



32D05SE0056 63.3103 PONTIAC

010

63.3103

REPORT OF WORK PERFORMED
IN BEN NEVIS & PONTIAC TOWNSHIPS
UNDER ONTARIO GOVERNMENT'S
MINERAL EXPLORATION ASSISTANCE
PROGRAM

CONTRACT KL-33.

D.R. Hawke B.Sc.
and
W.R. Ryall Ph.D.
Amax Exploration, Inc.
Timmins, Ontario

July 1973

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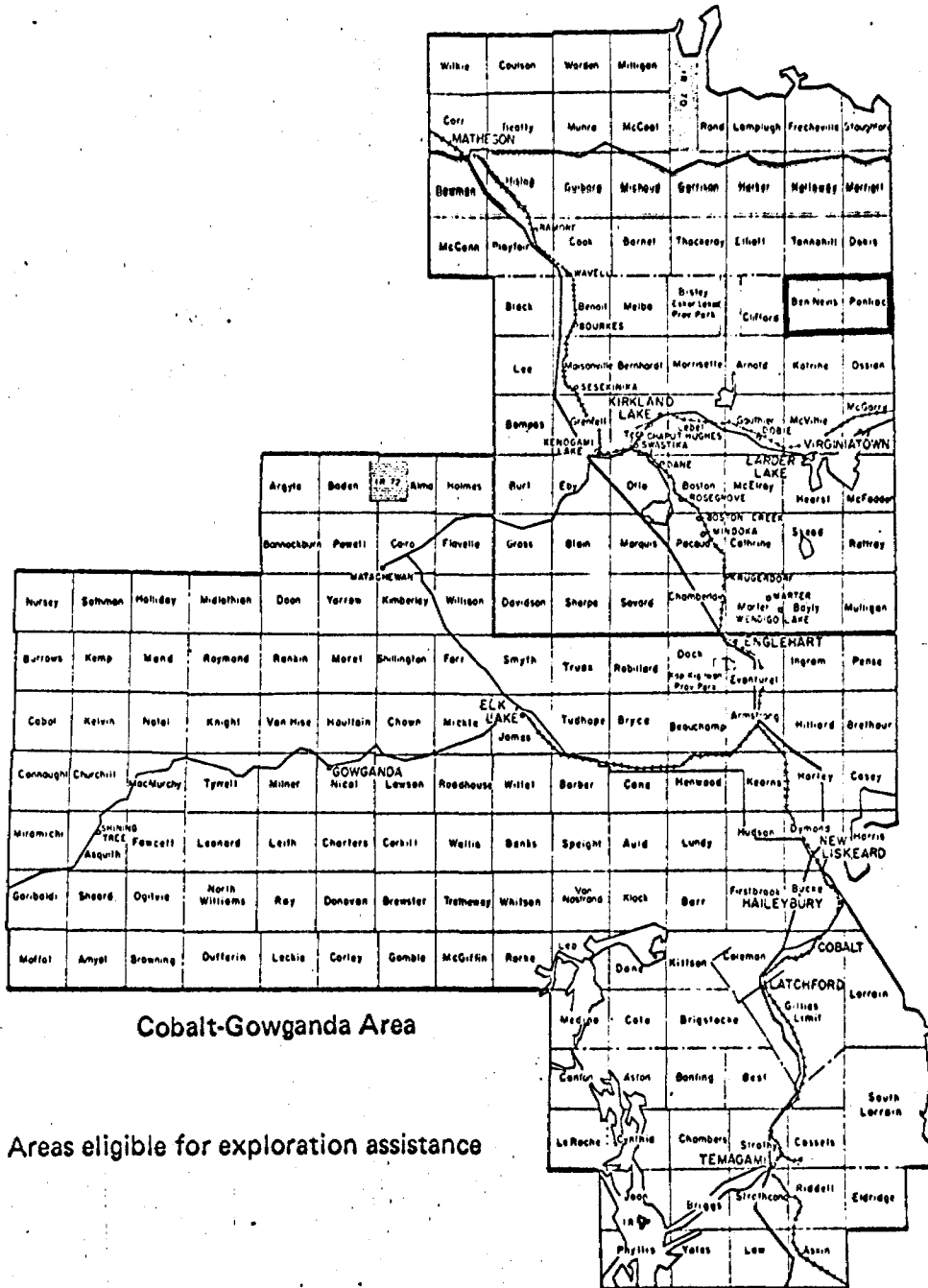
32D05SE0056 63.3103 PONTIAC

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Kirkland Lake Area



Cobalt-Gowganda Area

Areas eligible for exploration assistance

Figure 1. Location of claim groups in Pontiac and Ben Nevis Townships
 ...Amax Exploration, Inc...

I. SUMMARY

Diamond drill testing of IP targets in Ben Nevis and Pontiac Townships was completed with a total of eleven holes for an aggregate of 4145 feet. All holes intersected sulphide mineralization but this was mostly pyrite accompanied by weak base metal mineralization. Hole TX-102, drilled in Ben Nevis Township, returned the most encouragement with 7.5 feet averaging 2.63% Zn, 0.40% Cu, 41.7 ppm Ag and 0.08% Pb. Extension of this zone could not be located with an additional two closely spaced holes.

PART ABen Nevis Township

by

W.R. RyallII. INTRODUCTION

IP surveys, carried out in the fall and early winter of 1972, with the aid of the Ontario Government's Mineral Exploration Assistance Program, revealed several anomalous zones occurring in favourable geological environments which deserved diamond drill testing. A further request was made to the Ontario Government in March 1973 soliciting assistance under the above Program.

This request was approved and drilling commenced in Ben Nevis Township on April 2, 1973. A total of 3261 feet was drilled in Ben Nevis Township with all 8 holes intersecting pyrite mineralization. Two holes, TX-102 and TX-104, intersected copper, zinc, and lead mineralization in anomalous proportions, but not over economically significant widths. Two holes drilled to test the continuity of mineralization encountered in hole TX-102 showed that it did not extend to the area of later holes.

III. DIAMOND DRILLING

Eight holes were drilled as follows.

<u>Number</u>	<u>Location</u>	<u>Dip</u>	<u>Length</u>	<u>Zone</u>	<u>Reference</u>
TX-99-73	Ben Nevis-2 L6E 10+00S	-45°N	408 ft.	"Silver breccia"	Fig. 2
TX-100-73	Ben Nevis-2 L2E 6+00S	-45°N	400 ft.	-	Fig. 2
TX-101-73	Canagau L28S, 24+00W	-45°E	500 ft.	Zone D	Fig. 3
TX-102-73	Canagau L45+50S, 11+00W	-45°SE	500 ft.	Zone C	Fig. 3

<u>Number</u>	<u>Location</u>	<u>Dip</u>	<u>Length</u>	<u>Zone</u>	<u>Reference</u>
TX-103-73	Canagau L26S, 7+50E	-45°W	400 ft.	Zone B	Fig. 3
TX-104-73	Canagau L6S, 1+00E	-45°W	453 ft.	Zone A	Fig. 3
TX-105-73	Canagau 45+10S, 11+30W	-45°SE	300 ft.	Zone C	Fig. 3
TX-106-73	Canagau 45+70S, 11+40W	-45°SE	300 ft.	Zone C	Fig. 3

Total Footage3,261 ft.

Drill logs are attached overleaf together with assay results. All holes intersected sulphide mineralization but in most instances this was pyrite carrying only weak values of Cu, Zn, Pb and Ag.

DDH TX-102-73 returned anomalously high values from 65 to 72.5 ft. and in sections in the interval 469 to 478 ft. The 7.5 ft. from 65 ft. averaged 2.63% Zn, 0.40% Cu, 41.7 ppm Ag, 0.08% Pb. Within this section
 2.0 ft. from 65 ft. averaged 2.34% Zn, 0.11% Cu, 12.3 ppm Ag, 0.02% Pb and
 2.0 ft. from 67 ft. averaged 0.81% Zn, 0.84% Cu, 32.4 ppm Ag, 0.05% Pb and
 3.2 ft. from 69.3 ft. averaged 4.21% Zn, 0.31% Cu, 59.0 ppm Ag, 0.15% Pb.

In the deeper section encouraging values were reported from 469 to 478 ft., the best section being 2.0 ft. from 469 ft. which averaged 3.46% Zn, 0.17% Cu, 16.6 ppm Ag, 1.50% Pb.

Two holes were drilled in the vicinity of TX-102 to attempt to intersect possible extension of the above zones. TX-105 was drilled 50 ft. behind and TX-106 was drilled 50 ft. SW of TX-102. Both holes were unsuccessful in extending the limits of the mineralized zones.

PART B
Pontiac Township
 by
D.R. Hawke

IV. INTRODUCTION

In July 1971 an IP survey carried out in Pontiac Township defined an anomalous zone occurring in a favourable geological environment. This was enhanced the following summer by a geochemical survey which revealed a coincident geochem anomaly. Three diamond drill holes were planned to adequately test the IP-geochem anomaly. Drilling commenced on June 6, 1973 with a total of 884 feet being drilled. Each hole contained disseminated pyrite mineralization while two contained short sections of very weakly disseminated chalcopyrite. No economically significant assays were obtained in any of the holes.

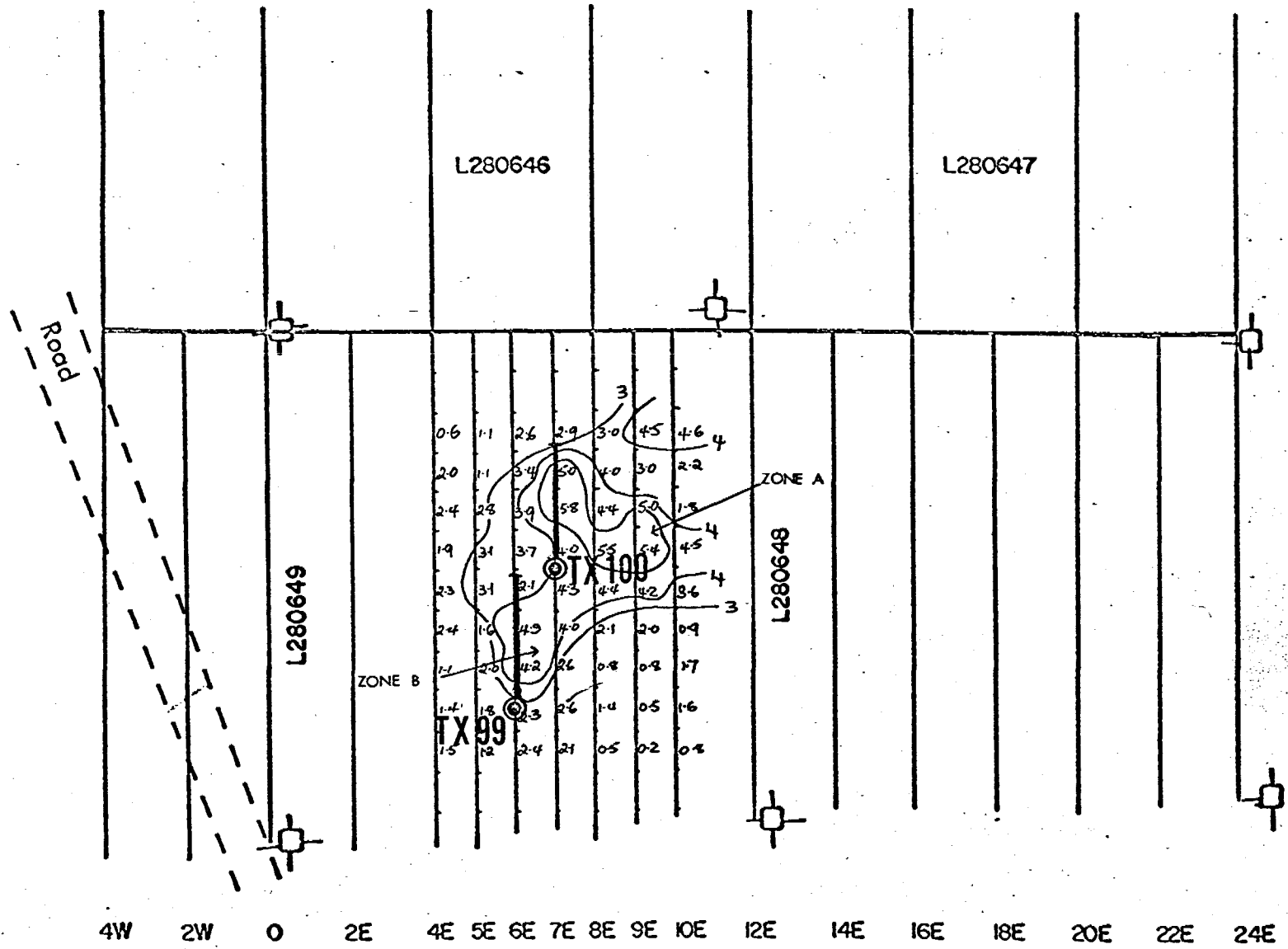
V. DIAMOND DRILLING


The data for the three holes is presented in the following table.

<u>Number</u>	<u>Location</u>	<u>Dip</u>	<u>Length</u>	<u>Reference</u>
TX-107-73	L4N 3+20E	-50°	312 ft.	Fig. 4
TX-108-73	L4N 1+00E	-45°	275 ft.	Fig. 4
TX-109-73	L0 2+50W	-45°	<u>297</u> ft.	Fig. 4

Total Footage884 ft.

The drill logs along with the assay results are attached overleaf. The three holes were designed to test the three intense regions of the IP anomaly. Disseminated pyrite in rhyolitic to dacitic host rocks was intersected in all three holes. Holes TX-107 and TX-109 contained short sections of very sparsely disseminated chalcopyrite. The mineralization tends to occur as discrete blebs and patches, which accounts for the strong IP response. The results of this drill program failed to provide any encouragement for further work on this property.



Percent Frequency Effect
Dipole - Dipole
 $n=3; a=100 \text{ ft.}$
Drill Hole  TX 99

IP SURVEY
BEN NEVIS TWP., ONTARIO
GRID 3 - DETAIL
SCALE: 1"=400'

NTS. NO. 320/5 PROJECT NO. 421-01
TO ACCOMPANY REPORT BY *W. Ryall*
AMAX Potash Ltd., Timmins, Ontario *DATE: May 73.*

Figure 2

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-99-73
Sheet No. 2

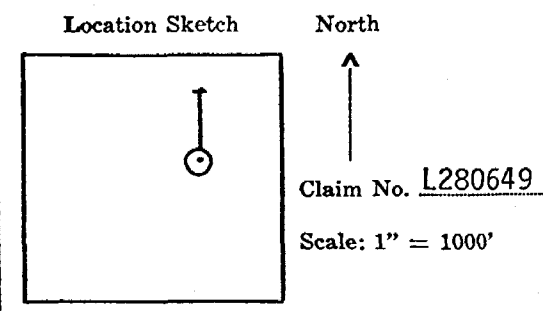
Footage		DESCRIPTION	Sample No.	From	To	Length										
From	To															
309.0	325.0	DACITE As for section from 31-227 ft.														
325.0	329.0	DACITE FRAGMENTAL As for section from 10-31 ft.														
329.0	382.0	DACITE As for section from 31-227 ft. except 2 ft. section at 366 ft. DACITE FRAGMENTAL with 15% py.														
382.0	385.0	DACITE FRAGMENTAL As for section from 10-31 ft.														
385.0	408.0	DACITE As for section from 31-227 ft.														

W.R. Rvall
.....
W.R. Rvall.

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-100-73

Hole No. TX-100-73	Sheet 1	Length 400	Commenced 7 April 1973	Dip: Collar 45°
Property Ben Nevis 2		Bearing 0°	Completed 9 April 1973	
Township Ben Nevis		Dip -45°	Drilling Co. Continental D.D.	Etch Test
Location Grid 3		Objective	Core Size BQ	Depth
Line 7E, 6+00S			Casing Left in Hole nil	Rdg.
Logged By W.R. Ryall				True
Core Location Timmins				

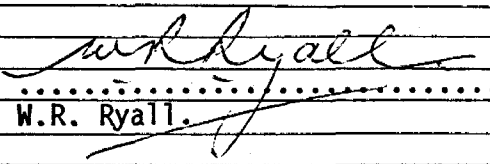


Remarks _____

Footage		DESCRIPTION	Sample No.	From	To	Length	Au oz/ton	Ag ppm	Cu ppm	Zn ppm
From	To									
0.0	16.0	OVERBURDEN								
16.0	400.0	DACITE								
		Grey to dark grey, generally medium grained massive, some sections heavily sheared others brecciated. The unit shows variable alteration with carbonate, sericite and chlorite being developed throughout resulting in rock being moderately soft.								
		16-22 ft. Broken core, rusty. Fragmental with frags to 1 inch across, poorly defined foliation (angle to CA approx. 60-70°). Abundant carbonate and up to 5% py.								
		22-50 ft. Fragmental, poorly sorted with abundant angular frags up to 1.5 in set in a fine grained groundmass. Py disseminated through section - aggregates reach 10% over 6 in.								
		50-55 ft. Massive.								
		55-62 ft. Fragmental section with heavy carbonate at top. Dissiminated py to 15% but av 5%.	4279	59	60	1.0	nil	2.2	570	2760
		62-134 ft. Less fragmental section, showing crude foliation (angle to CA 40-60°). Py to 15% but averages 5%.	4280	69	70	1.0	nil	2.2	106	2290
			4281	99	100	1.0	nil	0.9	104	66
			4282	119	120	1.0	nil	0.9	113	67

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-100-73
 Sheet No. 2

Footage		DESCRIPTION	Sample No.	From	To	Length	Au oz/ton	Ag ppm	Cu ppm	Zn ppm
From	To									
	134-195 ft.	Fragmental, mottled appearance due to heavy development of carbonate-silica amygdules averaging less than 0.5 in across. Frags to 2 in across set in heavily chloritized and carbonatized groundmass. Py disseminated through section av 2-3%.								
	195-360 ft.	Light grey, more massive section chlorite alteration not as heavy as above but sericite and carbonate heavy. Py disseminated through section generally av 2-5% but locally is to 30% eq sections shown at right.	4283	239	240	1.0	nil	0.8	62	53
			4284	323	324	1.0	nil	3.1	344	472
			4285	336	337	1.0	nil	0.8	82	20
	360-364 ft.	Highly carbonatized section.								
	364-400 ft.	Grey, fairly massive section with background py to 2%.	4286	364	365	1.0	nil	1.1	52	58
400	END OF HOLE.									
 W.R. Ryall.										

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-101-73

Hole No.	TX-101-73	Sheet	1	Length	500 ft.	Commenced	12 April 1973	Dip: Collar	-45°		
Property	Ben Nevis 2	Bearing	090°	Completed	16 April 1973	Drilling Co.	Continental D.D.	Etch Test	Depth	Rdg.	True
Township	Ben Nevis	Dip	-45°	Core Size	BQ	Casing Left in Hole		<div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p style="text-align: center;">Location Sketch</p> <div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto;"></div> </div> <div style="flex: 0.5; text-align: center;"> <p>North</p> <p>↑</p> </div> <div style="flex: 1;"> <p>Claim No. L280635</p> <p>Scale: 1" = 1000'</p> </div> </div>			
Location	L28S, 24+00E	Objective									
Logged By	W.R. Ryall										
Core Location	Timmins										

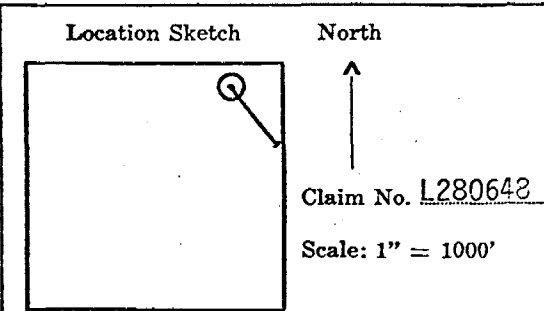
Remarks

Footage		DESCRIPTION	Sample No.	From	To	Length	Au oz/ton	Ag ppm	Cu ppm	Zn ppm
From	To									
0.0	16.0	OVERBURDEN								
16.0	27.0	DACITE								
		Light grey, massive, generally even grained, significant carbonate, chlorite alteration of groundmass. Amygdaloidal with av size 0.1-0.75 in carbonate filled with minor py. Streaky sericite alteration mostly as x-cutting veins up to 0.25 in across. Patchy py development through section.								
27.0	40.0	DACITE FRAGMENTAL								
		Dark grey, generally massive but in places crude foliation at about 60° to C.A. Groundmass heavily chloritized with fragments and ragged-edged patches composed almost entirely of sericite. Fragments and sericite patches make up about 50% of rock giving a mottled appearance. Rusty streaks x-cutting. Fragments generally about 1 in across but many may be larger than 10 in across Py sparse.								
40.0	56.5	DACITE								
		Grey, massive, amygdaloidal, hard not as altered as above section but at 50 ft. heavy development of white carbonate veinlets. Occasional patches of lighter coloured more sericitized rock near 41 and 53 ft. Amygdules infilled with carbonate, silica and rare py - elsewhere py sparse.								
56.5	61.0	DACITE FRAGMENTAL								
		As for section from 27-40 ft.								

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-102-73

Hole No. TX-102-73	Sheet 1	Length 500 ft.	Commenced 18 April 1973	Dip: Collar -45°
Property Ben Nevis	Grid 3	Bearing 135°	Completed 24 April 1973	Etch Test Depth Rdg. True
Township Ben Nevis		Dip -45°	Drilling Co. Continental D.D.	
Location L45+50S		Objective	Core Size B.Q.	
11+00W			Casing Left in Hole	
Logged By W.R. Ryall				
Core Location Timmins Office				
Remarks				



Footage		DESCRIPTION	Sample No.	From	To	Length	Au oz.	Ag ppm	Cu ppm	Zn ppm	Pb ppm
From	To										
0.0	11.0	OVERBURDEN									
11.0	62.5	DACITE FRAGMENTAL									
		Dark grey, massive, mod. hard, abundant chlorite and carbonate in groundmass with latter common as splashes and veins x-cutting rock. Less fragmental sections show carbonate silica infilled amygdules up to 1.5 in but av. about 0.25-0.5 ins. Frequently py at periphery and centre of amygdules. Fragments lighter coloured and harder than groundmass and range from l.t. 0.1 in to about 5 in across. Core fractured and rusty 29-30 ft and 34-35 ft. Massive white carbonate vein from 35.5 to 36.5 ft. contains 3% diss. py. Carbonate veins contain 2-15% py and 0-5% comb sphal and cpy. Section 60-61.5 ft. rusty streaking subparallel weak foliation 45 to 60° to C.A.	1509	26.0	27.5	1.5	.02	3.1	111	5400	
			1510	35.3	36.2	0.9		4.9	172	534	
			1511	39.0	40.0	1.0		2.5	64	3430	
			1512	40.0	45.0	5.0		0.9	44	364	
			1513	55.0	60.0	5.0		1.1	45	345	
			1514	60.0	62.5	2.5		0.9	38	383	
62.5	83.0	DACITE									
		Light grey-green, massive, hard, abundant amygdules infilled with silica and white carbonate av 0.5 in across. Brecciated in part and fragmental 76-78 ft. Abundant light green chlorite(?) and carbonate in groundmass. Plentiful carbonate veinlets sometimes with weak py, sphal and cpy. Heavy py with cpy and sphal from 67.0-72.5 ft. Gradational contact to unit below through 2 ft. rusty and in places fractured rock.	1501	63.6	65.0	1.4	nil	2.6	98	820	44
			1502	65.0	66.0	1.0	.01	14.1	1300	24300	228
			1503	66.0	67.0	1.0	nil	10.5	970	22400	154
			1504	67.0	67.9	0.9	.03	17.0	7600	7900	482
			1505	67.0	69.0	2.0	.01	45.0	9300	8300	600

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-102-73
Sheet No. 3

Footage		DESCRIPTION	Sample No.	From	To	Length	Au oz	Ag ppm	Cu ppm	Zn ppm	Pb ppm
From	To										
240.0	241.5	DACITE BRECCIA As for section 225.8-233.0 ft. 10% py 240-241 ft.	1527	240.0	241.0	1.0		2.8	449	329	
241.5	278.0	DACITE Med. grey, massive, fine grained, few amygdules infilled with quartz-feldspar-chlorite. Absence of carbonate veins. From 271.4-272.4 ft. 5% py in carbonate.	1528	271.4	272.4	1.0		1.7	40	278	
278.0	285.0	DACITE BRECCIA As for section 225.8-233.0 ft.	1529	280.0	281.0	1.0		2.3	47	126	
285.0	291.0	DACITE As for section 215.0-225.8 ft.									
291.0	296.5	DACITE BRECCIA As for section 225.8-233.0 ft.									
296.5	297.5	DACITE As for section 215.0-225.8 ft.									
297.5	301.5	DACITE BRECCIA As for section 225.8-233.0 ft.									
301.5	325.0	DACITE As for section 215.0-225.8 ft.									
325.0	330.0	DACITE BRECCIA Generally as for section 225.8-233.0 ft. but increasing number of carbonate veinlets and streaks. Fragments heavily sericitized in chlorite- rich groundmass. Py av. 1-2% but in interval 328-330 ft. av. 5%.									
330.0	363.0	DACITE Med. grey, massive, fine grained chloritized groundmass hosting amygdules infilled with feldspar- carbonate and rare py. Py av. 2% but heavier in carbonate-rich sections. Sections at right contain 5-10% py with sparse sphal.	1530	333.0	335.0	2.0		2.1	41	166	
			1531	338.5	340.0	1.5		4.3	192	320	
			1532	341.0	342.1	1.0		4.1	294	130	
			1533	345.9	346.9	1.0		3.1	95	262	
			1534	348.0	348.6	0.6		5.4	179	96	

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-102-73
Sheet No. 4

Footage		DESCRIPTION	Sample No.	From	To	Length	Au oz.	Ag ppm	Cu ppm	Zn ppm	Pb ppm
From	To										
363.0	380.0	DACITE Med. grey, more plentiful amygdules, mod. soft due to chlorite alteration of groundmass. Py av 2%.	1535	370.0	372.5	2.5		5.1	101	74	
			1536	375.0	377.5	2.5		1.8	69	193	
380.0	415.5	DACITE Grey, fine grained, amygdaloidal but less so than above section, abundant thin carbonate veinlets av 45° to C.A., brecciated in part, crude foliation about 60° to C.A.	1537	400.0	402.0	2.0		3.6	39	85	
			1538	403.0	404.5	1.5		4.7	41	84	
			1539	410.0	412.0	2.0		3.1	66	76	
			1540	412.0	413.0	1.5		1.9	64	175	
415.5	466.0	DACITE Darkery grey, med. grained, massive, approx. equal amount altered feldspar and ferromagnesian mineral set in a fine grained chloritized groundmass Py sparse av 1 l.t. 1%.									
466.0	473.0	DACITE FRAGMENTAL Med. grey, fairly massive, irregularly defined fragments up to 2 in set in chlorite rich groundmass. Py av. 10% but to 30% from 467-470. Massive py with sphal and gal 469-470 ft.	1541	466.0	467.0	1.0		5.1	296	2700	
			1542	467.0	469.0	2.0		3.2	92	810	150
			1543	469.0	470.0	2.0		16.6	1670	34600	15000
			1544	470.5	472.5	2.0		2.1	48	1430	110
473.0	500.0	DACITE As for section from 363-380 ft. 15% py 475.7 to 480 ft. containing sphal and gal.	1545	478.0	480.0	2.0		4.5	600	5220	2980
			1546	475.7	478.0	2.3		6.5	519	2330	1440
	500.0	END OF HOLE.									

W.R. Ryall
.....
W.R. Ryall.

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-103-73

Hole No. TX-103-73 Sheet 1	Length 400 ft.	Commenced 27 April 1973	Dip: Collar -45°
Property Canagau Option	Bearing 270°	Completed 28 April 1973	Etch Test Depth Rdg. True
Township Ben Nevis	Dip -45°	Drilling Co. Continental D.D.	
Location L26+00S	Objective	Core Size BQ	
7+50E		Casing Left in Hole nil	
Logged By W.R. Ryall			
Core Location Timmins Office			

Location Sketch

North

↑

Claim No. L12782

Scale: 1" = 1000'

Remarks _____

Footage		DESCRIPTION	Sample No.	From	To	Length	Cu ppm	Zn ppm	Ag ppm
From	To								
0.0	7.0	OVERBURDEN							
7.0	10.0	RHYOLITE Light grey, massive, hard, siliceous in places, fine grained, incipient sericitization. Py rare - top 3" of section contains 5% diss. py.	1559	7.0	7.3	0.3	88	5500	7.7
10.0	25.0	RHYOLITE FRAGMENTAL Light grey to green-grey, consists of angular, fractured, fine grained RHYOLITE fragments healed with light coloured siliceous or dark coloured chlorite-rich veinlets and irregular shaped patches and streaks. Fragments are lightly-moderately sericitized. Py av 1% over section but from 11-12 ft. 5% py with rusty patches and from 16.5 to 17.5 ft. av 15% py with 2in massive section, 23 to 24 ft. av 5% py.	1560	11.0	12.0	1.0	30	650	2.6
			1561	16.5	17.5	1.0	171	880	10.6
25.0	34.0	RHYOLITE PORPHYRY Dark grey fine grained groundmass hosting altered feldspar phenocrysts up to 0.2 in diam but av l.t. 0.1 in. Abundant chlorite alteration and patchy sericite alteration. Py sparse but rusty patch at 29 ft.							
34.0	72.0	RHYOLITE Light grey to green grey massive, hard, siliceous in part, light pervasive sericite alteration common to 42.5 ft where rock becomes darker coloured due to increase in chlorite content. Py sparse av l.t. 1% but occurs to 5% in veinlets at 44 ft.							

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-103-73
Sheet No. 2

Footage		DESCRIPTION	Sample No.	From	To	Length	Cu ppm	Zn ppm	Ag ppm
From	To								
72.0	87.0	RHYOLITE FRAGMENTAL Composed of light green angular siliceous fragments to 3 in set in a fine grained softer groundmass which is heavily sericitized at top of section but less so to base. Spotty chlorite present throughout but shows greater development over lower 4 ft. where rock is more massive. Py sparse.							
87.0	114.0	RHYOLITE Light grey to dark grey according to chlorite content. Lighter sections contain heavier sericitic alteration in which frequent chlorite spots give rock mottled appearance. Rock is massive, fine grained, fairly hard where unaltered. Occasional siliceous veinlet at high angle to C.A. Sulphides sparse, weak diss. py av l.t. 1% but from 92.5-93.0 ft cpy and py occur. At 92.5 ft 0.5 in seam massive cpy and from 92.5-93.0 ft cpy and py occur in late stage chlorite-carbonate veinlets.	1562	92.5	93.0	0.5	21600	2960	10.4
114.0	315.5	DACITE Med. to dark green grey, generally massive, mod hard. Consists of ragged altered feldspar phenocrysts av 0.1 in set in fine-med. grained chloritized groundmass. Some sections non porphyritic but grade into porphyritic sections over a few feet. Numerous siliceous veinlets cross cutting at angles ranging from 40° to 75° to C.A. and range in width from l.t. 0.1 in to 4 in. Frequently these veins enclose host rock fragments and py concentrations eg. from 248-249 ft 3% py, 269-270 ft. 3% py - elsewhere py is developed as isolated cubic crystals and as irregular disseminations over most of unit but av about 1%.	1563	248.0	249.0	1.0	149	56	1.7
			1564	269.0	270.0	1.0	27	48	1.8

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-103-73
Sheet No. 3

Footage		DESCRIPTION	Sample No.	From	To	Length	Cu ppm	Zn ppm	Ag ppm
From	To								
315.5	400.0	RHYOLITE							
		Light greenish grey, porphyritic in part with altered ragged feldspar phenocrysts set in a fine grained sericitized groundmass. Patchy sericite development. Frequently chlorite patches present in groundmass. Numerous silica veinlets crosscutting core generally at about 40 to 75° to C.A. Av width 0.1 to 0.5 in but from 365 to 371 ft coarsely crystalline silica forms 90 of core and is fractured throughout, but most heavily from 365 to 366 ft, 366.5 to 367 ft and 369 to 371 ft. Rock fragments are common in this vein which is rusty from 367.5 to 370 ft, though no sulphides are present. Chlorite common in vein over most of the section py is present to about 1% with up to 5% present over 1 to 3 inches. From 371 to 373 ft py av 10%, 376-377.5 ft av 5%. In these sections heavy sericite is present and rock is soft. From 383-384 ft heavy chlorite gives rock a dark grey colour and assoc with thin carbonate veinlets rare diss cpy.							
			1565	371.0	373.0	2.0	458	121	7.6
			1566	376.0	377.5	1.5	228	137	4.8
			1567	383.0	384.0	1.0	670	134	2.3
			1568	391.5	392.0	0.5	47	81	1.4

W.R. Ryall
.....
W.R. Ryall.

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-104-73
Sheet No. 2

Footage		DESCRIPTION	Sample No.	From	To	Length	Cu ppm	Zn ppm	Pb ppm	Ag ppm
From	To									
		crystals: Lighter coloured sections, particularly below about 140 ft. show development of sericite and contain heaviest py - 132-133 ft. - 10% py, as coarse disseminated crystals to 1/8 in. across and finely crystalline massive py in carbonate veinlets. 2 in band massive gal. cpy and sphal at 190 ft. Crude foliation at about 45° to C.A. defined near and of section by lighter bands.	1549	132.0	133.0	1.0	236	6800	520	4.2
195.0	302.0	RHYOLITE								
		Light grey, massive, even grained, med. soft due to abundant sericite development. Some chlorite-rich streaking which is better developed in latter half of section. Py weakly diss to l.t. 1% to 225 ft. when it reaches 1% and rare patches of cpy and sphal occur diss through rock to about 240 ft. Few x-cutting carbonate veinlets through section. Py incr. from 240 ft. and av 10% from 244-246 ft, 20% py with gal. and sphal. 274-275.5 ft, 288-289 ft. av. 5% diss py - py associated with sphal, 289-290 ft. massive sphal-gal with minor cpy, 294-5 ft av 5% py with minor sphal.	1550	244.0	245.0	1.0	203	10500	1640	3.3
			1551	274.0	275.5	1.5	1160	1330	22600	27.3
			1552	277.5	280.0	2.5	600	3120	3680	5.3
			1553	289.0	290.0	1.0	1200	45200	68000	41.3
		Fractured core at 212 and 221 ft. Persistent fractures at 60° to C.A. near 232 ft.	1554	294.0	295.0	1.0	86	680	1100	1.4
302.0	329.0	DACITE PORPHYRY								
		Light grey, massive, white feldspar phenocrysts av 0.2 in across but largest to 1 in set in a fine grained chloritized and sericitized ground-mass. Grades into unit described below by dimunition of phenocrysts. Py common through section av 2% but in several sections reaches 10%. From 307.5 to 309 ft. 10% py with 5% comb gal and sphal	1555	307.5	309.0	1.5	304	9300	8600	8.3
			1556	324.0	325.0	1.0	680	18200	2820	10.1

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-104-73
Sheet No. 3

Footage		DESCRIPTION	Sample No.	From	To	Length	Cu ppm	Zn ppm	Pb ppm	Ag ppm
From	To									
329.0	412.0	DACITE Med. grey, massive, poor foliation due to mineral streaking at 50-60° to C.A. near top of section porphyritic over intervals 335-340 ft. 342-365 ft., 395-412 ft. with feldspar to 0.3 in. Some amygdules infilled with quartz-feldspathic material carbonate and py. Groundmass mottled with dark chlorite-rich spots. Py av 2% with rare patches av 10-15% over 1-2 in. av 5% py 348-350 ft., 368-370 ft. Fragmental 349-350 ft.	1557	353.0	355.0	2.0	144	7400	3400	6.7
412.0	450.5	DACITE Light grey, massive, unfoliated and non porphyritic, abundant sericite alteration with patchy chlorite.								
450.5	453.0	DACITE FRAGMENTAL Med. grey, massive, light coloured fragments to 2 in set in a fine grained sericitized and chloritized groundmass.								
	453.0	END OF HOLE.								

W.R. Ryall
W.R. Ryall.

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-106-73

Hole No. TX-106-73 Sheet 1	Length 300 ft.	Commenced 9 May 1973	Dip: Collar -45°
Property Ben Nevis 3	Bearing 135°	Completed 10 May 1973	Etch Test Depth Rdg. True
Township Ben Nevis	Dip -45°	Drilling Co. Continental D.D.	
Location 45+70S, 11+40W	Objective	Core Size BQ	
Logged By W.R. Ryall		Casing Left in Hole	
Core Location Timmins Office			

Location Sketch

North

↑

Claim No. L280648
Scale: 1" = 1000'

Remarks _____

Footage		DESCRIPTION	Sample No.	From	To	Length	Ag ppm	Cu ppm	Zn ppm		
From	To										
0.0	10.0	OVERBURDEN									
10.0	32.0	DACITE FRAGMENTAL Dark grey, massive. Composed of angular dacite fragments ranging from 0.1 in to 6 in diam set in a med-fine grained groundmass which shows heavy chlorite alteration. Abundant silica and carbonate in groundmass along with about 1% diss py. Numerous fine grained silica veinlets cross cutting core. 6 in rusty patch near 23 ft.									
32.0	34.0	FELSIC DYKE Light green, massive, even grained, av grain size 0.05 in, composed of interlocking plates of light green micaceous mineral with interstitial carbonate and silica. Weak py diss throughout. 6 in quartz vein at 33.5 ft contains few diss specs cpy.									
34.0	60.0	DACITE Grey, massive, med hard, even grained, composed of altered feldspar phenocrysts l.t. 0.1 in set in fine grained chloritized groundmass. Rock becomes lighter coloured where sericite veins and patches are seen, particularly near 44 ft. and 59 ft. Diss py developed through unit av about 1% but between 55 and 56 ft av 5%.	1569	55.0	56.0	1.0	1.3	45	39		

AMAX EXPLORATION, INC.
DIAMOND DRILL RECORD

Hole No. TX-106-73
Sheet No. 2

Footage		DESCRIPTION	Sample No.	From	To	Length	Ag ppm	Cu ppm	Zn ppm			
From	To											
60.0	103.0	DACITE Grey, massive, amygdaloidal, mod soft due to abundant development of carbonate veinlets and patches. Amygdules very prominent in this unit, average 0.3 in across and are infilled with fine grained silica-carbonate. Carbonate veins or patches reach 6 in and 8 in C.L. at 77 and 91 ft., resp. Sulphides rare, diss py av 1.t. 1%.										
103.0	186.0	DACITE Grey, massive, even grained, only few amygdules near top of section and poorly developed elsewhere. Few carbonate-silica veinlets, largest are 1 in at 121.5 ft and 3 in at 123 ft. Groundmass contains heavy chlorite giving the rock a mottled appearance. Py is sporadically developed through section av about 1% but occurs to 5% in the section: 169 to 171 ft.	1570	169.0	171.0	2.0	0.5	43	99			
186.0	211.0	DACITE As for section from 60-103 ft. 5% py from 196 to 197 ft. Heavy fracturing and carbonate veining at 201 ft contains a few blebs of cpy.	1571	196.0	197.0	1.0	1.0	59	302			
211.0	220.0	DACITE As for section from 103 to 186 ft.										
220.0	300.0	DACITE Med grey, massive over most of section but from 290-300 ft rock shows poor foliation at about 40 to 50° to C.A. Heavy patches of black chlorite and patchy sericite alteration. Plentiful carbonate-silica infilled amygdules and numerous crosscutting carbonate-silica veins. Py generally heavier in this unit and av 1 to 2% between 235 to 237.5 ft av 10%, 266 to 267.5 ft av 5% 272-272.5 ft av 5%. Py mostly occurs as diss cubes av 0.05 in.	1572	235.0	237.5	2.5	0.9	86	229			
			1573	266.0	267.5	1.5	0.8	24	142			
			1574	272.0	272.5	0.5	2.8	76	458			
300.00		END OF HOLE.										

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AMAX POTASH LIMITED
DIAMOND DRILL RECORD

Hole No. TX-107-73
Sheet No. 2

Footage		DESCRIPTION	Sample No.	From	To	Length	Cu ppm	Zn ppm	Ag ppm	oz Au
From	To									
		116.1 - 117.2 - Lost core.								
		118.3 - 120.0 - " "								
		114.0 - 125.0 - Highly carb. & ser.								
		80.6 - 140.7 - core badly broken, poor recovery.								
125.8	127.4	Light grey fine gr. massive rhyolite. -no mineralization.								
127.4	140.0	Grey green f.g. rhyolite tuff breccia Very slightly sericitic No sulphides.								
140.0	143.7	Grey green agglomerate - frags up to 6" across, moderately sericitic - matrix looks like coarse An tuff. - contains a few small blebs py < 1%.	1611	140.0	145.0	5.0	77	344	1.1	Nil
143.7	145.5	Dark grey black m.g. dacite - slightly chloritic - contains a few small blebs & stringers of py up to 3%.								
145.5	146.5	light grey f.g. massive Rhyolite - quite siliceous - moderately carbonatized.								
146.5	158.2	Grey green Rhyolite breccia - contains only a few frags. - moderately ser. - contains many small irreg. blebs & veinlets of carbonate.								
		150.0 - 154.5 - contains numerous blebs py up to 10% - contains numerous blebs chlorite giving rock mottled appearance.								
158.2	166.1	Dark green gray f.g. dacite -no sulphides.	1612	150.0	155.0	5.0	1240	133	1.2	Nil

AMAX POTASH LIMITED
DIAMOND DRILL RECORD

Hole No. TX-107-73
Sheet No. 3

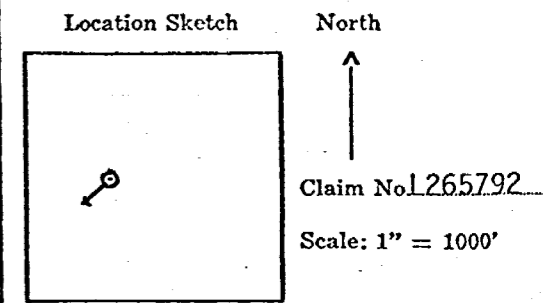
Footage		DESCRIPTION	Sample No.	From	To	Length	Cu ppm	Zn ppm	Ag ppm	oz Au
From	To									
166.1	167.2	Light grey f.g. Rhyolite Appears very siliceous Contains a few blebs py < 1%.								
167.2	179.5	Contains a few small irregular stringers carb.								
179.5	194.9	Light grey f.g. rhyolite -faint banding at 65° to c. axis - may be slightly tuffaceous & sericitic - appears quite siliceous - contains a few small blebs py 1-2%	1613	185.0	190.0	5.0	45	1590	0.8	Nil
		193.4 - 194.9 - contains a few small chl. stringers & very few small blebs cp.								
194.9	271.5	green grey m.g. feld. porph. contains white to pink feld pheno. up to 4mm. in diam.								
		215.0 - 216.1 - qtz. carb. veins								
		220.5 - 220.6 - qtz. carb. veinlet								
		227.7 - 227.8 - " " " with chl.								
		232.5 - 232.6 - " " "								
		236.5 - 236.6 - " " "								
		237.4 - 237.5 - " " "								
271.5	291.0	Greenish grey f.g. Andesite Contains a few small qtz. - carb. stringers " " " scattered blebs py.								
291.0	312.0	Light green grey rhyolite tuff breccia. -moderately ser. & chl.	1615	295.0	300.0	5.0	85	80	0.5	Nil
			1616	300.0	305.0	5.0	18	77	0.4	Nil
		295.0 - 297.7 - tuffaceous contains numerous small blebs & stringers py approx. 1%.								
		297.7 - 301.4 - contains numerous small white flecks								
		301.4 - 310.9 - contains a few small scattered blebs py - good breccia								
312.0		END OF HOLE.								

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DIAMOND DRILL RECORD

Hole No. TX-108-73

Hole No. TX-108-73	Sheet 1	Length 275.0	Commenced June 1973	Dip: Collar -45°
Property Pontiac		Bearing 245°	Completed June 1973	Etch Test
Township Pontiac		Dip -45°	Drilling Co. Continental D.D.	Depth
Location L4N 1+00E		Objective Test IP Anomaly	Core Size AQ	Rdg.
			Casing Left in Hole None	True
Logged By D.R. Hawke				
Core Location Timmins Office				



Remarks _____

Footage		DESCRIPTION	Sample No.	From	To	Length	Au ppm	Cu ppm	Zn ppm	Ag ppm
From	To									
0.0	3.4	CASING								
3.4	88.6	Green Grey f.g. porphyritic dacite. Contains numerous small light & dark phenocrysts up to 3 mm. Many of the white phenocrysts contain abundant carb. & may be amygdules. Contains a few blebs & stringers py generally <<1%. 17.1 - 18.0 very numerous white carb. spots 22.1 - 22.8 more py, 2-3% becomes more andesitic down the hole. 31.2 - 32.5 very numerous white round carb. spots, flow top? 37.3 - 37.5 " " " " " " " " " " " " 41.2 - 41.6 " " " " " " " " " " " " 45.0 - 45.9 " " " " " " " " " " " " 62.8 - 64.5 more py ≈ 3-5% in blebs & stringers with much qtz & carb. 64.4 - 64.6 numerous white carb. spots, flow top. 65.5 - 66.5 more py ≈ 2% as at 62.8-64.5 83.7 - 83.8 large stringer py.								
88.6	104.4	Light grey m.g. massive diorite.								
104.4	118.0	As at 3.4-88.6	1617	61.5	66.5	5.0	Nil	104	181	8.5
		105.4 - 106.4 contains a few py stringers ≈ 1% of rock 110.2 - 118.0 " " " " " " " " " " " " 112.3 - 113.8 contains numerous round white carb. spots 115.2 - 116.7 " " " " " " " " " " " "	1618	110.0	115.0	5.0	Nil	38	76	.8

AMAX POTASH LIMITED
DIAMOND DRILL RECORD

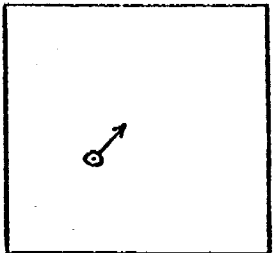
Hole No. TX-108-73
Sheet No. 3

Footage		DESCRIPTION	Sample No.	From	To	Length														
From	To																			
242.5	266.2	Green grey Rhyolite breccia - frags. up to 1-1/2", generally quite hazy. - matrix is dacitic. - contains very few small blebs py << 1%.																		
266.2	267.6	Dark green porph. dacite -Contains a few small white phenocrysts -No sulphides.																		
267.6	274.0	Light green Rhyolite breccia Contains only a few hazy fragments. Very slightly sericitic Contains a few very small blebs py << 1%.																		
274.0	275.0	Light green M.G. diorite?																		
	275.0	END OF HOLE.																		

Donald R. Hawke
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AMAX POTASH LIMITED
DIAMOND DRILL RECORD

Hole No. TX-109-73

Hole No. TX-109-73	Sheet 1	Length 297.0	Commenced June 1973	Dip: Collar	Location Sketch North 
Property Pontiac		Bearing 65°	Completed June 1973	Etch Test	
Township Pontiac		Dip -45°	Drilling Co. Continental D.D.	Depth	
Location LO, 2+50W		Objective Test IP Anomaly	Core Size AQ	Rdg. True	
Logged By D.R. Hawke			Casing Left in Hole 34 feet		
Core Location Timmins Office					Claim No. L265792

Scale: 1" = 1000'

Remarks _____

Footage		DESCRIPTION	Sample No.	From	To	Length	Au ppm	Cu ppm	Zn ppm	Ag ppm
From	To									
0.0	31.4	Casing								
31.4	42.2	Dark grey med. to c.g. rhyolite, appears to have been rextallized by diorite no sulphides								
42.2	108.9	Light green to grey med. to coarse grained diorite 31.4 - 47.6 med. to f.g. chill zone - moderately carbonatized								
108.9	120.3	Dark grey m.g. rhyolite - appears to have been rextallized by diorite - contains a few blebs py < 1%								
120.3	149.0	Dark grey f.g. porphyritic dacite Contains a few small (1-2 mm) round white phenocrysts Also contains some small white blebs & veinlets of qtz. + carb.	1626	110.0	115.0	5.0	Nil	58	94	1.3
			1627	115.0	120.0	5.0	Nil	63	118	1.1
			1628	120.0	125.0	5.0	Nil	41	217	2.2
			1624	125.0	130.0	5.0	Nil	58	538	3.2
		121.7 - 133.6 contains numerous blebs & stringers of fine py (3-5%), up to 20%.	1629	130.0	135.0	5.0	Nil	47	101	.7
			1623	137.0	141.0	4.0	Nil	3680	292	5.5
		136.8 - 140.4 core highly weathered & rusted & badly broken recovery poor malachite & some cp observed from 137.1-137.9, also much py.	1625	140.0	145.0	5.0	Nil	61	188	2.0
		140.4 - 147.4 contains numerous irreg. blebs & stringers py (3-5%)	1630	145.0	150.0	5.0	Nil	70	200	1.4

AMAX POTASH LIMITED
DIAMOND DRILL RECORD

Hole No. TX-109-73
Sheet No. 2

Footage		DESCRIPTION	Sample No.	From	To	Length	Au ppm	Cu ppm	Zn ppm	Ag ppm
From	To									
		141.7 - 145.0 core badly broken, recovery poor								
149.0	154.4	Light green grey f.g. massive rhyolite slightly sericitic contains a few py cubes << 1%								
154.4	171.4	Dark blue grey - f.g. rhyolite slightly tuffaceous, faint banding at 70° to core axis. contains much fine disseminated py. approx. 3%	1631	155.0	160.0	5.0	Nil	270	515	4.1
			1632	160.0	165.0	5.0	Nil	67	50	1.4
			1633	165.0	170.0	5.0	Nil	67	30	1.4
171.4	197.5	green grey f.g. massive dacite contains a few small specks py << 1%.								
197.5	198.3	Light grey Rhyolite breccia. Appears very siliceous Contains a few specks py <<1%								
198.3	202.3	Dark grey f.g. massive dacite py << 1%.								
202.3	225.2	Light blue grey f.g. Rhyolite as at 154.4 - 171.4 py approx. 1-2%	1634	205.0	210.0	5.0	Nil	640	31	.6
			1635	210.0	215.0	5.0	Nil	370	21	.2
			1636	215.0	220.0	5.0	Nil	395	27	.5
		190.5 - 202.3 Rock is bleached (i.e. silicified) to a light grey white bleached areas contain much less py.	1637	220.0	225.0	5.0	Nil	92	7	.5

AMAX POTASH LIMITED
DIAMOND DRILL RECORD

Hole No. TX-109-7
Sheet No. 3

Footage		DESCRIPTION	Sample No.	From	To	Length														
From	To																			
225.2	297.0	Dark green grey feld. porph. Matrix is m.g. Phenocrysts subhedral, 6mm to 4 mm in diameter - no sulphides.																		
		225.4 - 245.0 less phenocrysts																		
		277.0 - 297.4 less phenocrysts																		
	297.0	END OF HOLE.																		

Donald R. Hawke
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Donald R. Hawke


VI. CONCLUSIONS & RECOMMENDATIONS

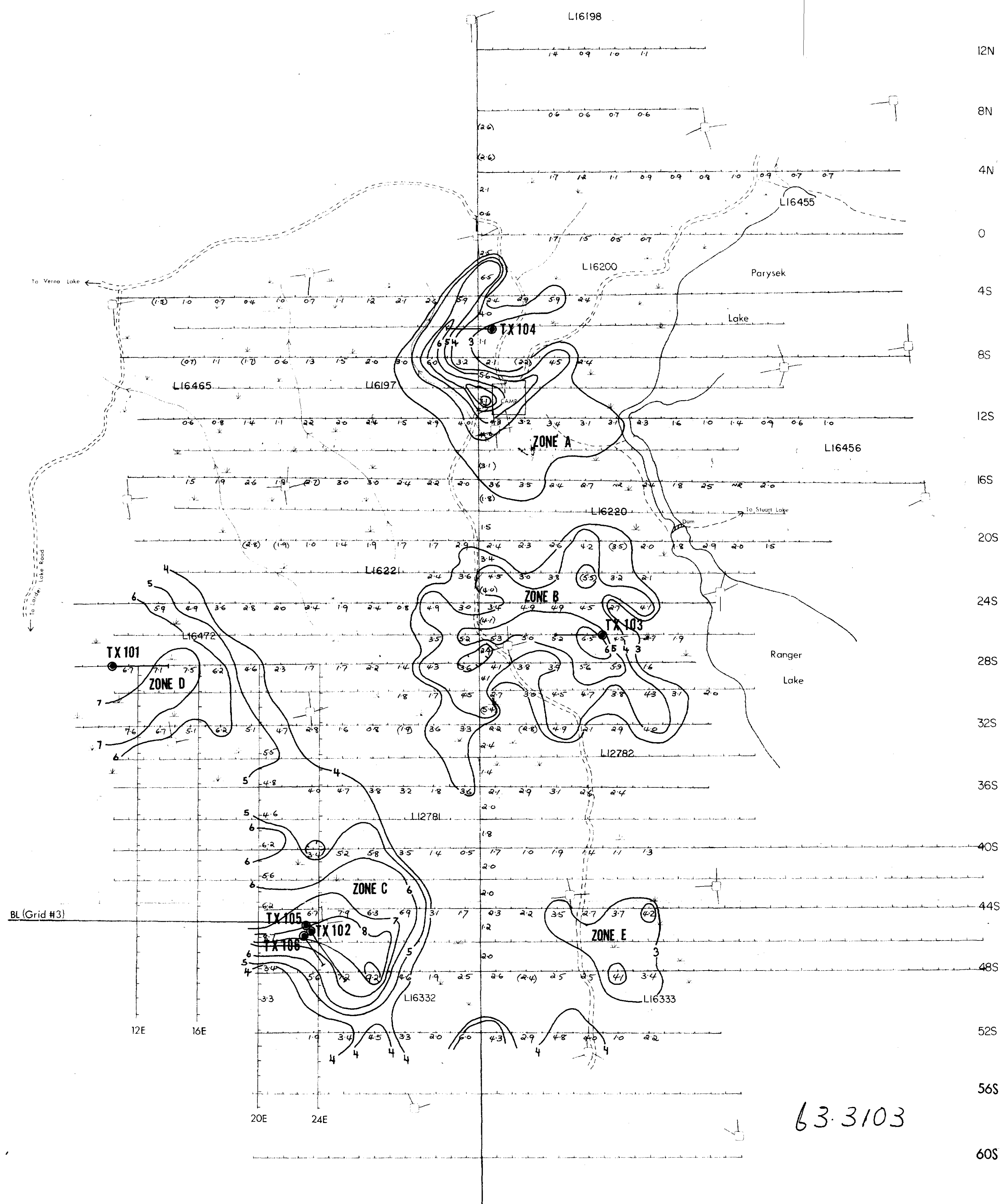
The diamond drill program carried out in Ben Nevis and Pontiac Townships tested intense regions of the several IP anomalous zones and the failure to intersect economic widths of base metal mineralization casts doubt on the likelihood that these zones host potential ore bodies.

The discovery of encouraging base metal mineralization in Zone C, Ben Nevis Township, intersected in hole TX-102, indicates this area to have enhanced potential and additional drill testing should be performed in the vicinity of station 7+00W, Line 48S where the anomaly appears more intense. Probably additional IP survey, utilizing a 100 ft. dipole, and, certainly, detailed geological mapping should be carried out in this area prior to drill testing.

In Pontiac Township the drilling has indicated the IP anomaly to be primarily due to disseminated pyrite mineralization although weak chalcopyrite was encountered in short sections of drill holes TX-107 and TX-109. No further work is recommended for this property.


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Donald R. Hawke.


.....
William R. Ryall.



Percent Frequency Effect
 Dipole - Dipole
 n=3; a=200 ft.
 () Noisy Reading
 DDH ●

IP SURVEY & DRILL HOLES	
BEN NEVIS TOWNSHIP, ONTARIO	
Canagau Mines Option	
SCALE: 1"=400'	
NTS. NO. 32 D/5	PROJECT NO. 421-01
TO ACCOMPANY REPORT BY:	
AMAX Potash Ltd., Timmins, Ontario	DATE:



Figure 3