81/2)

Report Approval

2.4320

Mining Lands Comments

☐ To: Geophysics

Comments

☐ Approved ☐ Wish to see again with corrections | Date | Signature

☑ To: Geology - Expenditures Mr. Kustra

Comments

☑ Approved ☐ Wish to see again with corrections | Date Mar 22/82 | Signature C Kustra

☐ To: Geochemistry

Comments

☐ Approved ☐ Wish to see again with corrections | Date | Signature

☐ To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)

1293 (81/12)

December 18, 1981 2.4330

Office of the Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

We have received reports and maps for a Geological Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims P.555626 et al, in the Townships of Deloro and Shaw.

This material will be examined and assessed and a statement of assessment work credits will be issued.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1380

J. Skura/bk

cc: AMAX Mineral Exploration
Timmins, Ontario
Attention: Rosemary Tittley/Joseph MacPherson/Peter Lickley

AMAX MINERALS EXPLORATION
(A Division of AMAX OF CANADA LIMITED)

255 Algonquin Blvd. West
Timmins, Ontario
P4N 2R8

Telephone: (705) 264-5247

November 23, 1981

Our File: 1043-14

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NOV 27 1981
MINING LANDS SECTION

Mr. F. W. Matthews,
Ontario Ministry of Natural Resources,
W 1617, Whitney Block,
Queen's Park,
Toronto, Ontario.
M7A 1W3

Dear Sir:

Enclosed herewith please find two (2) copies of a report on a geological survey which was carried out over the below listed contiguous mining claims located in Deloro and Shaw townships, along with their respective survey plans.

Please note that although Mr. Peter Lickley was the author, the report and plans have been signed by Mr. Joseph MacPherson, the Project Geologist, as Mr. Lickley was only with us during the summer field season.

P-555626	P-555627	P-555628	P-555629
P-555630	P-567049	P-567050	P-567051
P-567052	P-567427	P-567428	P-567429

A "Report of Work" concerning the above survey has been filed with Mr. William Good, Mining Recorder for the Porcupine Mining Division.

Thank you.

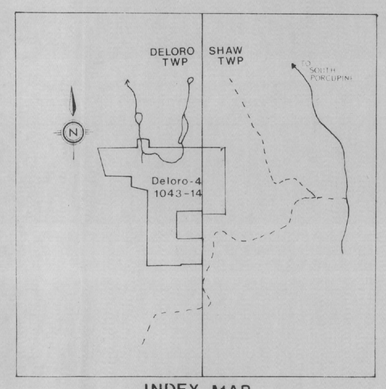
Yours truly,
AMAX OF CANADA LIMITED

Rosemary Tittley

Rosemary Tittley (Mrs.)
Land Recorder

Encs. 2

c.c. K. Clemiss/E. Barclay, Toronto



INDEX MAP

LEGEND

VOLCANIC ROCKS

V4	Dacite
V6	Andesite
V7	Basalt
V9ι	Intermediate Tuff
V9f	Felsic Tuff
V10ι	Intermediate Agglomerate
V9-10ι	Intermediate Tuff - Agglomerate

SEDIMENTARY ROCKS

S	Undifferentiated Sediments
SS	Quartzite and Cherty Sediments
IF	Iron Formation

INTRUSIVE ROCKS

2Db	Coarse Dioritic Diabase
4Db	Diabase

SYMBOLS

Py	Pyrite
Mag	Magnetite
Cp	Chalcopyrite
Tour	Tourmaline
qv	Quartz Vein
qs	Quartz Stringers
	Quartz Stringer or Vein - known orientation
	- unknown dip
	- unknown orientation
	Shear Zone
	Projected Shear Zone
	Fault (interpreted)
	foliation - inclined dip
	- dip unknown
	Bedding - inclined dip
	- dip unknown
	Geological Contact - known
	- assumed
	Outcrop Boundary
	Claim Post - located
	- location assumed
	Trench
	Pit with Quartz Veins
	Shaft
	Drill Hole
	Traverse Line
	Physiographic Boundary
	Swamp
	Beaver Pond
	Gravel Road
	Old Bush Road (Ingrown)

AMAX MINERALS EXPLORATION

GEOLOGY SURVEY

DELORO - 4 1043-14

Deloro & Shaw Townships

District of Cochrane

Scale 1:5,000

NTS: 42-A-6

Timmins Office

J. MacPherson

Date July 5, 1981

Mapped by: P. Lickley
J. MacPherson
D. Messenger

42A06NW8429 2.4330 DELORO
200

2.4330