

DIAMOND DRILL



32D12SW0094 24 HARKER

010

TOWNSHIP: Harker

REPORT No.: 24

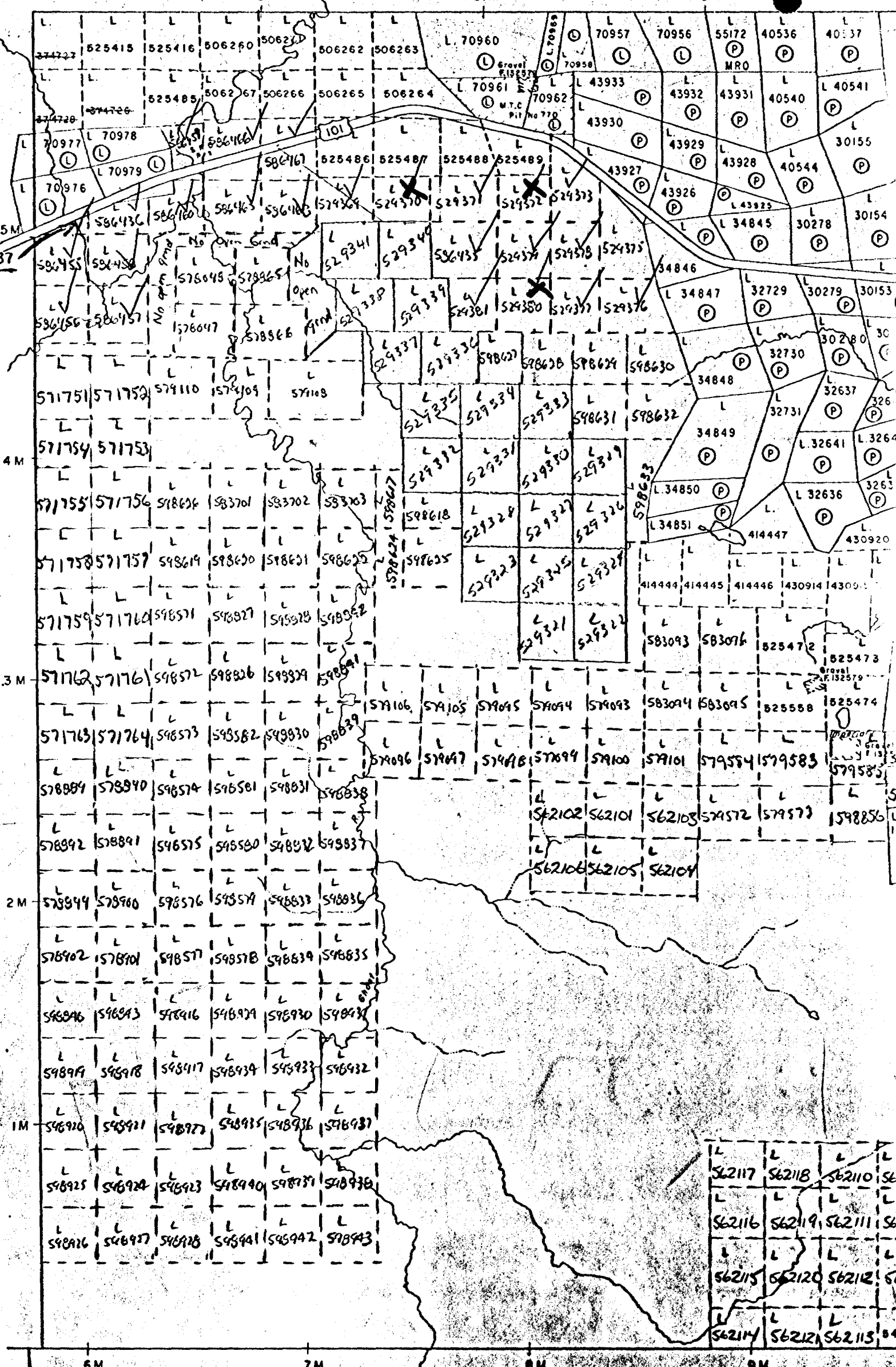
WORK PERFORMED BY: Amax Minerals Exploration

<u>CLAIM No.</u>	<u>HOLE No.</u>	<u>FOOTAGE</u>	<u>DATE</u>	<u>NOTE</u>
L 529380	839-39-1	186.7 m	June/81	(1)
L 529372	839-39-2	177.0 m	June/81	(1)
L 529370	839-39-3	132.0 m	July/81	(1)
L 586468	839-39-4	153.0 m	July/81	(2)
L 586465	839-39-5	168.0 m	Sept/81	(2)
L 529369	839-39-6	144.0 m	Sept/81	(2)
L 529370	839-39-7	144.0 m	Oct/81	(2)
L 529370	839-39-8	158.5 m	Oct/81	(2)
L 529371	839-39-9	96.0 m	Oct/81	(2)
L 586465	839-39-10	174.0 m	Nov/81	(2)

NOTES: (1) #471-81
(2) #12-82

Hankertwp
M353

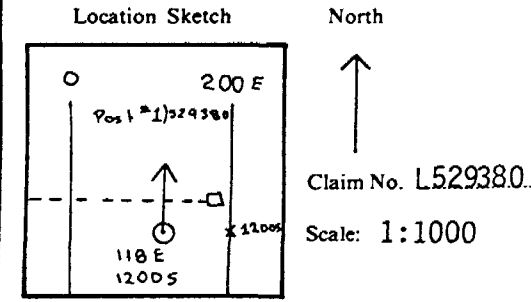
#472-81



AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-1

Hole No. 839-39-1 Sheet 1	Length 186.7	Commenced June 26, 1981	Dip: Collar -50°
Property Harker-3	Bearing Grid N	Completed June 30, 1981	Etch Test
Township Harker	Dip -50°	Drilling Co. St. Lambert	Depth 186.7
Location L118E; 1200S	Objective To test Au values in stratigraphy previously drilled by Anatole in 1973	Core Size BQ	Rdg. 45°
Logged By R.J. Roussain		Casing Left/ Lost in Hole None	True 52°
Core Location Perry Lake			



Remarks: This hole was designed to test Au values intersected in a hole completed by Anatole Res. in 1973. This hole was located on the old set-up. Sludges are collected.

Footage/ Metres		DESCRIPTION
From	To	
0	23.15	OVERBURDEN
23.15	32.62	ANDESITE
36.60	44.75	ANDESITE
44.75	46.70	INTERFLOW TUFF
46.70	59.80	ANDESITE
59.80	65.77	CHERT
65.77	73.50	ANDESITE
73.50	92.60	CHERT
92.60	112.40	ANDESITE
112.40	124.34	CHERT
124.34	133.63	SILICEOUS SEDIMENT (TUFF)
133.63	162.90	ANDESITE
162.90	163.65	MAFIC DYKE

Rosemary J. J. J.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-1
Sheet No. 3

Footage - Metres		DESCRIPTION
From	To	
0	23.15	OVERBURDEN sand, gravel, boulders
23.15	32.62	ANDESITE Dark grey green, fine grained, massive texture criss crossed by thin white calcite veinlets. Weakly to moderately magnetic. 1-2% sulphides as fine dissemination blebs and tiny threads accompanying calcite veinlets. From 32.62 - 36.60 rock becomes fragmental with 1cm to 1mm sized mafic fragment in a dark chloritic matrix tightly packed together. Fragments are angular and lighter in colour than the matrix. Upper and lower contact are gradational. Lower matrix of fragmental unit shows poorly developed foliation at 50° to core axis.
36.60	44.75	ANDESITE As described from 23.15 - 32.62 weakly and erratically magnetic, highly epidotized. 2% calcite stringer by volume. 36.50 - 36.51 calcite vein 39.41 - 39.50 calcite - epidote vein 3% cubic py. Rock is laced with a network of thread like calcite and epidote veinlets cutting the core at all angles. Py occurs in splashes and clots near the veinlets and as scattered 1 - 2mm sized cubes.
44.75	46.70	INTERFLOW TUFF Light grey fine grained, siliceous, hard Fragmental texture. Upper contact at 90° to core axis, lower contact broken up in core. 44.73 - 44.94 10% py as thin seams and heavy clots Fragments 3cm - 2mm in size, angular and in-situ breccia. Section carries 2% py overall.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-1
Sheet No. 4

Footage - Metres		DESCRIPTION
From	To	
46.70	59.80	ANDESITE
		As previously described from 23.15 - 32.62. Massive, fine grained texture, weakly magnetic.
		57.11 - 57.29 vuggy quartz calcite, epidote zone, broken core.
		Rock is highly epidotized with abundant tiny stringers and a lime green cast to the core.
		58.44 - 58.90 Highly epidotized, lime green, carbonated - reacts with HCL
59.80	65.77	CHERT
		Fine grained, highly siliceous, very hard, finely banded. Massive. Light grey to pink to mauve in colour. Upper contact sharp at 60° to core axis. Fault but distinct lamination at 60° to core axis throughout the unit. Sulphides occur as thin seams along the laminae scattered 1 - 2mm cubes, pin head sized specks and as clots and blebs accompanying cross cutting 2 - 4mm wide with quartz veins. Margins of cross cutting quartz veinlets have a pink to mauve aureole.
		65.00 - 65.77 Highly epidotized, badly broken core, fragmental texture contact zone.
65.77	73.50	ANDESITE
		As previously described from 23.5 - 32.62 slightly coarser texture but with the same identifying degree of epidotization. Rock is very hard and appears to have been silicified.
73.50	92.60	CHERT
		As previously described from 59.80 - 65.77 rock varies from light grey - buff to dark grey to brick red. Sulphides are ubiquitous as fine dissemination, pin head sized specks, thin seams, blebs, 2mm clots and scattered 1mm cubes. Sulphides as pyrite are heaviest along bedding planes as thin seams or beds. Up to 20% over 1cm laminae varies from 40° to 60° to core axis indicating a broken-up and distorted siliceous interflow sediment.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-1
Sheet No. 5

Footage - Metres		DESCRIPTION
From	To	
		The rock is cut by abundant quartz and calcite veinlets at all angles. <2% veins by volume. Core axis 40° at 84 metres, well developed fine bedding. Unit varies from a purple through to buff and cream coloured. Lower contact is badly broken up in core.
92.60	112.40	ANDESITE
		Light grey, massive as described from 23.15 - 32.62, but with less epidotization. Rock is strongly magnetic. Pyrite content can reach up to 5% over 1 - 2cm length near quartz-calcite veins. Pyrite occurs as thin threads, clots and in fillings near fractures.
		95.77 - 95.87 10% py near quartz calcite, fracture zone. 98.41 - 100.83 Fracture - Fault zone core is badly broken up with abundant py content 5 - 10% within the vugs and or near the calcite veins in the wall rock.
		From 100.83 rock is a massive flow rock, and could be termed as basalt. Highly magnetic. Scattered py cubes, blebs and fine threads. Rare pink calcite veinlets criss-cross the core. Rock becomes harder - silicification as underlying chert is approached.
112.40	124.34	CHERT
		As previously described from 59.80 - 65.77 light grey to cream to reddish - pink in colour. Uniformly hard veins siliceous. Prominent bands laminae - sedimentary beds - common at 40° - 45° to core axis. Sulphide content 2% overall as pyritic seams on bedding planes, fine pin head dissemination and heavy clots near micro faults or narrow breccia zones. 3 + 4cm clot of fine massive pyrite on upper contact. Alternate light and dark bands mark individual sedimentary sequences. An occasional band is coarse grained and soft - micro conglomerate.
124.34	133.63	SILICEOUS SEDIMENT (TUFF)
		Light grey to pink, hard, fine gravel, aphanitic free quartz grains in a dark matrix. This rock grades out of the overlying chert with an indicative gradational contact.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-1
Sheet No. 6

Footage - Metres		DESCRIPTION
From	To	
		126.34 - 126.56 Quartz carbonate vein 2% fine pyrite Pink K-spars Scattered narrow 5 - 10cm zones of pink alteration carrying pink-K-spar and fine disseminated pyrite up to 3-4%. Faint laminae at 131.65 at 50° to core axis. Lower contact zone is spread over 20-30cm with pieces of tuff in the underlying mafic flow. Contact area is silicified and hard.
133.62	162.90	ANDESITE Grey-green, fine grained massive mafic flow rock, magnetic.
		135.18 - 135.24 Pink quartz-calcite vein From 136.00 - 156.82 th core is badly broken up and smashed as buttons or segments limonite staining is common and the core is extremely vuggy. The rock is moderately to highly magnetic throughout and is altered with pink K-spars over 5 - 10cm section. Rare well developed banding may represent narrow interflow tuff bands but are too badly broken up to be sure. Banding at 137.50 is 55° to core axis. Foliation at 155.74 is 40° to core axis. 136.00 - 156.82 Fault zone 161.36 - 161.42 Quartz calcite vein, epidote 2% disseminated py 162.58 - 162.90 Quartz calcite breccia zone, pink K-spars, 3% py as fine dissemination. Upper contact at 55° to core axis.
162.90	163.65	MAFIC DYKE Dark green, soft, weakly magnetic aphanitic, chloritic Upper and lower contacts sharp at 40° to core axis respectively.
163.65	166.41	FLOW BRECCIA Dark greenish-pink, highly altered fragments are light pink due to K-spar alteration in a dark green chloritic matrix. Fragments are 1mm to 1cm in size, angular and rounded and are enveloped in a pink halo. Occasional fragments are completely epidotized.

AMAX MINERALS EXPLORATION
 (A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-1
 Sheet No. 7

Footage - Metres		DESCRIPTION
From	To	
		The section is distinct due to its fragmental texture, degree of alteration and weak magnetism.
		Pyrite content 1 - 2% as fine dissemination scattered 1mm cubes and thin seams on calcite veinlets.
		Lower contact is marked by pink pea-sized variables that coalesce.
166.41	174.86	ANDESITE
		is 133.63 - 162.90 Light grey, magnetic, fine grained
		168.38 - 168.47 Interflow tuff, pink K-spars
		172.29 - 172.48 Pink quartz calcite vein?
		5% disseminated fine pyrite, sharp irregular contact
174.86	176.63	ALTERED TUFF BRECCIA
		Light pinkish-white, friable, siliceous. Abundant pink K-spars, coarse grained, faintly recognizable fragments in a dark chloritic matrix, py content 2 - 4% as fine dissemination. Core is vuggy, limonitic.
		Foliation common at 60° to core axis.
176.63	186.7	ANDESITE
		As 133.63 - 162.90
		Light grey, magnetic, fine grained, extremely vuggy with scattered pink calcite veinlets accompanied by 1 - 2% disseminated py cubes.
	186.7	END OF HOLE

L 200W

0+00

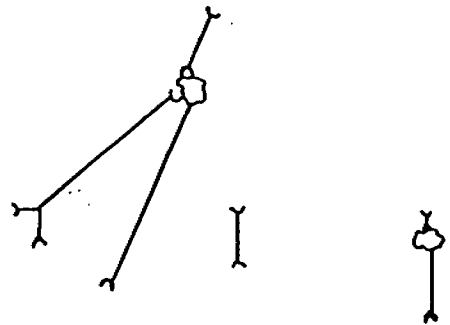
L 200E

#4-529380

#1-529380

Gravel Rd

Timberjack Rd



#3-529380

#2-529380

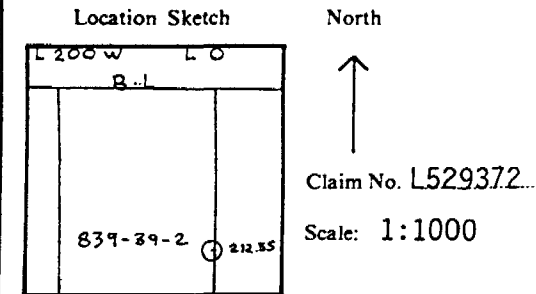
B39-39-1
L 22005

Scale 1:2500

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-2

Hole No. 839-39-2	Sheet 1	Length 177m	Commenced June 30, 1981	Dip: Collar -50°
Property 839-39 Harker 3		Bearing Grid S	Completed July 2, 1981	Etch Test
Township Harker		Dip -50°	Drilling Co. St. Lambert	Depth 177m
Location L0; 212.5W; -50°		Objective To test volcanic-sediment contact	Core Size BQ	Rdg. 55°
			Casing Left/Lost in Hole 60° NW	True 48°
Logged By R. J. Roussain		area marked by weak	50° BW	
Core Location Perry Lake		H.E.M., P.E.M. anomaly	(sanded in)	



Remarks: Conductive zone is explained as multiple thin graphitic beds within a sequence of carbonated, sheared sediments.

Footage/Metres		DESCRIPTION
From	To	
0	38.38	OVERBURDEN
38.38	55.19	ANDESITE
55.19	72.36	SEDIMENTS - (Greywacke - mudstone)
72.36	87.50	TUFFUCEOUS SEDIMENTS
87.50	87.83	GRAPHITIC BRECCIA
87.83	91.80	TUFFACEOUS SEDIMENT
91.80	92.56	GRAPHITIC BRECCIA
92.56	105.96	TUFFACEOUS SEDIMENT
105.96	128.87	ANDESITE
128.87	130.88	INTERFLOW TUFF
130.88	145.12	ANDESITE
145.12	177.00	SEDIMENTS - (greywacke - mudstone)
	177.00	END OF HOLE

Rosemary Ditty

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-2
Sheet No. 3

Footage - Metres		DESCRIPTION
From	To	
0	38.38	OVERBURDEN
		sand + boulders difficult to penetrate
38.38	55.19	ANDESITE
		- light grey-green, soft, chloritic. Section is composed of multiple narrow flows marked by stretched-elongated varioles that coalesce into masses. Rock is brecciated in part with a black chloritic matrix. Distinct foliation at 60° to core axis. This foliation is well developed and pervasive throughout the section. Rock is weakly carbonated. Pyrite is rare as specks.
		49.22 - 49.25, 49.36 - 49.53 white quartz calcite vein, minor py.
		52.16 - 52.23 quartz calcite vein
		53.07 - 53.26 quartz vein 1% py
55.19	72.36	SEDIMENTS - (greywacke - mudstone)
		Pale green-yellow, very soft, bedded, fine grained, strong shearing, highly altered, sericitized, carbonated. Core has a soft soapy feel. Bedding and shearing at 50° to core axis. This angle is common throughout the section.
		Portion of Destor-Porcupine Fault System?
		Upper contact is marked by a 1cm black argillaceous bed and a brecciated white quartz vein.
		Individual sedimentary beds can be selected due to slight colour variations and or grain size but are uniformly soft and altered. Carbonitization is strong and uniform.
		Thin black graphitic argillaceous sections 1 - 20cm in width are scattered randomly within the section from 55.19 - 71.50. These units are black, soft, poorly to highly conductive and have 1 - 5% pyrite as fine disseminated thin beds and blebs. Ankerite as brown thread like beds is common within these sections. The black beds are sometimes represented as thin 1 - 2m streaks of argillite + ankerite.
		69.49 - 70.82 2cm white quartz veins <1% py
		70.21 - 70.35 silicified zone 1% py

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-2
Sheet No. 4

Footage - Metres		DESCRIPTION
From	To	
72.36	87.50	TUFFACEOUS SEDIMENT
		- light grey, soft, massive texture, medium grained, foliation at 35° to core axis. Non carbonatized. Sharp but irregular upper contact.
		At 74.80 foliation - bedding becomes more distinct and is at 40° to core axis. Rock remains sheared as previous section. Light seams and fractures conformable to bedding are limonitic giving the core a "rusty" appearance from 74.60 - 76.50. At 78.00 a 15cm quartz breccia zone with angular .5 - 2cm fragments of wall rock.
		74.40 - 75.38 Siliceous breccia, broken fragments of country rock cemented in a quartz matrix, slumping, pink K-spars, thin 1cm py beds and accompanying ankerite seams as light brown crystalline units. Ankerite is highly reactive with HCl.
		80.00 - 81.32 Slightly coarser texture - 1% pyrite as disseminations and thin streaks
		86.00 - 87.50 fault breccia zone, rock is broken up at all angles, fracture planes are limonitic causing the core to appear "rusty"
87.50	87.83	GRAPHITIC BRECCIA
		Black graphitic breccia, fragments are .5cm - 5cm in length, angular and siliceous. Sharp upper contact at 35° to core axis. Lower contact is diffuse. 1% as thin streaks and blebs. Section is "rusty". Blacker portions are weakly conductive.
87.83	91.80	TUFFACEOUS SEDIMENT
		As previously described from 72.36 - 87.50. Rock is weakly breccia with large fragments (1 - 10cm) in a matrix of finer grained lighter material. Foliation strong at 25° to core axis. Flattening of core axis indicate some sedimentary slumping.
91.80	92.56	GRAPHITIC BRECCIA
		As 87.50 - 87.53, black argillaceous poorly to non-conductive. Vuggy with white quartz splashes. Rusty.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-2
Sheet No. 5

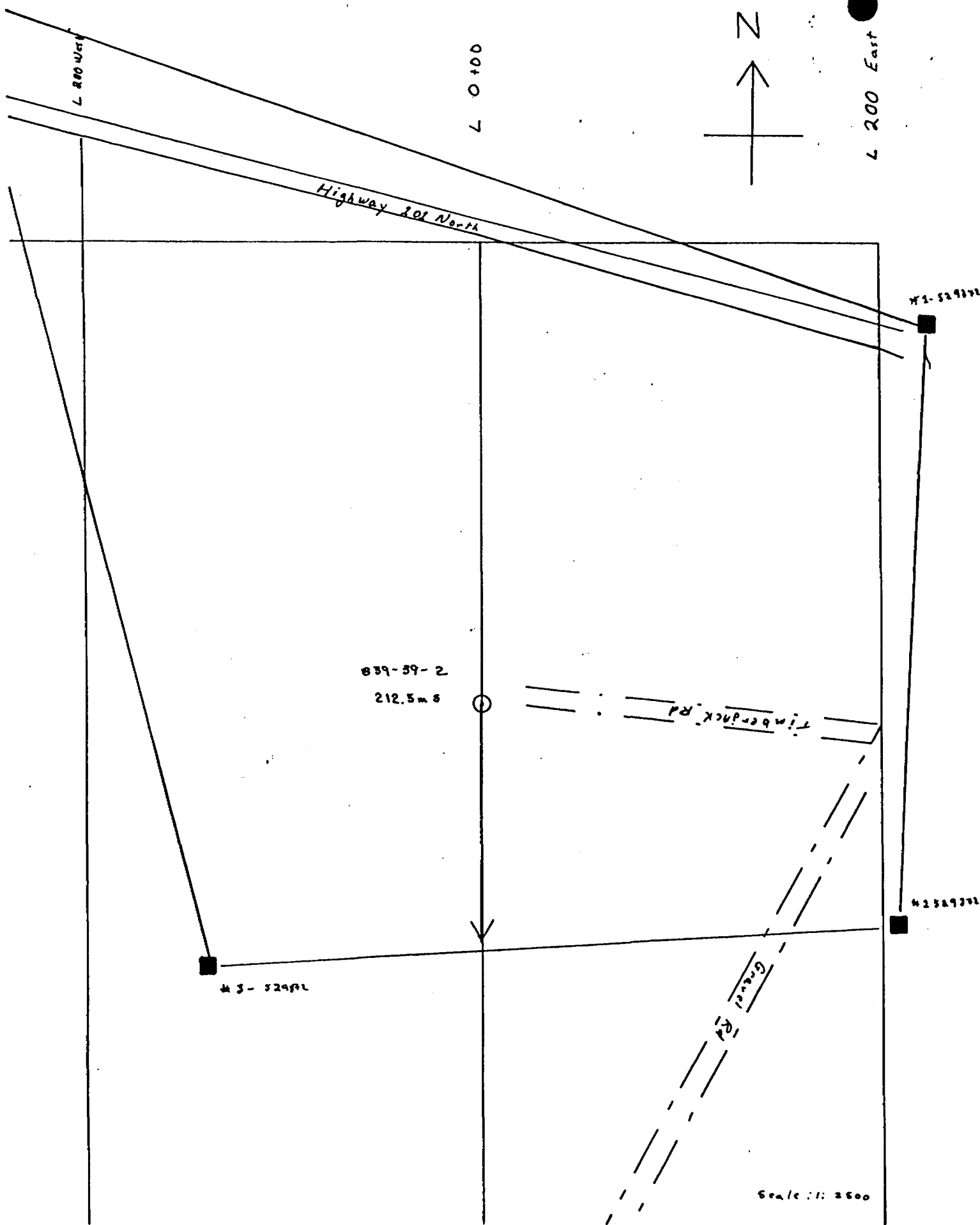
Footage - Metres		DESCRIPTION
From	To	
92.56	105.96	TUFFACEOUS SEDIMENT
		Similar to that described from 72.36 - 87.50 but lighter in colour and better developed laminae. Beds or laminae as alternate light and darker bands 1cm - 5cm in width. Prominent foliation at 50 - 55° to core axis.
		97.17 - 97.24 - light grey siliceous band with a 1cm carbonate vein on either contact.
		102.0 - 105.96 Rock becomes more fragmented with scattered stretched siliceous fragments in a light green matrix. Fragments are aligned at 50 - 55° to core axis. Some of the lighter bands may actually be stretched fragments or pebbles in a poorly sorted conglomerate.
		105.90 - 105.96 Contact breccia zone, small angular fragments of wall rock in a siliceous matrix.
105.96	128.87	ANDESITE
		Dark - green, dense massive, soft. A typical basic volcanic flow rock, medium to fine grained texture. Cut by many criss - crossing quartz - carbonate veinlets. Badly broken up upper contact.
		109.38 - 105.42, 109.65 - 109.75, 110.52 - 110.60, 112.40 - 112.42, 112.82 - 112.86. Quartz calcite veins, white, <<1% py
		114.54 - 114.70 white quartz - carbonate vein <<1% py
128.87	130.88	INTERFLOW TUFF
		- fine grained, light green, finely laminated at 65° to core axis. Upper contact from 128.87 - 129.57 strongly brecciated, faulted with 1% py as blebs and dissemination. Graphite on the slip planes. Quartz - carbonate veinlets in the matrix. Poorly conductive.
130.88	145.12	ANDESITE
		- as 105 - 128.87, faintly fragmented (a recemented flow breccia?)

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-2

Sheet No. 6

Footage - Metres		DESCRIPTION
From	To	
		Some sections of this unit have a tuffaceous appearance due to prominent angle of foliation and fine grained texture but these sections grade back to flows with no distinct contacts
		120.91 - 121.18 Flow breccia, quartz - carbonate matrix <<1% py as rare specks. Some narrow 1 - 2m sections may be a lappilli tuff with tightly packed light coloured 1 - 2m sized fragments in a green - chloritic matrix. Alignment of fragments is compatible with angle of foliation i.e. 50 - 55° to core axis.
		139.63 - 140.35 20% white quartz veins
145.12	177.00	SEDIMENTS (greywacke - mudstone)
		Similar to rocks between 59.19 - 72.36. Very soft, light grey to white, highly sheared, well developed laminae or bedding. Foliation strong at 50° to core axis throughout the section. Thin 1 - 2m brown ankerite seams conformable to bedding are common. These seams react vigorously with HCl. Upper contact sharp at 52° to core axis.
		147 - 148, 148.43 - 151.8 A fine lappilli with 1 - 2mm sized white elongated fragments tightly packed.
		152.41 - 153.65 A mafic lappilli tuff, darker green than previous unit but sharing all the same characteristics.
		15cm White quartz veins at 152.41 occupying facies change, <1% py as tiny specks
		from 153.89 the rock becomes finer grained and loses it's lappilli character. Section is weakly brecciated or shattered with cross - cutting fracture pattern as well as fractures conformable to bedding i.e. 50° to core axis.
		153.89 - 154.61 20% quartz as fine grained dark grey silicified zone with accompanying yellow-green sericite alteration, <2% py as thin seams and specks
		157.75 - 157.77 Black graphitic bed, 10% py as seams and blebs. Thin (1cm) white quartz vein on upper contacts. Unit at 48° to core axis.

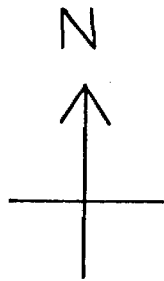


L 810 West

L 0+00

L 200 East

Highway 201 North



41-5293R

839-39-2
212.5m

Timberdack Rd

425937L

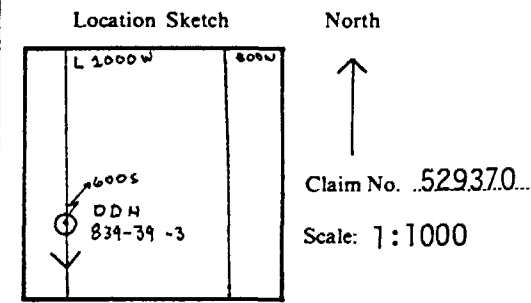
43-5297L

Scale : 1: 2500

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-3

Hole No. 839-39-3	Sheet 1	Length 132m	Commenced July 3, 1981	Dip: Collar -50°
Property 839-39		Bearing Grid South	Completed July 5, 1981	Etch Test
Township Harker		Dip -50	Drilling Co. St. Lambert	Depth 132m
Location L1000W		Objective To determine if an iron formation lies at depth.	Core Size BQ	Rdg. 50°
600S			Casing Left/ Lost in Hole None	True 45°
Logged By Bob Benoit				
Core Location Perry Lake				



Remarks

Footage/ Metres		DESCRIPTION
From	To	
0	16.05	OVERBURDEN
16.05	49.88	SEDIMENTARY TUFF
49.88	76.76	RED CHERT
76.76	89.37	LAPILLI TUFF
89.37	132.00	SEDIMENTARY TUFF
	132.00	END OF HOLE

Rolney

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-3

2

Footage - Metres		DESCRIPTION
From	To	
0	16.05	OVERBURDEN
		sand, gravel
16.05	49.88	SEDIMENTARY TUFF
		Very fine grained, medium hard, grey to light green in color, contains some quartz carbonate veins, these range from 1mm to 1.5cm wide, the core contains many small fragments that are less than 1mm in size, these fragments seem to be lineated or foliated, this foliation is approximately 60° to the core axis. The core also contains many veins of (dolomite) that are in swirls, they cut the core at all angles. The core also contains some anchorite present with the dolomite veins.
		Pyrite is present in the tuff. 1% to 2%, the pyrite seems to be concentrated in small siliceous bands 1mm to 1cm wide.
		68.40 - 68.87 Area of concentrated siliceous bands. These bands are magnetic, (magnetite)
49.88	76.76	RED CHERT
		Fine grained, hard, very siliceous grey to brick red in color, magnetic rock contains dolomite veins, these range from 1mm to 2cm wide, the chert also contains jasper veins, these range from 1mm to 1cm wide, the chert is well foliated and lineated, the foliation is 52° to the core axis. Most of the dolomite veins cut the core at all angles in a mass of swirls. The contacts between the tuff and the chert is sharp. The chert also contains zones of brecciation.
		The brecciations consist of broken chert fragments surrounded by a mixed matrix. The matrix consists of dolomite in some instances, to carbonates.
		The chert is conductive by the ohmeter in areas of mineralization. Pyrite is present in the chert 1% to 5%, the mineralization occurs mainly in areas of brecciation. Pyrite is mostly disseminated, found in spots or splotches. Chlorite is also present but in a minor amount.
76.76	89.37	LAPILLI TUFF
		Fine grained, soft, grey to light green in color, rock contains fragments that range from 1mm to 1cm in size.

00007

00007

0007



1-529876
4-529374

Timberjack Rd.

839-39-3
6005

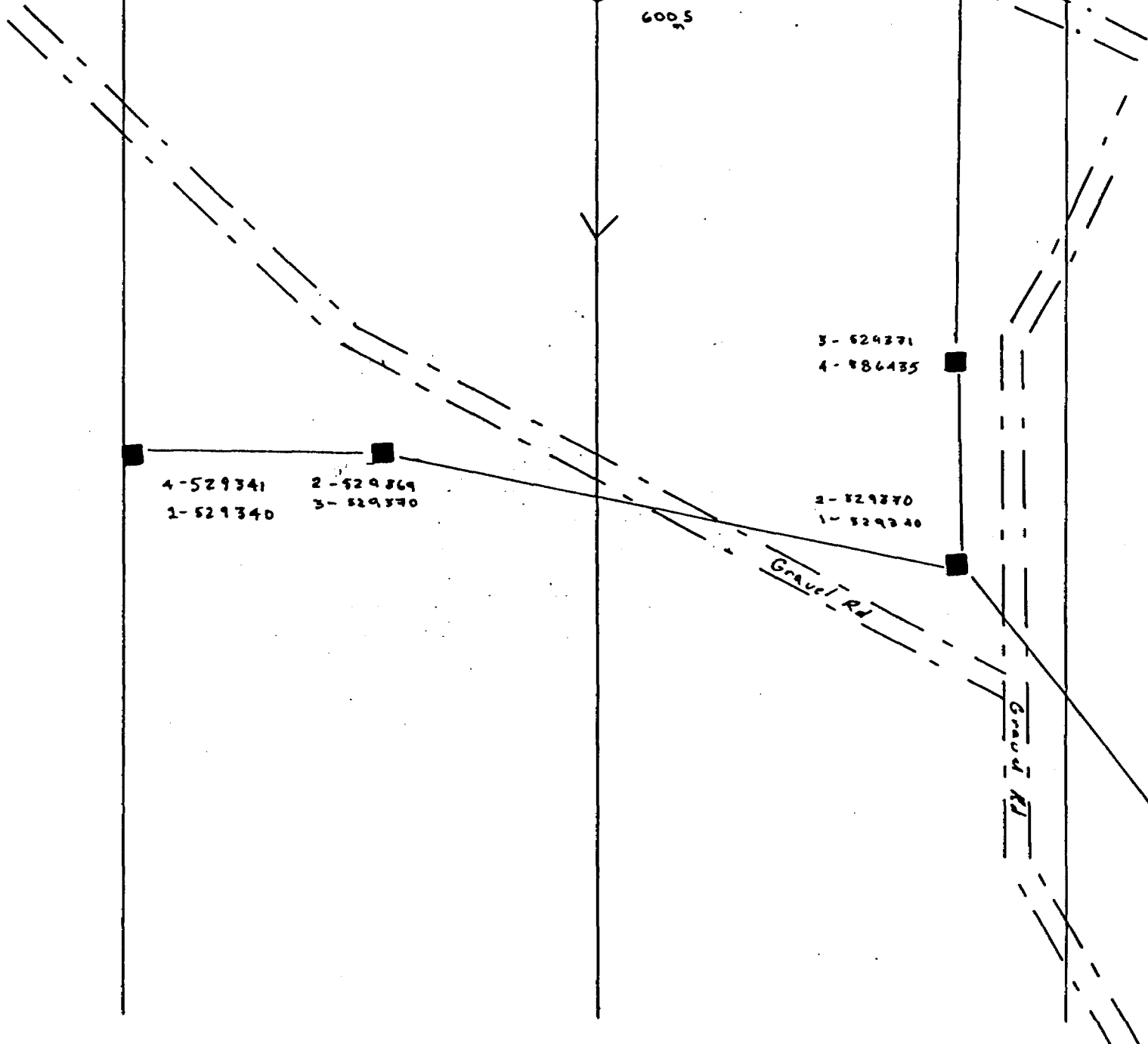
3-524271
4-586435

2-529370
1-529340

4-529341 2-529869
1-529340 3-529370

Gravel Rd.

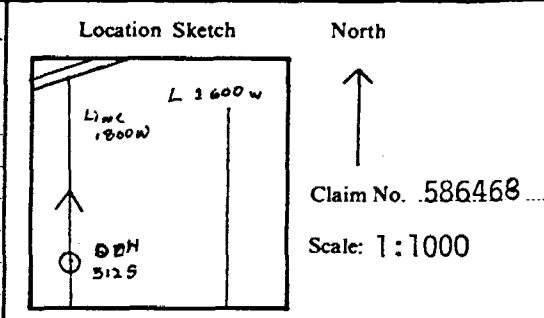
Gravel Rd.



AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-4

Hole No. 839-39-4	Sheet 1	Length 153m	Commenced July 5, 1981	Dip: Collar -50°
Property 839-39		Bearing Grid North	Completed July 8, 1981	Etch Test
Township Harker		Dip -50°	Drilling Co. St. Lambert	Depth 153m
Location L1800W		Objective To drill an iron formation at depth	Core Size BQ	Rdg. 45°
512S			Casing Left/ Lost in Hole None	True 40°
Logged By Bob Benoit				
Core Location Perry Lake				



Remarks

Footage/ Metres		DESCRIPTION
From	To	
0	20.70	OVERBURDEN
20.70	37.70	CHERT
37.70	41.93	SEDIMENTARY TUFF
41.93	44.21	CHERT
44.21	50.53	SEDIMENTARY TUFF
50.53	54.41	CHERT
51.41	52.85	SEDIMENTARY TUFF
52.85	59.74	CHERT
59.74	61.87	SEDIMENTARY TUFF
61.87	62.54	CHERT
62.54	78.16	SEDIMENTARY TUFF
78.16	98.53	CHERT
98.53	117.00	SEDIMENTARY TUFF

Bob Benoit

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-4

Sheet No. 3

Footage - Metres		DESCRIPTION
From	To	
0	20.70	OVERBURDEN
		sand, gravel, boulders
20.70	37.70	CHERT
		Very fine grained, very hard, siliceous, color ranges from a yellowish green to grey to a dull red, slightly magnetic in some areas, core is weathered at the begining, rust brown color, the chert is found to be either a massive chert or brecciated and even in some areas tuffaceous. The chert is intruded by dolomite veins, these range from 1mm to 2cm wide. There are also some quartz veins present these range from 1mm to 2cm wide.
		There is also altered chlorite veins, they are an olive green and range from 1m m to 1cm wide. Foliation is present it cuts the core at 30° to the core axis. Pyrite is present 1% to 3% in some areas, mostly the brecciated zones contain the most sulfides.
		(21.13 to 21.75) Weathered section, gossaned chert rusty brown color.
		(22.68 to 22.88) Brecciated chert, minor pyrite, disseminated in the matrix.
		(23.30 to 25.12) Brecciated chert, gradational contact, grades into a breccia, quartz dolomite matrix with 1% to 2% disseminated pyrite mixed with the matrix
		(26.44 to 26.54) Brecciated chert, quartz dolomite matrix
		(27.00 to 27.43) Brecciated chert, quartz dolomite matrix
		(28.79 to 30.14) Brecciated chert, " " " some minor pyrite
		(32.58 to 33.06) Brecciated chert, " " "
		(34.30 to 34.38) Brecciated chert, " " "
		(35.68 to 35.94) Brecciated chert, " " " some minor pyrite
		(36.00 to 37.40) Brecciated chert quartz dolomite matrix, a quartz vein runs parallel to the core, it is 1cm wide, and is 1.4m long minor pyrite present.
37.70	41.93	SEDIMENTARY TUFF
		Very fine grained, medium soft, slightly magnetic, color ranges from a grey to a light pink or magenta, fragments are very small, they seem

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-4
Sheet No. 4

Footage - Metres		DESCRIPTION
From	To	
37.70	41.93	Continued to be layered, core contains quartz veins that are from 1mm to 1cm wide, they cut the core at all angles. Pyrite is present but it is very minor. Contains minor amounts of ankerite. Contacts are sharp
41.93	44.21	CHERT Very fine grained, hard, grey to a brick red to light pink, contains quartz veins, 1mm to 1cm wide, the quartz is also the matrix, the quartz veins cut the core at all angles, there is some ankerite present in minor quantities, the chert is also brecciated in some areas, pyrite is present, minor amounts only. (42.79 to 43.28) Brecciated chert zone
44.21	50.53	SEDIMENTARY TUFF Same as (37.70 to 41.93) Layering appears to be at 30° to core axis minor pyrite, contains altered chlorite veins, olive green in color, 1mm to 0.5cm wide, color of core turns into a dirty yellow.
50.53	51.41	CHERT Fine grained, hard, siliceous, brick red to brown in color. Contains some quartz veins 1mm to 5mm wide, contains some pyrite.
51.41	52.85	SEDIMENTARY TUFF Same as (44.21 to 50.53) a little more siliceous, harder, fine grained, yellowish grey color, very minor amount of pyrite.
52.85	59.74	CHERT Very fine grained, hard, siliceous, brick red to brown, is intruded by quartz veins, these range from 1mm to 1cm wide, brecciation is present in the chert, usually a quartz or altered chlorite is the matrix. There is also a pink colored quartz mixed with a minor amount of K-spar that is approxiamately 20cm long.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

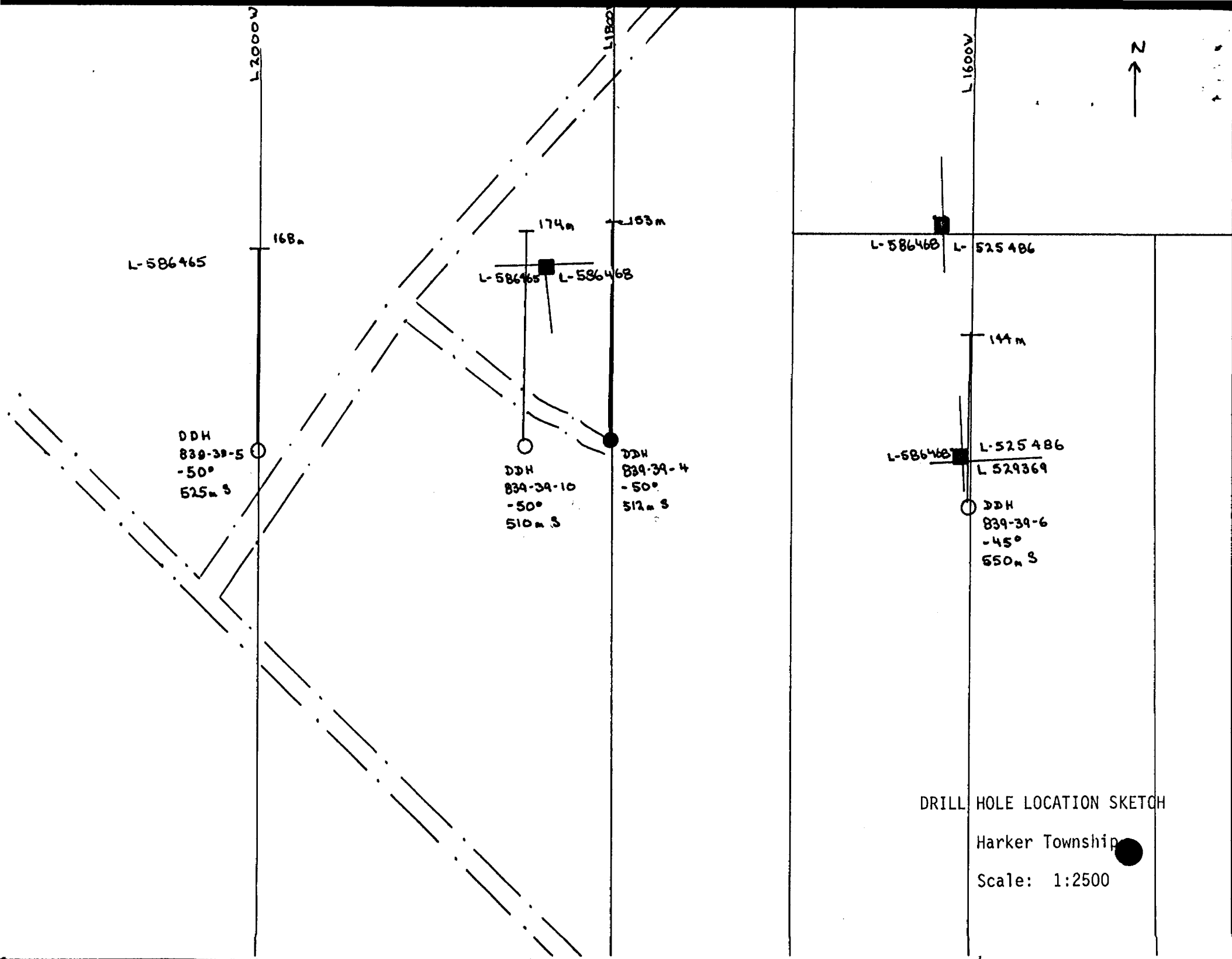
Hole No. 839-39-4
Sheet No. 5

Footage - Metres		DESCRIPTION
From	To	
		This quartz K-spar vein appears to be brecciated, it also contains some altered chlorite, some pyrite is present but only in minor amounts.
		(53.93 to 54.40) Brecciated chert.
		(54.63 to 54.70) Brecciated chert.
		(56.76 to 57.00) Brecciated chert.
		(57.58 to 57.96) Brecciated chert.
		(58.41 to 59.74) Vuggy, brecciated chert, pink color, siliceous
59.74	61.87	SEDIMENTARY TUFF
		Very fine grained, medium hard, grey to dirty yellow, contains some quartz veins, they range from 1mm to 1cm, they are white or light pink in color, they cut the core at all angles, some of the quartz is vuggy.
		Pyrite is present but in minor quantities only. Core has some chert bands they range from 1cm to 2cm, they are brick red to brown in color.
61.87	62.54	CHERT
		Similar to (52.85 to 59.74)
62.54	78.16	SEDIMENTARY TUFF
		Very fine grained, hard, color ranges from grey to a dirty yellow, core has many chert bands, these chert bands range from 1cm to 25cm.
		The chert is hard, siliceous, and brick red to brown color, some of the chert is brecciated. The core also contains quartz veins, these are white to a light pink in color and range from 1mm to 1cm wide, they cut the core at all angles, these quartz veins are sometimes weathered and contain vuggs which contain small silica crystals + pyrite. Pyrite is present in the core but only in minor amounts. Core also contains, altered chlorite veins 1mm to 1cm wide, soft.
		(70.91 to 71.20) Brecciated chert.
78.16	98.53	CHERT
		Very fine grained, brick red to brown, hard, contains band of sediments which are also fine grained but are softer and less siliceous, color of

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-4
Sheet No. 6

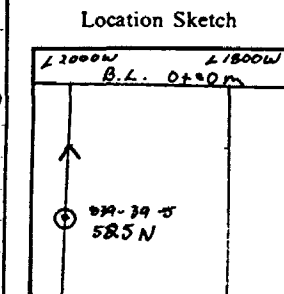
Footage - Metres		DESCRIPTION
From	To	
		sediments range from grey to a dirty green yellow. The core consists of bands of chert followed by sediments. The sediment bands and chert bands range from 1cm to 1.5m, the chert is also brecciated.
		The core contains quartz veins that range from 1mm to 3cm wide, there is also K-spar that is in veins or splotches, some of the K-spar is mixed with the quartz making it become harder, the sediments contain an altered chlorite that is olive green in color and is soft. Some of the core is weathered and fractured into rubble thus suggesting a fault, minor pyrite is present.
		(80.98 to 80.59) Brecciated chert unit
		(83.38 to 83.45) " " "
		(83.60 to 83.69) " " "
		(84.87 to 84.98) Quartz K-spar vein, some pyrite 1% Brecciated chert unit, very weathered and broken into rubble, suggesting a fault.
		(88.62 to 89.08) Quartz vein or unit
		(89.08 to 90.14) Brecciated chert unit
		(97.91 to 98.20) Brecciated chert unit
98.53	217.00	SEDIMENTARY TUFF
		Very fine grained, medium soft, grey to dirty green to yellow in color, contains some chert bands these bands range from 1mm to 3cm wide, they are from brick red to brown to purple in color, the tuff is also intruded by a quartz breccia, the tuff also has many small quartz veins that range from 2mm to 3mm they cut the core at all angles. The tuff also contains many small green veins that range from 1mm to 4mm, they are soft and are light green in color, they seem to cut the core at 30° to the core axis. Some pyrite present mostly in the chert bands.
		(109.68 to 110.93) Chert, purple red in color, very hard, not magnetic, contains 1% pyrite, also contains jasper.
		(104.80 to 110.90) Banded I.F. 5% py
117.00	153.00	IRON OXIDE FORMATION
		Massive bands of purple red siliceous chert, hard, very magnetic, contains quartz K-spar veins that range from 1mm to 5cm wide, they have a white to a light pink color, some of these veins are weathered and



AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-5

Hole No. 839-39-5	Sheet 1	Length 168.0 metres	Commenced September 22, 1981	Dip: Collar -50°
Property 839-39		Bearing Grid North	Completed September 26, 1981	Etch Test
Township Harker		Dip -50°	Drilling Co. St. Lambert	Depth 162.0m
Location L2000W, 525S		Objective To test for facies change in the iron formation.	Core Size BQ	Rdg. 46°
Logged By S. Davies			Casing Left/Lost in Hole None	True 39°
Core Location Perry Lake				



North
↑
Claim No. L-586465
Scale: 1:10,000

Remarks

Footage: Metres		DESCRIPTION
From	To	
0	25.70	OVERBURDEN
25.70	42.90	GREYWACKE
42.90	49.30	CHERTY GREYWACKE (SILICIFIED SEDIMENT)
49.30	78.55	GREYWACKE
78.55	94.30	INTERBEDDED CHERTY SEDIMENTS AND GREYWACKE (BRECCIA ?)
94.30	111.60	CHERTY SEDIMENTS / OR AN INTRUSIVE
111.60	119.00	MUDSTONE
119.00	125.80	GREYWACKE (INTERBEDDED GREYWACKE AND MUDSTONE DOWNHOLE)
125.80	136.25	CHERTY GREYWACKE
136.25	141.00	GREYWACKE
141.0	152.04	CHERT
152.04	152.50	BANDED IRON FORMATION
152.50	153.39	CHERT
153.39	154.16	BANDED IRON FORMATION

R. J. Pausan

(A Division of Amax of Canada Limited)

DIAMOND DRILL RECORD

Hole No. 839-39-5
Sheet No. 3

Footage - Metres		DESCRIPTION
From	To	
0	25.70	OVERBURDEN
25.70	42.90	GREYWACKE
		<p>Fine grained dark grey to green, soft, with obvious bedding at 40° to the core axis.</p> <p>Quartz / carbonate veins cut the core at random angles. Some have crenulated borders and show evidence of minor off sets. Many of the vein have altered similar to wall rock which is a very soft, yellowish colour, probably sericite. Downhole the veins have a white reaction rim which does not react with H.C.L. Minor dissemination pyrite.</p> <p>40.4 - 41.17 brecciated chert zone with some sericite alteration. Quartz infilling contains 1-2% pyrite.</p>
42.90	49.30	CHERTY GREYWACKE (SILICIFIED SEDIMENT)
		<p>Rock is mostly light grey to greenish in colour, fine to medium grained. Harder than the greywacke.</p> <p>From 42.9 to 43.75 and from 48.2 to 49.3 the rock is reddish due probably to the presence of hematite.</p> <p>The cherty greywacke from 43.75 to 48.72 has been brecciated onto fragments up to 2cm in size in places.</p> <p>Lighter greenish yellow and very soft bands intersect the core at 40-45° and may be caused by sericite alteration.</p> <p>Minor quartz veinlets intersect the core at random angles and most have crenulated borders and reaction rims.</p> <p>At 45.52 metres, there is a 3cm. quartz vein that cuts the core at about 80°. It is relatively barren of mineralization.</p> <p>The average sulphide content is 1-2% (approximately).</p>
49.30	78.55	GREYWACKE
		<p>as per 25.7 to 42.9</p> <p>The sericitic alteration has increased and is conformable with the bedding at 35° to the core axis. It is also found as reaction rims along some of the veins and along fractures.</p> <p>51.38 to 51.48 quartz veining brecciates the rock. At 56.8 metres pinkish vuggy quartz veinlets at random angles. 57.0 - 57.2 angular cherty fragments with a preformed orientation of 35-40° to the core axis - disseminated pyrite as well at 1-2%.</p>

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-5
Sheet No. 4

Footage - Metres		DESCRIPTION
From	To	
		62.8 - 63.1 cherty fragments
		74.77 - 75.2 reddish hematite alteration with brecciated quartz veining and sericite alteration, some disseminated pyrite.
		At 78.0 - 8-10cm. of hematitic alteration. The quartz veins throughout the section are brecciated and truncated by further veining and alteration.
78.55	94.30	INTERBEDDED CHERTY SEDIMENTS AND GREYWACKE (BRECCIA ?)
		Greywacks as described from 49.3 to 78.55 is interbedded with reddish cherty sediments but the beds are not well defined. Bedding in the greywacke is pronounced at 35° to the core axis.
		The quartz veinlets and stringers are brecciated in many places, crenulated and have reaction rims.
		Minor disseminated pyrite <1% throughout the core but there is a bit more concentrated in the veins and fracture areas. The upper and lower contacts are gradational.
94.30	111.60	CHERTY SEDIMENTS / OR AN INTRUSIVE
		Coarse to medium grained and reddish in colour. Relatively barren of quartz veining and disseminated pyrite up to 5% of the rock. Sulphides also occur in small stringers throughout the core. Sub-hedral to euhedral quartz and feldspar grains up to 2mm in size. There is also the presence of greyish black (blue) crystals of molybdenum (1-2%). This may indicate an intrusive. Other evidence for an intrusive are the chilled margins. The lower contact shows good epidote alteration and silicification of the country rock. The grain size seems to be coarser in the centre and grading into a finer grain towards the periphery.
		The grains look more detrital i.e. they appear more rounded and do not have well developed facies as in an intrusive (slow cooling).
		The contacts are conformable with the bedding (40°) which may indicate a sediment. The presence of biotite grains in places (<1%) may indicate an arkoseic sediment. Rock pieces for thin section analysis have been sent.
111.60	119.00	MUDSTONE
		Light to dark green in colour, fine grained with well defined

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-5
Sheet No. 5

Footage - Metres		DESCRIPTION
From	To	
		<p>laminae at 35° to the core axis.</p> <p>About 5% quartz veinlets and stringers cut the core at random angles. Most have crenulated borders and have been offset and brecciated. No carbonate is present. Some sericite alteration. The upper contact is gradational and is marked by quartz veining and alteration. The lower contact is defined gradational. Overall sulphide content <1% but is concentrated along fractures and veinlets.</p>
119.00	125.80	<p>GREYWACKE (INTERBEDDED GREYWACKE AND MUDSTONE DOWNHOLE)</p> <p>Medium grey in colour and medium to coarse grained with the grains up to 1-2mm in size. Downhole the rock becomes finer grained and bedding becomes more defined. At about 120 metres the greywacke becomes interbedded with mudstone and laminae that has a reddish hematite staining.</p> <p>Minor amounts of quartz stringers at random angles and minor disseminated pyrite.</p> <p>Bedding is at 35° to the core axis.</p>
125.80	136.25	<p>CHERTY GREYWACKE</p> <p>Medium to coarse grained with well defined bands of reddish sediments at 35° to the core axis.</p> <p>Minor quartz stringers at random angles that have been fractured and offset. Minor disseminated pyrite.</p> <p>From 131.75 to 133.9 the core has been brecciated and is more cherty. Some sulphides associated with this section. Upper and lower contacts are sharp to gradational.</p>
136.25	141.00	<p>GREYWACKE</p> <p>- as per 119.0 - 125.8</p> <p>Associated with some of the veins is a yellow staining, possibly ankerite.</p>
141.00	152.04	<p>CHERT</p> <p>Light green, very fine grained and hard. Bedding in places at 35° to the core axis.</p> <p>Quartz stringers at random angles.</p>

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-5
Sheet No. 6

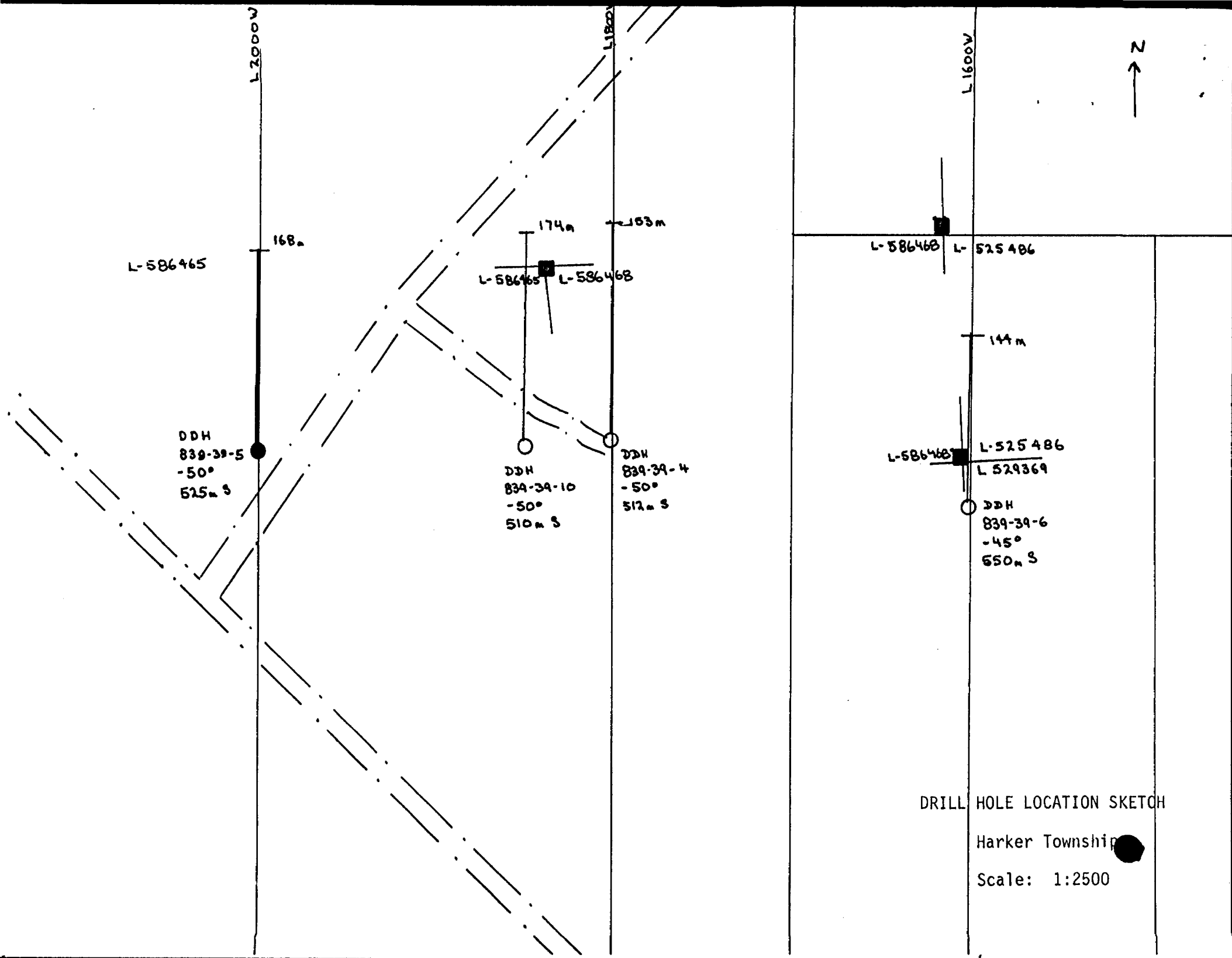
Footage - Metres		DESCRIPTION
From	To	
		The core has been brecciated into fragments of chert up to 2cm in size.
		From 151.45 to 152.04 the core contains darker green blebs, which could be chlorite. These blebs are 1-2mm in size and have a preferred orientation at 35-40° to the core axis.
		The overall sulphide content is minimal but is concentrated (1-2%) in the quartz veins such as at 147.8 metres. In this section (≈10cm long) the core is cut by two veinlets which altered the wall rock to a blackish colour.
152.04	152.5	BANDED IRON FORMATION
		Dark grey to black with bands of greenish chert. The iron is only slightly magnetic suggesting that most of it is hematite. Sulphide content is low - 1% and it is only slightly conductive. The iron has been brecciated by the chert in places. Relatively barren of quartz veining.
152.00	153.39	CHERT
		as per 141.0 to 152.04
153.39	154.16	BANDED IRON FORMATION
		as per 152.04 to 152.5
		This section is slightly more magnetic and has been brecciated more by the chert. There is also some brecciated quartz at 153.8 metres. At the top of the section, the rock has more of a reddish tinge with a red streak which indicates hematite. Sulphides - 1% (or less).
154.16	156.25	BRECCIATED BANDED CHERT
		The chert in this section has more of a reddish colour probably due to hematite.
		From 154.16 to 155.1 the chert is brecciated into fragments up to 3cm in size. There is minor quartz veinlets at random angles.
		From 155.1 to 156.24 the chert is banded at 37° to the core axis. The bands are greenish in colour and are much softer sediments.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-5

Sheet No. 7

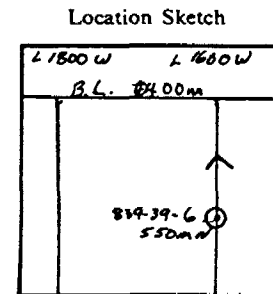
Footage - Metres		DESCRIPTION
From	To	
156.25	156.69	CHERTY SEDIMENTS / MUDSTONE
		Appears to be massive but on closer inspection, there are very thin laminae at 40° to the core axis. The rock is light green in colour and fine grained. It is too hard to be a mudstone only and too soft for a chert.
		Upper and lower contacts are sharp at 40° to the core axis.
156.69	157.10	IRON FORMATION
		as per 153.39 to 154.16
		Sulphide content is higher, about 2% and is concentrated in stringers. It is both cubic and disseminated.
157.10	164.88	CHERTY GREYWACKE
		with minor bands of iron formation
		Medium to dark green in colour and medium grained.
		Bedding is distinct at 45° to the core axis in thin laminae.
		159.10 to 159.13 iron formation which is black in colour and magnetic but not conductive.
		159.36 to 159.40 same as above
		From 160.5 to 161.58 the core becomes more cherty and brecciated.
		There is also some iron formation in bands from 161.16 to 161.48.
		162.63 - possible shear zone with chloritization along the fractures.
164.88	168.00	MUDSTONE
		as described from 111.6 to 119.0 metres.
	168.00	END OF HOLE



AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-6

Hole No. 839-39-6	Sheet 1	Length 144.0 metres	Commenced September 26, 1981	Dip: Collar -45°
Property 839-39		Bearing Grid North	Completed September 30, 1981	Etch Test 1
Township Harker		Dip -45°	Drilling Co. St. Lambert	Depth 141.0m
Location L1600W, 550S		Objective Drill iron formation	Core Size BQ	Rdg. 45°
			Casing Left/ Lost in Hole	True 38°
Logged By S. Davies				
Core Location Perry Lake				



North
↑
Claim No. L-529363
Scale: 1:10,000

Remarks

Footage Metres		DESCRIPTION
From	To	
0	9.00	OVERBURDEN
9.00	16.90	GREYWACKE (TO CHERTY GREYWACKE)
16.90	30.70	CHERTY SEDIMENTS
30.70	53.04	GREYWACKE
53.04	72.18	MUDSTONE INTERBEDDED WITH GREYWACKE
72.18	106.50	GREYWACKE
106.50	124.00	CHERTY SEDIMENTS
124.00	134.30	MUDSTONE
134.00	144.00	IRON FORMATION
	144.00	END OF HOLE

R. G. Rausan

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-6
Sheet No. 3

Footage - Metres		DESCRIPTION
From	To	
0	9.00	OVERBURDEN
9.00	16.90	GREYWACKE (TO CHERTY GREYWACKE)
		Dark green / grey in colour medium grained appears almost massive but some laminae at 30° to the core axis.
		From 9.0 to 10.2 the core is highly weathered to a rusty colour and rubblely.
		From 10.5 to 13.26 shear zone with rusty alteration along the fractures. The rock has also been silicified with hematite staining. Minor quartz veining has brecciated the rock and the veining has been further brecciated.
		Very minor sulphides. Lower contact is gradational.
16.90	30.70	CHERTY SEDIMENTS
		This section is distinguished from the previous section by the reddish colour and by being slightly harder. Most of the rock appears massive with minor laminae at 30° to the core axis.
		Small brecciated quartz stringers and minor sulphides.
		17.8 - 19.3 shear zone with rusty alteration along the fractures.
		19.4 - 19.96 the core is highly brecciated onto cherty fragments up to 102cm in size.
		22.2 - 25.18 chert breccia associated with a fault zone. Fragments of chert up to 3cm in size.
		Rusty alteration along the fractures. There is also sericite (?) alteration in places in the shear zone.
30.7	53.04	GREYWACKE
		as per 9.0 - 16.9
		- but with more brecciated quartz veining
		- sulphides (~1%) associated with the quartz veining
		Well bedded at 30° to the core axis. From 47.0 to 47.2 shear zone with quartz veining, sericite and hematite alteration.
		49.5 - shear zone with chloritization along the fractures.
		From 49.7 to 52.5 vuggy quartz veins and shearing.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-38-6
Sheet No. 4

Footage - Metres		DESCRIPTION
From	To	
53.04	72.18	MUDSTONE INTERBEDDED WITH GREYWACKE
		Upper contact is sharp at 35° to the core axis. Bands of coarser grained greywacke up to .25 metres thick throughout the core.
		The mudstone is dark grey to green in colour and appears massive. But there are other laminae at 35° to the core axis.
		Minor quartz veinlets contain mineralization of cubic pyrite.
		Sulphides also occur in small bands conformable with the bedding - overall content 1-2%.
		Lower contact is sharp at 35° to the core axis.
72.18	106.50	GREYWACKE
		as described from 30.7 to 53.04
		From 93.47 to 94.32 brecciated cherty section with crenulated quartz veins - minor sulphides.
		97.42 to 99.34 is also a brecciated section but not as much as the previous section.
106.50	124.00	CHERTY SEDIMENTS
		Dark red to green in colour, medium grained. Were bedded at 30-35° to the core axis. Brecciated crenulated quartz veining throughout the core at random angles. Quartz constitutes about 10%.
		Areas of lighter green, softer alteration (?) throughout which is conformable with the bedding.
		Chert fragments up to 2cm in size throughout. Minor disseminated sulphides.
		Upper contact is gradational.
		From 118.5 to 119.0 shear zone with chloritization along the fractures.
124.00	134.3	MUDSTONE
		as per 53.04 to 72.18
		From 129.04 to 129.09 brecciated quartz vein



L-586465

L2000W

168m

DDH
839-39-5
-50°
525m S

L1800W

174m

163m

L-586465

L-586468

DDH
839-39-10
-50°
510m S

DDH
839-39-4
-50°
512m S

L1600W

L-586468

L-525486

144m

L-586468

L-525486

L-529369

DDH
839-39-6
-45°
650m S

DRILL HOLE LOCATION SKETCH

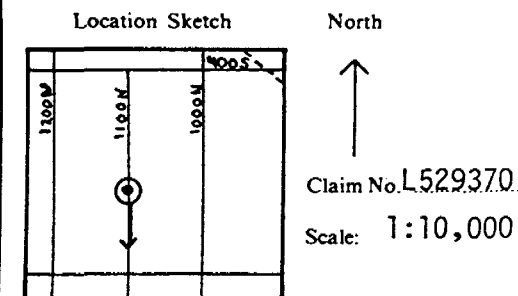
Harker Township ●

Scale: 1:2500

AMAX MINERALS EXPLORATION
 (A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-7

Hole No. 839-39-7 Sheet 1	Length 144.0 metres	Commenced October 7, 1981	Dip: Collar -50°
Property 839-39	Bearing Grid South	Completed October 10, 1981	Etch Test
Township Harker	Dip -50°	Drilling Co. St. Lambert	Depth 144.0m
Location L1100W, 562.5S	Objective Drill iron formation	Core Size BQ	Rdg. 36°
		Casing Left/ Lost in Hole	True 29°
Logged By S. Davies			
Core Location Perry Lake			
Remarks			



Footage / Metres		DESCRIPTION
From	To	
0	3.40	OVERBURDEN
3.40	8.45	GREEN CARBONATE ROCK
8.45	80.85	MUDSTONE & GREYWACKE
80.85	92.38	IRON FORMATION
92.38	144.0	GREYWACKE & MUDSTONE
	144.0	END OF HOLE

R. J. Pausan

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

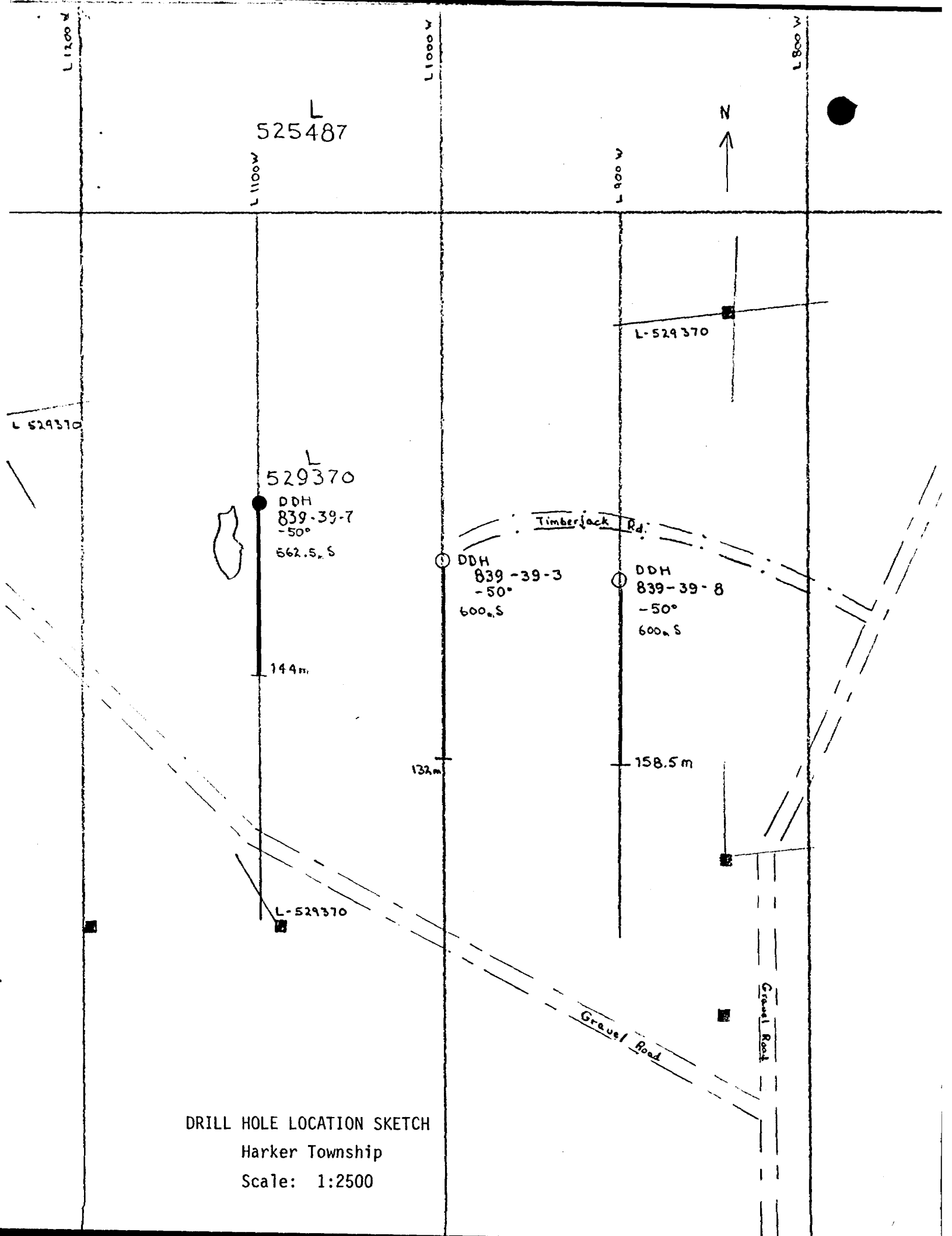
Hole No. 839-39-7
Sheet No. 4

Footage - Metres		DESCRIPTION
From	To	
0	3.40	OVERBURDEN
3.4	8.45	GREEN CARBONATE ROCK
		Light green in colour, very fine grained and soft. Does not have a vigorous reaction with acid. 5-10% quartz - carbonate veins cut the core at random angles and are crenulated in places. The beds show evidence of folding or soft sediment slumping.
		Angle of bedding is 35° to the core axis which is much shallower than downhole. The lower contact is sharp at 35° to the core axis.
		From 5.68 to 5.72 ankerite, brown and rusty in colour, conformable with the bedding at 35° to the core axis associated with fractures
		From 5.82 to 5.89 ankerite as per 5.68 to 5.72
		From 6.77 to 6.84 ankerite. This section is not conformable to the bedding but follows along fracture planes.
		From 8.36 to 8.38 ankerite as per 5.82 to 5.89
		There is also minor ankerite along the fracture planes.
8.45	80.85	MUDSTONE & GREYWACKE
		Dark green in colour, very fine grained and soft. Appears massive but there are small laminae at 50° to the core axis. Minor quartz - carbonate veinlets at random angles to the core.
		Very minor disseminated sulphides, some sericite alteration along the veinlets. Lower contact is sharp at 50° to the core axis.
		At 9.35 rusty alteration along fractures. The greywacke is coarser grained and slightly harder than the mudstone.
		Contacts between the units are sharp at 50° to the core axis.
		From 11.0 to 11.2 shear zone with rusty alteration.
		From 15.2 to 15.33 shear zone with rusty alteration along the fractures.
		From 16.64 to 16.83 shear zone
		From 21.4 to 24.47 the core has been altered to carbonate and sericite in places. There may also be some ankerite at 21.75 associated with the shear zone. This could also just be a rusty alteration.
		From 25.96 to 26.24 to rock has been brecciated into fragments up to 1cm in size.
		Downhole the sulphide content increases to about 1-2% but is concentrated in stringers and veinlets such as at; 29.0 metre, 30.15 metres, 34.32 to 34.42 which is quartz veining.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-7
Sheet No. 5

Footage - Metres		DESCRIPTION
From	To	
		Bedding angles at 48 metres is 50° to the core axis.
		" " " 52 " " 45° " " " "
		" " " 59 " " 47° " " " "
		About 63.1 metres, quartz - carbonate veining increases to 5-10% of the core. The veins and stringers cut the core at random angles and are brecciated and crenulated in places. Sulphides are associated with some of these veins. There is also sericitic alteration along some of these veins ie. 65.1 to 65.4, 67.8 to 68.6, 75.2 to 75.6, 78.0 to 78.3.
		From 79.5 to 80.85 there are small bands of iron formation up to 3cm wide. The lower contact is gradational.
80.85	92.38	IRON FORMATION
		Black to dark red in colour, fine grained and well banded at 47° to the core axis. The bands are whitish grey and may be chert.
		The iron formation is fairly massive with about 60-70% of the core being iron.
		Minor cubic pyrite in places.
		The iron is bedded with bands of mudstone up to 4cm wide in places. Highly magnetic but not conductive. Minor quartz stringers at random angles.
		From 80.9 to 81.03 cherty sediments which have been brecciated by quartz veining.
		From 81.21 to 81.36 medium green cherty sediments with crenulated quartz stringers.
		From 86.04 to 86.15 cherty sediments as above
		From 86.71 to 86.96 cherty sediments with quartz veining.
		87.45 to 87.55 " " " " "
		87.87 to 88.30 " " " " "
		From 88.76 to 88.85 sericitic and hematitic alteration.
		Lower contact is gradational as iron formation thins out.
92.38	144.0	GREYWACKE & MUDSTONE
		as described from 8.45 80.38
		From 103.12 to 103.36 breccia like zone.
		From 105.8 to 107.9 the greywacke has been silicified in bands up to 10cm wide with associated sulphides of 1-2%.
		This section of greywacke - mudstone has more quartz - carbonate veining than the previous section. The vein stringers cut the core at



L
525487

L
529370

DDH
839-39-7
-50°
562.5m S

DDH
839-39-3
-50°
600m S

DDH
839-39-8
-50°
600m S

L-529370

L-529370

144m

132m

158.5m

Timberjack Rd.

Gravel Road

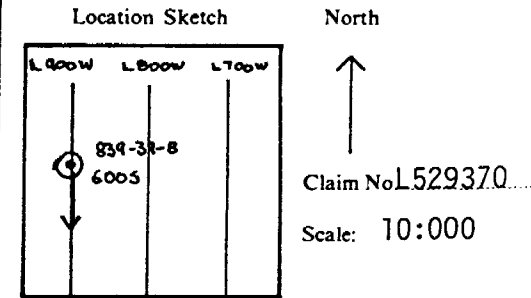
Gravel Road

DRILL HOLE LOCATION SKETCH
Harker Township
Scale: 1:2500

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-8

Hole No. 839-39-8	Sheet 1	Length 158.5 metres	Commenced October 10, 1981	Dip: Collar -50°
Property 839-39		Bearing Grid South	Completed October 14, 1981	
Township Harker		Dip -50°	Drilling Co. St. Lambert	Etch Test 1
Location L900W, 600S		Objective Drill iron formation	Core Size BQ	Depth 158.5m
			Casing Left/ Lost in Hole	Rdg. 45°
				True 38°
Logged By S. Davies				
Core Location Perry Lake				
Remarks				



Footage Metres		DESCRIPTION
From	To	
0	34.75	OVERBURDEN
34.75	64.12	MAJOR FAULT ZONE (BANDED IRON FORMATION & GREYWACKE)
64.12	68.90	IRON FORMATION (SHEAR ZONE)
68.90	83.41	SERICITIZED CARBONATE ROCK
83.41	113.80	GREYWACKE - MUDSTONE
113.80	139.90	CHERTY GREYWACKE
139.90	146.60	ARKOSIC (?) SEDIMENT
146.60	157.00	BASAL CONGLOMERATE
157.00	158.50	UNDIFFERENTIATED SEDIMENT
	158.50	END OF HOLE

R. G. Bennett

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-8
Sheet No. 4

Footage - Metres		DESCRIPTION
From	To	
0	34.75	OVERBURDEN
34.75	64.12	MAJOR FAULT ZONE (BANDED IRON FORMATION & GREYWACKE)
		Core is highly smashed and fragmented. The original rock was an iron formation with intercalated greywacke.
		The rock has been greatly weathered and oxidized by ground water movement along the shear. There are some sulphides in the larger pieces of core but an estimation cannot be made. The fragments of iron formation are highly magnetic and rusted.
		The majority of the fault occurs between 34.75 to 56.0 but it is continually sheared and fractured up to 78.2 metres (in places)
		Beds of cubic sulphides occur throughout the core such as at:
		53.72 metres.
		55.38 "
		56.48 "
		60.93 " this band is fairly massive and occurs in beds totalling 3 cm wide.
		61.19 "
		From 56.02 to 58.01 breccia zone which is highly oxidized along fracture planes.
64.12	68.90	IRON FORMATION (SHEAR ZONE)
		This section is still part of the fault zone but it is not as smashed as the previous section. The fracturing is not as dense.
		From 64.12 to 66.38 the iron formation is highly brecciated and fractured (but it is not smashed). Off setting and folding is obvious in the oxide bands and in quartz veins and stringers. Sulphide content is 1-2% overall but is concentrated in places and in the quartz.
		Upper and lower contacts of this section are sharp at 50° to the core axis.
		From 66.38 to 67.12 fine to medium grained, green greywacke, relatively barren of mineralization.
		From 67.2 to 67.4 - 2cm quartz veins cut the core at about 10° pinkish in colour and minor sulphides along the margins.
		From 67.12 to 68.7 the iron formation is fairly massive and sheared in places. Sulphide stringers (beds) occur from 67.7 to 68.1 in narrow bands. It appears to be fairly cubic. Lower contact is gradational.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

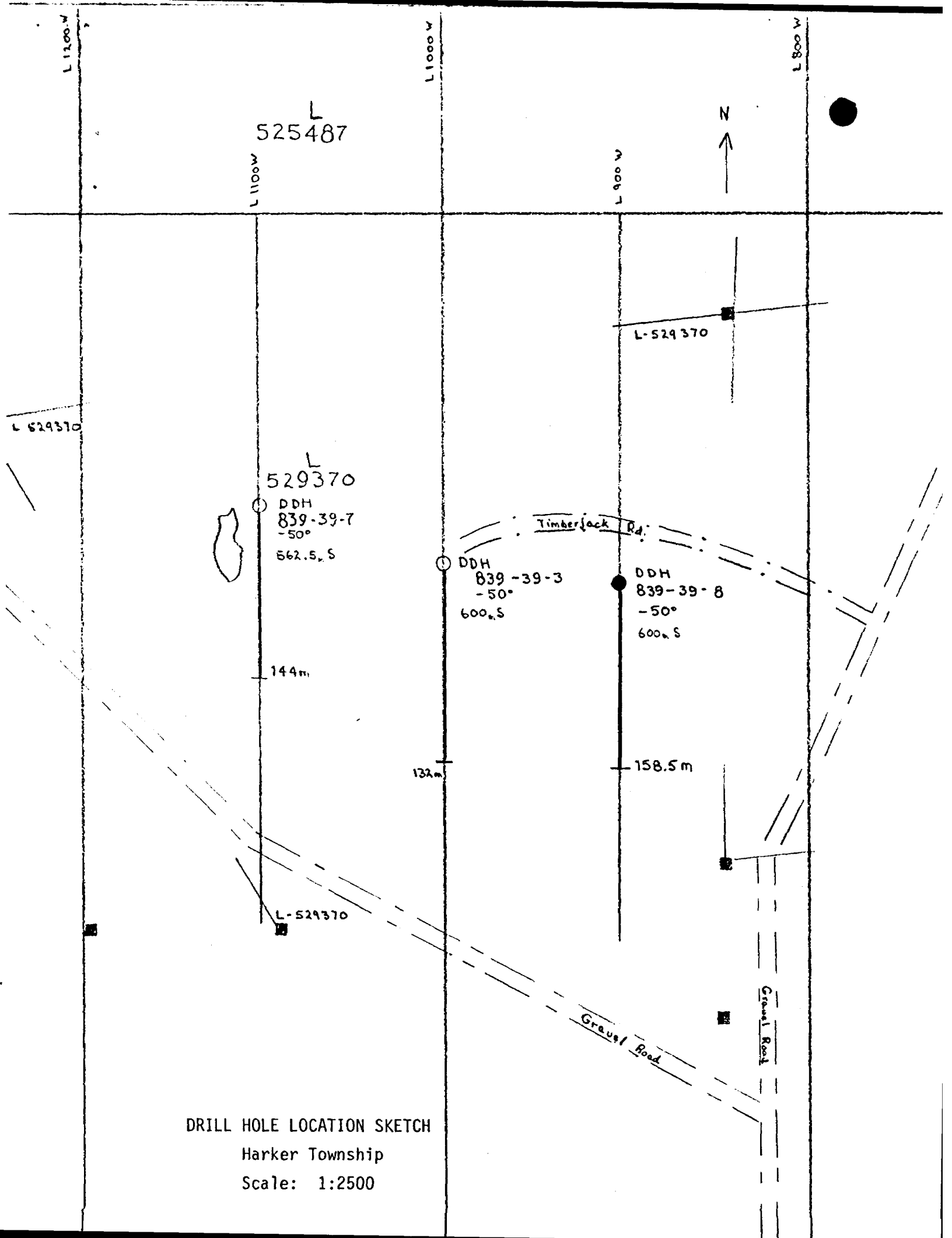
Hole No. 839-39-8
Sheet No. 5

Footage - Metres		DESCRIPTION
From	To	
68.90	83.41	SERICITIZED CARBONATE ROCK
		Medium to dark green in colour, fine grained and soft. The original rock may have been a mudstone or greywacke since bands up to 20cm wide of unaltered mudstone/greywacke occur within the unit. The rock was highly altered to sericite and carbonate. The carbonate content is about 5-10%. The core is well banded from 68.9 to 69.2 at 45° to 50° to the core axis. Downhole the bands are brecciated and crenulated and show evidence of soft sediment slumping and folding. Disseminated sulphides occur throughout and overall content is about 2%. From 72.6 to 73.15 shear zone with rusty alteration along the fractures on either side of the fracture, the rock is highly brecciated. Minor quartz veining occurs in the brecciated areas. From 76.6 to 77.8 breccia which is more silicified than the surrounding rock. From 78.0 to 78.24 fault with talc alteration on the borders and iron formation pebbles in the fault gouge.
83.41	113.8	GREYWACKE - MUDSTONE
		Dark green to light green in colour. Very fine to fine grained and relatively soft. The mudstone is well bedded at 40° to the core axis. Finely disseminated pyrite throughout with an overall content of 1-2%. Quartz veins and stringers cut the core at random angles and constitute about 5% of the rock. The upper contact is gradational. Contacts between the mudstones and greywackes are sharp at 45° to the core axis. From 85.0 to 85.57 breccia zones. Angular greywacke fragments in a pinkish quartz matrix. Sericitic alteration around some pebbles. From 86.05 to 86.48 sericitic alteration associated with quartz veining. From 88.9 to 89.15 chloritic and carbonic alteration associated with a shear zone. 91.2 to 91.4 pinkish cherty sediments 92.16 to 92.6 pinkish cherty sediments From 112.84 to 113.2 fault with breccia on the borders.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-8
Sheet No. 6

Footage - Metres		DESCRIPTION
From	To	
113.80	139.90	<p>CHERTY GREYWACKE</p> <p>Greywacke as described from 83.41 to 113.8 with pinkish cherty sediment bands up to 10cm wide throughout.</p> <p>Downhole the percentage of cherty bands increases. Well bedded at 50° to the core axis.</p> <p>Quartz stringers cut the core at random angles and make up about 3-5%. Finely disseminated pyrite throughout <1%. Downhole (around 129 metres) the quartz veining increases to about 10%. They are brecciated and crenulated.</p> <p>Disseminated sulphides increase to 1-2%.</p> <p>Bedding at 60° to the core axis (measured at 136.0 metres)</p> <p>Lower contact is gradationl.</p>
139.9	146.6	<p>ARKOSIC SEDIMENT</p> <p>Medium grained, reddish in colour and hard. This sediment is well bedded at 60° to the core axis. Some of the beds are greenish in colour and some yellowish but the overall colour is red.</p> <p>There are some biotite grains in places which may indicate that the sediment is arkose.</p> <p>Specularite also occurs in places (<1%) which is distinguishable by its streak. There are disseminated sulphides and cubic pyrite throughout, ≈2%. The individual grains are fairly well rounded and sorted.</p> <p>The lower contact is gradational.</p>
146.60	157.00	<p>BASAL CONGLOMERATE</p> <p>Fragments are semi-rounded and range in size from 2mm to 5cm across.</p> <p>The most striking feature of this sediment is the presence of large red iron formation pebbles. These pebbles are highly magnetic and have a red streak. The white unit is fairly magnetic because of numerous magnetite pebbles.</p> <p>The core becomes coarser downhole which suggests that the top of the beds are to the north.</p> <p>Carbonate content is about 3%.</p> <p>The overall sulphide content is about 3% but there are also small blobs of massive sulphides between the grains.</p> <p>There are also numerous pinkish chert grains throughout.</p>



L
525487

L
529370

DDH
839-39-7
-50°
562.5 S

DDH
839-39-3
-50°
600 S

DDH
839-39-8
-50°
600 S

L-529370

L-529370

144m

132m

158.5m

Timberjack Rd.

Gravel Road

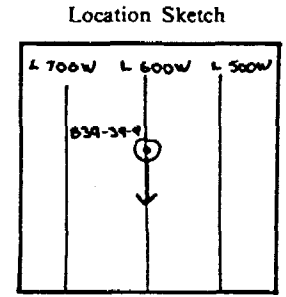
Gravel Road

DRILL HOLE LOCATION SKETCH
Harker Township
Scale: 1:2500

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-9

Hole No. 839-39-9	Sheet 1	Length 96.0 metres	Commenced October 14, 1981	Dip: Collar -50°
Property 839-39		Bearing Grid South	Completed October 16, 1981	Etch Test 1
Township Harker		Dip -50°	Drilling Co. St. Lambert	Depth 95.0m
Location L600W; 625S		Objective Drill iron formation	Core Size BQ	Rdg. 45°
			Casing Left/ Lost in Hole	True 38°
Logged By S. Davies				
Core Location Perry Lake				



North
↑
Claim No. L529371
Scale: 1:10,000

Remarks

Footage/ Metres		DESCRIPTION
From	To	
0	9.0	OVERBURDEN
9.0	34.2	SHEARED GREYWACKE, MUDSTONE & IRON FORMATION
34.2	65.9	IRON FORMATION
65.9	96.0	MUDSTONE - GREYWACKE
	96.0	END OF HOLE

S. Davies

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-9
Sheet No. 3

Footage - Metres		DESCRIPTION
From	To	
0	9.0	OVERBURDEN
9.0	34.2	SHEARED GREYWACKE, MUDSTONE & IRON FORMATION
		Highly sheared and fractured zone with rusty alteration along the fractures. The greywacke is greenish in colour, fine to medium grained and relatively soft.
		Iron formation is dispersed throughout the section up to .4 metres wide. It has a high magnetic response but is not conductive.
		Sulphide content is about 2% and is found mostly in the greywacke.
		19.24 to 19.28 banded iron formation
		19.76 to 20.1 breccia with quartz veining
		23.25 to 24.00 banded iron formation in sections up to 5cm wide
		25.27 to 25.92 banded iron formation
		26.00 to 26.90 the amount of quartz veining. The veins are up to 2cm in width and cut the core at random angles. There may be two stages of quartz veining, primary and secondary. The primary quartz is a smokey colour and may have been deposited with the sediments, it is conformable with the bedding. The secondary quartz cuts across the beds and is white in colour.
		From 26.90 to 27.90 banded iron formation
		27.9 to 28.46 iron formation
		28.65 to 29.23 iron formation
		From 29.45 to 30.20 the iron formation is not as massive as the previous section. It thins out and cuts the core at random angles. This could indicate folding or soft sediment slumping.
34.2	65.9	IRON FORMATION
		Fine grained, dark purplish red with a red streak. The red streak indicates the presence of a lot of hematite. There are also black bands of just magnetite in places but mostly downhole. The whole formation is magnetic but the black iron formation gives a higher response.
		The formation is mostly massive with some banding at 60° to core axis. Darker red hematite bands occur in places ie. 36.1 to 36.33 and 39.43 to 39.52. These bands are crenulated and folded
		Minor amount of crenulated quartz veining (≈3%). Sulphide content is low ≈1% or less. From about 62.0 metres to 66.0 metres the amount of quartzveining increases to about 5%. These veins are also highly crenulated.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-9
Sheet No. 4

Footage - Metres		DESCRIPTION
From	To	
		From 63.0 to 63.58 about 15% quartz veining which has brecciated the iron formation. Bright red hematite also in this section. About 2% sulphides. From 64.64 to 64.67 about 7% sulphide beds.
		At 65.32 small amount of chalcopyrite in a fracture which cuts the core at about 10° to the core axis. Some cubic pyrite in quartz veining which is associated with the contact at 65.93 metres. The contact is gradational.
65.9	96.0	MUDSTONE - GREYWACKE
		Dark green in colour, very fine to fine grained and relatively soft. Well bedded at 55° to the core axis. 5-10% quartz veining which is highly crenulated. The quartz is both white and smokey grey which may indicate primary and secondary quartz stages. Overall sulphide content is 1-2% but is concentrated in the veins.
		At the top of the section there are numerous brownish blebs which look like fragments with greyish reaction rims.
		69.17 to 69.25 about 25% crenulated quartz with about 3% sulphides.
		69.68 small sulphide stringers
		72.52 to 72.67 - 30% quartz with sericite and about 5% sulphides both cubic and disseminated. 75.25 minor amount of chalcopyrite.
		From 78.08 to 80.31 chert
		- massive, crystalline
		- pinkish and brecciated from 78.08 to 79.7 - this section contains some sericite alteration.
		79.4 to 79.64 pinkish quartz veins which are brecciated with sericite.
		From 79.7 to 80.31 the chert is massive, whitish in colour
		- the contacts are sharp at 55° to the core axis and sulphide content <1%.
		From 81.27 to 81.40 sulphides about 4%
		91.87 to 92.05 pink quartz vein which cuts the core at <5°.
		brecciated the greywacke - about 2% quartz.
		From 93.0 to 93.6 quartz brecciated the rock (only on half of the core) into angular fragment up to 2cm in diameter.
	96.0	END OF HOLE

L 500 W

L 600 W

L-52540B

L-529371

DDH 839-39-9
- 50°
6255



96m

L-529371

L-586435

DRILL HOLE LOCATION SKETCH

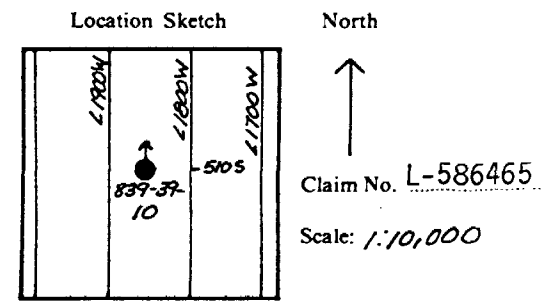
Harker Township

Scale: 1:2500

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-10

Hole No. <u>839-38-10</u> Sheet <u>1</u>	Length <u>174.0 metres</u>	Commenced <u>November 27, 1981</u>	Dip: Collar <u>-50°</u>
Property <u>Harker</u>	Bearing <u>Grid North</u>	Completed <u>December 2, 1981</u>	Etch Test Depth Rdg. True
Township <u>Harker</u>	Dip <u>-50°</u>	Drilling Co. <u>St. Lambert</u>	<u>1</u> <u>174.0m</u> <u>48°</u> <u>40°</u>
Location <u>L 1850W; 510S</u>	Objective <u>To drill an iron formation.</u>	Core Size <u>BQ</u>	
Logged By <u>B. Benoit</u>		Casing Left/Lost in Hole <u>none</u>	
Core Location <u>Perry Lake</u>			



Remarks _____

Footage / Metres		DESCRIPTION
From	To	
0	23.36	OVERBURDEN
23.36	44.23	CHERT
44.23	60.00	GREYWACKE
60.0	70.25	CHERT
70.25	99.91	GREYWACKE
99.91	136.00	IRON OXIDE FORMATION
136.00	142.84	SEDIMENT
142.84	151.42	GREYWACKE
151.42	174.00	GREYWACKE
	174.00	END OF HOLE

R. G. Pearson

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

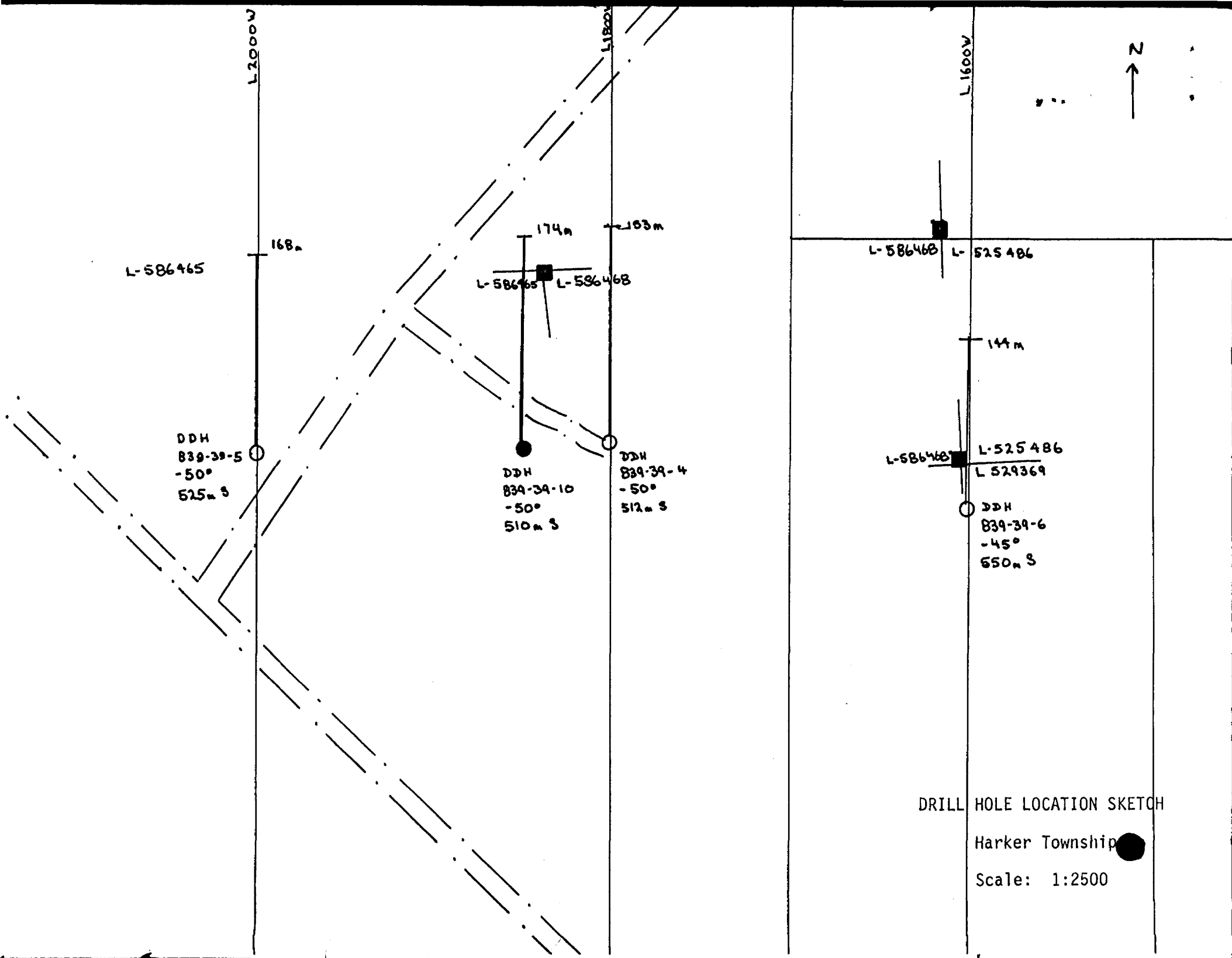
Hole No. 839-39-10
Sheet No. 5

Footage - Metres		DESCRIPTION
From	To	
0	23.36	OVERBURDEN sand and gravel
23.36	44.23	CHERT Pinkish, moderately hard, fine grained. The rock is slightly sericitic and carbonatized. Core also contains epidote bands that range from 1mm to 2cm wide. Core also contains small pin sized veins of specular hematite that are irregular and cut the core at all angles. The hematite is associated with small bands of disseminated pyrite. Sulphide content 1% to 3% disseminated pyrite. Pyrite is also found as small cubes.
44.23	60.00	GREYWACKE Grey green yellowish colour, weakly foliated at 33° to the core axis. Contact is gradational. Core is slightly chloritic, sericitic, and carbonatized. Core contains some quartz veins that range from 1mm to 5mm wide. These are irregular and cut the core at all angles. Core also contains some specular hematite mixed with the sulphides found near quartz vein seams. Sulphide content 1% to 2% disseminated pyrite, pyrite also found as small cubes. 48.36 to 48.47 - Quartz breccia siliceous, hard. Contains 1% to 2% disseminated pyrite.
60.0	70.25	CHERT Pinkish colour, very hard, siliceous, slightly sericitic and carbonatized. Core contains some epidote. Core also contains quartz veins that range from 1mm to 2cm wide. These veins cut the core at all angles and are very irregular and crenulated. Veins are also folded. Sulphide content 1% to 5% disseminated pyrite. The pyrite is found near quartz vein seams or the pyrite is also found to replace some of the smaller quartz veins. Pyrite is also found as small cubes. Some specular hematite is mixed with the disseminated pyrite.
		66.37 to 68.67 Conglomerate - Very hard, whitish pink colour, very siliceous, contains broken up quartz fragments.

AMAX MINERALS EXPLORATION
(A Division of Amax of Canada Limited)
DIAMOND DRILL RECORD

Hole No. 839-39-10
Sheet No. 6

Footage - Metres		DESCRIPTION
From	To	
		Core is slightly sericitic and carbonatized. Pyrite is present, 1% to 5% disseminated pyrite. Pyrite is found as spots and in bands. Pyrite is also found near quartz fragment seams.
	68.67 to 69.24	Siliceous chert breccia - brick red colour, very hard and slightly chloritic and carbonatized. Core contains 1% to 2% finely disseminated pyrite.
70.25	99.97	GREYWACKE
		Grey green - yellowish colour. Foliation is at 33° to the core axis. Contact is gradational. Core is slightly chloritic, sericitic and carbonatized. Core contains some quartz veins that range from 1mm to 1cm wide. These veins are irregular. Crenulated veins are folded. Core also contains epidote bands that cut the core at 33° to the core axis. These range from 1mm to 1cm wide. Sulphide content 1% to 2% disseminated pyrite. The pyrite is found near the quartz vein seams. The pyrite also partially replaces some of these quartz seams.
	99.51 to 99.75	Broken up core suggesting a fault gouge, core is a broken up rubble.
99.91	136.00	IRON OXIDE FORMATION
		Massive bright red-purple colour. Core is very hard, contains some jasper. Core contains many small crenulated and folded quartz veins. Many of these veins are carbonatized, these veins range from 1mm to 2cm wide. Core also contains a sufficient amount of specular hematite. The hematite is also associated with the sulphide content. The sulphide content ranges from 1% to 7% finely disseminated pyrite. Pyrite is also found as cubes. Core is highly magnetic. Foliation is at 40° to the core axis. Pyrite is found in or near quartz vein seams.
	104.43 to 105.81	Mudstone - yellowish-green colour, soft. Contact is sharp and it is at 40° to the core axis. Fine grained. Sulphide content 1% to 3% finely disseminated pyrite found as small thin bands.



DRILL HOLE LOCATION SKETCH

Harker Township ●

Scale: 1:2500