



32005NW0433 51 HARKER

010

DIAMOND DRILLING

Township: Harker

Report No: 51

WORK PERFORMED FOR: Amax Exploration INC.

RECORDED HOLDER: SAME AS ABOVE [x]

: OTHER []

<u>CLAIM NO.</u>	<u>HOLE NO.</u>	<u>FOOTAGE</u>	<u>DATE</u>	<u>NOTE</u>
L 101404-101405	KX-27-68	730'	Jan/68	(1)
L 101393	KX-28-68	667'	Jan-Feb/68	

1397'

NOTES: (1) Material from Mining Recorders files-added to depository in Toront October 21/87

DIAMOND DRILL RECORD

Hole No. KX27-68 Sheet 1

Property JOAN GROUP Length 730' Lot LINE 30E Hor. Comp. _____
 Location HARKER TWP., ONT. Bearing N32°W Dep. -13+50N Etch at 150' Ver. Comp. _____
 Commenced JAN. 4, 1968 Dip -48° (TEST AT 150') Elev. _____ True Dip -48° Total Recovery % 98%
 Completed JAN. 14, 1968 Objective I.F. ANOMALY - E.M. CONDUCTOR - MAG. ANOMALY Logged by B. NICOLET

FOOTAGE		DESCRIPTION	SHORTS FEET	SAMPLE NO.	LENGTH FEET	ANALYSIS				REC
FROM	TO									
0	104	<p><u>OVERBURDEN</u></p> <p>Medium grey clay, no boulders.</p>								
104	227	<p><u>SEDIMENTS</u></p> <p>Interbedded, aphanitic argillite and tuffaceous (andesitic-dacitic) material. The detritic origin is shown by sharp basal contact often grading upward into fine-grained to slaty material.</p> <p>Contacts from 30° (153-154') to 70° (118') with predominance of 50° to core axis.</p> <p><u>Proportion:</u> 60-70% - tuff 40-30% - argillite</p> <p><u>Detritic material:</u> medium- to fine-grained, light grey, abundant feldspars fragments up to 1mm across. Rare crystals, occasional disseminated FeS₂ blebs or cubes, beds from 1" to 2' thick. Grain size diminishes with depth and colour, becomes lighter.</p> <p><u>Argillite:</u> from light greenish-grey (165') to dark grey (123 and 196'), beds from 1/4" to 1'. Slight color changes emphasize bedding at 50°/core.</p> <p><u>Quartz-calcite-filled fractures:</u> overall 3 to 5% of the core with up to 10% (175-177') range from hairlike (1" (157 & 159'), mode 1mm, 50° to core sometimes at contact - tuff/argillite, sometimes associated with FeS₂ blebs, 5mm diameter (150', 167', 168', 177', 194')</p>								

Hole No. X227-6E Sheet 4

DIAMOND DRILL RECORD

Property _____ Length _____ Lat. _____ Hor. Comp. _____ Ver. Comp. _____
 Location _____ Bearing _____ Dep. _____ Etch at _____ Total Recovery % _____
 Commenced _____ Dip _____ Elev. _____ True Dip _____ Logged by _____
 Completed _____ Objective _____

FOOTAGE		DESCRIPTION	SHORTS FEET	SAMPLE NO.	LENGTH FEET	ANALYSIS		RECOVERY %
FROM	TO					oz/ton Cu	oz/ton Au	
		<p>at: 327' - 2", 328' - 5", 329' - 330', 332 - 334' (fracture // to core), 347 - 350', 352' - 2".</p> <p>Both extremities of section are of lighter color over several feet. This might be due to original composition (dacitic) but more likely corresponds to a "bleaching" in relation with alteration (carbonatization) as both are at contact with sheared carbonate rich zones. Dacite tuff sometimes reacts with acid (351'). Grain is medium to fine, the finer-grained parts might be <u>dacitic flows</u>.</p> <p>Fractures are hairlike to 2" thick - two types of filling material:</p> <p>a) dark grey and hard, only slight acid reaction, forms argillite joints (?). Silico graphitic and carbonate, lesser phyllites, carry most of pyrite 10-24%.</p> <p>b) white and soft, strong acid reaction, calcite with minor quartz. Only 3-5% pyrite on the edge. Younger than (a) (330', 340', 341', exception 342'), angle to core perpend. (320') to // (330-331'). Mode 50°.</p> <p><u>Sulphides</u>: mainly FeS₂ (3-5%), minor CuFeS₂ (344', 345', 348', 341.5'). May be some negligible FeS. Little disseminated, mostly associated with fractures, seams from 1mm to 10mm.</p>						
353	358	<p><u>SHEAR ZONE</u></p> <p>Similar to 293-323.5' with 354-355' incompetent type (a) material, 357-358' badly sheared with 15-25% FeS₂. Fracture-filling material identical 323-353'.</p>	353-358	(670)	5'	0.02	Nil	98

Hole No. EX27-68 Sheet 6

DIAMOND DRILL RECORD

Property _____ Length _____ Lat _____ Hor. Comp. _____ Ver. Comp. _____
 Location _____ Bearing _____ Dep _____ Etch at _____ Total Recovery % _____
 Commenced _____ Dip _____ Elev _____ True Dip _____ Logged by _____
 Completed _____ Objective _____

FOOTAGE		DESCRIPTION	SHORTS FEET	SAMPLE NO.	LENGTH FEET	ANALYSIS		RECOVERY %		
FROM	TO					Cu	Ni		Au	
482	508	<p>No or minor type (a) fracture filling, about 5% fractures increasing to 10% (471-482') calcite filled, hairlike to 5mm, concentrated at 400-401', 427-428', 478-479'.</p> <p><u>Sulphides:</u> 1-2% with locally 5% FeS preponderant with lesser FeS2 and minor CuFeS2 (at 400', 401.5', 438', 442', 454'). Associated with breaks, and also locally disseminated.</p> <p><u>NOTE:</u> Minor PbS at 395' - ZnS at 472'.</p> <p><u>SHEAR ZONE</u></p> <p>Similar to 293-323.5'. Major shear in type (a) material with graphite and 25% FeS2 at 492-496'. Type (b) fractures in competent broken dioritic material mostly filled with quartz.</p> <p><u>Sulphides:</u> overall 15 to 20% FeS2.</p>	483-497	(672)	14'	C.03		0.005	\$0.17	98
508	588'	<p><u>DACITE-ANDESITE</u></p> <p>Felsic volcanic with some tuffaceous portions becoming intermediate below 537'. Light green-grey, fine- to medium-fine-grained. Below 537', the rock becomes darker and medium-grained. (Andesite - andesitic tuff).</p> <p><u>Fractures:</u> 3-5% type (a) and (b) in equal amount. Main fracture zone at 527.5' (3") with 1" massive FeS2, 536' (2"), 537' (3"), 556' (1"), 587'-513.5' (4") to 11" to core with mode at 60-70°.</p> <p><u>Sulphides:</u> One to locally 10% (511-514' and 521-524') as disseminated cubes and blebs and with fracture. Mostly FeS2.</p>	511-515	(673)	4'	C.04		Nil		98

Hole No. KX27-68 Sheet 7

DIAMOND DRILL RECORD

Property _____ Length _____ Lat. _____ Hor. Comp. _____ Ver. Comp. _____
 Location _____ Bearing _____ Dep. _____ Etch at _____ Total Recovery % _____
 Commenced _____ Dip _____ Elev. _____ True Dip _____ Logged by _____
 Completed _____ Objective _____

FOOTAGE		DESCRIPTION	SHORTS FEET	SAMPLE NO.	LENGTH FEET	ANALYSIS		RECOVERY %	
FROM	TO					Cu	OR Au		
588	593.5	<p><u>SHEARED AND FRACTURED ZONE</u></p> <p>Contact zone between preceding and next formation. Actual contact at 595'.</p> <p><u>Fracturation:</u> 90% with quartz-calcite-filling material. Type (a), dark-grey silico-chloritic at 590' - 4".</p> <p><u>Sulphides:</u> 10-25% FeS2 as blebs, cubes, veinlets up to 10mm. From 591' gradual passage to next formation.</p>	588-592	(674)	4'	0.03	0.01	0.35	98
593.5	620	<p><u>ARGILLITIC TUFF</u></p> <p>Light green-grey, very fine- to fine-grained, felsic. Apparent bedding evidences given by slight color changes as in 104-227' but masked by shearing and fractures. One to locally 20% characteristic <u>quartz-calcite</u> eyes, 2mm diam. They are elongated and oriented at 50° to core axis. Usually associated with FeS2 cubes and blebs.</p> <p><u>Fracturation:</u> 5-8% upper part heavily sheared, mostly calcite, lesser quartz-filled with FeS2 on the edges.</p> <p><u>Sulphides:</u> 1-15% FeS2. Around 615' gradual passage to coarser-grained grey andesite and andesitic tuff, lesser quartz-calcite eyes.</p>	605-610	(675)	5'	0.07	0.005	0.17	
620	647	<p><u>MAFIC VOLCANIC ?</u></p> <p>Medium to dark grey, fine-grained.</p> <p>633-643': center portion darker and coarser, weakly magnetic due to disseminated Fe3. Three to 5% with FeS2 could be center part of basalto-andesitic flow or of intrusive</p>	635-643	(676)	8'	0.06			

Hole No. KX27-5E Sheet 8

DIAMOND DRILL RECORD

Property _____ Length _____ Lat _____ Hor. Comp _____ Ver. Comp _____
 Location _____ Bearing _____ Dep _____ Etch at _____ Total Recovery % _____
 Commenced _____ Dip _____ Elev _____ True Dip _____ Logged by _____
 Completed _____ Objective _____

FOOTAGE		DESCRIPTION	SHORTS FEET	SAMPLE NO.	LENGTH FEET	%		ANALYSIS OF		RECOVERY %
FROM	TO					Cu	Ni	FeS ₂	AU	
		<p>origin. Minute Fe₃O₄ crystals.</p> <p><u>Fractures:</u> Two to 5% with major at 630' and on both sides of the (623-643') interval (this being in favour of an intrusive origin?)</p> <p><u>Sulphides:</u> Two to 5% FeS₂, FeS in center portion, associated with or disseminated close by fractures.</p>								
647	655.5	<p><u>RHYODACITE</u> - porphyritic!</p> <p>Aphanitic with up to 3 mm feldspars, sub-conchoidal breaking under the hammer. Color light grey to pink-grey.</p> <p><u>Fractures:</u> Two to 3% quartz filled, very minor carbonate and phyllite.</p> <p><u>Sulphides:</u> Three to 10% FeS₂ as disseminated cubes up to 1mm of edge.</p>	650-655	(679)	5'	0.03	Nil		Nil	
655.5	730	<p><u>MAFIC VOLCANIC ?</u></p> <p>quite similar to 620-647'. Contact with previous rhyodacite quite sharp with however 4" of "reaction zone" becoming gradually darker.</p> <p>Rhyodacite, probably younger, might be intrusive rhyolite porphyry dike?</p> <p>Fairly magnetic sections at: 675-682', 697-720', 726-727'.</p> <p>Magnetism unlike similar previous section, seems irrespectful of grain size.</p>	675-682	(677)	7'	0.05	Nil		0.01	30.35

Hole No. KX27-68

Sheet 9

DIAMOND DRILL RECORD

Property _____ Length _____ Lat. _____ Hor. Comp. _____ Ver. Comp. _____
 Location _____ Bearing _____ Dep. _____ Etch at _____ Total Recovery % _____
 Commenced _____ Dip _____ Elev. _____ True Dip. _____ Logged by _____
 Completed _____ Objective _____

FOOTAGE		DESCRIPTION	SHORTS FEET	SAMPLE NO.	LENGTH FEET	ANALYSIS		OZ. TON	RECOVERY %
FROM	TO					Cu	Ni		
		<p>Grain size fine to medium (720-726') to coarse (692-704'), changes in grain size being gradual and not related to depth.</p> <p>Color is melanocratic, the first 10 feet being rather mesocratic.</p> <p><u>Shears, fractures:</u> Evidence of stress shown in some coarse-grained sections (670-672' and 680-687') by systematic orientation at 60-70° to core of elongated, chloritized ferromagnesian and disseminated FeS₂ seams.</p> <p>Fractures mainly at: 662-663', 672-673', 675-679', 682-684' and quartz-filled with minor Co₃Ca. They range from 5 to 20mm in thickness and carry pyritic on or near their edges.</p> <p><u>Sulphides:</u> from 1 (725-730') to 10% (675-679') mostly pyrite with much less FeS. Very minor CuFeS₂. Minute crystals of Fe₃O₄ disseminated (1/20 of a mm) probably responsible for magnetism.</p>							
			690-695	(678)	5'	0.06	Nil	Nil	

J.M. Patterson

DIAMOND DRILL RECORD

FOOTAGE		DESCRIPTION	SHORTS FEET	SAMPLE NO.	LENGTH FEET	ANALYSIS	RECOVERY %
FROM	TO						
236	241	GRAPHITIC SHEAR - C.R. = 90% Graphitic shear and broken zone with numerous q. calcite veinlets (chert at 240). Sulphide: FeS ₂ blebs, cubes and seams, 15 to 20% with sheared graphitic sections. Note: 237-238: less fractured, very fine grained dacite					
241	251	FELSIC TUFF - C.R. = 90% Medium grained, light to medium greenish grey. No real evidence of bedding but fragmental aspect of feldspars. Fracturation: 10-15% - Q. carbonate veinlets up to 20 mm. thick (245). Sulphides: 1-3% as odd flakes with veinlets.					
251	263	SHEARED FELSIC VOLC. - C.R. = 98% Generally fine to locally medium grained dacite, light grey. Fracturation: 50 to 70% with shearing 45°/core. (256-257 - usual quartz calcite veinlets (20 mm at 261). Major shears with graphite at 254-55-59) Sulphides: FeS ₂ - 3-8% diss. and with calcite veinlets and graphitic shears.					
263	266	GRAPHITIC SHEAR - C.R. = 98% Similar to 236-241, locally 20% FeS ₂ as massive seams and disseminated.					
266	298	FELSIC VOLC. (TUFF)? - C.R. 98% Light green gray rather fine grained. Fracturation: 10 to locally 30% quartz carbonate filled fractures - (30 mm. diameter at 284). 271-274: concentration of chlorite-graphite vein. Sulphides: 1 to 8% FeS ₂ correlated with amount of q. calcite fracture. Note: 274-287: medium grained, mesocratic chloritic - ?					

DIAMOND DRILL RECORD

FOOTAGE		DESCRIPTION	SHORTS FEET	SAMPLE NO.	LENGTH FEET	ANALYSIS	RECOVERY %
FROM	TO						
298	308	<p>INTERMED. TUFF - C.R. 98%</p> <p>Greenish grey medium grained. Development of (silico-chloritic?) dark spots, 2 mm. diameter. Fragmental feldspars.</p> <p>* Fracturation: Up to 10%, usual veinlets.</p> <p>* Sulphides: Minor FeS₂ disseminated blebs.</p>					
308	327	<p>Felsic Volc. - C.R. 98%</p> <p>Similar to 213-236. Note: 326-327: Important development of q. carbonate vein (up to 40 mm. thick) with silica-graphitic seams and pockets.</p>					
327	332	<p>INTERMED. TUFF - C.R. 98%. Similar to 298-308. Only 3 to 8% fracturation.</p>					
332	336	<p>INTERMED. TUFF - C.R. 98%. Medium grained, mesocratic, leucocratic finer grained toward bottom of section. Contact with previous section emphasized by up to (65-70%) q. carbonate veinlet, 3 mm. diameter.</p> <p>Doubtful traces of bedding but fragmental (1/2 mm.) feldspars.</p> <p>*Fracturation: 3%. *Sulphides: Minor diss. FeS₂.</p>					
336	382	<p>GRAPHITIC SHEAR - C.R. 98%. Dark black massive graphite zone with:</p> <p>75-80% : silico-graphite material in bands 1/2" to 1" thick at 45-55% core.</p> <p>10-15% : calcite (q.) vein, up to 40 mm. thick.</p> <p>7-8% : country rock section 2 feet long.</p> <p>Sulphides: 5-20% FeS₂ as seams, veinlets (10 mm. thick), diss.</p> <p>Note: 382-383: contact zone with next section.</p>					

Hole No. MX-23-66
 Property JOAN GROUP, ONT.

DIAMOND DRILL RECORD

Continuation Sheet No. 4

FOOTAGE		DESCRIPTION	SHORTS FEET	SAMPLE NO.	LENGTH FEET	ANALYSIS	RECOVERY %
FROM	TO						
382	433	<p>FELSIC VOLC. - C.R. 98%</p> <p>Similar to 308-327</p> <p>Fracturation: 5 to 15% fracture filled with q. calcite and irregularly shaped quartz graphitic material.</p> <p>382-398) -20-25% fracture with FeS₂ 399-413)</p> <p>Sulphide: 1 to locally 8% FeS₂ diss. and associated with fractures - Minor FeS - apparently rather associated with graphite fissure (411-412)</p>					
433	436	<p>GRAPHITIC SHEAR - C.R. 98%. Similar to 336-382.</p> <p>Sulphides: Only 5 to 15% FeS₂ (Seam at 434).</p>					
436	464	<p>FELSIC TO INT. VOLC. - C.R. 98%. Massive, light to medium greenish grey, Fine to medium-fine grained.</p> <p>Fracturation: 5 to locally 15% fracture. 450-51 well fractured.</p> <p>Sulphides: 1-3% FeS₂ mostly associated with fractures. Minor as disseminated.</p> <p>Note: 445-449: similar to 327-332 but chloritic spots elongated at 45°/core. 459 1/2 - 464: similar. to (445-449).</p>					
464	492	<p>INTERMED. VOLC. (TUFP?) - C.R. 98%. Similar to previous section but much more fractured.</p> <p>Fracturation: 25% as individual q. calcite vein sometimes concentrated in 4 feet section. Sulphides: Very minor diss. in the rock but as high as 15% with fracture (475-76).</p>					
492	514	<p>SHEARED ZONE - Only minor graphite as 1 to 2 mm. thick seam at 40 to 45° to core (507). Mainly q. carbonate veins up to 6" thick. Sulphides: 15 to 30% FeS₂ with locally (496-97) 50%.</p>					

DIAMOND DRILL RECORD

FOOTAGE		DESCRIPTION	SHORTS FEET	SAMPLE NO.	LENGTH FEET	ANALYSIS			RECOVER %
FROM	TO								
514	566	FINE SEDIMENTS? - C.R. 98%. Very fine to fine grained light grey green. Slight grain size changes (over 2 feet (520-523) emphasize the sedimentary origin from aphanitic argillite to fine grained detritic. Fracturation: 10 to 15% as dark (chlorite-graphitic) filled fracture and g. calcite veinlets (up to 20 mm. thick) Sulphides: Minor to locally 15% FeS ₂ usually related to a calcite filled fracture. 1 pocket of 3 mm. diameter FeS ₂ cubes at 531.							
566	637	MAFIC VOLC. (TUFF?) - C.R. 98%. Dark grey medium fine to medium coarse grained. Micro-dioritic to micro-gabbroic. Numerous gradual changes (sometimes emphasized by quartz (calcite filled cracks) in grain size. Gradual passage from previous section. Also gradual changes in size and percent of feldspars. These fractures could be in favour of a "diabasic flow" interpretation. Fracturation: 3 to 5% fractures filled with quartz calcite and chlorite-epidote. Sulphides: Minor to 5% FeS ₂ related or diss. nearby fracture. Note: Odd quartz "eye" can be detected.							
637	650	QUARTZ-DIABASE - C.R. 98%. Actually quite similar to preceding except - a) strongly magnetic b) uniform in grain size c) up to 5% quartz eye 1/4 to 1/2 mm. diameter. Magnetism due to minute diss. Fe ₃ O ₄ . Below 648: Progressively finer grained. Fracturation & Sulphides: Similar to 566-637.							
650	662	MONOGENIC BRECCIA - C.R. 98%. Probably flow breccia.							

Hole No. KX-25-68

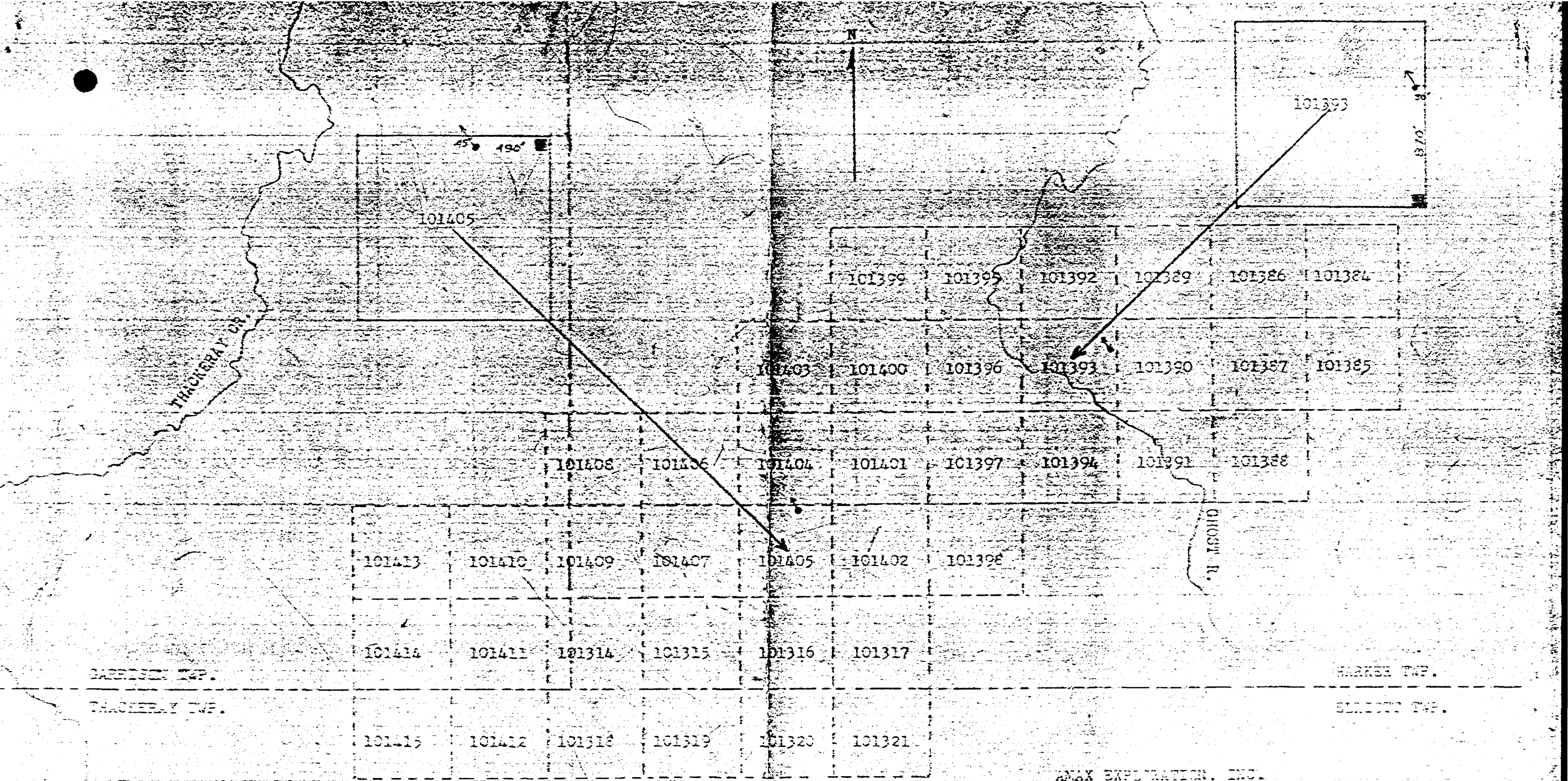
Property JOAN GROUP, ONTARIO

DIAMOND DRILL RECORD

Continuation Sheet No. 6

FOOTAGE		DESCRIPTION	SHORTS FEET	SAMPLE NO.	LENGTH FEET	ANALYSIS	RECOVERY %
FROM	TO						
650-662	(cont'd.	Fragments: Angular from 10 mm. to 1 foot. Aphanitic light grey with 5-10% quartz eyes. Kryo-dacite. Cement: Carbonate-chloritic with epidote. Fracturation: 2-5% usual quartz-calcite veinlets with FeS ₂ . Sulphides: Minor - 5% in secondary fracture - (2" thick at 655).					
662	667	FELSIC VOLC. - Similar to the <u>fragments</u> of preceeding flow-breccia.					
END OF HOLE							

J. M. Patterson



ANAX EXPLORATION, INC.
 CLAIM MAP SHOWING
 LOCATION OF S.D.N. KX-27-68 AND KX-28-68
 LARDER LAKE MINING DIVISION
 ONTARIO MARCH, 1968

SCALE: 1"=1,320'

J.M. Pastaw



32D05NW0433 51 HARKER

ONTARIO

THE MINING ACT REPORT OF WORK

900 form is required for each type of work to be recorded.

Harker

To the Recorder of Larder Lake Mining Division

I, Amax Exploration, Inc. name of Recorded Holder A-38495 Miner's Licence

Room 1101, 25 Adelaide Street West, Toronto 1, Ontario Post Office Address

do hereby report the performance of 1,397 days of diamond drilling type of work

not before reported to be applied on the following contiguous claims

Table with 6 columns: Claim No., Days, Claim No., Days, Claim No., Days. Contains handwritten entries for claims 101314 through 101400 and 101402 through 101415.

All the work was performed on Mining Claim (s) 101393 and 101405 (In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

- For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations - Names and addresses of the men who performed the work and the dates and hours of their employment.
For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate.
For Compressed Air or Other Power Driven or Mechanical Equipment
Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment.
For Power Stripping - Type of equipment. Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording.
With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate.
For Geological and Geophysical Survey - The names and addresses of men employed as well as dates. Type of instrument used in the case of geophysical survey. Reports and maps in duplicate must be filed with the Minister within 60 days of recording.
For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

No. of Holes: KX-27-68 KX-28-68
Footage: 730' 667'
Angle: -48° -45°
Diam. of Core: AXT AXT
Drillers: Boyles Bros. (Quebec) Ltd., Noranda, Que.
Dates: Jan. 3-17, 1968 Jan. 21 - Feb. 3, 1968

AMAX EXPLORATION, INC.

Date March 5, 1968

per: J.M. Patterson Signature of Recorded Holder or Agent

The Mining Act Certificate Verifying Report of Work

I, J.M. Patterson P.O. Box 277, Kirkland Lake, Ontario (Post Office Address)

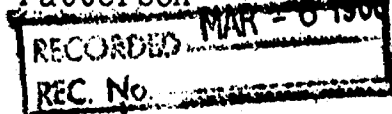
hereby certify:

- 1. 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.
2. That the annexed report is true.

Dated March 5, 1968

J.M. Patterson Signature

J. M. Patterson



THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS \$500. OR SIX MONTHS IMPRISONMENT OR BOTH