

DIAMOND DRILLING



41110NE0185 0016 SCADDING

010

TOWNSHIP: Scadding

REPORT No.: 20

WORK PERFORMED BY: Scadding Gold Mines Ltd./Northgate Exploration Ltd

CLAIM No.	HOLE No.	FOOTAGE	DATE	NOTE	
S 373196	N-1	257.0	Oct/80	(1) (2)	
	N-2	401.5	Oct/80	(1) (2)	
	N-3	464.0	Oct/80	(1) (2)	
	N-5	507.0	Oct/80	(1) (2)	
	N-6	627.0	Nov/80	(1) (2)	
	N-7	342.0	Nov/80	(1) (2)	
	N-8	475.0	Nov/80	(1) (2)	
	N-9	532.0	Nov/80	(1) (2)	
	N-10	418.0	Nov-Dec/80	(2)	
	N-11	286.0	Dec/80	(2)	
	N-26	452.0	Oct/80	(2)	
	N-28	205.0	Nov/80	(2)	
	N-29	280.0	Nov/80	(2)	
	N-30	325.0	Nov/80	(2)	
	N-31	411.0	Nov/80	(2)	
	S 357994	N-32	320.0	Nov/80	(2)
N-22		251.0	Oct/80	(1) (2)	
N-23		276.0	Oct/80	(1) (2)	
N-24		243.0	Oct/80	(1) (2)	
N-27		377.5	Oct/80	(1) (2)	
N-33		213.0	Nov/80	(1) (2)	
N-34		148.0	Dec/80	(1) (2)	
N-35		162.6	Dec/80	(1) (2)	
N-36		147.0	Dec/80	(1) (2)	
N-37		307.0	Dec/80	(1) (2)	
N-38		605.0	Dec/80	(1) (2)	
S 357990		N-20	427.0	Oct/80	(1) (2)
		N-21	401.0	Oct/80	(1) (2)
		N-25	398.0	Oct/80	(1) (2)
S 346915		N-4	601.0	Oct/80	(1) (2)
		N-12	615.0	Dec/80	(1) (2)
	N-13	55.0	Dec/80	(1) (2)	
	N-14	54.0	Dec/80	(1) (2)	
	N-15	82.0	Jan/81	(1)	
	N-16	58.0	Jan/81	(1)	
	N-17	76.0	Jan/81	(1)	
	N-18	57.0	Jan/81	(1)	
	N-19	56.6	Jan/81	(1)	
	N-43	164.0	Jan/81	(1)	
	N-44	307.0	Jan/81	(1)	
N-45	209.0	Jan/81	(1)		
N-46	127.0	Jan/81	(1)		

Notes: (1) #91-81 ^{total: 42.5M} 12719.6
 (2) OMEP Report: #OM21-PE-17-C-80

* MAP VELLUMS STORED ON TOP OF MAP CABINET.



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R.Watt Property
 Location: Scadding Twp, Ont.
 Co-ordinates: 5054.4N, 9497.2E

HOLE: N-1.
 Core size:

Section: O+50NW, O+50NE
 Length: 257.0 (78.3m)
 Elevation: 318.9m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 2/80
 Completed: Oct. 5/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to												
0.0	6.0	Casing											
0.0	1.83m												
6.0	69.3	Serpent quartzite, fine grained grey to dark grey to pinkish grey.											
1.83m	21.13m												
69.3	110.0	Quartzite, altered salmon pink with grey carbonate stringers and occasional patches similar in appearance to the footwall breccia.											
21.13m	33.53m												
		90.0-90.5 - Carbonate Bx section, contains 10% coarse granular pyrite.	9901	0.5 .15	90.0 27.43m	90.5 27.59m					.01		
110.0	126.0	Chlorite breccia zone, salmon pink quartzite with chlorite seams and patches.											
33.53m	38.41m												
		110.0-112.5 - Chlorite breccia, 10% chlorite in seams and patches, and locally as a replacement. Some pyrite grains associated with the chlorite. Local grey vein quartz.	9902	2.5 0.8	110.0 33.53m	112.5 34.29m					.005		
		112.5-114.5 - Chlorite breccia. 10% chlorite in narrow seams and as a replacement. Local blebs of pyrite. Some white carbonate present.	9903	2.0 0.6	112.5 34.29m	114.5 34.90m					nil		
		114.5-117.7 - Chlorite and carbonate breccia, mostly salmon pink quartzite with carb. rhombs and stringers. Some chlorite replacement. Minor pyrite.	9904	3.2 1.0	114.5 34.90m	117.7 35.88m					nil		
		117.7-120.0 - Chlorite-carbonate breccia. 10% chlorite, mostly as a replacement. White carbonate stringers with some associated blebs of pyrite.	9905	2.3 0.7	117.7 35.88m	120.0 36.58m					nil		
		120.0-123.0 - Chlorite breccia, 50% chlorite in seams and patches. Fairly well mineralized with pyrite in blebs and small cubes. Some grey vein quartz also present.	9906	3.0 0.9	120.0 36.58m	123.0 37.49m					.005		



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Section: 0+50NW, 0+50NE
 Length: 257.0 (78.3m)
 Elevation: 318.9 m
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DRILL LOG

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DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
126.0 38.41m	136.5 41.61m	123.0-126.0 - Chlorite breccia, 60% chlorite as a replacement, and in seams and patches. Pyrite rare.. Chlorite zone, 50% to 80% chlorite. Rare pyrite grain, some grey vein quartz. 126.0-128.5 - Chlorite zone, 70% chlorite, rare grain of pyrite. Locally some grey vein quartz. 128.5-131.0 - Chlorite zone, 60% chlorite. The odd grain of pyrite. Occasional bleb of grey vein quartz. 131.0-134.0 - Chlorite breccia, 50% chlorite in red altered quartzite. Some grey vein quartz, sulphides absent. 134.0-136.5 - Chlorite breccia, 50% chlorite in red altered quartzite. Some grey vein quartz, sulphides absent.	9907	3.0 .91m	123.0 37.49m	126.0 38.41m	.17 .05				
136.5 41.61m	152.0 46.33m	Chlorite zone, 60% to 80% chlorite. Some grey vein quartz throughout, sparse pyrite. V.G. as noted. 136.5-139.8 - Chlorite zone, 80% chlorite with some irregular blebs and stringers of grey vein quartz. Occasional grain of py. 139.8-141.3 - Chlorite zone, 80% chlorite with some grey vein quartz. Occasional grain of pyrite. Several grains of V.G. at 140.8. 141.3-143.7 - Chlorite zone, 70% chlorite with some blebs of grey vein quartz. The odd grain of pyrite.	9908 9909 9910 9911 9912 9913 9914	2.5 0.8 2.5 0.8 3.0 0.91 2.5 0.8 3.3 1.01 1.5 0.5 2.4 0.7	126.0 38.41m 128.5 39.17m 131.0 39.92m 134.0 40.84m 136.5 41.61m 136.5 41.61m 139.8 42.61m 139.8 42.61m 141.3 43.07m 141.3 43.07m	128.5 39.17m 131.0 39.92m 134.0 40.84m 136.5 41.61m 139.8 42.61m 141.3 43.07m 143.7 43.80m	.01 .002 nil nil .002 nil .04 .01 .21 .06				



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DRILL LOG

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DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		143.7-146.3 - Chlorite zone, 60% chlorite, blebs of grey vein quartz, occasional grains of pyrite.	9915	2.6 0.8	143.7 43.80m	146.3 44.59m	.005				
		146.3-148.6 - Chlorite zone, 75% chlorite with the odd grain of pyrite. A little vein quartz. Grains of aspy at 146.5. A grain of V.G. at 146.7 and very fine V.G. at 148.4.	9916	2.3 .70m	146.3 44.59m	148.6 45.29m	.05 .02				
		148.6-152.0 - Chlorite zone, 80% chlorite with several blebs and xtals of pyrite up to 1/4". Several fine grains of V.G. at 149.2.	9917	3.4 1.04m	148.6 45.29m	152.0 46.33m	.08 .02				
152.0 46.33m	154.5 47.09m	Altered quartzite, minor chlorite as a replacement.									
		152.0-154.5 - Quartzite, altered reddish with some local chlorite replacement.	9918	2.5 0.8	152.0 46.33m	154.5 47.09m	nil				
154.5 47.09m	155.7 47.46m	Chlorite breccia, 50% chlorite.									
		154.5-155.7 - Chlorite breccia, 50% chlorite with some coarse pyrite cubes in altered red quartzite. Many grains of fine V.G. in quartzite at 155.1.	9919	1.2 .37m	154.5 47.09m	155.7 47.46m	.06 .02				
155.7 47.46m	159.0 48.46m	Quartzite, altered, reddish.									
		155.7-159.0 - Quartzite, reddish, altered with some carbonate stringers and patches.	9920	3.3 1.01	155.7 47.46m	159.0 48.46m	nil				
159.0 48.46m	162.9 49.65m	Chlorite breccia, 10% chlorite in red altered quartzite.									
		159.0-162.9 - Chlorite breccia, 10% chlorite in altered red quartzite. No sulphides.	9921	3.9 1.19m	159.0 48.46m	162.9 49.65m	.05 .02				



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from	to						Au oz/ton		
162.9 49.65m	168.2 51.27m	Chlorite zone, 70% to 80% chlorite. Locally heavy fine magnetite, well mineralized with blebs and xtals. of pyrite, V.G. as noted.							
		162.9-165.4 - Chlorite zone, 80% chlorite with heavy fine magnetite and coarse pyrite in blebs. Many fine grains of V.G. at 164.7 to 164.8, and at 164.9.	9922	2.5 .76m	162.9 49.65m	165.4 50.42m	.60 .18		
		165.4-168.2 - Chlorite zone, 80% chlorite with heavy fine magnetite and some fine chalcopyrite. Good pyrite in blebs. Fine V.G. at 166.1, 166.3, 166.5 and 166.6.	9923	2.8 .85m	165.4 50.42m	168.2 51.27m	.56 .17		
168.2 51.27m	211.0 64.31m	Chlorite breccia, 10% to 30% chlorite in seams, patches and as a replacement of the quartzite.							
		168.2-172.0 - Chlorite breccia, 10% chlorite in seams and as a replacement. Sulphides rare.	9924	3.8 1.16	168.2 51.27m	172.0 52.43m	.01		
		172.0-174.0 - Chlorite breccia, 10% chlorite in crushed red quartzite. Local fine py in seams and grains.	9925	2.0 0.6	172.0 52.43m	174.0 53.04m	.002		
		174.0-177.0 - Chlorite breccia, 5%-10% chlorite in seams. Sulphides rare.	9926	3.0 0.9	174.0 53.04m	177.0 53.95m	nil		
		177.0-179.0 - Chlorite breccia, 15% chlorite in altered quartzite. 5% pyrite and po.	9927	2.0 0.6	177.0 53.95m	179.0 54.56m	nil		
		179.0-181.9 - Chlorite breccia, 10% chlorite in seams and as a replacement. Sulphides are rare.	9928	2.9 0.9	179.0 54.56m	181.9 55.44m	nil		
		181.9-183.9 - Chlorite breccia, 20% chlorite in seams, patches, and as a replacement. Local coarse blebs of py in chlorite.	9929	2.0 0.6	181.9 55.44m	183.9 56.05m	.04 .01		



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 Length: 257.0 (78.3m)
 Elevation: 318.9m
 Azimuth: S65°W Dip:-45°

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from	to						Au oz/ton				
		183.9-187.0 - Chlorite breccia, 20% chlorite with disseminated grains of magnetite common, also a few grains of pyrite with the chlorite.	9930	3.1 1.0	183.9 56.05m	187.0 57.00m	.005				
		187.0-192.0 - Chlorite breccia, 25% chlorite in seams, patches, and as a replacement. Occasional small grain of pyrite.	9931	5.0 1.53	187.0 57.00m	192.0 58.52m	.005				
		192.0-195.0 - Chlorite breccia, 30% chlorite in patches and as a replacement. The odd grain of pyrite.	9932	3.0 0.9	192.0 58.52m	195.0 59.44m	.04 .01				
		195.0-197.5 - Chlorite breccia, 40% chlorite with some grey vein quartz. The odd grain of pyrite.	9933	2.0 0.6	195.0 59.44m	197.5 60.20m	nil				
197.5 60.20m	199.1 60.69m	Chlorite zone, 80% chlorite, V.G. as noted.									
		197.5-199.1 - Chlorite zone, 80% chlorite with grey vein quartz in irregular patches. Small blebs of pyrite throughout. Many small grains of V.G. at 198.3.	9934	1.6 .49m	197.5 60.20m	199.1 60.69m	.30 .09				
199.1 60.69m	211.0 64.31m	Chlorite breccia.									
		199.1-201.5 - Chlorite breccia, 60% chlorite with fair pyrite in the chloritic sections.	9935	2.4 0.7	199.1 60.69m	201.5 61.42m	nil				
		201.5-204.1 - Chlorite breccia, 50% chlorite, mostly as a replacement. Minor pyrite.	9936	2.6 0.8	201.5 61.42m	204.1 62.21m	nil				
		204.1-207.0 - Chlorite breccia, 40% chlorite mostly as a replacement. Fair % pyrite in small grains and seams.	9937	2.9 0.9	204.1 62.21m	207.0 63.09m	.002				
		207.0-209.6 - Chlorite breccia, 20% chlorite mostly as a replacement. Rare grain of py.	9938	2.6 0.8	207.0 63.09m	209.6 63.89m	nil				



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 Location: Scadding Twp., Ont.
 Co-ordinates: 5054.4N, 9497.2E

HOLE: N-1
 Core size:

Section: 0+50NW, 0+50NE
 Length: 257.0 (78.3m)
 Elevation: 318.9m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 7/80
 Completed: Oct. 5/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						Au oz/ton		
211.0 64.31m	218.7 66.56m	206.9-211.0 - Chlorite breccia, 15% chlorite in seams and small patches. Locally good pyrite in seams in the more chloritic sections.	9939	1.4 0.4	206.9 63.89m	211.0 64.31m	.005		
		Altered quartzite, reddish brown with patches of minor chlorite replacement.							
218.7 66.66m	242.8 74.01m	211.0-216.0 - Quartzite, altered reddish brown occasional patch of weak chlorite replacement. Sulphides absent.	9940	5.0 1.5	211.0 64.31m	216.0 65.83m	.005		
		216.0-218.7 - Quartzite, altered reddish brown. A little chlorite in narrow seams and as a replacement. Rare pyrite grains.	9941	2.7 0.8	216.0 65.83m	218.7 66.66m	nil		
		Chlorite breccia, 20% to 40% chlorite. Some sulphides present.							
		218.7-222.0 - Chlorite breccia, 20% chlorite in seams and patches, and as a replacement. Locally a few grains of pyrite with the chlorite.	9942	3.3 1.0	218.7 66.66m	222.0 67.67m	nil		
		222.0-223.7 - Chlorite breccia, 20% chlorite mostly as a replacement in blebs in red quartzite. Sulphides absent.	9943	1.7 0.5	222.0 67.67m	223.7 68.19m	nil		
		223.7-225.2 - Chlorite breccia, 25% chlorite in seams and patches and as a replacement. Some pyrite in grains and in narrow seams. 3 specks of V.G. associated with coarse pyrrhotite at 224.0.	9944	1.5 0.5	223.7 68.19m	225.2 68.64m	.002		
		225.2-228.1 - Chlorite breccia, 20% chlorite in red quartzite, in blebs and patches. Sulphides absent.	9945	2.9 0.9	225.2 68.64m	228.1 69.53m	nil		
228.1-230.9 - Chlorite breccia, 40% chlorite in patches and seams. Fair pyrrhotite and some pyrite throughout with the more chloritic sections.	9946	2.8 0.9	228.1 69.53m	230.9 70.38m	nil				
230.9-233.0 - Chlorite breccia, 40% chlorite with a few grains of py and po with the chloritic sections.	9947	2.1 0.6	230.9 70.38m	233.0 71.02m	nil				



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HOLE: N-1
 Core size:

Section: 0+50NW, 0+50NE
 Length: 257.0 (78.3m)
 Elevation: 318.9m
 Azimuth: S65°W Dip: -45°

Dip Tests:
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DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton	Au gn/tonne					
		<u>Ore Sections</u>											
		1.	9907	3.0' 0.91m	123.0 37.49	126.0 38.41	0.17 .05	5.829 1.78					
		2.	9914	2.4' 0.73m	141.3 43.07	143.7 43.90	0.21 .06	7.200 2.2					
		3.	9921-24	5.3' 1.62m	162.9 49.65	168.2 51.27	0.58 0.2	19.886 6.07					
		3a.		9.2' 2.81m	159.0 48.46	168.2 51.27	0.36 0.1	12.343 3.8					
		4.		1.6' 0.49m	197.5 60.20	199.1 60.69	0.30 .09	10.286 3.1					
		<u>Ore Zone</u>											
				26.9 8.2m	141.3 43.07	168.2 51.27	0.158 .05	5.417 1.7					



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5070.7N, 9533.8E

HOLE: N-2
 Core size:

Section: 0+50NW, 1+75NE
 Length: 401.5' (122.3m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 7/80
 Completed: Oct. 9/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

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from	to						Au oz/ton						
0.0 0.0	6.0 1.83m	Casing											
6.0 1.83m	217.8 66.39m	Serpent quartzite reddish brown to grey. 22.0 (6.7m) - Bedded section at 45° to the core. 37.0 (11.3m) - Bedding at 45° to the core. 67.4-69.0 - Chlorite breccia, 10% chlorite in red altered quartzite down to the dyke & little py with the chlorite. 69.0 - 76.1 - (21.03 - 23.21) - Diabase dyke, fine grained dark grey. Top contact sharp at 60° to the core. 96.4 (29.4m) - Bedding at 65° to the core. 98.5-99.0 (30-30.2m) - Brecciated section, carbonate and some coarse patches of chlorite, no sulphides. 103.4-103.5 (31.5-31.55m) - Diabase dyklet at 80° to the core. 103.5-109.7 (31.5-33.4m) - Greywacke bed, dark grey, fine grained massive looking with local bedding at 60° to the core.	10101	2.4 0.51m	67.4 20.54m	69.0 21.03m	Nil						
146.0 44.5m	148.3 45.2m	3" of carbonate breccia followed by a brecciated section with rounded fragments up to 1". Looks like pebbles in places. Seams and disseminated pyrite throughout. 146.0-148.3 - Brecciated section, minor chlorite and carbonate, dissem. py.	10143	2.3 0.30m	146.0 44.50m	148.3 45.20m	Nil						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5070.7N, 9533.8E

HOLE: N-3.
 Core size:

Section: 0+50NW, 1+75NE
 Length: 401.5' (122.3m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -45°

Dip Tests:
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DRILL LOG

Drill Contractor - N. Morissette

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from	to						Au oz/ton							
177.8 54.2m	181.7 55.4m	Brecciated section, carbonated, sub-rounded fragments, locally coarse py in blebs. Last 1.5 ft. contains patches of chlorite which are mineralized with pyrite.												
		177.8-180.2 - Brecciated section, carbonatized with coarse patches and blebs of py.	10144	2.4 0.7	177.8 54.19m	180.2 54.93m	Nil							
		180.2-181.7 - Brecciated section, highly carbonatized. Seams and patches of chlorite up to 3/4" which are mineralized with pyrite.	10145	1.5 0.5	180.2 54.93m	181.7 55.38m	.002							
		187.3 (57.0m) - 3" Carbonatized section with coarse granular pyrite.												
213.7 65.1m	217.8 66.4m	Chloritic quartzite, grades into chlorite zone at 217.8. A little py.												
		213.7-217.8 - Chloritic quartzite, 20% chlorite as a replacement. A little fine pyrite.	10146	4.1 1.3	213.7 65.14m	217.8 66.39m	Nil							
217.8 66.39m	247.0 75.29m	Chlorite zone, 60% to 80% chlorite with some grey vein quartz. Pyrite in sections throughout.												
		217.8-220.3 - Chlorite zone, 60% chlorite with some grey vein quartz. Pyrite common throughout in small blebs. Local heavy magnetite.	10147	2.5 0.8	217.8 66.39m	220.3 67.15m	Nil							
		220.3-222.3 - Chlorite zone, 50% chlorite with some grey vein quartz. Rare grains of pyrite.	10148	2.0 .61m	220.3 67.15m	222.3 67.76m	0.32 0.1							
		222.3-224.3 - Chlorite zone, 60% chlorite. The odd grain of pyrite. Fair speck of V.G. at 222.6 in chlorite. Some dissem. magnetite.	10149	2.0 .61	222.3 67.76m	224.3 68.37m	0.04 .01							
		224.3-226.1 - Chlorite zone, 60% chlorite, an occasional grain of pyrite.	10150	1.8 0.6	224.3 68.37m	226.1 68.92m	0.01							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5070.7N, 9533.8E

HOLE: N-2
 Core size:

Section: 0+50NW, 1+75NE
 Length: 401.5' (122.3m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 7/80
 Completed: Oct. 9/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						Au oz/ton		
		226.1-227.7 - Chlorite zone, 65% chlorite with some irregular grey vein quartz. Occasional bleb of pyrite. Grain of V.G. at 226.3, speck at 227.5.	10151	1.6 0.5	226.1 68.92m	227.7 69.40m	0.03 .01		
		227.7-231.0 - Chlorite zone, 50% chlorite with occasional grains of py and po throughout.	10152	3.3 1.0	227.7 69.40m	231.0 70.41m	0.005		
		231.0-233.0 - Chlorite zone, 50% chlorite, good py and po, includes a coarse py xtal 3/4" across.	10153	2.0 .61	231.0 70.41m	233.0 71.02m	0.01		
		233.0-235.0 - Chlorite zone, 40% chlorite with the occasional bleb of pyrite.	10154	2.0 .61	233.0 71.02m	235.0 71.63m	.002		
		235.0-237.5 - Chlorite zone, 60% chlorite, some grey vein quartz. Well mineralized with coarse pyrite in vuggy patches up to 1 1/2".	10155	2.5 0.8	235.0 71.63m	237.5 72.39m	.002		
		237.5-240.7 - Chlorite zone, 50% chlorite, well mineralized with blebs and xtals of py and po up to 1/2". Some grey vein quartz.	10156	3.2 1.0	237.5 72.39m	240.7 73.37m	.002		
		240.7-243.7 - Chlorite zone, 70% chlorite with irregular vein quartz. Local coarse pyrite in blebs up to 1".	10157	3.0 .91m	240.7 73.37m	243.7 74.28m	0.19 .06		
		243.7-247.0 - Chlorite zone, 70% chlorite with grey vein quartz throughout. Well mineralized with blebs of pyrite in the quartz and in the chlorite.	10158	3.3 1.0	243.7 74.28m	247.0 75.29m	0.03 .01		
247.0 75.29m	249.0 75.90m	Chloritic quartzite.							
		247.0-249.0 - Chloritic quartzite, grading to relatively unaltered quartzite.	10159	2.0 .61	247.0 75.29m	249.0 75.90m	Nil		
249.0 75.90m	271.3 82.69m	Quartzite, pinkish grey							



NORTHGATE EXPLORATION LIMITED

DRILL LOG

Drill Contractor - N. Morissette

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HOLE: N-2
 Core size:

Section: 0+50NW, 1+75NE
 Length: 401.5' (122.3m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 7/80
 Completed: Oct. 9/80
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DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to						Au oz/ton			
		249.0-255.0 - Quartzite, light pinkish grey non chloritic.	10160	6.0 1.8	249.0 75.90m	255.0 77.73m	Nil			
		255.0-261.0 - Quartzite, light pinkish grey.	10161	6.0 1.8	255.0 77.73m	261.0 79.55m	Nil			
		263.0 (80.1m) - Bedding at 60° to the core.								
		261.0-266.5 - Quartzite, light pinkish grey somewhat altered over narrow sections.	10162	5.5 1.7	261.0 79.55m	266.5 81.23m	Nil			
266.5 81.2m	268.0 81.7m	Chlorite breccia, 20% chlorite in seams and patches.								
		266.5-268.5 - Chlorite breccia, 20% chlorite in seams and patches and as a replacement. Sulphides absent.	10163	2.0 .61	266.5 81.23m	268.5 81.84m	.01			
		268.5-271.3 - Quartzite, pinkish grey, becoming chloritic in the last foot.	10164	2.8 0.9	268.5 81.84m	271.3 82.69m	Nil			
271.3 82.69m	290.9 88.67m	Chlorite zone, 60% to 80% chlorite mostly well mineralized with pyrite. A large amount of magnetite in this section, the most I have observed to date.								
		271.3-274.2 - Chlorite zone, 70% chlorite with a little vein quartz. A few small blebs of pyrite throughout. Local disseminated magnetite.	10165	2.9 0.9	271.3 82.69m	274.2 83.58m	.03 .01			
		274.2-276.4 - Chlorite zone and breccia, 25% chlorite. A few blebs of py and the odd grain of magnetite.	10166	2.2 0.7	274.2 83.58m	276.4 84.25m	.005			
		276.4-278.6 - Chlorite zone, 80% chlorite with 10% coarse magnetite. Some coarse pyrite and a few grains of chalco. Some grey vein quartz. Speck of V.G. at 278.3. Badly ground core at 277.3.	10167	2.2 0.7	276.4 84.25m	278.6 84.92m	.01			



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Dip Tests:
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DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		278.6-280.3 - Chlorite breccia, 10% chlorite in narrow seams and patches. Sulphides absent.	10168	1.7 0.5	278.6 84.92m	280.3 85.44m	Nil				
		280.3-282.1 - Chlorite zone, includes 1.2 ft. of white carbonate mixed with chlorite. Sample is heavily mineralized with 15% magnetite and 10% sulphides in coarse patches. Pyrite, some chalco and a little aspy.	10169	1.8 .55m	280.3 85.44m	282.1 85.99m	0.44 0.1				
		282.1-283.3 - Chlorite zone, 20% magnetite with the odd grain of pyrite. Two grains of V.G. at 283.0.	10170	1.2 .37m	282.1 85.99m	283.3 86.35m	0.13 .04				
		283.3-286.4 - Chlorite breccia, 50% chlorite with the odd grain of pyrite. Some local magnetite.	10171	3.1 1.0	283.3 86.35m	286.4 87.30m	0.02 .01				
		286.4-288.6 - Chlorite zone, 80% chlorite, the odd coarse grain of pyrite throughout. Much fine magnetite in some sections.	10172	2.2 0.7	286.4 87.30m	288.6 87.97m	0.13 .04				
		288.6-290.9 - Chlorite zone, 80% chlorite with local coarse pyrite xtals up to 3/4". 10% magnetite throughout.	10173	2.3 0.7	288.6 87.97m	290.9 88.67m	0.20 .06				
290.9 88.67m	308.4 94.00m	Chlorite breccia, 10% to 20% chlorite with some pyrite mineralization.									
		293.4-297.0 - Chlorite breccia, 10% chlorite in salmon pink quartzite. Occasional coarse grains of pyrite associated with the chlorite.	10175	3.6 1.1	293.4 89.43m	297.0 90.53m	.002				
		297.0-301.3 - Chlorite breccia, 10% chlorite in small patches in salmon red quartzite. A few grains and xtals of py throughout.	10176	4.1 1.3	297.0 90.53m	301.3 91.84m	.002				
		301.3-304.3 - Chlorite breccia, 10% chlorite in small patches. Locally good py in blebs in the more chloritic sections.	10177	3.0 0.9	301.3 91.84m	304.3 92.75m	.005				
		304.3-306.3 - Chlorite breccia, 10% chlorite in small seams and patches, rare pyrite.	10178	2.0 0.6	304.3 92.75m	306.3 93.36m	Nil				



NORTHGATE EXPLORATION LIMITED

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HOLE: N-2
 Core size:

Section: 0+50NW, 1+75NE
 Length: 401.5' (122.3m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -45°

Dip Tests:
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DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
308.4 94.00m	352.0 107.29m	306.3-308.4 - Chlorite breccia, 20% chlorite in seams and patches. 7% coarse pyrite in seams and cubes. Quartzite, altered brown to pink, locally mottled.	10179	2.1 0.6	306.3 93.36m	308.4 94.00m	.002				
		308.4-311.2 - Altered quartzite; occasional chlorite seams and patches. Some coarse pyrite present.	10180	2.8 0.9	308.4 94.00m	311.2 94.85m	.002				
352.0 107.29m	368.0 112.17m	Chlorite breccia and chlorite zones mineralized with pyrite and magnetite.									
		352.0-353.3 - Chlorite zone, 60% chlorite with local blebs of pyrite and very heavy magnetite.	10181	1.3 0.4	352.0 107.29m	353.3 107.69m	.01				
		353.3-354.9 - Chlorite breccia, 10% chlorite mostly as a replacement. Sulphides absent.	10182	1.6 0.5	353.3 107.69m	354.9 108.18m	.002				
		354.9-356.3 - Chlorite zone, 40% chlorite with some good blebs of pyrite. Grain of V.G. at 355.2 and 2 grains of V.G. at 355.4.	10183	1.4 0.4	354.9 108.18m	356.3 108.60m	0.22 .07				
		356.3-358.5 - Chlorite zone, 70% chlorite well mineralized with blebs of pyrite. Locally heavy fine magnetite.	10184	2.2 .67m	356.3 108.60m	358.5 109.27m	0.22 .07				
		358.5-361.5 - Chlorite breccia, 50% chlorite in patches. Locally some pyrite.	10185	3.0 0.9	358.5 109.27m	361.5 110.19m	0.02 .01				
		361.5-364.0 - Chlorite breccia, 50% chlorite in patches. Well mineralized with blebs of pyrite.	10186	2.5 0.8	361.5 110.19m	364.0 110.95m	0.01				
		364.0-366.0 - Chlorite zone, 80% chlorite, some vein quartz. 10% pyrite in blebs up to 1/4". Some fine magnetite.	10187	2.0 0.6	364.0 110.95m	366.0 111.56m	0.02 .01				
		366.0-368.0 - Chlorite breccia, 30% chlorite in patches which are mineralized with blebs of pyrite.	10188	2.0 0.6	366.0 111.56m	368.0 112.17m	0.03 .01				



NORTHGATE EXPLORATION LIMITED

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HOLE: N-2
 Core size:

Section: 0+50NW, 1+75NE
 Length: 401.5' (122.3m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 7/80
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DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton	Au gm/tonne					
368.0 112.17m	401.4 122.35m	Quartzite, becoming light grey, relatively unaltered.											
390.0 118.9m	400.0 121.9m	Bedded section at 80° to the core.											
	401.4 122.35m	End of hole.											
		<u>Ore Sections</u>											
		1.	10148-9	4.0 1.22m	220.3 67.15m	224.3 68.37m	0.180 .05	6.172 1.9					
		2.	10157-8	6.3 1.92m	240.7 73.37m	247.0 75.29m	0.106 .03	3.635 1.1					
		3.	10169-73	3.0 0.91m	280.3 85.44m	283.3 86.35m	0.316 0.1	10.836 3.3					
		3a.		4.5 1.37m	286.4 87.30m	290.9 88.67m	0.166 .05	5.692 1.7					
		3b.		10.6 3.23m	280.3 85.44m	290.9 88.67m	0.166 .05	5.692 1.7					
		4.	10183-4	3.6 1.09m	354.9 108.18m	358.5 109.27m	0.220 .07	7.544 2.3					



NORTHGATE EXPLORATION LIMITED

Property: 772 D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5070.5N, 9533.5E

HOLE: N-3
 Core size:

Section: 0+50NW, 1+75NE
 Length: 464.0' (141.4m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -60°

Dip Tests:
 Started: Oct. 16/80
 Completed: Oct. 19/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS							
from	to						Au oz/ton							
136.7 41.7m	146.5 44.7m	Chlorite breccia, 10% chlorite along with carbonate. Fine seams and blebs of pyrite locally with the chlorite. 136.7-141.0 - Chlorite breccia, 10% chlorite in seams and small patches. Some py in narrow seams and blebs with the chlorite. 141.0-143.5 - Chlorite breccia, 20% chlorite in seams and patches with some associated pyrite. 143.5-146.5 - Chlorite breccia, 10% chlorite with blebs of pyrite in the chlorite.												
145.6 44.4m	274.9 83.8m	Quartzite, light to dark grey with local whitish carbonatized sections. 201.8 (61.5m) - 1/2" seam of chlorite, no sulphides. 207.7-209.0 - Heavily mineralized section not chloritic or carbonatized. 249.7-251.2 - Chlorite breccia, 10% chlorite. Some coarse pyrite in chlorite and in the quartzite. A few specks of chalco.	10189 10190 10191 10192 10193	4.3 1.3 2.5 0.8 3.0 0.9 1.3 0.4 1.5 0.5	136.7 41.67m 141.0 42.98m 143.5 43.74m 143.5 43.74m 207.7 63.31m 249.7 75.11m	141.0 42.98m 143.5 43.74m 146.5 44.65m 209.0 63.70m 251.2 76.57m	nil 0.002 nil 0.02 .01 .005							



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 Length: 464.0' (141.4m)
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DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						X-Ray Au oz/ton	Swastika Au oz/ton	
274.9 83.80m	276.6 84.31m	Quartzite contains 10% chlorite with occasional grains of pyrite. 274.9-276.6 - Chloritic quartzite, 10% chlorite with some scattered grains of py.	10102	1.7 0.5	274.9 83.79m	276.6 84.31m	0.04 .01	0.04 .01	0.01
276.6 84.31m	286.5 87.33m	Chlorite breccia, 20% to 50% chlorite includes some very coarse pyrite in cubes and patches up to 4". 276.6-280.0 - Chlorite breccia, 20% chlorite in patches with 10% coarse pyrite in cubes and blebs.	10103	3.4 1.04m	276.6 84.31m	280.0 85.35m	0.19 .06	0.21 .06	0.22 .07
		280.0-282.5 - Chlorite breccia, 25% chlorite in seams and patches. 10% pyrite in coarse cubes up to ½", also in blebs. Grain of V.G. at 281.3.	10104	2.5 .76m	280.0 85.35m	282.5 86.11m	0.12 .04	0.14 .04	0.14 .04
		282.5-285.0 - Chlorite breccia, 25% chlorite in seams and patches. 15% coarse pyrite in cubes and irregular blebs. Some grey vein quartz.	10105	2.5 .76	282.5 86.11m	285.0 86.87m	0.03 .01	.03 .01	0.03 .01
		285.0-286.5 - Chlorite breccia, 20% chlorite, 30% coarse pyrite in cubes and patches up to 4".	10106	1.5 .46m	285.0 86.87m	286.5 87.33m	0.09 .03	0.10 .03	0.06 .02
286.5 87.33m	299.9 91.41m	Quartzite, highly altered with 5% to 10% chlorite as a replacement and in narrow seams. Minor pyrite. Local chlorite breccia sections. 286.5-289.5 - Chloritic quartzite, 5-10% chlorite as a replacement and in narrow seams. A little fine pyrite.	10107	3.0 0.9	286.5 87.33m	289.5 88.24m	Tr	Tr	0.005
		289.5-293.0 - Chloritic quartzite, 7% chlorite in narrow seams and as a replacement. A few ½" pyrite cubes.	10108	3.5 1.1	289.5 88.24m	293.0 89.31m	Tr	Tr	0.005
		293.0-295.5 - Chloritic quartzite, 5% chlorite as a fine replacement. No sulphides.	10109	2.5 .76	293.0 89.31m	295.5 90.07m	Tr	Tr	Nil



NORTHGATE EXPLORATION LIMITED

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 Location: Scadding Twp., Ont.
 Co-ordinates: 5070.5N, 9533.5E

HOLE: N-3.
 Core size:

Section: 0+50NW, 1+75NE
 Length: 464.0' (141.4m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -60°

Dip Tests:
 Started: Oct. 16/80.
 Completed: Oct. 19/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						X-Ray Au oz/ton	Swastika Au oz/ton	
		295.5-297.5 - Chlorite breccia, 10% chlorite in seams and small patches. Some blebs of pyrite associated with the chlorite.	10110	2.0 0.6	295.5 90.07m	297.5 90.68m	Tr	Tr	0.005
		297.5-299.9 - Quartzite, weakly chloritic, also some carbonate. The odd fine pyrite grain.	10111	2.4 0.7	297.5 90.68m	299.9 91.41m	Tr	Tr	Nil
299.9 91.41m	313.7 95.62m	Chlorite breccia, well mineralized with coarse pyrite in cubes and patches. V.G. as noted.							
		299.9-302.5 - Chlorite breccia, 10% chlorite in seams. Well mineralized with 10% py in blebs and coarse patches.	10112	2.6 .79	299.9 91.41m	302.5 92.20m	Tr	Tr	0.005
		302.5-305.0 - Chlorite breccia, 5% chlorite in seams and as a replacement. Minor py.	10113	2.5 0.8	302.5 92.20m	305.0 92.97m	Tr	Tr	Nil
		305.0-307.6 - Chlorite zone, 60% chlorite with 15% coarse pyrite in cubes and patches up to 3/4". Possible grain of V.G. at 306.0.	10114	2.6 .79m	305.0 92.27m	307.6 93.76m	0.40 0.1	0.45 .14	0.50 .15
		307.6-309.4 - Quartzite, weakly chloritic with the odd grain of pyrite.	10115	1.8 0.6	307.6 93.76m	309.4 94.31m	Tr	Tr	0.005
		309.4-311.8 - Chlorite breccia, 25% chlorite, well mineralized with coarse pyrite in cubes and patches up to 3/4".	10116	2.4 .73m	309.4 94.31m	311.8 95.04m	0.08 .02	0.08 .02	0.09 .03
		311.8-313.7 - Chlorite breccia, 10% chlorite in seams. 5% pyrite in cubes up to 1/2" with the chlorite. Also in blebs in the quartzite.	10117	1.9 0.6	311.8 95.04m	313.7 95.62m	Tr	Tr	0.002
313.7 95.62m	324.0 98.76m	Quartzite, 5% to 10% chlorite, mostly as a replacement. Sulphides rare.							
		313.7-317.0 - Quartzite, 5% to 10% chlorite as a replacement. A few grains of pyrite.	10113	3.3 1.0	313.7 95.62m	317.0 96.62m	Tr	Tr	0.005



NORTHGATE EXPLORATION LIMITED

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HOLE: N-3
 Core size:

Section: 0+50NW, 1+75NE
 Length: 464.0' (141.4m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -60°

Dip Tests:
 Started: Oct. 16/80
 Completed: Oct. 19/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						X-Ray Au oz/ton	Swastika Au oz/ton	
		317.0-321.0 - Quartzite, 5% to 10% chlorite mostly as a replacement. Pyrite absent.	10119	4.0 1.2	317.0 96.62m	321.0 97.84m	Tr	Tr	Nil
		321.0-324.0 - Quartzite with 10% chlorite as a replacement. Sulphides absent.	10120	3.0 .91	321.0 97.84m	324.0 98.76m	Tr	Tr	Nil
324.0 98.76m	330.0 100.59m	Chlorite breccia, 50% chlorite with good pyrite mineralization throughout in xtals and grains up to 1/4".							
		324.0-327.0 - Chlorite breccia, 60% chlorite with 5% pyrite in cubes and blebs throughout.	10121	3.0 .91m	324.0 98.76m	327.0 99.67m	0.06 .02	0.06 .02	0.06 .02
		327.0-330.0 - Chlorite breccia, 70% chlorite, some pyrite and 10% magnetite.	10122	3.0 .91	327.0 99.67m	330.0 100.59m	0.05 .02	0.04 .01	0.03 .01
330.0 100.59m	332.6 101.38m	Chlorite zone, 80% chlorite with some pyrite throughout.							
		330.0-332.6 - Chlorite zone, 80% chlorite well mineralized with 5% pyrite and local heavy magnetite. Fine V.G. at 330.7, 331.8, 331.9 and many grains at 332.3.	10123	2.6 .79m	330.0 100.59m	332.6 101.38m	0.14 .04	0.10 .03	0.14 .04
332.6 101.38m	379.1 115.55m	Chlorite breccia, 50% to 60% chlorite with pyrite throughout most sections as noted.							
		332.6-335.8 - Chlorite breccia, 50% chlorite with pyrite in cubes and blebs.	10124	3.2 .98m	332.6 101.38m	335.8 102.35	0.06 .02	0.05 .02	0.07 .02
		335.8-337.6 - Chlorite breccia, 30% chlorite as a replacement and in grains. Locally good pyrite over narrow widths.	10125	1.8 0.6	335.8 102.35m	337.6 102.90m	0.04 .01	0.04 .01	0.04 .01
		337.6-340.5 - Quartzite, 10% chlorite as a replacement. Sulphides rare.	10126	2.9 0.9	337.6 102.90m	340.5 103.79m	Tr	Tr	0.005



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5070.5N, 9533.5E

HOLE: N-3.
 Core size:

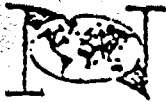
Section: 0+50NW, 1+75NE
 Length: 464.0' (141.4m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -60°

Dip Tests:
 Started: Oct. 16/80
 Completed: Oct. 19/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						X-Ray Au oz/ton	Swastika Au dz/ton	
		340.5-343.4 - Chlorite breccia, 50% chlorite. Locally well mineralized with fine and coarse pyrite.	10127	2.9 .88m	340.5 103.79m	343.4 104.67m	0.20 .06	0.24 .07	0.17 .05
		343.7-345.7 - Chlorite breccia, 50% chlorite in patches, pyrite common in 1/2" cubes. Many fine grains of V.G. at 344.7 and 345.1.	10128	2.3 .70m	343.7 104.67m	345.7 105.37m	0.26 .08	0.22 .07	0.19 .06
		345.7-348.6 - Chlorite breccia, 70% chlorite. Fine and coarse pyrite throughout. Grain of V.G. at 348.1.	10129	2.9 .88m	345.7 105.37m	348.6 106.26m	0.08 .02	0.09 .03	0.10 .03
		348.6-350.9 - Chlorite breccia, 30% chlorite in seams and patches, local coarse py. Speck of V.G. on slip at 350.7.	10130	2.3 .70m	348.6 106.26m	350.9 106.96m	0.12 .04	0.12 .04	0.12 .04
		350.9-353.3 - Chlorite breccia, 40% chlorite. A little pyrite in the more chloritic sections.	10131	2.4 .73m	350.9 106.96m	353.3 107.69m	0.10 .03	0.10 .03	0.03 .01
		353.3-355.4 - Chlorite breccia, 50% chlorite with some very coarse pyrite in blebs and cubes. Speck of V.G. at 353.5 and several grains at 354.8.	10132	2.1 .64m	353.3 107.69m	355.4 108.33m	0.57 .17	0.57 .17	0.57 .17
		355.4-357.0 - Chlorite breccia, 60% chlorite with good pyrite throughout. Many grains of V.G. at 354.8.	10133	1.6 .49m	355.4 108.33m	357.0 108.82m	1.32 .40	1.24 0.4	1.13 .34
		375.0-360.3 - Chlorite breccia, 20% chlorite in narrow seams. Rare sulphides.	10134	3.3 1.0	375.0 108.12m	360.3 109.82m	0.01	Tr	0.005
		360.3-363.8 - Chlorite breccia, 30% chlorite in seams and patches, rare pyrite.	10135	3.5 1.1	360.3 109.82m	363.8 110.89m	0.01	Tr	0.002
		363.8-365.7 - Chlorite breccia, 30% chlorite in patches. A little pyrite in the more chloritic sections. Several grains of V.G. at 365.5.	10136	1.9 0.6	363.8 110.89m	365.7 111.47m	0.02 .01	0.03 .01	0.02 .01
		365.7-368.1 - Chlorite breccia, 20% chlorite mostly as a replacement. Rare pyrite.	10137	2.4 .73	365.7 111.47m	368.1 112.20m	Tr	Tr	0.002



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5070.5N, 9533.5E

HOLE: N-3.
 Core size:

Section: 0+50NW, 1+75NE
 Length: 464.0' (141.4m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -60°

Dip Tests:
 Started: Oct. 16/80
 Completed: Oct. 19/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						X-Ray Au oz/ton	Swastika Au oz/ton	
		368.1-370.3 - Chlorite breccia, some py throughout. A great many grains of fine V.G. at 370.0.	10138	2.2 0.7	368.1 112.20m	370.3 112.87m	0.02 .01	Tr	0.15 .02
		370.3-372.7 - Chlorite breccia, some very coarse pyrite up to ½" in first part of the sample. 40% chlorite.	10139	2.0 .61m	370.3 112.87m	372.7 113.60m	0.11 .03	0.09 .03	0.09 .03
		372.3-374.8 - Chlorite breccia, 20% chlorite, rare pyrite.	10140	2.5 0.7	372.3 113.60m	374.8 114.24m	Tr	Tr	0.005
		374.8-376.6 - Chlorite breccia, 60% chlorite, well mineralized with blebs of pyrite.	10141	1.8 .55m	374.8 114.24m	376.6 114.79m	0.04 .01	0.07 .02	0.04 .01
		376.6-379.1 - Chlorite breccia, 10% chlorite in altered reddish quartzite.	10142	2.5 0.7	376.6 114.79m	379.1 115.55m	Tr	0.02 .01	Nil
379.1 115.55m	449.0 136.86m	Quartzite, grey to pinkish grey, relatively unaltered.							
402.0 122.5m	408.0 124.4m	Carbonate breccia, white carbonate stringers in pinkish altered quartzite.							
449.0 136.86m	464.0 141.43m	Carbonate breccia, salmon red, carb. rhombs and stringers.							
		464.0 (141.43m) - End of hole.							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5070.5N, 9533.5E

HOLE: N-3.
 Core size:

Section: 0+50NW, 1+75NE
 Length: 464.0' (141.4m)
 Elevation: 318.1m
 Azimuth: S65°W Dip: -60

Dip Tests:
 Started: Oct. 16/80
 Completed: Oct. 19/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS	
from	to						Au oz/ton	Au gm/tonne
		<u>Ore Sections</u>						
		1a.	10103-4	5.9 1.80	276.6 84.31	282.5 86.11	0.186 .06	6.378 2.0
		1b.	10103-6	9.9 3.0	276.6 84.36	286.5 87.38	0.134 .04	
		2.	10114	2.6 0.79	305.0 92.97	307.6 93.76	0.40 .12	15.431 4.7
		3.	10123	2.6 0.79	330.0 100.59	332.6 101.38	0.10 .03	4.801 1.5
		4.	10127-33	16.5 5.03	340.5 103.79	357.0 108.82	0.312 .10	10.698 3.3
		5.	10139	2.0 0.61	370.3 112.87	372.7 113.60	0.09 .03	3.429 1.1



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp, Ontario
 Co-ordinates: 5049.6N, 9561.8E

HOLE: N-5
 Core size:

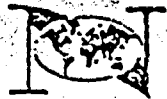
Section: 0+50SE
 Length: 507.0 (154.5m)
 Elevation: 311.8m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 28, 1980
 Completed: Nov. 5, 1980
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au						
0.0	10.0 3.05m	Casing											
10.0 3.05	19.4 5.91	Quartzite, highly altered, bleached white somewhat crushed in appearance. The odd narrow chlorite seam, occasional grain of pyrite. Bleb or chalco at 10.2 feet.											
19.4 5.91	64.7 19.72	Serpent quartzite, dark to light grey to pinkish grey, locally mottled. 30.0-31.0 Bedding at 70° to the core											
64.7 19.72	73.0 22.25	Diabase dyke, fine grained dark grey. Lower contact at 60° to the core.											
73.0 22.25	78.0 23.78	73.0-78.0 Chlorite breccia, altered reddish quartzite, brecciated with seams and the odd small patch of chlorite with some associated pyrite	10206	5.0 1.53	73.0 22.25	78.0 23.78	0.002						
78.0 23.78	93.6 28.53	Quartzite, altered brownish pink											
93.6 28.53	99.5 30.33	Carbonate breccia, bleached white quartzite with frequent carbonate stringers and patches with some granular py. Rare chlorite.											
99.5 30.33	147.3 44.90	Quartzite, light to dark brown to pinkish grey. Some short altered sections. 114.4-121.6 Altered brecciated bleached white section											
147.3 44.90	153.6 46.82	Chlorite breccia, 10% chlorite in seams and patches in altered white quartzite. Sulphides absent.	10207	3.0 .91	147.3 44.90	150.3 45.81	0.002						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp, Ont.
 Co-ordinates: 5049.6N, 9561.8E

HOLE: N-5
 Core size:

Section: 0+50SE
 Length: 507.0 (154.5m)
 Elevation: 311.8m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 28, 1980
 Completed: Nov. 5, 1980
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS					
from	to						Au					
		147.3-150.3 Chlorite breccia, 10% chlorite in seams and patches. Sulphides absent.	10207	3.0 .91	147.3 44.90	150.3 45.81	0.002					
		150.3-153.6 Chlorite breccia, 10% chlorite in seams and patches, sulphides absent.	10208	3.3 1.01	150.3 45.81	153.6 46.82	Nil					
153.6 46.82	189.5 57.76	Quartzite, grey to pinkish grey to brown										
189.5 57.76	212.5 64.77	Quartzite, crushed and altered section carbonatized sections with local patches of granular pyrite. A few narrow chlorite seams.										
		192.6-194.0 Quartzite, altered, carbonatized with some narrow chlorite seams with some associated granular pyrite	10209	1.4 .42	192.6 58.71	194.0 59.13	0.002					
		205.6 4" carbonate stringer with 25% coarse granular pyrite.										
212.5 64.77	223.5 68.12	Carbonate breccia, alternating sections of quartzite and carb. breccia. The odd small patch of chlorite within.										
223.5 68.12	230.8 70.35	Quartzite, altered, light grey to whitish										
230.8 70.35	256.9 78.30	Chlorite-carbonate breccia, 5% chlorite in seams and small patches with the carbonate stringers and patches										
		232.5-235.5 Chlorite-carbonate breccia, 5% chlorite in small patches and seams. The odd bleb of pyrite with chlorite	10210	3.0 .91	232.5 70.87	235.5 71.78	Nil					
		238.2-239.7 Chlorite-carbonate breccia, 10% chlorite in seams and patches with local fair pyrite blebs with chlorite.	10211	1.5 .46	238.2 72.60	239.7 73.06	0.002					



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5049.6N, 9561.8E

HOLE: N-5
 Core size:

Section: 0+50SE
 Length: 507.0 (154.5m)
 Elevation: 311.8m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 28, 1980.
 Completed: Nov. 5, 1980
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	Au ASSAYS							
from	to													
	235.0	Lost water												
	239.7-244.0	Chlorite-carbonate breccia, 3% chlorite in narrow seams with local associated blebs of pyrite	10212	4.3 1.31	239.7 73.06	244.0 74.37	Nil							
	244.0-246.0	Chlorite-carbonate breccia, 5% chlorite with fair pyrite in the chloritic slips and also in the quartzite	10213	2.0 .61	244.0 74.37	246.0 74.98	0.002							
	246.0-250.0	Quartzite, altered reddish brown, a few narrow chlorite seams and the odd grain of pyrite	10214	4.0 1.2	246.0 74.98	250.0 76.25	0.002							
	250.0-251.6	Quartzite, 5% chlorite in narrow seams with grains of pyrite	10215	1.6 0.5	250.0 76.25	251.6 76.69	0.002							
	251.6-253.1	Chlorite breccia, 10% chlorite in narrow seams which are well mineralized with blebs and cubes of py.	10216	1.5 .46	251.6 76.69	253.1 77.15	0.02 .01							
	253.1-254.9	Chlorite breccia, 10% chlorite in narrow seams and as a replacement. Local pyrite with the chlorite.	10217	1.8 .55	253.1 77.15	254.9 77.70	Nil Nil							
	254.9-256.7	Chlorite breccia, 25% chlorite with 10% vuggy pyrite. Some grey vein quartz. Good grain of V.G. at 255.3 and grain at 255.4 and also 255.8	10218	1.8 .55	254.9 77.70	256.7 78.24	.27 .08							
256.9 78.30	350.0 106.68	Quartzite, mostly grey with some pink to reddish brown sections.												
	256.7-258.4	Quartzite, grey, unaltered, includes 6" of coarse granular pyrite	10219	1.7 .52	256.7 78.24	258.4 78.76	.02 .01							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5049.6N, 9561.8E

HOLE: N-5
 Core size:

Section: 0+50SE
 Length: 507.0 (154.5m)
 Elevation: 311.8m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 28, 1980
 Completed: Nov. 5, 1980
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au				
		273.5-275.4 Carbonate breccia, 5% granular py.	10220	1.9 .58	273.5 83.36	275.4 83.94	.005				
350.0	353.2	Quartzite, altered salmon pink, grades into chlorite breccia									
353.2	357.0	Chlorite breccia									
		353.2-355.0 Chlorite breccia, salmon pink quartzite with 10% chlorite in small patches. A little pyrite with the chlorite	10221	1.8 .61	353.2 107.60	355.0 108.21	.002				
353.2 107.66	357.0 108.82	Chlorite breccia.									
		355.0-357.0 Chlorite breccia, 40% chlorite with 5% pyrite in blebs and cubes up to 1/4" with the chlorite	10222	2.0 .61	355.0 108.21	357.0 108.82	.05 .02				
		357.0 Ground and run over core for at least 1 ft.									
357.0 108.82	361.3 110.13	Quartzite weakly chloritized, sulphides are rare									
		357.0-359.0 Altered quartzite, 5% chlorite as a replacement. Sulphides absent.	10223	2.0 .58	357.0 108.82	359.0 109.4	Nil				
361.3 110.13	368.8 112.41	Chlorite breccia, 10% chlorite, locally well mineralized with pyrite in blebs and cubes									
		361.3-363.6 Chlorite breccia, 10% chlorite in seams and small patches up to 1". Local coarse pyrite in chlorite in cubes and blebs.	10224	2.3 .70	361.3 110.13	363.6 110.83	.04 .01				
		363.6-364.8 Chlorite breccia, 10% chlorite in seams, patches and as a replacement. Some fair pyrite throughout. Grain of v.g. in chlorite at 364.1	10225	1.2 .37	363.6 110.83	364.8 111.19	.13 .04				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp, Ontario
 Co-ordinates: 5049.6N, 9561.8E

HOLE: N-5
 Core size:

Section: 0+50SE
 Length: 507.0 (154.5m)
 Elevation: 311.8m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 28, 1980
 Completed: Nov. 5, 1980
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au						
		364.0 Ground core on block near v.g.											
		364.8-366.8 Chlorite breccia, 15% chlorite in patches and seams, well mineralized with 10% coarse pyrite in cubes up to 1/4" and in blebs.	10226	2.0 0.6	364.8 111.26	366.8 111.80	.11 .03						
		366.8-368.8 Chlorite breccia, 5% chlorite in seams and small patches with the odd pyrite cube	10227	2.0 .61	366.8 111.80	368.8 112.41	.01						
368.8 112.41	377.6 115.09	Quartzite, altered salmon pink, some crushed sections containing narrow chlorite slips. Sulphides absent.											
377.6 115.09	396.4 120.82	Quartzite, brownish, less altered than the previous section											
		385.0-386.5 Chlorite-carbonate breccia, 10% chlorite in seams and as a replacement. 3% pyrite in blebs and cubes. Some carbonate rhombs present.	10228	1.5 .46	385.0 117.35	386.5 117.81	.02 .01						
		392.6-394.1 Carbonate-chlorite breccia, coarse carbonate rhombs and patches, also seams of chlorite which are mineralized with pyrite.	10229	1.5 .45	392.6 119.67	394.1 120.12	.03 .01						
396.4 120.82	418.0 127.41	Carbonate breccia, salmon pink quartzite with patches, stringers and large rhombs of carbonate. Locally some chlorite partly replacing the carbonate rhombs.											
		397.8-400.0 Carbonate breccia, 5% chlorite replacing carbonate rhombs, and in narrow seams, and as a replacement of the quartzite. A few scattered sulphides.	10230	3.2 .67	397.8 121.25	400.0 121.92	.005						



NORTHGATE EXPLORATION LIMITED

Property: 772, D. R. Watt Property
 Location: Scadding Twp, Ont.
 Co-ordinates: 5049.6N, 7561.8E

HOLE: N-5
 Core size:

Section: 0+50SE
 Length: 507.0 (154.5m)
 Elevation: 311.8m
 Azimuth: S65°W

Dip Tests:
 Started: Oct. 28, 1980
 Completed: Nov. 5, 1980
 Logged by: P. Mclean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS	
from	to						Assay oz/ton	Assay gms/tonne
		<u>Ore Sections</u>						
		1.	10218	1.8 0.6	254.9 77.74	256.7 78.29	0.270 .08	9.258 2.8
		2.	10225-6	3.2 .98	363.6 110.90	366.8 111.87	0.118 .04	4.046 1.2



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.9N, 9541.0E

HOLE: N-6
 Core size:

Section: 0+00, 1+75NE
 Length: 627.0' (191.1m)
 Elevation: 315.5m
 Azimuth: S65°W Dip: -70°

Dip Tests:
 Started: Nov. 3/80
 Completed: Nov. 12/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
0.0	5.0	Casing.											
0.0	1.52m												
5.0	145.6	Serpent quartzite, grey to pinkish grey to reddish brown with local brecciated and bleached sections.											
1.52m	44.38m												
		10.0-15.0 - Brecciated section, bleached pinkish to white. Minor carbonate, the odd chlorite slip.											
		23.0-29.0 - Carbonate breccia section, white to pinkish with some carbonate stringers and patches.											
		60.0 - Bedding at 85° to the core.											
		18.3m											
		63.2-71.5 - Diabase dyke, dark grey, fine grained top contact sharp											
		19.3-21.8m at 70° to the core.											
		80.0-94.0 - Brecciated, altered section, locally crushed in appearance, sections of carb. breccia included. Bleached pinkish to white. A few blebs of granular pyrite.											
		24.4-28.7m											
		91.5-92.5 - ½" quartz stringer parallel to core.											
		27.9-28.2m											
		139.0 - Bedding at 70° to the core.											
		42.4m											
145.6	149.0	Chlorite breccia, 10% chlorite in small patches.											
44.38m	45.42m												
		145.6-149.0 - Chlorite breccia, 10% chlorite in small patches and as a replacement. A little pyrite with the chlorite.	10235	3.4	145.6	149.0	0.002						
				1.0m	44.38m	45.42m							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.9N, 9541.0E

HOLE: N-6.
 Core size:

Section: 0+00, 1+75NE
 Length: 627.0' (191.1m)
 Elevation: 315.5m
 Azimuth: S65°W Dip: -70°

Dip Tests:
 Started: Nov. 3/80
 Completed: Nov. 12/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
149.0 45.42m	154.0 46.94m	Quartzite, altered brownish to pink, 5% chlorite as a replacement in narrow seams.											
154.0 46.94m	165.5 50.45m	Chlorite breccia, 10% to 20% chlorite in seams and in small patches, and as a replacement.											
		154.0-156.5 - Chlorite breccia, 10% chlorite in seams and small patches. Sulphides rare.	10236	2.5 0.8m	154.0 46.94m	156.5 47.70m	0.002						
		156.5-160.2 - Chloritic quartzite, reddish brown with seams of chlorite, also some carbonate.	10237	3.7 1.1m	156.5 47.70m	160.2 48.83m	0.002						
		160.2-162.1 - Chlorite breccia, 20% chlorite in patches and small replacement grains. Rare pyrite.	10238	1.9 0.6m	160.2 48.83m	262.1 49.41m	0.002						
		162.1-163.1 - Chlorite breccia, 20% chlorite in patches and as a replacement. Two grains of V.G. in chlorite patch at 162.3. No sulphides noted.	10239	1.0 0.3m	162.1 49.41m	163.1 49.71m	.03 .01						
		163.1-164.1 - Quartzite, altered, slightly chloritic.	10240	1.1 0.33m	163.1 49.71m	164.2 50.05m	0.005						
		164.2-165.5 - Chlorite breccia, 15% chlorite in small patches and as a replacement. Rare pyrite on seams. Speck of V.G. at 165.2.	10241	1.3 .40m	164.2 50.05m	165.5 50.45m	.27 .08						
		165.5-167.5 - Chlorite breccia, 10% chlorite in small patches and replacement. Rare py.	10242	2.0 .61m	165.5 50.45m	167.5 51.05m	.10 .03						
165.5 50.45m	239.7 73.06m	Quartzite, well altered pinkish grey. Frequent chlorite seams and local chlorite replacement. Appears to be weakly developed section of breccia zone.											
		167.5-171.0 - Chloritic quartzite, 5% chlorite in narrow seams and as a replacement. Sulphides rare.	10243	3.5 1.07m	167.5 51.05m	171.0 52.12m	0.002						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.9N, 9541.0E

HOLE: N-6
 Core size:

Section: 0+00, 1+75NE
 Length: 627.0' (191.1m)
 Elevation: 315.5m
 Azimuth: S65°W Dip: -70°

Dip Tests:
 Started: Nov. 3/80
 Completed: Nov. 12/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		180.4-183.5 - Chloritic quartzite, 5% chlorite in narrow seams and as a replacement. Local disseminated pyrite.	10244	3.1 0.94m	180.4 54.99m	183.5 55.93m	0.002				
		187.6-189.4 - Brecciated well mineralized section 15% granular pyrite with some chalco and a speck of arsenopyrite. Not chloritic.	10245	1.8 0.55m	187.6 57.18m	189.4 57.73m	0.005				
		192.0-197.0 - Chloritic quartzite, highly altered. Frequent narrow chlorite seams which are mineralized with pyrite.	10246	5.0 1.52m	192.0 58.52m	197.0 60.05m	Nil				
		197.0-202.0 - Chloritic quartzite, frequent narrow chlorite slips, mineralized throughout with pyrite which is associated with the slips.	10247	5.0 1.52m	197.0 60.05m	202.0 61.57m	Nil				
		202.0-207.0 - Chloritic quartzite, frequent narrow chlorite slips which are mineralized with pyrite and some chalco. Sulphide heavily disseminated over short sections.	10248	5.0 1.52m	202.0 61.57m	207.0 63.09m	0.002				
210.0 64.0m	219.8 67.0m	Quartzite, bleached white. Some carbonate stringers, chlorite slips and sulphides rare in this section.									
		219.8-225.0 - Quartzite, altered with frequent narrow chlorite slips. Disseminated pyrite throughout.	10249	5.2 1.58m	219.8 67.00m	225.0 68.58m	Nil				
		225.0-230.0 - Altered quartzite, frequent narrow chlorite slips, disseminated pyrite throughout.	10250	5.0 1.52m	225.0 68.28m	230.0 70.11m	Nil				
		230.0-235.0 - Altered quartzite with frequent narrow chlorite slips. Disseminated pyrite throughout.	10251	5.0 1.52m	230.0 70.11m	235.0 71.63m	Nil				
		235.0-239.7 - Quartzite, less altered than the previous section, occasional chlorite seams, minor disseminated pyrite.	10252	4.7 1.43m	235.0 71.63m	239.7 73.06m	Nil				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.9N, 9541.0E

HOLE: N-6
 Core size:

Section: 0+00, 1+75NE
 Length: 627.0' (191.1m)
 Elevation: 315.5m
 Azimuth: S65°W Dip: -70°

Dip Tests:
 Started: Nov. 3/80
 Completed: Nov. 12/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
239.7 73.06m	257.0 78.33m	Chlorite breccia, 10% to 40% chlorite alternating with some unbrecciated sections. Chlorite in seams, patches and as a replacement. Some white carbonate with the chlorite throughout. Good pyrite and pyrrhotite with the chlorite.											
		239.7-240.9 - Chlorite breccia, 10% chlorite in seams and patches in crushed and altered whitish pink quartzite. 5% pyrite in blebs and seams, also a little chalco.	10253	1.2 0.37m	239.7 73.06m	240.9 73.43m	0.01						
		240.9-242.2 - Chlorite breccia, 50% chlorite in seams and patches. 10% vuggy pyrite in patches up to ½" and in irregular seams. Small fracture with V.G. at 241.7.	10254	1.3 0.40m	240.9 73.43m	242.2 73.82m	.08 .02						
		242.2-244.3 - Quartzite, altered with 5% chlorite in seams and as a replacement. The odd grain of pyrite.	10255	2.1 0.64m	242.2 73.82m	244.3 74.46m	0.005						
		244.3-246.2 - Chlorite breccia, 30% chlorite in seams and patches. 10% pyrrhotite with some pyrite and a little chalco.	10256	1.9 0.58m	244.3 74.46m	246.2 75.01m	.01						
		246.2-247.4 - Quartzite, grey pink, altered. A few chlorite slips and the odd grain of pyrrhotite.	10257	1.2 0.37m	246.2 75.04m	247.4 75.41m	0.02 .01						
		247.4-248.9 - Chlorite breccia, 10% chlorite in altered quartzite, locally blebs and seams of pyrrhotite.	10258	1.5 0.46m	247.4 75.41m	248.9 75.87m	.002						
		248.9-250.9 - Chlorite breccia, 30% chlorite well mineralized with 7% pyrite in blebs and seams. Fine speck of V.G. in pyrite at 249.8.	10259	2.0 0.61m	248.9 75.87m	250.9 76.48m	.005						
		250.9-252.5 - Chlorite breccia, 5% chlorite in seams, a little associated pyrrhotite.	10260	1.6 0.49m	250.9 76.48m	252.5 76.96m	.002						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.9N, 9541.0E

HOLE: N-6.
 Core size:

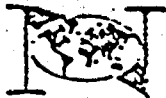
Section: 0+00, 1+75NE
 Length: 627.0' (191.1m)
 Elevation: 315.5m
 Azimuth: S65°W Dip:-70°

Dip Tests:
 Started: Nov. 3/80
 Completed: Nov. 12/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS					
from	to						Au oz/ton	Au gm/tonne				
		500.6-502.5 (152.58-153.16m) - Weakly chloritic section.										
		528.9-534.0 (161.21-162.76m) - Quartzite becoming somewhat crushed and altered.										
534.0 162.77m	545.0 166.12m	Carbonate breccia, 20% carbonate in narrow stringers and small patches in dark grey quartzite. Angular fragments of quartzite locally.										
545.0 166.12m	580.0 176.79m	Interbedded quartzite and greywacke, bedding at 60° to the core, some local sections of carbonate breccia.										
580.0 176.79m	627.0 191.11m	Greywacke-argillite, dark grey, bedding at 60° to the core. Occasional narrow pinkish quartzite beds.										
		597.0-599.0 (181.97-182.58m) - Ground core.										
		619.0-621.0 (188.67-189.28m) - Ground core.										
		627.0 (191.11m) - End of hole.										
		<u>Ore Sections</u>										
		1.	10241-2	3.3 1.00m	164.2 50.05m	167.5 51.05m	0.167 .05	5.726 1.8				



NORTHGATE EXPLORATION LIMITED

Drill Contractor - N. Morissette

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4928.9N, 9507.7E

HOLE: N-7.
 Core size:

Section: 3+50SE, 1+00SW
 Length: 342.0 (104.2m)
 Elevation: 308.3m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Nov. 14/80
 Completed: Nov. 16/80
 Logged by: P. McLean

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au						
0.0	12.0	Casing.											
0.0	3.66m												
12.0	90.0	Serpent quartzite, light to dark grey with some altered salmon red sections. 12.0-18.0 - (3.66-5.49) - Salmon pink altered quartzite, some carbonate stringers. 50.0-90.0 - (15.24-27.43) - Core very blocky and broken up. 88.0-90.0 - (26.82-27.43) - Brick red quartzite with a few chlorite seams with minor pyrite.											
3.66m	27.43												
90.0	171.5	Olivine diabase, top contact at 80° to the core. Fine grained at contact, becoming much coarser, dark grey fresh and massive in appearance. 164.0-171.5 - (49.99-52.27) - Becoming fine grained to lower contact.											
27.43m	52.27m												
171.5	177.5	Quartzite, pinkish, occasional chlorite seam.											
52.27m	54.10m												
177.5	221.5	Chlorite breccia, 10% chlorite in narrow seams and small patches. Chlorite is usually mineralized with fine pyrite. 177.5-180.0 - Chlorite breccia, brick red quartzite with 10% chlorite in narrow seams with some associated pyrite. Poor core recovery.											
54.10m	67.51m												
		180.0-183.5 - Chlorite breccia, 5% chlorite in seam and as a replacement. Some disseminated pyrite throughout.	10266	2.5	177.5	180.0	Nil						
		183.5-187.0 - Chlorite breccia, 10% chlorite in narrow seams and as a replacement and in small patches. 3% disseminated pyrite, in part associated with the chlorite.	10267	.77	54.10m	54.87m							
			10268	3.5	180.0	183.5	.002						
				1.06	54.87m	55.93m							
				3.5	183.5	187.0	Nil						
				1.07	55.93m	57.00m							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4928.9N, 9507.7E

HOLE: N-7
 Core size:

Section: 3+50SE, -1+00SW
 Length: 342.0 (104.2m)
 Elevation: 308.3m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Nov. 14/80
 Completed: Nov. 16/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au				
		187.0-190.0 - Chlorite breccia, 10% chlorite in seams and small patches. 3% pyrite partly associated with the chlorite.	10269	3.0 .91	187.0 57.00m	190.0 57.91m	.002				
		190.0-193.3 - Chlorite breccia, 15% chlorite with some carbonate also present. 3%-5% pyrite, mostly with the chlorite.	10270	3.3 1.01	190.0 57.91m	193.3 58.92m	Nil				
		193.3-196.0 - Chlorite breccia, 5% chlorite in narrow seams. Some associated py.	10271	2.7 .82	193.3 58.92m	196.0 59.74m	Nil				
		196.0-199.8 - Chlorite breccia, 10% chlorite in seams and small patches. Well mineralized with 5% pyrite with the chlorite.	10272	3.8 1.16	196.0 59.74m	199.8 60.90m	Nil				
		199.8-203.0 - Chlorite breccia, 10% chlorite in seams, small patches, and as a replacement. 3% pyrite associated with the chlorite.	10273	3.2 .98	199.8 60.90m	203.0 61.88m	Nil				
		203.0-206.2 - Chlorite breccia, 5% chlorite with white carbonate stringers and patches. 2% disseminated pyrite throughout.	10274	3.2 .98	203.0 61.88m	206.2 62.85m	0.002				
		206.2-208.9 - Chlorite breccia, 15% chlorite with carbonate. 5% pyrite in blebs up to 1/8" with the chlorite.	10275	2.7 .82	206.2 62.85m	208.9 63.67m	Nil				
		208.9-212.0 - Chlorite-carbonate breccia, 5% chlorite in stringers and small patches. Well mineralized with 5% disseminated pyrite, mostly with chlorite-carbonate.	10276	3.1 .95	208.9 63.67m	212.0 64.62m	Nil				
		212.0-215.0 - Chlorite-carbonate breccia, 3% disseminated pyrite throughout.	10277	3.0 .91	212.0 64.62m	215.0 65.53m	Nil				
		215.0-218.0 - Chlorite-carbonate breccia, 30% well mineralized with 5% pyrite in blebs and disseminated.	10278	3.0 .92	215.0 65.53m	218.0 66.45m	Nil				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4928.9N, 9507.7E

HOLE: N-7.
 Core size:

Section: 3+50SE, 1+00SW
 Length: 342.0 (104.2m)
 Elevation: 308.3m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Nov. 14/80
 Completed: Nov. 16/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au				
		218.0-221.5 - Chlorite-carbonate breccia, 20% locally well mineralized with blebs of pyrite.	10279	3.5 1.06	218.0 66.45m	221.5 67.51m	Nil				
		221.5-224.0 - Quartzite, pinkish to dark grey, weakly chloritic, disseminated granular pyrite.	10280	2.5 .67	221.5 67.51m	224.0 68.28m	Nil				
221.5 67.51m	241.0 73.46m	Interbedded quartzite and greywacke pinkish quartzite beds alternating with dark grey siliceous greywacke. Disseminated pyrite common in the greywacke beds. This section is weakly chloritized, mostly as a replacement, narrow sections of chlorite breccia.									
		232.0-237.0 - Chloritic quartzite and greywacke, 5%-10% chlorite as a replacement and in narrow seams. Fine disseminated pyrite not associated with the chlorite.	10281	5.0 1.52	232.0 70.72m	237.0 72.24m	Nil				
		237.0-241.0 - Chloritic greywacke, 5% chlorite mostly as a replacement. Disseminated granular pyrite throughout.	10282	4.0 1.22	237.0 72.24	241.0 73.46	Nil				
241.0 73.46m	257.3 78.43m	Chlorite breccia, 10% chlorite as a replacement and in seams and patches. Locally some pyrite with the chlorite.									
		241.0-243.5 - Chlorite breccia, 10% chlorite in patches and as a replacement. Some blebs of pyrite with the chlorite.	10283	2.5 .76	241.0 73.46m	243.5 74.22m	Nil				
		243.5-245.5 - Carbonate breccia, 30% carbonate with a little chlorite. Disseminated granular pyrite throughout.	10284	2.0 .61	243.5 74.22m	245.5 74.83m	Nil				
		245.5-248.0 - Chlorite breccia, 10% chlorite in greywacke and quartzite beds. 3% pyrite in blebs in the chlorite.	10285	2.5 .76	245.5 74.83	248.0 75.59	Nil				
		248.0-251.0 - Chloritic greywacke, 5% chlorite in narrow seams and as a replacement. 3% disseminated pyrite throughout.	10286	3.0 .92	248.0 75.59	251.0 76.51	.002				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4957.1N, 9533.9E

HOLE: N-8
 Core size:

Section: 3+00SE, 0+20NE
 Length: 475.0' (144.8m)
 Elevation: 312.0 m
 Azimuth: S65°W Dip: -51°

Dip Tests:
 Started: Nov. 17/80
 Completed: Nov. 21/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
202.7 61.78m	224.0 68.28m	Quartzite, altered with narrow chlorite seams.											
		206.0-211.0 - Quartzite with 5% chlorite in narrow seams and the odd patch. A few grains of pyrite with the chlorite.	10293	5.0 1.52m	206.0 62.79m	211.0 64.31m	Nil						
		216.5-218.6 - Quartzite, 5% chlorite in narrow seams and small patches. Some pyrite associated with the chlorite.	10294	2.1 0.63m	216.5 66.00m	218.6 66.63m	Nil						
224.0 68.22m	241.4 73.58m	Chlorite breccia, 10% chlorite in seams and small patches. Chlorite partly altered to serpentine due to diabase.											
		224.0-229.0 - Chlorite breccia, 10% chlorite and serpentine in small patches and seams. Rare grain of pyrite.	10295	5.0 1.52m	224.0 68.28m	229.0 69.80m	Nil						
		229.0-234.0 - Chlorite breccia, 10% chlorite and serpentine in small patches and seams. The odd grain of py and po.	10296	5.0 1.52m	229.0 69.80m	234.0 71.32m	Nil						
		234.0-236.0 - Chlorite breccia, 10% chlorite and serpentine in small patches. Rare py.	10297	2.0 0.61m	234.0 71.32m	236.0 71.93m	Nil						
		236.0-237.8 - Chlorite breccia, 15% chlorite and serpentine, fairly well mineralized with seams and blebs of pyrite and some pyrrhotite.	10298	1.8 .55m	236.0 71.93m	237.8 72.48m	Nil						
241.4 73.58m	248.1 75.62m	Quartzite, altered, with occasional narrow chlorite seams.											
		237.8-241.4 - Chlorite breccia, 10% chlorite and serpentine in patches and seams, 3% pyrite mostly in small blebs in the chlorite patches.	10299	3.6 1.10m	237.8 72.48m	241.4 73.58m	Nil						
		241.4-245.0 - Quartzite, well altered, a few chlorite seams, well mineralized with 7% pyrite, disseminated and in seams.	10300	3.6 1.10m	241.4 73.58m	245.0 74.68m	Nil						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4957.1N, 9533.9E

HOLE: N-8
 Core size:

Section: 3+00SE, 0+20NE
 Length: 475.0' (144.8m)
 Elevation: 312.0 m
 Azimuth: S65°W Dip: -51°

Dip Tests:
 Started: Nov. 17/80
 Completed: Nov. 21/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
242.1 75.62m	331.0 100.90m	245.0-248.3 - Quartzite, well altered with some chlorite seams, a little pyrite throughout.	10601	3.3 1.05m	245.0 74.68m	248.3 75.73m	Nil				
		Diabase, fine grained at contact, becoming medium coarse grained. Top contact at 45° to the core. Massive and uniform in appearance. Disseminated magnetite throughout.									
		327.0-331.0 (99.74-100.96m) - Diabase becoming fine grained to the contact.									
331.0 100.90m	331.5 101.04m	Ground core.									
331.0 100.90m	382.3 116.60m	Chlorite breccia, 10% to 20% chlorite in altered quartzite.									
		331.0-334.0 - Chlorite breccia, 7% chlorite in seams and small patches, local py po. Some ground core.	10602	3.0 .90m	331.0 100.90m	334.0 101.80m	Nil				
		334.0-337.5 - Chlorite breccia, 10% chlorite partly altered to serpentine. Locally fair pyrite and po with the chlorite.	10603	3.5 1.07m	334.0 101.80m	337.5 102.87m	Nil				
		337.5-340.8 - Chlorite breccia, 15% chlorite and serpentine with 5% fine pyrrhotite mostly with the chlorite which is in seams and patches.	10604	3.3 1.01m	337.5 102.87m	340.8 103.88m	Nil				
		340.8-342.8 - Chlorite breccia, 5% chlorite and serpentine in seams and small patches. Minor pyrrhotite.	10605	2.0 .61m	340.8 103.88m	342.8 104.49m	Nil				
		344.0-345.6 (104.92-105.40m) - Ground core.									
		342.8-346.6 - Chlorite breccia, 15% chlorite and serpentine in seams and small patches, 5% fine pyrrhotite with the chlorite. Note: 1.6 ft. ground core.	10606	3.8 1.16	342.8 104.49m	346.6 105.65m	0.002				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4957.1N, 9533.9E

HOLE: N-8.
 Core size:

Section: 3+00SE, 0+20NE
 Length: 475.0' (144.8m)
 Elevation: 312.0 m
 Azimuth: S65°W Dip: -51°

Dip Tests:
 Started: Nov. 17/80
 Completed: Nov. 21/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	CO						Au			
							oz/ton			
		346.6-349.0 - Chlorite breccia, 20% chlorite in well brecciated seams and patches. 7% pyrite and pyrrhotite in small blebs with the chlorite.	10607	2.4 .73m	346.6 105.65m	349.0 106.38m	0.02 .01			
		349.0-351.1 - Chlorite breccia, 20% chlorite with 7% pyrite and pyrrhotite in blebs with the chlorite. A little vein quartz.	10608	2.1 .64m	349.0 106.38m	351.1 107.02m	0.01			
		351.1-354.6 - Chlorite breccia, 5% chlorite in seams and as a replacement. A few blebs and grains of po with chlorite.	10609	3.5 1.01m	351.1 107.02m	354.6 108.03m	0.002			
		354.6-358.5 - Chlorite breccia, 5% chlorite in seams and as a replacement. A few blebs and grains of po with chlorite.	10610	3.9 1.24m	354.6 108.03m	358.5 109.27m	Nil			
		358.5-362.0 - Chlorite breccia, 10% chlorite and carbonate in seams and patches which are mineralized with grains of po.	10611	3.5 1.07m	358.5 109.27m	362.0 110.34m	Nil			
		362.0-365.5 - Chlorite breccia, 10% chlorite in patches with some associated carb. Some disseminated pyrite with the chlorite.	10612	3.5 1.07m	362.0 110.34m	365.5 111.41m	Nil			
		365.5-369.0 - Chlorite breccia, 7% chlorite and carbonate in patches and seams. Some pyrite.	10613	3.5 1.07m	365.5 111.41m	369.0 112.47m	Nil			
369.0 112.55m	372.0 113.46m	Quartzite, pinkish with some narrow greywacke beds included.								
		372.0-375.8 - Chlorite breccia, 10% chlorite mostly as a replacement, some small chlorite carbonate patches. A little pyrite with the chlorite throughout.	10614	3.8 1.16m	372.0 113.39m	375.8 114.55m	Nil			
		375.8-378.8 - Chlorite-carbonate breccia, patches of chlorite and carbonate with local pyrite grains.	10615	3.0 .91m	375.8 114.55m	378.8 115.46m	Nil			
		378.8-382.3 - Carbonate breccia minor associated chlorite in brick red quartzite. Minor pyrite.	10616	3.5 1.07m	378.8 115.46m	382.3 116.53m	Nil			



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4966.8N, 9522.3E

HOLE: N-9.
 Core size:

Section: 2+50 SE, 182 NW
 Length: 532.0' (162.1 m)
 Elevation: 313.3 m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Nov. 22/80
 Completed: Nov. 27/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
0.0	8.0 2.4	Overburden/Casing.											
8.0 2.4	163.0 49.7	Serpent quartzite. Weakly to strongly brecciated quartzite. Patches of alteration, pink and grey with much only slightly altered subgreywacke, frequently well bedded, 60° to core. Rare isolated chlorite stringer, and small blebs of granular pyrite. 5 to 10% carbonate stringers. 38.0-53.0 (11.59 - 16.17) - prominent pink alteration. 112.0-114.0 (34.16 - 34.77) As above. 120.0-163.0 (36.6 - 49.7) - Well brecciated quartzite with much spotty pink alteration. Some sections very strongly brecciated with angular fragment of bright pink quartzite in a carbonate matrix.											
163.0 49.7	172.5 52.4	Argillaceous metagreywacke. Dark brownish, f.g. Occ. weakly bedded. Numerous minute specs of carbonate and very finely diss. pyrite.											
172.5 52.40	191.3 58.20	Chlorite breccia zone. Poorly defined. Mostly scattered lumps, bands and fracture fillings with patches of non-chloritic, only slightly altered brownish subgreywacke. Distinct pink alteration in many spots. Prominent carbonate in chlorite rich spots. <u>Economics.</u> 172.5-176.0 - First few inches argillaceous, dark brown, then pink quartzite with rare streaks of chlorite. A little very f.g. diss. py. 176.0-179.0 - Chlorite breccia. 10% chlorite as streaks, fracture fillings and small patches. Rare flecks of py, po.	10575	3.5 1.07	172.5	176.0	52.61	53.68	Nil				
			10576	3.0 .92	176.0	179.0	53.68	54.60	Nil				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4966.8N, 9522.3E

HOLE: N-9
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 Length: 532.0' (162.1 m)
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DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		179.0-182.0 - Chlorite breccia. 25% chlorite, mostly small patches in pink quartzite. Odd small cubes of py.	10577	3.0 .91	179.0 54.60	182.0 55.51	0.002				
		182.0-185.0 - Chlorite breccia. A couple of 3 to 6" wide chlorite bands, remainder pink quartzite with scattered streaks of chlorite. Rare flecks of py, po.	10578	3.0 .91	182.0 55.51	185.0 56.43	0.002				
		185.0-188.0 - Quartzite, grey brown to spotty brown, weakly brecciated. Essentially barren.	10579	3.0 .91	185.0 56.43	188.0 57.34	Nil				
		188.0-191.3 - Quartzite, dark brown to dark grey with a few patches of grey to pink alteration. 5% chlorite in patches. A few small cubes of py.	10580	3.3 1.01	188.0 57.34	191.3 58.35	0.002				
191.3 58.35	236.7 72.19	Quartzite, mostly dark grey with bands and patches of pale grey to pinkish alteration. A few spots of well brecciated material, carbonate cemented. Remainder poorly brecciated to only lightly fractured. Rare bits of chlorite.									
		222.5-236.7 - (67.86 - 72.19) - Strong pink alteration with patches of well brecciated material. A little chlorite locally in this section.									
		<u>Economics</u> - (Trial Samples)									
		205.0-207.1 - Quartzite, dark grey with some bleaching in bands. Odd grains and small cubes of py.	10581	2.1 .65	205.0 62.52	207.1 63.17	Nil				
		207.1-209.0 - Quartzite, quite well brecciated, carbonate cemented. A few streaks of chlorite. Odd grains of py.	10582	1.9 .58	207.1 63.17	209.0 63.75	Nil				
		223.5-225.5 - Quartzite, altered, pink, brecciated, with 3 to 5% chlorite cement. Rare grains py.	10583	2.0 .61	223.5 68.17	225.5 68.78	0.02				
		225.5-228.0 - Quartzite, pink, fairly well brecciated. Small spots and streaks of chlorite, total less than 5%. Odd grains of py.	10584	2.5 .76	225.5 68.78	228.0 69.54	0.002				



NORTHGATE EXPLORATION LIMITED

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Section: 2+50 SE, 182 NW
 Length: 532.0' (162.1 m)
 Elevation: 313.3 m
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 Started: Nov. 22/80
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DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
		<u>Economics</u>											
		317.7-321.0 - Argillaceous greywacke. Moderately brecciated and bleached first 1.5 feet, then dark grey. Scarce small grains of py.	10588	3.3 1.0	317.7 96.90	321.0 97.90	Nil						
		321.0-324.0 - Argillaceous wacke, becoming bleached, hard. Scattered grains py.	10589	3.0 .92	321.0 97.90	324.0 98.82	Nil						
		324.0-326.0 - Quartzite, pink to brick red, brecciated with angular lumps of chlorite. A few grains and streaks of py.	10590	2.0 .61	324.0 98.82	326.0 99.43	Nil						
		326.0-328.0 - Bleached bedded argillaceous wacke, hard, pink in last 3 inches. Rare small grains py.	10591	2.0 .61	326.0 99.43	328.0 100.04	0.002						
		328.0-331.5 - Pink to brick red quartzite. Well brecciated with odd streaks and small lumps of chlorite. Some irregular thin carbonate cemented fractures. Very scarce pyrite.	10592	3.5 1.07	328.0 100.04	331.5 101.11	0.002						
		331.5-334.0 - Pink to brick red quartzite. Much less brecciated than above. A few carbonated seams and chloritized fractures carrying a little pyrite.	10593	2.5 .76	331.5 101.11	334.0 101.87	Nil						
		334.0-338.0 - Pink to brick red quartzite, gradually fading into grey. Very well brecciated with 5% chlorite seams. Strong pre-ore fault @ 335.0 with angular quartzite fragments in a carbonate matrix. Scattered grains of pyrite in chlorite seams.	10594	4.0 1.22	334.0 101.87	338.0 103.09	Nil						
		338.0-343.0 - Argillaceous wacke, fairly well bleached, altered with a few small pink spots where brecciated. Appear barren.	10595	5.0 1.53	338.0 103.09	343.0 104.62	Nil						
		343.0-348.0 - Interbedded argillite, siltstone and argillaceous wacke. Non-brecciated, massive to weakly fractured. A few carbonate streaks and seams. Essentially barren.	10596	5.0 1.52	343.0 104.62	348.0 106.14	Nil						



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HOLE: N-9
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Section: 2+50 SE, 182 NW
 Length: 532.0' (162.1 m)
 Elevation: 313.3m
 Azimuth: S65° W Dip: -45°

Dip Tests:
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DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
		348.0-353.0 - As above, becoming weakly chloritic where slightly brecciated. A little more bleached and altered. Scarce grains of pyrite.	10597	5.0 1.53	348.0 106.14	353.0 107.67	Ni1				
		353.0-356.0 - Interbedded argillite and siltstone, becoming slightly more brecciated. 5% chlorite in bands and as fracture fillings. Rare flecks of py, po.	10598	3.0 .91	353.0 107.67	356.0 108.58	Ni1				
		356.0-361.0 - As above, less brecciated except 359 to 360. Some vague chlorite banding. Scarce grains and streaks of py.	10599	5.0 1.53	356.0 108.58	361.0 110.11	Ni1				
		361.0-365.0 - Interbedded argillite and siltstone, massive to locally weakly brecciated, with chlorite streaks and fracture fillings where brecciated. Scattered grains of py.	10600	4.0 1.21	361.0 110.11	365.0 111.32	Ni1				
		365.0-369.0 - As above but better brecciated with much bleaching in bands. Essentially barren.	10801	4.0 1.23	365.0 111.32	369.0 112.55	Ni1				
		369.0-373.0 - Quartzite, pink alteration, well brecciated with a little carbonate, mostly small thombs. A few blebs of granular pyrite.	10802	4.0 1.22	369.0 112.55	373.0 113.77	0.002				
		373.0-377.0 - As above, less pyrite.	10803	4.0 1.22	373.0 113.77	377.0 114.99	Ni1				
		377.0-380.8 - Weakly brecciated argillite and siltstone, bleached in bands. f.g. weakly diss. pyrite.	10804	3.8 1.15	377.0 114.99	380.8 116.14	Ni1				
		380.8-384.2 - Argillaceous wacke, 10% chlorite as vague bands and weak replacement in poorly brecciated material. Only scattered small grains of pyrite.	10805	3.4 1.04	380.8 116.14	384.2 117.18	Ni1				
		384.2-387.0 - As above, better brecciated, but poorly mineralized.	10806	2.8 .85	384.2 117.18	387.0 118.03	Ni1				



NORTHGATE EXPLORATION LIMITED

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Core size:

Section: 2+50 SE, 182 NW
Length: 532.0' (162.1 m)
Elevation: 313.3 m
Azimuth: S65° W Dip: -45°

Dip Tests:
Started: Nov. 22/80
Completed: Nov. 27/80
Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
		387.0-391.0 - Argillite, some interbedded siltstone, locally bleached in bands. Rare f.g. py. No chlorite.	10807	4.0 1.23	387.0 118.03	391.0 119.26	Nil				
		391.0-394.0 - Argillite, bleached in bands. Odd narrow band of chlorite, less than 5% total. Very f.g. diss. py, less than 1/2%.	10808	3.0 .91	391.0 119.26	394.0 120.17	Nil				
		394.0-397.0 - Argillite, moderately brecciated, weakly chloritized. Much interbedded greywacke. A little f.g. diss. py.	10809	3.0 .92	394.0 120.17	397.0 121.09	Nil				
		397.0-401.0 - Becoming hard, quartzitic, fairly well brecciated. 3% to 5% chlorite as fracture fillings. A little f.g. diss. py.	10810	4.0 1.22	397.0 121.09	401.0 122.31	Nil				
406.5 123.98	421.9 128.68	401.0-406.5 (122.31 - 123.98) - Dark grey, banded, bleached argillite and greywacke. Barren. No sample taken.									
		Quartzite, pink brecciated in patches. 3% chlorite as fracture fillings and streaks. No sulphides observed.									
421.9 128.68	461.3 140.70	Limestone. Contact with upper unit weakly brecciated but well defined 70° to core. Well bedded 75° to 80° to core. Becoming well chloritized from 424.5 feet, generally as replacement along bedding planes but very locally as fracture filling where weakly brecciated. Possibly some amphibole present. Rare small cube of pyrite. 2" fault zone at 330.2, with soft gouge, 50° to core.									
		451.5-456.0 (137.70 - 139.08) - Diabase dyke.									
		<u>Trial Samples</u>									
		456.0-458.0 - Limestone, 30% chlorite replacement in massive to weakly fractured well bedded limestone. A few small clusters of py near contact with diabase dyke at 456.0'.	10816	2.0 .61	456.0 139.08	458.0 139.69	Nil				



NORTHGATE EXPLORATION LIMITED

OM 21-PE17-C-80

Property: 772, D.R. Watt Property
Location: Scadding Twp., Ont.
Co-ordinates: 5056.4N, 9540.0E

HOLE: N-10
Core size:

Section: 0+00, 1+75NE
Length: 418.0' (127.4m)
Elevation: 315.5
Azimuth: Dip: -45°

Dip Tests:
Started: Nov. 27/80.
Completed: Dec. 1/80
Logged by: Morissette

DRILL LOG

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
0.0	6.0 1.83m	Casing											
6.0	152.0 1.83m 46.33m	Serpent quartzite, light to dark to pinkish grey. Locally brecciated and altered. 18.0-275. (5.49-8.39m) - Altered brecciated section, angular quartzite fragments up to 1". Rare chlorite seams. 40.5-46.8 (12.35-14.27m) - Diabase dyke, dark grey, fine grained. Top contact at 60° to the core. 67.0-68.0 (24.44-20.74m) - Ground core. 125.8 (38.37m) - 1/2" quartz stringer with chlorite at 60° to the core.											
152.0	166.0 47.46m 48.00m	Quartzite, well altered and weakly chloritic with small replacement patches and narrow seams. Looks like a poorly developed chlorite breccia. 155.6-157.4 - Chlorite breccia, 10% chlorite in patches and narrow seams, some vein quartz. A few local grains of pyrite.	10620	1.8 0.55m	155.6 47.43m	157.4 47.98m	0.002						
166.0	187.4 50.60m 57.12m	Chlorite breccia, 5% to 10% chlorite in seams and small patches. 166.0-167.9 - Chlorite breccia, 5% to 10% chlorite in narrow seams. Locally good pyrite with the chlorite seams. 167.9-169.2 - Chlorite breccia, 10% chlorite in seams and patches. Local coarse py in blebs up to 1/2". Many small grains of V.G. at 168.6 in quartzite. 169.2-171.7 - Chlorite breccia, 10% chlorite mostly in narrow seams. Minor pyrite.	10621 10622 10623	1.9 0.30 1.3 .67m 2.5 .76m	166.0 50.60m 167.9 50.90m 169.2 51.57m 169.2 51.57m	167.9 50.90m 169.2 51.57m 171.7 52.33m	0.005 0.11 Nil						



NORTHGATE EXPLORATION LIMITED

DRILL LOG

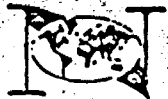
Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.4N, 9540.0E

HOLE: N-10
 Core size:

Section: 0+00, 1+75NE
 Length: 418.0' (127.4m)
 Elevation: 315.5
 Azimuth: Dip: -45°

Dip Tests:
 Started: Nov. 27/80
 Completed: Dec. 1/80
 Logged by: Marisette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		171.7-173.1 - Chlorite breccia, 10% chlorite with 30% grey vein quartz. Some pyrite with the chlorite.	10624	1.4 .43m	171.7 52.33m	173.1 52.76m	0.002				
		173.1-176.0 - Chlorite breccia, 5% to 10% chlorite and carbonate in narrow seams. Blebs of pyrite with the chlorite.	10625	2.9 .89m	173.1 52.76m	176.0 53.65m	Nil				
		176.0-178.4 - Chlorite breccia, 10% chlorite and carbonate in altered quartzite. Blebs of pyrite up to 1/2" fairly common with chlorite seams.	10626	2.4 .73m	176.0 53.65m	178.4 54.38m	Nil				
		178.4-181.8 - Quartzite, pinkish with 3% chlorite in small patches and seams. Some carbonate also present. Sulphides rare.	10627	3.4 1.03m	178.4 54.38m	181.8 55.41m	Nil				
		181.8-183.8 - Carbonate breccia, minor chlorite. Coarse granular pyrite in patches usually with the carbonate.	10628	2.0 .61m	181.8 55.41m	183.8 56.02m	0.005				
		185.5-187.4 - Altered mineralized section. Weakly chloritic. 10% pyrite in seams and patches.	10629	1.9 .58m	185.5 56.54m	187.4 57.12m	0.002				
187.4 57.12m	201.2 61.33m	Carbonate breccia, pinkish quartzite with patches, stringers and some rhombs.									
		190.7-191.7 - Carbonate bx, coarse granular py with carbonate stringers. A little Aspy.	10630	1.0 .30	190.7 58.13m	191.7 58.43m	.03				<.01
201.2 51.33m	215.2 65.59m	Chlorite-carbonate breccia, 5% to 10% chlorite in seams and small patches, and as a replacement of the quartzite and of the carbonate.									
		203.9-206.2 - Chlorite-carbonate breccia, 10% chlorite as a replacement of quartzite, and also replacing carbonate rhombs and patches.	10631	2.3 .70m	203.9 62.15m	206.2 62.85m	0.002				
		206.2-207.6 - Chlorite-carbonate breccia with 25% chlorite. 10% coarse pyrite with the chlorite in cubes and blebs, some chalco also present, a little vein quartz.	10632	1.4 .43m	206.2 68.85m	207.6 63.28m	.02				<.01



NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: 772, D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.4N, 9540.0E

HOLE: N-10
 Core size:

Section: 0+00, 1+75NE
 Length: 418.0' (127.4m)
 Elevation: 315.5
 Azimuth: Dip: -45°

Dip Tests:
 Started: Nov. 27/80
 Completed: Dec. 1/80
 Logged by: Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
215.2 65.59m	240.0 73.15m	211.9-215.2 - Chlorite-carbonate breccia, 10% chlorite in seams and small patches. Good grains of pyrite with chlorite. Quartzite, light to pinkish grey, relatively unaltered.	10633	3.3 1.00m	211.9 64.59m	215.2 65.59m	Nil				
240.0 73.15m	262.9 80.13m	Chlorite breccia, 10 to 20% chlorite in seams, patches, and as a replacement of pinkish quartzite. Some associated carbonate.									
		240.0-245.0 - Chlorite breccia, 10% chlorite as a replacement and in patches, minor py.	10634	5.0 1.53m	240.0 73.15m	245.0 74.68m	Nil				
		245.0-248.6 - Chlorite breccia, 15% chlorite with considerable white carbonate. Sulphides rare.	10635	3.6 1.09m	245.0 74.68m	248.6 75.77m	Nil				
		248.6-250.5 - Chlorite breccia, 20% chlorite in patches and seams. 3% coarse pyrite in cubes and blebs with the chlorite.	10636	1.9 .58m	248.6 75.77m	250.5 76.35m	0.002				
		250.5-252.9 - Chlorite breccia, 20% chlorite mostly as a replacement. Cubes and grains of pyrite throughout.	10637	2.4 .73m	250.5 76.35m	252.9 77.08m	Nil				
		252.9-257.5 - Chlorite breccia, 15% chlorite in replacement patches and in seams. Minor pyrite.	10638	4.6 1.41m	252.9 77.08m	257.5 78.49m	Nil				
		257.5-259.0 - Chlorite breccia, 10% chlorite in patches local coarse py with chlorite.	10639	1.5 .45m	257.5 78.49m	259.0 78.94m	Nil				
		259.0-262.9 - Chlorite breccia, 5% chlorite in small patches and as a replacement. Pyrite rare.	10640	3.9 1.19m	259.0 78.94m	262.9 80.13m	Nil				
		262.9-269.0 - Carbonate breccia, some sections are well mineralized with granular pyrite.	10641	1.6 .59m	262.9 80.13m	264.5 80.62m	.02				.01



NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.4N, 9540.0E

HOLE: N-10
 Core size:

Section: 0+00, 1+75NE
 Length: 418.0' (127.4m)
 Elevation: 315.5
 Azimuth: Dip: -45°

Dip Tests:
 Started: Nov. 27/80
 Completed: Dec. 1/80
 Logged by: Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
269.0 81.99m	272.7 83.12m	265.9-269.0 - Carbonate breccia, well mineralized with 10% granular pyrite associated with the carbonate. Quartzite, grey, unaltered, faintly chloritic.	10642	3.1 .94m	265.9 81.05m	269.0 81.99m	Nil				
272.7 83.12m	277.3 84.52m	Chlorite breccia, 15% chlorite in seams and patches, sulphides as noted.									
269.0 81.99m	272.7 83.12m	Quartzite, grey, unaltered, faintly chloritic.									
272.7 83.12m	277.3 84.52m	Chlorite breccia, 15% chlorite in seams and patches, sulphides as noted.									
272.7 83.12m	277.3 84.52m	272.7-274.8 - Chlorite breccia, 20% chlorite in seams and patches. Some coarse py with the chlorite in cubes up to 1/4".	10643	2.1 .64m	272.7 83.12m	274.8 83.76m	.02			.01	
277.3 84.52m	287.6 87.66m	274.8-277.3 - Chlorite breccia, 7% chlorite and some carbonate in patches and narrow seams, pyrite rare. Carbonate breccia, pinkish quartzite with patches and stringers of whitish carbonate.	10644	2.5 .76m	274.8 83.76	277.3 84.52	.01				
287.6 87.66m	350.8 106.93m	283.5-287.6 - Chlorite increasing, replacing the quartzite and the carbonate. Chlorite-carbonate breccia, 5% chlorite, sulphides absent. Chlorite breccia, 25% to 40% chlorite with coarse pyrite and V.G. as noted. Chlorite zones noted within this zone.	10645	4.1 1.25m	283.5 86.41m	287.6 87.66m	Nil				
		287.6-289.8 - Chlorite breccia, 40% chlorite with 10% coarse pyrite in cubes up to 1/2". Several grains of V.G. at 287.7 and speck of V.G. at 288.4 and 288.5	10646	2.2 .67m	287.6 87.66m	289.8 88.33m	0.95			.29	



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.4N, 9540.0E

HOLE: N-10
 Core size:

Section: 0+00, 1+75NE
 Length: 418.0' (127.4m)
 Elevation: 315.5
 Azimuth: Dip: -45°

Dip Tests:
 Started: Nov. 27/80
 Completed: Dec. 1/80
 Logged by: Morissette

DRILL LOG

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
291.4 88.88m	293.2 89.43m	289.8-291.4 - Chlorite breccia, 50% chlorite with pyrite cubes up to ¼" throughout. Speck of V.G. at 290.9 and 291.2. Chlorite zone, 65% chlorite well mineralized with pyrite, much V.G. throughout.	10647	1.6 .49m	289.8 88.3m	291.4 88.82m	0.13				
		291.4-293.2 - Chlorite zone, 65% chlorite, some grey vein quartz. 15% pyrite in cubes and blebs up to ½". V.G. noted at 292.0, 292.3, 292.6, 292.7, 292.8 and many grains at 293.0.	10648	1.8 .55m	291.4 88.82m	293.2 89.37m	0.43				
		293.2-295.8 - Chlorite breccia, 15% chlorite in altered pink quartzite. A few grains of pyrite with the chlorite.	10649	2.66 .79m	293.2 89.37m	295.8 90.16m	.02				
295.8 90.16m	309.5 94.34m	Chlorite zone, 50% to 70% chlorite, some local vein quartz, good pyrite throughout, V.G. as noted.									
		295.8-297.5 - Chlorite zone, 65% chlorite with some grey vein quartz. 5% pyrite in blebs with the chlorite. Fine grains of V.G. at 296.3.	10650	1.7 0.52m	295.8 90.16m	297.5 90.68m	0.14				
		297.5-300.5 - Chlorite zone, 50% chlorite with local heavy fine magnetite. Small blebs of pyrite throughout. Fine V.G. noted at 299.0, 299.3, 300.1, 300.3 and 300.4.	10651	3.0 .91m	297.5 90.68m	300.5 91.59m	0.08				
		300.5-302.5 - Chlorite zone, 60% chlorite, local grey vein quartz, small blebs of py throughout. Several grains of V.G. at 301.8.	10652	2.0 .61m	300.5 91.59m	302.5 92.20m	0.15				
		302.5-304.5 - Chlorite zone, 70% chlorite, 5% py in blebs throughout. Approximately 50 small grains of V.G. at 303.9.	10653	2.0 .61m	302.5 92.20m	304.5 92.81m	0.69				
		304.5-307.0 - Chlorite zone, 70% chlorite with very good patches of vuggy pyrite. An unusual amount of fine V.G. in multiple grains, fine to medium coarse. V.G. noted as follows: 304.8, 304.9, 305.0, 305.1, 305.3, 305.4, 305.5, 305.5, 305.8, 305.9, 306.0, 306.1, 306.6.	10654	2.5 .77m	304.5 92.81m	307.0 93.58m	5.54	X-Ray	Swastika	5.69	5.84



NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.4N, 9540.0E

HOLE: N-10
 Core size:

Section: 0+00, 1+75NE
 Length: 418.0' (127.4m)
 Elevation: 315.5
 Azimuth: Dip: -45°

Dip Tests:
 Started: Nov. 27/80
 Completed: Dec. 1/80
 Logged by: Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
309.5 94.34m	322.7 98.36m	307.0-309.5 - Chlorite zone, 15% pyrite, 60% chlorite, some chalco with the py. Speck of V.G. at 308.5 and 50-60 small grains at 308.9. Chlorite breccia, 25% to 30% chlorite in patches and as a replacement. Local pyrite in the more chloritic sections.	10655	2.5 .76m	307.0 93.58m	309.5 94.34m	1.82				
		309.5-322.7 - Chlorite breccia, 30% chlorite in patches and as a replacement. Local pyrite in the more chloritic sections.	10656	2.3 .70m	309.5 94.34m	311.8 95.04m	.05				
		311.8-314.0 - Chlorite breccia, 50% chlorite with small blebs of pyrite throughout. Local fine magnetite. Two grains of V.G. at 312.9.	10657	2.2 .67m	311.8 95.04m	314.0 95.71m	0.14				
		314.0-315.5 - Chlorite zone, 70% chlorite with 15% pyrite in patches. Considerable fine magnetite also present.	10658	1.5 .45m	314.0 95.71m	315.5 96.16m	0.34				
		313.5-318.5 - Chlorite breccia, 30% chlorite, local pyrite in small blebs.	10659	3.0 .82m	313.5 96.16m	318.5 97.08m	.02				
		318.5-321.2 - Chlorite breccia, 25% chlorite with a few blebs of pyrite in the more chloritic sections.	10660	2.7 0.81m	318.5 97.08m	321.2 97.90m	.002				
		321.2-322.7 - Chlorite breccia, 25% chlorite with a few blebs of pyrite in the more chloritic sections.	10661	1.5 .40m	321.2 97.90m	322.7 98.36m	.03				
322.7 98.36m	329.0 100.28m	Chlorite zone, 50% to 70% chlorite V.G. as noted.									
		322.7-324.7 - Chlorite zone, 50% chlorite fairly well mineralized with blebs of py. Fine V.G. at 322.8 and 323.4.	10662	2.0 .40m	322.7 98.36m	324.7 98.76m	.07				
		324.7-327.0 - Chlorite zone, 60% chlorite with local coarse pyrite in blebs, also a little fine magnetite. 2 grains of V.G. at 325.4 also a grain of aspy.	10663	2.3 .92m	324.7 98.76m	327.0 99.68m	.16m				



NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.4N, 9540.0E

HOLE: N-10
 Core size:

Section: 0+00, 1+75NE
 Length: 418.0' (127.4m)
 Elevation: 315.5
 Azimuth: Dip: -45°

Dip Tests:
 Started: Nov. 27/80
 Completed: Dec. 1/80
 Logged by: Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS					
from	to						Au oz/ton					
329.0	350.8	327.0-329.0 - Chlorite zone, 60% chlorite well mineralized with blebs of pyrite. Local fine magnetite specks V.G. at 327.4	10664	2.0 .60m	327.0 99.68m	329.0 100.28m	.12		.04			
100.35m	106.99m	Chlorite breccia, 10% to 20% chlorite in patches and as a replacement. Local pyrite in the more chloritic sections.										
		329.0-330.5 - Chlorite breccia, 10% chlorite usually in round patches, sulphides rare.	10665	1.5 .46m	329.0 100.28m	330.5 100.74m	.02		.01			
		330.5-331.4 - Chlorite breccia, 50% chlorite, includes a 1" bleb of pyrite. Several fine specks of V.G. at 330.8.	10666	0.9 .27m	330.5 100.74m	331.4 101.01m	.52		.16			
		331.4-335.0 - Chlorite breccia, 15% chlorite mostly as a replacement in circular blebs and small patches. The odd grain of pyrite with the chlorite.	10667	3.6 1.10m	331.4 101.01m	335.0 102.11m	.01					
		335.0-338.5 - Chlorite breccia, 10% chlorite mostly as a replacement, the odd grain of py.	10668	3.5 1.07m	335.0 102.11m	338.5 103.18m	.005					
		338.5-342.0 - Chlorite breccia, 10% chlorite in salmon red quartzite, mostly as a replacement. Sulphides absent.	10669	3.5 1.07m	338.5 103.18m	342.0 104.24m	.005					
		342.0-345.0 - Chlorite breccia, 10% chlorite in salmon red quartzite. The odd grain of pyrite with the more chloritic sections.	10670	3.0 .92m	342.0 104.24m	345.0 105.16m	.02		.01			
		345.0-349.0 - Chlorite breccia, 10% chlorite in salmon red quartzite in small patches and circular replacement blebs. A few grains of pyrite in the more chloritic sections. Some vein quartz.	10671	4.0 1.22m	345.0 105.16m	349.0 106.38m	.005					
		349.0-350.8 - Chlorite breccia, 20% chlorite in altered quartzite, mostly as a replacement. Sulphides absent.	10672	1.8 .55m	349.0 106.38m	350.8 106.93m	Nil					



NORTHGATE EXPLORATION LIMITED

DRILL LOG

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 Location: Scadding Twp., Ont.
 Co-ordinates: 5056.4N, 9540.0E

HOLE: N-10
 Core size:

Section: 0+00, 1+75NE
 Length: 418.0' (127.4m)
 Elevation: 315.5
 Azimuth: Dip: -45°

Dip Tests:
 Started: Nov. 27/80
 Completed: Dec. 1/80
 Logged by: Morissette

DEPTH		DESCRIPTION	sample number	width	from	to	ASSAYS							
							Au oz/ton	Au oz/ft						
from	to	NOTE: All angles are measured with respect to the long core axis.												
		Ore Sections	10646	2.2	287.6	289.8	0.950	2.090						
			10647	1.6	289.8	291.4	0.130	.208						
			10648	1.8	291.4	293.2	0.430	.774						
			10649	2.6	293.2	295.8	0.020	.052						
			10650	1.7	295.8	297.5	0.1400	.238						
			10651	3.0	297.5	300.5	0.0800	.240						
			10652	2.5	300.5	302.5	0.1500	.375						
			10653	2.0	302.5	304.5	0.690	1.380						
			10654	2.5	304.5	307.0	5.69	14.225						
			10655	2.5	307.0	309.5	1.82	4.550						
			10656	2.3	309.5	311.8	0.050	.115						
			10657	2.2	311.8	314.0	0.140	.308						
			10658	1.5	314.0	315.5	0.340	.510						
			10659	3.0	315.5	318.5	0.020	.060						
			10660	2.7	318.5	321.2	0.002	.005						
			10661	1.5	321.2	322.7	0.030	.045						
			10662	2.0	322.7	324.7	0.070	.140						
			10663	2.3	324.7	327.0	0.160	.368						
			10664	2.0	327.0	329.0	0.120	.240						
			10665	1.5	329.0	330.5	0.020	.030						
			10666	0.9	330.5	331.4	0.520	.468						



NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: 772, D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5012.1N, 9476.8E

HOLE: N-11
 Core size:

Section: 0+50SE, 0+80SW
 Length: 286.0' (87.2m)
 Elevation: 320.2
 Azimuth: Dip: -90°

Dip Tests:
 Started: Dec. 2/80
 Completed: Dec. 5/80
 Logged by: Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
0.0	8.0 2.44m	Casing											
8.0	13.0 2.44m	Carbonate breccia, salmon pink quartzite with stringers and patches of white carbonate, local coarse pyrite.											
		11.0-12.5 - Carbonate breccia, some coarse pyrite with a little chalco, and a grain of aspy.	10677	1.5 0.5m	11.0 3.3m	12.5 3.8m	0.002						
13.0	33.9 3.97m	Serpent quartzite, grey to pinkish grey to salmon pink.											
33.9	63.0 10.34m	Chlorite breccia, 10% chlorite in seams patches and as a replacement.											
		33.9-35.1 - Chlorite breccia, 10% chlorite in patches. Includes a quartz-carbonate stringer with coarse pyrite cubes up to 3/8".	10678	1.2 0.4m	33.9 10.3m	35.1 10.7m	0.10						
		35.1-36.6 - Chlorite breccia, 15% chlorite in patches and as a replacement. Coarse pyrite cubes and grains with the chlorite. Many grains of V.G. in quartzite at 36.0, also 2 grains at 36.4.	10679	1.5 0.5m	35.1 10.7m	36.6 11.2m	0.21						
		36.6-40.0 - Chlorite breccia, 10% chlorite, mostly as a replacement and in patches, and in narrow seams. Sulphides absent.	10680	3.4 1.0m	36.6 11.2m	40.0 12.2m	0.002						
		40.0-43.0 - Chlorite breccia, 10% chlorite as a replacement. A little py with chlorite throughout.	10681	3.0 0.9m	40.0 12.2m	43.0 13.1m	Nil						
		43.0-45.4 - Chlorite breccia, 15% chlorite in patches and as a replacement. A few grains of pyrite.	10682	2.4 0.7m	43.0 13.1m	45.4 13.8m	0.002						
		45.4-48.6 - Chlorite breccia, 30% chlorite with 15% white calcite. Local good pyrite with the chlorite and calcite.	10683	3.2 1.0m	45.4 13.8m	48.6 14.8m	0.005						



NORTHGATE EXPLORATION LIMITED

DRILL LOG

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 Co-ordinates: 5012.1N, 9476.8E

HOLE: N-11
 Core size:

Section: 0+50SE, 0+80SW
 Length: 286.0' (87.2m)
 Elevation: 320.2
 Azimuth: Dip: -90°

Dip Tests:
 Started: Dec. 2/80
 Completed: Dec. 5/80
 Logged by: Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to						Au oz/ton			
52.8 16.10m	58.0 17.69m	48.6-51.8 - Chlorite breccia, 5% chlorite as a replacement, the odd grain of pyrite. Quartzite with 5% chlorite as a replacement.	10684	3.2 1.0m	48.6 14.8m	51.8 15.8m	Nil			
		51.8-52.8 - Chlorite breccia, 10% chlorite with a little white carbonate. Some pyrite with the chlorite. Possible speck of V.G. at 50.0.	10685	1.0 0.3m	51.8 15.8m	52.8 16.1m	Nil			
		53.8-55.0 (16.41-16.78m) - Ground core.								
		52.8-58.0 - Quartzite, weakly chloritic with 5% chlorite throughout as a replacement. Includes 1.2 ft. of ground core. Sulphides absent.	10686	7.2 1.6m	52.8 16.1m	58.0 17.7m	Nil			
		58.0-63.0 - Chlorite breccia, 7% chlorite as a replacement and in narrow seams. Rare grains of pyrite.	10687	5.0 1.2m	58.0 17.7m	63.0 19.2m	Nil			
63.0 19.21m	70.8 21.59m	Quartzite, dark grey, local weakly chloritic sections.								
70.8 21.59m	98.8 30.13m	Chlorite breccia, 10% chlorite in patches and seams.								
		70.8-72.6 - Chlorite breccia, 10% chlorite in seams and patches in well altered red quartzite. Sulphides absent.	10688	1.8 0.5m	70.8 21.6m	72.6 22.1m	0.002			
		72.6-73.8 - Chlorite breccia, 30% chlorite with grains of pyrite throughout.	10689	1.2 0.4m	72.6 22.1m	73.8 22.5m	0.04			.01
		73.8-75.1 - Chlorite breccia, 20% chlorite with a few grains of pyrite. 10 grains of V.G. at 74.7 and approximately 30 grains at 74.0, several at 75.1.	10690	1.3 0.4m	73.8 22.5m	75.1 22.9m	0.34			.10
		75.1-78.5 - Chlorite breccia, 20% chlorite in replacement patches. Sulphides absent.	10691	3.4 1.0m	75.1 22.9m	78.5 23.9m	0.002			



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5012.1N, 9476.8E

HOLE: N-11
 Core size:

Section: 0+50SE, 0+80SW
 Length: 286.0' (87.2m)
 Elevation: 320.2
 Azimuth: Dip: -90°

Dip Tests:
 Started: Dec. 2/80
 Completed: Dec. 5/80
 Logged by: Morissette

DRILL LOG

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		78.5-80.7 - Chlorite breccia, 20% chlorite in patches and as a replacement. Small pyrite xtals fairly common in the chlorite and in the altered quartzite.	10692	2.2 0.7m	78.5 23.9m	80.7 24.6m	.005				
		80.7-83.3 - Chlorite breccia, 40% chlorite in patches and seams, sulphides rare	10693	2.5 0.8m	80.7 24.6m	83.3 25.4m	.002				
		83.3-86.0 - Chlorite breccia, 50% chlorite in seams and patches. Sulphides absent.	10694	2.7 0.8m	83.3 25.4m	86.0 26.2m	Nil				
		86.0-89.0 - Chlorite breccia, 15% chlorite in seams and round patches and as a replacement. Sulphides absent.	10695	3.0 0.8m	86.0 26.2m	89.0 27.0m	.002				
		89.0-92.3 - Chlorite breccia, 15% chlorite in seams, patches and as a replacement. Sulphides absent.	10696	3.3 1.1m	89.0 27.0m	92.3 28.1m	Nil				
		92.3-94.7 - Chlorite breccia, 60% chlorite with a few disseminated grains and blebs of pyrite throughout.	10697	2.4 0.8m	92.3 28.1m	94.7 21.9m	.03				.01
		94.7-98.8 - Chlorite breccia, 20% chlorite mostly as a replacement. The odd grain of pyrite disseminated throughout.	10698	4.1 1.2m	94.7 28.9m	98.8 30.1m	Nil				
98.8 30.13m	119.8 36.54m	Quartzite, grey to pinkish grey, relatively unaltered.									
		106.5-107.2 - Chlorite breccia, 10% chlorite in circular patches. Grain of pyrite.									
119.8 36.54m	147.7 45.05m	Chlorite breccia, 20% to 50% chlorite in patches, seams and as a replacement.									
		119.8-122.3 - Chlorite breccia, 25% chlorite in seams, patches and as a replacement. Locally a few grains of pyrite.	10699	2.5 0.7m	119.8 36.5m	122.3 37.2m	.002				



NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: 772, D.R.Watt Property
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 Co-ordinates: 5012.1N, 9476.8E

HOLE: N-11
 Core size:

Section: 0+50SE, 0+80SW
 Length: 286.0' (87.2m)
 Elevation: 320.2
 Azimuth: Dip: -90°

Dip Tests:
 Started: Dec. 2/80
 Completed: Dec. 5/80
 Logged by: Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		122.3-124.8 - Chlorite zone, 60% chlorite which is well mineralized with 2% pyrite in blebs, includes a 1" xtal. Disseminated magnetite throughout, some irregular vein quartz.	10700	2.5 0.8m	122.3 37.2m	124.8 38.0m	0.08				.02
		124.8-125.8 - Chlorite breccia, 10% chlorite mostly as a replacement. Pyrite absent.	11001	1.0 -0.3m	124.8 38.0m	125.8 38.3m	.005				
		126.0 (38.43m) - Ground core, possibly 6".									
		125.8-128.0 - Chlorite zone, 60% chlorite with disseminated magnetite throughout. Blebs of pyrite including a 2" cube. Specks of V.G. at 126.9 and 127.6. Note: Ground core on block at 126.0.	11002	2.2 0.7m	125.8 38.3m	128.0 39.0m	0.24				.07
		128.0-129.4 - Chlorite breccia, 15% chlorite mostly as a replacement. Rare sulphides.	11003	1.4 0.4m	128.0 39.0m	129.4 39.4m	Nil				
		129.4-132.6 - Chlorite breccia, 60% chlorite with small blebs of pyrite throughout.	11004	3.2 1.0m	129.4 39.4m	132.6 40.4m	0.08				.02
		132.6-134.8 - Chlorite breccia, 15% chlorite mostly as a replacement. Blebs and small cubes of pyrite in the chlorite, also in altered reddish quartzite.	11005	2.2 0.7m	132.6 40.4m	134.8 41.4m	0.19				.06
		134.8-136.8 - Chlorite breccia, 50% chlorite, 3% pyrite in cubes and blebs throughout. Several grains of V.G. at 135.0, grain at 135.5, small patches of V.G. on chlorite slip 135.7 to 135.9. Good grain of V.G. within a pyrite cube at 136.4.	11006	2.0 0.6m	134.8 41.1m	136.8 41.7m	2.47				.75
		136.8-139.8 - Chlorite breccia, 20% chlorite in patches and seams. Sulphides absent.	11007	3.0 0.9m	136.8 41.7m	139.8 42.6m	0.01				
		139.8-141.8 - Chlorite breccia, 50% chlorite well mineralized with 5% pyrite in blebs and cubes.	11008	2.0 0.6m	139.8 42.6m	141.8 43.2m	.03				.01



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5012.1N, 9476.8E

HOLE: N-11.
 Core size:

Section: 0+50SE, 0+80SW
 Length: 286.0' (87.2m)
 Elevation: 320.2
 Azimuth: Dip: -90°

Dip Tests:
 Started: Dec. 2/80
 Completed: Dec. 5/80
 Logged by: Morissette

DRILL LOG

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		141.8-144.1 - Chlorite breccia, 30% chlorite in patches and as a replacement. Rare cube of pyrite.	11009	2.3 0.7m	141.8 43.2m	144.1 43.9m	.02				.01
		144.1-146.3 - Chlorite breccia, 50% chlorite as a replacement. Small blebs of pyrite and a little chalcopyrite throughout.	11010	2.2 0.7m	144.1 43.9m	146.3 44.6m	.01				
		146.3-147.7 - Chlorite breccia, 10% chlorite mostly as a replacement of altered quartzite. The odd small grain of pyrite.	11011	1.4 0.4m	146.3 44.6m	147.7 45.0m	.01				
147.7 45.0m	152.0 46.3m	Quartzite, pinkish grey, minor chlorite replacement over narrow widths.									
		147.7-152.0 - Quartzite, pinkish grey weakly chloritized in some sections. A few local grains of pyrite.	11012	4.3 1.3m	147.7 45.0m	152.0 46.0m	Nil				
		Chlorite breccia, weakly chloritic as a replacement and in narrow seams.									
152.0 46.3m	155.2 47.3m	152.0-155.2 - Chlorite breccia, 7% chlorite mostly as a replacement, also in narrow seam. Some fine disseminated pyrite throughout.	11013	3.2 1.0m	152.0 46.3m	155.2 47.3m	Nil				
155.2 47.3m	160.2 48.9m	Quartzite, pinkish grey, very weakly chloritized. No appreciable sulphide.									
160.2 48.9m	172.0 52.4m	Quartzite, well altered, somewhat crushed in appearance. 5% chlorite in narrow seams and as a replacement. Local fine disseminated sulphides.									
		160.2-164.0 - Quartzite, crushed and altered with frequent chlorite seams. Some fine disseminated pyrite with a little local chalco.	11014	3.8 1.2m	160.2 48.8m	164.0 50.0m	Nil				
		164.0-169.0 - Quartzite, altered with local fine chlorite seams. The odd narrow section of weak chlorite replacement. Local fine pyrite.	11015	5.0 1.5m	164.0 50.0m	169.0 51.5m	Nil				
		169.0-172.0 - Quartzite grading to chlorite breccia, 7% chlorite as a replacement and in narrow seams. Sulphides absent.	11016	3.0 0.9m	169.0 51.5m	172.0 52.4m	Nil				



NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5012.1N, 9476.8E

HCLE: N-11
 Core size:

Section: 0+50SE, 0+80SW
 Length: 286.0' (87.2m)
 Elevation: 320.2
 Azimuth: Dip: -90°

Dip Tests:
 Started: Dec. 2/80
 Completed: Dec. 5/80
 Logged by: Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
172.0 52.4m	195.0 59.4m	Chlorite breccia, 20% to 50% chlorite in seams, patches and as a replacement of altered red quartzite.									
		172.0-173.8 - Chlorite breccia, 25% chlorite which is well mineralized with blebs and small cubes of pyrite.	11017	1.8 0.6m	172.0 52.4m	173.8 53.0m	.01				
		173.8-177.3 - Chlorite breccia, 20% chlorite mostly as a replacement with the odd small patch of chlorite. Occasional small grains of pyrite.	11018	3.5 1.0m	173.8 53.0m	177.3 54.0m	Nil				
		177.3-180.8 - Chlorite breccia, 20% chlorite mostly as a replacement with the odd small patch of chlorite. Local grains of py.	11019	3.5 1.1m	177.3 54.0m	180.8 55.1m	.002				
		180.8-182.6 - Chlorite breccia, 30% chlorite in patches. Blebs of pyrite throughout. Several fine grains of V.G. at 181.5 also at 181.7 and at 182.4.	11020	1.8 0.6m	180.8 55.1m	182.6 55.2m	.85		.26		
		182.6-184.1 - Chlorite breccia, 60% chlorite with fine blebs of pyrite throughout. Good grains of V.G. at 183.9 and 184.0.	11021	1.5 0.4m	182.6 55.7m	184.1 56.1m	.48		.15		
		184.1-187.1 - Chlorite breccia, 20% chlorite in seams and patches, and as a replacement. Rare grains of pyrite.	11022	3.0 0.9m	184.1 56.1m	187.1 57.0m	.01				
		187.1-189.6 - Chlorite breccia, 30% chlorite as a replacement and in patches. Fine disseminated pyrite.	11023	2.5 0.8m	187.1 57.0m	189.6 57.8m	.005				
		189.6-191.6 - Chlorite breccia, 50% chlorite. Coarse pyrite in blebs up to 1/2" in the more chloritic sections, with some associated chalcopyrite. Grain of V.G. at 189.9, good grains at 190.7 and 190.8, also at 191.2.	11024	2.0 0.6m	189.6 57.8m	191.6 58.4m	1.20		.37		
		191.6-195.0 - Chlorite breccia, 20% chlorite with local blebs of pyrite in the more chloritic sections.	11025	3.4 1.1m	191.6 58.3m	195.0 59.4m	.07		.02		



NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: 772, D.R. Watt Property
 Location: Scadding Twp. Ont.
 Co-ordinates: 5012.1N, 9476.8E

HOLE: N-11
 Core size:

Section: O+50SE, O+80SW
 Length: 286.0' (87.2m)
 Elevation: 320.2
 Azimuth: Dip: -90°

Dip Tests:
 Started: Dec. 2/80
 Completed: Dec. 5/80
 Logged by: Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
195.0 59.4m	217.7 66.4m	Chlorite zone, 50% to 70% chlorite well mineralized with blebs of pyrite.									
		195.0-196.5 - Chlorite zone, 70% chlorite with 10% pyrite in coarse blebs. Some vein quartz. Speck of V.G. at 195.7.	11026	1.5 0.5m	195.0 59.4m	196.5 59.9m	.20				.06
		196.5-197.7 - Chlorite zone, 20% chlorite in altered red quartzite, sulphides rare.	11027	1.2 0.4m	196.5 59.9m	197.7 60.3m	.01				
		197.7-199.7 - Chlorite zone, 70% chlorite with coarse blebs of pyrite with a little chalco. Grains of V.G. at 198.3 and also at 199.0.	11028	2.0 0.6m	197.7 60.3m	199.7 60.9m	.23				.07
		199.7-201.7 - Chlorite zone, 70% chlorite, some irregular grey vein quartz. Blebs of pyrrhotite and pyrite throughout. Very fine V.G. at 199.9, 200.7 and 200.8.	11029	2.0 0.6m	199.7 60.9m	201.7 61.5m	.16				.05
		201.7-203.7 - Chlorite zone, 70% chlorite, some grey vein quartz. Sparsely mineralized with small blebs of pyrite.	11030	2.0 0.6m	201.7 61.5m	203.7 62.1m	.03				.01
		203.7-205.5 - Chlorite zone, 70% chlorite with small blebs of pyrite throughout. Irregular grey vein quartz, some of which is also mineralized. Very fine specks of V.G. at 204.5.	11031	1.8 0.5m	203.7 62.1m	205.5 62.6m	.005				
		205.5-208.0 - Chlorite zone, 60% chlorite with coarse blebs of pyrite in the more chloritic sections. 10% magnetite in fairly coarse grains, local grey vein quartz.	11032	2.5 0.8m	205.5 62.6m	208.0 63.4m	.01				
		208.0-210.0 - Chlorite zone, 60% chlorite, 10% grey vein quartz and 15% magnetite in coarse patches. Blebs of pyrite with a little associated chalco up to 3/4". Speck of V.G. in magnetite at 208.6.	11033	2.0 0.6m	208.0 63.4m	210.0 64.0m	.31				.09
		210.0-212.5 - Chlorite zone, 60% chlorite, 10% vein quartz and 15% magnetite in coarse patches. Fine speck of V.G. at 212.1.	11034	2.5 0.8m	210.0 64.0m	212.5 64.8m	.05				.02



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5012.1N; 9476.8E

HOLE: N-11.
 Core size:

Section: 0+50SE, 0+80SW
 Length: 286.0' (87.2m)
 Elevation: 320.2
 Azimuth: Dip: -90°

Dip Tests:
 Started: Dec. 2/80
 Completed: Dec. 5/80
 Logged by: Morissette

DRILL LOG

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS	
from	to						Au oz/oz/ton	Au oz/ft.
		<u>Ore Sections</u>						
		1.	10678	1.2 0.4	33.9 10.3	35.1 10.7	0.100	.120
			10679	1.5 0.5	35.1 10.7	36.6 11.2	0.210	.315
				2.7	33.9	36.6	0.161	.435
		2.	10689	1.2 0.4	72.6 22.1	73.8 22.5	0.040	0.048
			10690	1.3 0.4	73.8 22.5	75.1 22.9	0.340	.442
		2a.		2.5 0.8	72.6 22.1	75.1 22.9	0.196	.490
		3.	11002	2.2 0.7	125.8 38.3	128.0 39.0	0.240	.528
			11003	1.4 0.4	128.0 39.0	129.4 39.4	Ni1	-
			11004	3.2 1.0	129.4 39.4	132.6 40.4	0.0800	.256
			11005	2.2 0.7	132.6 40.4	134.8 41.4	0.190	0.418



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5012.1N, 9476.8E

HOLE: N-11
 Core size:

Section: 0+50SE, 0+80SW
 Length: 286.0' (87.2m)
 Elevation: 320.2
 Azimuth: Dip: -90°

Dip Tests:
 Started: Dec. 2/80
 Completed: Dec. 5/80
 Logged by: Morissette

DRILL LOG

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS	
from	to						Au oz/ton	Au oz/ft.
		Ore Sections - Cont'd	11006	2.0 0.6	134.8 41.1	136.8 41.7	2.470	4.940
		3a.		11.0 14.5	125.8 122.3	136.8 136.8	0.558	6.142
			11020	1.8 0.6	180.8 55.1	182.6 55.2	0.850	1.530
			11021	1.5 0.4	182.6 55.7	184.1 56.1	0.480	0.720
		4.		3.3 1.1	180.8 55.1	184.1 56.1	0.682	2.257
			11022	3.0 0.9	184.1 56.1	187.1 57.0	0.010	0.030
			11023	2.5 0.8	187.1 57.0	189.6 57.8	0.005	0.013
			11024	2.0 0.6	189.6 57.8	191.6 58.4	1.200	2.400
			11025	3.4 1.1	191.6 58.3	195.0 59.4	0.070	0.238
			11026	1.5 0.5	195.0 59.4	196.5 59.9	0.200	0.300



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5012.1N, 9476.8E

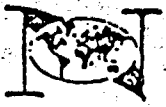
HOLE: N-11
 Core size:

Section: 0+50SE, 0+80SW
 Length: 286.0' (87.2m)
 Elevation: 320.2
 Azimuth: Dip: -90

Dip Tests:
 Started: Dec. 2/80
 Completed: Dec. 5/80
 Logged by: Morissette

DRILL LOG

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS	
from	to						Au oz/oz/ton	Au oz/ft.
		<u>Ore Sections - Cont'd</u>						
		4a.						
				6.9	189.6	196.5	0.426	2.938
					57.8	59.9		
			11027	1.2	196.5	197.7	0.010	0.012
				0.4	59.9	60.3		
			11028	2.0	197.7	199.7	0.230	0.460
				0.6	60.3	60.9		
			11029	2.0	199.7	201.7	0.160	0.320
				0.6	60.9	61.5		
			11030	2.0	201.7	203.7	0.030	0.060
				0.6	61.5	62.1		
			11031	1.8	203.7	205.5	0.005	0.009
				0.5	62.1	62.6		
			11032	2.5	205.5	208.0	0.010	0.025
				0.8	62.6	63.4		
			11033	2.0	208.0	210.0	0.310	0.620
				0.6	63.4	64.0		
			11034	2.5	210.0	212.5	0.050	0.125
				0.8	64.0	64.8		
			11035	2.5	212.5	215.0	0.150	0.375
				0.7	64.8	65.5		



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
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 Co-ordinates: 5012.1N, 9476.8E

HOLE: N-11
 Core size:

Section: 0+50SE, 0+80SW
 Length: 286.0' (87.2m)
 Elevation: 320.2
 Azimuth: Dip: -90

Dip Tests:
 Started: Dec. 2/80
 Completed: Dec. 5/80
 Logged by: Morissette

DRILL LOG

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS	
from	to						Au oz/ton	Au oz/ft.
		<u>Ore Sections - Cont'd</u>						
			11036	2.7 0.9	215.0 65.5	217.7 66.4	0.100	0.270
		4b.		4.0	197.7 60.3	201.7 61.5	0.195	0.780
		4c.		7.0	208.0 63.4	215.0 65.5	0.160	1.120
		4d.		36.9	180.8 55.1	217.7 65.4	0.203	7.508



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5088N, 9612.4E

HOLE: N-12.
 Core size:

Section: 0 + 00
 Length: 615 (187.5m)
 Elevation: 315.5m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Dec. 9, 1980
 Completed: Jan. 9, 1981
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
		232.8 - 233.6 - (70.96 - 71.20) - A few bands and blebs of chlorite. About 1% disseminated pyrite.	10889	0.8 0.24	232.8 70.96	233.6 71.20				
		233.6 - 257.0 - (71.20 - 78.33) - Quartzite, dark grey, relatively unaltered, non-brecciated with no carbonate.								
		257.0 - 321.0 - (78.33 - 97.84) - Quartzite, much bleaching and well brecciated with some patches unaltered. A few streaks and blebs of chlorite at 276.0' (84.2). Core fairly broken and blocky.								
321.0 97.84	332.0 101.19	Olivine Diabase, m.g. to f.g. with chilled margins. Lower contact area fractured and weakly brecciated with contact irregular, about 45° to core. Upper contact sharp, 40° to core. Strongly magnetic.								
332.0 101.19	380.3 115.92	Quartzite, moderately well brecciated and strongly bleached pale grey, occasional faintly pink. Some patches and zones of brown, less altered quartzite. Some zones of chlorite filled hairline fractures imparting a web-like pattern. Very scarce sulphides.								
		<u>Economics</u> - Trial Samples								
		332.0 - 337.0 - (101.19 - 102.72) - Quartzite, well brecciated with numerous hairline fractures, many mineralized with chlorite. Total chlorite content less than 5%. Occasional scattered grains of pyrite.	10890	5.0 1.53	332.0 101.19	337.0 102.72				
		337.0 - 339.5 - (102.72 - 103.48) - As above, but less chlorite.	10891	2.5 .76	337.0 102.72	339.5 103.48				
		339.5 - 341.7 - (103.48 - 104.15) - Quartzite, light to medium brown, very little altered and only slightly fractured. Barren.	10892	2.2 .67	339.5 103.48	341.7 104.15				
		341.7 - 344.6 - (104.15 - 105.03) - Quartzite, strongly bleached, slightly brecciated with scattered streaks of chlorite. Rare flecks py.	10893	2.9 .88	341.7 104.15	344.6 105.03				



NORTHGATE EXPLORATION LIMITED

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 Core size:

Section: 0 + 00
 Length: 615 (187.5m)
 Elevation: 315.5m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Dec. 9, 1980
 Completed: Jan. 9, 1981
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
		393.0 - 398.0 - (119.79 - 121.31) - Quartzite, bleached pale grey with some brownish less altered spots. Rare streak of chlorite and odd flecks of pyrite.	10899	5.0 1.52	393.0 119.79	398.0 121.31				
		398.0 - 403.0 - (121.31 - 122.83) - Quartzite, weakly brecciated, brownish. Poorly mineralized with only odd grain of pyrite.	10900	5.0 1.52	398.0 121.31	403.0 122.83				
		403.0 - 407.0 - (122.83 - 124.05) - Quartzite, brownish, weakly fractured, very little bleaching. Essentially barren.	10701	4.0 1.22	403.0 122.83	407.0 124.05				
		407.0 - 412.0 - (124.05 - 125.58) - Quartzite, well bleached and brecciated. A little vein quartz at 409.0 (0.1). Scattered grains and odd bleb of py.	10702	5.0 1.53	407.0 124.05	412.0 125.58				
		412.0 - 447.0 - (125.58 - 136.25) - Quartzite, brownish, locally brecciated with minor bleaching and alteration. Entire section essentially barren. No samples taken.								
		447.0 - 449.0 - (136.25 - 136.86) - Quartzite, light brown, brecciated, slightly bleached, rare fleck of py.	10703	2.0 0.6	447.0 136.25	449.0 136.86				
		449.0 - 453.0 - (136.86 - 138.07) - Quartzite, brownish to spotty bleached greyish. Well brecciated with odd grains of py.	10704	4.0 1.21	449.0 136.86	453.0 138.07				
		453.0 - 456.0 - (138.07 - 138.99) - Quartzite, more bleached and altered than above. Fairly well brecciated. A little carbonate. Rare flecks of py.	10705	3.0 .92	453.0 138.07	456.0 138.99				
		456.0 - 460.0 - (138.99 - 140.21) - Quartzite, well bleached and altered, fairly well brecciated with a little carbonate cement. Odd grains of py.	10706	4.0 1.22	456.0 138.99	460.0 140.21				
		460.0 - 463.0 - (140.21 - 141.12) - As above. A little more py as scattered small blebs and hairline fracture fillings.	10707	3.0 .91	460.0 140.21	463.0 141.12				
		463.0 - 466.0 - (141.12 - 142.04) - Quartzite, bleached and brecciated in small patches with odd grains and streaks of py.	10708	3.0 .91	463.0 141.12	466.0 142.04				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5088N, 9612.4E

HOLE: N-12.
 Core size:

Section: 0 + 00
 Length: 615 (187.5m)
 Elevation: 315.5m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Dec. 9, 1980
 Completed: Jan. 9, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
543.0 165.51	552.2 168.31	Quartzite; well brecciated and altered pinkish to light grey. A few small patches of 3 to 5% chlorite as streaks and irregular blebs. <u>Economics</u> 543.0 - 545.5 - (165.51 - 166.27) - Quartzite, 3 to 5% chlorite in well brecciated altered pink quartzite. Rare grains of py. 545.5 - 549.0 - (166.27 - 167.34) - Quartzite, altered, pink to grey, well brecciated and fractured. Essentially barren. 549.0 - 552.2 - (167.34 - 168.31) - Quartzite, pink, well brecciated, 2 to 4% chlorite as fracture fillings. Rare grains of py.								
552.2 168.31	581.4 177.21	Chlorite breccia. 5 to 60% chlorite in altered pink to red quartzite. Overall a weak chloritic breccia zone, with highly variable chlorite content. <u>Economics</u> 552.2 - 554.5 - (168.31 - 169.01) - Chlorite breccia. 30% chlorite in well brecciated pink to grey quartzite. 1% to 2% pyrite as small irregular blebs. 554.5 - 556.3 - (169.01 - 169.56) - Chlorite breccia. 30% chlorite in pink brecciated quartzite. ½ to 1% pyrite as irregular blebs and small cubes to 3 mm. 556.3 - 558.5 - (169.56 - 170.23) - Chlorite zone. 60% chlorite. Rare small cubes of py. 558.5 - 562.0 - (170.23 - 171.29) - Chlorite breccia. 35% chlorite in pink brecciated quartzite. Scattered small grains of pyrite, less than 1% total.	10715	2.5 .76	543.0 165.51	545.5 166.27				
			10716	3.5 1.07	545.5 166.27	549.0 167.34				
			10717	3.2 .97	549.0 167.34	552.2 168.31				
			10718	2.3 .70	552.2 168.31	554.5 169.01				
			10719	1.9 .55	554.5 169.01	556.3 169.56				
			10720	2.2 .67	556.3 169.56	558.5 170.23				
			10721	3.5 1.06	558.5 170.23	562.0 171.29				



NORTHGATE EXPLORATION LIMITED

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 Location: Scadding Twp., Ont.
 Co-ordinates: 5088N, 9612.4E

HOLE: N-12.
 Core size:

Section: 0 + 00
 Length: 615 (187.5m)
 Elevation: 315.5m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Dec. 9, 1980
 Completed: Jan. 9, 1981
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS	
from	to						Au oz/ton	oz/ft
		<u>Ore Sections</u>						
		1.	10724	3.5 1.07	568.0 173.2	571.5 174.3	.32 .1	1.120 .34
			10725	3.0 .92	571.5 174.3	574.5 175.2	.04 .01	.120 .04
				2.5 .76	574.5 175.2	577.0 175.9	.01	.025 .01
		2.		3.0 .92	577.0 175.9	580.0 176.9	.13 .04	.390 .12
		2a.		12.0 3.7	568.0 173.2	580.0 176.9	.138 .04	1.655 .5



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4994N, 9836E

HOLE: N-13
 Core size:

Section: 98 + 36E
 Length: 55.0 (16.76m)
 Elevation: 300.3m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Dec. 15, 1980
 Completed: Dec. 16, 1980
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to												
0.0	5.0	Casing.											
0.0	1.52												
5.0	8.0	Casing Core. Chlorite breccia, 25% chlorite in bleached white quartzite in patches, seams and as a replacement. Rusty weathered with carbonate grains rusty brown. 1% pyrite in grains and blebs.											
1.52	2.44												
		5.0 - 8.0 - (1.52 - 2.44) - Casing core. Chlorite breccia, 25% chlorite in bleached whitish quartzite in patches seams, and as a replacement. 10% carbonate, weathered rusty brown. 1% pyrite in grains and blebs, mostly with the more chloritic sections.	11040	3.0 0.9	5.0 1.52	8.0 2.44							
8.0	14.5	Chlorite zone, 60% chlorite with 3% to 10% pyrite in blebs and grains. Local aspy. Minor chalco with the pyrite.											
2.44	4.42												
		8.0 - 10.0 - (2.44 - 3.05) - Chlorite zone, 60% chlorite, 10% pyrite in vuggy patches with a little associated chalco. Specks of V.G. on sawn surface at 8.9 (2.7) and 9.5 (2.9). Small grain at 9.6 (2.9) on 2nd half of core.	11041	2.0 0.6	8.0 2.44	10.0 3.05							
		10.0 - 12.0 - (3.05 - 3.66) - Chlorite zone, 70% chlorite with 10% pyrite in blebs up to 1/2". A little grey vein quartz. Local grains of aspy and a little chalco. Speck of V.G. 2nd half at 10.1 (3.1), several grains of V.G. in pyrite bleb on sawn surface at 11.3 (3.5).	11042	2.0 0.6	10.0 3.05	12.0 3.66							
		12.0 - 14.5 - (3.66 - 4.42) - Chlorite zone, 60% chlorite with 3% pyrite in small blebs and grains.	11043	2.5 0.8	12.0 3.66	14.5 4.42							
14.5	25.0	Chlorite breccia, 10% to 30% chlorite as a replacement, and in seams and patches.											
4.42	7.62												
		14.5 - 16.7 - (4.42 - 5.09) - Chlorite breccia, 30% chlorite in seams and as a replacement. A few grains and small blebs of pyrite.	11044	2.2 0.7	14.5 4.42	16.7 5.09							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4994N, 9836E

HOLE: N-13
 Core size:

Section: 98 + 36E
 Length: 55.0 (16.76m)
 Elevation: 300.3m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Dec. 15, 1980
 Completed: Dec. 16, 1980
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
		31.0 - 33.0 - (9.45-10.06) - Chlorite breccia, 30% chlorite with 15% pyrite and a little po in coarse blebs and small grains. Small vugs present locally.	11052	2.0 0.6	31.0 9.45	33.0 10.06				
		33.0 - 35.0 - (10.06-10.67) - Chlorite breccia, 25% chlorite with 20% pyrite in coarse blebs and seams. Minor chalco. Small vugs throughout.	11053	2.0 0.6	33.0 10.06	35.0 10.67				
		35.0 - 36.5 - (10.67-11.13) - Chlorite breccia, 25% chlorite with 25% pyrite in coarse blebs and seams. A little po also present. Some small vugs.	11054	1.5 0.5	35.0 10.67	36.5 11.13				
36.5 11.13	43.4 13.23	Chlorite breccia, 20% chlorite with 7% to 10% sulphides, mostly pyrrhotite in blebs.								
		36.5 - 39.0 - (11.13-11.89) - Chlorite breccia, 25% chlorite with 7% sulphides, both pyrrhotite and vuggy pyrite.	11055	2.5 0.8	36.5 11.13	39.0 11.89				
		39.0 - 41.0 - (11.89-12.50) - Chlorite breccia, 20% chlorite with 10% pyrrhotite in blebs, also a little chalco and some pyrite.	11056	2.0 0.6	39.0 11.89	41.0 12.50				
		41.0 - 43.4 - (12.50-13.23) - Chlorite breccia, 20% chlorite with 7% pyrrhotite in grains and blebs. Minor chalcopyrite.	11057	2.4 0.7	41.0 12.50	43.4 13.23				
43.4 13.23	53.0 16.15	Chlorite breccia, 10% chlorite as a replacement. Some carbonate grains throughout. A few grains of pyrite and pyrrhotite.								
		43.4 - 46.0 - (13.23-14.02) - Chlorite breccia, 10% chlorite as a replacement of pinkish quartzite. The odd grain of po.	11058	2.6 0.8	43.4 13.23	46.0 14.02				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4994N, 9836E

HOLE: N-13.
 Core size:

Section: 98 + 36E
 Length: 55.0 (16.76m)
 Elevation: 300.3m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Dec. 15, 1980
 Completed: Dec. 16, 1980
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz./ton						
		<u>Ore Sections</u>											
			11040	3.0 0.9	5.0 1.5	8.0 2.4	.059 .02						
			11041	2.0 0.6	8.0 2.4	10.0 3.1	.560 .2						
			11042	2.0 0.6	10.0 3.1	12.0 3.6	.253 .08						
		1.		7.0 2.1	5.0 1.5	12.0 3.6	.258 .08						
		1a.		4.0 1.2	8.0 2.4	12.0 3.6	.407 .1						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4995N, 9828.3E

HOLE: N-14.
 Core size:

Section: 98 + 28.5E
 Length: 54.0 (16.46m)
 Elevation: 300.7 m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Dec. 16, 1980
 Completed: Dec. 17, 1980
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to												
0.0	6.0	Casing.											
0.0	1.83												
6.0	7.0	Casing core, chlorite breccia, 10% chlorite mostly as a replacement, sulphides are rare.											
1.83	2.13												
7.0	37.2	Chlorite breccia, 15% to 40% chlorite mineralized throughout with blebs and grains of pyrite, varies from 1% to 25% sulphides. Locally very fine V.G. noted.											
2.13	11.34												
		7.0 - 10.0 - (2.13 - 3.05) - Chlorite breccia, 15% chlorite as a replacement and in patches. A few grains of pyrite in the more chloritic sections. 70% recovery.	11063	3.0 0.9	7.0 2.13	10.0 3.05							
		10.0 - 12.0 - (3.05 - 3.66) - Chlorite breccia, 50% chlorite in patches and as a replacement. 10% pyrite in blebs and grains. A few grains of aspy noted. 70% recovery.	11064	2.0 0.6	10.0 3.05	12.0 3.66							
		12.0 - 14.0 - (3.66 - 4.27) - Chlorite breccia, 30% chlorite in patches and as a replacement. 2% pyrite in small blebs and grains in the more chloritic sections.	11065	2.0 0.6	12.0 3.66	14.0 4.27							
		14.0 - 16.0 - (4.27 - 4.88) - Chlorite breccia, 30% chlorite in patches and as a replacement. Local blebs and grains of pyrite, mostly in the more chloritic sections. Grain of V.G. on sawn surface 15.2 (4.6) in pyrite bleb.	11066	2.0 0.6	14.0 4.27	16.0 4.88							
		16.0 - 18.0 - (4.88 - 5.49) - Chlorite breccia, 40% chlorite with 20% pyrite in large blebs. Small vugs throughout. Specks of V.G. in vug at 16.8 (5.1) 2nd side, speck at 17.5 (5.3) and grain at 17.6 (5.4) on 2nd side of sawn surface.	11067	2.0 0.6	16.0 4.88	18.0 5.49							
		18.0 - 19.2 - (5.49 - 5.85) - Chlorite breccia, 30% chlorite in patches and as a replacement. 10% pyrite in large blebs, grains, and seams. Small specks of V.G. on sawn surface at 18.4 (5.6).	11068	1.2 0.4	18.0 5.49	19.2 5.85							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4995N, 9828.3E

HOLE: N-14
 Core size:

Section: 98 + 28.5E
 Length: 54.0 (16.46m)
 Elevation: 300.7 m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Dec. 16, 1980
 Completed: Dec. 17, 1980
 Logged by: P. McLean

DRILL LOG Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to												
		19.2 - 22.0 - (5.85 - 6.70) - Ground core.											
		22.0 - 24.0 - (6.70 - 7.32) - Chlorite zone, 60% chlorite, 5% sulphides, mostly pyrrhotite in small blebs, also some chalco and a little pyrite. Poor recovery, 50% ground core.	11069	2.0 0.6	22.0 6.70	24.0 7.32							
		24.0 - 26.0 - (7.32 - 7.92) - Chlorite breccia, 30% chlorite as a replacement and in patches. 5% sulphides as coarse pyrite blebs, also some pyrrhotite. Rusty weathered core with frequent small vugs.	11070	2.0 0.6	24.0 7.32	26.0 7.92							
		26.0 - 28.0 - (7.92 - 8.53) - Chlorite breccia, 25% chlorite as a replacement and in patches. 15% pyrite in seams and large blebs, minor chalco. Small vugs throughout.	11071	2.0 0.6	26.0 7.92	28.0 8.53							
		28.0 - 30.0 - (8.53 - 9.14) - Chlorite breccia, 20% chlorite as a replacement and in patches. Locally well mineralized with blebs of pyrite, 5%. Vugs in the best mineralized sections. Specks of fine V.G. at 28.9 (8.8) in vug on sawn surface.	11072	2.0 0.6	28.0 8.53	30.0 9.14							
		30.0 - 32.0 - (9.14 - 9.75) - Chlorite breccia, 20% chlorite with 15% pyrite in large blebs and seams. Small vugs throughout. Rusty sections.	11073	2.0 0.6	30.0 9.14	32.0 9.75							
		32.0 - 34.0 - (9.75 - 10.36) - Chlorite breccia, 20% chlorite in whitish quartzite. 7% sulphides, pyrite and pyrrhotite and minor chalco. Small vugs throughout.	11074	2.0 0.6	32.0 9.75	34.0 10.36							
		34.0 - 36.0 - (10.36 - 10.97) - Chlorite breccia, 25% chlorite with 20% sulphides, mostly large blebs of pyrite up to 1/2" with minor associated chalco. Specks of V.G. with pyrite at 34.6 (10.6) on sawn surface. Some small vugs throughout.	11075	2.0 0.6	34.0 10.36	36.0 10.97							
		36.0 - 37.2 - (10.97 - 11.34) - Chlorite breccia, 25% chlorite with 25% pyrite in very coarse blebs and seams up to 2". Minor chalco. A few small vugs throughout.	11076	1.2 0.4	36.0 10.97	37.2 11.34							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4995N, 9828.3E

HOLE: N-14
 Core size:

Section: 98 + 28.5E
 Length: 54.0 (16.46m)
 Elevation: 300.7m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Dec. 16, 1980
 Completed: Dec. 17, 1980
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to												
37.2 11.34	41.2 12.56	Chlorite zone, 65% - 70% with 7% sulphides. Coarse pyrite blebs and smaller blebs of pyrrhotite. Some grey quartz.											
		37.2 - 39.1 - (11.34 - 11.92) - Chlorite zone, 70% chlorite with 7% pyrite and pyrrhotite in blebs and grains. Some vuggy pyrite blebs up to 3/4".	11077	1.9 0.6	37.2 11.34	39.1 11.92							
		39.1 - 41.2 - (11.92 - 12.56) - Chlorite zone, 65% chlorite with some grey x-talline quartz. 5% pyrite and pyrrhotite in coarse blebs.	11078	2.1 0.6	39.1 11.92	41.2 12.56							
		41.2 - (12.6) - 2" rusty seam.											
41.2 12.56	54.0 16.46	Chlorite breccia, 10% to 30% chlorite. Sulphides rare to absent.											
		41.2 - 43.4 - (12.56 - 13.23) - Chlorite breccia, 30% chlorite mostly as a replacement. Rare grain of py.	11079	2.2 0.7	41.2 12.56	43.4 13.23							
43.4 13.2	54.0 16.5	Rusty seams, core weathered in appearance.											
		43.4 - 45.5 - (13.23 - 13.87) - Chlorite breccia, 40% chlorite mostly as a replacement. The odd grain of pyrite and some white carbonate in this section.	11080	2.1 0.6	43.4 13.23	45.5 13.87							
		45.5 - 48.0 - (13.87 - 14.63) - Chlorite breccia, 15% chlorite as a replacement. The odd grain of pyrite. Rusty core due to seams.	11081	2.5 0.8	45.5 13.87	48.0 14.63							
48.0 14.63	54.0 16.46	Rusty seam almost parallel to the core.											
		48.0 - 51.0 - (14.63 - 15.54) - Chlorite breccia, 10% chlorite as a replacement. Sulphides absent. Rusty seam almost parallel to the core.	11082	3.0 0.9	48.0 14.63	51.0 15.54							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4995N, 9828.3E

HOLE: N-14
 Core size:

Section: 98 + 28.5E
 Length: 54.0 (16.46m)
 Elevation: 300.7m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Dec. 16, 1980
 Completed: Dec. 17, 1980
 Logged by: P. McLean

DRILL LOG Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
		<u>Ore Sections</u>											
		1.	11064	2.0 0.6	10.0 3.1	12.0 3.7	.586 .2						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
Location: Scadding Twp., Ont.
Co-ordinates: 4995N, 9821E

HOLE: N-15
Core size:

Section: 98 + 21E
Length: 82.0 (24.99m)
Elevation: 301.4m
Azimuth: 0° Dip: 0°

Dip Tests:
Started: Jan. 7, 1981
Completed: Jan. 9, 1981
Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz./ton						
0.0	6.5	Casing.											
0.0	1.98												
6.5	15.0	Chlorite breccia, 20% to 30% chlorite in seams, patches, and as a replacement. 5% to 10% pyrite in irregular blebs and seams. Small vugs common.											
1.98	4.57												
		6.5 - 8.5 - (1.98 - 2.59) - Chlorite breccia, 20% chlorite, mostly as a replacement, also in patches. 10% pyrite in coarse blebs and seams.	11084	2.0 .61	6.5 1.98	8.5 2.59	Tr						
		8.5 - 10.9 - (2.59 - 3.32) - Chlorite breccia, 20% chlorite in patches and as a replacement. 10% pyrite in coarse blebs and seams, locally a few grains of chalco. Small vugs throughout.	11085	2.4 .73	8.5 2.59	10.9 3.32	.002						
		10.9 - 13.0 - (3.32 - 3.96) - Chlorite breccia, 20% chlorite in patches and as a replacement. 7% sulphides, py and po in blebs. Also a little fine chalco.	11086	2.1 .64	10.9 3.32	13.0 3.96	.002						
		13.0 - 15.0 - (3.96 - 4.57) - Chlorite breccia, 20% chlorite in patches and as a replacement. 7% sulphides, mostly po and py in blebs. Minor fine chalco. Small vugs present.	11087	2.0 .61	13.0 3.96	15.0 4.57	.011						
15.0	38.0	Chlorite zone, 60% to 80% chlorite, well mineralized with coarse blebs of pyrite throughout. Frequent vuggy sections. V.G. as noted.											
4.57	11.58												
		15.0 - 17.0 - (4.57 - 5.18) - Chlorite zone, 60% chlorite with 20% pyrite in coarse blebs up to 3/4". Fine grains of V.G. both sides of surface at 15.3 (4.7), several coarse grains both surfaces at 15.5 (4.7), fine speck of V.G. at 16.6 (5.1), 2nd half. Local large vugs with quartz xtals.	11088	2.0 .61	15.0 4.57	17.0 5.18	.365						
		17.0 - 19.0 - (5.18 - 5.79) - Chlorite zone, 60% chlorite with 15% pyrite in coarse blebs, minor po. Locally some irregular grey vein quartz also well mineralized with pyrite. Some small vugs, fine speck of V.G. 2nd half surface at 17.6 (5.4).	11089	2.0 .61	17.0 5.18	19.0 5.79	.096						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4995N, 9821E

HOLE: N-15.
 Core size:

Section: 98 + 21E
 Length: 82.0 (24.99m)
 Elevation: 301.4m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Jan. 7, 1981
 Completed: Jan. 9, 1981
 Logged by: P. McLean

DRILL LOG Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
		19.0 - 21.5 - (5.79 - 6.55) - Chlorite zone, 60% chlorite, 10% sulphides, equal amounts of py and po in blebs up to ½". Grains of V.G. at 20.5 (6.3) and 21.2 (6.5) on 2nd half surface. Also at 21.3 (6.5) on 1st half surface.	11090	2.5 .76	19.0 5.79	21.5 6.55	.052				
		21.5 - 23.5 - (6.55 - 7.16) - Chlorite zone, 70% chlorite with 20% coarse pyrite in coarse blebs and seams up to 11". Very vuggy. Coarse grain of V.G. at 22.0 (6.7) and many coarse grains at 22.4 (6.8), some on 1st side of sawn surface, most on 2nd side, also on outside of 2nd side.	11091	2.0 .61	21.5 6.55	23.5 7.16	.230				
		23.5 - 25.0 - (7.16 - 7.92) - Chlorite zone, 60% chlorite with 20% sulphides, mostly py some po in coarse blebs. Coarse V.G. grains at 23.7 (7.2) outside 2nd half, also fine grains 2nd surface. Coarse grains on 1st half outside and on 1st surface at 25.7 (7.8).	11092	2.5 .76	23.5 7.16	26.0 7.92	.798				
		26.0 - 28.0 - (7.92 - 8.53) - Chlorite zone, 70% chlorite with 10% sulphides, both py and po. Several large vugs. Fine speck of V.G. at 26.5 (8.1) 1st half surface, also several grains on 2nd surface at 27.6 (8.4).	11093	2.0 .61	26.0 7.92	28.0 8.53	.202				
		28.0 - 30.0 - (8.53 - 9.14) - Chlorite breccia, 70% chlorite, 15% sulphides, mostly po in blebs up to ½", also some coarse py. Occasional vugs. Locally some irregular vein quartz. Grains of V.G. at 28.3 (8.6) on both sides of sawn surface, several grains at 28.5 (8.7) on 2nd surface. Coarse grains V.G. at 29.1 (8.9) outside 1st half. Grain V.G. at 29.6 (9.0) on 1st surface and coarse smear at 29.8 (9.1) also on 1st surface. Grain of V.G. at 29.9 (9.1) on 1st surface.	11094	2.0 .61	28.0 8.53	30.0 9.14	1.038				
		30.0 - 32.0 (9.14 - 9.75) - Chlorite zone, 70% chlorite with 12% sulphides, mostly po in coarse blebs up to 1½". Some irregular vein quartz also mineralized. Specks of V.G. at 30.2 (9.2) 1st surface. Coarse grain at 30.6 (9.3) both surfaces. V.G. at 31.6 (9.6) and 31.7 (9.7) on 2nd surface. Several coarse grains outside 1st side at 31.8 (9.7). Coarse grain V.G. outside 2nd side at 38.9 (11.9).	11095	2.0 .61	30.0 9.14	32.0 9.75	.801				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4995N, 9821E

HOLE: N-15.
 Core size:

Section: 98 + 21E
 Length: 82.0 (24.99m)
 Elevation: 301.4m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Jan. 7, 1981
 Completed: Jan. 9, 1981
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
		32.0 - 34.0 - (9.75 - 10.36) - Chlorite zone, 70% chlorite with 20% po in large blebs and seams. Local grey vein quartz. Grain of V.G. outside 1st half at 32.4 (9.9), fine grains on 1st surface at 32.5 (9.9). Fine grains outside 1st surface at 32.6 (9.9). Also several coarse grains outside 2nd half at 32.4 (9.9). 32.6 (9.9) to 33.2 (10.1) coarse po, 40% in this section with some chalco. Many grains of V.G. in the pyrrhotite throughout this section, on both sides of the core outside, also on the sawn surfaces.	11096	2.0 .61	32.0 9.75	34.0 10.36	1.33				
		34.0 - 36.0 - (10.36 - 10.97) - Chlorite zone, 65% chlorite with some grey vein quartz. 20% sulphides mostly po, also some vuggy pyrite, in blebs and seams. Coarse grain of V.G. 2nd surface at 33.0 (10.1), fine grains and a fine seam outside 2nd side at 33.4 (10.2). Fine grains 1st half outside at 33.1 (10.1). Coarse grain V.G. 1st surface at 33.4 (10.2), several grains outside 1st half at 35.9 (10.9).	11097	2.0 .61	34.0 10.36	36.0 10.97	.12				
		36.0 - 38.0 - (10.97 - 11.58) - Chlorite zone, 60% chlorite, 10% grey vein quartz in irregular stringers. 12% pyrite in blebs up to 1/2". Many fine grains of V.G. 1st surface at 37.5 (11.4).	11098	2.0 .61	36.0 10.97	38.0 11.58	.278				
38.0 11.58	52.8 16.09	Chlorite breccia, 20% to 30% chlorite in altered whitish quartzite, sulphides vary from sparse to 10%.									
		38.0 - 40.0 - (11.58 - 12.19) - Chlorite breccia, 25% chlorite as a replacement and in seams, 5% sulphides, mostly py, some po. Coarse grain of V.G. in po at 38.9 (11.9) 1st half outside.	11099	2.0 .61	38.0 11.58	40.0 12.19	.056				
		40.0 - 43.3 - (12.19 - 13.20) - Chlorite breccia, 25% chlorite in patches and as a replacement. 10% sulphides, mostly po in small blebs, also some pyrite.	11100	3.3 1.01	40.0 12.19	43.3 13.20	.003				
		43.3 - 46.0 - (13.20 - 14.02) - Chlorite breccia, 10% chlorite in well brecciated quartzite, in seams and as a replacement. Sulphides rare.	11101	2.7 .82	43.3 13.20	46.0 14.02	Tr				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Township, Ont.
 Co-ordinates: 4995N, 9821E

HOLE: N-15.
 Core size:

Section: 98 + 21E
 Length: 82.0 (24.99m)
 Elevation: 301.4m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Jan. 7, 1981
 Completed: Jan. 9, 1981
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
52.8 16.09	65.7 20.02	46.0 - 47.3 - (14.02 - 14.42) - Chlorite breccia, 30% chlorite in patches and as a replacement. 10% sulphides in small blebs. Py and po.	11102	1.3 .40	46.0 14.02	47.3 14.42	.002				
		47.3 - 48.4 - (14.42 - 14.75) - Chlorite breccia, 15% chlorite as a replacement, a few grains of py and pyrrhotite.	11103	1.1 .33	47.3 14.42	48.4 14.75	Tr				
		48.4 - 50.4 - (14.75 - 15.36) - Chlorite zone, 50% chlorite with 7% sulphides, fine py and po. Speck of V.G. 1st half outside at 49.2 (15.0), several grains 2nd surface at 50.0 (15.3). Some disseminated magnetite.	11104	2.0 .61	48.4 14.75	50.4 15.36	.306				
		50.4 - 52.8 - (15.36 - 16.09) - Chlorite breccia, 35% chlorite as a replacement, and in seams. Locally some aspy. Disseminated magnetite, minor sulphides.	11105	2.4 .73	50.4 15.36	52.8 16.09	.03				
		Chlorite zone, 60% to 70% chlorite with 5% to 10% sulphides.									
		52.8 - 54.7 - (16.09 - 16.67) - Chlorite zone, 60% chlorite with 10% sulphides, pyrite and pyrrhotite, disseminated magnetite also present. Grain of V.G. at 53.6 (16.4) on 2nd surface and grain at 54.5 (16.6) on 1st surface.	11106	1.9 .58	52.8 16.09	54.7 16.67	.177				
		54.7 - 56.7 - (16.67 - 17.28) - Chlorite zone, 60% chlorite with 10% py and po in blebs, locally disseminated magnetite. Speck of V.G. at 55.4 (16.9) and 55.5 (16.9) on 2nd surface, grains of V.G. at 54.5 (16.6) on 1st surface.	11107	2.0 .61	54.7 16.67	56.7 17.28	.139				
		56.7 - 59.4 - (17.28 - 18.11) - Chlorite zone, 60% chlorite with 7% py and po, disseminated magnetite throughout.	11108	2.7 .83	56.7 17.28	59.4 18.11	.172				
		59.4 - 62.2 - (18.11 - 18.96) - Chlorite zone, 70% chlorite with 3% disseminated pyrite in 1st half of the sample. Frequent grains of aspy in the last 3". 5% disseminated magnetite.	11109	2.8 .85	59.4 18.11	62.2 18.96	.056				
		62.2 - 64.0 - (18.96 - 19.50) - Chlorite zone, 70% chlorite with 5% sulphides, py and po in blebs. 5% disseminated magnetite. Several coarse grains of V.G.	11110	1.8 .54	62.2 18.96	64.0 19.50	.050				



NORTHGATE EXPLORATION LIMITED

DRILL LOG

Drill Contractor - N. Morissette

Property: 772, D.R. Watt Property
Location: Scadding Twp., Ont.
Co-ordinates: 4995N, 9821E

HOLE: N-15.
Core size:

Section: 98 + 21E
Length: 82.0 (24.99m)
Elevation: 301.4m
Azimuth: 0° Dip: 0°

Dip Tests:
Started: Jan. 7, 1981
Completed: Jan. 9, 1981
Logged by: P. McLean

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						Au oz/ton		
		<u>Ore Sections</u>							
			11088	2.0 0.6	15.0 4.6	17.0 5.2	.365		
			11089	2.0 0.6	17.0 5.2	19.0 5.8	.095		
			11090	2.5 0.8	19.0 5.8	21.5 6.6	.05		
			11091	2.0 0.6	21.5 6.6	23.5 7.2	.23		
			11092	2.0 0.6	23.5 7.2	26.0 7.9	.798		
			11093	2.0 0.6	26.0 7.9	28.0 8.5	.20		
			11094	2.0 0.6	28.0 8.5	30.0 9.2	1.04		
			11095	2.0 0.6	30.0 9.2	32.0 9.8	.801		
			11096	2.0 0.6	32.0 9.8	34.0 10.4	1.33		
			11097	2.0 0.6	34.0 10.4	36.0 10.9	.12		



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4995N, 9821E

HOLE: N-15.
 Core size:

Section: 98 + 21E
 Length: 82.0 (24.99m)
 Elevation: 301.4m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Jan. 1, 1981
 Completed: Jan. 9, 1981
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
		<u>Ore Sections - (Cont'd)</u>											
		1.	11098	2.0 0.6	36.0 10.9	38.0 11.6	.278						
				23.0 7.0	15.0 4.6	38.0 11.6	.462						
			11099	2.0 0.6	38.0 11.6	40.0 12.2	.056						
			11100	3.3 1.0	40.0 12.2	43.3 13.2	.003						
			11101	2.7 0.8	43.3 13.2	46.0 14.0	Tr						
			11102	1.3 0.4	46.0 14.0	47.3 14.4	.002						
			11103	1.1 0.3	47.3 14.4	48.4 14.8	Tr						
				10.4 3.2	38.0 11.6	48.4 14.8	.012						
			11104	2.0 0.5	48.4 14.8	50.4 15.4	.306						
			11105	2.4 0.7	50.4 15.4	52.8 16.1	.03						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4995N, 9821E

HOLE: N-15
 Core size:

Section: 98 + 21E
 Length: 82.0 (24.99m)
 Elevation: 301.4m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Jan. 7, 1981
 Completed: Jan. 9, 1981
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						Au oz/ton		
		<u>Ore Sections - (Cont'd)</u>							
			11006	1.9 0.6	52.8 16.1	54.7 16.7	.177		
			11007	2.0 0.6	54.7 16.7	56.7 17.3	.139		
			11108	2.7 0.8	56.7 17.3	59.4 18.1	.172		
	2.			11.0 3.4	48.4 14.8	59.4 18.1	.160		
	3.			44.4 13.5	15.0 4.6	59.4 18.1	.291		



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4992N, 9806E

HOLE: N-16.
 Core size:

Section: 98 + 06E
 Length: 58.0 (17.67m)
 Elevation: 300.3m
 Azimuth: 0° Dip: -10°

Dip Tests:
 Started: Jan. 11, 1981
 Completed: Jan. 13, 1981
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au	oz/ton					
0.0	15.0	Casing.											
0.0	4.57												
		0.0 - 3.0 - (0.0 - .91) - Quartzite, salmon pink with occasional grains of chlorite. Apparently a boulder.											
		3.0 - 15.5 - (.91 - 4.72) - Gravel and boulders, hole was reported to have run out of rock.											
15.0	21.7	Chlorite breccia, 15% to 20% chlorite as a replacement and in seams in altered reddish quartzite. Sulphides absent.											
4.57	6.61												
		15.5 - 17.0 - (4.72 - 5.18) - Chlorite breccia, 15% chlorite as a replacement and in seams. Sulphides absent.	11115	1.5 .46	15.5 4.72	17.0 5.18	.002						
		17.0 - 19.5 - (5.18 - 5.94) - Lost core.											
		19.5 - 21.7 - (5.94 - 6.61) - Chlorite breccia, 20% chlorite, as a replacement and in small patches. Sulphides rare. Speck of V.G. outside 2nd half.	11116	2.2 .67	19.5 5.94	21.7 6.61	.002						
21.7	30.6	Chlorite breccia, 25% chlorite in patches and seams, local coarse sulphides.											
6.61	9.33												
		21.7 - 23.7 - (6.61 - 7.22) - Chlorite breccia, 25% chlorite in patches and as a replacement. Pyrite blebs increasing to the end of the sample in more chloritic sections. 5% pyrite.	11117	2.0 .61	21.7 6.61	23.7 7.22	.018						
		23.7 - 25.2 - (7.22 - 7.68) - Chlorite breccia, 25% chlorite in patches and as a replacement. Well mineralized with 20% pyrite in coarse blebs, also a little chalco. Vuggy section. Speck of V.G. in vug outside 2nd half at 24.0 (7.3), also V.G. at 24.0 (7.3) and 24.5 (7.5) 1st half surface. Two grains of V.G. outside 1st half at 23.9 (7.3), and two grains in vugs at 24.3 (7.4). Minute grains on both surfaces at 24.6 (7.5).	11118	1.5 .46	23.7 7.22	25.2 7.68	.106						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4992N, 9806E

HOLE: N-16.
 Core size:

Section: 98 + 06E
 Length: 58.0 (17.67m)
 Elevation: 300.3m
 Azimuth: 0° Dip: -10°

Dip Tests:
 Started: Jan. 11, 1981
 Completed: Jan. 13, 1981
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		25.2 - 28.2 - (7.68 - 8.60) - Chlorite breccia, 25% chlorite, mostly as a replacement. Sulphides absent.	11119	3.0 .92	25.2 7.68	28.2 8.60	.007				
		28.2 - 30.6 - (8.60 - 9.33) - Chlorite breccia, 25% chlorite in patches and as a replacement. 3% to 5% sulphides, mostly pyrite in blebs, seams and grains, also a few grains of aspy. Speck of V.G. on 2nd surface at 28.3 (8.6).	11120	2.4 .73	28.2 8.60	30.6 9.33	.084				
30.6 9.33	35.3 10.76	Chlorite zone, 60% chlorite with very heavy aspy to 32.8 (10.0), then minor sulphides.									
		30.6 - 33.0 - (9.33 - 10.06) - Chlorite zone, 60% chlorite with 10% arsenopyrite in grains and coarse aggregates with prismatic xtals up to 1" in length. 32.2 (9.8) to 32.7 (9.9) is 60% aspy. Minor associated pyrite.	11121	2.4 .73	30.6 9.33	33.0 10.06	.122				
		33.0 - 35.3 - (10.06 - 10.76) - Chlorite zone, 60% chlorite with some quartzite breccia fragments. A few local grains of pyrite.	11122	2.3 .70	33.0 10.06	35.3 10.76	.009				
35.3 10.76	44.3 13.50	Chlorite breccia, 25% to 50% chlorite with 2% to 5% disseminated sulphides.									
		35.3 - 38.0 - (10.76 - 11.58) - Chlorite breccia, 40% chlorite with 1% to 2% pyrite in small blebs and seams. Good grain of V.G. outside 2nd half at 36.8 (11.2).	11123	2.7 .82	35.3 10.76	38.0 11.58	.010				
		38.0 - 40.0 - (11.58 - 12.19) - Chlorite breccia, 50% chlorite with 2% disseminated pyrite. A little grey vein quartz.	11124	2.0 .61	38.0 11.58	40.0 12.19	.011				
		40.0 - 42.3 - (12.19 - 12.89) - Chlorite breccia, 40% chlorite with 5% sulphides, coarse blebs of pyrite and po, also some fine sulphides. Large vugs locally.	11125	2.3 .70	40.0 12.19	42.3 12.89	.034				
		42.3 - 44.3 - (12.89 - 13.50) - Chlorite breccia, 25% chlorite with 5% sulphides, mostly po in coarse bleb in the more chloritic sections, some chalco also present. Good grain of V.G. at 44.0 (13.4) on 1st surface.	11126	2.0 .61	42.3 12.89	44.3 13.50	.022				



NORTHGATE EXPLORATION LIMITED

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HOLE: N-16.
 Core size:

Section: 98 + 06E
 Length: 58.0 (17.67m)
 Elevation: 300.3m
 Azimuth: 0° Dip: -10°

Dip Tests:
 Started: Jan. 11, 1981
 Completed: Jan. 13, 1981
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
		<u>Ore Sections</u>											
			11118	1.5 0.5	23.7 7.2	25.2 7.7	.106						
			11119	3.0 0.9	25.2 7.7	28.2 8.6	.007						
			11120	2.4 0.7	28.2 8.6	30.6 9.3	.084						
			11121	2.4 0.7	30.6 9.3	33.0 10.1	.122						
		1.		9.3 2.8	23.7 7.2	33.0 10.1	.072						
		1a.		4.8 1.5	28.2 8.6	33.0 10.1	.103						
			11128	2.1 0.6	45.9 14.0	48.0 14.6	.154						
			11129	2.0 0.6	48.0 14.6	50.0 15.3	.072						
		2.		4.1 1.3	45.9 14.0	50.0 15.3	.114						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4992N, 9792E

HOLE: N-17.
 Core size:

Section: 97 + 91E
 Length: 76.0 (23.2m)
 Elevation: 300.7m
 Azimuth: 0° Dip: -8°

Dip Tests:
 Started: Jan. 15, 1981
 Completed: Jan. 17, 1981
 Logged by: Paul McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
0.0	12.0	Casing.									
0.0	3.67										
12.0	20.0	Mostly ground core with only 2 feet of partly ground material remaining which is chloritized and carbonated quartzite with a few blebs of pyrite. Chlorite zone at 20.0 feet (6.10) ground prior to this depth. 12.0 - 20.0 - (3.67 - 6.10) - Chloritized and carbonated quartzite with the odd bleb of pyrite. 6 feet of ground core included.	11134	8.0 2.43	12.0 3.67	20.0 6.10	.008				
3.67	6.10										
20.0	26.4	Chlorite zone, 70% to 80% chlorite, disseminated magnetite, pyrite and pyrrhotite throughout, locally very coarse blebs and seams. V.G. as noted. 20.0 - 21.3 - (6.10 - 6.49) - Chlorite zone, 80% chlorite, sparse pyrite and a few grains of magnetite. Several fine grains of V.G. at 20.3 (6.2) on 1st surface.	11135	1.3 .39	20.0 6.10	21.3 6.49	2.16				
6.10	8.05										
		21.3 - 23.3 - (6.49 - 7.10) - Chlorite zone, 80% chlorite with 10% sulphides, coarse po with some aspy and fine pyrite throughout. Disseminated magnetite. Grain of V.G. outside 2nd half at 21.6 (6.6), also fine grain outside 1st half at 21.6 ((6.6). Fine grain 1st surface at 21.7 (6.6), and at 22.2 (6.8) and 22.3 ((6.8). Coarse grain V.G. 2nd surface at 22.5 ((6.9) also fine grain outside 2nd half at 22.5 (6.9). 22.4 - 22.6 (6.8 - 6.9) - coarse patch of po and py with some aspy with many grains of V.G. outside and inside 1st half. Several coarse grains outside 2nd half at 22.7 (6.9). Grain 2nd surface at 22.8 (7.0). Outside 1st half grains at 22.5 (6.9) and 22.6 (6.9).	11136	2.0 .61	21.3 6.49	23.3 7.10	1.26				
		23.3 - 25.0 - (7.10 - 7.62) - Chlorite zone, 70% chlorite with 20% sulphides in grains, blebs and patches pyrite, po, disseminated magnetite. Coarse grain of V.G. at 23.6 (7.2) outside 1st half. Fine V.G. both surfaces at 23.8 (7.3), speck of V.G. outside 2nd side at 23.9 (7.3); speck of V.G. in po 1st surface at 24.1 (7.4). Many grains with po at 24.7 (7.5) both surfaces, also several grains of V.G. at 24.9 (7.6) both surfaces.	11137	1.7 .52	23.3 7.10	25.0 7.62	.79				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4992N, 9792E

HOLE: N-17.
 Core size:

Section: 97 + 91E
 Length: 76.0 (23.2m)
 Elevation: 300.7m
 Azimuth: 0° Dip: -8

Dip Tests:
 Started: Jan. 15, 1981
 Completed: Jan. 17, 1981
 Logged by: Paul McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
26.4	31.0	25.0 - 26.4 - (7.62 - 8.05) - Chlorite zone, 70% chlorite with coarse blebs of po, 15% sulphides. 25.3 - 25.5 (7.7 - 7.8) - coarse po blebs with many good grains of V.G. on both surfaces and outside both halves. Disseminated magnetite throughout.	11138	1.4	25.0	26.4	2.65				
8.05	9.45	Chlorite breccia, 50% chlorite with 10% sulphides, V.G. as noted.		.43	7.62	8.05					
		26.4 - 28.4 - (8.05 - 8.66) - Chlorite breccia, 50% chlorite with coarse sulphides, 7% po and some py in small blebs. Speck of V.G. 2nd surface at 26.7 (8.1) and speck on 1st surface at 27.1 (8.3).	11139	2.0	26.4	28.4	.098				
				.61	8.05	8.66					
		28.4 - 31.0 - (8.66 - 9.45) - Chlorite breccia, 50% chlorite with 10% magnetite in coarse grains and aggregates. 7% sulphides, mostly py in blebs. Speck of V.G. 1st surface at 28.7 (8.8), also speck outside 2nd half at 29.2 (8.9).	11140	2.6	28.4	31.0	.206				
				.79	8.66	9.45					
31.0	51.0	Chlorite breccia, 10% to 20% chlorite as a replacement, and in seams and patches.									
9.45	15.54										
		31.0 - 32.7 - (9.45 - 9.97) - Chlorite breccia, 10% chlorite as a replacement and in seams and small patches. A little disseminated py and magnetite with the chlorite patches. 1/2" seam of pyrite included.	11141	1.7	31.0	32.7	.057				
				.52	9.45	9.97					
		32.7 - 34.0 - (9.97 - 10.36) - Chlorite breccia, 10% chlorite in seams and patches and as a replacement. A few grains of py and magnetite.	11142	1.3	32.7	34.0	.098				
				.39	9.97	10.36					
		34.0 - 36.0 - (10.36 - 10.97) - Chlorite breccia, 15% chlorite in seams and small patches, and as a replacement. Seams and small blebs of pyrite, 5% pyrite. Two specks of V.G. outside 2nd half at 34.3 (10.5).	11143	2.0	34.0	36.0	.084				
				.61	10.36	10.97					
		36.0 - 39.0 - (10.97 - 11.89) - Chlorite breccia, 15% chlorite as a replacement and in seams and patches in altered reddish quartzite. Rare sulphides.	11144	3.0	36.0	39.0	.001				
				.92	10.97	11.89					



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4992N, 9792E

HOLE: N-17.
 Core size:

Section: 97 + 91E
 Length: 76.0 (23.2m)
 Elevation: 300.7m
 Azimuth: 0° Dip: -8°

Dip Tests:
 Started: Jan. 15, 1981
 Completed: Jan. 17, 1981
 Logged by: Paul McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		39.0 - 42.0 - (11.89 - 12.80) - Chloritized quartzite, 10% chlorite in altered reddish quartzite which is well carbonatized with narrow stringers and small patches of whitish carbonate. Sulphides absent.	11145	3.0 .91	39.0 11.89	42.0 12.80	Tr				
		42.0 - 45.0 - (12.80 - 13.72) - Chloritized quartzite, 10% chlorite as a replacement and in very narrow seams. Rare grains of pyrite.	11146	3.0 .91	42.0 12.80	45.0 13.72	.002				
		45.0 - 47.0 - (13.72 - 14.33) - Chlorite breccia, 10% chlorite in frequent narrow seams and as a replacement. Occasional grain of py and a few small grains of aspy.	11147	2.0 .61	45.0 13.72	47.0 14.33	Tr				
		47.0 - 49.0 - (14.33 - 14.94) - Chlorite breccia, well brecciated with 15% chlorite in seams and patches, and as a replacement. 1% pyrite throughout in fine grains and small blebs.	11148	2.0 .61	47.0 14.33	49.0 14.94	.008				
		49.0 - 51.0 - (14.94 - 15.54) - Chlorite breccia, 15% chlorite in seams and patches and as a replacement. Well brecciated with 5% sulphides, mostly po with some py in small blebs, narrow seams, and grains.	11149	2.0 .61	49.0 14.94	51.0 15.54	.002				
		51.0 - 53.1 - (15.54 - 16.18) - Chlorite breccia, 5% chlorite in seam and as a replacement. 10% sulphides po and py mostly in coarse patches and seams.	11150	2.1 .64	51.0 15.54	53.1 16.18	.002				
51.0 15.54	68.0 20.73	Chlorite breccia, weakly chloritic with 5% to 10% chlorite, mostly as a replacement and in narrow seams. This section is well mineralized with 5% to 10% sulphides.									
		53.1 - 54.9 - (16.18 - 16.73) - Chlorite breccia, 7% chlorite in seam and patches, well mineralized with 10% sulphides in coarse patches, py po, and a little chalco.	11151	1.8 .55	53.1 16.18	54.9 16.73	.001				
		54.9 - 57.0 - (16.73 - 17.37) - Carbonate breccia, weakly chloritic with frequent small carbonate rhombs in reddish altered quartzite. 3% sulphides, mostly in blebs of py chalco, and local arsenopyrite.	11152	2.1 .64	54.9 16.73	57.0 17.37	.001				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4992N, 9792E

HOLE: N-17.
 Core size:

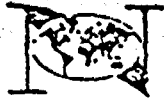
Section: 97 + 91E
 Length: 76.0 (23.2m)
 Elevation: 300.7m
 Azimuth: 0° Dip: -8°

Dip Tests:
 Started: Jan. 15, 1981
 Completed: Jan. 17, 1981
 Logged by: Paul McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
		57.0 - 59.0 - (17.37 - 17.98) - Chlorite breccia, 10% chlorite in altered carbonated quartzite. Carbonated rhombs and stringers throughout. 10% sulphides, py and some chalco in seams, blebs and cubes, also a few grains of aspy. 2 grains of V.G. in pyrite xtal at 58.7 (17.9).	11153	2.0 .61	57.0 17.37	59.0 17.98	.002				
		59.0 - 61.0 - (17.98 - 18.59) - Altered quartzite well carbonated with many small carbonated rhombs and grains, weakly chloritic. 10% py in seams and blebs with a little associated chalco. A few grains of aspy.	11154	2.0 .61	59.0 17.98	61.0 18.59	.002				
		61.0 - 63.0 - (18.59 - 19.20) - Chloritized quartzite, less carbonated than previous sample. 7% chlorite as a replacement and in narrow seams. 10% pyrite with a little chalco and some fine po, in seams blebs and small xtals.	11155	2.0 .61	61.0 18.59	63.0 19.20	.001				
		63.0 - 65.5 - (19.20 - 19.96) - Chlorite breccia, 7% chlorite in seams and as a replacement. 5% fine po with some py and a little chalco disseminated and in seams.	11156	2.5 .76	63.0 19.20	65.5 19.96	.001				
		65.5 - 68.0 - (19.96 - 20.73) - Chlorite breccia, 7% chlorite in seams and as a replacement. 3% to 5% disseminated po and py. Local carbonated stringers.	11157	2.5 .76	65.5 19.96	68.0 20.73	.001				
68.0 20.73	76.0 23.16	Interbedded greywacke and quartzite with greywacke beds replaced by fine chlorite. Bedding at 80° to the core. 3% po with a little pyrite and chalco. Somewhat brecciated with the best sulphides in the more brecciated sections.									
		68.0 - 71.0 - (20.73 - 21.64) - Interbedded quartzite and greywacke with 10% chlorite in greywacke beds, as a fine replacement. 3% fine po disseminated and in seams. A little py also present, somewhat brecciated.	11158	3.0 .91	68.0 20.73	71.0 21.64	Tr				
		71.0 - 73.5 - (21.64 - 22.40) - Interbedded quartzite and greywacke somewhat brecciated with 5% chlorite replacement. 3% to 5% po with a little py and chalco.	11159	2.5 .76	71.0 21.64	73.5 22.40	.001				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4992N, 9792E

HOLE: N-17
 Core size:

Section: 97 + 91E
 Length: 76.0 (23.2m)
 Elevation: 300.7m
 Azimuth: 0° Dip: -8°

Dip Tests:
 Started: Jan. 15, 1981
 Completed: Jan. 17, 1981
 Logged by: Paul McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
		<u>Ore Sections</u>											
			11135	1.3 0.4	20.0 6.1	21.3 6.5	2.16						
			11136	2.0 0.6	21.3 6.5	23.3 7.1	1.26						
			11137	1.7 0.5	23.3 7.1	25.0 7.6	0.79						
			11138	1.4 0.4	25.0 7.6	26.4 8.1	2.65						
			11139	2.0 0.6	26.4 8.1	28.4 8.7	.098						
			11140	2.6 0.8	28.4 8.7	31.0 9.5	.206						
			11141	1.7 0.5	31.0 9.5	32.7 10.0	.057						
			11142	1.3 0.4	32.7 10.0	34.0 10.4	.098						
			11143	2.0 0.6	34.0 10.4	36.0 11.0	.084						
		1.		16.0 5.0	20.0 6.1	36.0 11.0	.719						



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Elevation: 300.7m
Azimuth: 0° Dip: -8°

Dip Tests:
Started: Jan. 15, 1981
Completed: Jan. 17, 1981
Logged by: Paul McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
		<u>Ore Sections - (Cont'd)</u>											
		1a.		11.0 3.4	20.0 6.1	31.0 9.5	1.010						
		1b.		6.4 2.0	20.0 6.1	26.4 8.1	1.622						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4998N, 9777E

HOLE: N-18
 Core size:

Section: 97 + 61E
 Length: 57.0 (17.37m)
 Elevation: 303.3m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Jan. 18, 1981
 Completed: Jan. 20, 1981
 Logged by: Paul McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
0.0	2.6	Chlorite breccia, 40% chlorite in patches. Rusty weathered, 20% pyrite in vuggy patches. Some brownish weathered carbonate areas, some lost core. 0.0 - 2.6 - (0.0 - .79) - Chlorite breccia, 40% chlorite with 20% pyrite in coarse vuggy patches. Some carbonatized sections. Some lost core in this sample.	11161	2.6 .79	0.0 0.0	2.6 .79	Tr				
0.0	.79										
2.6	11.0	Chlorite breccia, 20% chlorite as a replacement and in narrow seams. 2.6 - 4.0 - (.79 - 1.22) - Chlorite breccia, 20% chlorite mostly as a replacement, and in narrow seams. A few rare blebs of pyrite with the chlorite seams.	11162	1.4 .43	2.6 .79	4.0 1.22	Tr				
.79	3.35										
		4.0 - 6.5 - (1.22 - 1.98) - Chlorite breccia, 20% chlorite in seams and as a replacement. 5% sulphides, po with some py in coarse and fine blebs and grains.	11163	2.5 .76	4.0 1.22	6.5 1.98	Tr				
		6.5 - 8.5 - (1.98 - 2.59) - Chlorite breccia, 30% chlorite as a replacement and in patches. Locally some blebs of pyrite, also fine and disseminated py. Speck of V.G. on 1st surface at 7.5 (2.3) in py bleb. 5% sulphides, locally coarse py blebs, also fine po and py.	11164	2.0 .61	6.5 1.98	8.5 2.59	.03				
		8.5 - 11.0 - (2.59 - 3.35) - Chlorite breccia, 15% chlorite as a replacement and in narrow seams. Sulphides absent.	11165	2.5 .76	8.5 2.59	11.0 3.35	Tr				
11.0	30.0	Chlorite breccia, 10% to 20% chlorite as a replacement and in seams. Locally well mineralized sections. 11.0 - 13.0 - (3.35 - 3.96) - Chlorite breccia, 10% chlorite as a replacement and in narrow seams. 5% pyrite in blebs and cubes up to 1/2". Py with the chlorite in the more brecciated sections. A few irregular white carbonate stringers.	11166	2.0 .61	11.0 3.35	13.0 3.96	Tr				
3.35	9.14										



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4998N, 9777E

HOLE: N-18.
 Core size:

Section: 97 + 61E
 Length: 57.0 (17.37m)
 Elevation: 303.3m
 Azimuth: 0° Dip: 0°

Dip Tests:
 Started: Jan. 18, 1981
 Completed: Jan. 20, 1981
 Logged by: Paul McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		33.8 - 35.7 - (10.30 - 10.88) - Chlorite breccia, 20% chlorite as a replacement and in patches. Well mineralized with 10% sulphides, po in seams and patches, also a little pyrite and minor chalco. Speck of V.G. at 34.0 (10.4) on outside of 2nd half.	11175	1.9 .58	33.8 10.30	35.7 10.88	.03				
		35.7 - 38.0 - (10.88 - 11.58) - Chlorite breccia, 30% chlorite as a replacement and in patches and seams. 5% sulphides mostly po with a little pyrite in fine grains.	11176	2.3 .70	35.7 10.88	38.0 11.58	Tr				
		38.0 - 39.8 - (11.58 - 12.13) - Chlorite breccia, 30% chlorite as a replacement and in seams and patches. The odd grain of py and po.	11177	1.8 .55	38.0 11.58	39.8 12.13	Tr				
		39.8 - 42.0 - (12.13 - 12.80) - Chlorite breccia, 30% chlorite in seams and patches and as a replacement. Vuggy section with 3% sulphides some coarse blebs and grains of py and pyrrhotite.	11178	2.2 .67	39.8 12.13	42.0 12.80	Tr				
		42.0 - 44.0 - (12.80 - 13.41) - Chlorite breccia, 25% chlorite mostly as a replacement. 3% to 5% disseminated sulphides throughout, mostly py.	11179	2.0 .61	42.0 12.80	44.0 13.41	Tr				
44.0 13.41	50.9 15.51	Chlorite breccia, weakly chloritic with 10% chlorite mostly as a replacement. Minor disseminated sulphides.									
		44.0 - 47.0 - (13.41 - 14.32) - Chlorite breccia, 10% chlorite as a replacement and in seams. 2% disseminated pyrite throughout.	11180	3.0 .91	44.0 13.41	47.0 14.32	Tr				
		47.0 - 49.4 - (14.32 - 15.06) - Chlorite breccia, 7% chlorite as a replacement and in narrow seams. The odd grain of pyrite.	11181	2.4 .74	47.0 14.32	49.4 15.06	Tr				
		49.4 - 50.9 - (15.06 - 15.51) - Chlorite breccia, 7% chlorite as a replacement, rare grain of pyrite.	11182	1.5 .46	49.4 15.06	50.9 15.51	Tr				



NORTHGATE EXPLORATION LIMITED

DRILL LOG

Drill Contractor - N. Morissette

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 49S3N, 9762E

HOLE: N-19.
 Core size:

Section: 97 + 61E
 Length: 56.6 (17.3)
 Elevation: 304.2m
 Azimuth: 0° Dip: -5°

Dip Tests:
 Started: Jan. 21, 1981
 Completed: Jan. 22, 1981
 Logged by: P. McLean

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
0.0	1.6	Chlorite zone, 60% chlorite with 10% coarse pyrite in blebs.	11187	1.6 .49	0.0 0.0	1.6 .49	.086				
0.0	.49										
1.6	4.8	Chlorite breccia, 40% chlorite in patches and as a replacement.	11188	1.6 .49	1.6 .49	3.2 .98	.092				
.49	1.46										
1.6	3.2	1.6 - 3.2 - (.49 - .98) - Chlorite breccia, 40% chlorite in patches, seams and as a replacement. 10% pyrite in blebs with the chlorite. Also 10% magnetite in blebs and disseminated throughout. A few grains of aspy.	11189	1.6 .49	3.2 .98	4.8 1.46	.038				
.49	1.46										
3.2	4.8	3.2 - 4.8 - (.98 - 1.46) - Chlorite breccia, 30% chlorite in seams and as a replacement. 5% sulphides, py and po and a few grains of aspy. Also a soft silvery mineral at 3.4 (1.1) and 3.6 (1.1) outside 2nd half, could be silver or a telluride? Disseminated magnetite throughout.	11190	2.0 .61	4.8 1.46	6.8 2.07	.126				
1.6	1.46										
4.8	26.0	Chlorite zone, 50% to 70% chlorite, well mineralized throughout with coarse blebs and seams of py and po.	11191	2.2 .67	6.8 2.07	9.0 2.74	.092				
1.46	7.92										
4.8	6.8	4.8 - 6.8 - (1.46 - 2.07) - Chlorite zone, 70% chlorite with 10% sulphides in blebs and disseminated. Mostly py with a few grains of aspy. Some disseminated magnetite, local grey vein quartz.	11192	2.0 .61	9.0 2.74	11.0 3.35	.03				
1.46	7.92										
6.8	9.0	6.8 - 9.0 - (2.07 - 2.74) - Chlorite zone, 60% chlorite with 7% sulphides, py and some po and a few local grains of aspy, intergrown with pyrite. A few grains of magnetite. A few vugs noted. Some ground core in this sample.	11192	2.0 .61	9.0 2.74	11.0 3.35	.03				
1.46	7.92										
9.0	11.0	9.0 - 11.0 - (2.74 - 3.35) - Chlorite zone, 50% chlorite with 7% sulphides, mostly py in blebs and seams, locally some po and a little chalco. Minor magnetite.	11192	2.0 .61	9.0 2.74	11.0 3.35	.03				
1.46	7.92										



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 4999N, 9762E

HOLE: N-19
 Core size:

Section: 97 + 61E
 Length: 56.6 (17.3m)
 Elevation: 304.2m
 Azimuth: 0° Dip: -5°

Dip Tests:
 Started: Jan. 21, 1981
 Completed: Jan. 22, 1981
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
		26.0 - 29.0 - (7.92 - 8.84) - Chlorite breccia, 20% chlorite as a replacement and in narrow seams and patches. Sulphides absent.	11200	3.0 0.9	26.0 7.92	29.0 8.84	Tr				
		29.0 - 32.0 - (8.84 - 9.75) - Chlorite breccia, 10% chlorite as a replacement and in seams and small patches. Sulphides absent.	11201	3.0 0.9	29.0 8.84	32.0 9.75	Tr				
		32.0 - 35.0 - (9.75 - 10.67) - Chlorite breccia, 20% chlorite as a replacement and in seams and patches 3% sulphides, py and locally coarse po patches in the more brecciated sections.	11202	3.0 0.9	32.0 9.75	35.0 10.67	Tr				
		35.0 - 38.0 - (10.67 - 11.58) - Chlorite breccia, 15% chlorite mostly in narrow seams and as a replacement. Seams are usually mineralized with sulphides. Local blebs and grains of pyrite, also fine po. 3% sulphides. A little white carbonate with the chlorite seams.	11203	3.0 0.9	35.0 10.67	38.0 11.58	Tr				
		38.0 - 41.0 - (11.58 - 12.50) - Chlorite breccia, 10% chlorite in narrow seams, and as a replacement. White carbonate with the seams. Grains and blebs of py and po with chlorite seams. 1% sulphides.	11204	3.0 0.9	38.0 11.58	41.0 12.50	Tr				
		41.0 - 44.0 - (12.50 - 13.41) - Chlorite breccia, 10% chlorite in narrow seams, and as a replacement. A few disseminated sulphides throughout.	11205	3.0 0.9	41.0 12.50	44.0 13.41	Tr				
		44.0 - 46.0 - (13.41 - 14.02) - Chlorite breccia, 10% chlorite in seams and as a replacement. Local blebs and grains of py and po with chlorite seams. Grain of V.G. with a bleb of pyrite at 44.9 (13.7) on 1st surface.	11206	2.0 0.6	44.0 13.41	46.0 14.02	Tr				
46.0 14.02	56.6 17.25	Some bedding, contorted from 45° to 65° to the core.									
		46.0 - 49.0 - (14.02 - 14.93) - Chlorite breccia, 10% chlorite in seams and as a replacement. Locally some white carbonate. A few grains and blebs of py and po.	11207	3.0 0.9	46.0 14.02	49.0 14.93	Tr				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont;
 Co-ordinates: 4999N, 9762E

HOLE: N-19
 Core size:

Section: 97 + 61E
 Length: 56.6 (17.3m)
 Elevation: 304.2m
 Azimuth: 0 Dip: -5

Dip Tests:
 Started: Jan. 21, 1981
 Completed: Jan. 22, 1981
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		<u>Ore Sections</u>	11187	1.6 0.5	0.0 0.0	1.6 0.5	.086				
			11188	1.6 0.5	1.6 0.5	3.2 1.0	.092				
			11189	1.6 0.5	3.2 1.0	4.8 1.5	.038				
		1.	11190	2.0 0.6	4.8 1.5	6.8 2.1	.126				
			11191	2.2 0.7	6.8 2.1	9.0 2.8	.092				
		1a.		9.0 2.8	0.0 0.0	9.0 2.8	.089				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5294.0N, 9582.0E

HOLE: N-20
 Core size:

Section: 6+50NW, 6+50NE
 Length: 427.0 (130.1m)
 Elevation: 302.6m
 Azimuth: S65° W Dip: -45°

Dip Tests:
 Started: Oct. 6/80
 Completed: Oct. 9/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au						
152.0 46.4	177.0 54.0	Carbonate breccia, quartzite contains sections with grey carbonate stringers.											
177.0 54.0	269.0 82.0	Quartzite, light to dark grey. Locally very blocky and broken up core. 205.0-206.0 - Bedded section at 45° to the core.											
269.0 82.0	278.0 84.7	Chlorite breccia zone, 20% to 70% chlorite in altered pink quartzite. <u>Economic</u> 269.0-271.0 - Chlorite breccia, 50% chlorite with some blebs of pyrite in the more chloritic sections. 271.0-273.0 - Chlorite breccia, 20% chlorite in patches and as a replacement. Good sulphides with the more chloritic sections, also a little vein quartz. 273.0-277.0 - Chlorite zone, 70% chlorite with py in small blebs. <u>Economic</u> 273.0-275.0 - Chlorite zone, 75% chlorite mostly well mineralized with pyrite in blebs and seams. A little chalco. noted. Fine speck of V.G. at 274.0. 275.0-277.0 - Chlorite zone, 70% chlorite. Fine pyrite in blebs and grains throughout.	9954 9955	2.0 0.6 2.0 0.6	269.0 82.0 271.0 82.5	271.0 82.6 273.0 83.2	.005 .01						
278.0	302.3 92.1	Quartzite, pink to grey, somewhat altered the odd grain of pyrite.	9956 9957	2.0 0.6 2.0 0.6	273.0 83.2 275.0 83.8	275.0 83.8 277.0 84.4	.04 .01 .02 .01						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5294.5N, 9583.2E

HOLE: N-21
 Core size:

Section: 6+50NW, 6+50NE
 Length: 401.0 (122.2m)
 Elevation: 302.7m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 9/80
 Completed: Oct. 13/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au						
74.7 22.8	79.0 24.2	Quartzite; grey to reddish, highly altered broken blocky core.											
79.0 24.2	92.0 28.0	Fault zone, quartzite completely altered hematitic and brecciated.											
		80.0-86.0 - (24.4 - 26.2) - Ground core, lost water.											
92.0 28.0	165.0 50.3	Quartzite, pinkish grey somewhat carbonatized throughout. Local short sections of carbonate breccia. Broken blocky core.											
		94.0-97.0 - (28.7 - 29.6) - Ground core.											
		149.5-151.0 - (45.6 - 46.0) - Lost core.											
165.0 50.3	172.5 52.4	Chlorite breccia 5% to 20% chlorite as a replacement and in narrow seams and patches.											
		165.0-169.2 - Chlorite breccia, 5% chlorite as a replacement, and in seams and patches. Rare grains of pyrite and the odd narrow pyrite seam.	9972	4.2 1.3	165.0 50.3	169.2 51.6	.002						
		169.2-172.5 - Chlorite breccia, 5% chlorite mostly as a replacement, the odd chloritic seam. Sulphides absent.	9973	3.3 1.0	169.2 51.6	172.5 52.6	.005						
172.5 52.4	181.8 55.2	Chlorite zone 60% to 80% chlorite, mostly well mineralized with pyrite, some of which is coarse. V.G. as noted.											
		172.5-174.6 - Chlorite zone, 70% chlorite with bleb and grains of pyrite common throughout.	9974	2.1 0.6	172.5 52.6	174.6 53.2	.03 .01						
		174.6-177.0 - Chlorite zone, 80% chlorite with blebs and grains of pyrite and po throughout. Many good grains of V.G. at 176.5	9975	2.4 0.7	174.6 53.2	177.0 53.9	.14 .04						



NORTHGATE EXPLORATION LIMITED

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 Co-ordinates: 5294.5N, 9583.2E

HOLE: N-21
 Core size:

Section: 6+50NW, 6+50NE
 Length: 401.0 (122.2m)
 Elevation: 302.7m
 Azimuth: - Dip: -90

Dip Tests:
 Started: Oct. 9/80
 Completed: Oct. 13/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette.

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au				
		177.0-179.0 - Chlorite zone, 80% chlorite with 15% pyrite in coarse blebs up to 3/4". Several fine grains of V.G. at 177.2, coarse grain at 177.8, several grains on slip at 178.8.	9976	2.0 0.5	177.0 53.9	179.0 54.6	.13 .04				
		179.0-181.8 - Chlorite zone, 60% chlorite with occasional grains of pyrite and po. Note: Badly ground and run over core estimate 1 foot of core missing.	9977	2.8 0.8	179.0 54.6	181.8 55.4	.01				
181.8 55.2	217.0 66.1	Carbonate breccia, typical footwall, salmon pink quartzite with white carbonate stringers and patches. 216.7-217.0 - (65.9 - 66.1) - Coarse pyrite in carbonate stringer.									
217.0 66.1	269.5 82.0	Quartzite, grey to pink, only the odd section with carbonate stringers. 269.5 - (82.0) - Bedding at 65° to the core.									
269.5 82.0	285.0 86.9	Carbonate breccia, irregular carbonate stringers in salmon pink quartzite. Several narrow unbrecciated greywacke beds in this section.									
285.0 86.9	291.8 88.9	Chlorite breccia, 10% to 50% chlorite minor sulphides. 285.0-288.5 - Chlorite breccia, 50% chlorite in seams and patches, and as a replacement. Some white carbonate also present. Some fine pyrite in the more chloritic sections in grains and seams. Speck of V.G. in white carbonate at 288.1.	9978	3.5 1.1	285.0 86.9	288.5 87.9					
		288.5-291.8 - Chlorite breccia, 10% chlorite in the odd seam and patch, mostly as a replacement.	9979	3.3 1.0	288.5 87.9	291.8 88.9	Ni1				



NORTHGATE EXPLORATION LIMITED

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 Co-ordinates: 5294.5N, 9583.2E

HOLE: N-21
 Core size:

Section: 6+50NW, 6+50NE
 Length: 401.0 (122.2m)
 Elevation: 302.7m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 9/80
 Completed: Oct. 13/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au						
291.8 88.9	298.0 90.8	Quartzite, weakly chloritized with 5% chlorite as a replacement. Minor sulphides.											
298.0 90.8	300.0 91.4	Chlorite breccia, 10% chlorite.											
		<u>Economic</u> 298.0-300.0 - Chlorite breccia, 10% chlorite in seams and patches, pyrite absent.	9980	2.0 0.5	298.0 88.9	300.0 91.4	.002						
300.0 91.4	302.5 92.2	Chlorite zone, 80% chlorite with fine pyrite throughout.											
		300.0-302.5 - Chlorite zone, 80% chlorite with some grey vein quartz and a little white carbonate. Well mineralized with pyrite and pyrrhotite and minor chalcopyrite.	9981	2.5 0.8	300.0 91.4	302.5 92.2	.005						
302.5 92.2	338.3 103.0	Chlorite breccia 10% to 50% chlorite in pink quartzite.											
		302.5-305.0 - Chlorite breccia and chlorite zone 25% chlorite, sulphides absent.	9982	2.5 0.8	302.5 92.2	305.0 93.0	.002						
		305.0-307.3 - Chlorite breccia, 5% chlorite as a replacement, sulphides absent.	9983	2.3 0.7	305.0 93.0	307.3 93.7	Nil						
		307.3-309.0 - Chlorite breccia, includes 8" of 80% chlorite with dissem. po. Some vein quartz and a little white carbonate.	9984	1.7 0.5	307.3 93.7	309.0 94.2	Nil						
		309.0-312.5 - Chlorite breccia, 10% chlorite as a replacement. Includes 4" of 25% chlorite. Some carbonate stringers. Sulphides absent.	9985	3.5 1.0	309.0 94.2	312.5 95.2	Nil						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
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 Co-ordinates: 5294.5N, 9583.2E

HOLE: N-21
 Core size:

Section: 6+50NW, 6+50NE
 Length: 401.0 (122.2m)
 Elevation: 302.7m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 9/80
 Completed: Oct. 13/80
 Logged by: P. McLean

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au				
338.3 103.1	343.5 104.7	333.0-334.8 - Quartz carbonate vein, white carbonate with 60% vein quartz. A few small chloritic inclusions. Some coarse pyrite in seams in the first 2", otherwise not mineralized.	9994	1.8 0.5	333.0 101.5	334.8 102.0	.002				
		334.8-336.4 - Chlorite zone, 50% chloritic patches and seams. Seams of py and po fairly common.	9995	1.6 0.5	334.8 102.0	336.4 102.5	Nil				
		336.4-338.3 - (102.5 - 103.1) - Quartz carbonate vein.									
		336.4-338.3 - Quartz carbonate vein, 50% white quartz, 50% grey carbonate. Sulphides absent.	9996	1.9 0.6	336.4 102.5	338.3 103.1	Nil				
		Quartzite, dark grey, relatively unaltered.									
		338.3-340.5 - Quartzite, somewhat chloritic no sulphides noted.	9997	2.2 0.7	338.3 103.1	340.5 103.8	Nil				
		340.5-342.8 - Quartzite, dark grey, minor carbonate.	9998	2.3 0.7	340.5 103.8	342.8 104.5	Nil				
343.5 104.7	401.0 122.2	342.8-345.0 - Quartzite and carbonate breccia, some chlorite in seams and as a replacement. Locally py and po in seams and grains.	9999	2.2 0.7	342.8 104.5	345.0 105.2	.005				
		345.0-347.6 - Chlorite-carbonate breccia, 10% chlorite which is well developed with grains and seams of pyrite.	10000	2.6 0.7	345.0 105.2	347.6 105.9	.005				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
Location: Scadding Twp., Ont.
Co-ordinates: 5294.5N, 9583.2E

HOLE: N-21
Core size:

DRILL LOG

Drill Contractor - N. Morissette

Section: 6+50NW, 6+50NE
Length: 401.0 (122.2m)
Elevation: 302.7m
Azimuth: - Dip: -90°

Dip Tests:
Started: Oct. 9/80
Completed: Oct. 13/80.
Logged by: P. McLean

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton	ft/oz.					
		<u>Ore Sections</u>											
		1.	9975	2.4 0.7	174.6 53.3	177.0 54.0	0.14 .04	0.336 0.1					
			9976	2.0 0.6	177.0 54.0	179.0 54.6	0.13 .04	0.260 .08					
				4.4 1.3	174.6 53.3	179.0 54.6	0.135 .04	.596 .2					



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5269.2N, 9494.8E

HOLE: N-22
 Core size:

Section: 7+00 NW
 Length: 251' (76.6m)
 Elevation: 305.0m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 14/80
 Completed: Oct. 16/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au				
87.0	89.1	Chlorite Zone - Chlorite, carbonate bx. with about 50% chlorite and 40% carbonate. Visible gold at 87.6. Plus 5% pyrite as irregular blebs and disseminations in both carbonate and chlorite.									
26.5	27.2										
		87.0-88.0 - Chlorite, carbonate bx. 70% chlorite - 25% carbonate with 1 mm. fleck of free gold at 87.6'. 5% pyrite as irregular blebs and dissemination.	10307	1.0	87.0	88.0	0.22				
				0.3	26.5	26.8	.07				
		88.0-89.1 - Chlorite, carbonate bx. 65% carbonate, 30% chlorite. 5% py, po as irregular blebs, mostly in carbonate. No V.G. obs.	10308	1.1	88.0	89.1	0.07				
				0.4	26.8	27.2	.02				
89.1	92.6	Quartzite, f.g. band, greenish grey to banded buff, moderately jointed. First and last 8 inches chlorite rich. Minor diss. carbonate. Rare minute flecks of py.	10309	3.5	89.1	92.6	0.005				
27.2	28.2										
92.6	94.0	Chlorite Zone - chlorite carbonate bx. About 30% chlorite, 40% carbonate, remainder quartzite. Minor flecks and occasional small blebs of py and po.	10310	1.4	92.6	94.0	0.005				
28.2	28.7										
94.0	111.2	Quartzite, light grey to buff coloured, vaguely banded with occasional remnant bedding planes, 65° to 70° to core. Locally zones of brecciation healed with carbonate.									
28.7	33.9										
111.2	113.2	Chloritic Zone - 10 to 15% diss. carbonate, mostly as trains of subhedral xstals along foliation. 20% chlorite and 2% pyrite as small blebs and flecks.	10311	2.0	111.2	113.2	0.002				
33.9	34.5										
113.2	119.6	Quartzite, f.g. grey to patchy light brown. Moderately jointed at random angles, well bedded 70° to core @ 116'.									
34.5	36.5										
119.6	139.0	Chlorite Zone - 40 to 80% chlorite with local light grey patches of non-chloritized quartzite. Occasional flecks of po, py.									
36.5	42.3										



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5269.2N, 9494.8E

HOLE: N-22
 Core size:

Section: 7+00 NW
 Length: 251' (76.6m)
 Elevation: 305.0m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 14/80
 Completed: Oct. 16/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au						
		<u>Economics</u>											
		119.5-124.0 - Chloritic quartzite, 40% chlorite. Rare flecks and streaks of po, py.	10313	4.4 1.4	119.6 36.4	124.0 37.8	0.005						
		124.0-129.0 - 80% chlorite replacement. Weakly brecciated locally. Feebly mineralized py, po.	10314	4.0 1.5	124.0 37.8	129.0 39.3	0.005						
		129.0-131.8 - Weakly brecciated first 8" with 30% chlorite. Remainder 60% chlorite. Feebly mineralized po, py.	10315	2.8 0.9	129.0 39.3	131.8 40.2	0.002						
		131.8-135.0 - Weakly brecciated first 9 inches with 15% chlorite. Remainder 50% chlorite. Rare flecks po, py.	10316	3.2 0.9	131.8 40.2	135.0 41.1	0.005						
		135.0-139.0 - 40% chlorite decreasing to 10% in last 4 inches. Local brownish discoloration. Mineralized very weakly po, py.	10317	4.0 1.3	135.0 41.1	139.0 42.3	0.002						
139.0 42.3	149.0 45.4	Quartzite, buff coloured to light grey, some orange banding. Locally fractured and brecciated with carbonate cement. Occasional flecks of py. 40% chlorite 141.0 to 141.7.											
		<u>Economics</u>											
		139.0-141.0 - Quartzite, buff coloured, essentially barren.	10318	2.0 0.7	139.0 42.3	141.0 43.0	Nil						
		141.0-141.7 - 40% chlorite replacement. A few flecks of po.	10319	0.7 0.2	141.0 43.0	141.7 43.2	0.005						
		141.7-145.0 - Quartzite, buff coloured, some orange banding. Well brecciated and carbonated. Very rare flecks of po.	10320	3.3 1.0	141.7 43.2	145.0 44.2	Nil						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5269.2N, 9494.8E

HOLE: N-22
 Core size:

Section: 7+00 NW
 Length: 251' (76.6m)
 Elevation: 305.0m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 14/80
 Completed: Oct. 16/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS					
from	to						Au					
149.0 45.4	169.0 51.5	145.0-149.0 - Quartzite, lightly fractured, some orange banding. Essentially barren.	10321	4.0 1.2	145.0 44.2	149.0 45.4	0.002					
		Chlorite Zone - f.g. dark green with local zones of chlorite bx. Chlorite content from 20 to 80%. Very weakly mineralized po, py.										
		<u>Economics</u>										
		149.0-152.0 - Chlorite breccia. 40% chlorite. Scattered clusters of po flecks.	10322	3.0 0.9	149.0 45.4	152.0 46.3	0.07 .02					
		152.0-155.0 - Chlorite breccia as above.	10323	3.0 0.9	152.0 46.3	155.0 47.2	0.005					
		155.0-157.5 - Chlorite breccia. 60% chlorite. Rare flecks po, py.	10324	2.5 0.8	155.0 47.2	157.5 48.0	0.03 .01					
		157.5-160.5 - 70% chlorite, weakly brecciated locally. Mostly massive even coloured dark green. Rare flecks po, py.	10325	3.0 0.9	157.5 48.0	160.5 48.9	0.03 .01					
		160.5-163.0 - Chlorite breccia. Weakly brecciated, 40% chlorite. Essentially barren.	10326	2.5 0.8	160.5 48.9	163.0 49.7	0.005					
		163.0-166.0 - 60% chlorite. Local patches weakly brecciated. Essentially barren.	10327	3.0 0.9	163.0 49.7	166.0 50.6	0.01					
		166.0-169.0 - Chlorite breccia, 20% chlorite. Rare flecks of po.	10328	3.0 0.9	166.0 50.6	169.0 51.5	0.005					



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5269.2N, 9494.8E

HOLE: N-22
 Core size:

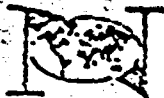
Section: 7+00 NW
 Length: 251' (76.6m)
 Elevation: 305.0m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: Oct. 14/80
 Completed: Oct. 16/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to						Au			
169.0 51.5	229.3 69.9	Quartzite, f.g. grey to buff coloured with patches of weak chloritization and spotty brecciation healed with carbonate. Quartz/carbonate vein 186.2 to 186.6. Occasional flecks of po. 3/4" bleb of py at 306.5 and 1/4" band of py @ 208.1. Minor chlorite veining 226.0 to 228.0. <u>Economics</u> 169.0-170.0 - Quartzite, massive, buff to grey. Essentially barren. 180.3-181.3 - Weakly chloritized quartzite, 10% chlorite. A few flecks of py. 181.3-182.3 - Darker green than above, about 40% chlorite. Rare flecks of po. 182.3-183.2 - Weakly chloritized quartzite, 10% chlorite. A few small clusters of po, py. 183.2-184.9 - Chlorite breccia with 3" quartz/carbonate vein. About 1% po, py as small grains along breccia fragment margins. 184.9-185.9 - Quartzite, 5% chlorite, essentially barren. 206.2-207.2 - Quartzite, and carbonate bx. 3/4" lump of py. at 206.8. 207.2-208.5 - Quartzite, pale grey with 1/4" band of py. No chlorite.								
			10329	1.0 0.3	169.0 51.5	170.0 51.8	Nil			
			10330	1.0 0.3	180.3 55.3	181.3 55.3	Nil			
			10331	1.0 0.3	181.3 55.3	182.3 55.6	0.002			
			10332	1.0 0.3	182.3 55.6	183.3 55.9	Nil			
			10333	1.6 0.5	183.3 55.9	184.9 56.4	0.002			
			10334	1.0 0.3	184.9 56.4	185.9 56.7	Nil			
			10335	1.0 0.4	206.2 62.8	207.2 63.2	0.02 .01			
			10336	1.3 0.4	207.2 63.2	208.5 63.6	0.005			



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
Location: Scadding Twp., Ont.
Co-ordinates: 5269.2N, 9494.8E

HOLE: N-22
Core size:

Section: 7+00 NW
Length: 251' (76.6m)
Elevation: 305.0m
Azimuth: S65°W Dip: -45°

Dip Tests:
Started: Oct. 14/80
Completed: Oct. 16/80
Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz./ton						
		<u>Ore Sections</u>											
				1.0	87.0	88.0	0.22						
				0.3	26.5	26.8	.07						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5269.5N, 9495.7E

HOLE: N-23
 Core size:

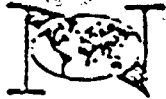
Section: 7+00 NW
 Length: 276' (84.1m)
 Elevation: 305.0m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 16/80
 Completed: Oct. 18/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz./ton						
0.0	19.3	Overburden/Casing.											
0.0	5.9												
19.3	84.0	Serpent Quartzite, med. grey to buff, f.g. hard, moderately jointed, occasionally weakly fractured. Weak chlorite banding 52.0 - 53.5.											
5.9	25.6												
		<u>Economic</u>											
		51.0-52.0 - (15.5-15.8) - Quartzite, buff coloured, hard, essentially barren.	10338	1.0 0.3	51.0 15.5	52.0 15.8	Nil						
		52.0-53.5 - (15.8-16.3) - Quartzite, weak chlorite replacement, mostly in bands. Weakly fractured with 1% py as small clusters and flecks.	10339	1.5 0.5	52.0 15.8	53.5 16.3	Nil						
		53.5-54.5 - (16.3-16.6) - Quartzite, about 5% chlorite. Essentially barren.	10340	1.0 0.3	53.5 16.3	54.5 16.6	Nil						
		75.6-86.0 - (23.0-26.2) - Lost core 1.5'.											
84.0	91.8	Chlorite Zone, f.g. dark green with about 30% chlorite. Chlorite bx. from 87.5 with 20% chlorite in strongly jointed core. Some buff to pinkish non-chloritic patches. Entire section very poorly mineralized.											
25.6	28.0												
		<u>Economics</u>											
		84.0-86.0 - (25.6-26.2) - 30% chlorite replacement. Rare flecks of po.	10341	2.0 0.6	84.0 25.6	86.0 26.2	Nil						
		86.0-88.0 - (26.2-26.8) - 60% chlorite, rare flecks of po.	10342	2.0 0.6	86.0 26.2	88.0 26.8	Nil						
		88.0-91.8 - (26.8-28.0) - Chlorite breccia. 25% chlorite. Rare flecks po, py. 1.6' of core ground.	10343	3.8 1.2	88.0 26.8	91.8 28.0	0.002						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5269.5N, 9495.7E

HOLE: N-23
 Core size:

Section: 7+00 NW
 Length: 276' (84.1m)
 Elevation: 305.0m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 16/80
 Completed: Oct. 18/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS							
from	to						Au oz./ton							
91.8 28.0	100.0 30.5	Quartzite, buff to pinkish with grey patches. Well bedded 65° to core @ 98'. No pyrite obs.												
		91.8-95.5 - (28.0-29.1) - Quartzite, pinkish to grey, occasional remnant bedding 65° to core. No py obs.	10344	3.7 1.1	91.8 28.0	95.5 29.1	Nil							
		95.5-98.5 - (29.1-30.0) - Quartzite, as above.	10345	3.0 0.9	95.5 29.1	98.5 30.0	Nil							
		98.5-100.0 - (30.0-30.5) - Quartzite, 5% chlorite. Rare flecks po.	10346	1.5 0.5	98.5 30.0	100.0 30.5	0.002							
100.0 30.5	129.0 39.3	Chlorite breccia. Dark green with scattered non-chloritic pink quartzite patches and occasional carbonate zones. 10 to 60% chlorite. <u>Economics</u>												
		100.0-103.0 - (30.5-31.4) - Chlorite breccia. 1.4 feet of lost core in section. 40% chlorite. Rare flecks of py, po.	10347	3.0 0.9	100.0 30.5	103.0 31.4	0.002							
		103.0-106.0 - (31.4-32.3) - Chlorite breccia. 50% chlorite, mostly even grained replacement, occasional narrow bands at random angles. Rare flecks of po.	10348	3.0 0.9	103.0 31.4	106.0 32.3	0.002							
		106.0-109.0 - (32.3-33.2) - Chlorite breccia, as above but about 40% chlorite.	10349	3.0 0.9	106.0 32.3	109.0 33.2	0.002							
		109.0-112.0 - (33.2-34.1) - Chlorite breccia. 40% chlorite. Occasional pink unreplaced quartzite patches. Rare flecks of po.	10350	3.0 0.9	109.0 33.2	112.0 34.1	0.002							
		112.0-114.0 - (34.1-34.7) - Chlorite breccia. 50% chlorite replacement in quartzite. Last 6 inches 60% carbonate. Rare flecks of po.	10351	2.0 0.6	112.0 34.1	114.0 34.7	Nil							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5269.5N, 9495.7E

HOLE: N-23
 Core size:

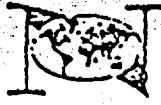
Section: 7+00 NW
 Length: 276' (84.1m)
 Elevation: 305.0m
 Azimuth: -- Dip: -90°

Dip Tests:
 Started: Oct. 16/80
 Completed: Oct. 18/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
		114.0-116.0 - (34.7-35.4) - Chlorite breccia, 30% chlorite replacement in patches and as bands. Rare po flecks.	10352	2.0 0.7	114.0 34.7	116.0 35.4	0.002				
		116.0-119.0 - (35.4-36.3) - Chlorite breccia. 20% chlorite replacement in quartzite. Essentially barren.	10353	3.0 0.9	116.0 35.4	119.0 36.3	Nil				
		119.0-121.0 - (36.3-36.9) - Chlorite breccia, as above.	10354	2.0 0.6	119.0 36.3	121.0 36.9	Nil				
		121.0-124.0 - (36.9-37.8) - Chlorite breccia, weakly brecciated to massive, 20% chlorite replacement and minor banding. Rare po flecks.	10355	3.0 0.9	121.0 36.9	124.0 37.8	Nil				
		124.0-127.0 - (37.8-38.7) - Chlorite breccia, 30% chlorite with distinct chlorite bands at random angles. Rare po flecks.	10356	3.0 0.9	124.0 37.8	127.0 38.7	0.005				
		127.0-129.0 - (38.7-39.3) - Chlorite breccia, 20% chlorite replacement and banding. Rare sulphide flecks.	10357	2.0 0.6	127.0 38.7	129.0 39.3	0.01				
129.0 39.3	177.0 53.9	Quartzite, pink to grey-green, locally weakly brecciated and carbonated. Spotty remnant bedding 60 to 70° to core. A few patches of weak chlorite replacement in last two feet.									
177.0 53.9	206.7 63.0	Chloritic Zone, quartzite with very patchy chlorite replacement. Up to 50% chlorite in some patches. Quartzite is generally weakly brecciated and fractured, pink, with occasional calcite stringers.									
		<u>Economics</u>									
		177.0-177.9 - (53.9-54.2) - Chlorite breccia, 50% chlorite in pink weakly brecciated quartzite. About 1% diss. po.	10358	0.9 0.3	177.0 53.9	177.9 54.2	Nil				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5269.5N, 9495.7E

HOLE: N-23
 Core size:

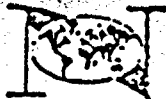
Section: 7+00 NW
 Length: 276' (84.1m)
 Elevation: 305.0m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 16/80
 Completed: Oct. 18/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
		177.9-180.0 - (54.2-54.9) - Pink quartzite with 2 to 3% patchy chlorite replacement. No sulphides observed.	10359	2.1 0.7	177.9 54.2	180.0 54.9	Nil				
		180.0-184.0 - (54.9-56.1) - Quartzite, 20% chlorite replacement in patches. A few scattered po, py grains.	10360	4.0 1.2	180.0 54.9	184.0 56.1	Nil				
		184.0-185.0 - (56.1-56.4) - 40% chlorite replacement. ½ to 1% po, py as minute grains.	10361	1.0 0.3	184.0 56.1	185.0 56.4	Nil				
		185.0-189.4 - (56.4-57.7) - Quartzite, pink to banded pinkish green. 5% chlorite. Rare flecks po.	10362	4.4 1.3	185.0 56.4	189.4 57.7	Nil				
		189.4-190.4 - (57.7-58.0) - Chlorite breccia. 60% chlorite. A few flecks of po.	10363	1.0 0.3	189.4 57.7	190.4 58.0	Nil				
		190.4-193.0 - (58.0-58.8) - Pink quartzite with patchy chloritic replacement. Rare flecks po.	10364	2.6 0.8	190.4 58.0	193.0 58.8	Nil				
		193.0-196.5 - (58.8-59.9) - As above, 15% chlorite rich patches in pink quartzite. Essentially barren.	10365	3.5 1.1	193.0 58.8	196.5 59.9	0.002				
		196.5-200.0 - (59.9-61.0) - 30% chlorite rich patches in pink quartzite, weakly brecciated. No sulphides obs.	10366	3.5 1.1	196.5 59.9	200.0 61.0	Nil				
		200.0-203.0 - (61.0-61.9) - As above, 20% chlorite rich patches.	10367	3.0 0.9	200.0 61.0	203.0 61.9	Nil				
		203.0-206.7 - (61.9-63.0) - Pink quartzite, 10% chlorite rich patches. No sulphides obs.	10368	3.7 1.1	203.0 61.9	206.7 63.0	0.005				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5269.5N, 9495.7E

HOLE: N-23
 Core size:

Section: 7+00 NW
 Length: 276' (84.1m)
 Elevation: 305.0m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 16/80
 Completed: Oct. 18/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
206.7 63.0	276.0 84.1	Carbonate breccia. Pink to buff coloured quartzite, brecciated and carbonated. Frequent brownish chert bands. Brecciation and carbonate content increases gradually. Small blebs and clusters of pyrite frequently noted in carbonate. Occasional small amounts of chlorite. <u>Trial Samples:</u> 253.4-254.4 - (77.3-77.6) - Pink quartzite/carbonate breccia with a little chlorite banding and about 2% py. 257.6-258.6 - (78.5-78.8) - Carbonate breccia, 40% pink quartzite fragments, 60% grey calcite with 1% pyrite. 276.0 - (84.1) - Hole terminated.									
			10369	1.0 0.3	253.4 77.3	254.4 77.6	0.01				
			10370	1.0 0.3	257.6 78.5	258.6 78.8	0.01				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont. HOLE: N-25
 Co-ordinates: 5319.2N, 9582.1E Core size:

Section: 7+50 NW
 Length: 398.0 (121.3)
 Elevation: 301.9m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 24/80
 Completed: Oct. 26/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
0.0	42.0	Overburden/casing.											
0.0	12.8												
42.0	160.7	Serpent quartzite, alternating pink to orange and grey, locally brecciated, carbonate healed zones. Hematitic open joints @ 82.5 and 104.6. Occasional remnant bedding, mostly 60° to core. A few irregular cherty zones.											
12.8	49.0												
160.7	232.0	Greywacke, quartzite. Mainly f.g. to m.g. dark grey greywacke with minor interbedded quartzite. Thinly bedded 199.0 - 201.0, 75 to 80° to core and 206.0 to 209.0 - 45° to core. Frequent thin beds and irregular patches of buff coloured chert, occasional microfaulted. Quartzite beds often finely fractured to weakly brecciated.											
49.0	70.7												
		<u>Economics</u>											
		230.0-231.0 - (70.1-70.4) - Dark grey greywacke. No sulphides obs.	10374	1.0 0.3	230.0 70.1	231.0 70.4	Nil						
		231.0-232.0 - (70.4-70.7) - Thinly bedded greywacke and quartzite. Very weakly diss. pyrite.	10375	1.0 0.3	231.0 70.4	232.0 70.7	Nil						
232.0	235.5	Chlorite zone. Dark green to near black, 10 to 40% chlorite replacement in greywacke. Very weakly mineralized po, py.											
70.7	71.8												
		<u>Economics</u>											
		232.0-233.5 - (70.7-71.2) - 30% chlorite bands in bleached, altered greywacke. Very weakly diss. pyrite, ½% or less.	10376	1.5 0.5	232.0 70.7	233.5 71.2	0.002						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5319.2N, 9582.1E

HOLE: N-25
 Core size:

Section: 7+50 NW
 Length: 398.0 (121.3)
 Elevation: 301.9m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 24/80
 Completed: Oct. 26/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		233.5-234.5 - (71.2-71.5) - 30 to 40% chlorite replacement. Scattered minute grains of pyrite.	10377	1.0 0.3	233.5 71.2	234.5 71.5	Nil				
		234.5-235.5 - (71.5-71.8) - Weakly brecciated greywacke and chert. A little carbonate cement and rare flecks of pyrite.	10378	1.0 0.3	234.5 71.5	235.5 71.8	Nil				
235.5 71.8	254.5 77.6	Greywacke and impure quartzite. Med. to dark grey. Occasional thinly laminated buff coloured chert beds. 248.0 to 254.5, mainly weakly brecciated and finely fractured impure quartzite. Rare carbonate cemented fractures. A few scattered grains of pyrite 235.5 - 237.5. <u>Economics</u>									
		235.5-237.5 - (71.8-72.4) - Weakly bedded greywacke. Rare fleck py.	10379	2.0 0.6	235.5 71.8	237.5 72.4	Nil				
254.5 77.6	300.6 91.6	Quartzite, pinkish to orange coloured with grey green unaltered patches. Numerous euhedral carbonate crystals to 4 mm. within patches of pinkish to orange alteration. Frequent carbonate cemented brecciated zones and old structures. Occasional patches of very weakly diss. pyrite. <u>Trial Sample</u>									
		296.0-297.0 - (90.2-90.5) - Pale buff to pinkish quartzite with scattered grains of pyrite (Less than 1/2%).	10380	1.0 0.3	296.0 90.2	297.0 90.5	Nil				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5319.2N, 9582.1E

HOLE: N-25
 Core size:

Section: 7+50 NW
 Length: 398.0 (127.3)
 Elevation: 301.9m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 24/80
 Completed: Oct. 26/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
300.3 91.6	353.1 107.6	<p>Quartzite and greywacke. 300.6 to 302.5 mainly unaltered dark grey greywacke except for minor bleaching along fractures. Gradually becoming bleached light to medium grey with patches of dark grey unaltered wacke. Much interbedded quartzite. Pinkish to orange alteration in patches from 308.0, frequently associated with brecciation and carbonate healed fractures. Local patches of very weakly diss. f.g. pyrite.</p> <p><u>Economics</u></p> <p>300.3-302.0 - (91.5-92.0) - Dark grey metagreywacke with a few pistacio green band of alteration. Scattered grains of pyrite and a few of chalcopyrite.</p> <p>302.0-304.0 - (92.0-92.7) - Bleached patchy dark grey and light grey metagreywacke. Occasional flecks of pyrite.</p> <p>304.0-306.0 - (92.7-93.3) - As above, minute grains of pyrite - less than 1/2%.</p>									
353.1	355.8	<p>Chlorite breccia. Altered, bleached, brecciated metagreywacke. Distinct chloritic fragments in a carbonate matrix and insipient chloritization in margins of breccia zone. Very little pyrite.</p> <p>353.1-354.1 - (107.6-107.9) - First 3 inches chloritized meta-greywacke, remainder chlorite breccia with about 10% chlorite and 20% carbonate. Rare flecks of pyrite.</p> <p>354.1-354.8 - (107.9-108.1) - Chlorite breccia. Fragments of chloritized greywacke in a carbonate matrix and carbonate fragments in chlorite rich bands. Very little pyrite as minute grains.</p>	10381	1.7 0.5	300.3 91.5	302.0 92.0	0.002				
			10382	2.0 0.7	302.0 92.0	304.0 92.7	Nil				
			10383	2.0 0.6	304.0 92.7	306.0 93.3	Nil				
			10384	1.0 0.3	353.1 107.6	354.1 107.9	Nil				
			10385	0.7 0.2	354.1 107.9	354.8 108.1	0.002				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ontl
 Co-ordinates: 5319.2N, 9582.1E

HOLE: N-25
 Core size:

Section: 7+50 NW
 Length: 398.0 (121.3)
 Elevation: 301.9m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 24/80
 Completed: Oct. 26/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
355.8 108.4	398.0 121.3	<p>354.8-355.8 - (108.1-108.4) - Weakly chloritized greywacke, 20% chlorite. Essentially barren.</p> <p>Greywacke and siltstone (quartzite) interbedded. Greywacke is med. grained dark grey, light grey where bleached and altered. Siltstone sections are thinly bedded, 60° to core, med. grey to buff coloured. Occasional carbonate cemented fractures. Brecciated and fractured "crackle breccia" 375.0 to 378.0. Locally well bedded 60 to 80° to core 385.0 to 398.0.</p> <p>398.0 - (121.3) - Hole terminated.</p>	10386	1.0 0.3	354.8 108.1	355.8 108.4	0.002				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5242.1N, 9509.7E

HOLE: N-26
 Core size:

Section:
 Length: 452' (137.8m)
 Elevation: 307.2m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 27/80
 Completed: Oct. 30/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to						Au oz/ton			
0.0	12.0	Overburden/casing.								
0.0	3.7									
12.0	89.0	Serpent Quartzite. Massive to weakly bedded meta sub-greywacke to greywacke, light to dark grey in patches due to leaching and alteration. Bedding mostly 60° to core. Often weakly fractured with intense bleaching along fractures. Occasional carbonate healed structures, generally 1" or less wide. Series of strongly slickensided joints 36.0 (11.0) to 37.0' (11.3), and single strongly slickensided joint. 20° to core at 91.2' (27.8). Infrequent chloritic hairline fractures and minor local chlorite bands. Very scattered flecks of pyrite. <u>Economics (Trial Samples)</u> 72.0-73.0 - (21.9-22.2) - 20% weak chlorite banding 40° to core with 30% diss. carbonate. Rare flecks of pyrite. 73.0-74.5 - (22.2-22.7) - Partly brecciated, carbonated subgreywacke, strongly bleached last foot. Scattered flecks and small blebs of pyrite.								
3.7	27.1									
89.0	102.0	Quartzite, pink to buff alteration, rarely orange. Locally brecciated and fractured, carbonate healed. Rare chlorite stringers and small patches in brecciated sections. <u>Economics - (Trial Sample)</u> 91.5-92.5 - (27.9-28.2) - Pinkish quartzite breccia with minor carbonate cement. 40% pyrite 92.1 to 92.3.								
27.1	31.1									
			10387	1.0 0.3	72.0 21.9	73.0 22.2	Nil			
			10388	1.5 0.5	73.0 22.2	74.5 22.7	0.002			
			10389	1.0 0.3	191.0 58.2	192.0 58.5	0.005			



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont. HOLE: N-26
 Co-ordinates: 5242.1N, 9509.7E Core size:

DRILL LOG

Drill Contractor - N. Morissette

Section:
 Length: 452' (137.8m)
 Elevation: 307.2m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 27/80
 Completed: Oct. 30/80
 Logged by: K. Larsen

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS							
from	to						Au oz./ton							
		<u>Economics</u>												
		248.2-249.2 - (75.7-76.0) - Chlorite breccia. 40% unreplaced grey quartzite. 3% py, po as subhedral cubes.	10392	1.0 0.3	248.2 75.7	249.2 76.0	0.08							
		249.2-251.4 - (76.0-76.6) - Chlorite breccia. 3" pink quartzite fragment and a little grey non-chloritic quartzite, remainder has about 40% chlorite. A few subhedral py, po cubes and scattered py grains.	10393	2.2 0.6	249.2 76.0	251.4 76.6	0.05							
		251.4-254.0 - (76.6-77.4) - Chlorite breccia, weakly brecciated to massive. 60% chlorite replacement. Rare flecks and minute grains of py, po.	10394	2.6 0.8	251.4 76.6	254.0 77.4	0.005							
		254.0-257.0 - (77.4-78.3) - Chlorite breccia, weakly brecciated to massive. 50 to 60% chlorite replacement. Very rare flecks of pyrite.	10395	3.0 0.9	254.0 77.4	257.0 78.3	0.03							
		257.0-260.0 - (78.3-79.2) - Chlorite breccia, 40% chlorite replacement. A little bluish quartz cement. Scarce pyrite blebs and flecks.	10396	3.0 0.9	257.0 78.3	260.0 79.2	0.002							
		260.0-262.6 - (79.2-80.0) - Non-brecciated, 30% chlorite replacement. Rare blebs and flecks py, po.	10397	2.6 0.8	260.0 79.2	262.6 80.0	0.01							
		262.6-263.4 - (80.0-80.3) - Chlorite breccia, 14 small grains of free gold in a cluster at 262.7'. Remainder has a few blebs of py, po.	10398	0.8 0.3	262.6 80.0	263.4 80.3	0.84							
		263.4-265.2 - (80.3-80.8) - Chlorite breccia, quartz healed. 40% chlorite replacement. 3% py, po.	10399	1.8 0.5	263.4 80.3	265.2 80.8	0.12							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
Location: Scadding Twp., Ont.
Co-ordinates: 5242.1N, 9509.7E

HOLE: N-26
Core size:

Section:
Length: 452' (137.8m)
Elevation: 307.2m
Azimuth: - Dip: -90°

Dip Tests:
Started: Oct. 27/80
Completed: Oct. 30/80
Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS							
from	to						Au oz/ton							
		319.0-320.5 - (97.2-97.7) - Chlorite-carbonate breccia. 30% chlorite replacement in zone of quartzite breccia. Several carbonate healed fractures, re-fractured and chloritized.												
		<u>Economics</u>												
		288.4-290.2 - (87.9-88.5) - Chlorite breccia. 30% chlorite replacement. 2" band of non-chloritic grey quartzite in first foot. Strongly sheared last 8 inches with numerous slicks. Rare flecks of po, py.	10401	1.8 0.6	288.4 87.9	290.2 88.5	0.002							
		290.2-291.0 - (88.5-88.7) - Grey quartzite, essentially barren.	10402	0.8 0.2	290.2 88.5	291.0 88.7	Nil							
		291.0-292.0 - (88.7-89.0) - 40% chlorite replacement. 2% diss. py, po.	10403	1.0 0.3	291.0 88.7	292.0 89.0	0.07							
		292.0-295.0 - (89.0-89.9) - 40% chlorite replacement. A little carbonate at 294.0. Poorly mineralized with very rare flecks of py, po.	10404	3.0 0.9	292.0 89.0	295.0 89.9	0.05							
		295.0-298.0 - (89.9-90.8) - 50% chlorite replacement. Rather massive looking. A little bluish quartz locally. Rare flecks po, py.	10405	3.0 0.9	295.0 89.9	298.0 90.8	0.05							
		298.0-301.0 - (90.8-91.7) - Chlorite breccia. 20% chlorite as fracture fillings and patchy replacement in pink quartzite breccia. Very little pyrite as scattered flecks.	10406	3.0 0.9	298.0 90.8	301.0 91.7	.01							
		301.0-304.0 - (91.7-92.6) - Chlorite breccia. As above, but 10% chlorite interstitial to breccia fragments. Rare fleck po, py.	10407	3.0 0.9	301.0 91.7	304.0 92.6	.002							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont. HOLE: N-26
 Co-ordinates: 5242.1N, 9509.7E Core size:

Section:
 Length: 452' (137.8m)
 Elevation: 307.2m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 27/80
 Completed: Oct. 30/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS					
from	to						Au oz/ton	oz/ft.				
		<u>Ore Sections</u>										
			10398	0.8 0.2	262.5 80.1	263.4 80.3	0.84 0.3	.672 .2				
			10399	1.8 0.6	263.4 80.3	265.2 80.9	0.12 .04	.216 .07				
		1.		2.6 0.8	262.6 80.1	265.2 80.9	.342 .10	.888 .3				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5255.2N, 9502.9E

HOLE: N-27.
 Core size:

Section: 5+50 NW
 Length: 377.5 (115.1m)
 Elevation: 306.5m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 31/80
 Completed: Nov. 8/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au/ oz. ton						
0.0	8.0	Overburden, cased to 12.0'.											
0.0	2.4												
8.0	141.0	Serpent quartzite, light to medium grey, massive to weakly bedded and locally brecciated, carbonated. Rather strongly jointed 37.0 to 80.0. Bedding 70° to core @ 85'. Rare flecks and spots of py.											
2.4	43.0	129.0-133.0 - (39.3-40.6) - Ground core.											
141.0	156.0	Quartzite, pinkish to salmon coloured alteration, local carbonate, healed structures and brecciated zones. Core slightly fractured.											
43.0	47.6	<u>Economics</u> 154.0-156.0 - (46.9-47.6) - Quartzite, pinkish, 2% carbonate in fractures. Last 4 inches weakly chloritic. Rare flecks of py.	10419	2.0 0.7	154.0 46.9	156.0 47.6	0.002						
156.0	179.2	Chlorite Zone. Variable chlorite replacement in weakly to moderately brecciated quartzite. Some unreplaced pink to buff coloured quartzite. Strongly slickensided slips at 163.0, 166.1 and 168.2. The latter is composed of several slips 10° to 30° to core with a little ground pyrite and soft chlorite gouge.											
47.6	54.6	<u>Economics</u> 156.0-158.1 - (47.6-48.2) - 20% chloritic bands and patches in quartzite breccia. Rare fleck of py and a few pyritized hairline fractures. A single 4 mm. spot of chalcopyrite at 157.2.	10420	2.1 0.6	156.0 47.6	158.1 48.2	0.02 .01						
		158.1-159.1 - (48.2-48.5) - 10% chlorite as bands in pale grey quartzite. 5 minute grains of V.G. at 158.6. No pyrite observed.	10421	1.0 0.3	158.1 48.2	159.1 48.5	0.03	V.G.?					



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5255.2N, 9502.9E

HOLE: N-27
 Core size:

Section: 5+50 NW
 Length: 377.5 (115.1m)
 Elevation: 306.5m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 31/80
 Completed: Nov. 8/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						Au/ oz/ton		
		159.1-162.1 - (48.5-49.4) - 40% chlorite replacement. A few small grey unreplaced quartzite patches. No sulphides observed.	10422	3.0 0.9	159.1 48.5	162.1 49.4	0.01		
		162.1-164.0 - (49.4-50.0) - 30% chlorite replacement. 0.5 feet of core ground between 163.2 and 163.7. No sulphides observed.	10423	1.9 0.6	162.1 49.4	164.0 50.0	0.005		
		164.0-165.0 - (50.0-50.3) - 20% chlorite replacement. No sulphides observed.	10424	1.0 0.3	164.0 50.0	165.0 50.3	0.005		
		165.0-166.0 - (50.3-50.6) - 20% chlorite replacement. Rare flecks of py, po. 5 small clusters of V.G. spread over length of core.	10425	1.0 0.3	165.0 50.3	166.0 50.6	0.002	V.G.	
		166.0-168.2 - (50.6-51.3) - 30% chlorite replacement. Scattered minute flecks of py, po.	10426	2.2 0.7	166.0 50.6	168.2 51.3	0.005		
		168.2-169.2-(51.3-51.6) - 40% chlorite replacement. 2 to 10 mm. veinlet of pyrite, chalco - pyrite and c.g. disseminations of same in first 0.5 feet.	10427	1.0 0.3	168.2 51.3	169.2 51.6	0.37 .11	V.G.	
		169.2-170.8 - (51.6-52.1) - 20% chlorite replacement, diminishing to 10% in last 6 inches. A single speck of V.G. at 170.6'. Rare flecks of py, po.	10428	1.6 0.5	169.2 51.6	170.8 52.1	0.005		
		170.8-174.0 - (52.1-53.0) - Quartzite, buff to pinkish coloured. 5% chlorite in first 3 inches. No sulphides observed.	10429	3.2	170.8 52.1	174.0 53.0	0.002		
		174.0-175.3 - (53.0-53.4) - Chlorite breccia. 20% chlorite in pinkish brecciated quartzite. Rare flecks of py.	10430	1.3 0.4	174.0 53.0	175.3 53.4	0.002		
		175.3-176.6 - (53.4-53.8) - Chlorite breccia. 50% chlorite. 15% pyrite - c.g. euhedral cubes and anhedral masses up to one inch in diameter. Two small clusters and several small specks of v.g.	10431	1.3 0.4	175.3 53.4	176.6 53.8	1.58 0.5	V.G.	



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Cnt.
 Co-ordinates: 5255.2N, 9502.9E

HOLE: N-27
 Core size:

Section: 5+50 NW
 Length: 377.5 (115.1m)
 Elevation: 306.5m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 31/80
 Completed: Nov. 8/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS							
from	to						Au/ oz. ton							
		219.0-221.5 - (66.7-67.5) - Fault Zone? Strongly slickensided structure about 5° to core. Core split in thin slices near parallel to long axis. Some carbonate coated pieces.												
		239.0-251.0 - (72.6-76.5) - Gradually decreasing chlorite content, becoming patchy and stringy with much unreplaced pink quartzite.												
		<u>Economics</u>												
		192.2-194.4 - (58.6-59.3) - 20 to 30% chlorite replacement. Quite massive with a couple of small unreplaced quartzite patches. Scattered flecks of py, po.	10437	2.2 0.7	192.2 58.6	194.4 59.3	0.002							
		194.4-196.4 - (59.3-59.9) - Chlorite breccia. Weakly chloritized 5 to 10% in lightly brecciated quartzite. Essentially barren.	10438	2.0 0.7	194.4 59.3	196.4 59.9	0.005							
		196.4-198.6 - (59.9-60.5) - Quartzite, buff to pinkish coloured, a little remnant bedding 55° to core. No sulphides observed.	10439	2.2 0.7	196.4 59.9	198.6 60.5	0.002							
		198.6-200.6 - (60.5-61.2) - Chlorite breccia. 10% chlorite in first foot, then rapidly increasing to 40%. Very rare flecks of sulphide.	10440	2.0 0.7	198.6 60.5	200.6 61.2	0.005							
		200.6-201.6 - (61.1-61.5) - Chlorite breccia, 40% chlorite. Rare flecks of py, po. Single speck of V.G. at 201.1.	10441	1.0 0.4	200.6 61.2	201.6 61.5	0.69 .21							
		201.6-204.6 - (61.5-62.4) - Chlorite breccia. 20% chlorite as bands and small patches. 0.7' lost core at 204.0. Possible fault zone, 5° to core. Rare flecks of pyrite.	10442	3.0 0.9	201.6 61.5	204.5 62.4	0.02 .01							
		204.6-206.6 - (62.4-63.0) - Chlorite breccia, 20% chlorite as bands and irregular small patches. Scarce flecks of py, po.	10443	2.0 0.6	204.6 62.4	206.6 63.0	0.01							



NORTHGATE EXPLORATION LIMITED

 Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5255.2N, 9502.9E

 HOLE: N-27.
 Core size:

 Section: 5+50 NW
 Length: 377.5 (115.1m)
 Elevation: 306.5m
 Azimuth: - Dip: -90°

 Dip Tests:
 Started: Oct. 31/80
 Completed: Nov. 8/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au/ oz. ton				
		206.6-208.0 - (63.0-63.4) - Chlorite breccia. 40% chlorite. A little bluish quartz and 2% py, -po, mostly 2 to 4 mm. anhedral forms.	10444	1.4 0.4	206.6 63.0	208.0 63.4	0.06 .02				
		208.0-211.0 - (63.4-64.3) - Chlorite breccia. Pinkish quartzite with about 10% chlorite. Essentially barren.	10445	3.0 0.9	208.0 63.4	211.0 64.3	0.02 .01				
		211.0-214.0 - (64.3-65.2) - Chlorite breccia. 15% chlorite in first 1.5 feet, then 30% in remainder. About 1% po, py. Weakly diss. throughout.	10446	3.0 0.9	211.0 64.3	214.0 65.2	0.23 .07				
		214.0-217.0 - (65.2-66.1) - Chlorite breccia. 25% chlorite. A few small patches of light grey quartzite. Rare flecks of sulphides.	10447	3.0 0.9	214.0 65.2	217.0 66.1	0.03 .01				
		217.0-219.0 - (66.1-66.8) - Chlorite breccia. 40% chlorite, a little bluish quartz. Occasional flecks of py, po.	10448	2.0 0.7	217.0 66.1	219.0 66.8	0.02 .01				
		219.0-221.0 - (66.8-67.4) - Chlorite breccia. 50% chlorite. With narrow irregular bands, pods and streaks of po, py, cpy, about 6% total sulphides. Core badly split and fractured by slightly vuggy structure undulating at 5' to core. 2 specks of V.G. at 220.4'.	10449	2.0 0.6	219.0 66.8	221.0 67.4	1.08 0.3	V.G.			
		221.0-224.0 - (67.4-68.3) - Chlorite breccia. 40 to 60% chlorite, quite massive. ½% po, py as scattered flecks.	10450	3.0 0.9	221.0 67.4	224.0 68.3	0.05 .02				
		224.0-227.0 - (68.3-69.2) - Chlorite breccia 20 to 30% chlorite, rare flecks po, py. Run over core 226.0 - 227.0.	10451	3.0 0.9	224.0 68.3	227.0 69.2	0.05 .02				
		227.0-230.0 - (69.2-70.1) Chlorite breccia. 30% chlorite. Essentially barren.	10452	3.0 0.9	227.0 69.2	230.0 70.1	0.01				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5255.2N, 9502.9E

HOLE: N-27
 Core size:

Section: 5+50 NW
 Length: 377.5 (115.1m)
 Elevation: 306.5m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: Oct. 31, 1980
 Completed: Nov. 8, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS	
from	to						Au oz/ton	ft./oz.
		<u>Ore Sections</u>						
	1.		10427	1.0 0.3	168.2 51.3	169.2 51.6	.37 .1	
			10431	1.3 0.4	175.3 53.5	176.6 53.9	1.58 0.5	2.054 0.6
			10432	1.6 0.5	176.6 53.9	178.2 54.4	0.26 .08	.416 .13
	2.			2.9 0.9	175.3 53.5	178.2 54.4	0.85 0.3	2.470 0.8
	3.		10441	1.0 0.3	200.6 61.2	201.6 61.5	0.69 0.2	
	4.		10446	3.0 0.9	211.0 64.4	214.0 65.3	0.23 .07	
	5.		10449	2.0 0.6	219.0 66.8	221.0 67.4	1.08 0.3	



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5219.2N, 9457.3E

HOLE: N-28
 Core size:

Section: 6+00NW, 1+25NE
 Length: 205' (62.5m)
 Elevation: 310.7m
 Azimuth: Dip: -90°

Dip Tests:
 Started: November 9, 1980
 Completed: November 12, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
0.0	16.0	Overburden - casing.								
0.0	4.9									
16.0	139.0	Pinkish to grey quartzite, scattered carbonated fractures. Small amounts of chlorite locally, often as narrow zones, one foot or less, but also associated with light fracturing. 16.0 - 24.8 - (4.9 - 7.56) - Quartzite, pinkish alteration. Numerous rust stained joints (surface effect). Weakly chloritic in small one inch patches and along hairline fractures. Run over core 19.2' to 20.6'. 24.8 - 25.0 - (7.56 - 7.62) - Fault. Heavy rust staining, one inch of fault by. 5 to 15° to core. 25.0 - 41.0 - (7.62 - 12.5) - Quartzite, pinkish alteration. Some unaltered grey patches. 34.8 - 35.8 heavy chlorite bands. 41.0 - 70.8 - (12.5 - 21.6) - Quartzite, light grey with carbonate healed fractures. Pink alteration absent. Scattered bits of chlorite, less than 2% total. 70.8 - 139.0 - (21.6 - 42.4) - Quartzite, pinkish alteration. Typical carbonated fractures. Minor chlorite as streaks and rarely thin bands. Chlorite zone 69.8 to 71.8 and 100.0' to 100.8'. Drastic increase in pinkish alteration toward base of unit. Occasional chert beds up to 2". <u>Economic</u> - (Trial Samples)								
4.9	42.37									
		21.0 - 24.8 - (6.40 - 7.56) - Pink quartzite, weakly brecciated with 2 to 5% chlorite and scattered flecks of py, po.	10460	3.8 1.15	21.0 6.40	24.8 7.56				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Matt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5219.2N, 9457.3E

HOLE: N-28
 Core size:

Section: 6+00NW, 1+25NE
 Length: 205' (62.5m)
 Elevation: 310.7m
 Azimuth: Dip: -90°

Dip Tests:
 Started: November 9, 1980
 Completed: November 12, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
139.0	180.0	97.5 - 99.7 - (29.72 - 30.39) - Quartzite, pink to buff coloured, weakly brecciated and carbonated. No sulphides observed.	10471	2.2 0.7	97.5 29.72	99.7 30.39				
42.37	54.87	99.7 - 100.7 - (30.39 - 30.69) - 6" chlorite breccia zone in pink quartzite. 1% diss. py, po in chlorite, remainder barren.	10472	1.0 0.3	99.7 30.39	100.7 30.69				
		Chlorite breccia. Chloritization varies from 5% to locally 60%. A few small patches of pink quartzite section generally poorly mineralized. Strong slips @ 155.0 - 15° to core.								
		<u>Economics</u>								
		139.0 - 141.0 - (42.37 - 42.98) - Chlorite breccia. 20% chlorite in pinkish quartzite, mostly as bands. A little vein Qtz. @ 141.0'. No sulphides observed.	10473	2.0 0.6	139.0 42.37	141.0 42.98				
		141.0 - 142.0 - (42.98 - 43.28) - Chlorite breccia. 40% chlorite with 1% py. A single speck of v.q. at 141.4'.	10474	1.0 0.3	141.0 42.98	142.0 43.28				
		142.0 - 145.0 - (43.28 - 44.20) - Chlorite breccia. 15% chlorite in grey to pink quartzite, poorly brecciated. Rare flecks of py.	10475	3.0 0.9	142.0 43.28	145.0 44.20				
		145.0 - 148.0 - (44.20 - 45.11) - Chlorite breccia, 10% to 15% chlorite. Patches of pink non-chloritic quartzite. Poorly mineralized with rare flecks py, po.	10476	3.0 0.9	145.0 44.20	148.0 45.11				
		148.0 - 151.6 - (45.11 - 46.21) - Chlorite breccia, 10% chlorite or less. Poorly mineralized.	10477	3.6 1.1	148.0 45.11	151.6 46.21				
		151.6 - 154.6 - (46.21 - 47.12) - 5 to 10% chlorite in very weakly brecciated quartzite. No sulphides observed.	10478	3.0 0.9	151.6 46.21	154.6 47.12				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5205.1N, 9464.3E

HOLE: N-29.
 Core size:

Section: 5+50NW, 1+25NE
 Length: 280' (85.4m)
 Elevation: 312.0m
 Azimuth: Dip: -90°

Dip Tests:
 Started: November 13, 1980
 Completed: November 15, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to												
0.0	10.0	Overburden - casing.											
0.0	3.0												
10.0	63.0	Quartzite, brecciated, pink to buff coloured with scattered streaks and small patches of weak chloritization. Section is similar to N-28, 16.0' to 139.0'. Fractures and breccia zone carbonate healed.											
3.0	19.2												
		<u>Note:</u> Assay was made on section of BQ core believed to be a boulder: from 7.0' to 9.5' - This is probably bedrock.											
		<u>Economics</u>											
		10.0 - 13.0 - (3.0 - 4.0) - Pink to buff quartzite with 5% chlorite as streaks and weak replacement. Core slightly rusty coloured and pitted where pyrite was leached out.	10489	3.0 0.9	10.0 3.0	13.0 4.0							
		13.0 - 16.0 - (4.0 - 5.0) - Quartzite, pink, carbonated. 2 to 3% chlorite and rare flecks py.	10490	3.0 0.9	13.0 4.0	16.0 5.0							
		16.0 - 19.0 - (5.0 - 5.8) - Quartzite, pink, fairly massive. 2% chlorite as streaks. Poorly mineralized.	10491	3.0 0.9	16.0 5.0	19.0 5.8							
		19.0 - 22.0 - (5.8 - 6.8) - Quartzite, buff coloured, massive, non brecciated. No sulphides observed.	10492	3.0 0.9	19.0 5.8	22.0 6.8							
		22.0 - 25.0 - (6.8 - 7.6) - Quartzite breccia. 5% chlorite as seams and streaks. scattered blebs of py, po, less than 1%.	10493	3.0 0.9	22.0 6.8	25.0 7.6							
		43.0 - 46.0 - (13.1 - 14.0) - Quartzite. Fairly well brecciated and carbonated with scattered seams of chlorite. 1% pyrite and a few flecks of chalco-pyrite.	10494	3.0 0.9	43.0 13.1	46.0 14.0							



NORTHGATE EXPLORATION LIMITED

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HOLE: N-29
 Core size:

Section: 5+50NW, 1+25NE
 Length: 280' (85.4m)
 Elevation: 312.0m
 Azimuth: Dip: -90°

Dip Tests:
 Started: November 13, 1980
 Completed: November 15, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to												
		<u>Economics</u>											
		179.0 - 181.0 - (54.6 - 55.2) - 3% chlorite as seams and small bands, in brecciated grey quartzite. Rare flecks of pyrite.	10500	2.0 0.6	179.0 54.6	181.0 55.2							
		181.0 - 183.0 - (55.2 - 55.9) - Chlorite breccia. 10% chlorite as seams and small patches. Very rare flecks of py, po.	10501	2.5 0.8	181.0 55.2	183.5 55.9							
		183.5 - 185.0 - (55.9 - 56.4) - Chlorite breccia 25% chlorite as patches, seams and streaks. A few blebs of py, po, less than 1%.	10502	1.5 0.5	183.5 55.9	185.0 56.4							
		185.0 - 187.0 - (56.4 - 57.0) - Chlorite breccia. 30% chlorite, patches, seams and weak replacement. Occasional flecks of py, po.	10503	2.0 0.6	185.0 56.4	187.0 57.0							
		187.0 - 189.0 - (57.0 - 57.6) - Chlorite breccia. 40% chlorite, mostly replacement in weakly brecciated quartzite. Occasional small flecks of py, po.	10504	2.0 0.6	187.0 57.0	189.0 57.6							
		189.0 - 191.0 - (57.6 - 58.2) - Chlorite breccia. 30% chlorite, mainly replacement. A little bluish quartz in matrix. Rare flecks py, po.	10505	2.0 0.6	189.0 57.6	191.0 58.2							
		191.0 - 193.0 - (58.2 - 58.8) - Weakly fractured quartzite with 20% chlorite replacement. No sulphides observed.	10506	2.0 0.6	191.0 58.2	193.0 58.8							
193.0 58.8	208.9 63.7	Quartzite, brecciated, pinkish to buff coloured, typical carbonated fractures and seams. Some dark grey, less altered patches. Rare seams of chlorite.											
		<u>Economics</u>											
		193.0 - 198.0 - (58.8 - 60.4) - Quartzite, pinkish. Occasional carbonate healed fractures and seams. Rare chlorite seams. No sulphides observed.	10507		193.0 58.8	198.0 60.4							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
Location: Scadding Twp., Ont.
Co-ordinates: 5205.1N, 9464.3E

HOLE: N-29
Core size:

Section: 5+50NW, 1+25NE
Length: 280' (85.4m)
Elevation: 312.0m
Azimuth: Dip: -90°

Dip Tests:
Started: November 13, 1980
Completed: November 15, 1980
Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
		198.0 - 203.0 - (60.4 - 61.9) - Quartzite, pink to buff coloured, slightly brecciated to massive. Rare flecks of py, po.	10508	5.0 1.5	198.0 60.4	203.0 61.9				
		203.0 - 208.9 - (61.9 - 63.7) - Quartzite, buff coloured with some less altered grey patches. Rather massive with occasional remnant bedding 60° to core. Essentially barren.	10509	5.9 1.8	203.0 61.9	208.9 63.7				
208.9 63.7	215.0 65.5	Chlorite breccia. 10 to 40% chlorite, small patches of replacement and irregular bands and seams. A few patches of pinkish to grey unreplaced quartzite. <u>Economics</u>								
		208.9 - 210.8 - (63.7 - 64.3) - Chlorite breccia. 30 to 40% chlorite in weakly brecciated quartzite. Scattered flecks of pyrite.	10510	1.9 0.6	208.9 63.7	210.8 64.3				
		210.8 - 212.8 - (64.3 - 64.9) - Chlorite breccia. 40% chlorite in lightly brecciated quartzite. Rare pyritic hairline fractures.	10511	2.0 0.6	210.8 64.3	212.8 64.9				
		212.8 - 215.0 - (64.9 - 65.5) - Chlorite breccia. 20% chlorite in strongly brecciated pinkish quartzite. Rare flecks of py, po.	10512	2.2 0.7	212.8 64.9	215.0 65.5				
215.0 65.5	234.0 71.3	Quartzite, pink to buff coloured, locally brecciated and carbonated. A few small zones of chloritization. <u>Economics</u>								
		215.0 - 217.0 - (65.5 - 66.1) - Pink quartzite breccia, with carbonated fractures. A few streaks of chlorite. Essentially barren.	10513	2.0 0.6	215.0 65.5	217.0 66.1				
		217.0 - 219.5 - (66.1 - 66.9) - Pink quartzite, carbonated fractures. A few chlorite streaks. Essentially barren.	10514	2.5 0.8	217.0 66.1	219.5 66.9				



NORTHGATE EXPLORATION LIMITED

DM 21 - 7E17 - C - 80

Property: 772, D.R. Matt Property
Location: Scadding Twp., Ont.
Co-ordinates: 5230.9N, 9520.8E

HOLE: N-31
Core size:

Section: 5+50NW, 3+50NE
Length: 411.0' (125.3m)
Elevation: 309.2m
Azimuth: Dip: -90°

Dip Tests:
Started: November 21, 1980
Completed: November 24, 1980
Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to												
0.0	9.0	Overburden/casing.											
0.0	2.74												
9.0	193.1	Quartzite, grey, frequently bleached near white, fractured and brecciated with frequent carbonate healed fractures. Some grey non-bleached greywackish sections. Rare small zones of faintly pinkish alteration. 55.0 - 67.0 (16.77 - 20.43) blocky ground with numerous joints and slips.											
2.74	58.86												
		77.0 - 175.6 - (23.5 - 53.6) - Grey to light grey quartzite, weakly to moderately brecciated and fractured with 10% carbonate healed fractures.											
		175.6 - 176.1 - (53.6 - 53.7) - Grey brecciated quartzite with a few streaks of chlorite. A little buff coloured chert.											
		177.6 - 179.3 - (54.2 - 54.7) - Grey brecciated quartzite with scattered blebs and streaks of chlorite. A few flecks of pyrite.											
		188.0 - 192.3 - (57.3 - 58.7) - As above, a few blobs of py. Well mineralized py @ 189.2.											
		<u>Economics</u>											
		175.6 - 177.6 - (53.52 - 54.13) - Weakly brecciated grey to bleached pale grey quartzite with scattered streaks and blobs of chlorite. Rare flecks py, po.	10523	2.0 0.6	175.6 53.52	177.6 54.13							
		177.6 - 179.6 - (54.13 - 54.74) - Well brecciated grey to faintly pinkish quartzite with 10% chlorite as streaks and small blobs. A few grains of magnetite and py.	10524	2.0 0.6	177.6 54.13	179.6 54.74							
		188.2 - 189.2 - (57.36 - 57.67) - Chlorite breccia. 20% chlorite in well brecciated quartzite, 5% diss. py.	10525	1.0 0.3	188.2 57.36	189.2 57.67							



NORTHGATE EXPLORATION LIMITED

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 Location: Scadding Twp., Ont.
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HOLE: N-31
 Core size:

Section: 5+50NW, 3+50NE
 Length: 411.0' (125.3m)
 Elevation: 309.2m
 Azimuth: Dip: -90°

Dip Tests:
 Started: November 21, 1980
 Completed: November 24, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
		303.2 - 304.2 - (92.42 - 92.72) - Chlorite breccia. 20% chlorite, mostly replacement. Rare grains of po, py.	10537	1.0 0.3	303.2 92.42	304.2 92.72				
		304.2 - 305.4 - (92.72 - 93.09) - Chlorite breccia. 40% chlorite, 4" of ground core at beginning of sample. 2 small specks of V.G. @ 304.5.	10538	1.2 0.4	304.2 92.72	305.4 93.09				
		305.4 - 308.4 - (93.09 - 94.00) - Chlorite breccia. 5 to 10% chlorite as fracture fillings, streaks, bands and irregular small patches in brecciated pinkish quartzite. Essentially barren.	10539	3.0 0.9	305.4 93.09	308.4 94.00				
		308.4 - 311.6 - (94.00 - 94.98) - Chlorite breccia. Poorly to moderately brecciated quartzite with 5 to 15% chlorite in patches and as fracture fillings. Rare flecks of py, po.	10540	3.2 1.0	308.4 94.00	311.6 94.98				
		311.6 - 314.2 - (94.98 - 95.77) - Chlorite breccia, 30 to 40% chlorite, mostly even replacement, imparting a granular texture to core. A couple of spots of weakly diss. f.g. py.	10541	2.6 0.8	311.6 94.98	314.2 95.77				
		314.2 - 317.4 - (95.77 - 96.75) - Chlorite breccia. 20 to 30% chlorite in patches and as fracture fillings. Rare flecks py, po.	10542	3.2 1.0	314.2 95.77	317.4 96.75				
		317.4 - 321.1 - (96.75 - 97.87) - Chlorite breccia. 10% chlorite, mostly as fracture fillings in brecciated grey to faintly pinkish quartzite. Rare flecks of po, py.	10543	3.7 1.1	317.4 96.75	321.1 97.87				
		321.1 - 323.1 - (97.87 - 98.48) - Chlorite breccia. 30% chlorite, mostly replacement. 1% f.g. diss. py, po and rare flecks of chalcopyrite.	10544	2.0 0.6	321.1 97.87	323.1 98.48				
		323.1 - 324.9 - (98.48 - 99.03) - Chlorite breccia. 20% chlorite as irregular patches in grey bleached, brecciated quartzite. Essentially barren.	10545	1.8 0.5	323.1 98.48	324.9 99.03				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
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 Co-ordinates: 5230.9N, 9520.8E

HOLE: N-31
 Core size:

Section: 5+50NW, 3+50NE
 Length: 411.0' (125.3m)
 Elevation: 309.2m
 Azimuth: Dip: -90°

Dip Tests:
 Started: November 21, 1980
 Completed: November 24, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
324.9 99.03	355.2 108.27	Quartzite, pinkish, locally salmon red, moderately to well brecciated with 5 to 10% carbonate filled fractures. 3 to 5% chlorite in scattered small patches and local fracture fillings. <u>Economics</u> 324.9 - 329.0 - (99.03 - 100.28) - Quartzite, weakly to non-brecciated, pinkish to light brown. 2% chlorite as small spots and fracture fillings. Essentially barren. 329.0 - 333.0 - (100.28 - 101.50) - Quartzite, weakly to moderately brecciated in patches. 3 to 5% chlorite as fracture fillings. Last 1.5 feet no chlorite. Rare carbonated fractures. No sulphides observed. 333.0 - 337.0 - (101.50 - 102.71) - Quartzite, pink, locally unaltered grey-brown. Weakly brecciated first two feet, then well brecciated, bright pink to salmon red, well brecciated with 2% chlorite as fracture fillings. No sulphides observed. 5% carbonated fractures. 337.0 - 342.0 - (102.71 - 104.24) - Quartzite, weakly to moderately brecciated, grey to faintly pink. 5 to 8% carbonate healed fractures. Essentially barren. 342.0 - 343.5 - (104.24 - 104.70) - Quartzite, as above. 343.5 - 344.3 - (104.70 - 104.94) - Small chlorite breccia zone. 20% chlorite in small spots and a single band, 3" wide. 1% py, po as small subhedral cubes. 344.3 - 349.0 - (104.94 - 106.38) - Quartzite, pink with 10% carbonate healed fractures. Rare small spot of chlorite. No sulphides observed. 4" ground core.								
			10546	4.1 1.3	324.9 99.03	329.0 100.28				
			10547	4.0 1.2	329.0 100.28	333.0 101.50				
			10548	4.0 1.2	333.0 101.50	337.0 102.71				
			10549	5.0 1.5	337.0 102.71	342.0 104.24				
			10550	1.5 0.5	342.0 104.24	343.5 104.70				
			10551	0.8 0.2	343.5 104.70	344.3 104.94				
			10552	4.7 1.4	344.3 104.94	349.0 106.38				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
Location: Scadding Twp., Ont.
Co-ordinates: 5230.9N, 9520.8E

HOLE: N-31
Core size:

Section: 5+50NW, 3+50NE
Length: 411.0' (125.3m)
Elevation: 309.2m
Azimuth: Dip: -90°

Dip Tests:
Started: November 21, 1980
Completed: November 24, 1980
Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au/ oz/ton						
		<u>Ore Sections</u>											
		1.	10544	2.0 0.6	321.1 97.93	323.1 98.54	0.100 .03						
		2.	10555	1.0 0.3	355.2 108.3	356.2 108.6	0.110 .03						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp, Ont.
 Co-ordinates: 5230.8N, 9520.6E

HOLE: N-32
 Core size:

Section: 5+50NW, 3+50NE
 Length: 320' (97.17m)
 Elevation: 309.3m
 Azimuth: Dip: -75°

Dip Tests:
 Started: Nov. 25/80
 Completed: Nov. 27/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractors - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
0.0	6.0	Overburden - casing									
0.0	1.83m										
6.0	270.2	<p>Quartzite, grey to pale grey bleached, lightly to locally well brecciated. 5 to 10% carbonate healed fractures. Occ. bleb of granular pyrite.</p> <p>18.0-19.0 - 2" wide feld. porphyry dyke, 5° to core.</p> <p>44.5-49.0 - Numerous brecciated chert beds.</p> <p>78.0-79.0 - Glossy qtz. veinlet 8° to core.</p> <p>158.0-186.0 - Very blocky ground, numerous joints at random angles.</p> <p>@ 215.0 - Fault zone. Badly broken core with sandy gauge. Looks like about 60° to core.</p> <p>215.0-241.0 - Badly broken core, several sections of ground core up to 1.0 ft.</p> <p>243.0-264.0 - Core box spilled by drill crew. Core completely mixed up, but no zones of economic interest.</p> <p>Chlorite breccia. Poorly chloritized grey to faintly pinkish brecciated quartzite. Many patches non-brecciated, massive quartzite. Locally 5 to 20% carbonate.</p> <p><u>Economics:</u></p> <p>270.2-271.4 - Chlorite breccia. Grey quartzite, moderately brecciated with 10 to 15% chlorite as small irreg. patches. One small 2" patch carries about 5% po.</p>									
0.0	1.83m										
6.0	1.83m										
270.2	82.51m										
270.2	82.51m										
285.5	87.02m										
10558											
1.2											
.37											
270.2											
82.36m											
271.4											
72.72m											
nil											



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R.Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5230.8N, 9520.6E

HOLE: N-32
 Core size:

Section: 5+50NW, 3+50NE
 Length: 320' (97.17m)
 Elevation: 309.3m
 Azimuth: Dip: -75°

Dip Tests:
 Started: Nov. 25/80
 Completed: Nov. 27/80
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		271.4-274.0 - Quartzite, poorly brecciated pinkish to grey. A few streaks and fracture fillings of chlorite. A little carbonate. No sulphides noted.	10559	2.6 .27m	271.4 82.72m	274.0 83.52m	nil				
		274.0-276.5 - Quartzite, weakly brecciated, grey to pale brown, a few carbonate cemented fractures. No chlorite nor sulphides.	10560	2.5 .76m	274.0 83.52m	276.5 84.28m	nil				
		276.5-279.0 - Chlorite breccia. 10 to 15% chlorite as bands and fracture fillings in moderately brecciated grey to faintly pink quartzite. Rare streak or small cluster of pyrite.	10561	2.5 .76m	276.5 84.28m	279.0 85.04m	0.002				
		279.0-281.8 - Quartzite, weakly brecciated, pale grey to pale brown. A few streaks and fracture fillings of chlorite. No sulphides noted.	10562	2.8 .85m	279.0 85.04m	281.8 85.89m	nil				
		281.8-284.0 - Chlorite breccia. 20% chlorite as bands and irregular fracture fillings in moderately brecciated pale grey quartzite. Some carbonated fractures. Local diss. py in chlorite bands.	10563	2.2 .67m	281.8 85.89m	284.0 86.56m	0.002				
		284.0-285.5 - Chlorite breccia. Poorly brecciated in first foot with a few streaks of chlorite. Remainder well brecciated with 30% chlorite. Rare flecks of py, po.	10564	1.5 .46	284.0 86.56m	285.5 87.02m	0.002				
285.5 87.02m	306.0 93.27m	Quartzite, pale grey bleached to faintly pinkish. Not well brecciated. Scattered streaks, bands and fracture fillings of chlorite. Occ. carbonate cemented fractures. <u>Economics:</u> 285.5-292.0 - Only 3.8' of core, remainder missing or ground. Quartzite, pale grey to brown and faintly pinkish. 5% carbonated fractures. A few less altered dark grey patches of greywackish material. Essentially barren.	10565	6.5 1.98m	285.5 87.02m	292.0 89.00m	0.002				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5230.8N, 9520.6E

HOLE: N-32
 Core size:

Section: 5+50NW, 3+50NE
 Length: 320' (97.17m)
 Elevation: 309.3m
 Azimuth: Dip: -75°

Dip Tests:
 Started: Nov. 25/80
 Completed: Nov. 27/80
 Logged by: K. Larsen.

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		292.0-295.5 - Quartzite, pale grey. Weakly to locally well brecciated. A few streaks and bands of chlorite with rare py, po flecks.	10566	3.5 1.07m	292.0 89.00m	295.5 90.07m	nil				
		295.5-297.0 - Chlorite breccia zone. 10% chlorite in well brecciated grey quartzite. 3% granular pyrite in blebs and irregular pods.	10567	1.5 .47m	295.5 90.07m	297.0 90.53m	nil				
		297.0-302.0 - Quartzite, pink to pale grey, moderately brecciated with rare streaks of chlorite. 2% carbonate cemented fractures. Essentially barren.	10568	5.0 1.52m	297.0 90.53m	302.0 92.05m	nil				
		302.0-306.0 - Quartzite, as above.	10569	4.0 1.22m	302.0 92.05m	306.0 93.27m	nil				
306.0 93.27m	318.8 97.17m	Chlorite breccia zone, poorly to well developed with chlorite content variable from nil to 30%. Last 3 feet contains 1/2 to 3/4 inch rhombs of carbonate and irregular pods of quartz to 3/4". <u>Economics:</u> 306.0-309.0 - Chlorite breccia. Well brecciated grey quartzite with 20% chlorite as fracture fillings, blebs and Fg. replacement. Rare flecks of po, py. 309.0-312.8 - Quartzite, bleached pale grey, massive to lightly fractured. Barren. 312.8-314.6 - Chlorite breccia. 20% chlorite in strongly brecciated grey to pale brown quartzite. A few streaks and blebs of py, po. 314.6-316.1 - Quartzite, poorly brecciated with 15% chlorite or less as fracture fillings, and replacement. Essentially barren.	10570	3.0 .91m	306.0 93.27m	309.0 94.18m	0.005				
			10571	3.8 1.16m	309.0 94.18m	312.8 95.34m	nil				
			10572	1.8 .55m	312.8 95.34m	314.6 95.89m	0.005				
			10573	1.5 .47m	314.6 95.89m	316.1 96.35m	0.002				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
Location: Scadding Twp., Ont.
Co-ordinates: 5230.8N, 9520.6E

HOLE: N-32
Core size:

Section: 5+50NW, 3+50NE
Length: 320' (97.17m)
Elevation: 309.3m
Azimuth: Dip: -75°

Dip Tests:
Started: Nov. 25/80
Completed: Nov. 27/80
Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz/ton				
		316.1-318.8 - Chlorite breccia. Strongly brecciated quartzite with 30 to 40% chlorite. Carries large rhombs of carbonate and pods of milky white quartz. About 1% po, py as streaks, small blebs and fracture fillings. 318.8 - Hole terminated. 97.17m Last chlorite zone estimated to be within 10 feet of FW.	10574	2.7 .82m	316.1 96.35m	318.8 97.17m	0.06				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5279.3N, 9445.1E

HOLE: N-33
 Core size:

Section: 8+00NW, 2+00NE
 Length: 213.0' (64.9m)
 Elevation: 304.7m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: November 29, 1980
 Completed: November 30, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to												
0.0	32.0	Overburden/casing. (casing removed after hole completed)											
0.0	9.8												
32.0	101.0	Chlorite breccia. Both replacement and as fillings in brecciated zones. A few small sections of non chloritic to weakly chloritized pink quartzite. Carbonate cement in brecciated sections.											
9.8	30.8												
		<u>Economics</u>											
		32.0 - 35.0 - (9.8 - 10.7) - Chlorite breccia. Very finely brecciated grey quartzite with about 10% chlorite. Odd grain of py.	10819	3.0 0.9	32.0 9.8	35.0 10.7							
		35.0 - 38.0 - (10.7 - 11.6) - As above, slightly more pyrite, but less than 1/2%.	10820	3.0 0.9	35.0 10.7	38.0 11.6							
		38.0 - 41.0 - (11.6 - 12.5) - 10% chlorite, mostly insipient replacement in poorly brecciated quartzite. Essentially barren.	10821	3.0 0.9	38.0 11.6	41.0 12.5							
		41.0 - 44.0 - (12.5 - 13.4) - 10% chlorite in poorly brecciated quartzite. No sulphide noted.	10822	3.0 0.9	41.0 12.5	44.0 13.4							
		44.0 - 47.0 - (13.4 - 14.3) - 40% chlorite replacement in poorly brecciated quartzite. Essentially barren.	10823	3.0 0.9	44.0 13.4	47.0 14.3							
		47.0 - 50.0 - (14.3 - 15.2) - As above.	10824	3.0 0.9	47.0 14.3	50.0 15.2							
		50.0 - 53.0 - (15.2 - 16.2) - Chlorite gradually fading, becoming moderately brecciated pink quartzite at 52.0'. Essentially barren.	10825	3.0 0.9	50.0 15.2	53.0 16.2							
		53.0 - 54.4 - (16.2 - 16.6) - Pink quartzite, gradually becoming chloritic. No sulphides observed.	10826	1.4 0.4	53.0 16.2	54.4 16.6							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5279.3N, 9445.1E

HOLE: N-33.
 Core size:

Section: 8+00NW, 2+00NE
 Length: 213.0' (64.9m)
 Elevation: 304.7m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: November 29, 1980
 Completed: November 30, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
		55.4 - 56.4 - (16.9 - 17.2) - Chlorite breccia. A single 1" wide breccia zone 15 - 20° to core in otherwise massive 40% chloritized quartzite. The narrow breccia zone carries some 4% vuggy py, po.	10828	1.0 0.3	55.4 16.9	56.4 17.2				
		NOTE: 1.6' of ground core from 56.4 to 59.0 in two areas: one at 56.5 - estimated to be 0.9' and one at 58.3 estimated to be 0.7'.								
		56.4 - 58.1 - (17.2 - 17.7) - Chlorite breccia. 0.9' of ground core. 40% chlorite. Well brecciated, quartz-carbonate cemented. 1% py, po as streaks and scattered blebs.	10829	1.7 0.5	56.4 17.2	58.1 17.7				
		58.1 - 59.0 - (17.7 - 18.0) - Chlorite breccia. 0.7' of ground core. Mostly small nubbins of run over core. Occasional flecks of py, po. About 40% chlorite.	10830	0.9 0.3	58.1 17.7	59.0 18.0				
		59.0 - 62.0 - (18.0 - 18.9) - Chlorite breccia. Moderately well brecciated with 20% chlorite. Some pinkish non-chloritic patches.	10831	3.0 0.9	59.0 18.0	62.0 18.9				
		62.0 - 65.0 - (18.9 - 19.8) - Chlorite zone, 40% chlorite replacement. Very rare flecks po, py.	10832	3.0 0.9	62.0 18.9	65.0 19.8				
		65.0 - 68.0 - (19.8 - 20.7) - Chlorite breccia. 30% chlorite replacement and fracture fillings. Rare flecks po, py.	10833	3.0 0.9	65.0 19.8	68.0 20.7				
		68.0 - 71.0 - (20.7 - 21.6) - Chlorite breccia. 10% chlorite in well brecciated grey quartzite. Essentially barren.	10834	3.0 0.9	68.0 20.7	71.0 21.6				
		71.0 - 74.0 - (21.6 - 22.5) - As above, but scattered flecks and small blebs of granular po.	10835	3.0 0.9	71.0 21.6	74.0 22.5				
		74.0 - 77.4 - (22.5 - 23.6) - Chlorite breccia, 20% chlorite in moderately brecciated quartzite. Rare flecks py, po.	10836	3.4 1.0	74.0 22.5	77.4 23.6				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
Location: Scadding Twp., Ont.
Co-ordinates: 5279.3N, 9445.1E

HOLE: N-33
Core size:

Section: 8+00NW, 2+00NE
Length: 213.0' (64.9m)
Elevation: 304.7m
Azimuth: - Dip: -90°

Dip Tests:
Started: November 29, 1980
Completed: November 30, 1980
Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
		77.4 - 80.9 - (23.6 - 24.4) - Quartzite, light brown to buff, unaltered with a few carbonate cemented fractures. Barren.	10837	2.5 0.8	77.4 23.6	80.9 24.4				
		80.9 - 81.8 - (24.4 - 24.9) - Chlorite zone - 10% chlorite, barren.	10838	0.9 0.3	80.9 24.4	81.8 24.9				
		81.9 - 83.0 - (24.9 - 25.3) - Chlorite breccia. A single well brecciated zone, carbonate cemented, then refractured and chloritized. About 20% chlorite, 3% chalcopyrite and 2% po. V.G. in two small clusters, one at 82.6 and one at 83.0.	10839	1.2 0.4	81.8 24.9	83.0 25.3				
		83.0 - 84.6 - (25.3 - 25.8) - Chlorite Zone. Non-brecciated zone of 20% chlorite replacement. A few blebs of po.	10840	1.6 0.5	83.0 25.3	84.6 25.8				
		84.6 - 85.4 - (25.8 - 26.0) - Chlorite breccia zone, same as 81.9 - 83.0, much carbonate, refractured and chloritized. 10% very vuggy pyrite and a few blebs of chalcopyrite.	10841	0.8 0.3	84.6 25.8	85.4 26.0				
		85.4 - 87.0 - (26.0 - 26.5) - Chlorite Zone. 10% chlorite replacement in quartzite. No sulphides noted.	10842	1.6 0.5	85.4 26.0	87.0 26.5				
		87.0 - 90.0 - (26.5 - 27.4) - Chlorite Zone. Single carbonated structure, 1" wide at 88.9', remainder 10% chlorite replacement. A few py. po blebs in structure, remainder barren.	10843	3.0 0.9	87.0 26.5	90.0 27.4				
		90.0 - 92.8 - (27.4 - 28.3) - Chlorite Zone. 10% chlorite or less in massive grey-green quartzite. Barren.	10844	2.8 0.9	90.0 27.4	92.8 28.3				
		92.8 - 93.8 - (28.3 - 28.6) - Chlorite Zone. A single one inch carbonate cemented structure. About 1% diss. py, po in entire sample.	10845	1.0 0.3	92.8 28.3	93.8 28.6				
		93.8 - 96.8 - (28.6 - 29.5) - Chlorite breccia. Poorly brecciated to massive. 10% chlorite. No sulphides.	10846	3.0 0.9	93.8 28.6	96.8 29.5				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5279.3N, 9445.1E

HOLE: N-33
 Core size:

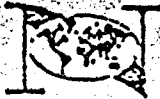
Section: 8+00NW, 2+00NE
 Length: 213.0' (64.9m)
 Elevation: 304.7m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: November 29, 1980
 Completed: November 30, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
		<u>Ore Sections</u>											
		1.	10827	1.0 0.3	54.4 16.59	55.4 16.89	0.26 0.07						
		2.	10839	1.2 0.4	81.8 24.94	83.0 25.31	0.25 0.07						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5278.6N, 9443.8E

HOLE: N-34
 Core size:

Section: 8+00NW, 2+00NE
 Length: 148.0' (45.1m)
 Elevation: 304.6m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: December 1, 1980
 Completed: December 2, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to												
0.0	42.0	Casing through overburden. Casing removed after completion of hole.											
0.0	12.8												
42.0	93.3	Chlorite breccia. 10 to 40% chlorite replacement and in fillings in brecciated zones associated with carbonate. Locally a little vein quartz. Generally poorly mineralized.											
12.8	28.4												
		<u>Economics</u>											
		42.0 - 45.0 - (12.8 - 13.7) - 40% chlorite replacement. Rather massive, non-brecciated material. No sulphides observed.	10871	3.0 0.9	42.0 12.8	45.0 13.7							
		45.0 - 48.0 - (13.7 - 14.6) - 20% chlorite replacement, some patches of 5% replacement in light brownish quartzite. No sulphides observed.	10872	3.0 0.9	45.0 13.7	48.0 14.6							
		48.0 - 51.0 - (14.6 - 15.5) - 20% chlorite replacement in non-brecciated quartzite. No sulphides observed.	10873	3.0 0.9	48.0 14.6	51.0 15.5							
		51.0 - 53.0 - (15.5 - 16.2) - Chlorite breccia. Weakly brecciated with a little carbonate. Scattered grains of py, po.	10874	2.0 0.6	51.0 15.5	53.0 16.2							
		53.0 - 56.5 - (16.2 - 17.2) - 30% chlorite replacement in massive quartzite. Essentially barren.	10875	3.5 1.1	53.0 16.2	56.5 17.2							
		56.5 - 60.0 - (17.2 - 18.2) - Some grey, glassy vein quartz in first 6", remainder 20% chlorite replacement, massive. A few grains of py with vein qtz.	10876	3.5 1.1	56.5 17.2	60.0 18.2							
		60.0 - 63.0 - (18.2 - 19.1) - 25% chlorite replacement in weakly brecciated quartzite. A little dull grey quartz healing a couple of irregular fractures. Essentially barren.	10877	3.0 0.9	60.0 18.2	63.0 19.1							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5278.6N, 9443.8E

HOLE: N-34.
 Core size:

Section: 8+00NW, 2+00NE
 Length: 148.0' (45.1m)
 Elevation: 304.6m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: December 1, 1980
 Completed: December 2, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
		63.0 - 66.0 - (19.1 - 20.0) - As above.	10878	3.0 0.9	63.0 19.1	66.0 20.0				
		66.0 - 71.0 - (20.0 - 21.6) - 20 to 30% chlorite replacement in massive quartzite. No sulphides observed.	10879	5.0 1.5	66.0 20.0	71.0 21.6				
		71.0 - 74.0 - (21.6 - 22.5) - Chlorite breccia. A few patches of carbonate, quartz-chlorite healed fractures. A few grains of pyrite with these. Remainder 30% chlorite replacement, massive.	10880	3.0 0.9	71.0 21.6	74.0 22.5				
		74.0 - 76.5 - (22.5 - 23.3) - Chlorite breccia. Weakly brecciated with minor carbonate and 20% chlorite. Rare flecks of po, py.	10881	2.5 0.8	74.0 22.5	76.5 23.3				
		76.5 - 78.0 - (23.3 - 23.8) - Chlorite breccia. 1% py as Vuggy blebs. 40% chlorite.	10882	1.5 0.5	76.5 23.3	78.0 23.8				
		78.0 - 82.0 - (23.8 - 25.0) - 20% chlorite replacement in massive quartzite. Essentially barren.	10883	4.0 1.2	78.0 23.8	82.0 25.0				
		82.0 - 86.0 - (25.0 - 26.2) - 10 to 20% chlorite replacement in massive quartzite. A few small blebs and vague spots of bluish quartz in matrix. No sulphides observed.	10884	4.0 1.2	82.0 25.0	86.0 26.2				
		86.0 - 87.5 - (26.2 - 26.7) - As above.	10885	1.5 0.5	86.0 26.2	87.5 26.7				
		87.5 - 91.0 - (26.7 - 27.7) - Chlorite breccia. Well brecciated, with typical carbonated structures and breccia zones. 20 to 30% chlorite. Rare flecks of po, py.	10886	3.5 1.1	87.5 26.7	91.0 27.7				
		91.0 - 93.3 - (27.7 - 28.4) - Chlorite breccia. Well brecciated, as above, but chlorite content rapidly declining. Distinct angular fragments of quartzite in a carbonate matrix. 5% chlorite. Essentially barren.	10887	2.3 0.7	91.0 27.7	93.3 28.4				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5291.2N, 9472.7E

HOLE: N-35
 Core size:

Section: 8+00NW, 3+00NE
 Length: 162.6' (49.6)
 Elevation: 302.9m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: December 4, 1980
 Completed: December 5, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to												
0.0	24.0	Overburden/casing. Casing removed after completion of hole.											
0.0	7.3												
24.0	39.4	Quartzite. Fairly massive, pink alteration, occasional carbonate cemented fracture.											
7.3	12.0												
39.4	68.0	Quartzite. Pink to buff coloured, scattered bits of chlorite. Generally well brecciated with numerous carbonate cemented fractures. Some zones of strongly brecciated material, healed with pale grey carbonate and quartz. Mineralization associated with these.											
12.0	20.7												
		<u>Economics</u>											
		39.4 - 40.4 - (12.0 - 12.3) - Quartzite, weakly brecciated, pinkish to buff coloured. A few streaky beds of buff coloured chert. Rare grains of pyrite.	10850	1.0 0.3	39.4 12.0	40.4 12.3							
		40.4 - 41.4 - (12.3 - 12.6) - Quartzite with quartz-carbonate structure from 40.8 to 41.2, well mineralized, 10% pyrite as blebs and subhedral cubes. Remainder of sample has only rare grains of py.	10851	1.0 0.3	40.4 12.3	41.4 12.6							
		41.4 - 44.0 - (12.6 - 13.4) - Quartzite, non-chloritic with scattered carbonate healed fractures. Bright pink in bands. Rare flecks of py.	10852	2.6 0.8	41.4 12.6	44.0 13.4							
		44.0 - 45.0 - (13.4 - 13.7) - Chlorite breccia. Poorly developed with only 5% chlorite, but well brecciated and mineralized. Quartz-carbonate cement healing fractures. 3% pyrite directly associated with quartz-carbonate.	10853	1.0 0.3	44.0 13.4	45.0 13.7							
		45.0 - 47.5 - (13.7 - 14.5) - Quartzite, pink, poorly brecciated. One to two % chlorite. Rare grains of py. Very little carbonate.	10854	2.5 0.8	45.0 13.7	47.5 14.5							
		47.5 - 49.0 - (14.5 - 14.9) - Quartzite, 5% chlorite. Moderately well brecciated, quartz-carbonate healed. 1% py as scattered blebs associated with quartz-carbonate.	10855	1.5 0.5	47.5 14.5	49.0 14.9							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5291.2N, 9472.7E

HOLE: N-35
 Core size:

Section: 8+00NW, 3+00NE
 Length: 162.6' (49.6)
 Elevation: 302.9m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: December 4, 1980
 Completed: December 5, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
		49.0 - 51.0 - (14.9 - 15.5) - Quartzite, non-chloritic, but appearance otherwise same as above. Scattered grains of py. May possibly be F.W. type pyrite.	10856	2.0 0.6	49.0 14.9	51.0 15.5				
		51.0 - 55.0 - (15.5 - 16.8) - Quartz, grey to dark grey and pink. Carbonate structure 52.0 - 52.3 (15.86 - 15.95), some blebs of py with this. Rest essentially barren.	10857	4.0 1.2	51.0 15.5	55.0 16.8				
		55.0 - 56.5 - (16.8 - 17.2) - Carbonate Structure. Heavy pyrite 55.2 (16.8) - 55.6 (16.9), about 30%, but looks like granular pyrite found in F.W. No V.G. noted.	10858	1.5 0.5	55.0 16.8	56.5 17.2				
		56.5 - 57.8 - (17.2 - 17.6) - Quartzite, well brecciated and carbonated. Essentially barren. Looks like F.W.	10859	1.3 0.4	56.5 17.2	57.8 17.6				
		57.8 - 68.0 - (17.6 - 20.7) - Quartzite, pink altered to buff, some chert beds. Numerous rhombs of carbonate, typical of F.W. material. All barren - no samples taken.								
68.0 20.7	69.3 21.1	Fault Zone. Brick red hematite staining in highly sheared and brecciated quartzite. No angles could be obtained. Tentatively named #1 Fault. Same as intercepted in N-24.								
69.3 21.1	77.3 23.6	Chlorite breccia. Distinct zone of mostly chlorite replacement in weakly brecciated quartzite. Section is poorly mineralized.								
		<u>Economics</u>								
		69.3 - 71.3 - (21.1 - 21.7) - Chlorite breccia. First 7" quartzite, pink, with 2 to 5% chlorite. Remainder chlorite breccia, 10 to 15% chlorite. Rare grain of py, cpy.	10860	2.0 0.6	69.3 21.1	71.3 21.7				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5291.2N, 9472.7E

HOLE: N-35
 Core size:

Section: 8+00NW, 3+00NE
 Length: 162.6' (49.6)
 Elevation: 302.9m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: December 4, 1980
 Completed: December 5, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS			
from	to									
		71.3 - 72.7 - (21.7 - 22.2) - Chlorite breccia. 20 - 30% chlorite in first foot, then 10% chlorite replacement in remainder. A few grains of pyrite and chalcopyrite.	10861	1.4 0.4	71.3 21.7	72.7 22.2				
		72.7 - 74.7 - (22.2 - 22.8) - Chlorite breccia. 30% chlorite, essentially barren.	10862	2.0 0.6	72.7 22.2	74.7 22.8				
		74.7 - 77.3 - (22.8 - 23.6) - Chlorite breccia. 10 - 15% chlorite, rapidly declining to straight non-chloritic quartzite. Essentially barren.	10863	2.6 0.8	74.7 22.8	77.3 23.6				
77.3 23.6	126.3 38.5	Quartzite, mostly buff to light brown, brecciated with much carbonate. Frequent chert beds. Pinkish alteration is vague.								
126.3 38.5	136.5 41.6	Chlorite breccia. Patchy, well brecciated quartzite with several carbonate structures. Chloritization best developed in highly brecciated zones. Locally some py, po, and rarely chalcopyrite.								
		<u>Economics</u>								
		126.3 - 127.3 - (38.5 - 38.7) - Quartzite, rather massive with 5% chlorite replacement. No sulphides noted.	10864	1.0 0.3	126.3 38.5	127.3 38.7				
		127.3 - 128.5 - (38.7 - 39.2) - Carbonate structure with 4" inclusion of highly chloritized quartzite. A few grains of py.	10865	1.2 0.4	127.3 38.7	128.5 39.2				
		128.5 - 130.3 - (39.2 - 39.7) - Chlorite breccia. Continuation of above carbonate structure. Structure has been re-fractured and chloritized - mineralized. About 10% chlorite as fracture fillings in carbonate. Several blebs of py and V.G. at 129.5 (39.4) - some 4 small grains in a cluster.	10866	1.8 0.5	128.5 39.2	130.3 39.7				
		130.3 - 133.0 - (39.7 - 40.5) - Quartzite, grey to slightly banded green, 2 to 5% chlorite replacement. Barren.	10867	2.7 0.8	130.3 39.7	133.0 40.5				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5291.2N, 9472.7E

HOLE: N-35
 Core size:

Section: 8+00NW, 3+00NE
 Length: 162.6' (49.6)
 Elevation: 302.9m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: December 4, 1980
 Completed: December 5, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS	
from	to						Au oz/ton	oz/ft
		<u>Ore Sections</u>						
			10866	1.8 0.5	128.5 39.2	130.3 39.7	0.26 0.08	.468 0.14
			10867	2.7 0.8	130.3 39.7	133.0 40.6	0.002 0.0006	.005 0.001
			10868	1.0 0.3	133.0 40.6	134.0 40.9	0.13 0.04	.130 0.004
		1.		5.5 1.7	128.5 39.2	134.0 40.9	0.110 0.03	.603 0.18



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5308.5N, 9431.6E

HOLE: N-37
 Core size:

Section: 9+00NW, 2+00NE
 Length: 307' (93.6)
 Elevation: 301.8m
 Azimuth: S65°W Dip: -45°

Dip Tests:
 Started: December 8, 1980
 Completed: December 9, 1980
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to								
0.0	40.0	Casing through overburden. Numerous boulders, mostly diabase and pink to red quartzite. Casing removed after completion of hole.							
0.0	12.2								
40.0	70.3	Serpent quartzite, buff coloured to red and pink, massive with no carbonate except rare thin stringer. A few small irregular patches of grey to dark grey less altered "subgreywacke". Occasional vague remnant bedding 65° to core.							
12.2	21.4								
70.3	93.6	Diabase, chilled, f.g. margins, coarser grained in center. Contact with upper unit 45° to core, lower contact same angle. 73.0 to 73.6, strong slickensided joint 10° to core, 1/8" soft gouge.							
21.4	28.5								
93.6	134.7	Quartzite, mostly buff coloured with some pink alteration in patches. Carbonate is still very scarce. Quartz vein 109.0 to 109.4, 75° to core. A couple of blebs of chlorite in this and a network of pink alteration associated with randomly oriented hairline fractures. Frequent zones of "crackle breccia", this being numerous fine hairline fractures of random orientation superimposed on earlier deformations. This would appear to be the result of strain caused by post ore faulting.							
28.5	41.1								
		94.4 - 95.3 - (28.79 - 29.06) - Possible fault zone. Quartzite is quite sheared and brecciated but lacks hematite staining typically associated with major faults.							
		102.0 - 102.8 - (31.11 - 31.35) - Possible weak fault. Core is sheared, disrupted and brecciated, but lacks hematite staining.							
134.7	137.9	Diabase dyke. Upper contact fingered, with red-brown quartzite between diabase dykelets. Lower contact sharply defined 10° to core, strongly sheared.							
41.1	42.1								
		135.4 - 137.9 - (41.29 - 42.05) - Fault Zone. Very strong brecciated and sheared diabase. Some vuggy carbonate. Fault is well defined 10° to core. Spots of hematite stained.							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5013.5N, 9746E

HOLE: N-44
 Core size:

Section:
 Length: 307' (93.6)
 Elevation: 307.3m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: January 24, 1981
 Completed: January 27, 1981
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						Au oz./ton		
		@ 39.7 (12.10) - 2" zone, highly fractured with a little soft gouge. Possible fault. <u>Economics - Trial Samples</u>							
		62.0 - 64.5 - (18.90 - 19.66) - Quartzite, well brecciated mottled dark grey to off white. 2 to 5% chlorite interstitial to fragments. Scattered grains, blebs and streaks of py, po and cpy, about 2% total by volume. Mineralization clearly associated with minute fractures.	11402	2.5 0.8	62.0 18.90	64.5 19.66	Tr		
		81.0 - 83.5 - (24.69 - 25.45) - Quartzite, as above, but more buff coloured fragments. Chlorite interstitial to fragments. Scattered isolated cluster of py cubes and occasional blebs and streaks.	11403	2.5 0.8	81.0 24.69	83.5 25.45	Tr		
		83.5 - 84.5 - (25.45 - 25.76) - Quartzite, well brecciated dark grey with light grey to buff fragments. 2% chlorite interstitial to fragments. A little py as streaks and small blebs.	11404	1.0 0.3	83.5 25.45	84.5 25.76	Tr		
		84.5 - 87.5 - (25.76 - 26.67) - Quartzite, dark grey to bleached light grey, massive to lightly fractured with chlorite along fractures. Py streaks and small grains in chlorite.	11405	3.0 0.9	84.5 25.76	87.5 26.67	Tr		
		87.5 - 91.0 - (26.67 - 27.74) - Quartzite, fractured and lightly brecciated with streaks of chlorite and occasional blebs and streaks of py, po.	11406	3.5 1.1	87.5 26.67	91.0 27.74	Tr		
		91.0 - 95.0 - (27.74 - 28.96) - Quartzite. Well brecciated to 92.5 with pink alteration and a little carbonate, remainder massive to lightly fractured dark grey to slightly bleached. Chlorite persistent along hairline fractures but in very small amounts. Scattered grains of py.	11407	4.0 1.2	91.0 27.74	95.0 28.96	Tr		
		95.0 - 97.7 - (28.96 - 29.78) - Quartzite, dark grey massive meta-subgreywacke. A few chloritic hairline fractures. Rare small grains of py. Last 3 inches	11408	2.7 0.8	95.0 28.96	97.7 29.78	Tr		



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5013.5N, 9746E

HOLE: N-44.
 Core size:

Section:
 Length: 307' (93.6)
 Elevation: 307.3 m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: January 24, 1981
 Completed: January 27, 1981
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						Au oz./ton		
97.7	126.1	becoming brecciated with increase in chlorite content.							
29.78	38.44	Chlorite breccia. 10% to very locally 60% chlorite in well brecciated dark grey meta-subgreywacke. Much bleaching and pink altered fragments. Locally some carbonate cement. Several zones well mineralized py, po, cpy and v.g. as noted.							
		<u>Economics</u>							
		97.7 - 100.0 - (29.78 - 30.48) - Chlorite breccia. 15% chlorite in brecciated quartzite. Fragments vary from dark grey to buff and pink. A little carbonate locally. Scattered grains of po.	11409	2.3 0.7	97.7 29.78	100.0 30.48	.001		
		100.0 - 103.0 - (30.48 - 31.39) - Chlorite breccia. 25% chlorite in highly brecciated quartzite. Fragments generally quite small, dark grey, buff to pink and off white. Scattered clusters of diss. py, po and occasional cpy.	11410	3.0 0.9	100.0 30.48	103.0 31.39	.004		
		103.0 - 106.0 - (31.39 - 32.31) - Chlorite breccia. 25% chlorite, as above.	11411	3.0 0.9	103.0 31.39	106.0 32.31	.06		
		106.0 - 107.0 - (32.31 - 32.61) - Chlorite breccia. 30% chlorite and a little carbonate in well brecciated dark grey quartzite. Some bluish quartz in matrix. 1% po, py, f.g., diss.	11412	1.0 0.3	106.0 32.31	107.0 32.61	Tr		
		107.0 - 110.0 - (32.61 - 33.53) - Chlorite breccia. 15% chlorite in finely brecciated quartzite. Odd grains of py.	11413	3.0 0.9	107.0 32.61	110.0 33.53	Tr		
		110.0 - 113.0 - (33.53 - 34.44) - Chlorite breccia, as above but 10% chlorite and coarser brecciation.	11414	3.0 0.9	110.0 33.53	113.0 34.44	.009		
		113.0 - 116.0 - (34.44 - 35.36) - Chlorite breccia. 20% chlorite. Well brecciated with a little carbonate. Odd bleb of po, py.	11415	3.0 0.9	113.0 34.44	116.0 35.36	.364		



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5013.5N, 9746E

HOLE: N-44
 Core size:

Section:
 Length: 307' (93.6)
 Elevation: 307.3 m
 Azimuth: - Dip: -90°

Dip Tests:
 Started: January 24, 1981
 Completed: January 27, 1981
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz/ton						
		<u>Ore Sections</u>											
			11415	3.0 0.9	113.0 34.5	116.0 35.4	.364						
			11416	1.0 0.3	116.0 35.4	117.0 35.7	.013						
			11417	1.0 0.3	117.0 35.7	118.0 36.0	.576						
			11418	1.0 0.3	118.0 36.0	119.0 36.3	.062						
			11419	1.0 0.3	119.0 36.3	120.0 36.6	.222						
			11420	1.0 0.3	120.0 36.6	121.0 36.9	.129						
		1.		8.0 2.5	113.0 34.5	121.0 36.9	.276						



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5014.ON, 9746E

HOLE: N-45
 Core size:

Section:
 Length: 209.0' (63.74)
 Elevation: 307.3 m
 Azimuth: 0° Dip: -70°

Dip Tests:
 Started: January 27, 1981
 Completed: January 30, 1981
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS		
from	to						Au oz/ton		
0.0	4.0	Casing through overburden.							
0.0	1.2								
4.0	76.4	Quartzite, med. grey and brecciated with spotty pink alteration to 21.0 feet, then grey to dark grey unaltered, fairly massive to 76.4'. No bedding observed. Becoming lighter grey in colour from 52 feet. Pink alteration in last two feet of zone. 7.0 to 11.0 - (2.1 - 3.4) - Ground core. 52.0 to 54.0 - (15.9 - 16.5) - Ground core.							
1.2	23.3								
76.4	101.0	Chlorite breccia. A poorly developed zone composed of greywacke, somewhat argillaceous in places, with local brecciation, bleaching and pink alteration. Chlorite content variable but rarely over 20%. <u>Economics</u> 76.4 - 78.4 - (23.3 - 23.9) - Chlorite breccia. 5% chlorite in pink to grey quartzite, poorly brecciated. No sulphides observed. 78.4 - 79.9 - (23.9 - 24.4) - Chlorite breccia. 20% chlorite in well brecciated, pink altered quartzite. No sulphides observed. 79.9 - 83.0 - (24.4 - 25.3) - Chlorite breccia. 20% chlorite in well brecciated quartzite. Some small spots of pink alteration. Rare flecks of po, py. 83.0 - 86.0 - (25.3 - 26.2) - Chlorite breccia. 10% chlorite in poorly brecciated grey to pink quartzite. Some small massive greywacke sections - unaltered. No sulphides observed.							
23.3	30.8								
			11462	2.0 0.6	76.4 23.3	78.4 23.9	Tr		
			11463	1.5 0.5	78.4 23.9	79.9 24.4	.020		
			11464	3.1 0.9	79.9 24.4	83.0 25.3	.084		
			11465	3.0 0.9	83.0 25.3	86.0 26.2	.001		



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5014.ON, 9746E

HOLE: N-45-
 Core size:

Section:
 Length: 209.0' (63.74)
 Elevation: 307.3 m
 Azimuth: 0° Dip: -70°

Dip Tests:
 Started: January 27, 1981
 Completed: January 30, 1981
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
		86.0 - 89.0 - (26.2 - 27.1) - Quartzite with scattered narrow brecciated zones carrying 5% chlorite. Some pink alteration. No sulphides observed.	11466	3.0 0.9	86.0 26.2	89.0 27.1	.003				
		89.0 - 93.0 - (27.1 - 28.4) - Quartzite, bright pink with a few streaks of chlorite to 91.0, the dark grey f.g. to m.g. wacke. No sulphides observed.	11467	4.0 1.2	89.0 27.1	93.0 28.4	.001				
		93.0 - 96.0 - (28.4 - 29.3) - Quartzite, dark grey, massive to weakly fractured. No alteration. A few grains of pyrite.	11468	3.0 0.9	93.0 28.4	96.0 29.3	.001				
		96.0 - 98.0 - (29.3 - 30.0) - Greywacke, becoming fractured and weakly brecciated, but essentially unaltered. A little chlorite replacement in last few inches. No sulphides observed.	11469	2.0 0.6	96.0 29.3	98.0 30.0	Tr				
		98.0 - 101.0 - (30.0 - 30.8) - Chlorite breccia. 5 to 10% chlorite in weakly brecciated and fractured, pink altered quartzite. Chlorite as fracture fillings with a little py associated.	11470	3.0 0.9	98.0 30.0	101.0 30.8	.003				
101.0 30.8	127.0 38.7	Quartzite, dark grey, argillaceous, massive to weakly fractured. A little pink alteration 106.0 to 107.0, remainder unaltered to 119.0, then becoming weakly brecciated and slightly bleached in narrow bands.									
127.0 38.7	141.6 43.2	Quartzite, locally interbedded with near black argillite. Mostly well brecciated with patches of bleaching and pink alteration. Bedding variable from 35° to 60° to core. A little chlorite and pyrite in brecciated sections. Zone appears to be a weakly developed chlorite breccia zone.									
		<u>Economics</u>									
		127.0 - 128.0 - (38.7 - 39.0) - Chlorite breccia. 10% chlorite in pinkish altered quartzite. Scattered flecks of py.	11471	1.0 0.3	127.0 38.7	128.0 39.0	Tr				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5011.0 N
 9738.2 E

HOLE: N-46
 Core size:

Section:
 Length: 127' (38.8)
 Elevation: 307.5m
 Azimuth: 0° Dip: -55°

Dip Tests:
 Started: Jan. 30, 1981
 Completed: Feb. 1, 1981
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS							
from	to						Au oz./ton							
0.0	6.0	Casing through overburden. Nubbins of chlorite bx. 5.0 (1.5) to 6.0 (1.8), possibly a boulder. Not mineralized.												
0.0	1.8													
6.0	36.0	Quartzite, dirty grey, mostly brecciated with much pink alteration. Locally small amounts of carbonate. Pink alteration increasing from 27.0 (8.2). No chlorite or sulphides noted.												
1.8	11.0													
36.0	47.0	Quartzite, grey with much pink alteration. Locally brecciated, but little or no carbonate. Rare bleb of chlorite. No sulphides noted. Core badly broken.												
11.0	14.3													
47.0	56.4	Chlorite breccia. A poorly developed chloritic zone, composed mainly of deep pink quartzite with blebs, streaks and rarely bands of chlorite. Locally weakly mineralized po, py.												
14.3	17.2													
		<u>Economics</u>												
		47.0 - 48.6 - (14.3 - 14.8) - Chlorite breccia. 10% chlorite in pink altered, brecciated quartzite. Rare grain of py, po.	11508	1.6 0.5	47.0 14.3	48.6 14.8	.001							
		48.6 - 49.8 - (14.8 - 15.2) - Chlorite zone. 50% chlorite, mainly replacement. A few streaks and blebs of po, py and a single grain of V.G. @ 49.1' (15.0)	11509	1.2 0.4	48.6 14.8	49.8 15.2	.396							
		49.8 - 51.5 - (15.2 - 15.7) - Chlorite breccia. 30% chlorite as large blobs or bands in pink quartzite. A few pyritic hairline fractures and scarce small grains of po, py with a few flecks of cpy associated with pyrite.	11510	1.7 0.5	49.8 15.2	51.5 15.7	.079							
		51.5 - 54.0 - (15.7 - 16.5) - Quartzite, bright pink, slightly fractured with chlorite healing hairline fractures. Occasional small blebs of chlorite. Essentially barren.	11511	2.5 0.8	51.5 15.7	54.0 16.5	.012							
		54.0 - 56.4 - (16.5 - 17.2) - As above, but 5% chlorite and 1/2% pyrite.	11512	2.4 0.7	54.0 16.5	56.4 17.2	.002							



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5011.0 N
 9738.2 E

HOLE: N-46
 Core size:

Section:
 Length: 127' (38.8)
 Elevation: 307.5 m
 Azimuth: 0° Dip: -55°

Dip Tests:
 Started: Jan. 30, 1981
 Completed: Feb. 1, 1981
 Logged by: K. Larsen

DRILL LOG

Drill Contractor - N. Morissette

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS				
from	to						Au oz./ton				
56.4 17.2	66.4 20.3	Quartzite, med. to lt. grey, massive, non-brecciated, non-bedded. No sulphides and no chlorite. Samples: Sampled as a matter of record. 56.4 - 61.4 - (17.2 - 18.7) - Quartzite, med. grey, massive, barren. 61.4 - 66.4 - (18.7 - 20.3) - Quartzite, as above, barren.	11513	5.0 1.5	56.4 17.2	61.4 18.7	Tr				
66.4 20.3	78.5 23.9	Chlorite breccia. 5 to 30% chlorite in pink altered, brecciated quartzite. <u>Economics</u> 66.4 - 68.0 - (20.3 - 20.7) - Chlorite breccia. Purely brecciated, pink altered quartzite with 5% chlorite as small blebs and streaks. 68.0 - 69.0 - (20.7 - 21.0) - Chlorite breccia. 15% chlorite in pink quartzite breccia. ½ to 1% po, py as streaks and small irregular grains. 69.0 - 71.0 - (21.0 - 21.7) - Quartzite, non-brecciated, buff to grey, weakly fractured. No sulphides observed. 71.0 - 74.0 - (21.7 - 22.6) - Chlorite breccia. 30% chlorite in well brecciated pink quartzite. 1% po, py and scarce grains of cpy. 74.0 - 77.5 - (22.6 - 23.6) - Chlorite breccia. 25% chlorite as irregular pods, blebs and stringers in bleached lt. grey quartzite. A little po, py and rare flecks of cpy.	11514	5.0 1.5	61.4 18.7	66.4 20.3	Tr				
			11515	1.6 0.5	66.4 20.3	68.0 20.7	.001				
			11516	1.0 0.3	68.0 20.7	69.0 21.0	.130				
			11517	2.0 0.6	69.0 21.0	71.0 21.7	.009				
			11518	3.0 0.9	71.0 21.7	74.0 22.6	.059				
			11519	3.5 1.1	74.0 22.6	77.5 23.6	.120				



NORTHGATE EXPLORATION LIMITED

Property: 772, D.R. Watt Property
 Location: Scadding Twp., Ont.
 Co-ordinates: 5011.0 N
 9738.2 E

HOLE: N-46.
 Core size:

Section:
 Length: 127' (38.8)
 Elevation: 307.5 m
 Azimuth: 0° Dip: -55°

Dip Tests:
 Started: Jan. 30, 1981
 Completed: Feb. 1, 1981
 Logged by: K. Larsen

DRILL LOG

DEPTH		DESCRIPTION NOTE: All angles are measured with respect to the long core axis.	sample number	width	from	to	ASSAYS						
from	to						Au oz./ton						
		<u>Ore Sections</u>											
			11509	1.2 0.4	48.6 14.8	49.8 15.2	.396						
			11510	1.7 0.5	49.8 15.2	51.5 15.7	.079						
		1.		2.9 0.9	48.6 14.8	51.5 15.7	.21						
		2.	11516	1.0 0.3	68.0 20.7	69.0 21.1	.130						
			11518	3.0 0.9	71.0 21.7	74.0 22.6	.059						
		3.	11519	3.5 1.07	74.0 22.6	77.5 23.6	.120						
		3a.		6.5 2.0	71.0 21.7	77.5 23.6	.091						



41110NE0185 0016 SCADDING

020

SUMMARY REPORT
EXPLORATION ACTIVITIES OF
SCADDING TOWNSHIP PROPERTIES
Project 772
Oct. - Dec. 31, 1980

G. Harper
Chief Geologist

W. Weber
Manager Exploration

Toronto, Ontario
February 4, 1981

2.4121

Duplicate

SUMMARY REPORT
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41110NE0185 0016 SCADDING

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SUMMARY REPORT - ASHIGAMI PROJECT 772
SCADDING TOWNSHIP, SUDBURY DISTRICT, ONTARIO

1.0 Summary

Exploratory work on the property commenced early in October. The first drill arrived on the property October 1, followed by a second drill 4 days later and a third drill early in December.

The total footage completed by December 31, 1980 was 11,602 feet in 32 holes.

Surveyors (Sutcliffe & Co.) were engaged to define the concession lines, survey previous and current drill holes, produce section profiles and conduct a boundary survey preparatory to lease application.

Overburden clearing of the East-West Zone, the Intermediate Zone and North-West structure was largely completed. There remains to be done, the hydraulic sluicing to completely expose the rock surface.

The campsite comprising driller's quarters, crew living quarters, office with propane, electrical and septic systems have been completed and are operational. Core shacks, open and covered, have been built with a capacity for over 40,000 lineal feet of core.

Roads to the drill sites, campsite and campsite area have been gravelled and improved to all-weather category.

The line cutting on the property is 75% completed with the balance deferred until the spring of 1981. A total of 285 line kilometers or 178 line miles have been cut, chained and picketed.

The magnetometer survey is underway with coverage of the N-W Grid largely completed. Further I.P. or E.M. surveys have been deferred until the spring.

The proposed exploration 1981 budget for the Scadding groups totals \$1.0 Million exclusive of the development and mining proposed for the 4 claim lease area.

In the appended outline of the 1980 exploration activities and expenditures, the full coverage of the work program is readily visible and accountable.

Ore reserves presently confirm the original report of W.K. Weber, March, 1980, and total in the completed test work approximately 250,000 tons grading 0.22 oz. Au/ton. Final definition of the ore reserve picture will be available in late February 1981, following the completion of Phase I drill program.

EXPLORATION EXPENDITURES
Project 772 - Scadding Township

SERIES	CATEGORY	BUDGET OCT-80	UNITS	OMEF	% COMPL.	ACTUAL EXPENDITURE	TRANSFER
100	GROUND CONTROL						
	i) Line cutting	61,985.	429 LKm	11,845.	55%	38,719.13	-27,000.
	ii) Photogrammetric		8000 ac.	(Gulf Grp)	100%	42,048.49	+42,000.
	iii) Surveying						
	a) Claim Boundary	25,000.	30 Km		100%		
	b) Drill Sites	15,000.	100 Km	9,000.	100%	60,671.82	+20,000.
	TOTAL	\$101,985.				99,692.41	
200	GEOLOGY						
	i) Stripping						
	Site Clearance	13,980.		16,000.	100%	5,843.50	
	ii) Metallurgy	3,500.			100%		
	TOTAL	\$17,480.				5,843.50	-11,000.
300	GEOCHEMISTRY						
	TOTAL	Nil					
400	GEOPHYSICS						
	i) I.P. Survey	18,600.	31 Km	9,000.	Nil		
	ii) Magnetometer	3,100.	31 Km	10,000.	30%	3,692.40	- 2,500.
	iii) EM-16 VLF	3,720.	31 Km	8,750.	Nil		
	TOTAL	\$28,420.				3,692.40	
500	DRILLING						
	i) Contract	150,000.	10,000'	380,000.	116%	203,393.01	
	ii) Assays	10,000.	1,000	(20,000')		7,544.14	
	TOTAL	\$160,000.				210,937.15	+50,000.
600	TRANSPORT						
	i) Rentals & Leases					3,948.39	
	ii) Maintenance					1,364.67	
	iii) Shipping Charges	8,800.				1,300.90	
	iv) Commercial					2,046.26	
	TOTAL					8,918.48	+100.
700	CAMPSITE, ACCOMODATION						
	i) Core Racks	8,810.		6,500.		6,765.15	
	ii) Site Bldgs.	9,320.		7,500.		14,190.55	
	iii) Motel etc.	4,500.				2,959.52	
	iv) Communications	500.				625.66	
	v) Site Clearance, Roads	7,500.				7,031.50	
	TOTAL	\$30,630.				31,572.38	+1,000.
800-900	SUPERVISION						
	i) Project Personnel	29,500.				34,328.42	
	ii) Drafting	7,000.				4,966.48	
	iii) Head Office	17,500.				13,122.37	
	iv) Site Office					8,016.33	
	TOTAL	54,000.				60,433.60	+10,000.
SUMMARY	TOTAL	371,715.				428,943.15	
OMEF		83,279.				94,428.00	
	NET	288,436.					
CONTINGENCY		36,791.					
SITE		325,227.					
901 HEAD OFFICE		45,500.				See Above	-45,000.
	TOTAL	\$370,727.00		448,100.00		330,515.00	

Summary Report of The Exploration Activities

On the Ashigami Project 772

Scadding Township, Sudbury District, Ontario N.T.S. 41I/10

Period Oct. 1 - Dec. 31, 1980

2.0 Introduction

The Watt properties comprise 206 claims, now divided into 6 separate groups; Projects 772, 723, 724, 725, 726 and 727. The acquisition in the fall of 1980 followed a lengthy period of evaluation and negotiation which commenced in June, 1978.

The terms of acquisition of a 100% interest required (a) a front end payment satisfied by the issue of 110,000 treasury shares of Northgate, (b) a reservation to the vendors of a 30% net profits royalty as well as assumption of the "Gulf royalty" of \$1.00 per ton mined on the original group of 40 claims, and a commitment to spend in exploration and development programs, at least one million dollars in the 18 month period following the date of the agreement.

The properties are located in Scadding Township, 31 miles north and east of Sudbury, one of the major mining centres in Canada. The access, availability of water, energy and ancilliary services including labour supply is comparable to the best in Canada.

Exploration in Scadding Township has been sporadic since the first discovery of gold in 1888. The flurries of major exploratory work involved gold in the pre-World War II era; gold, copper and uranium during the fifties and sixties and currently the recent activity sparked by the McLean discoveries in the period 1974-1980.

The dominant regional geological feature of the area is the Huronian sedimentary basin, a counterpart of the Blind River basin but separated by the Sudbury intrusive lopolith. The sedimentary rocks span the Mississagi, Bruce, Serpent and Gowganda formations. The underlying basement is Archean granites, gneisses and schists. Flat-lying Nipissing diabasic sills and Killarnean olivine diabase dikes intrude the sediments.

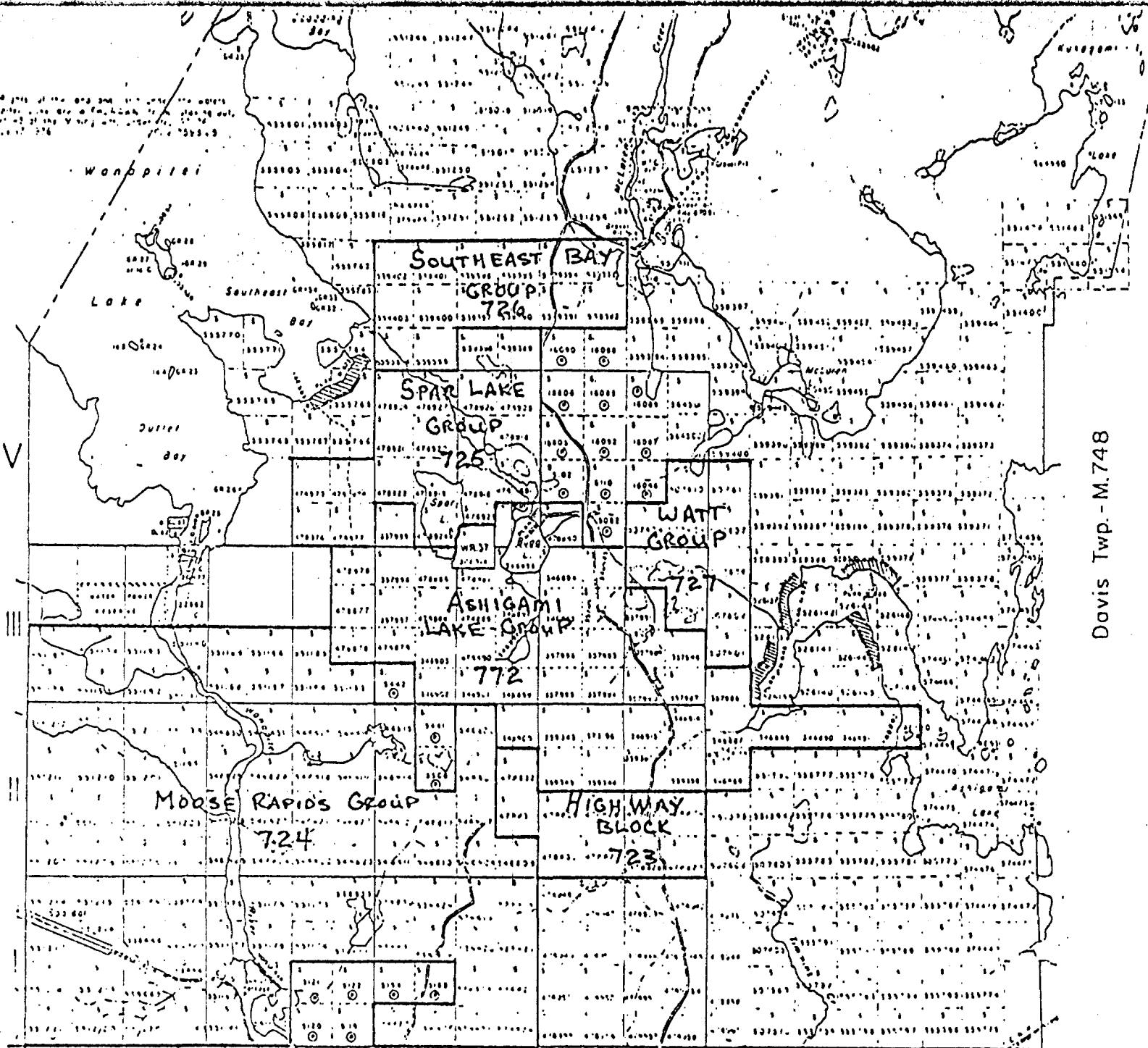
The structural deformation and disruption of continuity is considerable and in part post-ore.

In 1974, a small sulphide ore zone (31,000 tons) was defined on the Gulf-Getty claims. D.R. Watt acquired the Gulf claims in 1977 and following the expenditure of \$292,000, two additional gold-bearing zones were partially drill-indicated.

Considering the potential ore to be significant, Northgate embarked on an intensive exploration program to confirm the potential reserves in anticipation of early development and probable exploitation during the coming year.

MacIennan Twp. - M. 841

IV



Davis Twp. - M. 748

12

11

10

Plan of Claim Groups
Projects 772, 723, 724, 725, 726, 727
Scadding Twp.
Scale 1 : 50 000

2.1 Property and Ownership

The total of the Watt properties in Scadding Township comprises 206 claims and records in area 8240 acres or nearly 40% of the township. The claim blocks are contiguous except for three patent claims, 5508, 5441 and 5442, property of the former Alkin Gold Mines Limited, located in lot 8, concession II and III, Scadding Twp. The majority of the claims (exception 28) lie within the surveyed subdivided segment, lots 5 to 12, Conc. I-IV inc., Scadding Township, Sudbury District, Ontario.

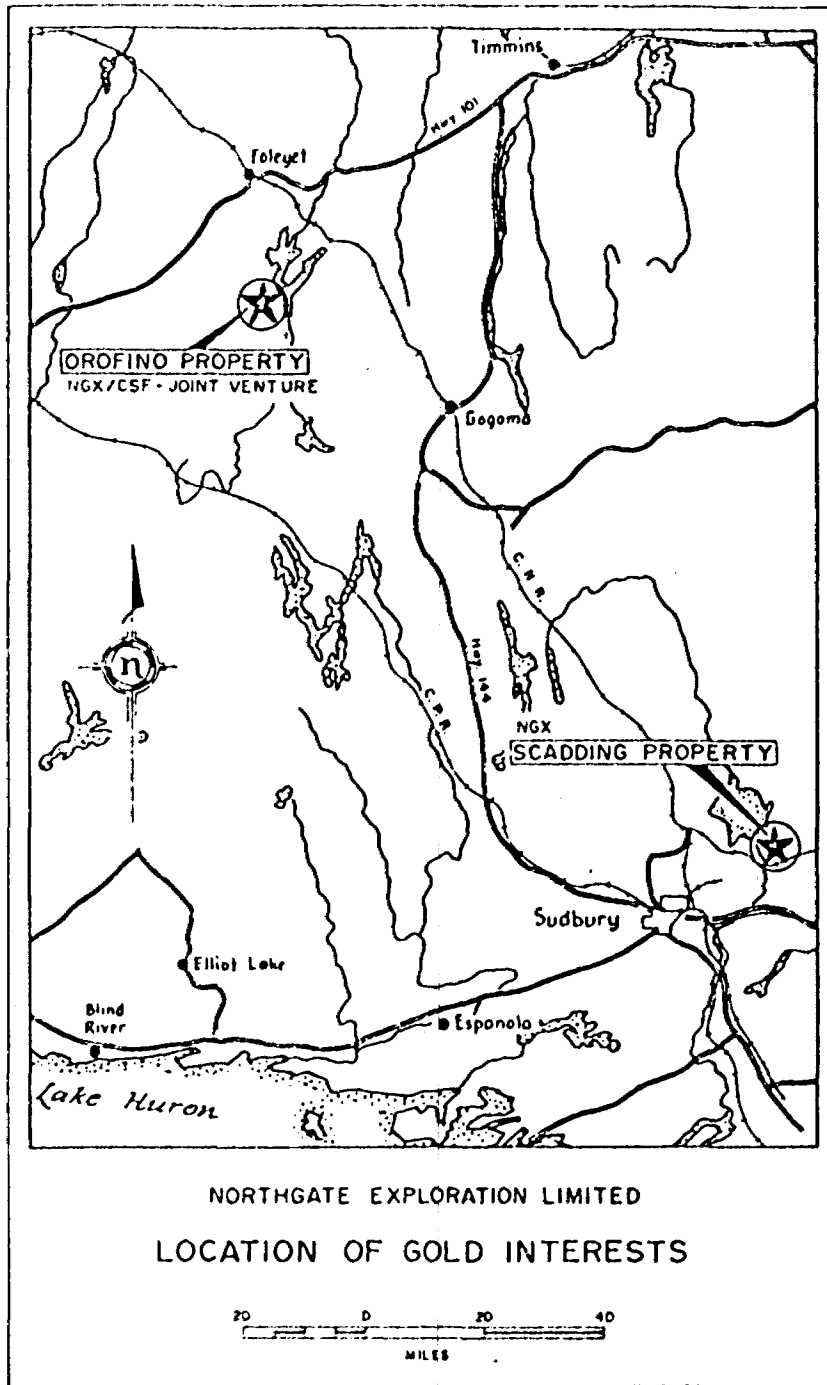
The original grouping of the claims was as follows:

		<u>Number</u>
1. <u>D. R. Watt</u>		
(a) Gulf Group	S346887-346903 incl.	17
	S346914-346916 incl.	3
	S357986-357999 incl.	14
	S359359-359360 incl.	2
	S373196	1
	S359343-359345 incl.	<u>3</u>
		40
(b) Staked Addition	S478823-478832 incl.	10
	S478876-478881 incl.	6
	S478886-478890 incl.	5
	S507801-507811 incl.	<u>11</u>
		32
2. <u>P. McLean</u>		
	S478916-478928 incl.	13
	S478976-478979 incl.	4
	S539398	1
	S478891	1
	S539389	<u>1</u>
		20
3. <u>Watt-McLean</u>		
(a) Southwest	S538663-538669 incl.	7
	S538818-538833 incl.	16
	S546805-546831 incl.	27
	S551173-551182 incl.	10
	S551183-551222 incl.	<u>40</u>
		100
(b) Northwest	S539390-539397 incl.	8
	S539399-539403 incl.	5
	S539384	<u>1</u>
		14
		<u>14</u>
		28
		<u>14</u>
		42
		<u>14</u>
		56
		<u>14</u>
		70
		<u>14</u>
		84
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		98
		<u>14</u>
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		1904
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		1918
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		1932
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		1946
		<u>14</u>
		1960
		<u>14</u>
		1974
		<u>14</u>
		1988
		<u>14</u>
		2002
		<u>14</u>
		2016
		<u>14</u>
		2030
		<u>14</u>
		2044
		<u>14</u>
		2058
		<u>14</u>
		2072
		<u>14</u>
		2086
		<u>14</u>
		2100
		<u>14</u>
		2114
		<u>14</u>
		2128
		<u>14</u>
		2142
		<u>14</u>
		2156
		<u>14</u>
		2170
		<u>14</u>
		2184
		<u>14</u>
		2198
		<u>14</u>
		2212
		<u>14</u>
		2226
		<u>14</u>
		224

1.	<u>Claims to Patent and Mining Lease</u>	
	(Ashigami Group) Project 772	
	S346887-346903 incl.	17 claims
	S346914-346916 incl.	3
	S357986-357999 incl.	14
	S359359-359360 incl.	2
	S373196	1
	S359343-359345 incl.	3
	S478876-478881 incl.	6
	S478886-478890 incl.	5
		<u>51</u> claims
2.	<u>Project 723 Highway Group</u>	
	S478823-478832 incl.	10 claims
3.	<u>Project 724 Moose Rapids Group</u>	
	S538663-538669 incl.	7 claims
	S538818-538833 incl.	16
	S546805-546831 incl.	27
	S551173-551222 incl.	50
		<u>100</u> claims
4.	<u>Project 725 Spar Lake Group</u>	
	S478916-478928 incl.	13 claims
	S478976-478979 incl.	4
	S539398	1
	S539389	1
	S478891	1
		<u>20</u> claims
5.	<u>Project 726 Southeast Bay Group</u>	
	S539390-539397 incl.	8 claims
	S539399-539403 incl.	5
	S539384	1
		<u>14</u> claims
6.	<u>Project 727 Watt Group</u>	
	S507801-507811	<u>11</u> claims
TOTAL		206 claims

An examination of the abstracts of the claims (Oct. 1/80) indicates the claims are all in good standing save for two possible disputes which are in the course of correction. The first action required was a boundary survey to fulfil lease requirements for (1) a four claim group enclosing the ore zones and (2) the Gulf Group. A geodetic survey has been completed to satisfy the lease requirements as well as provide profiles of the sections and accurate eastings, northings and azimuths for the drill holes completed. These sections have been replotted at 1:500 metric scale.

These claim groups are held in trust by Northgate Exploration pending the fulfillment of the salient terms of acquisition outlined in the following summary.



PROPERTY LOCATION

Figure 2

- (a) a front-end payment satisfied by the issue of 110,000 treasury shares of Northgate Exploration.
- (b) reservation to the vendors of a 30% net profits royalty on ore removed from the property as well as assumption by Northgate of the "Gulf royalty" on the 40 claim group (\$1.00 per ton ore removed from the designated claims).
- (c) a commitment to spend in exploration and development work at least one million dollars within a period of 18 months following the date of the memorandum of agreement. The purpose of this program is to delineate an economically mineable orebody and bring the project to a positive feasibility stage. In the second stage it is provided that the ongoing development shall proceed under Northgate's elective right to production on a tonnage scale to be determined by the results of the above first stage program.

2.2 Location and Access (See Figure 2)

The Watt properties are located in the Sudbury District of Ontario, approximately 18 air line miles northeast of this main mining community. The population of Sudbury is currently at the 93,000 level. Road distance from the properties to the city centre via Trans Canada Highway #17 is 30 miles. An unnamed highway (locally known as the Ashigami Lodge road) leads from Highway 17 at the village of Callum northward nine miles to the site of the mineralized zone, some 1,200 feet west off this road. This road is of all-weather standard and will meet all the requirements of the exploration and development stages. Numerous logging roads originating from the Ashigami Lodge road provide ready access to all but the Moose River group to the southwest. Access to this group will involve moving in from the west via CNR tracks and offshoot roads west of the Wanapitei River. This river is a sizeable north-south flowing water course dividing the Moose Rapids group into approximately two equal segments.

Sudbury is 200 air miles (42 minutes north and slightly west of Toronto.) Several flights (Air Canada) to and from Toronto serve this community daily. In addition, NorOntair, the Ontario Government airline serving Northern Ontario, provides short hop links to the other mining and northern communities within its network of airports.

Charter fixed wing and helicopter services are available in Sudbury for some minimal needs in remote areas of the claim groups.

2.3 Auxiliary Services

2.3.1 Water

There are numerous lakes and water courses on and about the Watt properties. The major nearby lake is Wanapitei Lake, off to the northwest. This lake, approximately two square miles in a circular dimension, is the source of the water supply for the City of Sudbury and hence the lake and river of the same name passing through the property are environmentally sensitive. There are four smaller lakes (Bugg, Spar) within the property confines and a second large lake, Ashigami Lake, directly adjoining to the east. Water, therefore, is in ample supply subject to restrictions pertinent to the human consumption needs of the City of Sudbury.

There are numerous small creeks and brooks for local drill water supply.

2.3.2 Timber

In the vicinity of the known showings on the Ashigami group, a forest fire some 30 years ago burned a strip nearly a mile wide along a northeasterly trend across the eastern segment of the properties. Second growth has been scrub poplar and cotton wood. Elsewhere on the property, the regrowth of the spruce following the original log-off is now halfway to a mature stand.

Timber supplies for mining purposes are readily available in Sudbury.

2.3.3 Electrical Power and Energy

The electrical high tension power lines follow Highway 17, some 9 miles south of the mineral prospects. Ontario Hydro generates a local source of power on the Wanapitei system at Timmins Chute.

The gas pipeline serving Sudbury also follows Highway 17, a branch line from the main line at North Bay.

Except for the extension of these services to the site, there are ample sources of power and energy relatively close to the site.

2.3.4 Mining Equipment and Supplies

Sudbury is probably the best supplied and serviced mining centre in Canada. Many suppliers maintain warehouses in this region and materials are available on short notice.

Likewise, mining contractors such as MacIsacc at Sudbury, J. Redpath at North Bay, Raise at Elliot Lake are close at hand and offer a full range of services for underground development and/or the production phases.

Sudbury has a good supply of skilled labourers of a high standard and accustomed to the top flight pay scale.

2.3.5 Transport

Road transport from the mine site to Highway 17 (Trans Canada) is nine miles. From this point, Copper Cliff is 20 miles west; Falconbridge 22 miles west and north; North Bay 65 miles to the east. Road haul to Noranda is 267 miles; to Pamour, near Timmins, is 326 miles.

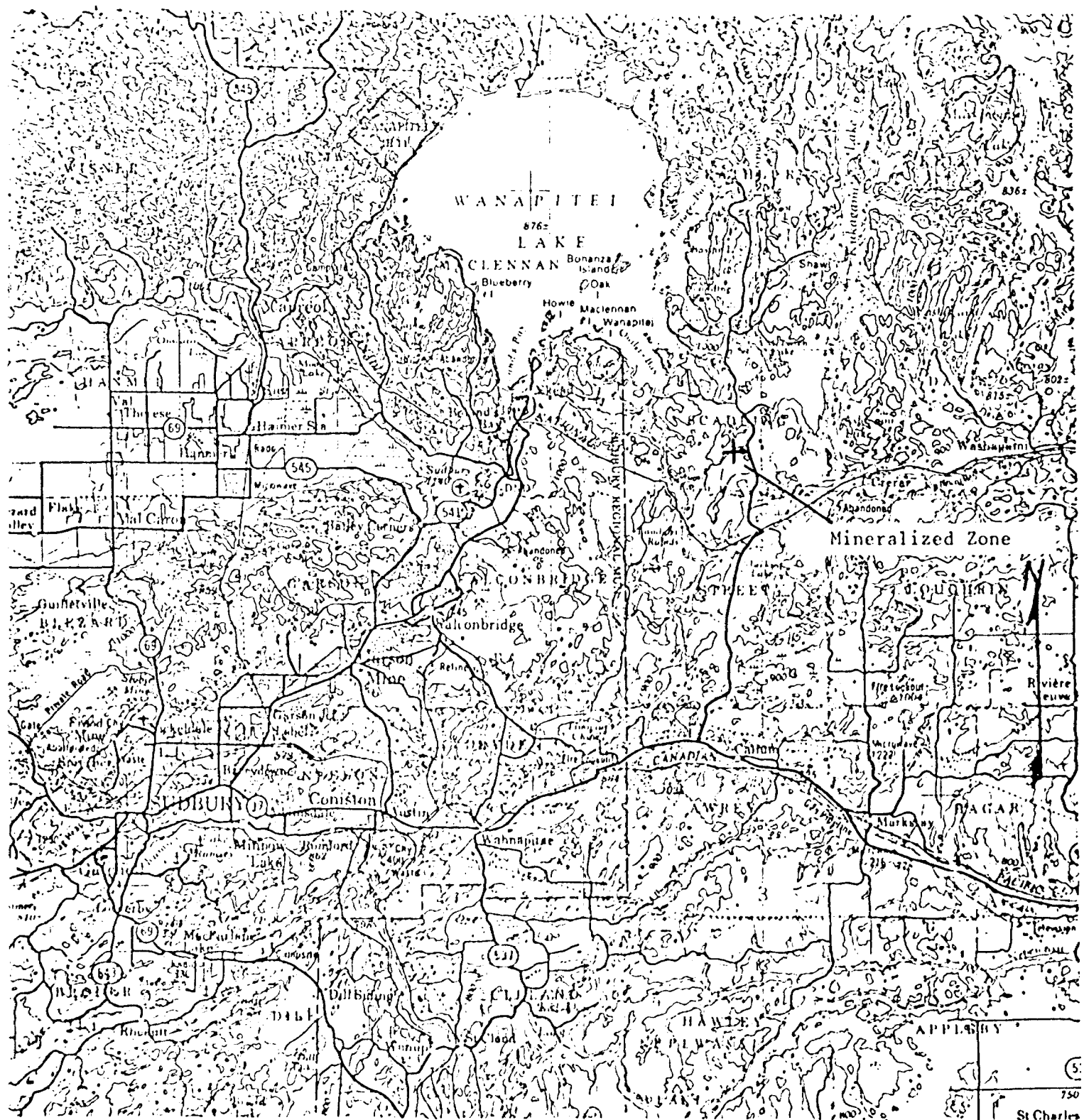
The main line CNR (North Bay-Sudbury) crosses the Ashigami Lodge road three miles south of the mine site, and the nearest siding now existing is at Crerar, three miles to the east. A graded spur siding previously existed along the CNR line at the Ashigami crossing and can be rebuilt with minimal effort.

Since the railways follow the roads, rail distances to the main centres of interest closely approximate the road distances.

Sudbury airport is eight air miles due west of the mine site, but the road distance is 30 miles via Highways 17 and 541.

2.3.6 Environmental Sensitivity

Scadding Township has been logged off around the turn of the century. The second growth has been destroyed by at least two extensive forest fires which has left little in the way of merchantable timber currently.



TOPOGRAPHIC PLAN SHOWING LOCATION
 OF MINERALIZED ZONE
 D. K. WATT PROPERTY
 Scale 1:250,000

Figure 3

In the area of the mineral prospects, the trees are second growth poplar and cottonwood.

Drill cuttings must be kept from entering any water-course since the drainage is to the west into the Wanapitei system, source of the Sudbury drinking water.

The normal regulations regarding oil spill, sewage, overburden removal, etc., will be enforced with greater frequency since we are close and accessible from the Sudbury office.

Work permits are required for our general exploration and development work.

Wood cutting permits have been granted to third parties over claims of the Watt properties. These people can be of concern since in their cutting activities they destroy survey markers, cut lines, etc. These permits should be discouraged by Northgate with valid reasons for objection.

2.4 Topography

The claim groups lie within the Precambrian glaciated peneplain. Elevations range from 900 to 1,100 feet ASL, but relief is rarely more than 50 feet in local situations. The south-central part of Scadding Township, especially Lots 5 to 8, Concession I, are drift-covered and devoid of outcrop. Elsewhere outcrop is reasonably plentiful (3-10%) and tends to occur as ridges, usually northwest trending. A thin mantle of overburden obscures the rock surface in most instances. Glacial outwash sand and gravel deposits are most common in the southern limits of the properties.

The swampy or marshy muskeg areas tend to be the areas of lowest elevation and are noted on the appended Figure 3. The drainage flows to the west and the south into the Wanapitei system.

2.5 Climate

The Sudbury District lies in a belt which experiences a continental climatic pattern modified slightly by the nearby Great Lakes.

The summer season, which begins in May and continues to mid-September, is accompanied by warm temperatures (average 20°C), but can be as high as 28 to 30°C for short periods. The summer season can be marred by persistent overcast skies, abundant rainfall and cool temperatures.

Spring and fall have considerable sunny, cool days with frost at night. Most of the rainfall (average 34 inches) comes during these seasons.

The winter may start as early as mid-October and last until May, but more frequently snow does not stay on the ground until mid to late November and disappears late in April. Snow accumulations, partly in late winter, are generally up to three feet in the bush and temperatures may drop below -40°C for short periods, generally in February.

3.0 Previous Work

See "Introductory Report, D. R. Watt Properties, Projects 772, 723, 724 725, 726 and 727, Scadding Township, Sudbury District, Ontario," W. W. Weber, November 7, 1980.

- as follows: 2.1 Pre-World War II pgs. 7-8
- 2.2 Previous Work Post World War II pgs. 8-11
- 2.3 Uranium pg. 12
- 2.4 Recent Exploration pgs. 13-14.

3.1 Previous Work D. R. Watt (Gulf Option)

Ref. Summary Report - Gulf-Getty Joint Venture, Sudbury Project, Paul McLean, November 6, 1974.

The original showing now known as the East-West Zone was discovered in the thirties and at this time trenching, sampling and stripping of the overburden left their marks, which were not rediscovered until the mapping program of the Ontario Government in 1973.

Under the Gulf-Getty option, the work program in 1973 comprised further rock trenching and sampling, detailed geological mapping and a self-potential geophysical survey.

In 1974 the grid (100' spacing) was extended 4,000 feet to the west and geological mapping and a self-potential survey were completed on the new grid. In addition, magnetometer and electromagnetic surveys were completed over the entire grid. Limited soil sampling investigated the environs.

The field work was followed by a diamond drilling program comprising 20 holes (S-14-33) totalling 3,794 feet of coring. This work was almost entirely concentrated on the East-West Zone, as well as the geophysical anomalies.

Based on the drilling results, an ore shoot (East-West Zone) was calculated to contain 34,125 tons grading 0.303 oz. Au/ton. The property was allowed to go dormant until an agreement was reached on December 15, 1977 with Gulf Minerals, calling for the acquisition of a 40 claim group by D. R. Watt for the following considerations:

- (a) expenditure of \$200,000 on the 40 claims prior to December 15, 1979.
- (b) retention of a royalty of \$1.00 per ton on any ore milled from these claims.

3.1.1 D. R. Watt Program

During the early part of 1978, nine holes (1,847 feet) were completed on the property. The last four holes intersected the N-W Structure. In addition, grid lines were established on the 17W structure, and detailed mapping, magnetometer and self-potential surveys completed. A new gold showing was located 525 feet northwest of the previous drilling. A limited drill program, six holes (1,256 feet), was completed.

Following the recommendations of Paul McLean, the 1979 program comprised geological mapping¹, magnetometer surveys and 10,058 feet of drilling in 35 holes, mainly on the "Chimney and N-W Structure". A total expenditure

(1) Summary Report, November 15, 1978.

DRILL RESULTS, D.R. WATT PROGRAM

<u>Hole No.</u>	<u>Footage</u>	<u>Width</u>	<u>Average Grade</u>
S-45	42.1- 44.4	2.3	.21
	107.1-118.3	11.2	.18
S-46	40.6- 50.4	9.8	.25
W-6	121.3-122.5	1.3	.25
W-7	110.4-113.3	2.6	.18
W-8	113.5-120.1	6.6	.60
	126.9-130.5	3.6	.073
	143.0-148.5	5.4	.186
W-9	65.0- 66.3	1.3	.44
	109.1-116.7	6.6	.93
	139.5-147.3	7.8	.18
	160.5-175.3	14.8	.309
	184.2-193.5	9.3	.063
W-10	50.7- 55.0	4.3	.49
W-12	60.7- 62.7	1.8	.15
W-24	48.5- 64.8	16.3	.097
	88.0- 96.0	8.0	.333
W-25	82.4- 85.0	2.6	.153
W-26	14.1- 16.1	2.0	.10
W-28	147.6-170.2	22.6	.341
	209.9-232.5	22.6	.108
W-29	298.6-404.1	105.5	.35
	409.2-412.0	2.8	.15
W-30	166.5-175.0	8.5	.53
	211.6-279.5	67.9	.397
W-31	233.0-241.5	8.5	.237
W-33	258.7-259.7	1.0	.16
	284.4-286.4	2.0	.09
W-34	290.0-295.8	5.8	.846
W-35	105.6-147.5	41.9	.299
	154.0-167.0	13.0	.073
W-43	21.0- 51.7	30.7	.274
	89.2- 92.4	3.2	.08
	105.3-119.6	14.3	.137
W-44	62.9- 77.0	14.1	.276
	133.0-151.8	18.8	.099
W-45	84.7-101.0	16.3	.167
	117.5-120.2	2.7	.14
	142.1-155.1	13.0	.338
W-46	80.3-82.3	2.0	.17
	104.0-110.4	6.4	.222
	139.8-144.8	5.0	.171
	155.2-170.4	15.2	.065
	182.8-186.8	4.0	.065
W-47	109.8-120.0	10.2	.314
W-48	254.4-255.5	1.1	.10
W-49	289.3-292.8	3.5	.30

of \$245,416.29 in the specified two-year period fulfilled the second condition of acquisition.

In his summary report of January 15, 1980, P. McLean tabulated the results of the drilling and estimated the following reserves:

1) Chimney Shoot

a) Sect. 1+00SE and 0+50SE	81,896 tons @ 0.41 oz. Au/ton
b) Sect. 0+50SE and 0+00	135,800 tons @ 0.359 oz. Au/ton
c) Sect. 0+00 and 0+50NW	111,240 tons @ 0.304 oz. Au/ton
d) Sect. 0+50NW and 1+00NW	<u>68,400 tons @ 0.295 oz. Au/ton</u>
TOTAL	397,336 tons @ 0.343 oz. Au/ton

2) N-W Structure

a) Sect. 5+50 NW - Sect. 6+50NW	
i) Upper Shoot	29,704 tons @ 0.242 oz. Au/ton
ii) Lower Shoot	<u>77,844 tons @ 0.150 oz. Au/ton</u>
TOTAL	107,548 tons @ 0.175 oz. Au/ton

Combined with the East-West Zone defined in 1974, the total estimated drill indicated ore reserves were calculated to be 539,049 tons grading 0.307 oz. Au/ton.

The author then visited P. McLean and examined the core at his residence in North Bay, and completed an appraisal report (March 21, 1980) evaluating the ore reserves and additional ore potential.

In this report the estimated ore reserves were defined on the less optimistic standard of the Association of Professional Engineers and were as follows:

1) Drill Indicated Ore

East-West Zone	34,125 tons @ 0.30 oz. Au/ton
North-West Zone	36,180 tons @ 0.227 oz. Au/ton
Intermediate or Chimney Zone	<u>163,100 tons @ 0.251 oz. Au/ton</u>
TOTAL	233,405 tons @ 0.254 oz. Au/ton

2) Possible Ore

South-East Zone	14,640 tons @ 0.325 oz. Au/ton
Intermediate Zone	15,600 tons @ 0.304 oz. Au/ton
North-West Zone	<u>12,480 tons @ 0.06 oz. Au/ton</u>
TOTAL	42,720 tons @ 0.24 oz. Au/ton

In addition, it was reported that the ore potential may be of the order of 500,000 tons, but 8,000 feet of coring on specified sections was required to effectively drill indicate this possible potential.

4.0 General Geology of the District

See "Introductory Report ... Scadding Twp., ... November 7, 1980, W.W. Weber. pgs. 17-36.

4.01 Structural Geology

See "Introductory Report ... Scadding Twp., ... November 7, 1980, W.W. Weber, pgs. 41-45.

4.1 Local Geology of the Watt Properties

Reference P. McLean Report, January 15, 1980

The Watt claims are mainly underlain by Serpent quartzite, Bruce limestone, and Bruce conglomerate. Gowganda conglomerate and argillite occur on the eastern section of the property. A large sill of Nipissing diabase underlies the southernmost claims. Northwesterly-trending olivine diabase dikes are present in some areas of the property. (See Figure 4)

A strong northerly-trending fault zone passes through the east arm of Ashigami Lake, where Gowganda conglomerate is faulted against Mississagi quartzite. This structure is marked by intense brecciation and pyrite mineralization, but does not carry gold values.

The East-West Gold Structure.

The east-west zone is situated within the Serpent quartzite near the base of the formation. The structure consists of an east-west striking chlorite breccia zone which dips 65° to the south. The host quartzite has been intensely chloritized and varies from 10% to 90% chlorite. Gold values are associated with the chlorite, usually where it is well mineralized with pyrite or pyrrhotite or locally with arsenopyrite. A little chalcopyrite may also be present, along with a minor amount of vein quartz.

As previously mentioned, it is estimated that this zone contains 34,125 tons of material grading 0.303 oz. gold per ton. Recent drilling has shown that this zone plunges at 45° to the west and that the gold values do not extend beyond the area outlined by Gulf.

The 17 West Gold Structure.

Previous work has indicated the presence of a strong northwesterly trending chlorite breccia zone in the 17 west area. This zone is similar in appearance to the east-west structure except for the absence of arsenopyrite, and the presence of more fine visible gold.

The structure varies from 10 feet up to 135 feet in width and has frequently been offset by faulting. Several post-ore olivine diabase dikes intrude the zone and displace it by as much as their widths. A 100 foot wide dike near the south end of the explored area displaces the structure some 100 feet to the west.

Results of the recently completed drilling program have confirmed that the 17 west structure is an important locus for the deposition of gold ore shoots. The zone has now been partly tested by drilling for a length of 1,250 feet, and has been found to contain at least three ore shoots having a substantial aggregate tonnage of ore grade material. The breccia zone remains unexplored beyond this length and it is expected to continue in both directions. The structure has been intersected down to a vertical depth of over 400 feet and is thought to persist to depth. Gold values are present on the surface some 200 feet southeast of the last hole in this direction and chlorite boulders have been found some 1,200 feet on strike to the northwest of the most northerly drill holes.

STRATIGRAPHIC SEQUENCE - ASHIGAMI PROPERTY*

FORMATION	UNIT	LITHOLOGY	Au MINERALIZED ZONES
Serpent Fm.	Diabase Dykes		
	Upper Quartzite Unit	a clean quartzite, gradational from lower unit	
	Upper Chlorite Zone	5-15 m thick, gradational from lower unit, abundant facies changes; a dirty quartzite with locally abundant chlorite.	
	Intermediate Quartzite Zone	30-60m thick, gradational from lower unit, A cleaner quartzite with rare chlorite zones and no evidence of facies changes.	
	Intermediate Chlorite Zone	5-60m thick, gradational from lower unit. Abundant facies changes and interbedding with adjacent units; a dirty quartzite with locally abundant chlorite. Au present usually at interface of chlorite rich and poor zones.	N.W. Zone, Main Zone, N33-N34 Zone
	Lower Quartzite Unit	25-50m thick, gradational from lower unit, facies changes less evident, a cleaner quartzite with very minor chlorite zones.	
	Lower Chlorite Zone	0-20m thick, abundant facies changes, dirty quartzite with locally abundant chlorite gradational from below. Au present usually at interface of chlorite rich and poor zones.	E.-W. Zone, W35 Zone, S51-S52 Zone
Espanola Fm.	Transition Zone	0-25m thick, abundant facies changes, lenses of dirty quartzite, limestone, siltstone, greywacke conglomerate. Gradational from below. In extreme north unit is in excess of 50 m thick.	
	Limestone Unit	A coherent unit of limestone or limestone breccia with minor interbedded sandstone lenses in excess of 20 m thick.	

*This sequence is based on an interpretation of sections, updated to 15-1-81, by G. Harper.

4.1.1 Recent Geological Information

The 1980 drilling by Northgate, combined with previous drilling and surface mapping, has allowed gradual build up of a detailed picture of stratigraphic and structural complexity of the central property area. The Espanola Formation limestone unit has been defined as the local base above which a 230 metre maximum thickness of Serpent Formation is detailed. In keeping with similar Huronian Supergroup sediments elsewhere in the Southern Province the sequence has been cross-folded and faulted along ENE and NW-NNW trends. The local sequence has been metamorphosed to upper greenschist facies and is characterized by zones of strong alteration; chloritization, carbonatization, epidotisation, silicification and feldspathization. Na, Fe and Ca are relatively enriched and K and Mg depleted.

There is a gradual transition from typical Espanola limestone up into the Serpent quartzite through a zone containing bands or lenses of limestone, limestone breccia, sandstone, siltstone and chloritic quartzite. The latter, referred to as the lower chlorite zone, is believed to be the result of metamorphism of an originally "dirty" clayey sandstone. This is overlain by another chloritic quartzite zone and then more "clean" quartzite. This is referred to as the intermediate chlorite zone as there are indications that there may be another dirty to clean quartzite cycle above this. Individual units vary in thickness rapidly suggesting considerable facies variation and rapid deposition in a high energy environment.

Folding about an easterly axis, with cross-folding about a NNW axis has resulted in an overturned south dipping limb at the south, reappearing as a gently southeast dipping limb in the north and dipping moderately to steeply to the east around the western limits of an easterly plunging syncline. Faulting roughly parallels each fold trend resulting in horst and graben style movement of local blocks.

Two ages of diabase dikes cut the folded sequence but have been offset by faulting.

4.1.2 Mineralization

Gold mineralization is localized within the chloritic zones where it is associated with pyrite and in the East West Zone, with arsenopyrite and pyrrhotite. The mineralized zones form shoots which appear to rake in conformity with the plunges of both directions of folding and are commonly within an envelope of brecciation and strong alteration.

The gold values appear to be concentrated in four separate areas.

1) South Zone

Near the south end, west of the E-W zone, gold values were encountered in holes W-34 and W-35. This zone will be drilled in 1981. The intersections indicate the zone to be a small lens, possibly 100 feet in length on strike and similar to the East-West Zone.

2) East-West Zone

This canoe-shaped lens lies between 9746 to 9840 sections in the lower limits of the Serpent quartzite. The strike is east-west and the plunge is to the southwest. The length is approximately 100m with a maximum width of 18m and an average width of 4m. The deepest point of the ore established in the current drilling is 45m. The presence of arsenopyrite in the ore is unique to this zone. Subject to the final definition of the ore zone in the current drilling, the ore is estimated at 30,000 tons grading 0.30 oz Au/ton.

3) Intermediate Zone

This ore lens has a length of 60m, a width up to 35m and an average thickness of 12m. The strike is N30°W and the plunge is to the southeast at approximately 65° apparent. The maximum depth of ore encountered is 140m below surface. It lies between 2+30 to 2+90NW.

The year end evaluation of the ore tonnage in this zone is 140,267 grading 0.138 oz. Au/ton.

4) N-W Zone

This zone is located between 4+24 to 4+54 Sections on the N-W Grid. The length is 42 m. and the local spreading on section 4+54 has a maximum width of 107m. The thickness averages 17m. The strike is N25°W and the plunge an apparent 35° to the southeast.

The year end estimate of ore in this zone is 90,487 tons grading 0.160 oz. Au/ton.

4.2 Additional Exploration 1980

4.2.1 Line Cutting

Three grids have been established on the property. No. 1 grid follows the N-W Structure with the base line oriented at N25°W and lines at 50 feet separation with stations at 50 foot intervals covering the area of interest adjacent to and on the extension of the ore horizon. Total line miles- 42.98.

Grid No. 2, the former McLean grid, has been refurbished and re-chained (N-S). Lines at 100 foot intervals and 50 foot stations have been re-established on this group of claims lying to the north of Grid No. 1. A total of 26.4 line miles was involved in this grid.

Grid No. 3 is a regional grid, (N-S and E-W), covering the outlying claims with lines at 100m separation and sections at 30m intervals. A total of 102 line miles has been completed as follows:

- (a) 18.5 line miles Conc. I, Moose Rapids Group, 724
- (b) 47.0 line miles Conc. II, (i) Moose Rapids and Highway Group,
723-724 - 35.3 line miles
(ii) Ashigami, 772 - 11.7 line miles
- (c) 2.0 line miles Conc. III, Ashigami, 772
- (d) 34.5 line miles, Conc. IV, (i) Ashigami, 772 - 3.5 line miles
(ii) Spar Lake, 725 - 31.0 line miles

An appended plan of the line cutting (Plan 101), shows the extent and orientation of the completed lines as of December 31, 1980.

4.2.2 Surveying

The prime purposes of the surveys were three fold:

- (i) to establish the boundary lines of the lease areas
- (ii) to pick-up site locations of the new and old drill holes and produce profiles for the sections.
- (iii) establish a ground control for the photogrammetric aerial survey.

Geodetic elevations have been established on the property from the base on the C.N.R. transcontinental line.

The surveying currently is:

- (i) completed, filed and accepted for the small lease area (4 claims)
- (ii) completed in the field except for pick-up of the original claim posts for the 40 claim lease area
- (iii) completed for the location (co-ordinates and elevations) for 88 drill holes as well as profiles of sections within the ore zones
- (iv) completed for the establishment of numerous ground control stations necessary for the accurate production of the photogrammetric base plans covering the entire 8,500 acre property.

4.2.3 Photogrammetric Survey

This aerial survey was flown in late October to produce topographic base maps for the entire property.

The base plans from the 1:8,000 photography will be produced as a mosaic for the entire property with the plans for field work at 1:2,000 and local detail in the areas of potential production at 1:500.

The preliminary plans have been received and final copies will be ready well in advance of the spring field work.

4.2.4 Magnetometer Survey

In the 1980 program, the field work commenced in mid-December and 539 stations were recorded on the No. 1 Grid mainly to assist the drilling program.

In 1981, the entire claim groups will be covered by magnetic and EM-16 VLF surveys.

4.2.5 Site Clearance and Roads

Over 800m of gravel roads were built to provide access to the campsite, drill holes and sites of the ore zones.

- | | |
|--------------------------------------|------|
| (i) Kukigami Road to Campsite | 400m |
| (ii) Kukigami Road to East-West Zone | 200m |
| (iii) Campsite to N-W Zone | 200m |

In addition an area 50 x 70m was levelled and filled to produce the campsite. This work required the movement of 3,960 cubic yards from a local gravel pit.

Site clearance or overburden removal was completed for three areas:

- | | |
|----------------------|------------|
| 1. N-W Zone | 15m x 15m |
| 2. Intermediate Zone | 100m x 80m |
| 3. E-W Zone | 80m x 30m |

The bulldozing of the overburden involved an estimated removal of 10,625 cubic metres.

In the spring, the light soil cover will be hydraulically removed to expose the bare rock for detailed mapping.

4.2.6 Campsite

An office-core logging trailer, a mobile home trailer, complete with a 4500KW electrical generator and electric system, propane lighting and heating, and a septic sewage system have been installed on the campsite.

A radio-telephone service is now operable providing direct contact with the site.

Over 40,000 feet of core racks have been built to provide core storage for the drill programs.

5.0 1981 Budget Data

Project 772 - Ashigami Lake

Total Budget:	\$849,830.00
Possible OMEP Grant:	<u>\$150,000.00</u>
Net Cost	\$699,830.00

1980 Program: This exploration activity started October 2, 1980. The principal thrust has been diamond drilling of the Intermediate or Chimney Zone and the N-W structure. In addition, a camp has been established; lines cut and grid refurbished; lease survey and drill hole survey underway; and bulldozer clearance of overburden on the 3 known mineralized areas.

1981 Program: Line cutting and geophysics expected to be completed by year end will extend into the 1981 period. Drilling footage has exceeded expectations in 1980 but the complexity of the structure and erratic nature of the gold will require further extensive drilling especially in the first quarter of 1981. This attempt to outline and extend the ore reserves will be the prime activity for the next two months with greater emphasis in the summer on the possible repetition of the gold occurrences on the untested portions of the Ashigami Lake group. Reconnaissance programs to pinpoint potential target areas will be carried out at this time on the five adjoining projects.

Details of the work program and the scheduled rate of cash outflow are appended to this report.

Project 723 - Highway Block

Total Budget: \$ 31,000.00

Project 724 - Moose Rapids Group

Total Budget: \$122,000.00

Project 725 - Spar Lake Group

Total Budget: \$ 87,000.00

Project 726 - Southeast Bay Group

Total Budget: \$ 31,000.00

Project 727 - Watt Group

Total Budget: \$ 31,000.00

Although these projects have been budgeted separately, for descriptive purposes and field operational purposes, they have been grouped together.

All five blocks of claims adjoin the central Ashigami Lake group (772), containing the gold deposits referred to as the D.R. Watt Prospect. These surrounding protective claims have had little detailed work other than locally around some old prospects. In view of the careful prospecting required to locate showings, as demonstrated by Paul McLean, the work programme envisaged for these claims starts from grass roots.

Line cutting initiated in 1980, will be completed as soon as snow conditions allow in 1981. Approximately 250 line kms. will be cut in April-May 1981. by a contractor.

Geological mapping will cover all claims with greatest detail in the areas along strike from the showings, i.e. Spar Lake and Highway Blocks. Prospecting will be undertaken in conjunction with mapping.

Areas of interest defined by mapping and prospecting will be subjected to small humus sampling grids.

Detailed ground magnetic and VLF-EM surveys will cover all claim blocks.

It is anticipated that at least one prospect will be discovered that warrants drilling, probably on the Spar Lake Block, along strike from the existing N-W Zone.

Serpent Formation quartzites and conglomerates, which host the D.R. Watt gold mineralization outcrop on the various claim blocks in the following estimated proportions:

723 Highway Block	5 % of area
724 Moose Rapids Group	15 % of area
725 Spar Lake Group	80 % of area
726 Southeast Bay Group	20 % of area
727 Watt Group	15 % of area

Estimated expenditures have been distributed to reflect the proportion of Serpent Formation rocks underlying each grouping with the exception of specific logistic-related costs.

G. Harper
Chief Geologist

W. W. Weber
Manager Exploration N.A.

Toronto, Ontario
February 4, 1981

REFERENCES

Collins, W. H.

- 1913: Geology of a portion of the Sudbury map-area south of Wanapitei Lake, Ontario; Geol. Surv. Canada, Summary Report, 1913.
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Fairbairn, H. W.

- 1939a: Ashigami Lake area, Map No. 48m; Ontario Dept. Mines, 1939.
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Kindle, L. F.

- 1933: Moose Mountain-Wanapitei area; Ontario Dept. Mines, Vol. XLI, 1932, pt. 4.

Meldrum, A. H.

- Memo to W. W. Weber, June, 1978.
Memo to W. W. Weber, D. R. Watt Property, March 21, 1980.

Northgate Exploration Limited

- Summary Report, November 15, 1978.

Ontario Ministry of Natural Resources

- 1979: Gold Deposits of Ontario, Part 2; Part of District of Cochrane, Districts of Muskoka, Nipissing, Parry Sound, Sudbury, Timiskaming, and Counties of Southern Ontario.

Tagliamonte, F. P.

- 1978: Report on D. R. Watt Gold Property; Scadding Township; Sudbury Mining Division, Ontario.

Weber, W. W.

- 1980: Introductory Report, D. R. Watt Properties, Projects 772, 723, 724, 275, 726 and 727, Scadding Township, Sudbury District, Ontario.

LIST OF PLANS - 1980

	<u>Scale</u>	<u>Plan No.</u>
<u>Northwest Zone</u>		
Plan of Drill Holes - North Sheet	1:500	772-500-1
" " " " South Sheet	"	772-500-2
Drill Section 110 NW	"	772-500-3
" " 123 NW	"	772-500-4
" " 137 NW	"	772-500-5
" " 153 NW	"	772-500-6
" " 169 NW	"	772-500-7
" " 182 NW	"	772-500-8
" " 198 NW	"	772-500-9
" " 225 NW	"	772-500-10
" " 232 NW	"	772-500-11
" " 240 NW	"	772-500-12
" " 257 NW	"	772-500-13
" " 272 NW	"	772-500-14
" " 288 NW	"	772-500-15
" " 303 NW	"	772-500-16
" " 318 NW	"	772-500-17
" " 362 NW	"	772-500-18
" " 393 NW	"	772-500-19
" " 424 NW	"	772-500-20
" " 439 NW	"	772-500-21
" " 454 NW	"	772-500-22
" " 469 NW	"	772-500-23
" " 484 NW	"	772-500-24
" " 499 NW	"	772-500-25
" " 531 NW	"	772-500-26
" " 588 NW	"	772-500-27
<u>East West Zone</u>		
Plan of Drill Holes	1:250	772-500-28
Drill Section 9851 E	"	772-500-29
" " 9836 E	"	772-500-30
" " 9821 E	"	772-500-31
" " 9791 E	"	772-500-32
" " 9776 E	"	772-500-33
" " 9761 E	"	772-500-34
" " 9746 E	"	772-500-35
" " 97385 E	"	772-500-36
" " 97275 E	"	772-500-37
Longitudinal Section along Baseline	1:250	772-500-38
Level Plan 305M	"	772-500-39
" " 300M	"	772-500-40
" " 295M	"	772-500-41
" " 290M	"	772-500-42
" " 285M	"	772-500-43
" " 280M	"	772-500-44
" " 275M	"	772-500-45

SCHEDULE I

SCADDING TWP. - DRILLING

DDH	LOCATION		ELEV.	DIP	BEAR.	DEPTH	METRIC SECT.	GULF SECT	DATE	DATE
	NORTH	EAST							STARTED	COMPLETED
N-1	5054.4	9497.2	318.9	-45°	S65°W	78.3M	272	0+50NW	10/ 2/80	10/ 5/80
N-2	5070.7	9533.8	318.1	-45°	S65°W	122.3M	272	0+50NW	10/ 7/80	10/ 9/80
N-3	5070.5	9533.5	318.1	-60°	S65°W	141.4M	272	0+50NW	10/16/80	10/19/80
N-4	5085.7	9566.5	312.3	-60°	S65°W	183.2M	272	0+50NW	10/20/80	10/27/80
N-5	5049.6	9561.8	311.8	-45°	S65°W	154.5M	240	0+50SE	10/28/80	11/ 5/80
N-6	5056.9	9541.0	315.5	-70°	S65°W	191.1M	257	0+00	11/ 3/80	11/12/80
N-7	4928.9	9507.7	308.3	-45°	S65°W	104.2M	153	3+50SE	11/14/80	11/16/80
N-8	4957.1	9533.9	312.0	-51°	S65°W	144.8M	169	3+00SE	11/17/80	11/21/80
N-9	4966.8	9572.3	313.3	-45°	S65°W	162.1M	182	2+50SE	11/22/80	11/27/80
N-10	5056.4	9540.0	315.5	-45°	S65°W	127.4M	257	0+00	11/28/80	12/ 1/80
N-11	5012.1	9476.8	320.2	-90°	-	87.2M	240	0+50SE	12/ 3/80	12/ 5/80
N-12	5087.7	9612.4	315.5	-45°	S65°W	187.5M	257	0+00	12/ 7/80	12/13/80
N-13*	4994.0	9836.0	300.3	- 0°	0°	17.4M			12/15/80	12/16/80
N-14*	4995.0	9828.3	300.7	- 0°	0°	16.5M			12/16/80	12/16/80
* Denotes holes drilled NQ, all other holes drilled AQ.										
N-20	5294.0	9582.0	302.6	-45°	S65°W	130.1M	454	6+50NW	10/ 6/80	10/ 9/80
N-21	5294.5	9583.2	302.7	-90°	-	122.2M	454	6+50NW	10/ 9/80	10/13/80
N-22	5269.2	9494.8	305.0	-45°	S65°W	76.5M	469	7+00NW	10/14/80	10/16/80
N-23	5269.5	9495.7	305.0	-90°	-	84.1M	469	7+00NW	10/16/80	10/18/80
N-24	5284.5	9493.1	304.5	-90°	-	74.0M	484	7+50NW	10/20/80	10/22/80
N-25	5319.2	9582.1	301.9	-90°	-	121.3M	484	7+50NW	10/24/80	10/26/80
N-26	5242.1	9509.7	307.2	-90°	-	137.8M	439	6+00NW	10/27/80	10/30/80
N-27	5255.2	9502.9	306.5	-90°	-	115.1M	424	5+50NW	10/31/80	11/ 8/80
N-28	5219.2	9457.2	310.7	-90°	-	62.5M	439	6+00NW	11/ 9/80	11/12/80
N-29	5205.1	9464.3	312.0	-90°	-	85.3M	424	5+50NW	11/13/80	11/15/80
N-30	5183.5	9422.1	310.6	-90°	-	99.1M	424	5+50NW	11/17/80	11/19/80
N-31	5230.9	9520.8	309.2	-90°	-	125.3M	424	5+50NW	11/21/80	11/24/80
N-32	5230.8	9520.6	309.3	-75°	S65°W	97.5M	424	5+50NW	11/25/80	11/27/80
N-33	5297.3	9445.1	304.7	-90°	-	64.9M	499	8+00NW	11/29/80	11/30/80
N-34	5278.6	9443.8	304.6	-45°	S65°W	45.1M	499	8+00NW	12/ 1/80	12/ 2/80
N-35	5291.2	9472.7	302.9	-45°	S65°W	49.5M	499	8+00NW	12/ 4/80	12/ 5/80
N-36	5291.8	9473.8	302.8	-90°	-	44.8M	499	8+00NW	12/ 5/80	12/ 6/80
N-37	5308.5	9431.6	301.8	-45°	S65°W	93.6	531	9+00NW	12/ 8/80	12/ 9/80
N-38	5374.0	9436.8	300.3	-45°	S65°W	185.3		11+00NW	12/11/80	12/16/80

SCADDING TWP. - ORE INTERSECTIONS

DDH #	Intersection	Core Footage		Length	Au	
		from	to		oz/ton	gm/tonne
N-1	1	123.0' 37.49m	126.0' 38.41m	3.0' 0.91m	0.17	5.829
	2	141.3' 43.07m	143.7' 43.90m	2.4' 0.73m	0.21	7.200
	3	162.9' 49.65m	168.2' 51.27m	5.3' 1.62m	0.58	19.886
	3a	159.0' 48.46m	168.2' 51.27m	9.2' 2.81m	0.36	12.343
	4	197.5' 60.20m	199.1' 60.69	1.6' 0.49m	0.30	10.286
N-2	1	220.3' 67.15m	224.3' 68.37m	4.0' 1.22m	0.180	6.172
	2	240.7' 73.37m	247.0' 75.29m	6.3' 1.92m	0.106	3.635
	3	280.3' 85.44m	283.3' 86.35m	3.0' 0.91m	0.316	10.836
	3a	286.4' 87.30m	290.9' 88.67m	4.5' 1.37m	0.166	5.692
	3b	280.3' 85.44m	290.9' 88.67m	10.6' 3.23m	0.166	5.692
	4	354.9' 108.18m	358.5' 109.27m	3.6' 1.09m	0.220	7.544
N-3	1a	276.6' 84.31m	282.5' 86.11m	5.9' 1.80m	0.177	6.378
	1b	276.6' 84.31m	286.5' 87.33m	9.9' 3.02m	0.126	4.321
	2	305.0' 92.97m	307.6' 93.76m	2.6' 0.79m	0.45	15.431
	3	330.0' 100.59m	332.6' 101.38m	2.6' 0.79m	0.14	4.801
	4	340.5' 103.79	357.0' 108.82m	16.5' 5.03m	0.302	10.698
	5	370.3' 112.87m	372.7' 113.60m	2.0' 0.61m	0.097	3.429
N-4	No ore intersections					
N-5	1	254.9' 77.70m	256.7' 78.24m	1.8' 0.55m	0.270	9.258
	2	363.6' 110.83	366.8' 111.80m	3.2' 0.97m	0.118	4.046

DDH #.	Intersection	Core Footage		Length	Au	
		from	to		oz/ton	gm/tonne
N-6	1	164.2' 50.05m	167.5' 51.05m	3.3' 1.00m	0.167	5.726
N-7	No ore intersections					
N-8	No ore intersections					
N-9	No ore intersections					
N-10	1	287.6' 87.66m	309.5' 94.34m	21.9' 6.68m	1.10	37.723
	2	287.6' 87.66m	331.4' 101.01m	43.8' 13.35m	0.603	20.68
	3	359.3' 109.51m	360.9' 110.00m	1.6' 0.49m	0.480	16.46
N-11	1	33.9' 10.33m	36.6' 11.16m	2.7' 0.83m	0.161	5.513
	2	72.6' 22.13m	73.8' 22.49m	1.2' 0.36m	0.040	1.369
		73.8' 22.49	75.1' 22.89m	1.3' 0.40m	0.340	11.643
	2a	72.6' 22.13m	75.1' 22.89m	2.5' 0.76m	0.196	6.712
	3	134.8' 41.08m	136.8' 41.70m	2.0' 0.62m	2.470	84.589
	3a	125.8' 38.34m	136.8' 41.69m	11.0' 3.35m	0.558	19.109
		122.3' 37.27m	136.8' 41.69m	14.5' 4.42m	0.438	16.438
	4	180.8' 55.11m	184.1' 56.11m	3.3' 1.0m	0.682	23.356
	4a	189.6' 57.79m	196.5' 59.89m	6.9' 2.1m	0.426	14.589
	4b	197.7' 60.26m	201.7' 61.48m	4.0' 1.22m	0.195	6.678
	4c	208.0' 63.40m	215.0' 65.53m	7.0' 2.13m	0.160	5.479
	4d	180.8' 55.11m	217.7' 66.35m	36.9' 11.24m	0.203	6.592
	N-12	1	568.0' 173.12m	571.5' 174.19m	3.5' 1.07m	0.32
571.5' 174.19m			574.5' 175.11m	3.0' 0.92m	0.04	1.369
2		577.0' 175.87m	580.0' 176.78m	3.0' 0.91m	0.13	4.452
2a		568.0' 173.12m	580.0' 176.78m	12.0' 3.66m	0.138	4.726

DDH #	Intersection	Core Footage		Length	Au	
		from	to		oz/ton	gm/tonne
N-20	No Ore Intersections					
N-21	1	174.6'	179.0'	4.4'	0.135	4.623
		53.22m	54.56	1.34m		
N-22	1	87.0'	88.0'	1.0'	0.22	7.534
		26.52m	26.82m	0.32m		
N-23	No Ore Intersections					
N-24	No Ore Intersections					
N-25	No Ore Intersections					
N-26	1	262.6'	265.2'	2.5'	0.342	11.712
		80.04m	80.83m	0.79m		
N-27	1	168.2'	169.2'	1.0'	0.37	12.67
		51.26m	51.57m	0.31m		
	2	175.3'	176.6'	1.3'	1.58	54.10
		53.43m	53.82m	0.39m		
	3	200.6'	201.6'	1.0'	0.69	23.630
61.14m		61.44m	0.30m			
4	211.0'	214.0'	3.0'	0.23	7.876	
	64.31m	65.23m	0.92m			
5	219.0'	221.0'	2.0'	1.08	36.986	
	66.75m	67.36m	0.61m			
N-28	No Ore Intersections					
N-29	No Ore Intersections					
N-30	No Ore Intersections					
N-31	1	321.1'	323.1'	2.0'	0.100	3.425
		97.87m	98.48m	0.61m		
2	355.2'	356.2'	1.0'	0.110	3.767	
	108.26m	108.57m	0.31m			
N-32	No Ore Intersections					
N-33	1	54.4'	55.4'	1.0'	0.26	8.904
		16.58m	16.88m	0.30m		
2	81.8'	83.0'	1.2'	0.25	8.562	
	24.93m	25.30m	0.37m			
N-34	No Ore Intersections					
N-35	1	128.5'	134.0'	5.5'	0.110	3.767
		39.17m	40.84m	1.67m		
N-36	No Ore Intersections					
N-37	No Ore Intersections					
N-38	No Ore Intersections					

SCHEDULE II

Northgate Exploration Limited
Project 772 Scadding Twp. Budget 1981

<u>Code</u>	<u>Activity</u>	<u>Active Party</u>	<u>Total Cost</u>	<u>Labour Requirement</u> NGX	<u>Labour Cost</u> NGX	<u>Remarks</u>
120	Line cutting	Contract	\$ 9,000			60 KM
107	Legal		10,000			* H.O. Expense
116	Ground Rent		1,000			Acquisition
	Subtotal		\$ 20,000			
201	Photogrammetry	Contract	9,400			* Shared with Operations
201	Survey Control	Contract	3,100			* " " "
201	Patent Survey	Contract	25,000			* " " "
	Subtotal		\$ 37,500			
<u>Geology</u>						
201	Recce	Contract	5,000	20 md.		Scale 1:2500
201	Detail	Contract	10,000	40 md.		Scale 1:500
206	Project Geologist	NGX	7,500	60 md.	7,500	
228	Trenching	NGX	6,000	30 md.	4,500	
228	Sampling Assays		1,000			
	Subtotal		\$ 29,500			
<u>Geochemistry</u>						
330	Recce	NGX	7,000	40 md.	3,500	3,500 samples
330	Detail	NGX	4,400	30 md.	4,000	2,200 samples-Summer student Assistant
301	Supervision	Contract	7,500	60 md.		
304	Assays		34,200			5,700 samples
	Subtotal		\$ 53,100			
<u>Geophysics</u>						
437	Recce VLF	NGX/C	6,000	20 md.	5,000	60 KM
436	Recce Mag.	NGX/C	4,800	20 md.	4,200	60 KM
437	Detail VLF	NGX/C	6,600	30 md.	5,300	66 KM
436	Detail Mag.	NGX/C	5,280	30 md.	4,800	66 KM
401	I.P.	Contract	17,500			35 KM
406	Supervision/Consulting	Contract	5,000			
	Subtotal		45,180			

<u>Code</u>	<u>Activity</u>	<u>Active Party</u>	<u>Total Cost</u>	<u>Labour Requirement</u> NGX	<u>Labour Cost</u> NGX	<u>Remarks</u>
<u>Drilling</u>						
501	Drilling	Contract	\$360,000			20,000 ft.
506	Supervision	NGX	15,000		15,000	* 6 mos.
506	Core Grabber	NGX	7,500		7,500	* 6 mos.
504	Assays		20,000			* 2,000 samples
		Subtotal	\$402,500			
<u>Transport</u>						
603	Gas, Oil Repairs		\$ 5,000			20,000 KM
607	Registration-Insce.		1,500			
645	Airlines etc.		2,250			
602	Leased or Rental Vehicles		10,000			
645	Shipping charges		2,000			
		Subtotal	\$ 20,750			
<u>Campsite</u>						
701	Construction & Write Off		12,000			
702	Equipment & Write Off		15,000			
703	Supplies		17,500	700 md.		
705	Motel		4,000			
708	Communications		8,000			* Radio telephone - shared Operations
749	Cook		6,000			Cook 4 mos.-shared Exploration
		Subtotal	\$ 62,500			
<u>Regional Office</u>						
806	Driver-Expediter	NGX	6,000		4,000	4 mos.
808	Communications		2,000			
803	Vehicle Expense		8,000			
806	Supervision	NGX	15,000		15,000	6 mos.-shared Exploration
809	Drafting	Contract	3,000			
809	Typist	Contract	2,000			
		Subtotal	36,000			

<u>Code</u>	<u>Activity</u>	<u>Active Party</u>	<u>Total Cost</u>	<u>Labour Requirement</u> NGX	<u>Labour Cost</u> NGX	<u>Remarks</u>
<u>Head Office</u>						
901	Consulting	NGX	\$ 20,000		\$ 20,000	
902	Equipment		2,500			* shared operation
903	Supplies		2,500			* shared operations
904	Assays		1,000			
905	Rent O.H.		20,000			* shared operations
906	H.O. Reports	NGX	10,000			
908	Communications		2,500			* shared operations
909	Secretary		8,000			
910	Drafting		10,000			* shared operations
955	Appraisals		5,000			
956	Soc. Conventions		2,000			
957	Library		1,000			
		Subtotal	<u>\$ 84,500</u>			

Recap

100 Series	\$ 20,000
200 Series Survey	37,500
200 Series Geology	29,500
300 Series	34,200
400 Series	45,180
500 Series	402,500
600 Series	20,750
700 Series	62,500
800 Series	36,000
900 Series	84,500
Total	\$772,630
10% Contingency	<u>77,200</u>
	849,830
Less Poss. DMEP	<u>150,000</u>
N.G.X. Net Cost	\$699,830

Personnel

Mgr. of Exploration	40%
Cons. Geologist	100 md.
Project Geologist	50%
Core Grabber	100%
Em & Mag Technician	100 md.
Mapping Geologist	60 md.
Student Assistants	2 X 100 md.
Secretary H.O.	40%
Casual Labour	120 md.
Driver-Expediter	120 md.
Cook	120 md.

SCHEDULE III

ORTHOPHOTOGRAMMETRIC SURVEY

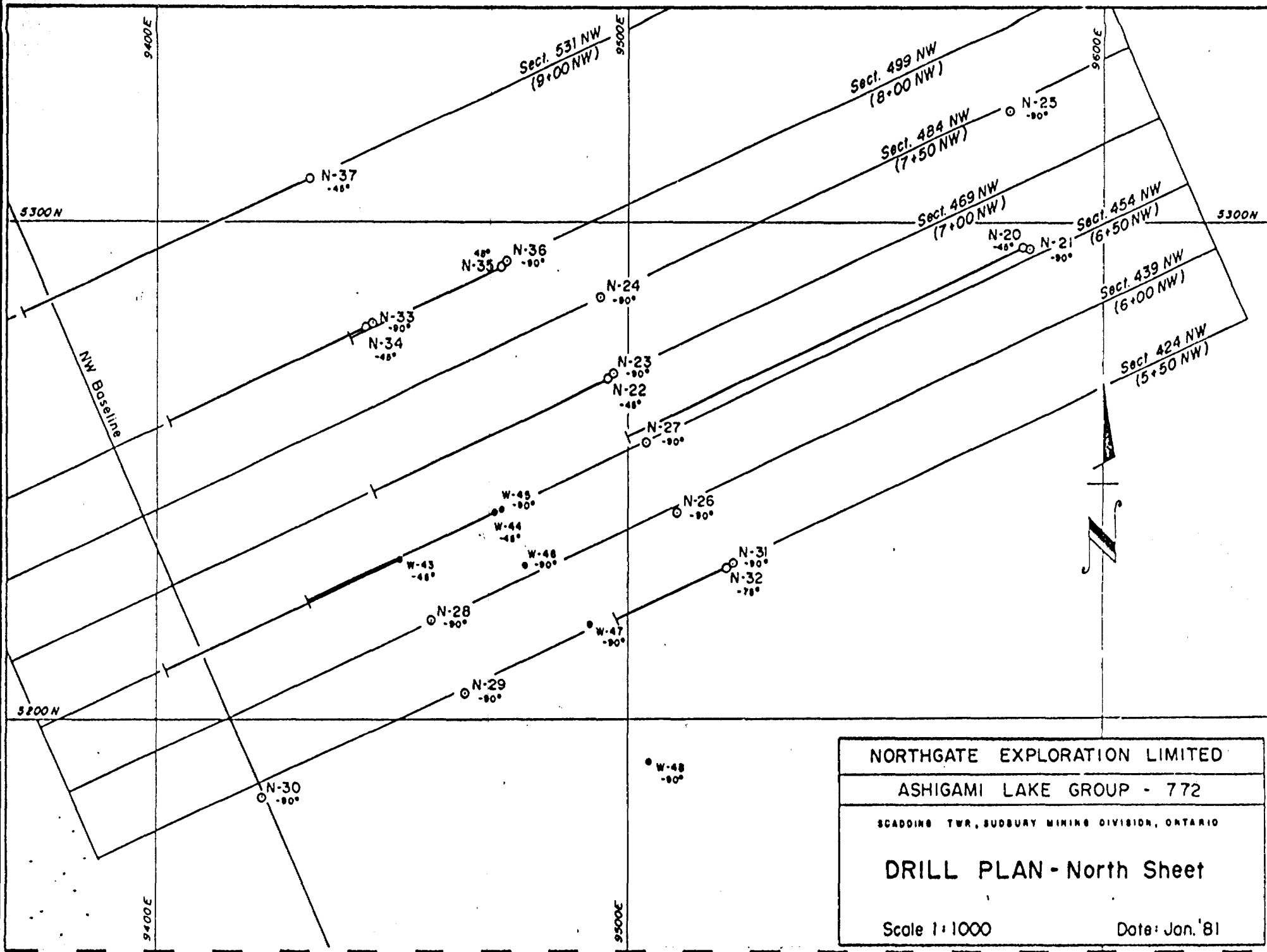
Northway Gestalt Corporation of Toronto was contracted in the fall of 1980 to provide air coverage of the Scadding Township property and to draft topographically contoured base plans.

The property was flown in November 1980. The survey was performed by visual navigation in a CGMAP aircraft, using an RC-8 and an RC-10 Wild Camera. This instrument has an accuracy of 1/100 mm. The altitude at which the survey was flown was 4000'. Total flying distance was 39 miles with a .8 mile line spacing.

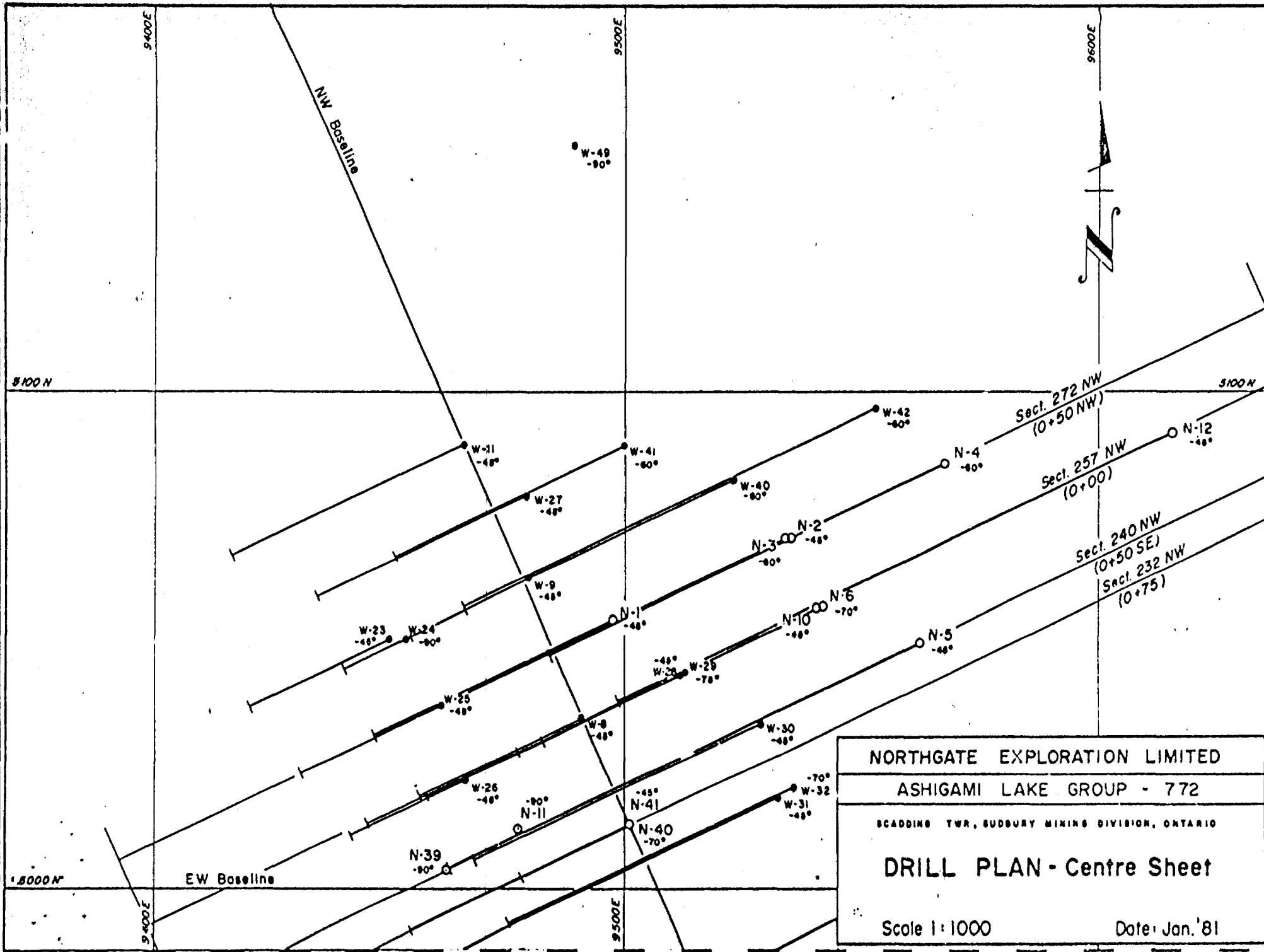
Summary and Conclusions

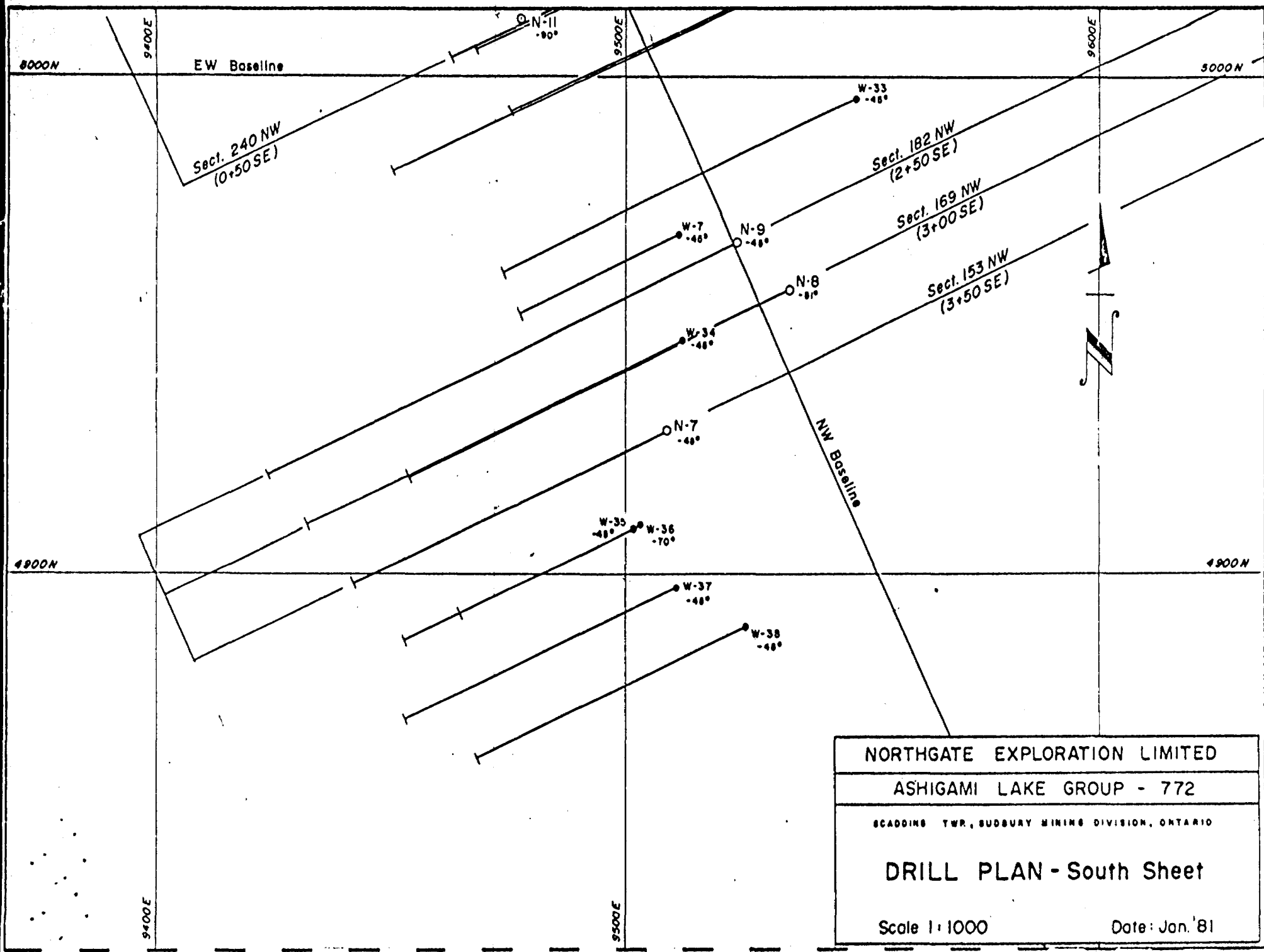
The results of the survey may be seen in the following maps: a 1:8000' scale photomosaic, a duplicate set of 1:8000' scale air photographs, a 1:1000' scale enlargement of the known ore zones, and a 1:2000' scale topographic sheet with 2 metre contour intervals.

The orthophotogrammetric survey has succeeded in providing a mapping control for the field crew and will be used as a ground control for any further exploration activities.



NORTHGATE EXPLORATION LIMITED	
ASHIGAMI LAKE GROUP - 772	
SCADDING TWR, SUDBURY MINING DIVISION, ONTARIO	
DRILL PLAN - North Sheet	
Scale 1:1000	Date: Jan, '81





NORTHGATE EXPLORATION LIMITED	
ASHIGAMI LAKE GROUP - 772	
SCADDING TWP, SUDBURY MINING DIVISION, ONTARIO	
DRILL PLAN - South Sheet	
Scale 1:1000	Date: Jan. '81

LOOKING N25°W

N-22 N-23
-45° -90°

300m

300m

765m

841m

200m

200m

NW Baseline

NORTHGATE EXPLORATION LIMITED

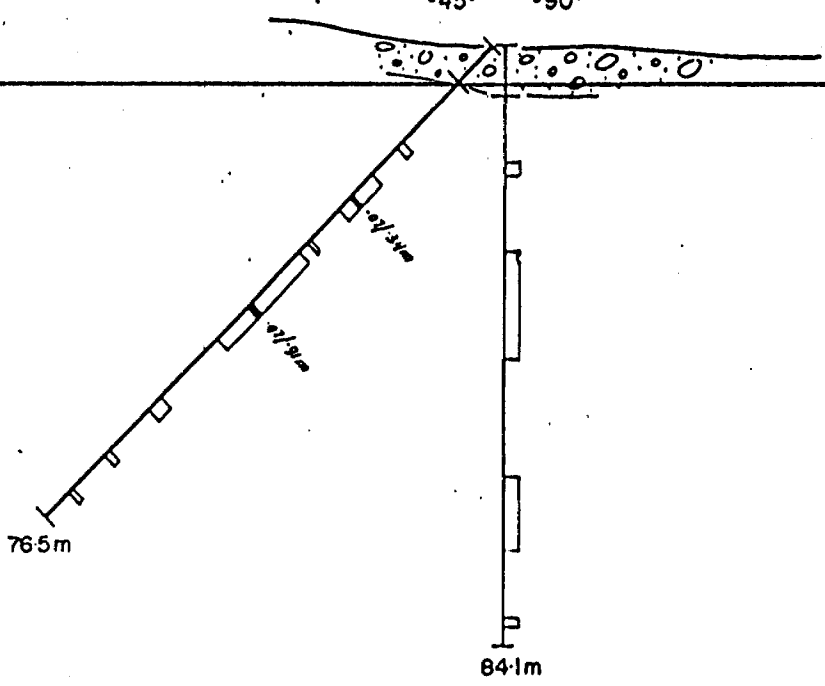
ASHIGAMI LAKE GROUP - 772

SCADDING TWP, SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 469 NW
(7+00NW)

Scale 1:1000

Date: Jan 81



LOOKING N25°W

N-28
-90°

W-46
-90°

N-26
-90°

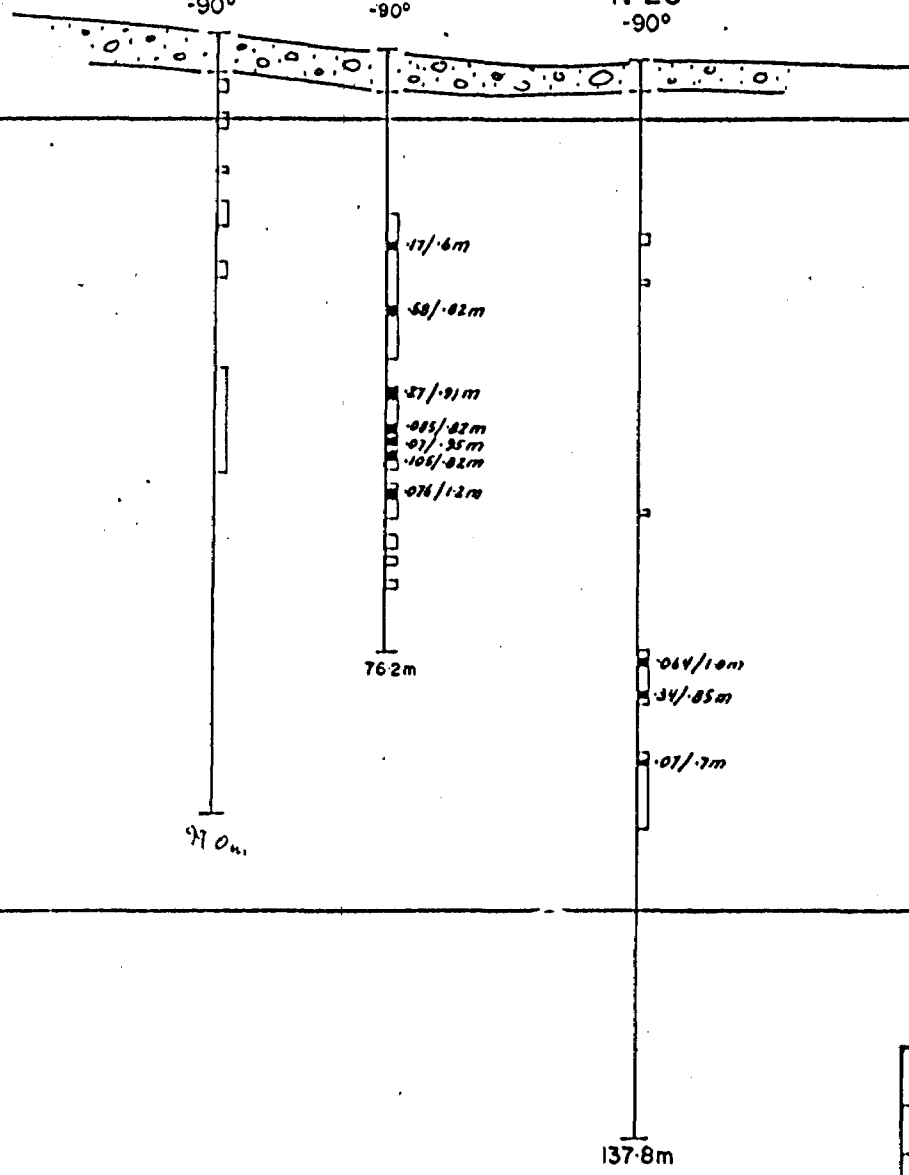
300m

300m

200m

200m

NW Baseline



NORTHGATE EXPLORATION LIMITED

ASHIGAMI LAKE GROUP - 772

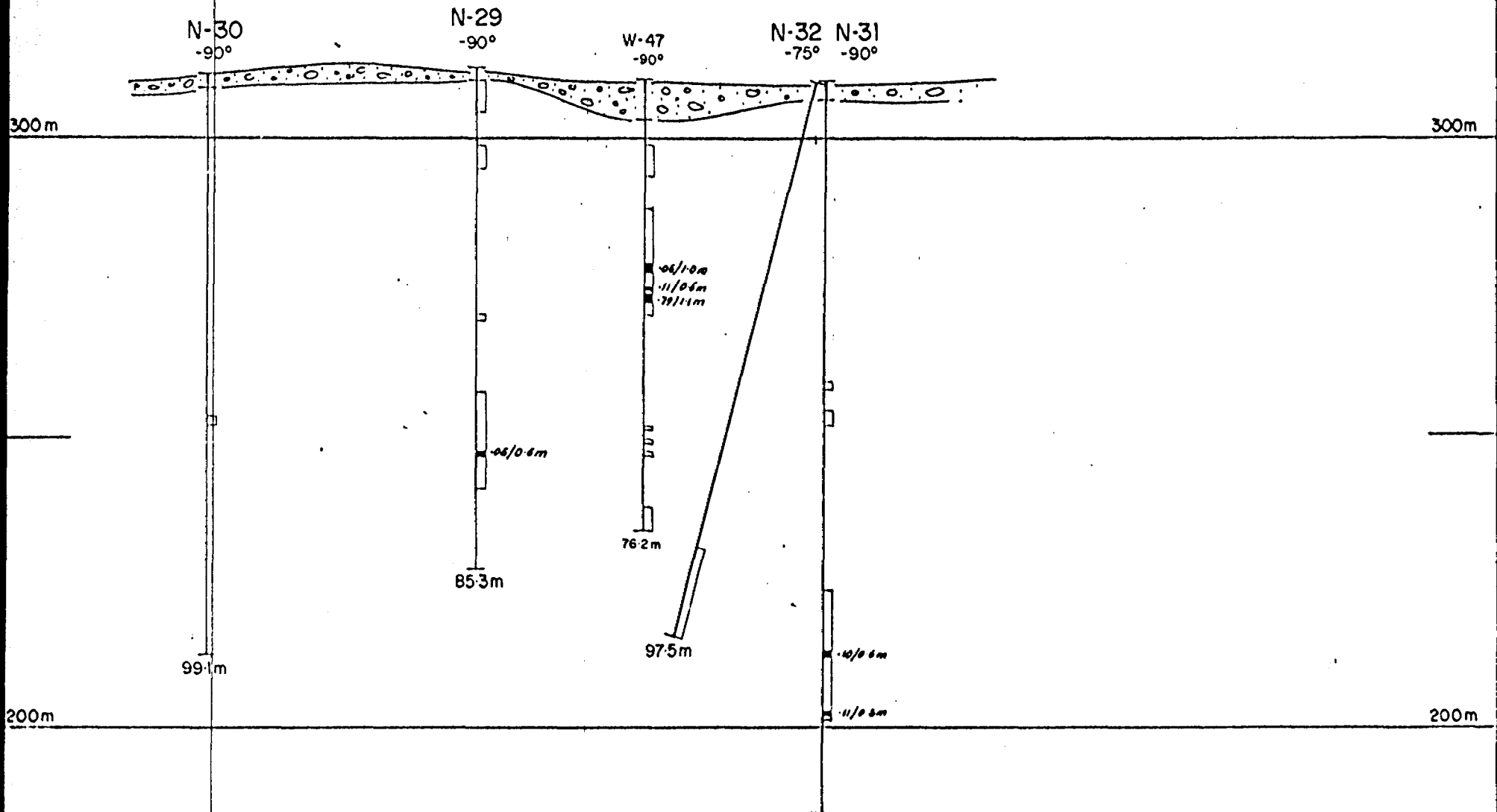
SCADDING TWP., SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 439 NW
(6+00NW)

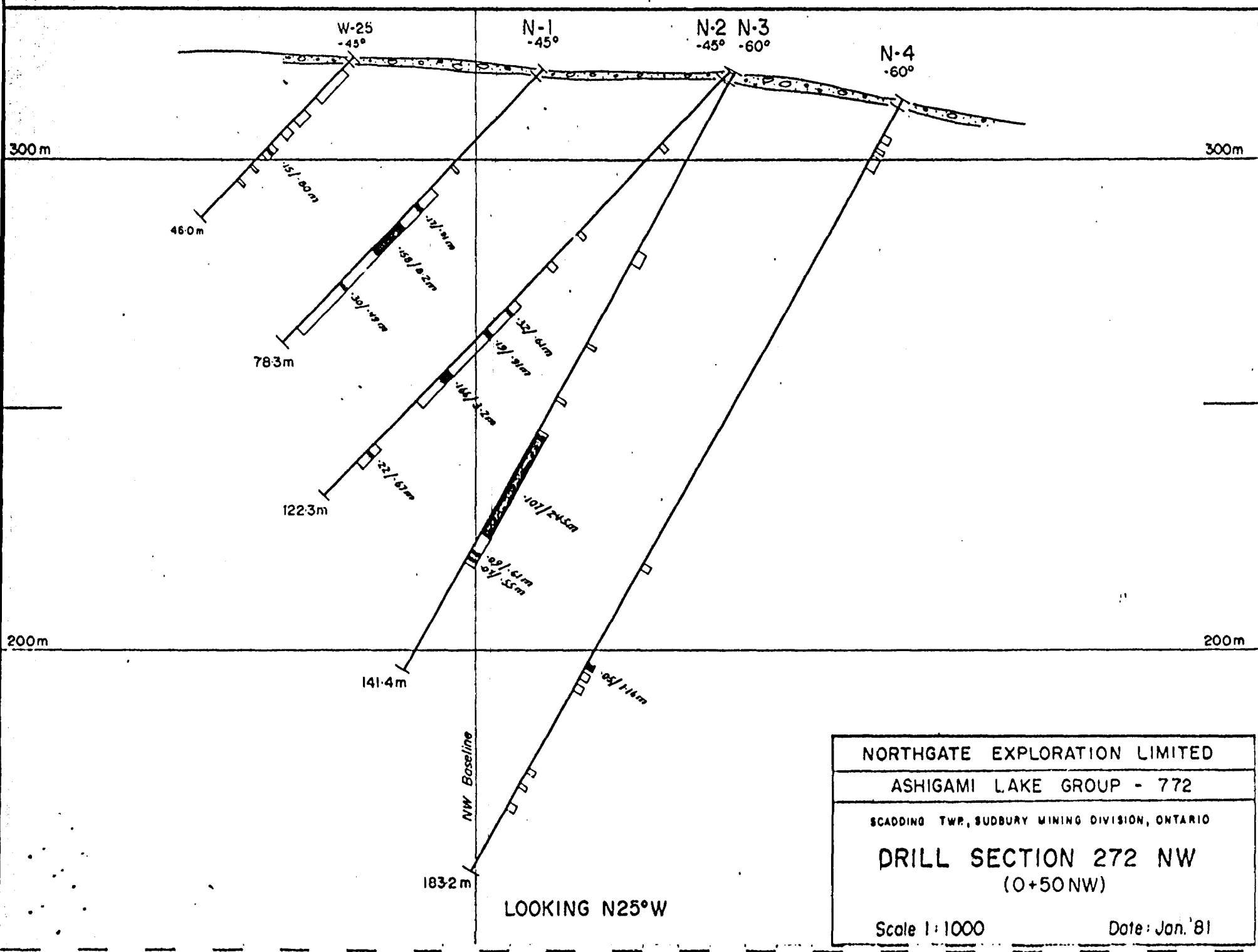
Scale 1:1000

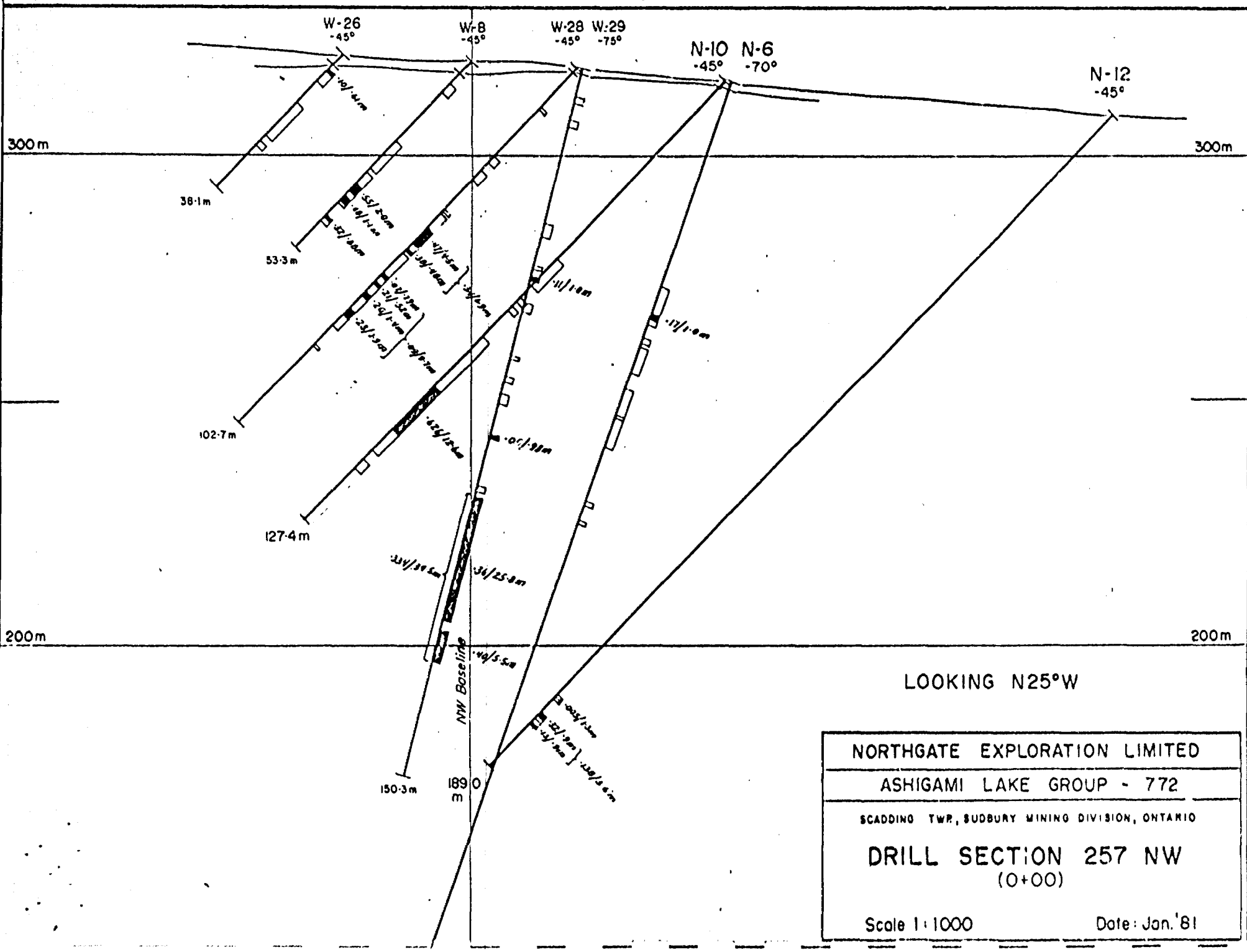
Date: Jan. '81

LOOKING N25°W



NORTHGATE EXPLORATION LIMITED	
ASHIGAMI LAKE GROUP - 772	
SCADDING TWP, SUDBURY MINING DIVISION, ONTARIO	
DRILL SECTION 424 NW (5+50 NW)	
Scale 1:1000	Date: Jan. '81





N-41
-45°

N-40
-70°

LOOKING N25°W

300m

300m

Not Assayed

71.9m

73.8m

200m

200m

NW Baseline

NORTHGATE EXPLORATION LIMITED

ASHIGAMI LAKE GROUP - 772

SCADDING TWP., SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 232 NW
(0+75 SE)

Scale 1:1000

Date: Jan. '81

LOOKING N25°W

W-7

-45°

N-9

-45°

300m

300m

533m

200m

200m

162.1m

NW Baseline

NORTHGATE EXPLORATION LIMITED

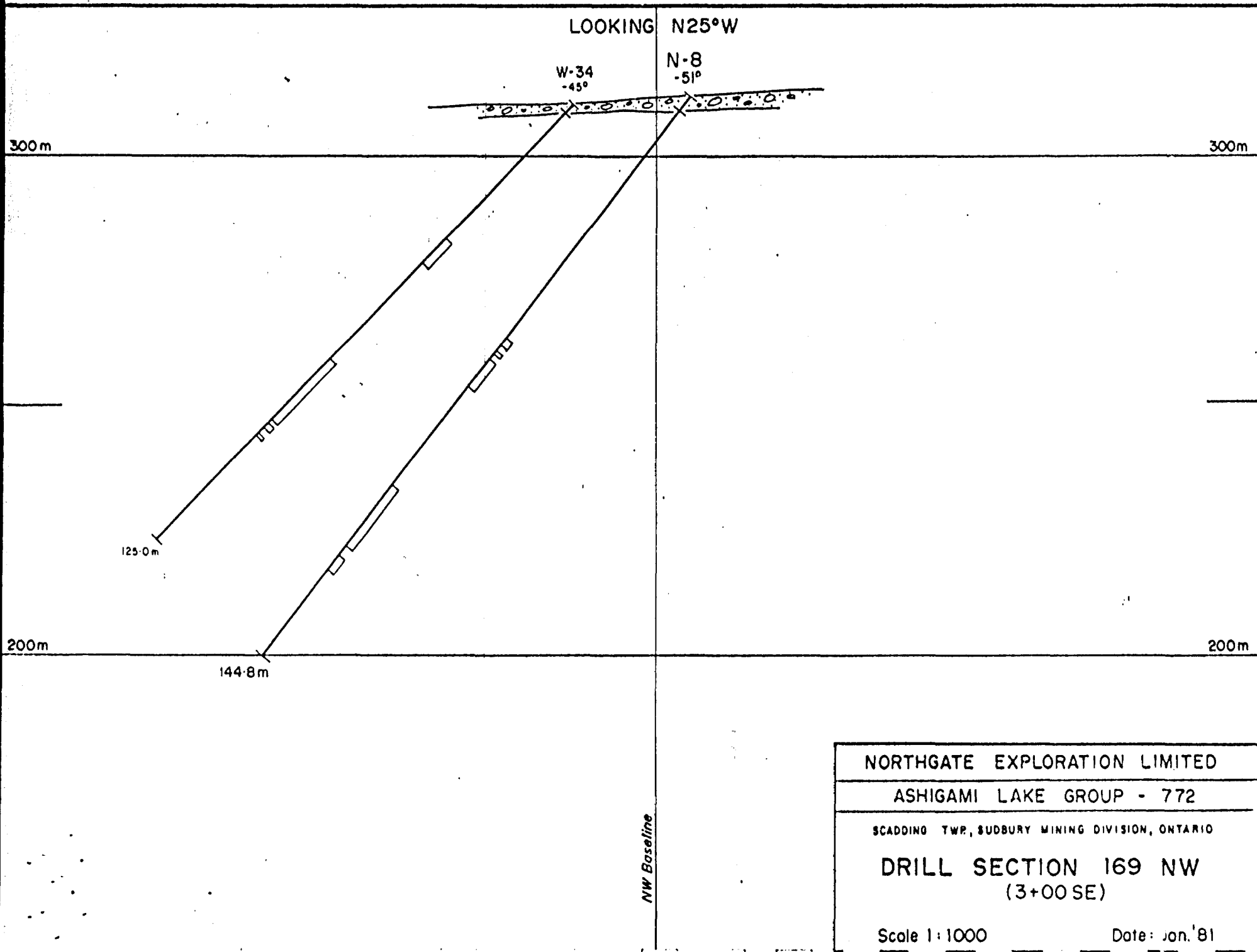
ASHIGAMI LAKE GROUP - 772

SCADDING TWP., SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 182 NW
(2+50 SE)

Scale 1:1000

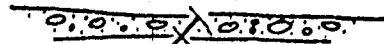
Date: Jan. '81



LOOKING N25°W

N-7

-45°



300m

300m

104.2m

200m

200m

NW Baseline

NORTHGATE EXPLORATION LIMITED

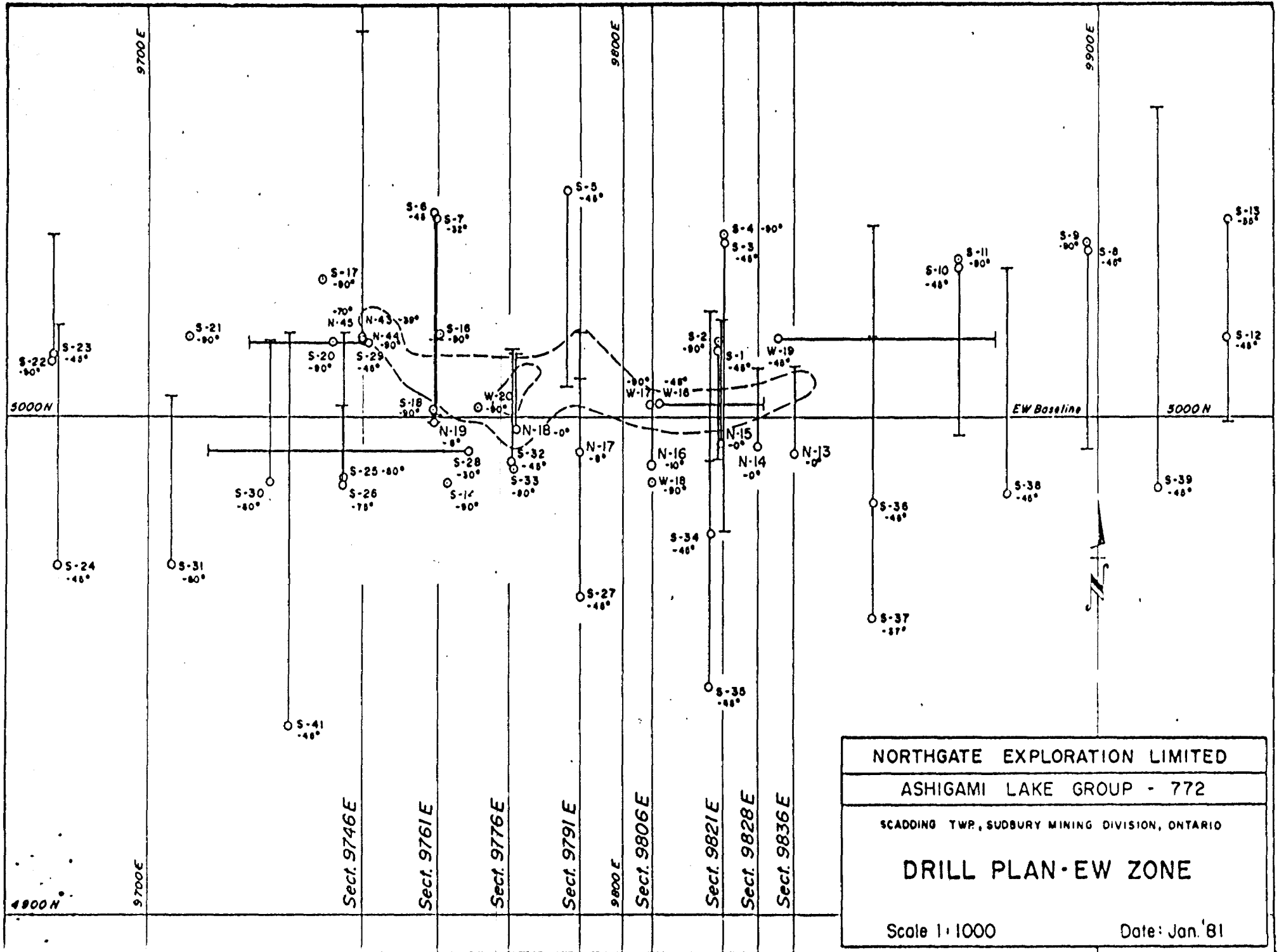
ASHIGAMI LAKE GROUP - 772

SCADDING TWP., SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 153 NW
(3+50SE)

Scale 1:1000

Date: Jan. '81



LOOKING WEST

N-13
-0°

Mineralized
Zone

W-19
-45°/090°

300m

300m

17.4
m

282/13m

297/10m

200m

200m

New EW Baseline

NORTHGATE EXPLORATION LIMITED

ASHIGAMI LAKE GROUP - 772

SCADDING TWP., SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 9836 E

Scale 1:1000

Date: Jan '81

LOOKING WEST

N-14
-0°

*Mineralized
Zone*

300m

16.4m

300m

-334/162m

200m

200m

New EW Baseline

NORTHGATE EXPLORATION LIMITED

ASHIGAMI LAKE GROUP - 772

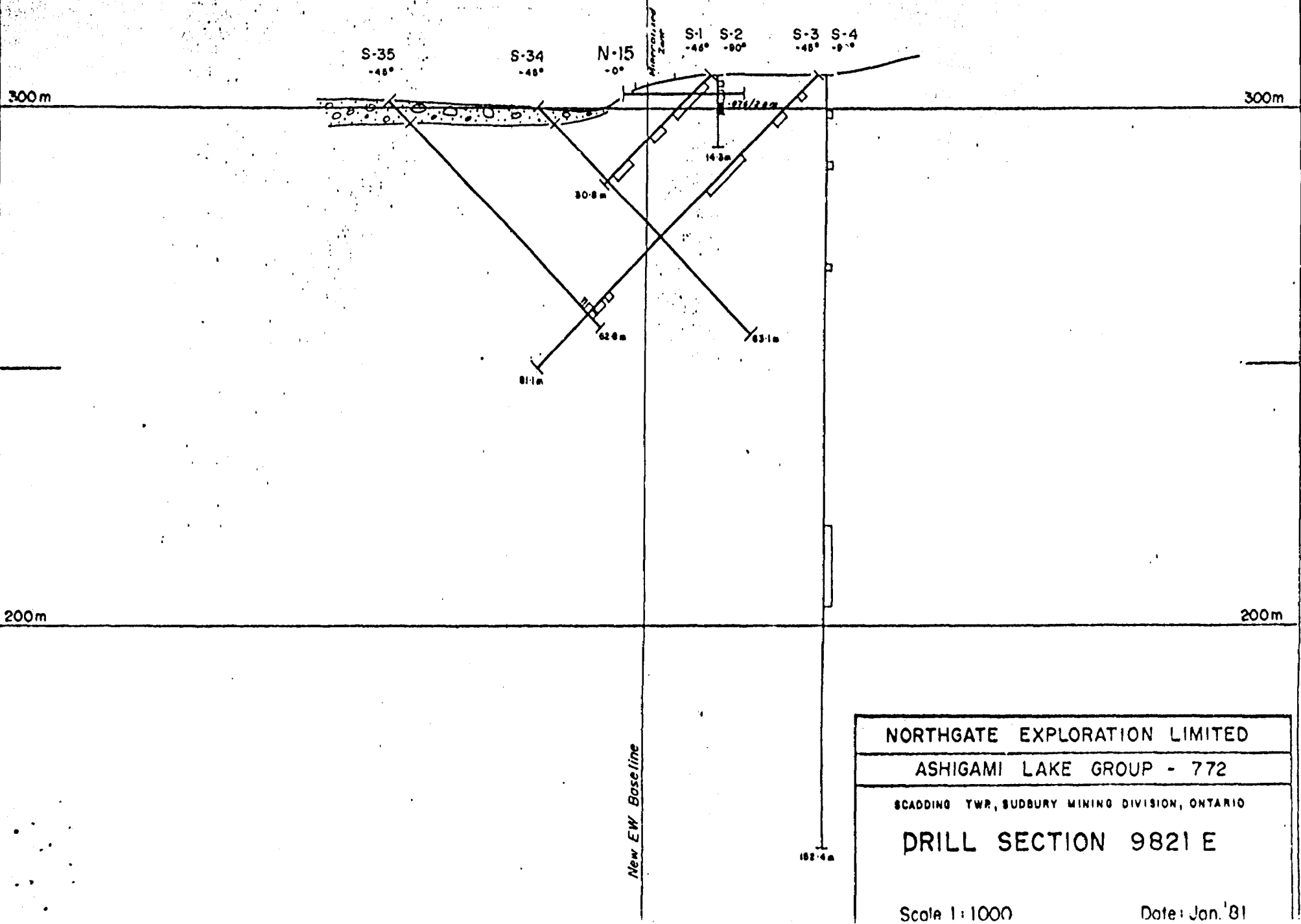
SCADDING TWP, SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 9828 E

Scale 1:1000

Date: Jan '81

LOOKING WEST



NORTHGATE EXPLORATION LIMITED

ASHIGAMI LAKE GROUP - 772

SCADDING TWR, SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 9821 E

Scale 1:1000

Date: Jan. '81

LOOKING WEST

300m

300m

200m

200m

N-16

-10°

W16 W-1

-45°/90° -90°

W-18

-90°

30.5m

30.5m

New EW Baseline

NORTHGATE EXPLORATION LIMITED

ASHIGAMI LAKE GROUP - 772

SCADDING TWP., SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 9806 E

Scale 1:1000

Date: Jan. '81

LOOKING WEST

300 m

300 m

200 m

200 m

S-27
-45°

N-17
-8°

S-5
-48°

Mineralized Zone

Barron Hole

Barron Hole

88.8 m

61.3 m

23.2 m

NEW EW BASELINE

NORTHGATE EXPLORATION LIMITED

ASHIGAMI LAKE GROUP - 772

SCADDING TWP, SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 9791 E

Scale 1:1000

Date: Jan '91

LOOKING WEST

S-33
-90°

S-32
-45°

W-20
-90°

N-18
-0°

300 m

300 m

17.6 m

15/27 m

54.2 m

Barren Hole

60.3 m

32.3 m

200 m

200 m

NEW EW BASELINE

NORTHGATE EXPLORATION LIMITED

ASHIGAMI LAKE GROUP - 772

SCADDING TWP, SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 9776 E

Scale 1:1000

Date: Jan '91

LOOKING WEST

N-45
-70°
N-44 N-43
-90° -39°

300m

300m

48.99m

93.8m

200m

200m

NEW EW BASELINE

NORTHGATE EXPLORATION LIMITED

ASHIGAMI LAKE GROUP - 772

SCADDING TWP, SUDBURY MINING DIVISION, ONTARIO

DRILL SECTION 9746 E

Scale 1:1000

Date: 11/81

J. R. I. E. I.

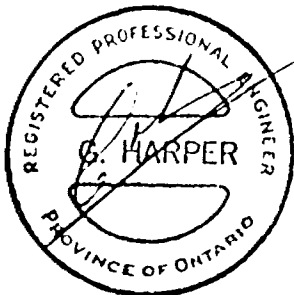


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SUMMARY REPORT
EXPLORATION ACTIVITIES OF
SCADDING TOWNSHIP PROPERTIES
PROJECT 772
Jan. 1 - Mar. 31, 1981

K. Larsen
Consulting Geologist



2 Oct - October 1981.

True Copy
Harper
Exploration
Northgate Expl

SUMMARY REPORT - ASHIGAMI PROJECT 772
SCADDING TOWNSHIP, SUDBURY DISTRICT, ONTARIO

1.0 Summary

Exploratory diamond drilling continued on January 5, following a short break for Christmas. Two drills were employed up to February 12, at which time drilling in the central zone was completed. A single small drill was retained to complete drilling in the south zone. On February 24, all drilling was terminated.

The total footage completed in 1981 was 4538 feet (1383 meters) in 24 holes, including deepening of one hole by 103 feet. The grand total footage, including drilling completed during 1980 is 16,239 feet (4949.6 meters) in 56 holes, of which 438 feet was drilled with NQ coring equipment in the East-West zone. This core was forwarded to INCO Metals Ltd. in Sudbury, where it was sawed in half. One half of the core was retained by INCO for analysis, the other half was sent to Lakefield for analysis. Surveyors (Sutcliffe & Co.) completed all survey work involving boundaries, concession lines, road right-of-ways and drill hole locations in the third week of February. In addition, elevation profiles were established at 15 meter intervals in the East-West zone.

Magnetometer and V.L.F. surveys were carried out intermittently on the N-W grid during January and February. In early March, a contractor took over this work. Geophysical surveys on all line grids are expected to be completed in the first half of April. I.P. and/or E.M. surveys will be carried out in late spring.

Ore reserves were extensively reviewed, following detailed drilling of known ore zones. The net result is a slightly lower tonnage than indicated by previous drilling. Details of ore reserves and grades are outlined in 4.0.

Summary Report of the Exploration Activities
On the Ashigami Project 772
Scadding Township, Sudbury District, Ontario N.T.S. 411/10
Period Jan. 5 - March 31, 1981

2.0 Introduction

Property ownership, location, access, logistics, previous work and general geology of the area, is outlined in the Summary report: "Exploration Activities of Scadding Township Properties, Oct.1 - Dec.31, 1980", and will not be dealt in this report.

Detail drilling of known ore lenses resulted in a better understanding of the physical shape and structural setting of these. Several faults were outlined, partly with the aid of magnetometer surveys, and partly through drill hole intercepts.

The stratigraphic sequence from the upper Serpent quartzite through the upper part of the Bruce limestone, both of Huronian age, were studied in order to obtain data useful in correlating lithologic information obtained from drill holes. Lateral variation in the sediments can be demonstrated, both through changing lithologic characters and changing thickness. The latter is somewhat complicated by block faulting.

The chlorite breccia zones, within which all known gold mineralization occur in the area, is situated within a relatively narrow (40 to 100 meters) wide zone of intensely deformed and brecciated Huronian quartzite. In the East-West zone, it lies in contact with the Bruce limestone. In the South and Central zones, it lies within the lower transitional, argillaceous Serpent quartzite. In the North zone, the chloritic breccia zones are located in the lower part of the relatively clean upper Serpent quartzite.

Geophysical surveys, both previous and more recent, were helpful in outlining diabase dykes and major faults, but failed to aid directly in locating mineralized zones within the chlorite breccia, as well as the chlorite breccia zones themselves. The diabase dykes frequently cut the chlorite breccia zones, or lie within close vicinity of these and tend to create a masking effect, shielding the presence of the feebly magnetic chlorite breccia zones. Recent V.L.F. work also outline the diabase dykes.

3.0 Detailed geology of East-West, South, Central and North Zones

3.1 The East-West zone

Ore grade material occurs within an East-West striking zone of intensely brecciated and chloritized argillaceous quartzite at or near the base of the Serpent formation. It lies in contact with the Bruce limestone from section E9821 on eastward. The chlorite breccia dips 75° to the north in the east end, gradually changing to near vertical in the central area around section E9791.

A fault striking northwest between sections E9761 and E9746 uplifted the entire zone east of it, resulting in its' exposure to the effects of weathering. West of the fault, the chlorite breccia zone is not exposed on surface. Drilling indicates it is dipping to the south at an angle of 45° to 50° and plunging to the west with rapid narrowing of the zone.

Ore grade material suitable for mining by open pit methods is confined to an area between metric sections E9836 and E9750. A total of seven large diameter (NQ) diamond drill holes were drilled at angles ranging from zero to minus ten degrees, at 15 meter intervals between sections E9836 and E9761. These holes resulted in a new interpretation of the shape of the ore zone, as well as the chlorite breccia zone. Several sections indicate a rapid mushrooming effect of the chlorite breccia zone, from a width of less than one meter to over twenty meters within a vertical distance of as little as 30 meters. Armed with this knowledge, it was evident that additional sampling is needed on the surface of the zone, in order to arrive at final ore reserve figures. Trenching and sampling is planned for the earliest possible period in April. Prior to trenching, the surface area will be sluiced clean of overburden remaining from previous stripping operations by bulldozer. This work will be done in liason with the engineering department to satisfy their needs for information pertinent to design of an open pit.

West of the fault, on section E9746, three AQ holes were drilled to test the westerly extension of the ore zone. Hole number N 44 was drilled at an angle of -90 for a distance of 307 feet, without intercepting the Bruce limestone. Several aspects of this hole may be of some geological significance. The chlorite breccia zone proper is well developed and merits only comments when considered in conjunction with the remainder of the hole.

Both above and below the chlorite breccia zone, which carried several grains of visible gold, a conspicuous pattern of intermittent zones of brecciation, accompanied by pinkish, hematitic alteration, bleaching and varying amount of pyrite and

pyrrhotite mineralization was noted. Between these zones, the metasediments were found to be essentially unaltered and non-brecciated. This suggests the presence of a macro breccia, with large blocks of unaltered metasediments, bordered by zones of intense alteration and brecciation. These brecciated borders in essence represents the matrix of the macro breccia, and invariable carry small amounts of chlorite on the order of two to five per cent. The sulphide mineralization found within these breccia zones may locally carry some gold values of potential economic interest. Unless these values are on the order of ounces per ton, it is very doubtful they could be considered ore, in view of the disproportionally large volume of barren rock these macro breccias carry.

The main chlorite zone appear in every respect to have continuity both in depth and along strike. This zone must be considered as having a structural control of different proportions and possibly of different origin than the breccia zones enveloping the large macro breccia fragments.

The chlorite breccia zone appear to extend at least as far as E9946 as indicated by nine diamond drill holes of the Gulph "S" series. The lithology in the "S" series holes is for the most part poorly described in the logs. Unfortunately, the core from many of the holes is missing, thus preventing a review of the lithology of these. Gulph Minerals Canada Ltd., in their 1975 report on Scadding Township, stated that east of line 5+00W (E9851 on NGX plans) copper replaces much of the gold so that gold values become sub-economic. Evidence from many holes drilled under the present program does not substantiate this statement. Chalcopyrite is present in all known gold bearing zones and appear to be a late stage mineral.

3.2 The South Zone

The south zone comprises an area between section 1+98 in the north and the Bruce limestone contact with the Serpent quartzite to the south at section 0+65 NW.

The dominant geologic feature within the area is a northwesterly striking diabase dyke. The presently known strike length of this dyke is over 400 meters. It cuts through both the Bruce limestone and the overlying Serpent quartzite formation and dips 60 degrees to the northeast.

A small chlorite breccia zone is situated on the SW side of the diabase dyke, between sections 1+23 NW and 1+82 NW. A series of small, discontinuous lenses or ore grade material were found by diamond drilling. The erratic nature of these lenses renders this zone uneconomic under present conditions.

Bruce limestone were intercepted in a number of drill holes between sections 1+25 NW and 1-S2 NW. Projections of these intercepts to surface suggest the presence of a narrow, northwesterly striking fold in the limestone. There are no outcrops in this area of the surface to confirm this. It is anticipated that the currently on-going magnetometer survey will shed some additional light on this problem.

Along the SE. side of the diabase dyke on section 1+10 NW and O+70 NW, chlorite breccia zones were intercepted in DDH. W 38, W 39 and W 39A. While no mineralization of economic interest were found in these zones, they are significant from a geological point of view. This chlorite breccia may be a part of the upper chlorite zone, thus leaving the chlorite breccia on the SW side of the dyke as a part of the lower chlorite zone, equal in its stratigraphic position to the lower chlorite zone seen in the north zone. Little is known about the potential existence of a lower chlorite zone between the south zone and the north zone. DDH. S-50, drilled from section 1+98 with a strike of $N45^{\circ} W$ and angle of -45° some 137 meters SW of the baseline, intercepted a narrow zone of chlorite breccia at 322 feet. This zone lies in the FW. of the upper chlorite breccia zone and may thus partly substantiate the presence of a lower chlorite zone in this area.

3.3 The Central Zone

This zone is located between sections 1+98 NW and 3+18 NW on grid number one. It is bounded in the north by #4 fault, which strikes $N42 E$ and dips steeply northwest.

The chlorite breccia zone strikes $N25 W$ and dips 60 to 70 northeast. It is composed of several parallel chloritized breccia zones in the lower Serpent quartzite unit. The uppermost H.W. zone has continuity along strike and dip. The remaining parallel zones below this appear to be lense-like and discontinuous, both along strike and dip.

Drilling in this zone between sections 2+33NW and 2+88NW outlined a cone or V-shaped ore lense. The upper and lower limits of the ore shoot are respectively 24 meters and 135 meters below daylight surface. The lower part forms a sharp "V" as indicated by D.D.H. N-6 and N-12 on section 2+57 NW. The overall shape of the ore lense can be seen on fig. 1, a plan in the plane of the ore shoot, appended to the rear of this report.

The ore shoot is composed of a central, fairly homogeneous core, centered on section 2+57 NW. Northeast and southwest of this, it rapidly lenses out into a series of smaller ore

shoots, separated by waste or subeconomic mineralization.

Final evaluation of the ore tonnage in this lense is 96,000 tons grading 0.264 oz. Au/ton. The category of this reserve is: "Indicated".

Near the top and some ten meters above the H.W. of the main ore shoot, a small satellite ore shoot was intercepted on sections 2+32 NW, 2+40 NW and 2+57 NW. The average height of the core lense is 25 meters, top and bottom being respectively 10 to 22 meters and 30 to 56 meters below surface, raking to the southeast. Calculated ore reserves for this lense is 6773.0 tons, grading 0.383 oz. Au/ton. The category for this reserve is also: "Indicated".

No further drilling is required in the intermediate ore zone.

3.4 The North Zone

The North Zone is defined as the area lying north of #4 fault. The area between #4 fault and #3 fault, generally referred to as "The Gap", comprises a large downfaulted block, within which only traces of the upper chlorite zone were found. Several vertical holes failed to locate a suspected deep-seated chlorite breccia zone or any economic mineralization. Within the downfaulted block, bounded by #3 and #4 faults, an east-west striking fault was intercepted in D.D.H. N-28 and N-32 at N5220. The fault dips 80° to the north and appears to be a hinge fault with increasing vertical displacement to the west.

Two chlorite breccia zones, respectively referred to as the upper and lower zones, occurs between number three fault in the south and number two fault in the north, within a wedge-shaped block formed by the two faults. The upper chlorite zone is well defined by several D.D.H. intercepts. The lower chlorite breccia zone was intercepted only as far north as section 4+54 NW and remains to be explored from this section up to number two fault where it is believed to terminate or be offset as is the case with the upper chlorite zone.

Early drilling under the Watt program outlined an ore shoot on Section 4+54 NW. Follow-up drilling confirmed the presence of a V-shaped ore shoot with its' apex reaching the surface. The ore shoot is composed of TWO lenses, one each in the upper and lower chlorite breccia zone. They dip 40° north-easterly and are separated by waste or subeconomic mineralization from five to fifteen meters wide. Down dip and slightly northeast of D.D.H. N-27, the ore shoot appears to be cut off by a fault.

Drilling NE. and SW. of section 4+54 indicated a rapid fingering out of the upper ore shoot in both directions into a series of small individual lenses of subeconomic value. The ore shoot in the lower chlorite zone remains open along strike to the NW., and requires additional drilling. The lower chlorite zone appear to be diverging away from the upper chlorite zone in a northwesterly direction and was not intercepted north of section 4+54 NW., due mainly to late recognition of its changing strike.

The chlorite breccia zones are stratigraphically located within the lower part of the upper, relatively clean, Serpent quartzite. The HW. and FW. are altered pinkish to orange in colour, probably due to iron enrichment. This alteration pattern is typical in all areas where chlorite breccia zones are known and may, in part, be useful as a guide in future exploration.

4.0 ORE RESERVES

4.1 The Intermediate Zone

The method of polygons was chosen for calculating reserves in this ore lense. The method of polygons, also commonly known as: 'Areas of equal influence'; is based on the concept that all factors, determined for a certain point of a mineral body, extend half the distance to adjoining and surrounding points, thus forming an area of influence.

Cross sections through the ore shoot were drafted and lines drawn at 90° to the dip of each ore section, in areas where grade and thickness information was desirable. After calculating these, the information was transferred to a plan in the plane of the ore shoot, symbolized as points. Areas of equal influence (polygons) were then established by using perpendicular bisectors erected from the middle of the sides of triangles, established by lines connecting individual points.

Computation of ore reserves by the use of above method is somewhat slow and requires numerous calculations. The author has used this method many times on various gold and base metal ore deposits, and found it to be more reliable than most other methods, consequently worth the extra time required.

Modifications to normal polygon construction were required along the fringe areas of the ore shoot. Tonnage, grade and thickness of each polygon and fringe area is listed under 4.1.1.

A plan in the plane of the ore shoot, showing location of individual polygons is appended to the rear of this report. (Fig.1)

The final calculated tonnage for the intermediate ore shoot is 96,000 tons grading 0.264 oz. Au per ton.

A small satellite ore body in the H.W. of the intermediate ore shoot is calculated to contain 6,773.0 tons grading 0.383 oz. Au per ton. The ore reserve category for both of the above is "Indicated".

4.1.1. Tonnage, grade and average thickness of polygonal ore blocks in the intermediate ore shoot.

<u>POLYGON #</u>	<u>TONNAGE</u>	<u>OZ. AU PER TON</u>	<u>OZ. AU IN BLOCK</u>	<u>AVERAGE THICKNESS</u>
1	2401.38	0.158		
2	2246.65	0.138	379.42	8.5 m
3	4601.40	0.130	310.04	13.3 m
4	5121.70	0.407	598.18	17.3 m
5	2867.86	0.300	2084.50	19.5 m
6	2430.12	0.211	860.36	9.5 m
7	3704.00	0.211	512.76	5.9 m
8	6311.54	0.211	781.55	5.3 m
9	6680.85	0.090	568.04	11.2 m
10	8905.55	0.626	4182.21	11.0 m
11	8905.55	0.493	4390.43	13.0 m
12	7391.32	0.280	2069.57	14.0 m
13	5005.78	0.338	1691.95	16.5 m
14	940.91	0.250	235.23	14.7 m
15	310.05	0.138	42.79	3.7 m
16	4417.69	0.158	697.99	7.0 m
17	3212.96	0.162	520.50	5.0 m
18	2364.16	0.166	392.45	2.2 m
19	6161.15	0.138	850.24	15.5 m
20	3541.06	0.107	378.89	15.5 m
21	3738.74	0.271	1013.20	12.0 m
	6091.88	0.129	785.85	15.7 m

Fringe Areas

A	423.00	0.158	66.86	4.2 m
B	318.60	0.138	43.97	6.7 m
C	220.19	0.130	28.63	8.6 m
D	472.00	0.407	192.00	9.75m
E	526.02	0.300	157.81	4.75m
F	301.28	0.493	148.53	6.5 m
G	531.69	0.280	148.87	7.0 m
H	467.36	0.338	157.97	8.25m
I	61.08	0.250	15.27	7.35m
J	270.38	0.250	67.59	7.35m
K	563.27	0.338	190.38	8.25m
L	422.00	0.271	114.36	6.00m
M	174.81	0.107	18.70	7.75m
N	963.38	0.138	132.95	7.75m
O	227.25	0.166	37.72	1.10m
P	661.78	0.162	107.21	2.50m
Q	254.12	0.129	254.12	7.85m
R	401.70	0.158	63.47	3.50m
S	368.48	0.211	77.75	2.65m

4.2 The South Zone

Early drilling in the Watt program indicated a small ore shoot on section 1+32 NW. DDH. W-35 intercepted four individual ore lenses separated by subeconomic to barren quartzite. The combined average, including the waste, showed a grade of 0.196 oz. Au/ton over 19.2 meters. Hole N-54 was drilled so as to intercept this ore closer to surface. The hole cut three small lenses of ore grade material. The uppermost of these averaged 0.340 oz. Au/ton over 0.91 meters and appear to be in contiguity with the lowermost ore lense in DDH. W-35. The remaining two ore shoots are isolated and discontinuous. To test for lateral continuity, two holes were drilled on section 1+43 NW. N-55 intercepted three ore lenses of narrow width. The uppermost of these averaged 0.418 oz. Au/ton over 0.76 meters and shows contiguity with the upper ore lense intercepted in hole W-35. The lower two ore lenses shows contiguity with the lower two lenses intercepted in DDH. N-54. Hole number N-56 was drilled at a steeper angle from the same set up as N-55, but did not intercept any ore grade material.

A few of the small ore lenses may reach surface. These would not be of sufficient strike length or width, to warrant attempts at mining these from surface. Drilling to the NW and SE of the south zone ore shoot clearly defines its limited extend. With this evidence, the author recommends the zone be dropped from the ore reserve inventory, but retained as an identified-subeconomic resource, containing a possible 15,000 tons grading 0.20 oz. Au/ton or better.

Further drilling is not indicated at this time.

4.3 The North Zone

The rapid lensing out of the two ore shoots in the north zone leaves only a block centered on section 4+54NW, extending seven meters NE and SW of this, and measuring 105 meters down dip at an angle of 40°. The ore block is composed of two ore shoots, lying respectively in the upper and lower chlorite breccia zones. The waste and lowgrade mineralization separating the two ore lenses were included in the reserve calculations.

4.3.1. Method of Calculating Ore Reserves

The blocked out zone of mineralization on Section 4+54 NW was divided into four small segments, governed by drill hole intercepts. The average grade for each segment was calculated and weighted based on drill hole intercepts. The average width of each block was established and reduced by 50% at points seven meters NE and SW of the section. The volume was calculated and reduced to short tons by using a factor of 0.339804 (metric

equivalent of 12 cubic feet per ton).

4.3.2 Tonnage and Grade

The total calculated tonnage is 66,217 tons grading 0.096 Oz. Au/ton. This does not include the uppermost 25 meters of the ore shoot in the lower chlorite breccia zone. This ore shoot falls under the category of "Inferred" ore, and requires additional drilling to confirm its presence. Surface stripping may be a possible alternative to drilling as the ore shoot may reach surface.

4.4 The East-West Zone

Assay results from NQ holes N-18 and N-19, as well as AQ hole N-44, has not yet been received. Additional sampling by trenching is required to clarify the ore outlines. Ore reserves will be calculated when Assay results are received from both trenching and diamond drill holes.

SCADDING TOWNSHIP DRILLING

<u>WELL #</u>	<u>NORTH</u>	<u>LOCATION</u>		<u>DIP</u>	<u>BEAR.</u>	<u>DEPTH</u>	<u>METRIC SECTION</u>	<u>DATE STARTED</u>	<u>DATE COMPLETED</u>
		<u>EAST</u>	<u>ELEV.</u>						
N-15	*4995.00	9821.00	301.45	0°	0°	25.0m	9821	Jan 6/81	Jan 8/81
N-16	*4991.80	9806.00	300.26	-10°	0°	17.7	9806	Jan11/81	Jan13/81
N-17	*4991.80	9791.70	300.68	-8°	0°	23.2m	9791	Jan14/81	Jan16/81
N-18	*4997.60	9776.60	303.30	0°	0°	17.4m	9776	Jan17/81	Jan18/81
N-19	*4999.35	9762.30	304.23	-5°	0°	17.1m	9761	Jan19/81	Jan20/81
N-39	5005.48	9458.95	320.04	-90°	S65°W	56.4m	240	Jan21/81	Jan23/81
N-40	5013.82	9500.97	317.15	-70°	S65°W	73.8m	232	Jan14/81	Jan17/81
N-41	5013.39	9500.12	317.20	-45°	S65°W	70.1m	232	Jan11/81	Jan19/81
N-42	5062.08	9477.13	320.55	-80°	S65°W	109.1m	288	Jan26/81	Jan30/81
N-43	5015.34	9746.41	307.37	-39°	0°	50.0m	9746	Jan20/81	Jan24/81
N-44	5013.40	9746.31	307.28	-90°	0°	93.6m	9746	Jan24/81	Jan27/81
N-45	5013.94	9746.31	307.25	-70°	0°	64.6m	9746	Jan27/81	Jan30/81
N-46	5010.90	9738.19	307.45	-55°	0°	38.7m	9738.5	Jan28/81	Feb 1/81
N-47	4990.17	9745.91	306.41	-70°	0°	61.6m	9746	Feb 3/81	Feb 4/81
N-48	4981.22	9843.60	298.71	-35°	0°	49.1m	9844	Feb 5/81	Feb 7/81
N-49	4986.25	9791.00	299.48	-40°	0°	51.8m	9791	Feb 8/81	Feb10/81
N-50	5137.18	9459.44	316.86	-90°	S65°W	91.7m	362	Feb 1/81	Feb 5/81

<u>DDH #</u>	<u>NORTH</u>	<u>LOCATION</u>		<u>DIP</u>	<u>BEAR.</u>	<u>DEPTH</u>	<u>METRIC SECTION</u>	<u>DATE STARTED</u>	<u>DATE COMPLETED</u>
		<u>EAST</u>	<u>ELEV.</u>						
N-51	5161.80	9512.76	311.97	-90°	S65°W	121.9m	362	Feb 5/81	Feb 7/81
N-52	5177.06	9474.99	314.06	-90°	S65°W	98.5m	393	Feb 9/81	Feb 12/81
N-53	4902.29	9490.82	304.23	-35°	S65°W	9.1m	137	HOLE ABORTED IN OB.	
N-54	4897.79	9481.44	303.68	-55°	S65°W	59.7m	137	Feb 16/81	Feb 19/81
N-55	4909.22	9488.17	304.50	-35°	S65°W	66.1m	144.5	Feb 19/81	Feb 22/81
N-56	4909.92	9489.50	304.77	-60°	S65°W	63.7m	144.5	Feb 22/81	Feb 24/81

* Denotes NQ Holes, all others are drilled AQ.

Scadding Twp. - Ore Intersections

DDH #	Intersection	Core Footage		Length	Au	
		From	To		Oz/ton	Gm/ton
N-15	1	15.0' 4.6m	38.0' 11.6m	23.0' 7.0m	0.462	14.37
	2	48.4' 14.8m	59.4' 18.1m	11.0' 3.4m	0.160	4.98
	3	15.0' 4.6m	59.4' 18.1m	44.4' 13.53m	0.291	9.05
N-16	1	23.7' 7.2m	33.0' 10.1m	9.3' 2.8m	0.072	2.24
	1a	28.2' 8.6m	33.0' 10.1m	4.8' 1.5m	0.103	3.20
	2	45.9' 14.0m	50.0' 15.2m	4.1' 1.2m	0.114	3.55
N-17	1	20.0' 6.1m	36.0' 11.0m	16.0' 4.9m	0.719	22.36
	1a	20.0' 6.1m	31.0' 9.4m	11.0' 3.4m	1.010	31.41
	1b	20.0' 6.1m	26.4' 8.0m	6.4' 2.0m	1.622	50.45
N-18	NOT AVAILABLE (Assays pending)					
N-19	NOT AVAILABLE (Assays pending)					
N-39	1	6.0' 1.8m	7.5' 2.3m	1.5' 0.46m	0.26	8.09
	1a	6.0' 1.8m	10.5' 3.2m	4.5' 1.4m	0.090	2.80
	2	18.7' 5.7m	20.0' 6.1m	1.3' 0.40m	0.25	7.78
	2a	18.7' 5.7m	23.0' 7.0m	4.3' 1.3m	0.077	2.39

DDH #	Intersection	Core Footage		Length	Au	
		From	To		Oz/ton	Gm/ton
N-40	1	197.4' 60.2m	199.5' 60.8m	2.1' 0.64m	0.160	4.98
	1a	197.4' 60.2m	202.0' 61.6m	4.6' 1.4m	0.095	2.95
N-41	1	77.0' 23.5m	80.0' 24.4m	3.0' 0.91m	0.10	3.11
	1a	77.0' 23.5m	83.0' 25.3m	6.0' 1.8m	0.090	2.80
	2	89.0' 27.1m	90.5' 27.6m	1.5' 0.46m	0.310	9.64
	2a	86.0' 26.2m	90.5' 27.6m	4.5' 1.4m	0.106	3.30
	3	122.0' 37.2m	123.5' 37.6m	1.5' 0.46m	0.100	3.11
	4	155.0' 47.2m	156.9' 47.8m	1.9' 0.58m	0.150	4.67
	4a	155.0' 47.2m	159.0' 48.5m	4.0' 1.2m	0.092	2.86
	N-42	NO ORE INTERSECTIONS				
N-43	NO ORE INTERSECTIONS					
N-44	NOT AVAILABLE (Assays pending)					
N-45	NO ORE INTERSECTIONS					
N-46	1	48.6' 14.8m	51.5' 15.7m	2.9' 0.88m	0.21	6.53
	2	68.0' 20.7m	69.0' 21.0m	1.0' 0.30m	0.130	4.04
	3.	74.0' 22.6m	77.5' 23.6m	3.5' 1.1m	0.120	3.73
	3a	71.0' 21.6m	77.5' 23.6m	3.5' 2.0m	0.091	2.83
	1	145.5' 44.3m	164.8' 50.2m	19.3' 5.9m	0.186	5.79
N-47	1a	147.5' 45.0m	155.0' 47.2m	7.5' 2.3m	0.393	12.22
N-48	NO ORE INTERSECTIONS					

DDH #	Intersection	Core Footage		Length	Au		
		From	To		Oz/ton	Gm/ton	
N-49	NO ORE INTERSECTIONS						
N-50	NO ORE INTERSECTIONS						
N-51	NO ORE INTERSECTIONS						
N-52	1	121.0' 36.9m	122.0' 39.2m	1.0' 0.30m	0.53	16.48	
N-53	HOLE ABORTED BEFORE REACHING BEDROCK						
N-54	1.	104.0' 41.7m	107.0' 32.6m	3.0' 0.91m	0.340	10.58	
	2	135.0' 41.1m	137.3' 41.8m	2.3' 0.70m	0.390	12.13	
	3	143.5' 43.7m	147.0' 44.8m	2.5' 0.76m	0.220	6.84	
N-55	1	88.0' 26.8m	89.0' 27.1m	1.0' 0.30m	0.97	30.17	
	1a	86.5' 26.4m	89.0' 27.1m	2.5' 0.76m	0.418	13.01	
	2.	172.0' 52.4m	175.0' 53.3m	3.0' 0.91m	0.135	4.20	
	3	194.5' 59.3m	202.0' 61.6m	7.5' 2.3m	0.174	5.41	
N-56	NO ORE INTERSECTIONS						

STRATIGRAPHIC SEQUENCE - ASHIGAMI PROPERTY*

FORMATION		UNIT	LITHOLOGY
Serpent Fm.	1	Diabase Dykes	
	2	Upper Qtzite Unit	A relatively clean quartzite, gradational from 4. Locally fractured and carbonated in lower parts.
	3	Upper Chlorite Zone	30 - 4-m thick, a zone of tectonic brecciation and fracturing, intensely to moderately chloritized and locally mineralized Au, Cp, Py, AsPy and Pc. Pink to orange hematitic alteration extends into wall rock above and below this zone for five to 30 meters.
	4	Intermediate Qtzite Unit	30-6-m thick, gradational from 5. A relatively clean quartzite with occasional metagreyvacke beds. No evidence of facies changes. Lower parts may be tectonically disrupted and brecciated close to 7 and strongly bleached.
	5	Lower Qtzite Unit	25-50-m thick, gradational from 5. Some metagreyvacke and siltstone beds, minor chert and rare narrow chloritic zones. Frequently fractured and carbonated with much bleaching and minor py, po, aspy and cp mineralization.
	6	Lower Chloritic Zone	0 - 20 thick. Abundant facies changes. Dirty quartzite with some argillaceous beds prominent tectonic brecciation and fracturing with moderate to intense chloritization. Locally mineralized Au, Cp, Py, Po, Aspy.

FORMATION	UNIT	LITHOLOGY	
Española Fm	7	Transition Zone	5 - 30-m thick, gradational from 8, facies changes. Dirty quartzite greywacke, argillite, limestone and conglomerate. Six may be located in upper parts of this zone. Unit is thickening to the north.
	8	Limestone Unit	A coherent unit of limestone, limestone breccia and minor interbedded siltstone lenses in excess of 20m. thick.

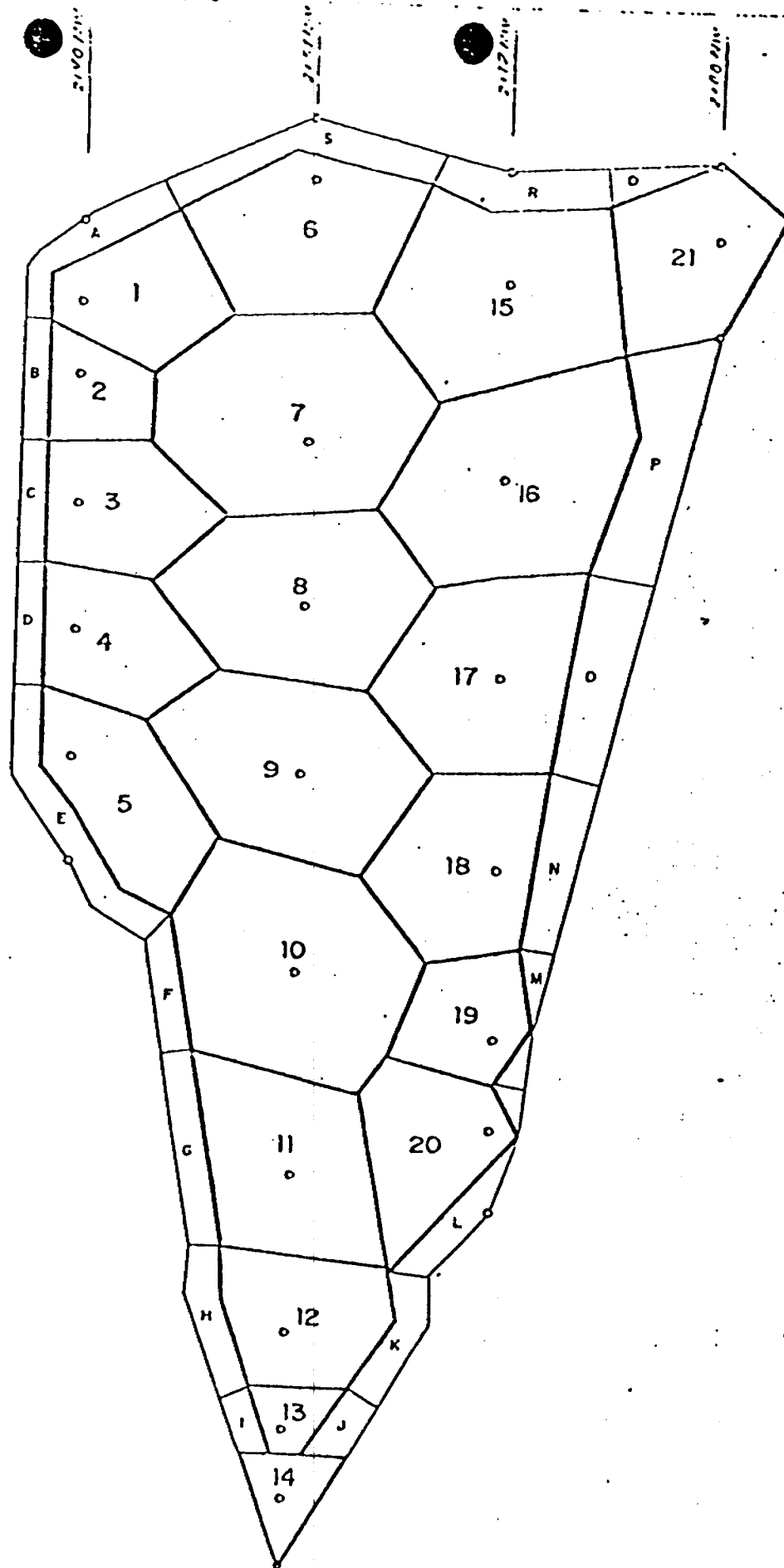
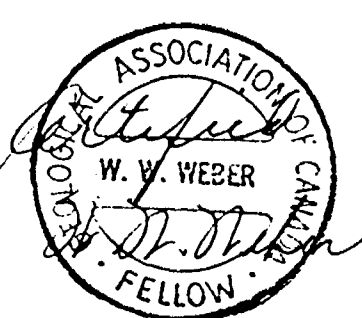
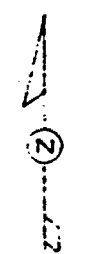
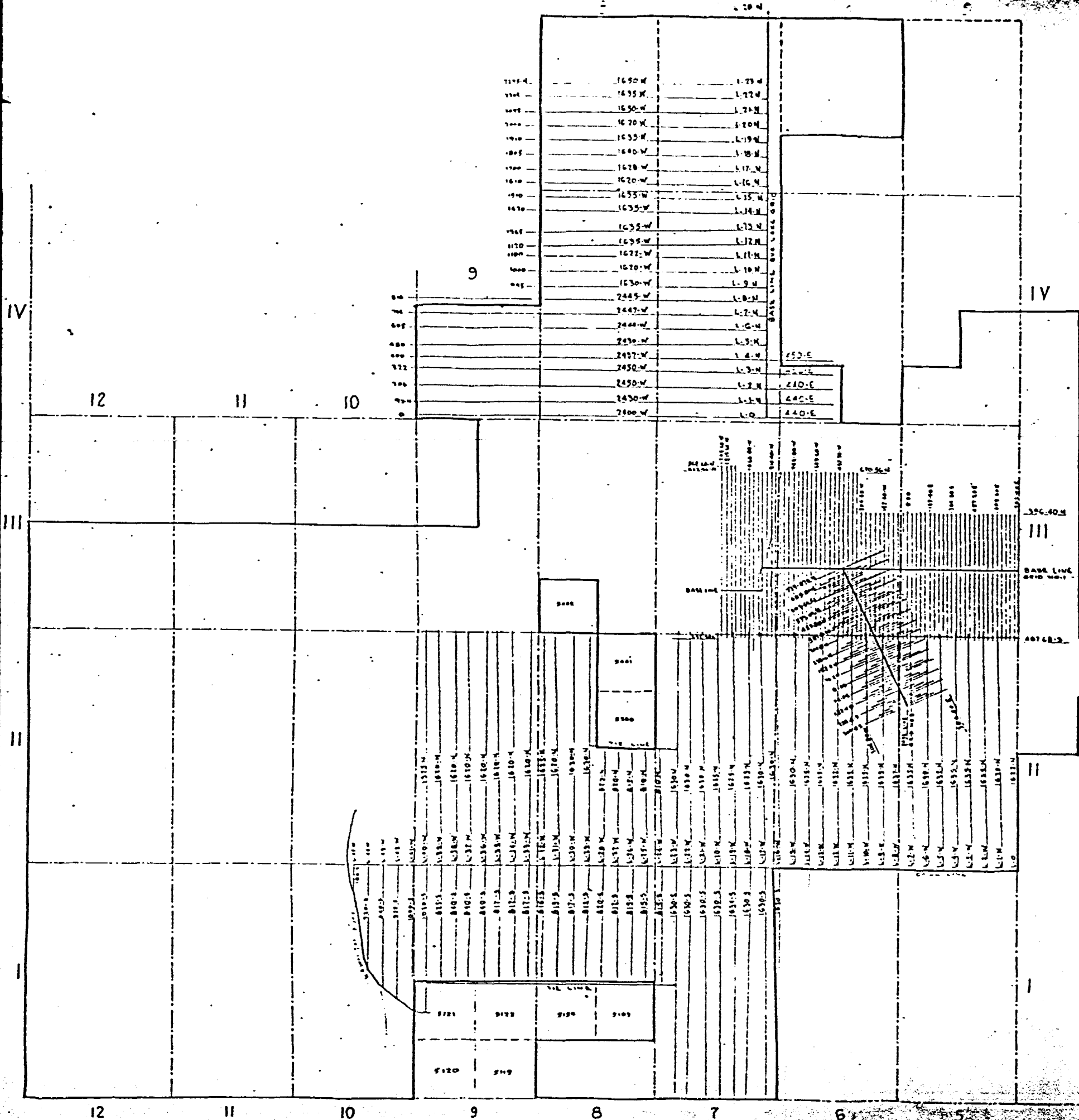


FIGURE 1

Scale 1 : 500



XEROX REDUCTION
 NOT TRUE SCALE
 NORTHGATE EXPLORATION LIMITED
 29-30th AVE GROUP - 772
 STATE OF TEXAS - 200' BY 200' TO 1" = 200'
GRID PLAN
 CONTAINS 1000' RESOLUTION DATA

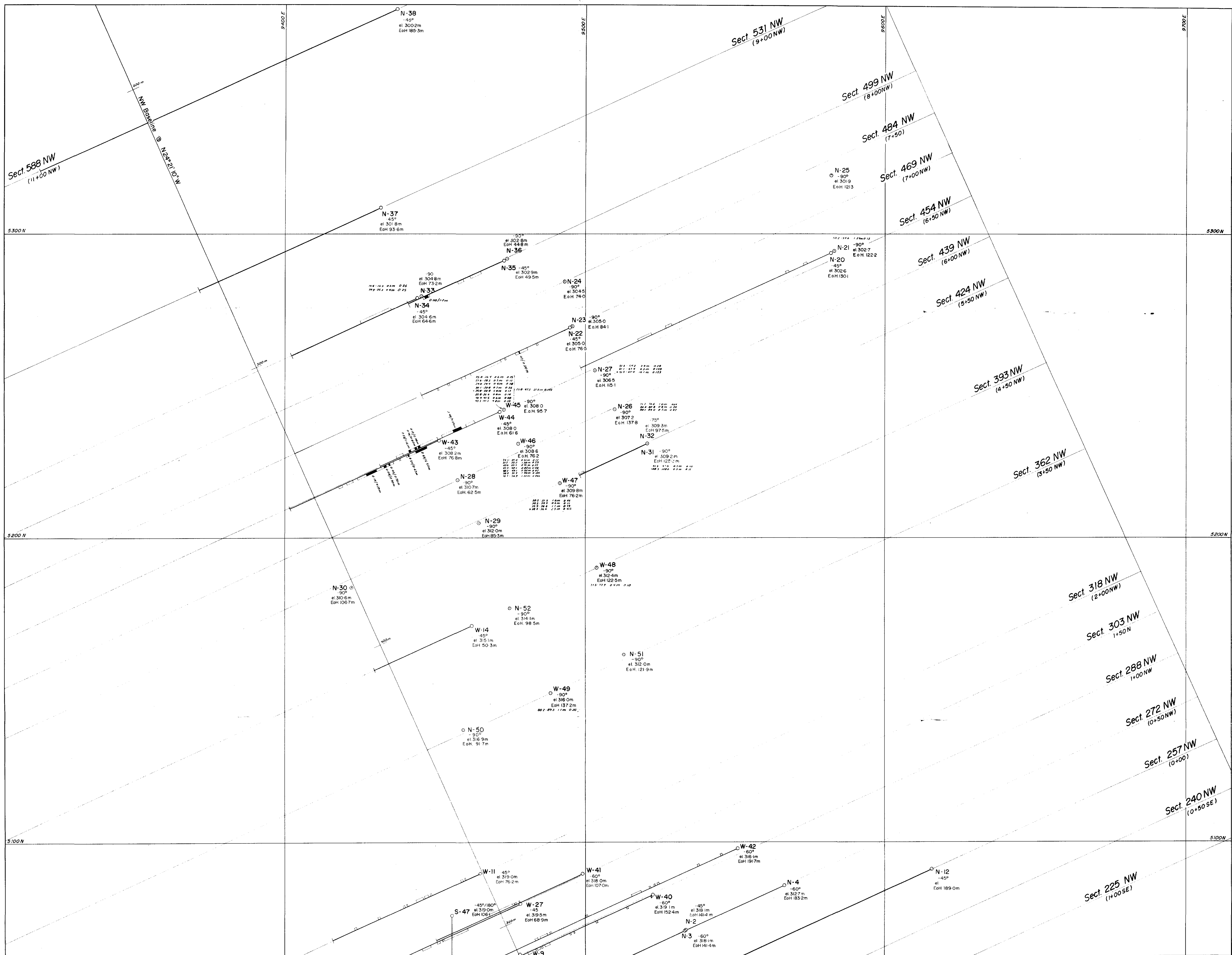
1650-W	1-73-M
1655-W	1-72-M
1650-W	1-74-M
1670-W	1-70-M
1655-W	1-19-M
1640-W	1-18-M
1670-W	1-17-M
1670-W	1-16-M
1655-W	1-15-M
1655-W	1-14-M
1655-W	1-13-M
1655-W	1-12-M
1655-W	1-11-M
1672-W	1-11-M
1670-W	1-10-M
1650-W	1-9-M
2445-W	1-8-M
2447-W	1-7-M
2450-W	1-6-M
2450-W	1-5-M
2450-W	1-4-M
2450-W	1-3-M
2450-W	1-2-M
2450-W	1-1-M
2450-W	1-0

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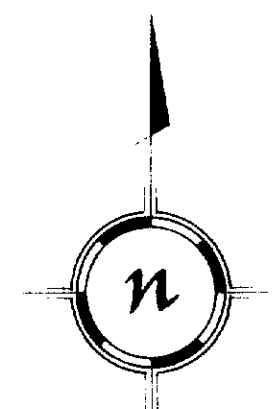
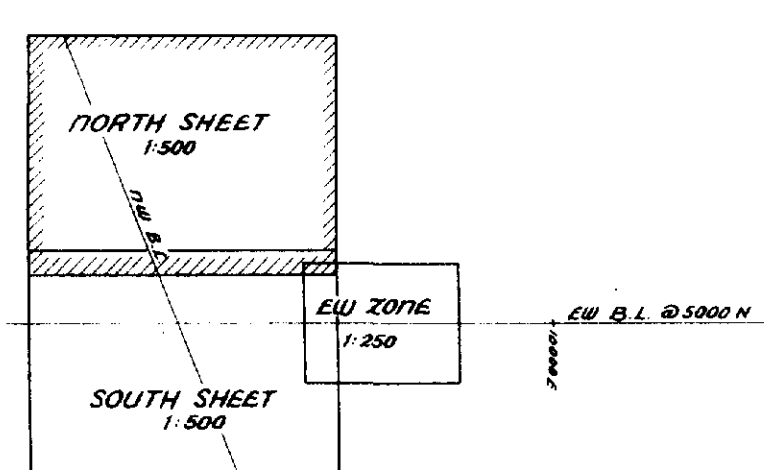
FOR ADDITIONAL
INFORMATION

SEE MAPS:

SCADDING - 0016 # 1-40



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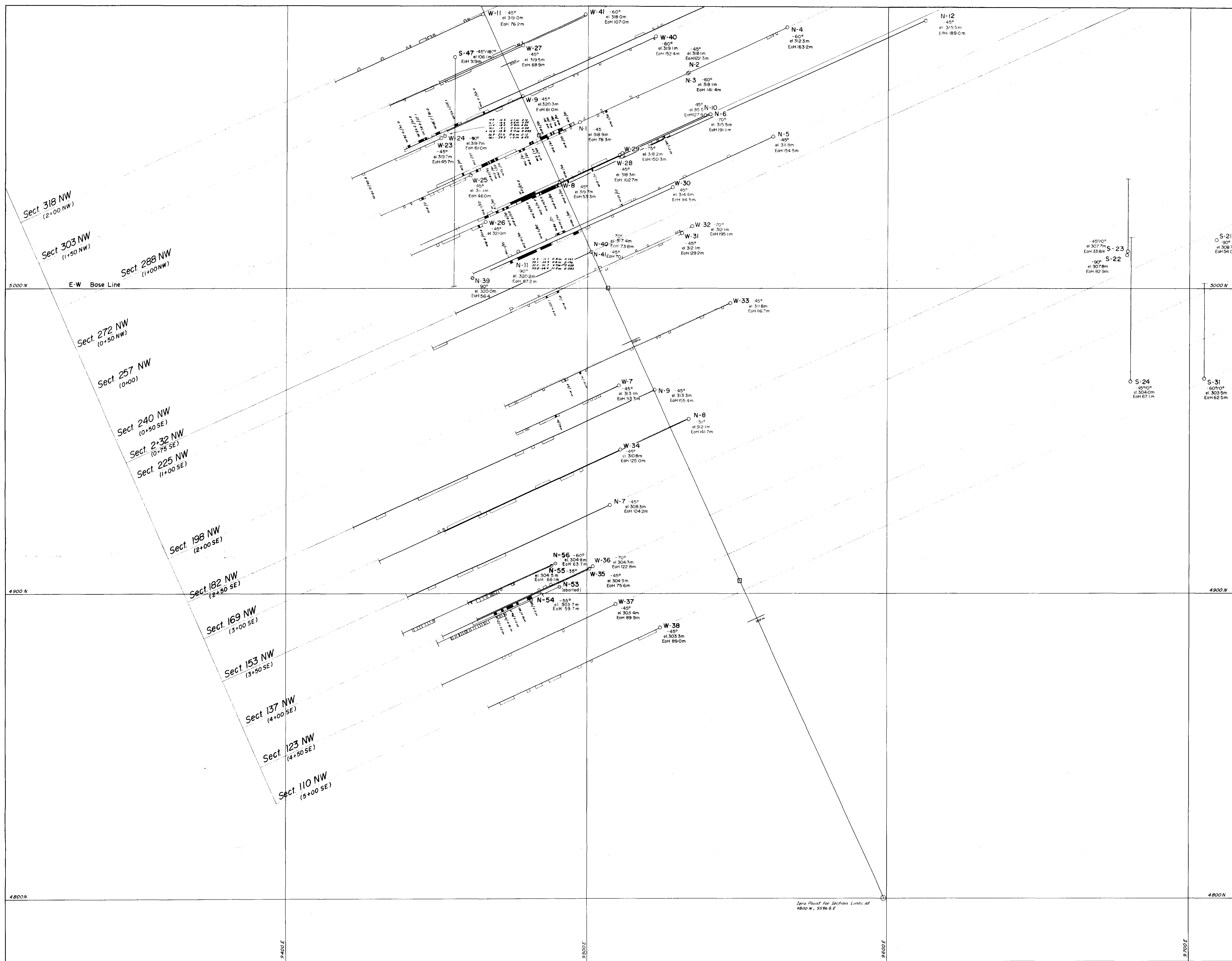


28th October 1981

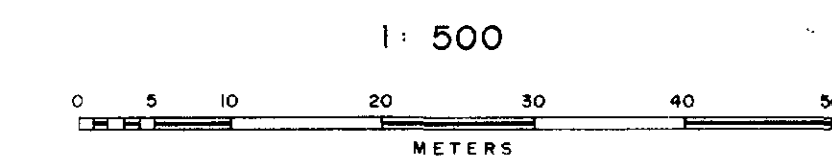
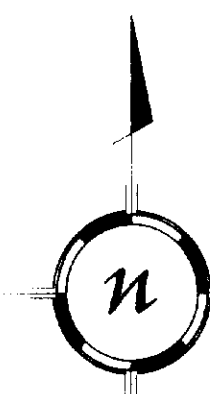
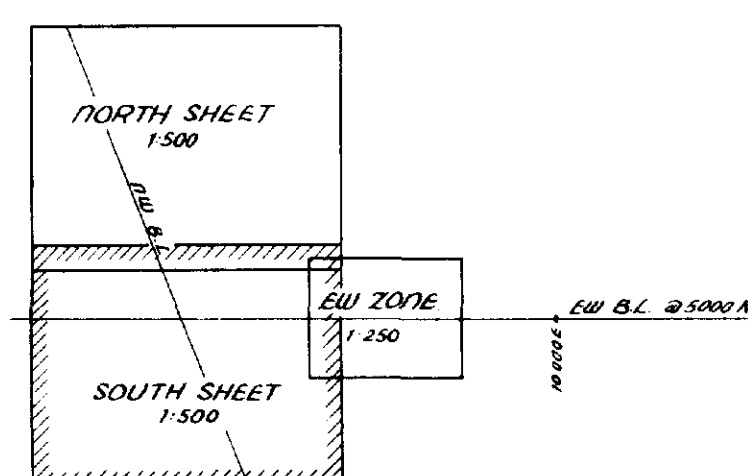


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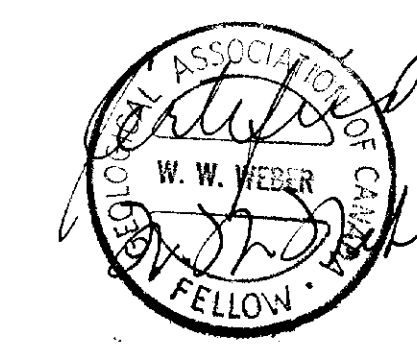
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ASHIGAMI LAKE GROUP - 772			
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PLAN OF DRILL HOLES			
(NORTH SHEET)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING No.
A.R. Gunther			
DATE	SCALE		
Nov. 1980	1 : 500		



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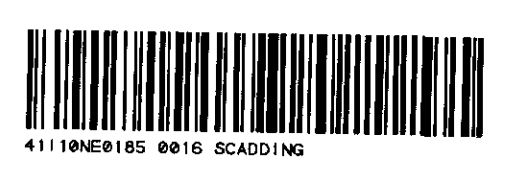
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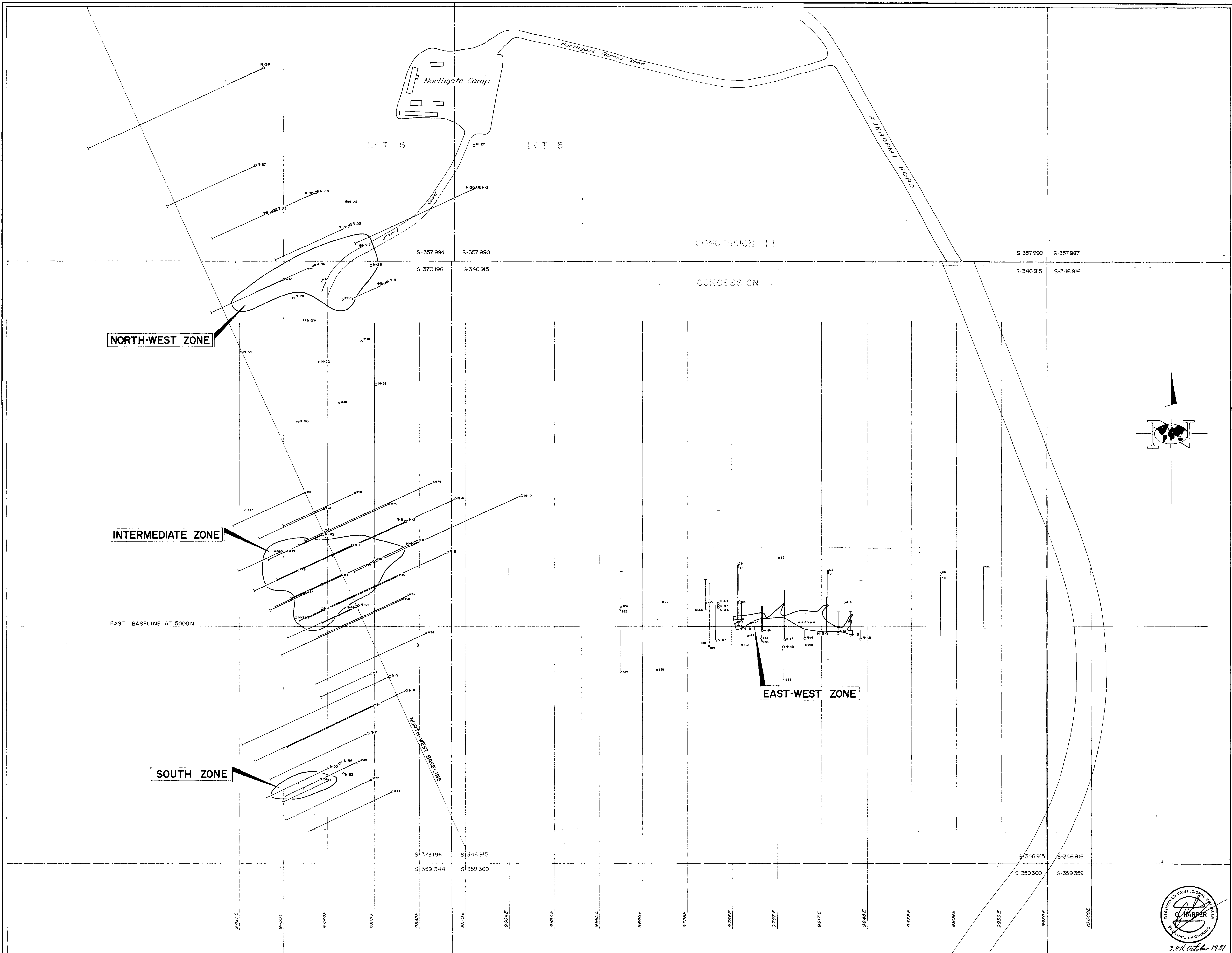
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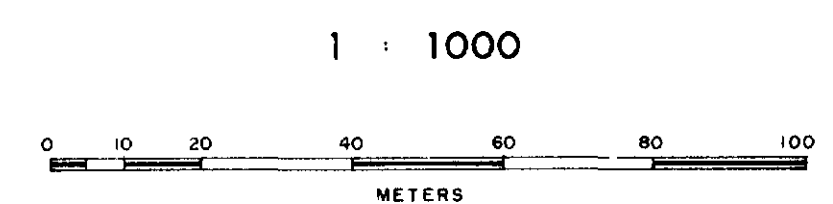
PLAN OF DRILL HOLES
 (SOUTH SHEET)

DRAWN BY A.R. Gunther	CHECKED BY	REVISIONS	DRAWING NO.
DATE Nov. 1980	SCALE 1:500		





○ N-30 Northgate Drill Holes
 ○ N-10 Old Trill Holes
 ○ N-57

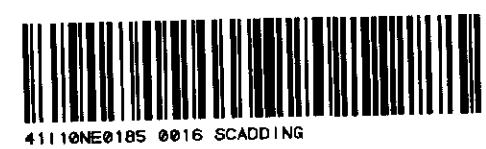


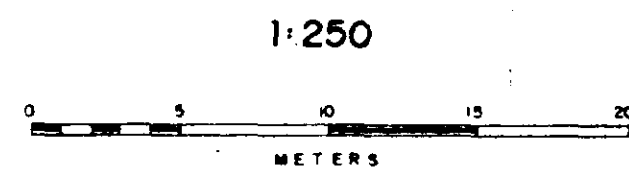
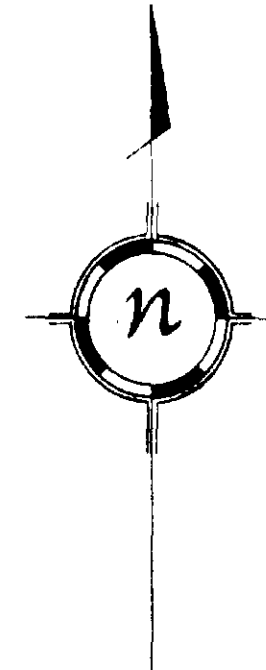
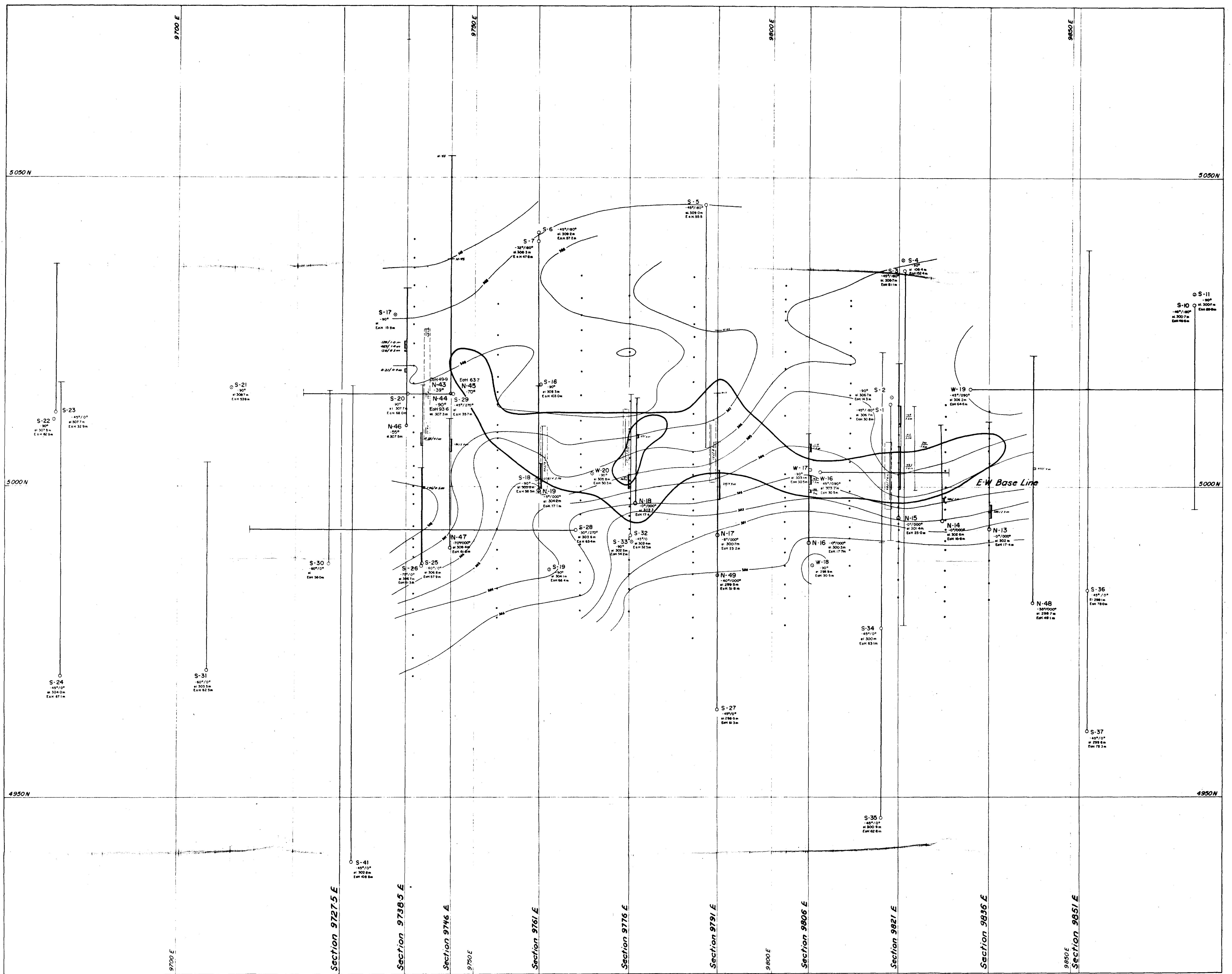
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Northgate Exploration Limited
 ASHIGAMI LAKE GROUP - 772
 SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO
PLAN OF 1980-81 DRILLING
showing
MINERALIZED ZONES

Drawn A.R. Gunther
 Date April 1981
 Scale 1:1000
 NTS





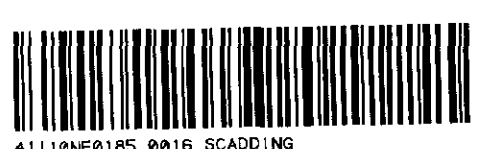
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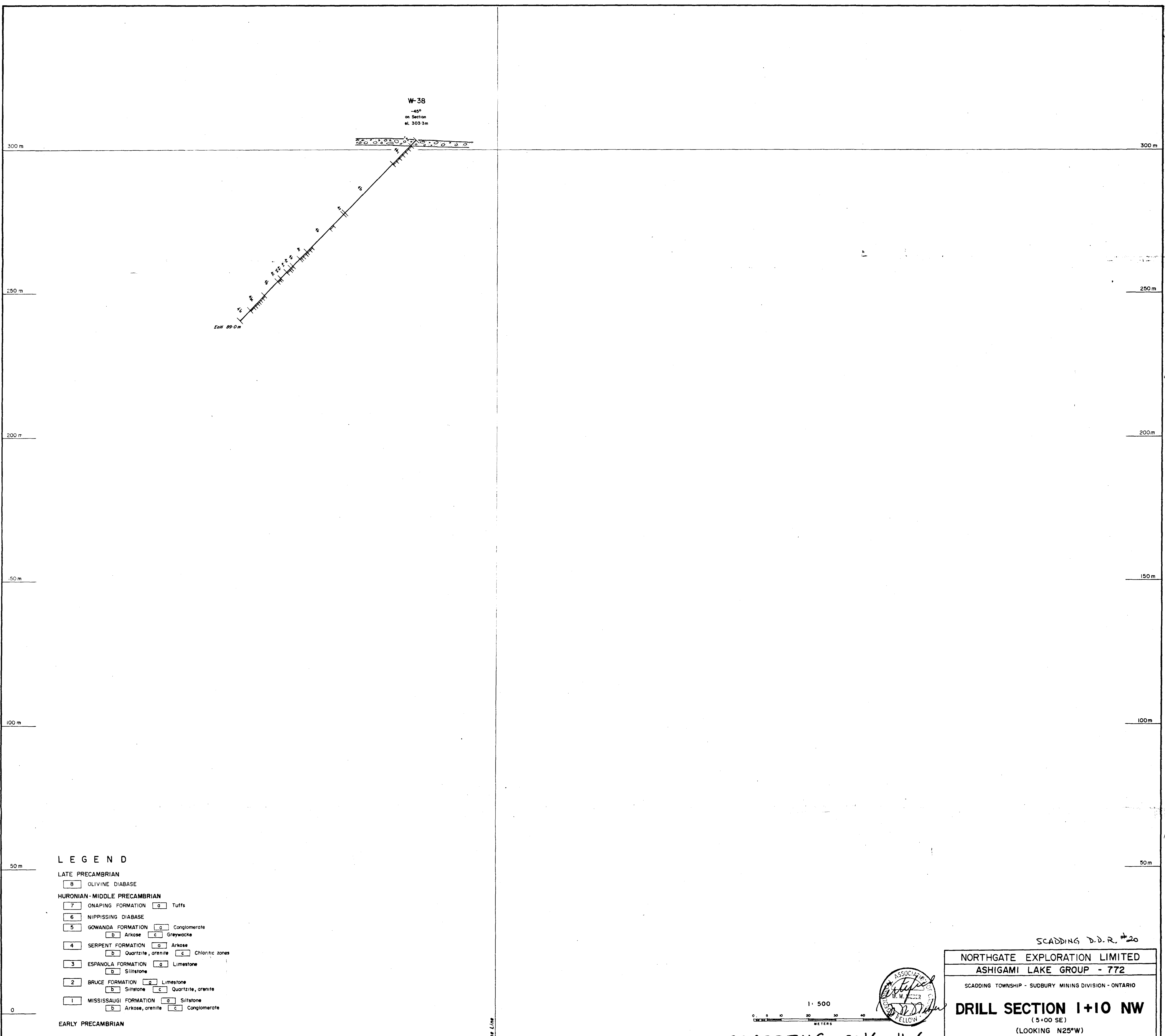


SCADDING D.D.R. #20

NORTHGATE EXPLORATION LIMITED
 ASHIGAMI LAKE GROUP - 772
 SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO
ELEVATION CONTOURS
PLAN OF DRILL HOLES
 EAST-WEST ZONE

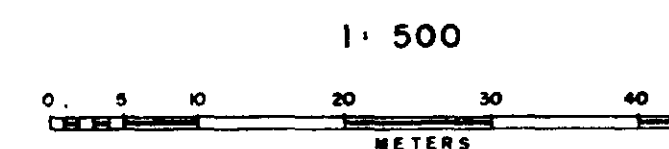
Drawn by A R Gunther	Checked by	Revised	Drawing No.
Date Nov 1980	Scale 1:250		





LEGEND

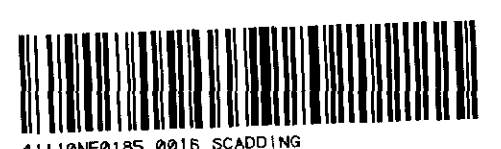
- LATE PRECAMBRIAN**
 8 OLIVINE DIABASE
- HURONIAN - MIDDLE PRECAMBRIAN**
 7 ONAPING FORMATION a Tuffs
 6 NIPPISSING DIABASE
 5 GOWANDA FORMATION a Conglomerate
 b Arkose c Greywacke
 4 SERPENT FORMATION a Arkose
 b Quartzite, arenite c Chloritic zones
 3 ESPANOLA FORMATION a Limestone
 b Siltstone
 2 BRUCE FORMATION a Limestone
 b Siltstone c Quartzite, arenite
 1 MISSISSAUGI FORMATION a Siltstone
 b Arkose, arenite c Conglomerate
- EARLY PRECAMBRIAN**



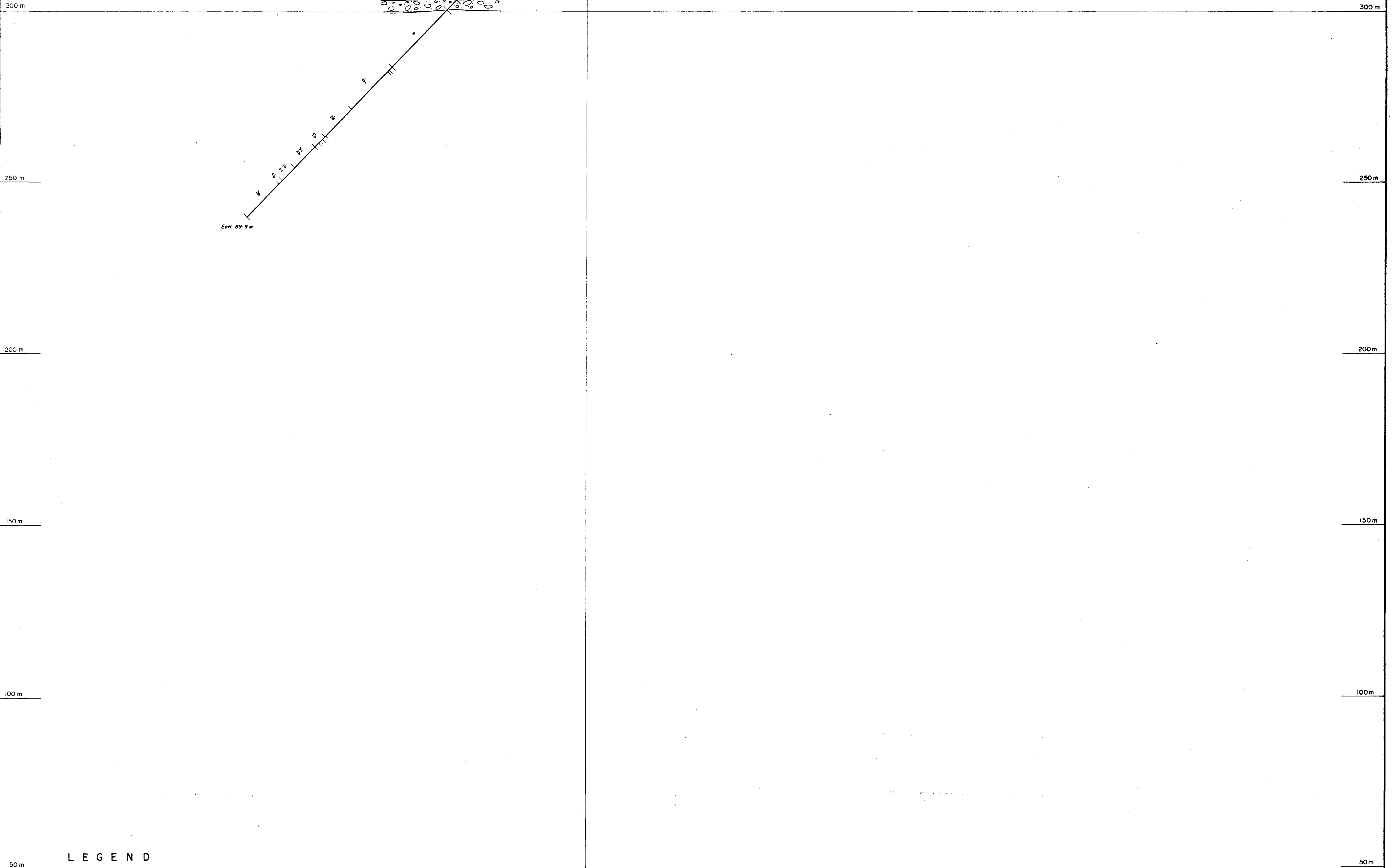
SCADDING-0016 # 6

SCADDING D.D.R. #20

NORTHGATE EXPLORATION LIMITED			
ASHIGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION 1+10 NW			
(5+00 SE)			
(LOOKING N25°W)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING No.
D.L.Bagnall			
DATE	SCALE		
Nov. 1980	1:500		



W-37
-45°
on Section
at 303.4 m



LEGEND

LATE PRECAMBRIAN

8 OLIVINE DIABASE

HURONIAN-MIDDLE PRECAMBRIAN

7 ONAPING FORMATION - a Tuffs

6 NIPPISSING DIABASE

5 GOWANDA FORMATION a Conglomerate

b Arkose c Greywacke

4 SERPENT FORMATION a Arkose

b Quartzite, arenite c Chloritic zones

3 ESPANOLA FORMATION a Limestone

b Siltstone

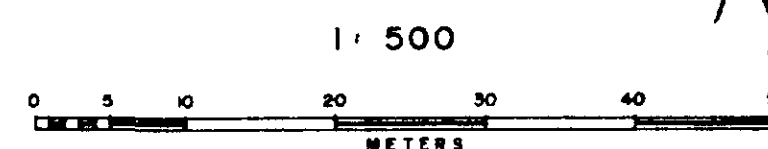
2 BRUCE FORMATION a Limestone

b Siltstone c Quartzite, arenite

1 MISSISSAUGI FORMATION a Siltstone

b Arkose, arenite c Conglomerate

EARLY PRECAMBRIAN



SCADDING-0016 #7



SCADDING D.D.R. #20

NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

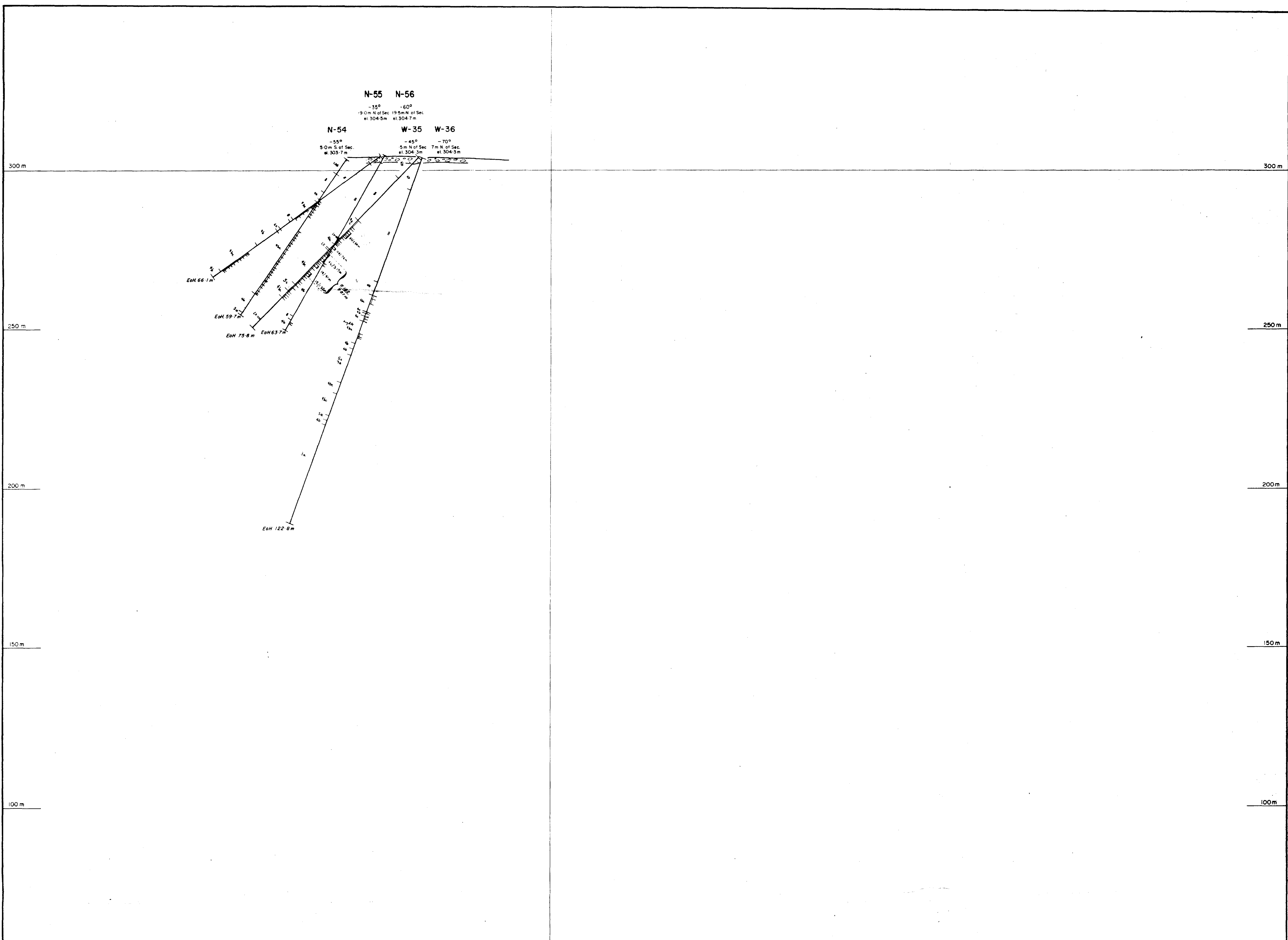
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION I+23 NW

(4+50 SE)
(LOOKING N25°W)

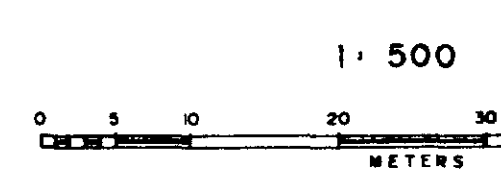
DRAWN BY D.L. Goggin	CHECKED BY	REVISIONS	DRAWING No.
DATE Nov 1980	SCALE 1:500		





LEGEND

- LATE PRECAMBRIAN**
 8 OLIVINE DIABASE
- HURONIAN - MIDDLE PRECAMBRIAN**
 7 ONAPING FORMATION a Tufts
 6 NIPPISSING DIABASE
 5 GOWANDA FORMATION a Conglomerate
 b Arkose c Greywacke
 4 SERPENT FORMATION a Arkose
 b Quartzite, arenite c Chloritic zones
 3 ESPANOLA FORMATION a Limestone
 b Siltstone
 2 BRUCE FORMATION a Limestone
 b Siltstone c Quartzite, arenite
 1 MISSISSAUGI FORMATION a Siltstone
 b Arkose, arenite c Conglomerate
- EARLY PRECAMBRIAN**

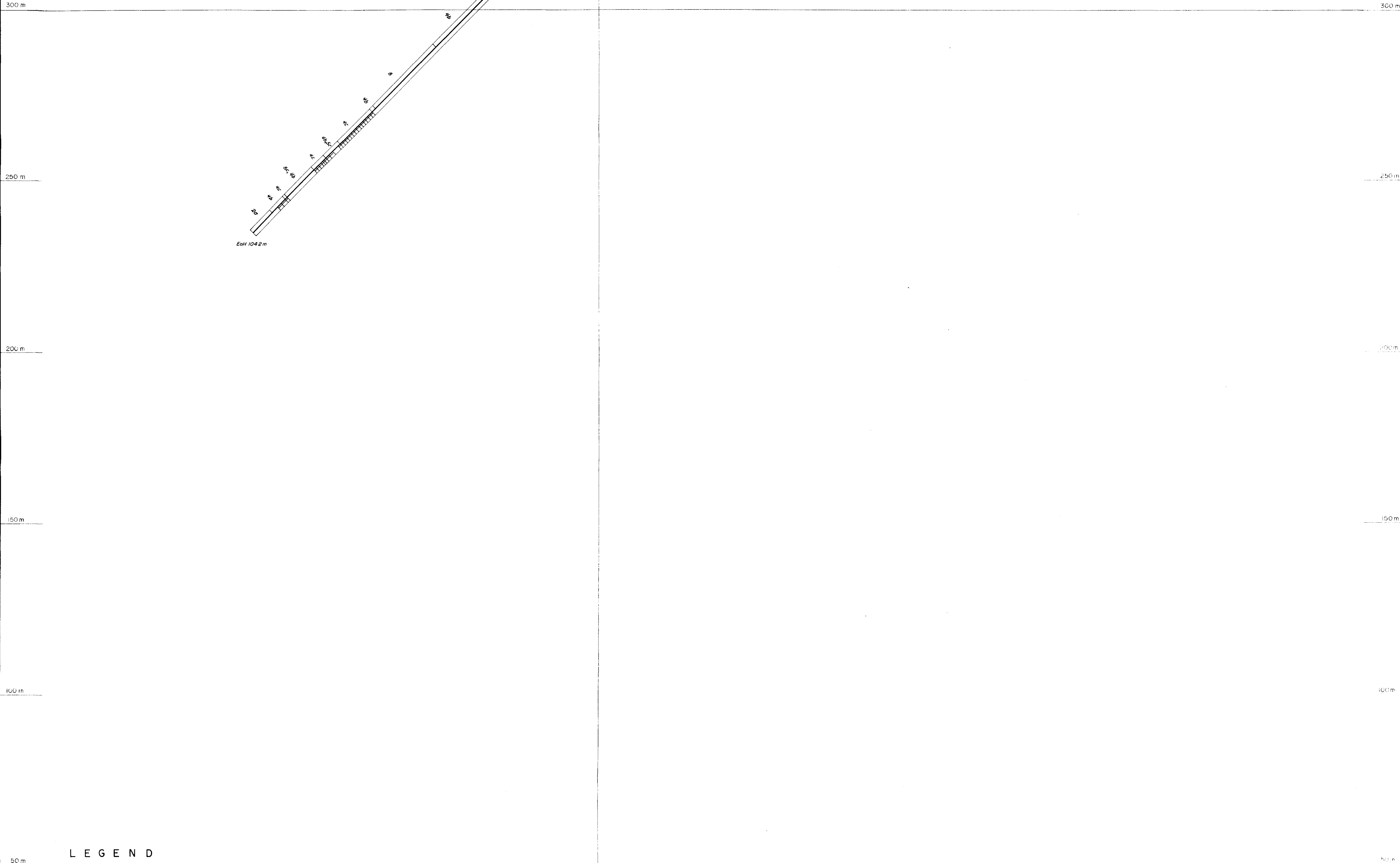


SCADDING-0016 #8

SCADDING D.D.R. #20

NORTHGATE EXPLORATION LIMITED			
ASHIGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION I+37 NW			
(LOOKING N25°W)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING NO.
DATE	SCALE		
Nov 1980	1:500		



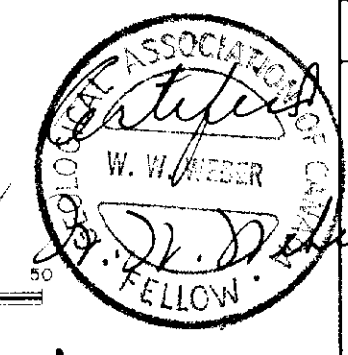
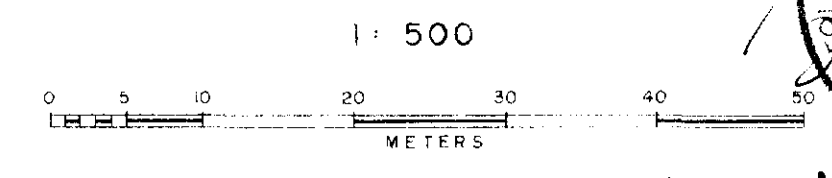


LEGEND

- LATE PRECAMBRIAN**
- 8 OLIVINE DIABASE
- HURONIAN - MIDDLE PRECAMBRIAN**
- 7 ONAPING FORMATION [a] Tuffs
 - 6 NIPPISSING DIABASE
 - 5 GOWANDA FORMATION [a] Conglomerate
[b] Arkose [c] Greywacke
 - 4 SERPENT FORMATION [a] Arkose
[b] Quartzite, arenite [c] Chloritic zones
 - 3 ESPANOLA FORMATION [a] Limestone
[b] Siltstone
 - 2 BRUCE FORMATION [a] Limestone
[b] Siltstone [c] Quartzite, arenite
 - 1 MISSISSAUGI FORMATION [a] Siltstone
[b] Arkose, arenite [c] Conglomerate

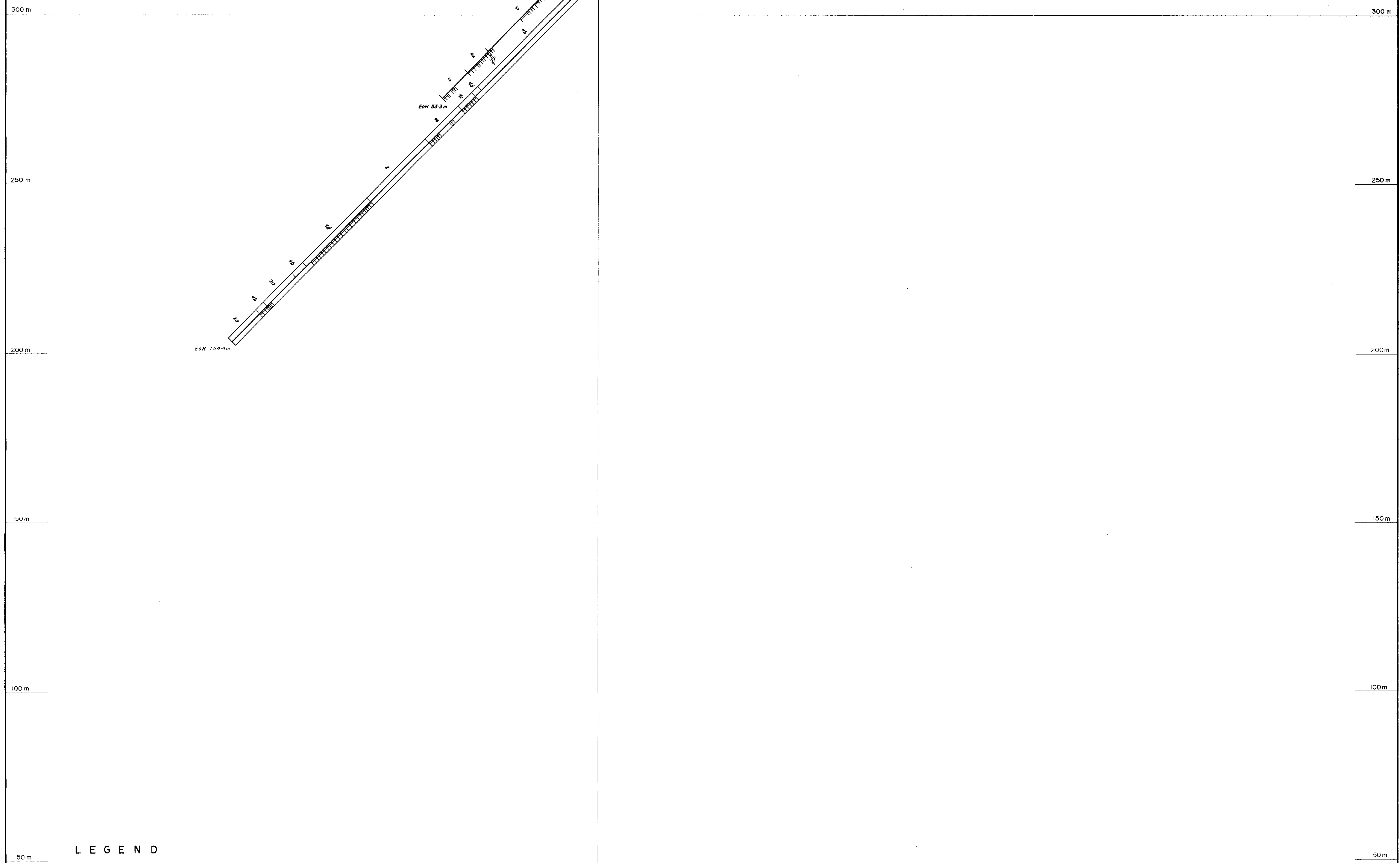
EARLY PRECAMBRIAN

SCADDING-0016 #9



NORTHGATE EXPLORATION LIMITED	
ASHIGAMI LAKE GROUP - 772	
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO	
DRILL SECTION 1+53 NW	
(3+50 SE)	
(LOOKING N25°W)	
DRAWN BY: A.R. GARDNER	CHECKED BY: W.W. FREDER
DATE: Nov 1980	SCALE: 1:500

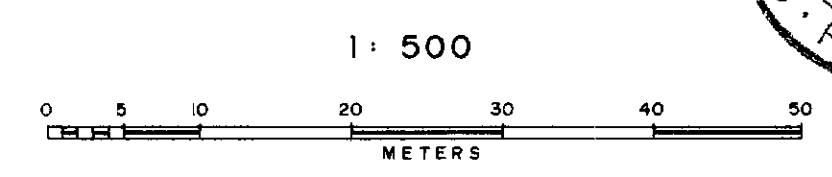
W-7 N-9
 -45° -45°
 6.2m N of Sec. on Section
 el. 313.1m el. 313.3m



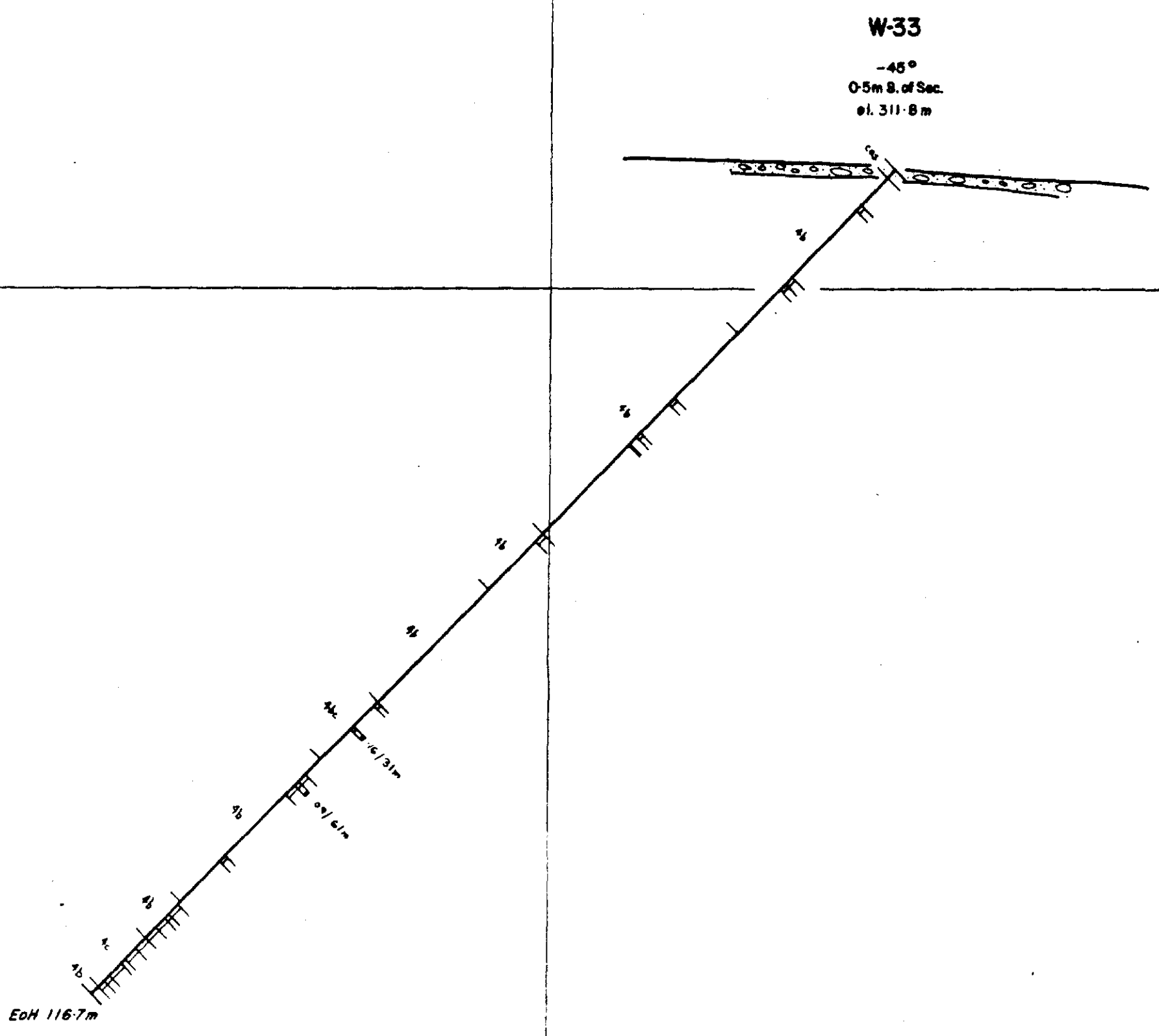
LEGEND

- LATE PRECAMBRIAN**
 8 OLIVINE DIABASE
- HURONIAN-MIDDLE PRECAMBRIAN**
 7 ONAPING FORMATION a Tuffs
 6 NIPPISSING DIABASE
 5 GOWANDA FORMATION a Conglomerate
 b Arkose c Greywacke
 4 SERPENT FORMATION a Arkose
 b Quartzite, arenite c Chloritic zones
 3 ESPANOLA FORMATION a Limestone
 b Siltstone
 2 BRUCE FORMATION a Limestone
 b Siltstone c Quartzite, arenite
 1 MISSISSAUGI FORMATION a Siltstone
 b Arkose, arenite c Conglomerate
- EARLY PRECAMBRIAN**

SCADDING - 0016 #11



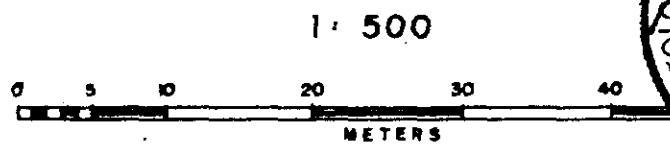
NORTHGATE EXPLORATION LIMITED			
ASHIGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION 1+82 NW			
(2+50 SE)			
(LOOKING N25°W)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING NO.
DATE	SCALE		
Nov. 1980	1:500		



LEGEND

- LATE PRECAMBRIAN**
 8 OLIVINE DIABASE
- HURONIAN - MIDDLE PRECAMBRIAN**
 7 ONAPING FORMATION a Tufts
 6 NIPPISSING DIABASE
 5 GOWANDA FORMATION a Conglomerate
 b Arkose c Greywacke
 4 SERPENT FORMATION a Arkose
 b Quartzite, arenite c Chloritic zones
 3 ESPANOLA FORMATION a Limestone
 b Siltstone
 2 BRUCE FORMATION a Limestone
 b Siltstone c Quartzite, arenite
 1 MISSISSAUGI FORMATION a Siltstone
 b Arkose, arenite c Conglomerate
- EARLY PRECAMBRIAN**

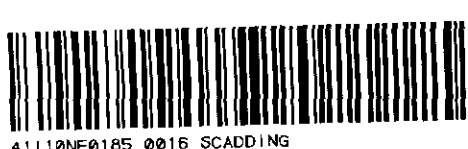
NW Base Line

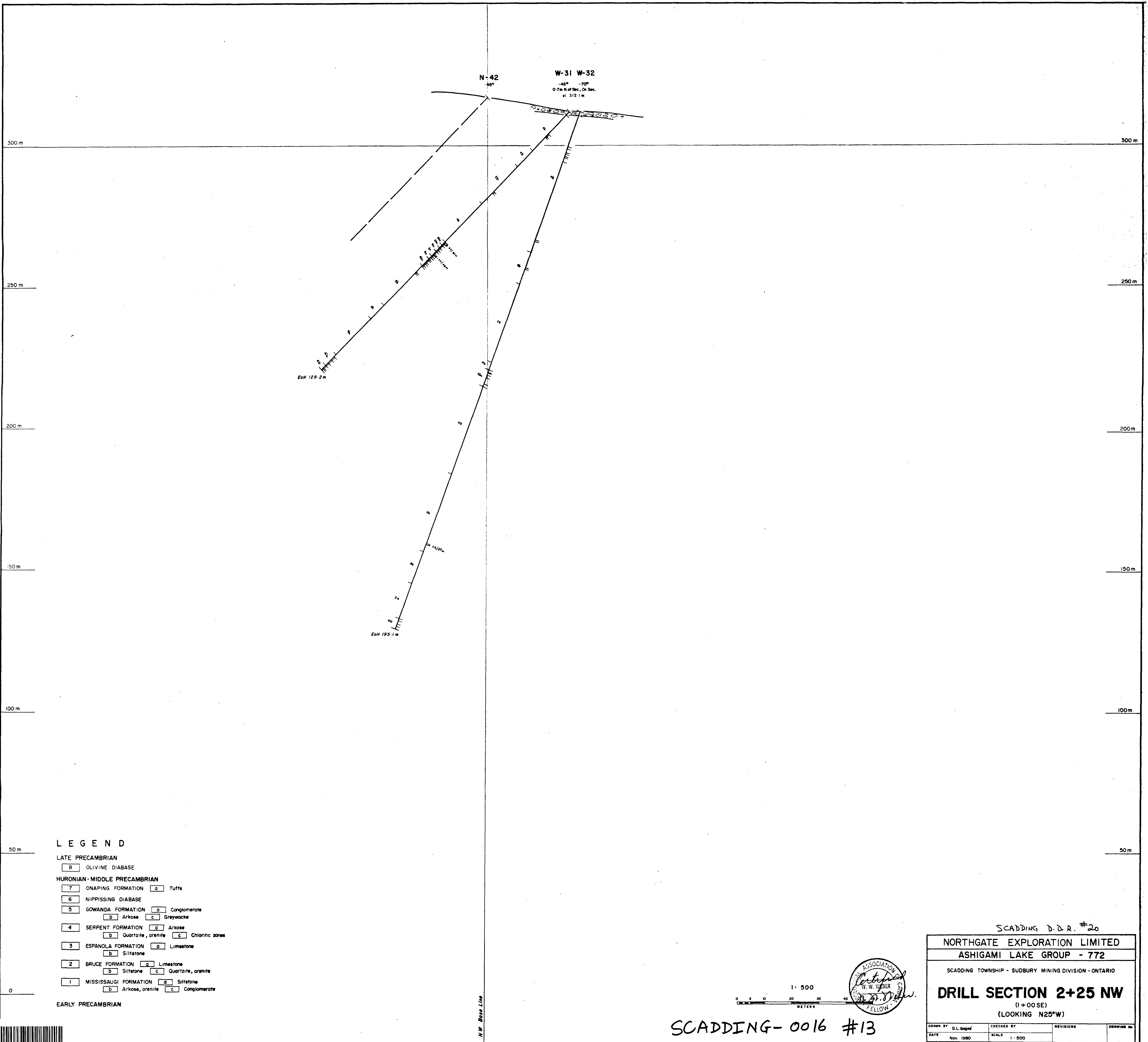


SCADDING - 0016 #12

SCADDING D.D.R. #20

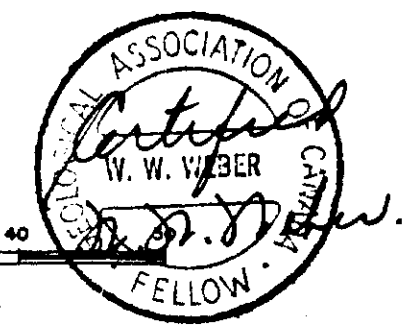
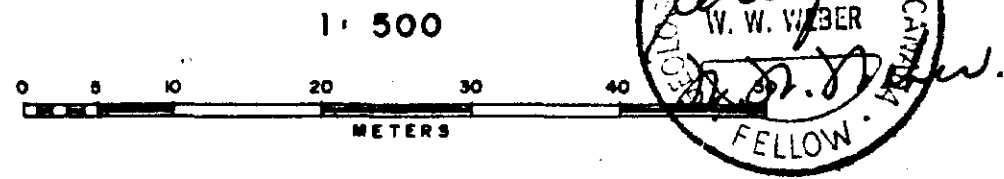
NORTHGATE EXPLORATION LIMITED			
ASHIGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION 1+98 NW			
(2+00 SE)			
(LOOKING N25°W)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING NO.
Nov 1980			





LEGEND

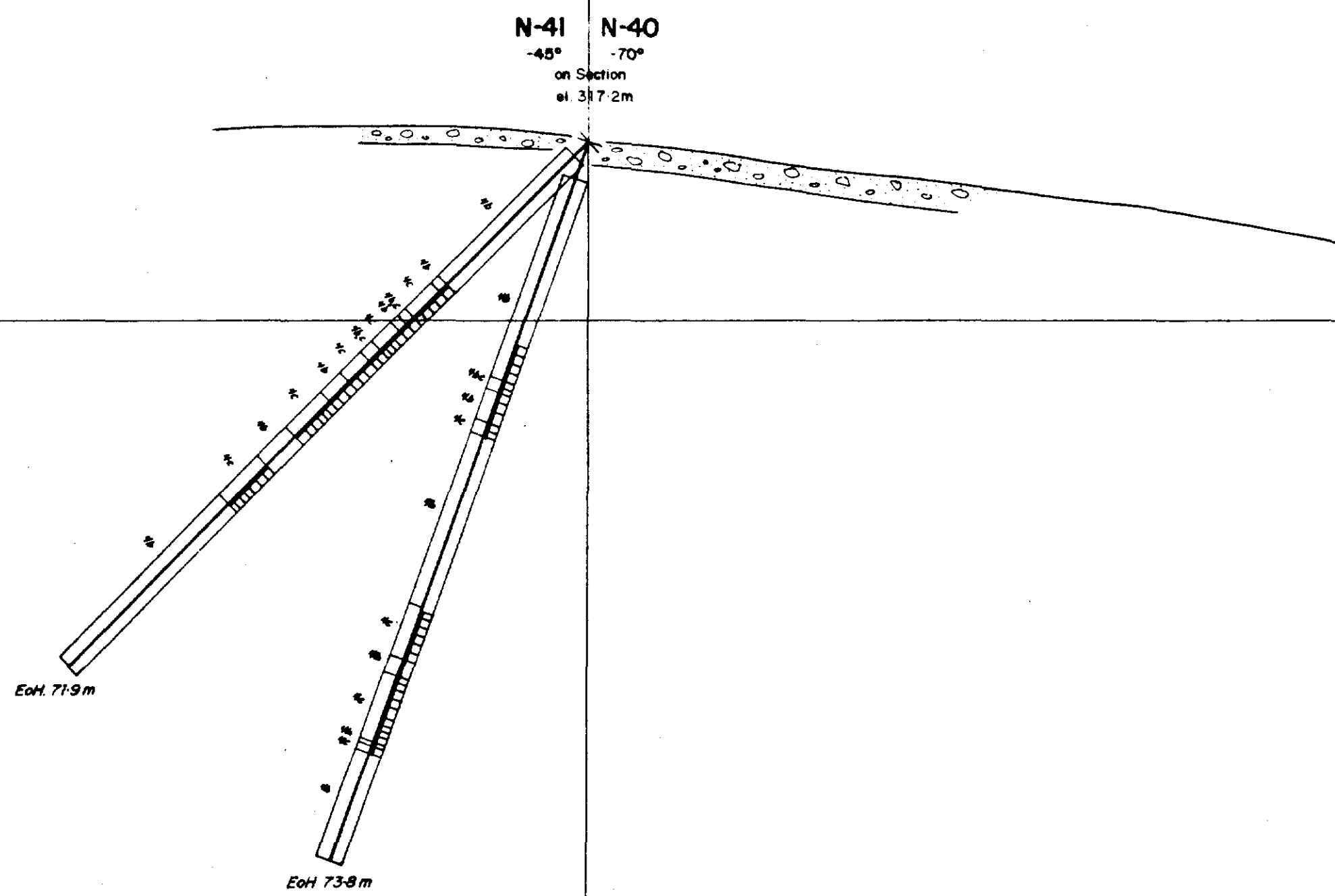
- LATE PRECAMBRIAN**
- 8 OLIVINE DIABASE
- HURONIAN-MIDDLE PRECAMBRIAN**
- 7 ONAPING FORMATION a Turfs
 - 6 NIPPISSING DIABASE
 - 5 GOWANDA FORMATION a Conglomerate
b Arkose c Greywacke
 - 4 SERPENT FORMATION a Arkose
b Quartzite, arenite c Chloritic zones
 - 3 ESPANOLA FORMATION a Limestone
b Siltstone
 - 2 BRUCE FORMATION a Limestone
b Siltstone c Quartzite, arenite
 - 1 MISSISSAUGI FORMATION a Siltstone
b Arkose, arenite c Conglomerate
- EARLY PRECAMBRIAN**



SCADDING-0016 #13

SCADDING D.D.R. #20

NORTHGATE EXPLORATION LIMITED			
ASHIGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION 2+25 NW			
(1+00SE)			
(LOOKING N25°W)			
DRAWN BY	D.L. Goggin	CHECKED BY	REVISIONS
DATE	Nov. 1980	SCALE	1:500
DRAWING No.			



300 m

300 m

250 m

250 m

200 m

200 m

150 m

150 m

100 m

100 m

50 m

50 m

LEGEND

LATE PRECAMBRIAN

8 OLIVINE DIABASE

HURONIAN - MIDDLE PRECAMBRIAN

7 ONAPING FORMATION a Tuffs

6 NIPPISSING DIABASE

5 GOWANDA FORMATION o Conglomerate
b Arkose c Greywacke

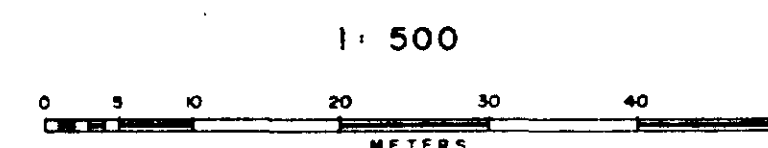
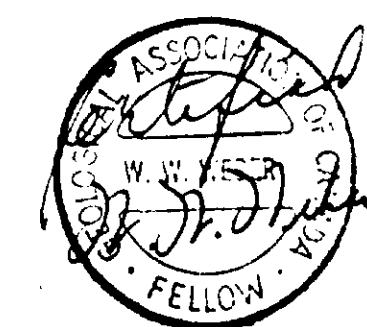
4 SERPENT FORMATION a Arkose
b Quartzite, arenite c Chloritic zones

3 ESPANOLA FORMATION a Limestone
b Siltstone

2 BRUCE FORMATION a Limestone
b Siltstone c Quartzite, arenite

1 MISSISSAUGI FORMATION a Siltstone
b Arkose, arenite c Conglomerate

EARLY PRECAMBRIAN



SCADDING-0016 # 14

SCADDING D.D.R. #20

NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

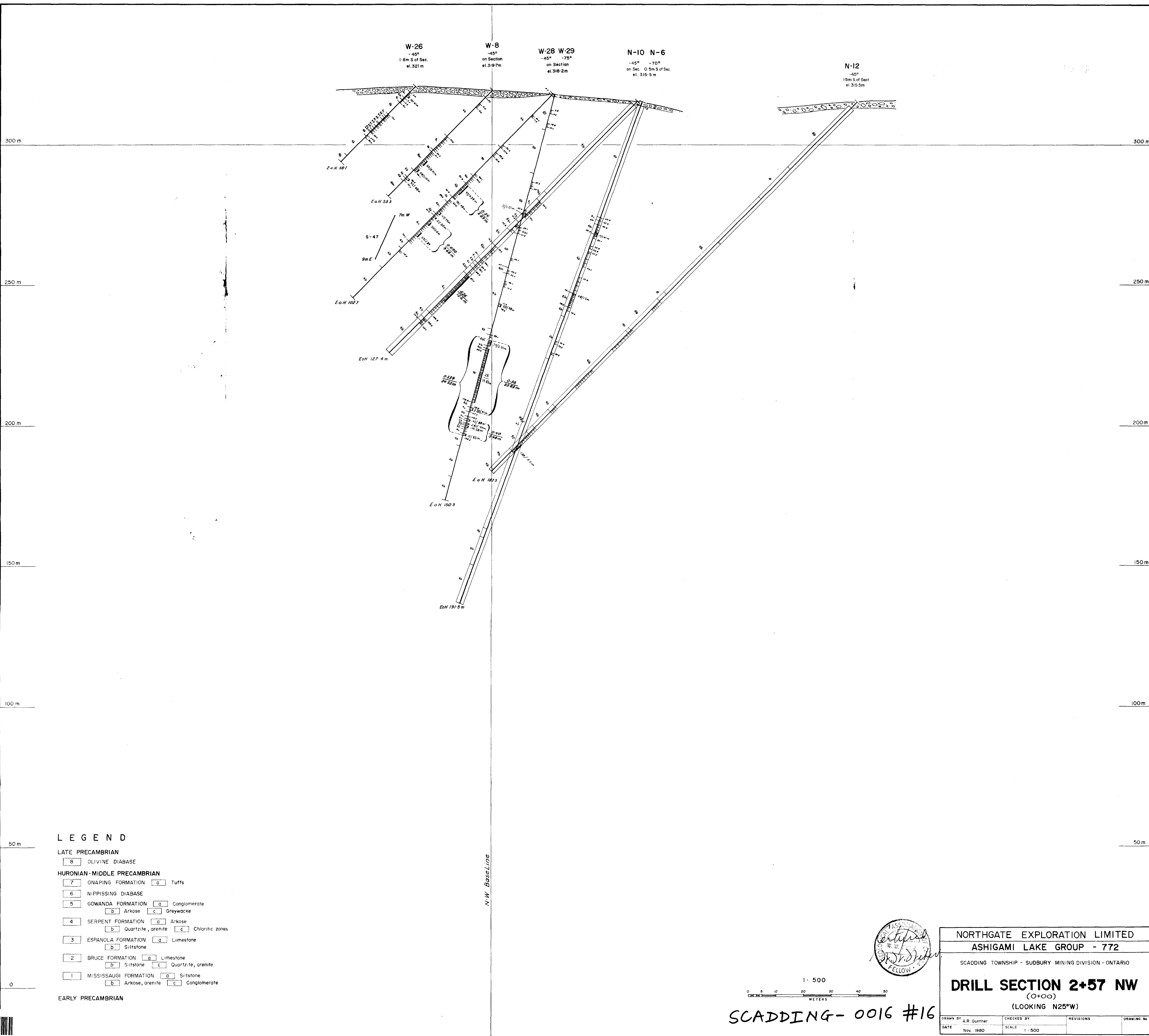
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION 2+32 NW

(LOOKING N25°W)

Drawn by: J.R. Gunther Checked by: REVISIONS: DRAWING NO. DATE





- LEGEND**
- LATE PRECAMBRIAN**
- 8 OLIVINE DIABASE
- HURONIAN-MIDDLE PRECAMBRIAN**
- 7 ONAPING FORMATION
 - a Tuffs
 - 6 NIPPISING DIABASE
 - 5 GOWANDA FORMATION
 - a Conglomerate
 - b Arkose
 - c Greywacke
 - 4 SERPENT FORMATION
 - a Arkose
 - b Quartzite, arenite
 - c Chloritic zones
 - 3 ESPANOLA FORMATION
 - a Limestone
 - b Siltstone
 - 2 BRUCE FORMATION
 - a Limestone
 - b Siltstone
 - c Quartzite, arenite
 - 1 MISSISSAUGI FORMATION
 - a Siltstone
 - b Arkose, arenite
 - c Conglomerate
- EARLY PRECAMBRIAN**

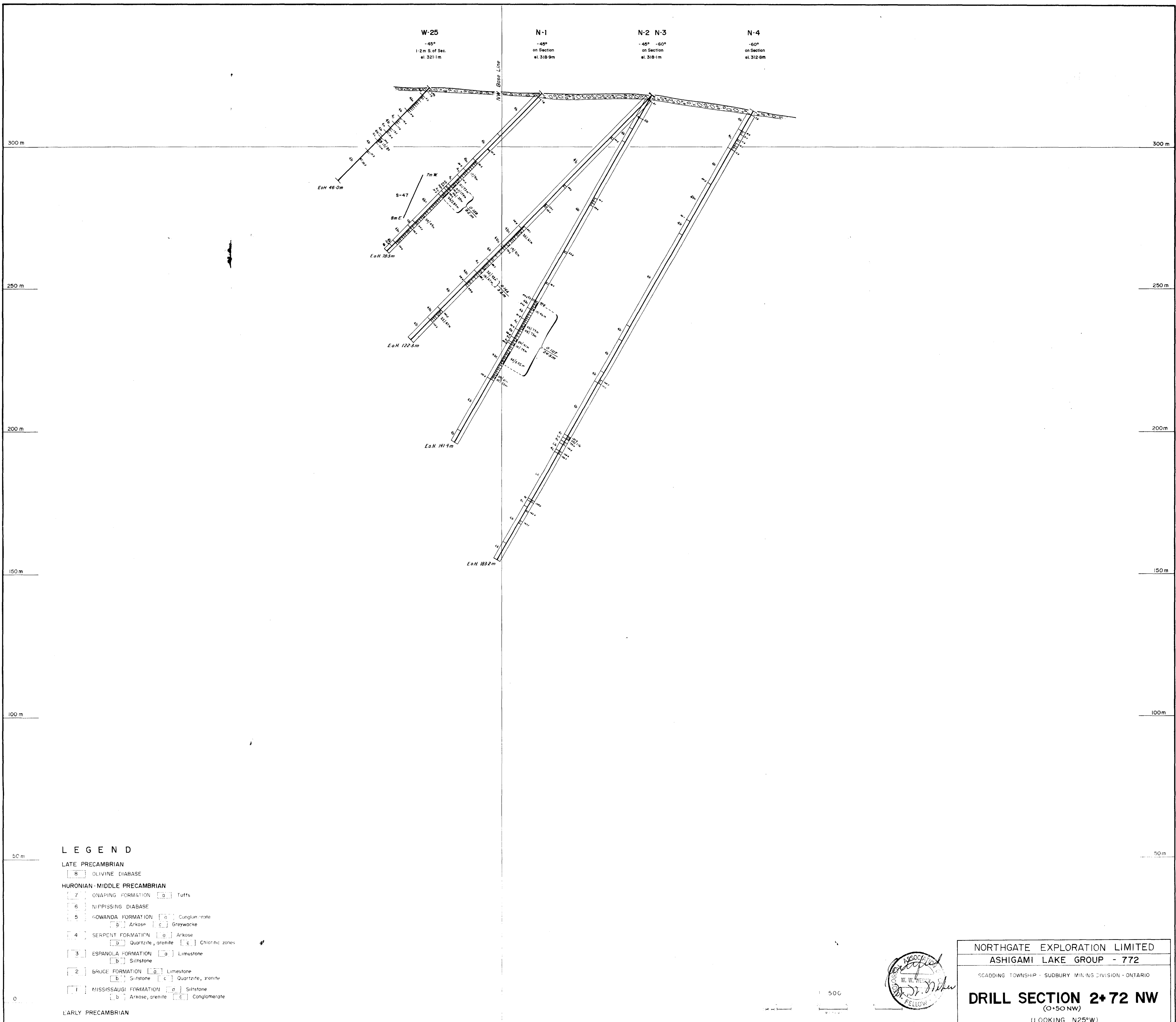
1:500

0 5 10 20 30 40 50 METERS

SCADDING-0016 #16



NORTHGATE EXPLORATION LIMITED			
ASHIGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUBBURY MINING DIVISION - ONTARIO			
DRILL SECTION 2+57 NW			
(O+OO)			
(LOOKING N25°W)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING NO.
DATE	SCALE		
Nov. 1980	1:500		



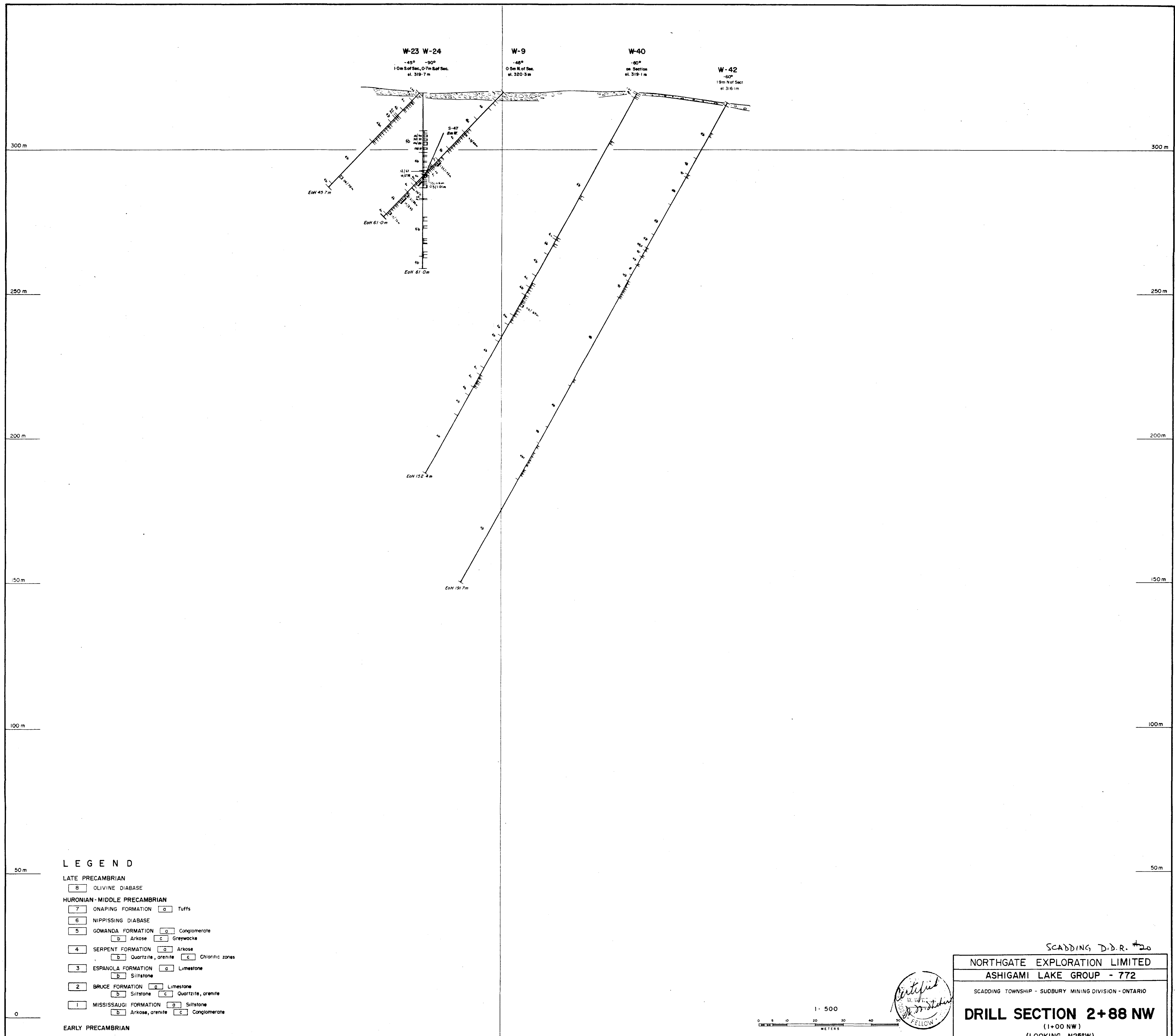
LEGEND

- LATE PRECAMBRIAN**
- [8] OLIVINE DIABASE
- HURONIAN-MIDDLE PRECAMBRIAN**
- [7] ONAPING FORMATION [a] Tuffs
 - [6] NIPPISSING DIABASE
 - [5] HOWANDA FORMATION [a] Conglomerate
[b] Arkose [c] Greywacke
 - [4] SERPENT FORMATION [a] Arkose
[b] Quartzite, arenite [c] Chloritic zones
 - [3] ESPANOLA FORMATION [a] Limestone
[b] Siltstone
 - [2] BRUCE FORMATION [a] Limestone
[b] Siltstone [c] Quartzite, ironite
 - [1] MISSISSAUGI FORMATION [a] Siltstone
[b] Arkose, arenite [c] Conglomerate
- EARLY PRECAMBRIAN**



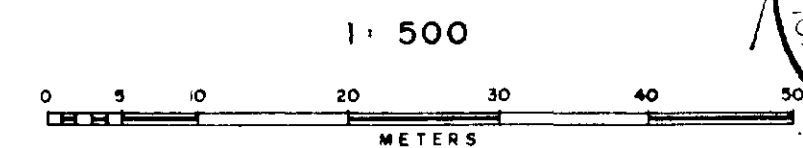
NORTHGATE EXPLORATION LIMITED
 ASHIGAMI LAKE GROUP - 772
 SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO
DRILL SECTION 2+72 NW
 (O+50NW)
 (LOOKING N25°W)

SCADDING-0016 #17



LEGEND

- LATE PRECAMBRIAN**
- 8 OLIVINE DIABASE
- HURONIAN - MIDDLE PRECAMBRIAN**
- 7 ONAPING FORMATION a Tuffs
 - 6 NIPISSING DIABASE
 - 5 GOWANDA FORMATION a Conglomerate
b Arkose c Greywacke
 - 4 SERPENT FORMATION a Arkose
b Quartzite, arenite c Chloritic zones
 - 3 ESPANOLA FORMATION a Limestone
b Siltstone
 - 2 BRUCE FORMATION a Limestone
b Siltstone c Quartzite, arenite
 - 1 MISSISSAUGI FORMATION a Siltstone
b Arkose, arenite c Conglomerate
- EARLY PRECAMBRIAN**



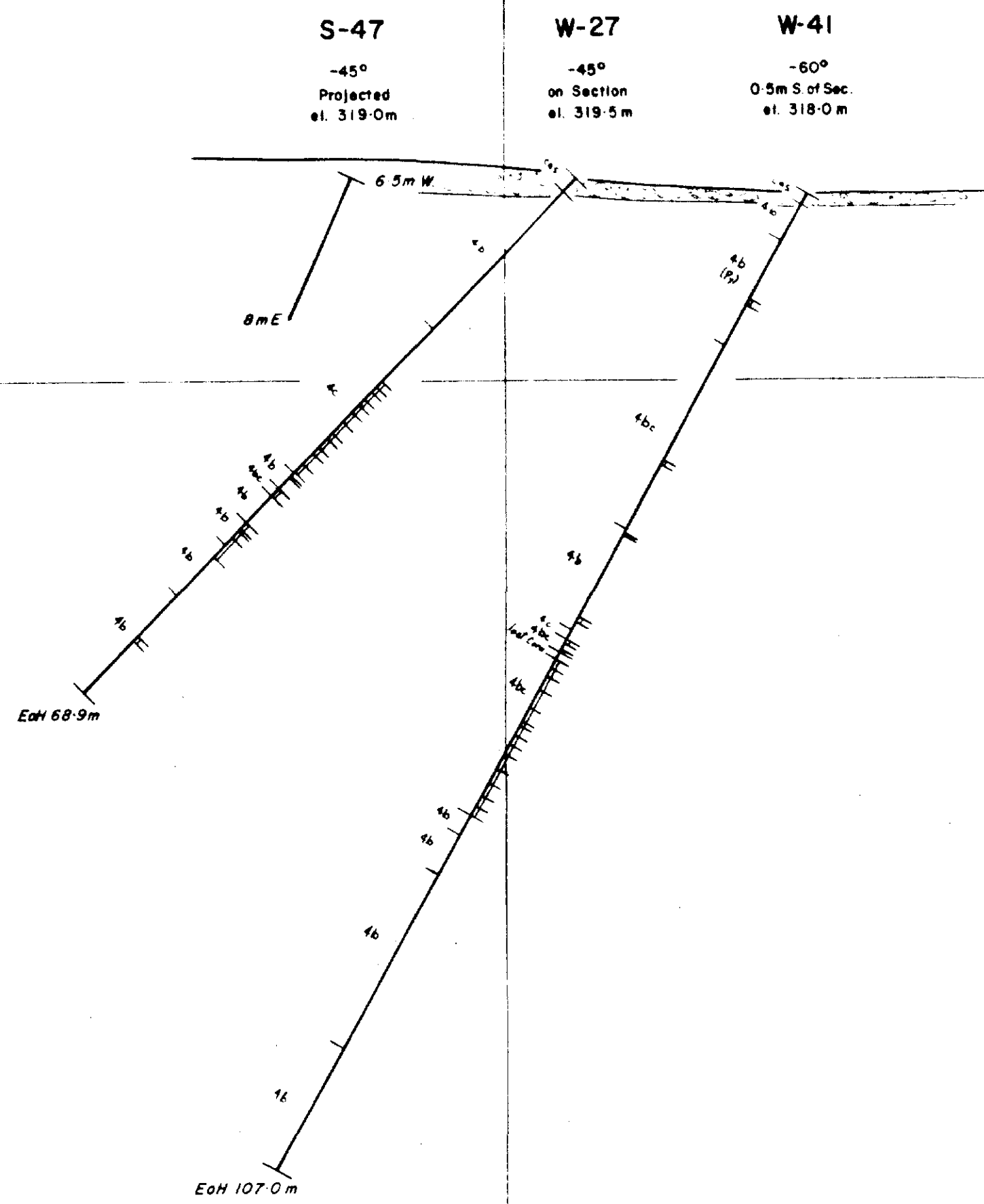
SCADDING-0016 #18



SCADDING D.D.R. #20

NORTHGATE EXPLORATION LIMITED			
ASHIGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION 2+88 NW			
(1+00 NW)			
(LOOKING N25°W)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING NO.
D. L. Gagné			
DATE	SCALE		
Nov. 1980	1:500		





300 m

300 m

250 m

250 m

200 m

200 m

50 m

150 m

100 m

100 m

50 m

50 m

LEGEND

LATE PRECAMBRIAN

8 OLIVINE DIABASE

HURONIAN-MIDDLE PRECAMBRIAN

7 ONAPING FORMATION a Tuffs

6 NIPPISSING DIABASE

5 GOWANDA FORMATION a Conglomerate

b Arkose c Greywacke

4 SERPENT FORMATION a Arkose

b Quartzite, arenite c Chloritic zones

3 ESPANOLA FORMATION a Limestone

b Siltstone

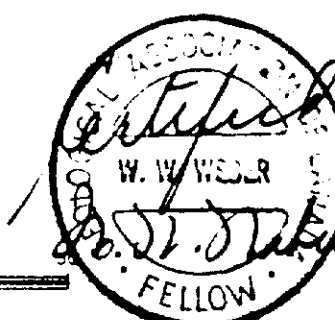
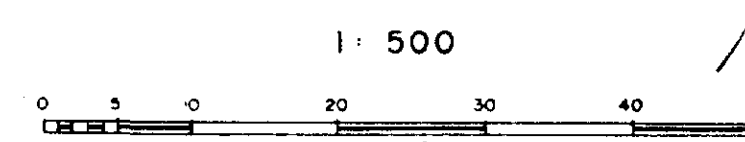
2 BRUCE FORMATION a Limestone

b Siltstone c Quartzite, arenite

1 MISSISSAUGI FORMATION a Siltstone

b Arkose, arenite c Conglomerate

EARLY PRECAMBRIAN



SCADDING-0016 #19

SCADDING D.D.R. #20

NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

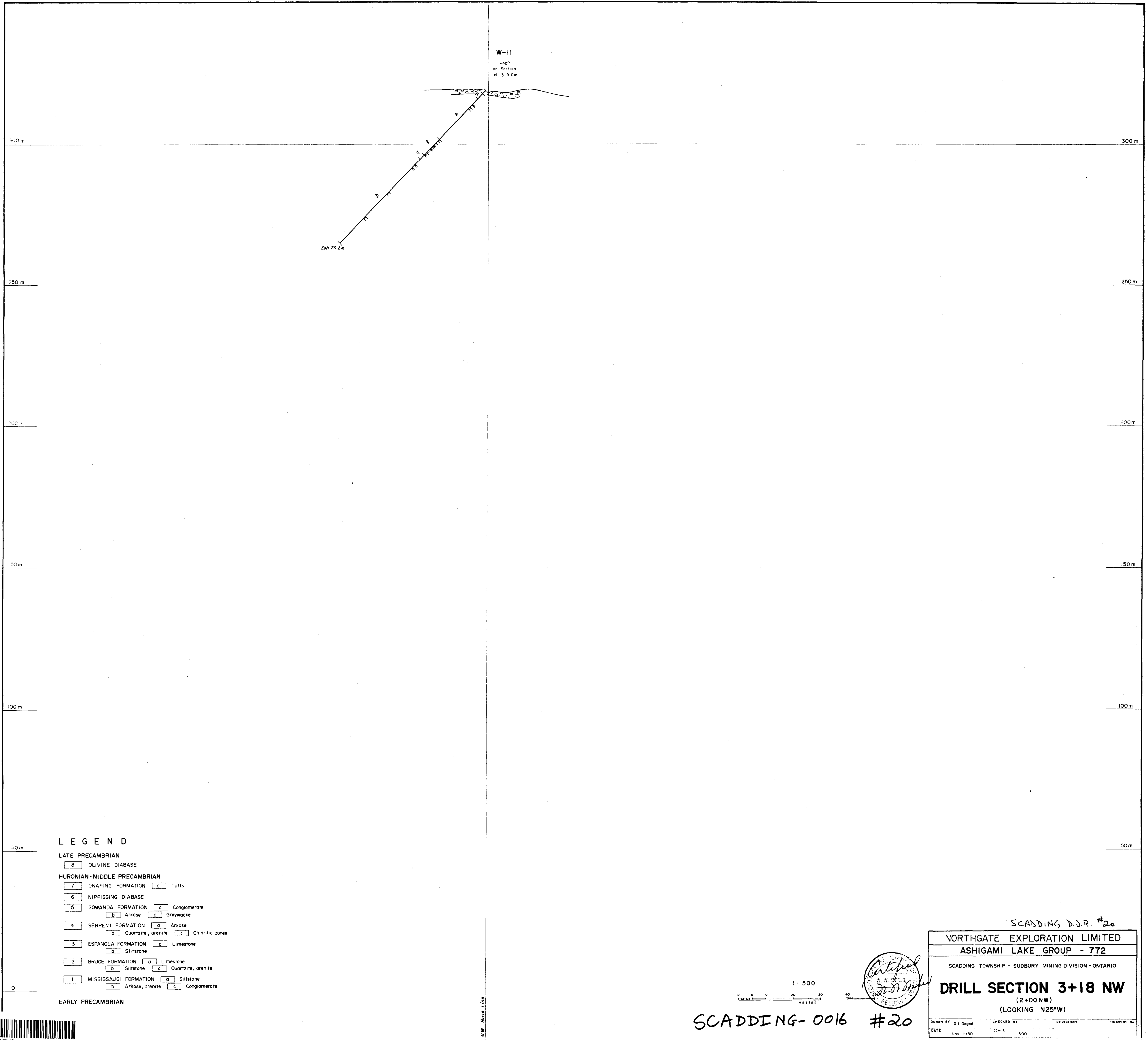
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION 3+03 NW

(1+50 NW)
(LOOKING N25°W)

DRAWN BY D.L. Gagné	CHECKED BY	REVISIONS	DRAWING NO.
DATE Nov 1980	SCALE 1:500		





W-11
-45°
on Section
el. 319.0m

Eoh 76.2m

N.W. Base Line

LEGEND

LATE PRECAMBRIAN

8 OLIVINE DIABASE

7 ONAPING FORMATION a Tuffs

6 NIPPISSING DIABASE

5 GOWANDA FORMATION a Conglomerate

b Arkose c Graywacke

4 SERPENT FORMATION a Arkose

b Quartzite, arenite c Chloritic zones

3 ESPANOLA FORMATION a Limestone

b Siltstone

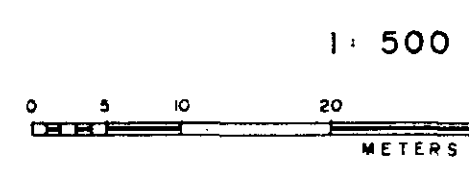
2 BRUCE FORMATION a Limestone

b Siltstone c Quartzite, arenite

1 MISSISSAUGI FORMATION a Siltstone

b Arkose, arenite c Conglomerate

EARLY PRECAMBRIAN



SCADDING D.D.R. #20

NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

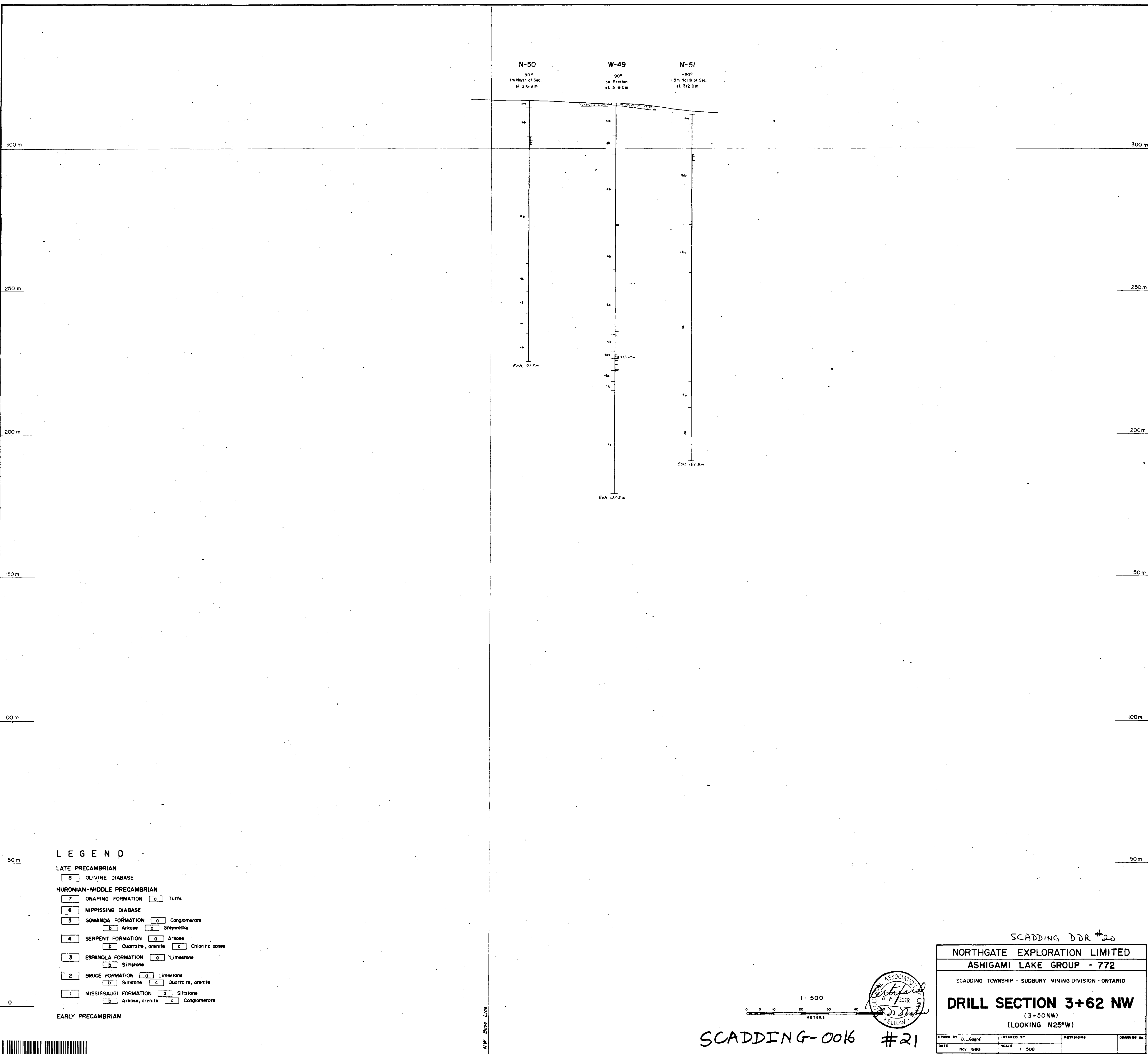
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION 3+18 NW
(2+00 NW)
(LOOKING N25°W)

DRAWN BY D.L. Gagne CHECKED BY REVISIONS DRAWING No.
DATE Nov 1980 SCALE 1:500

SCADDING-0016 #20

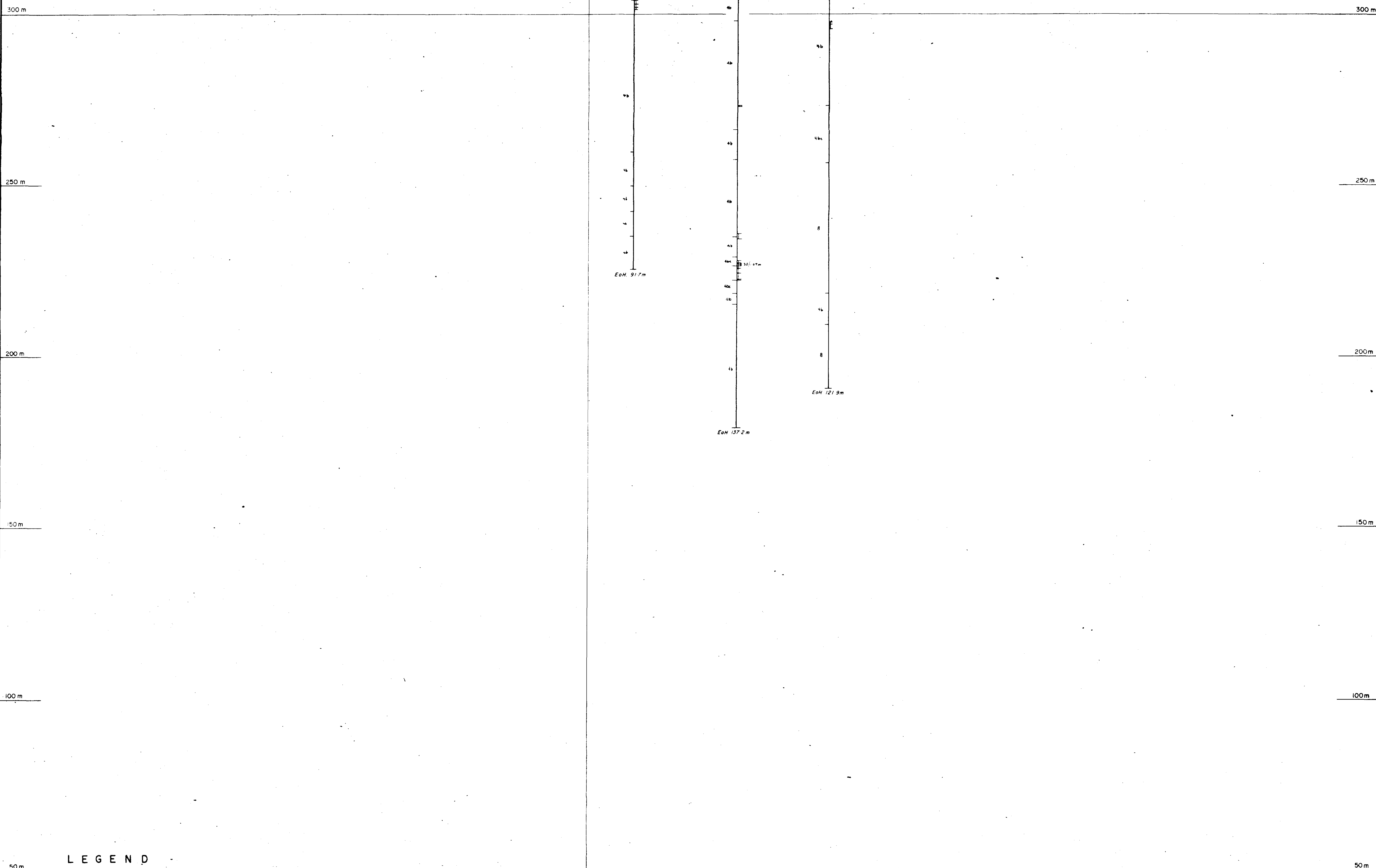




N-50
-90°
1m North of Sec.
el. 316-9m

W-49
-90°
on Section
el. 316-0m

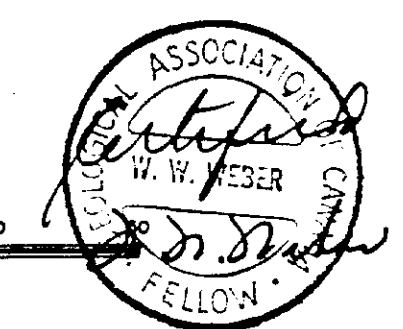
N-51
-90°
1.5m North of Sec.
el. 312-0m



LEGEND

- LATE PRECAMBRIAN**
- 8 OLIVINE DIABASE
- HURONIAN - MIDDLE PRECAMBRIAN**
- 7 ONAPING FORMATION a Turfs
 - 6 NIPPISSING DIABASE
 - 5 GOWANDA FORMATION a Conglomerate
b Arkose c Greywacke
 - 4 SERPENT FORMATION a Arkose
b Quartzite, arenite c Chloritic zones
 - 3 ESPANOLA FORMATION a Limestone
b Siltstone
 - 2 BRUCE FORMATION a Limestone
b Siltstone c Quartzite, arenite
 - 1 MISSISSAUGI FORMATION a Siltstone
b Arkose, arenite c Conglomerate
- EARLY PRECAMBRIAN**

1:500
METERS



SCADDING-0016 #21

SCADDING DDR #20

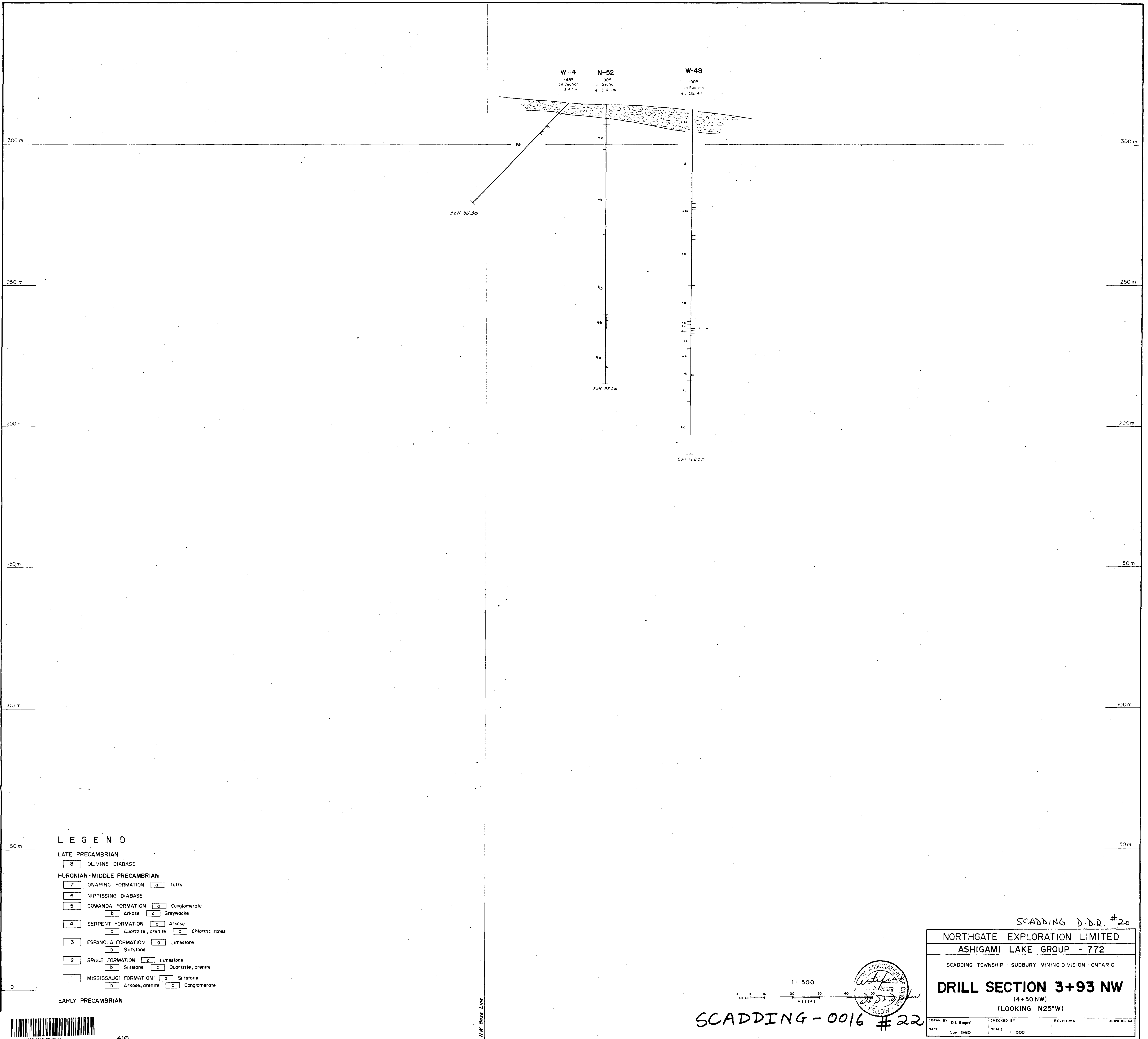
NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION 3+62 NW
(3+50NW)
(LOOKING N25°W)

DRAWN BY D.L. Gagné	CHECKED BY	REVISIONS	DRAWING NO.
DATE Nov 1980	SCALE 1:500		





W-14 -45° on Section el. 315.7m
 N-52 -90° on Section el. 314.7m
 W-48 -90° on Section el. 312.4m

EoH 50.3m

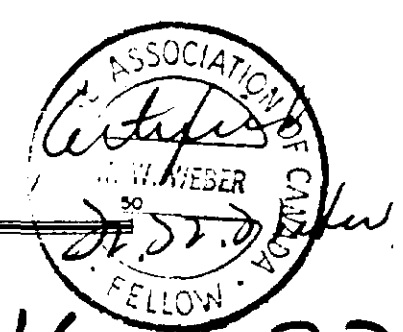
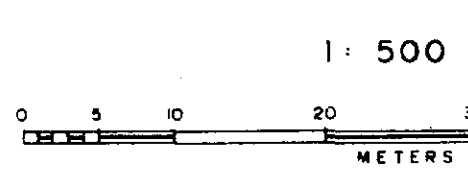
EoH 98.5m

EoH 122.5m

LEGEND

- LATE PRECAMBRIAN**
 8 OLIVINE DIABASE
- HURONIAN-MIDDLE PRECAMBRIAN**
 7 ONAPING FORMATION a Tuffs
 6 NIPPISSING DIABASE
 5 GOWANDA FORMATION a Conglomerate
 b Arkose c Greywacke
 4 SERPENT FORMATION a Arkose
 b Quartzite, arenite c Chloritic zones
 3 ESPANOLA FORMATION a Limestone
 b Siltstone
 2 BRUCE FORMATION a Limestone
 b Siltstone c Quartzite, arenite
 1 MISSISSAUGI FORMATION a Siltstone
 b Arkose, arenite c Conglomerate

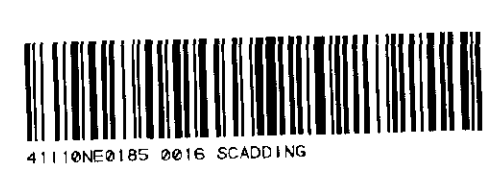
EARLY PRECAMBRIAN

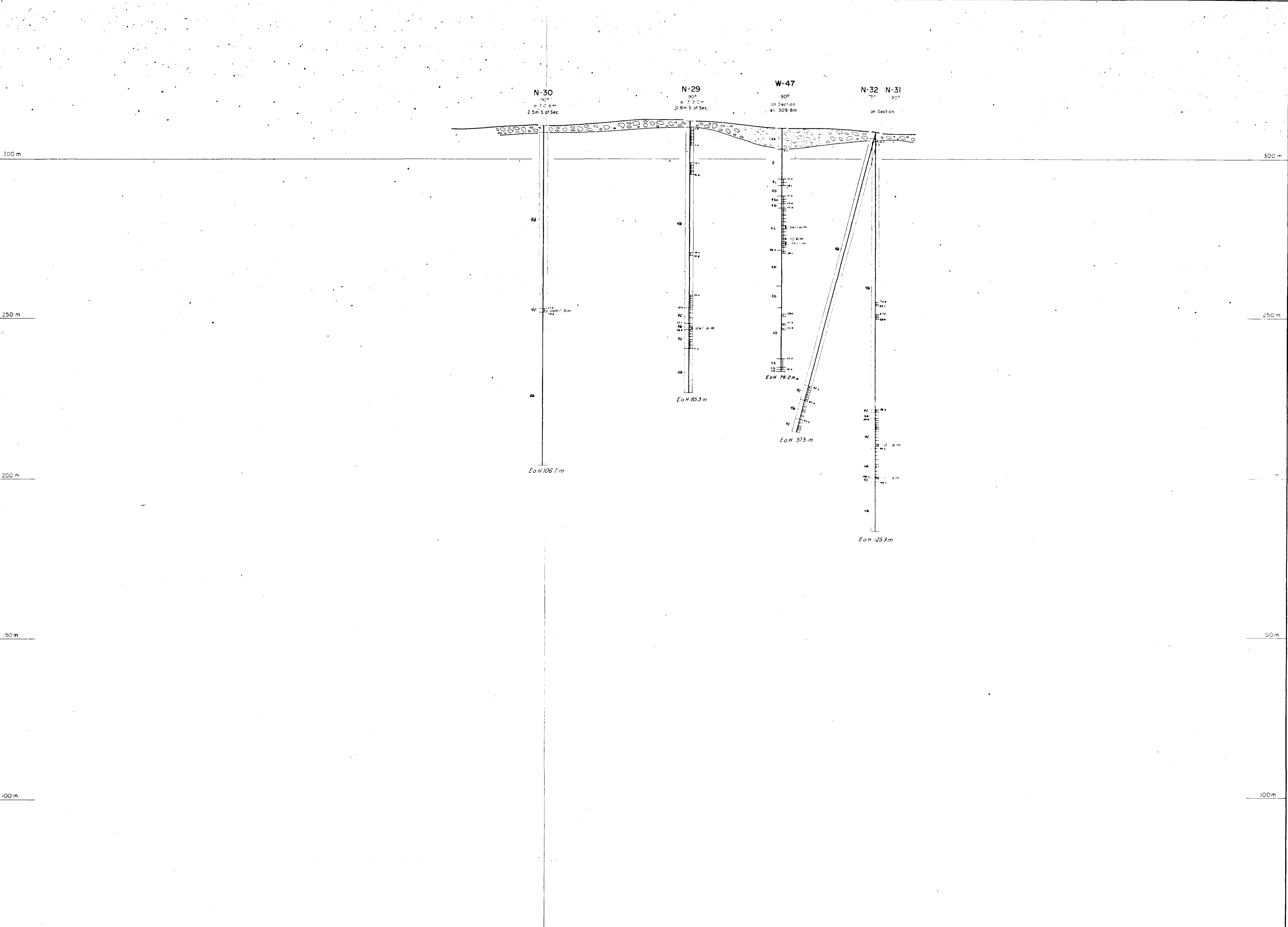


SCADDING D.D.R. #20

NORTHGATE EXPLORATION LIMITED	
ASHIGAMI LAKE GROUP - 772	
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO	
DRILL SECTION 3+93 NW	
(4+50 NW)	
(LOOKING N25°W)	
DRAWN BY D.L. Gagne	CHECKED BY REVISIONS
DATE Nov 1980	SCALE 1:500

SCADDING-0016 #22

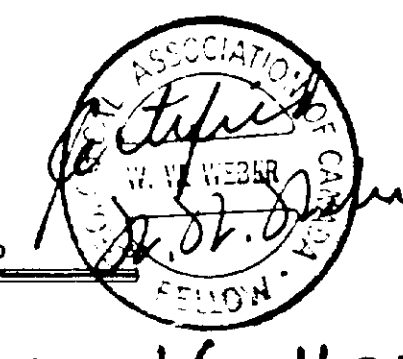




LEGEND

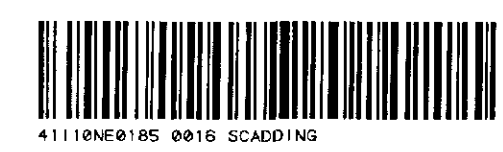
- LATE PRECAMBRIAN**
- 8 OLIVINE DIABASE
- HURONIAN-MIDDLE PRECAMBRIAN**
- 7 ONAPING FORMATION (a) Tuffs
 - 6 NIPPISSING DIABASE
 - 5 GOWANDA FORMATION (a) Conglomerate
(b) Arkose (c) Greywacke
 - 4 SERPENT FORMATION (a) Arkose
(b) Quartzite, arenite (c) Chloritic zones
 - 3 ESPANOLA FORMATION (a) Limestone
(b) Siltstone
 - 2 BRUCE FORMATION (a) Limestone
(b) Siltstone (c) Quartzite, arenite
 - 1 MISSISSAUGI FORMATION (a) Siltstone
(b) Arkose, arenite (c) Conglomerate
- EARLY PRECAMBRIAN**

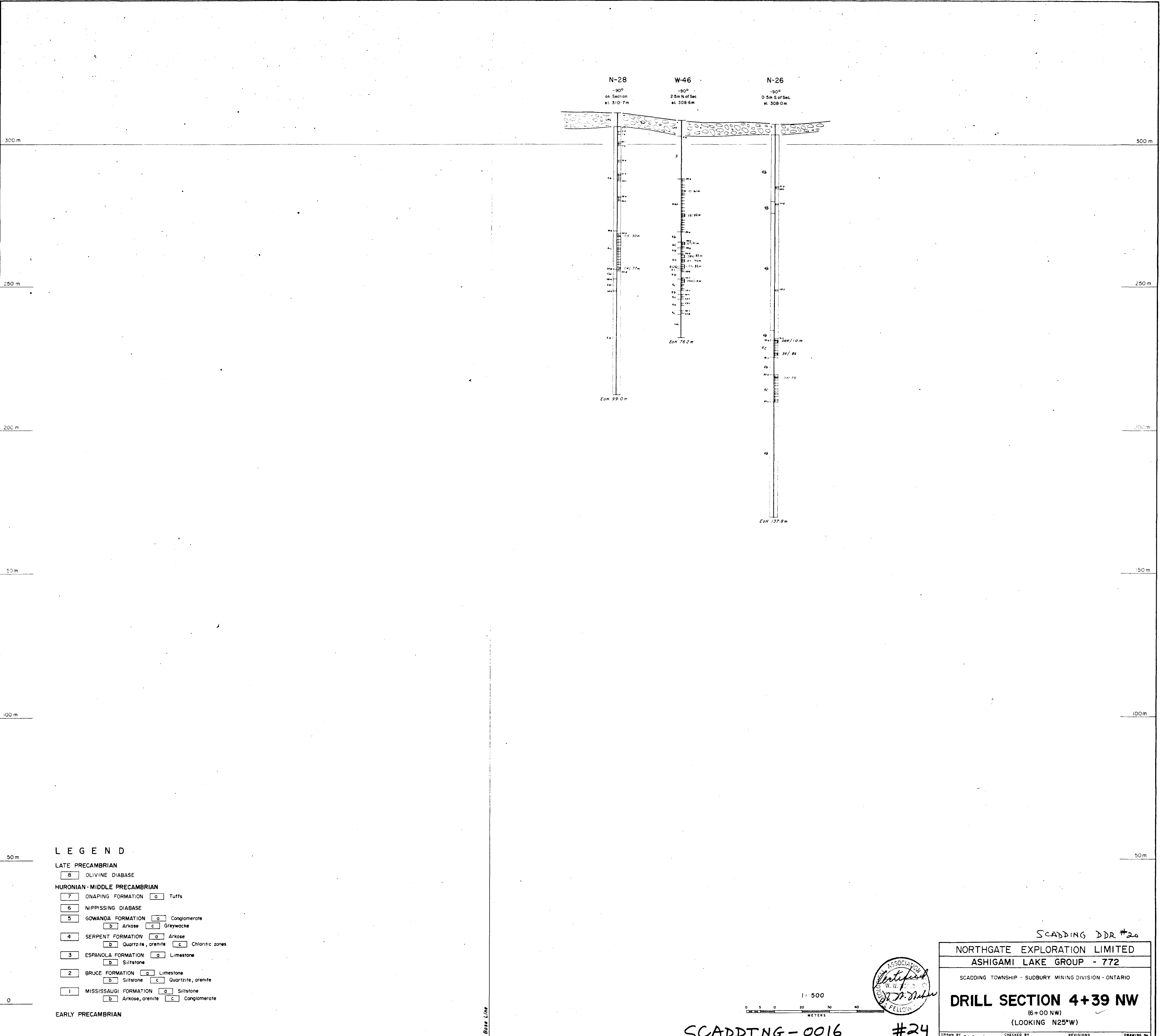
1:500
 0 5 10 20 30 40
 METERS
 SCADDING-00.16-#23



SCADDING D.D.R. #20

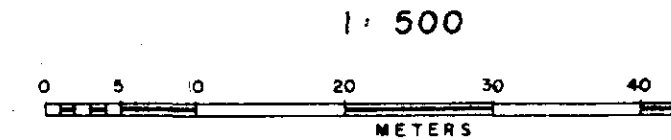
NORTHGATE EXPLORATION LIMITED	
ASHIGAMI LAKE GROUP - 772	
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO	
DRILL SECTION 4+24 NW	
(5+50 NW) (LOOKING N25°W)	
DRAWN BY D.L. Gagne	CHECKED BY
DATE	REVISIONS
DRAWING NO.	





LEGEND

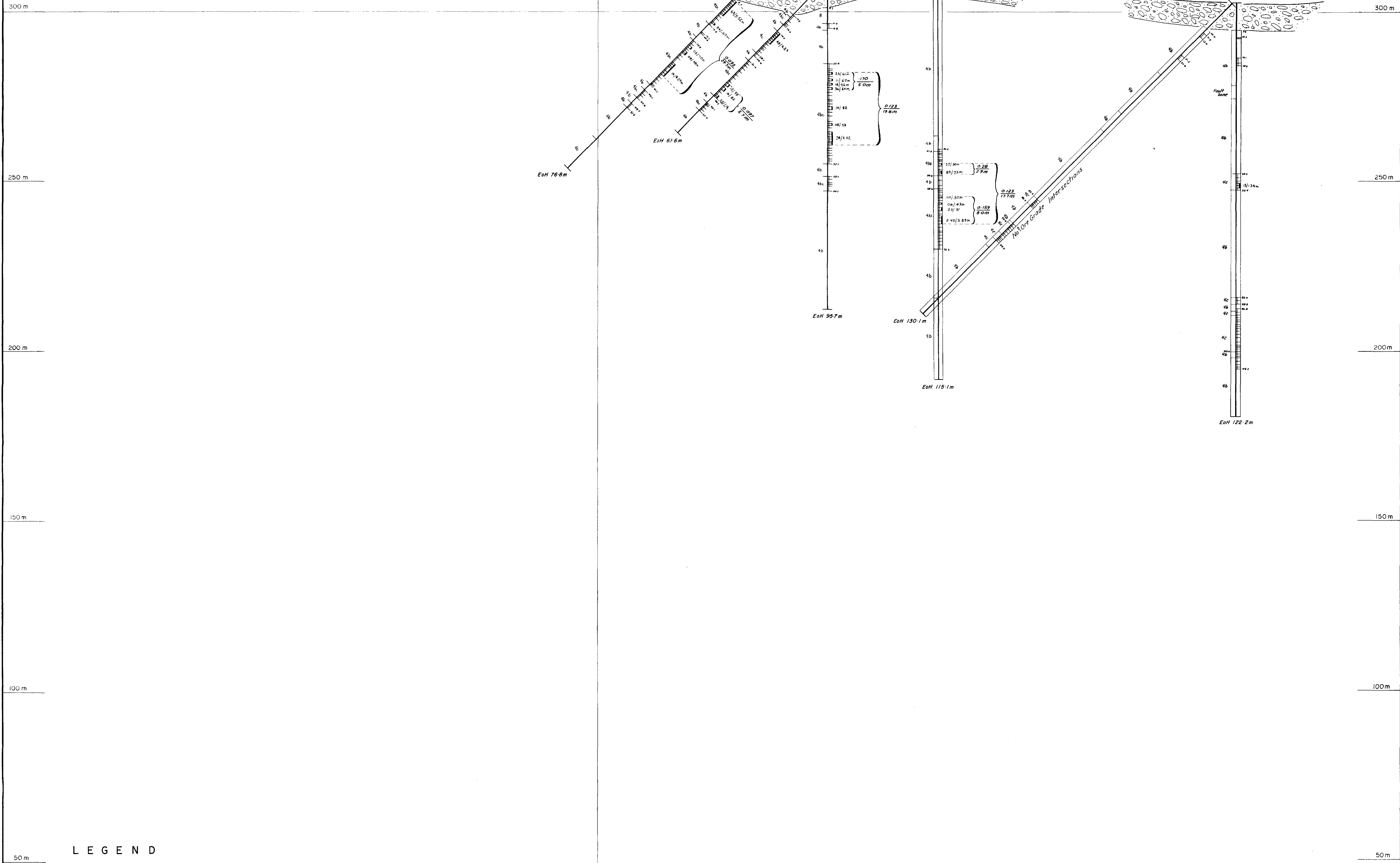
- LATE PRECAMBRIAN**
 8 OLIVINE DIABASE
- HURONIAN - MIDDLE PRECAMBRIAN**
 7 ONAPING FORMATION a Tuffs
 6 NIPPISSING DIABASE
 5 GOWANDA FORMATION a Conglomerate
 b Arkose c Greywacke
 4 SERPENT FORMATION a Arkose
 b Quartzite, arenite c Chloritic zones
 3 ESPANOLA FORMATION a Limestone
 b Siltstone
 2 BRUCE FORMATION a Limestone
 b Siltstone c Quartzite, arenite
 1 MISSISSAUGI FORMATION a Siltstone
 b Arkose, arenite c Conglomerate
- EARLY PRECAMBRIAN**



SCADDING-0016 #24

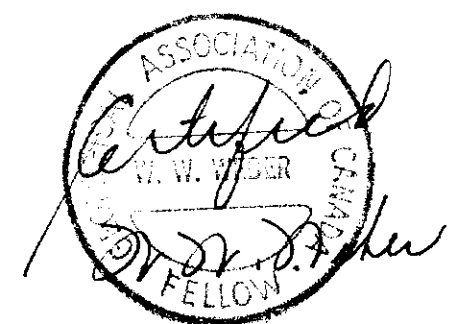
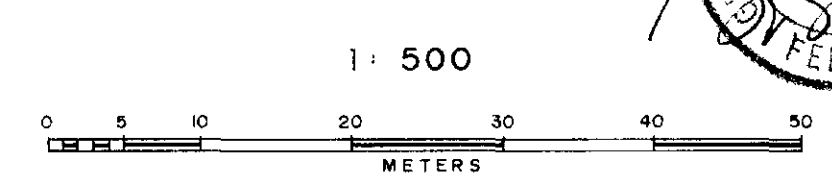
SCADDING DDR #20

NORTHGATE EXPLORATION LIMITED			
ASHIGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION 4+39 NW			
(6+00 NW)			
(LOOKING N25°W)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING No
DATE	Nov 1980	SCALE	1:500



LEGEND

- LATE PRECAMBRIAN**
 8 OLIVINE DIABASE
- HURONIAN - MIDDLE PRECAMBRIAN**
 7 ONAPING FORMATION a Tuffs
 6 NIPPISSING DIABASE
 5 GOWANDA FORMATION a Conglomerate
 b Arkose c Greywacke
 4 SERPENT FORMATION a Arkose
 b Quartzite, arenite c Chloritic zones
 3 ESPANOLA FORMATION a Limestone
 b Siltstone
 2 BRUCE FORMATION g Limestone
 b Siltstone c Quartzite, arenite
 1 MISSISSAUGI FORMATION a Siltstone
 b Arkose, arenite c Conglomerate
- EARLY PRECAMBRIAN**



SCADDING-0016 #25

NORTHGATE EXPLORATION LIMITED			
ASHIGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION 4+54 NW			
(6+50 NW)			
(LOOKING N25°W)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING NO.
Nov 1980	1:500		



300 m

250 m

200 m

150 m

100 m

50 m

0

300 m

250 m

200 m

150 m

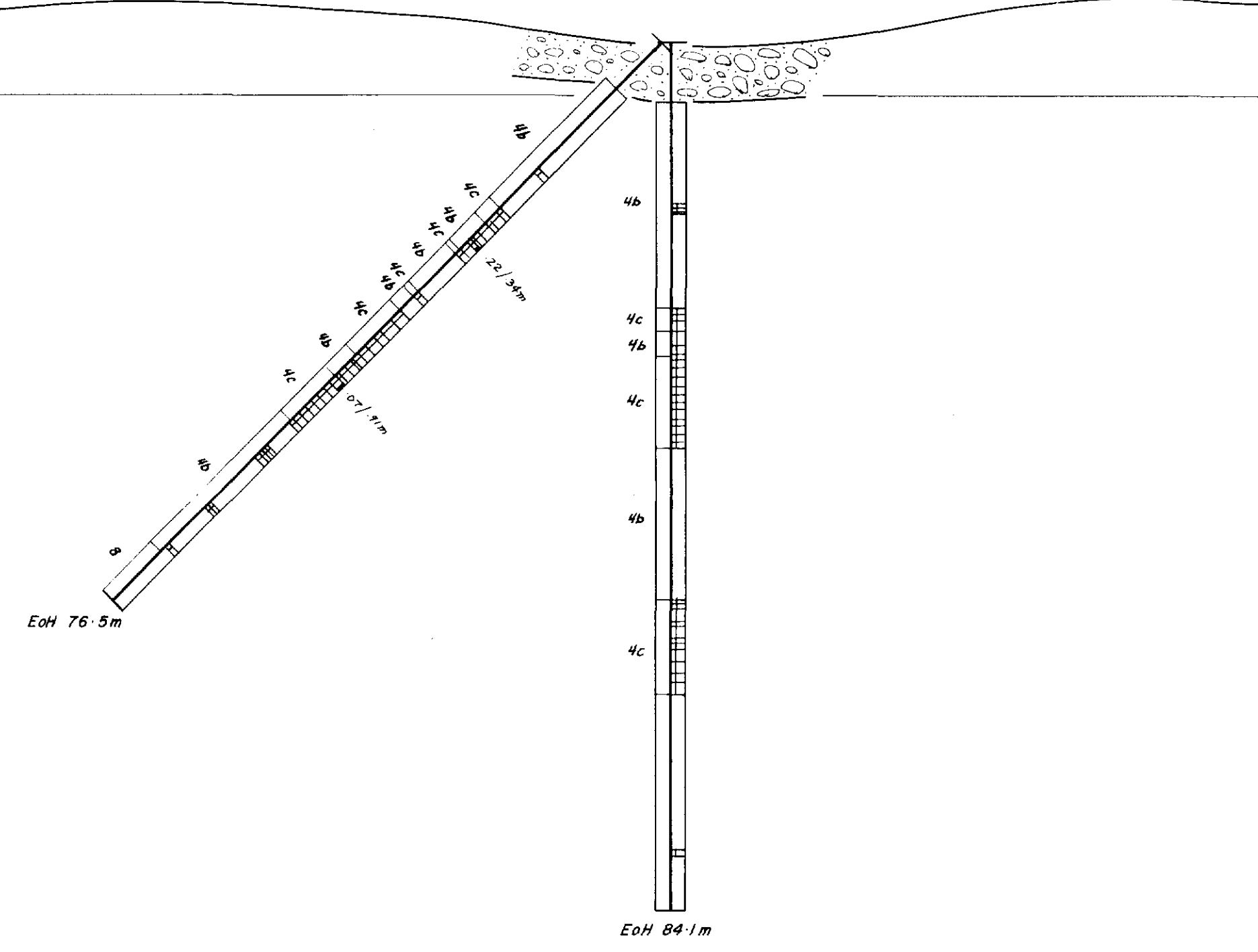
100 m

50 m

0

N-22 N-23

-45° -90°
on Section
el. 305.3m



LEGEND

LATE PRECAMBRIAN

8 OLIVINE DIABASE

HURONIAN - MIDDLE PRECAMBRIAN

7 ONAPING FORMATION a Tuffs

6 NIPPISSING DIABASE

5 GOWANDA FORMATION a Conglomerate

b Arkose c Greywacke

4 SERPENT FORMATION a Arkose

b Quartzite, arenite c Chloritic zones

3 ESPANOLA FORMATION a Limestone

b Siltstone

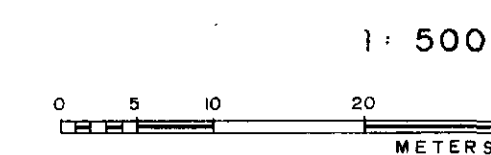
2 BRUCE FORMATION a Limestone

b Siltstone c Quartzite, arenite

1 MISSISSAUGI FORMATION a Siltstone

b Arkose, arenite c Conglomerate

EARLY PRECAMBRIAN



SCADDING - 0016 #26

SCADDING DDR #20

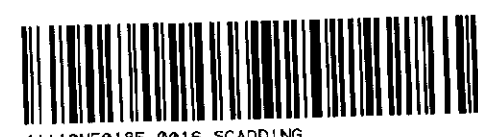
NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

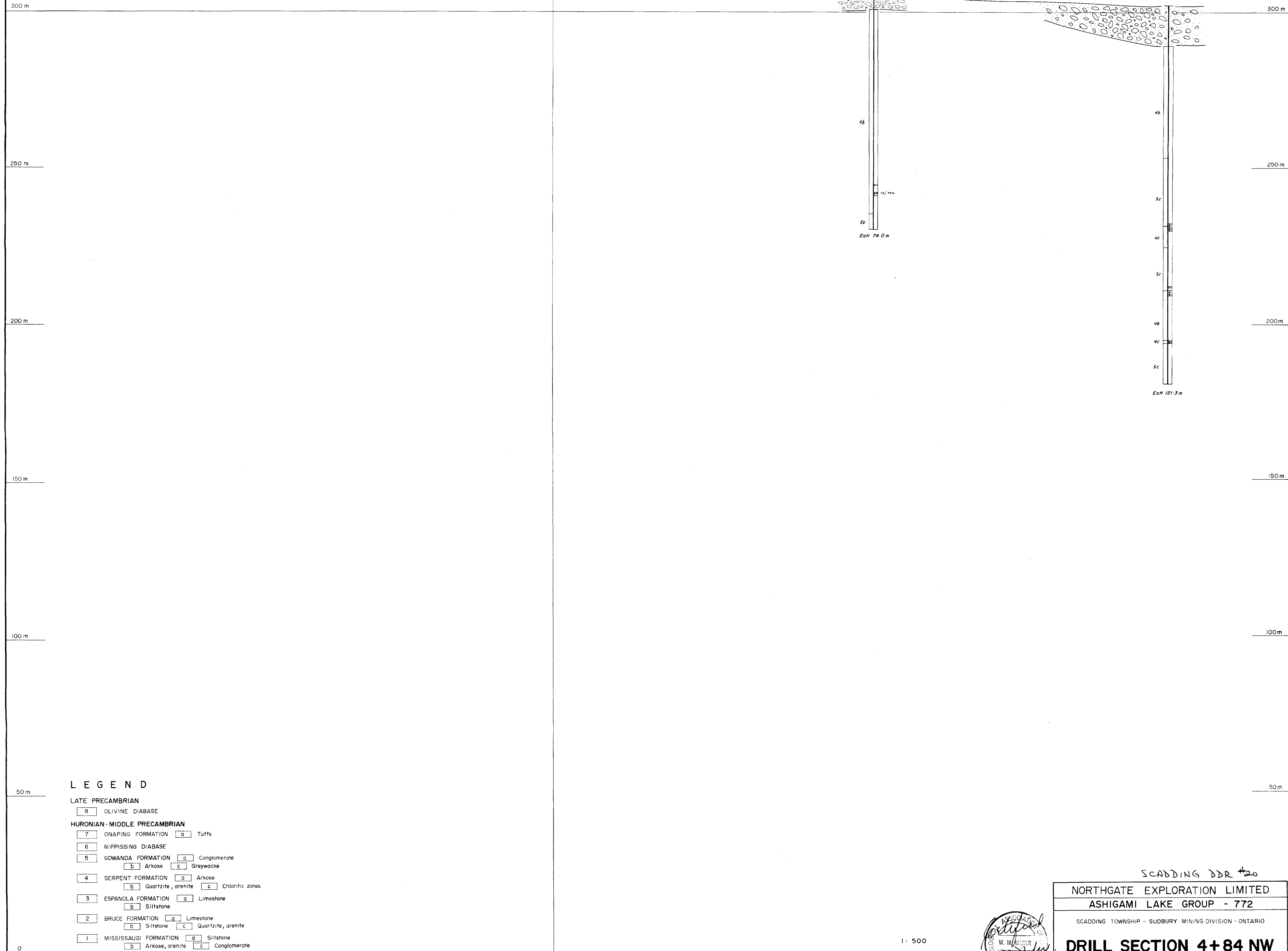
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION 4+69 NW

(7+00 NW)
(LOOKING N25°W)

DRAWN BY	CHECKED BY	REVISIONS	DRAWING NO.
D.L. Gagne			
DATE	SCALE		
Nov 1980	1:500		





N-24
-90°
on Section
el. 304.5 m

N-25
-90°
4.7 m S. of Sec.
el. 302.2 m

300 m

250 m

200 m

150 m

100 m

50 m

0

300 m

250 m

200 m

150 m

100 m

50 m

0

NW Base Line

74.0 m

121.3 m

LEGEND

- LATE PRECAMBRIAN**
 8 OLIVINE DIABASE
- HURONIAN - MIDDLE PRECAMBRIAN**
 7 ONAPING FORMATION a Tuffs
 6 NIPPISSING DIABASE
 5 GOWANDA FORMATION g Conglomerate
 b Arkose c Greywacke
 4 SERPENT FORMATION a Arkose
 b Quartzite, arenite c Chloritic zones
 3 ESPANOLA FORMATION a Limestone
 b Siltstone
 2 BRUCE FORMATION a Limestone
 b Siltstone c Quartzite, arenite
 1 MISSISSAUGI FORMATION a Siltstone
 b Arkose, arenite c Conglomerate
- EARLY PRECAMBRIAN**

1 : 500

0 5 10 20 30 40

METERS

SCADDING-0016 #27



SCADDING DDR #20

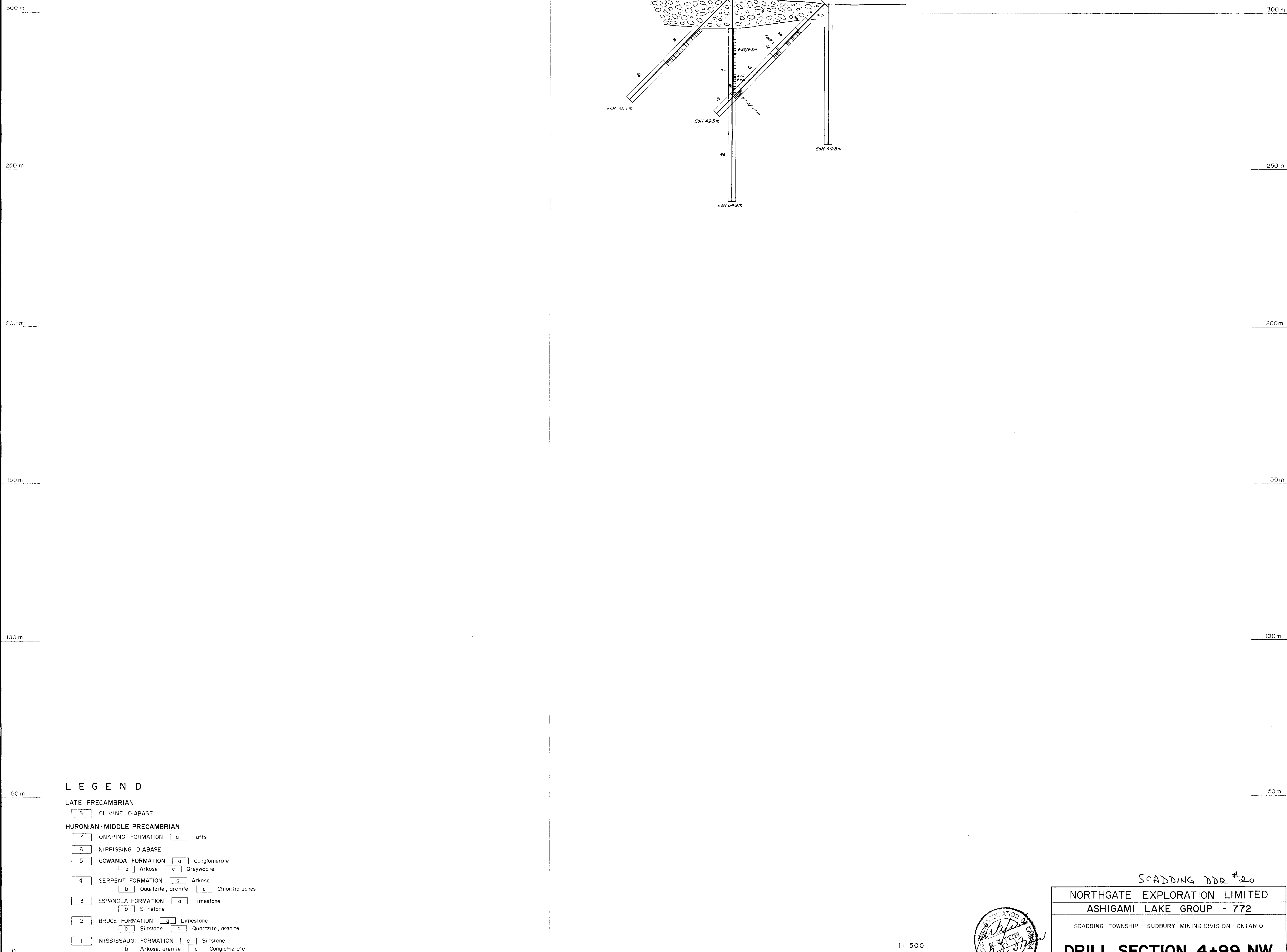
NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION 4+84 NW
 (7+50 NW)
 (LOOKING N25°W)

DRAWN BY O. L. Gagné	CHECKED BY W. W. Wessler	REVISIONS	DRAWING No.
DATE Nov. 1980	SCALE 1 : 500		

NW Base Line



LEGEND

LATE PRECAMBRIAN

8 OLIVINE DIABASE

HURONIAN - MIDDLE PRECAMBRIAN

7 ONAPING FORMATION a Tuffs

6 NIPISSING DIABASE

5 GOWANDA FORMATION a Conglomerate
b Arkose c Greywacke

4 SERPENT FORMATION a Arkose
b Quartzite, arenite c Chloritic zones

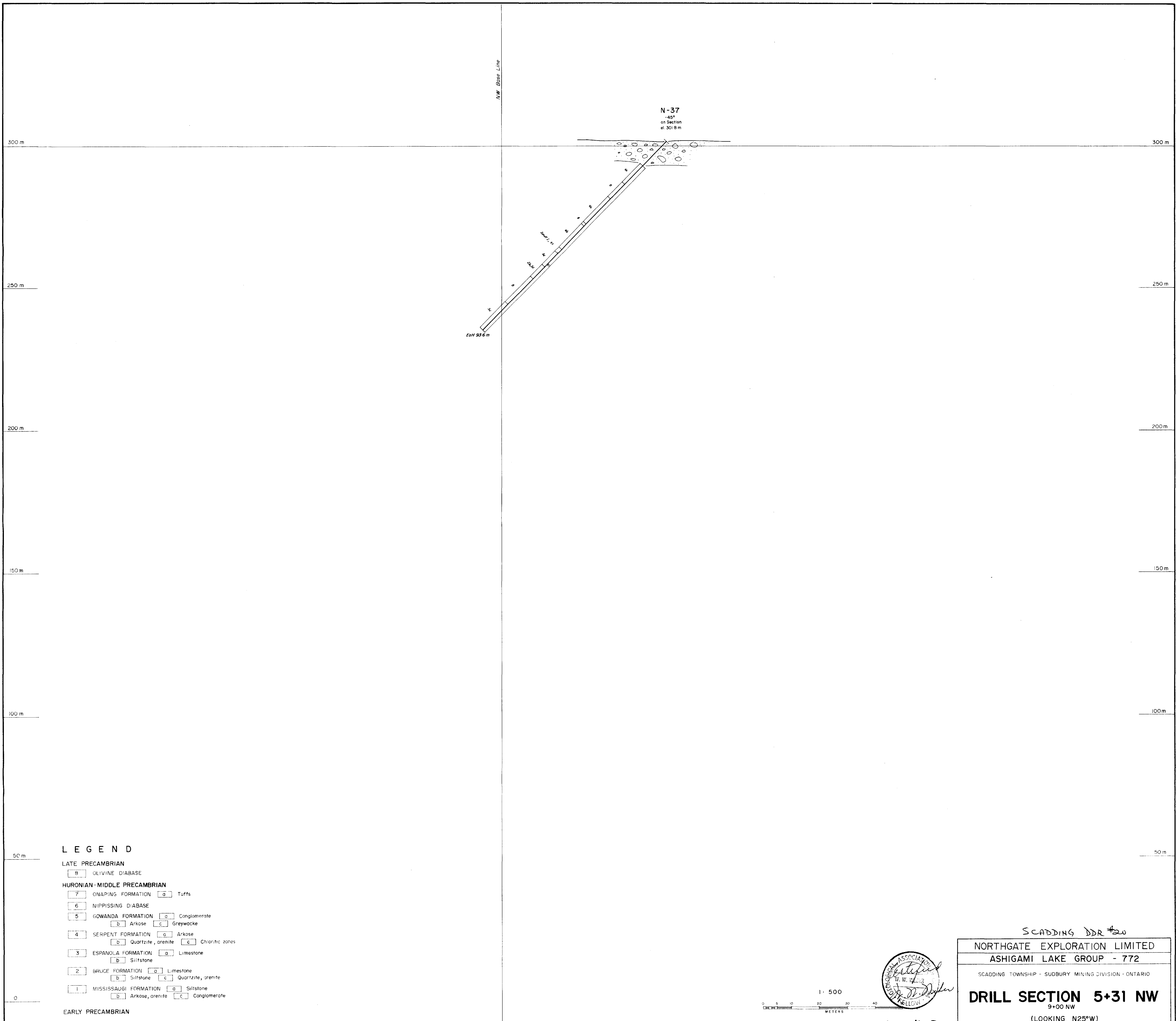
3 ESPANOLA FORMATION a Limestone
b Siltstone

2 BRUCE FORMATION a Limestone
b Siltstone c Quartzite, arenite

1 MISSISSAUGI FORMATION a Siltstone
b Arkose, arenite c Conglomerate

EARLY PRECAMBRIAN





LEGEND

LATE PRECAMBRIAN

8 OLIVINE DIABASE

HURONIAN-MIDDLE PRECAMBRIAN

7 ONAPING FORMATION a Tuffs

6 NIPPISSING DIABASE

5 GOWANDA FORMATION a Conglomerate

b Arkose c Greywacke

4 SERPENT FORMATION a Arkose

b Quartzite, arenite c Chloritic zones

3 ESPANOLA FORMATION a Limestone

b Siltstone

2 BRUCE FORMATION a Limestone

b Siltstone c Quartzite, arenite

1 MISSISSAUGI FORMATION a Siltstone

b Arkose, arenite c Conglomerate

EARLY PRECAMBRIAN

SCADDING DDR #20

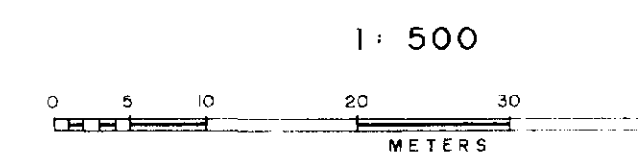
NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION 5+31 NW
 9+00 NW
 (LOOKING N25°W)

DRAWN BY A.R. Gunther	CHECKED BY <i>[Signature]</i>	REVISIONS	DRAWING NO.
DATE Nov 1980	SCALE 1:500		

SCADDING-0016 #29



S

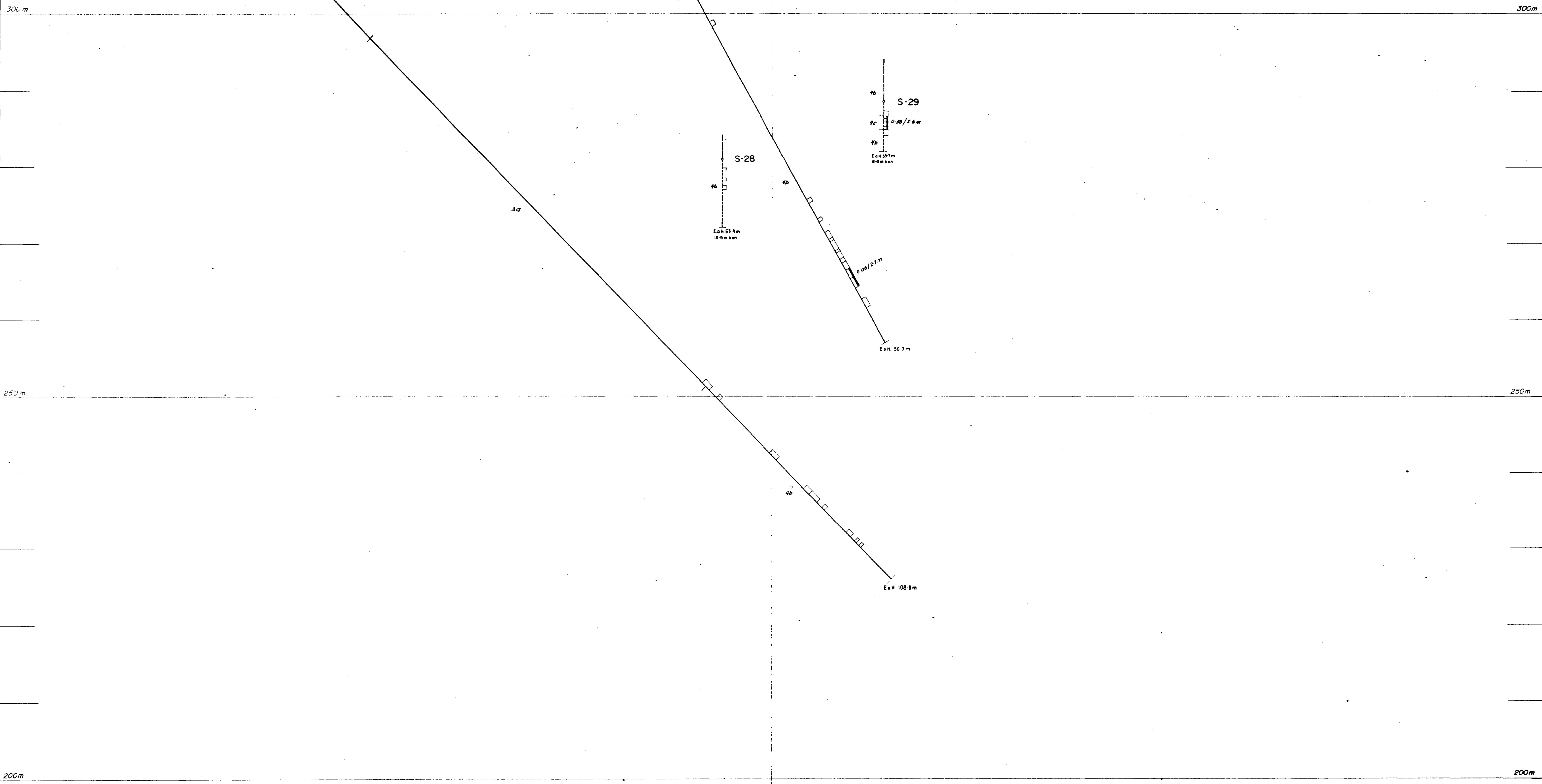
N

S-41
-607/01
el. 302.9m
19m dia

S-30
-607/01
el. 308.9m
21m dia

S-28

S-29



LEGEND

LATE PRECAMBRIAN

8 Olivine Diabase

HURONIAN - MIDDLE PRECAMBRIAN

7 Onaping Formation
a. Tuffs

6 Nipissing Diabase

5 Gawanda Formation
a. Conglomerate b. Arkose c. Greywacke

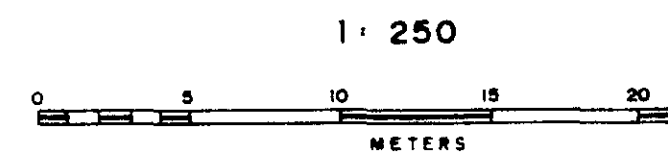
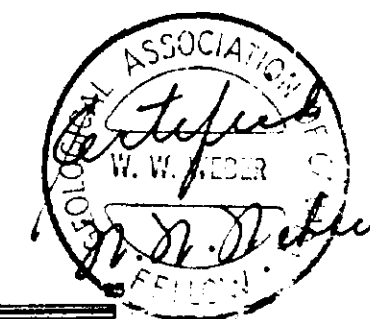
4 Serpent Formation
a. Arkose b. Quartzite, arenite c. Chloritic Zone

3 Espanola Formation
a. Limestone b. Siltstone

2 Bruce Formation
a. Limestone b. Siltstone c. Quartzite, arenite

1 Mississauga Formation
a. Siltstone b. Arkose, arenite c. Conglomerate

Base Line @ 5000 N



SCADDING-0016 #30

SCADDING SDR #20

NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION 9727.5 E

(LOOKING WEST)

DRAWN BY	CHECKED BY	REVISIONS	DRAWING No.
A.R. Gunther			
DATE	SCALE		
Nov 1980	1:250		



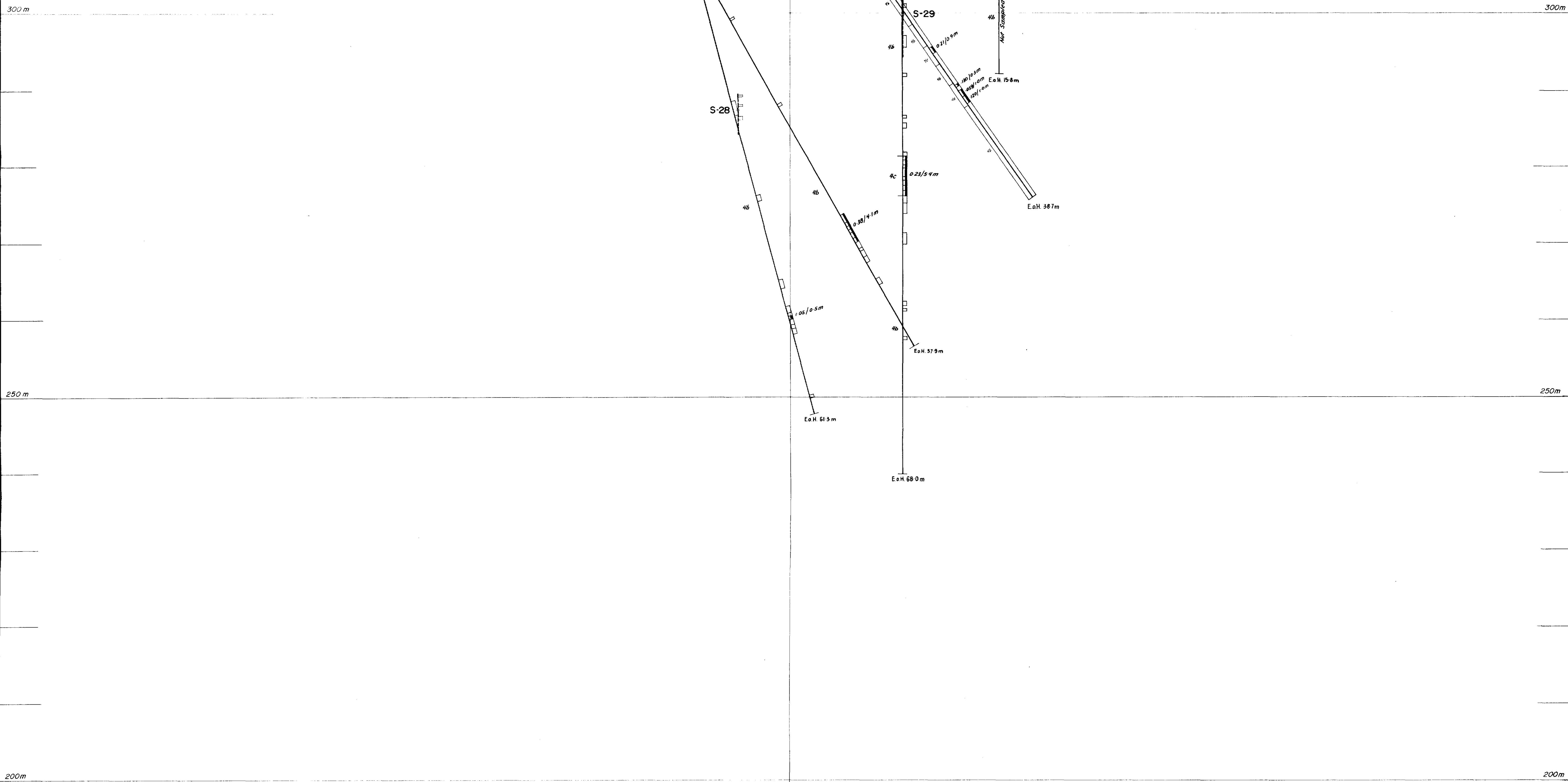
S

N

S-26 S-25
 -75°/0' -60°/0'
 el. 306.7m el. 308.8m
 2.0m in front 2.0m in front

S-20 S-17
 -90° -90°
 el. 307.7m el. 308
 on Section 2.0m in front

N-46
 -55°/0' -55°/0'
 el. 307.5m on Section



LEGEND

LATE PRECAMBRIAN

8 Olivine Diabase

HURONIAN - MIDDLE PRECAMBRIAN

7 Onaping Formation
a. Tuffs

6 Nipissing Diabase

5 Gowanda Formation
a. Conglomerate b. Arkose c. Greywacke

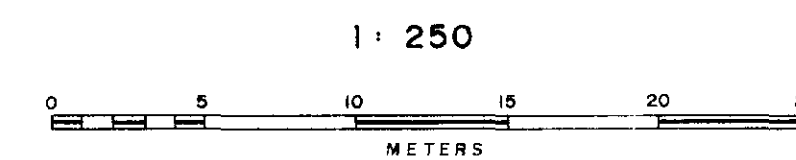
4 Serpent Formation
a. Arkose b. Quartzite, arenite c. Chloritic Zones

3 Espanola Formation
a. Limestone b. Siltstone

2 Bruce Formation
a. Limestone b. Siltstone c. Quartzite, arenite

1 Mississauga Formation
a. Siltstone b. Arkose, arenite c. Conglomerate

Base Line @ 5000 N



SCADDING-0016 # 31

SCADDING DR#20

NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION 9738-5 E

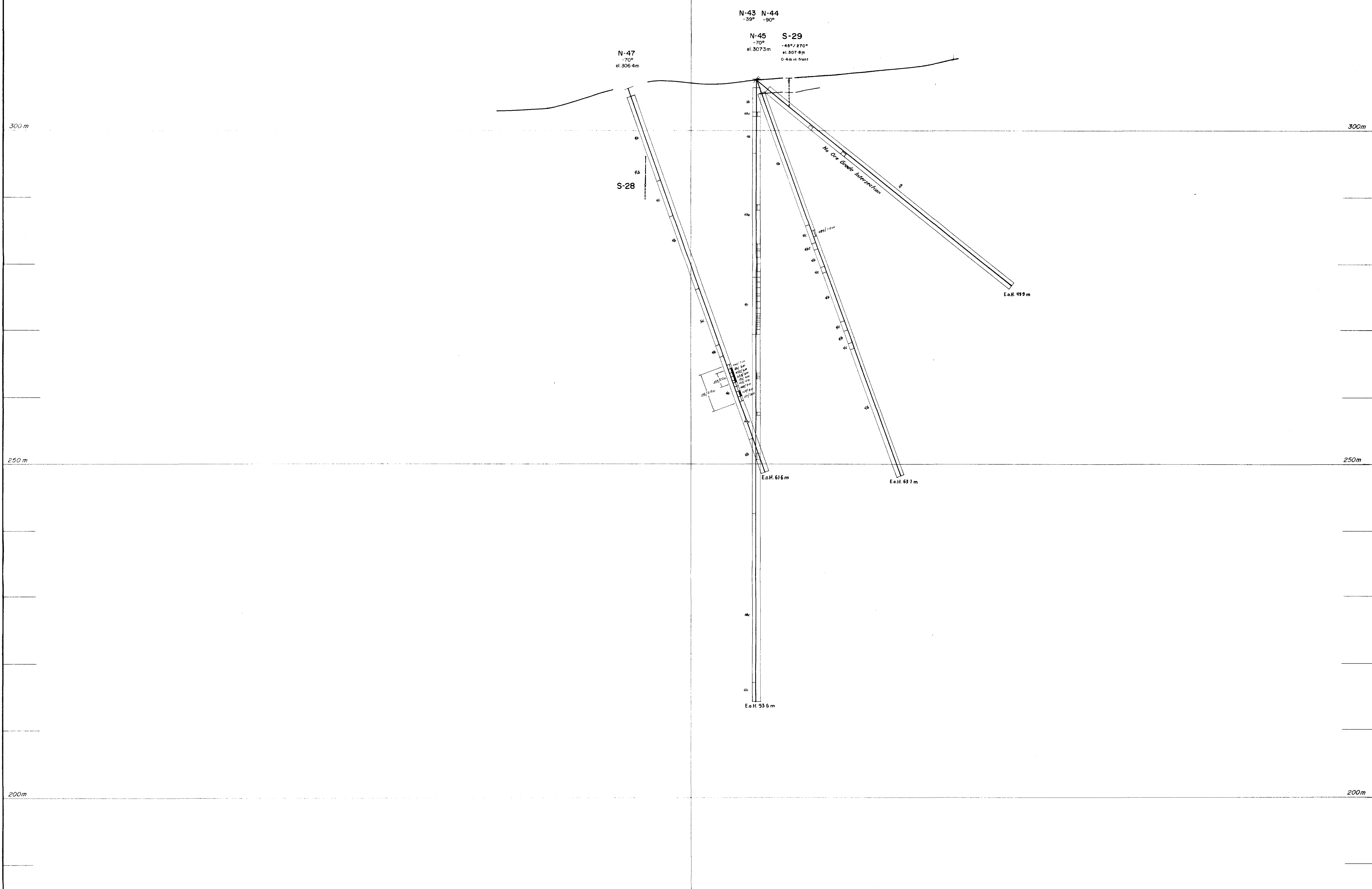
(LOOKING WEST)

DRAWN BY	A.R. Gunther	CHECKED BY		REVISIONS		DRAWING NO.	
DATE	Nov. 1980	SCALE	1:250				



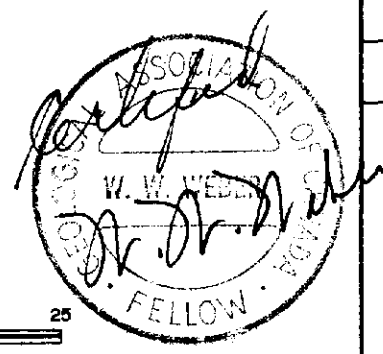
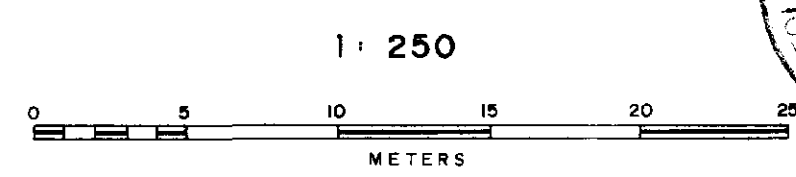
S

N



LEGEND

- LATE PRECAMBRIAN
- 8 Olivine Diabase
- HURONIAN - MIDDLE PRECAMBRIAN
- 7 Onaping Formation
 - a Tuffs
 - 6 Nipissing Diabase
 - 5 Gowanda Formation
 - a Conglomerate b Arkose c Greywacke
 - 4 Serpent Formation
 - a Arkose b Quartzite, arenite c Chloritic Zones
 - 3 Espanola Formation
 - a Limestone b Siltstone
 - 2 Bruce Formation
 - a Limestone b Siltstone c Quartzite, arenite
 - 1 Mississauga Formation
 - a Siltstone b Arkose, arenite c Conglomerate



SCADDING DDR #20

NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

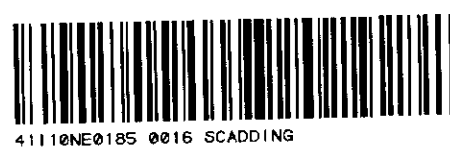
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

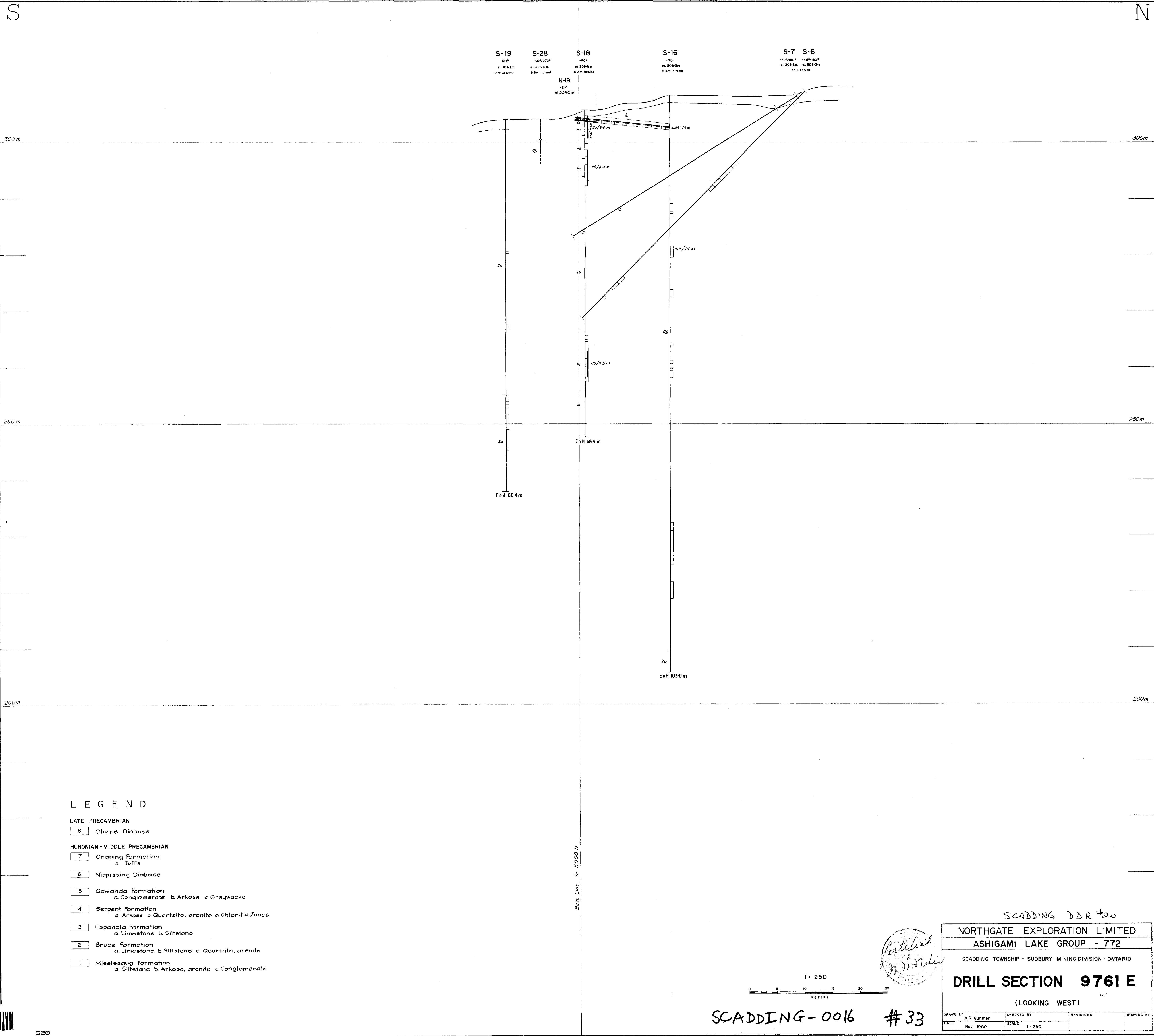
DRILL SECTION 9746 E

(LOOKING WEST)

DRAWN BY A.R. Gunther	CHECKED BY	REVISIONS	DRAWING No.
DATE Nov 1980	SCALE 1:250		

SCADDING - 0016 #32





LEGEND

LATE PRECAMBRIAN

8 Olivine Diabase

HURONIAN-MIDDLE PRECAMBRIAN

7 Onaping Formation

a. Tuffs

6 Nipissing Diabase

5 Gowanda Formation

a. Conglomerate b. Arkose c. Greywacke

4 Serpent Formation

a. Arkose b. Quartzite, arenite c. Chloritic Zones

3 Espanola Formation

a. Limestone b. Siltstone

2 Bruce Formation

a. Limestone b. Siltstone c. Quartzite, arenite

1 Mississauga Formation

a. Siltstone b. Arkose, arenite c. Conglomerate



SCADDING DDR #20

NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

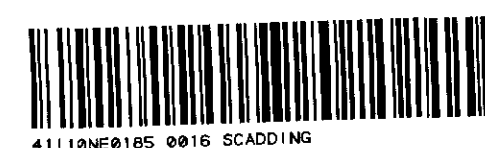
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION 9761 E

(LOOKING WEST)

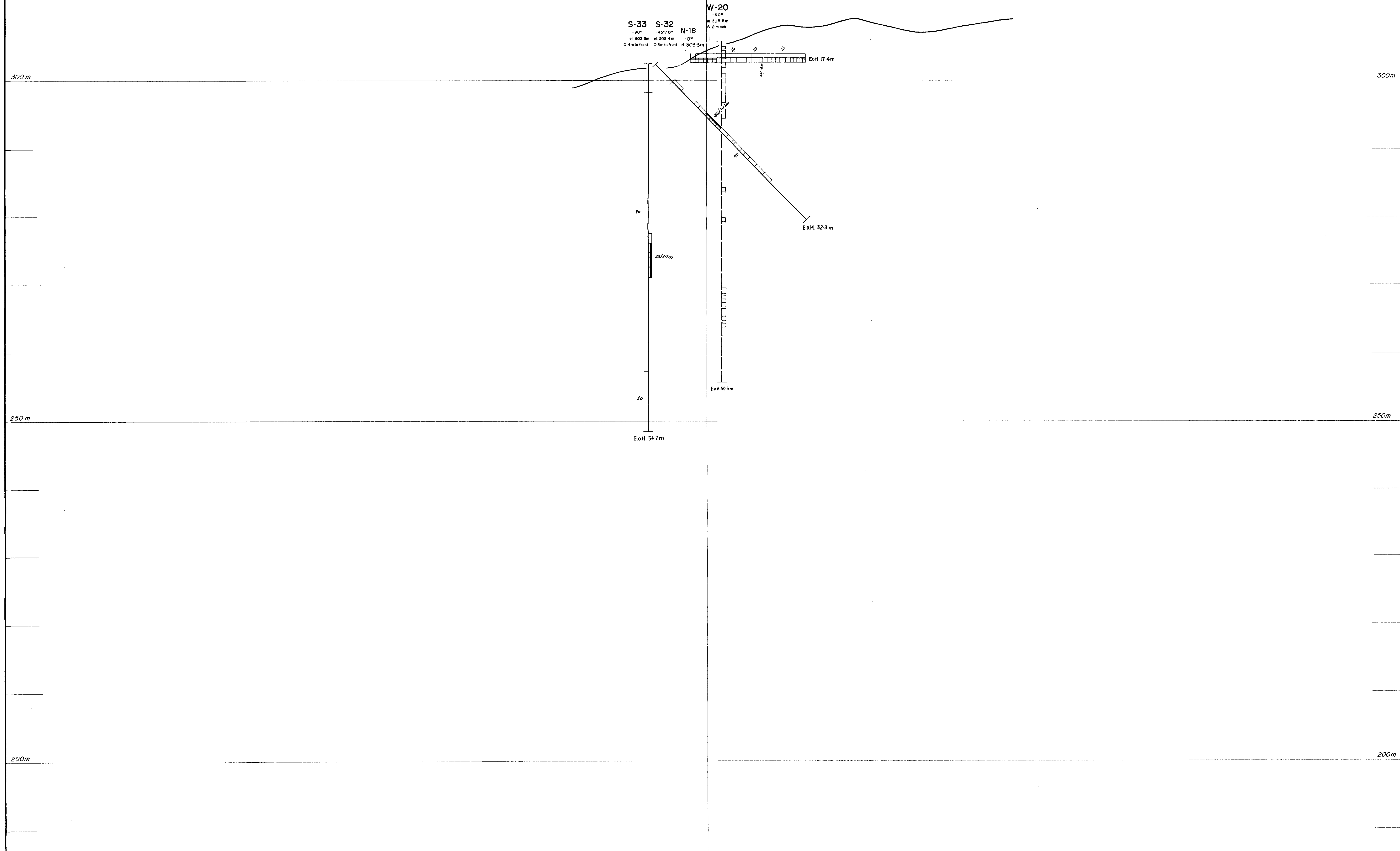
DRAWN BY A.R. Gunther	CHECKED BY	REVISIONS	DRAWING NO.
DATE Nov. 1980	SCALE 1:250		

SCADDING-0016 #33



S

N



S-33 S-32 N-18
 -90° -89° 0' -90°
 at 302.5m at 302.4m at 303.3m
 0.4m in front 0.3m in front at 303.3m

W-20
 -90°
 at 305.8m
 6.2 m in front

EoH 17.4m

EoH 32.3m

EoH 50.3m

EoH 54.2m

300 m

300m

250 m

250m

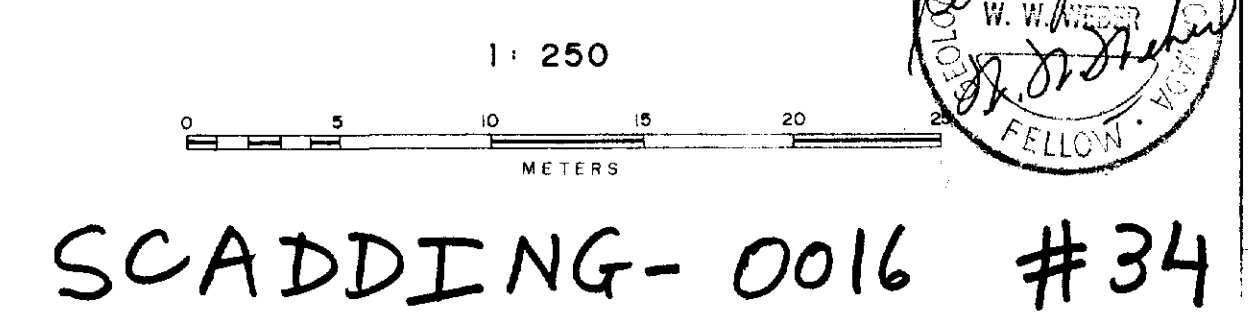
200 m

200m

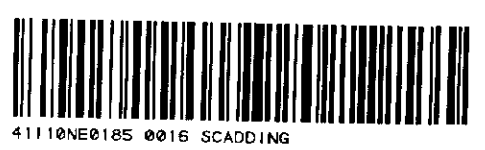
LEGEND

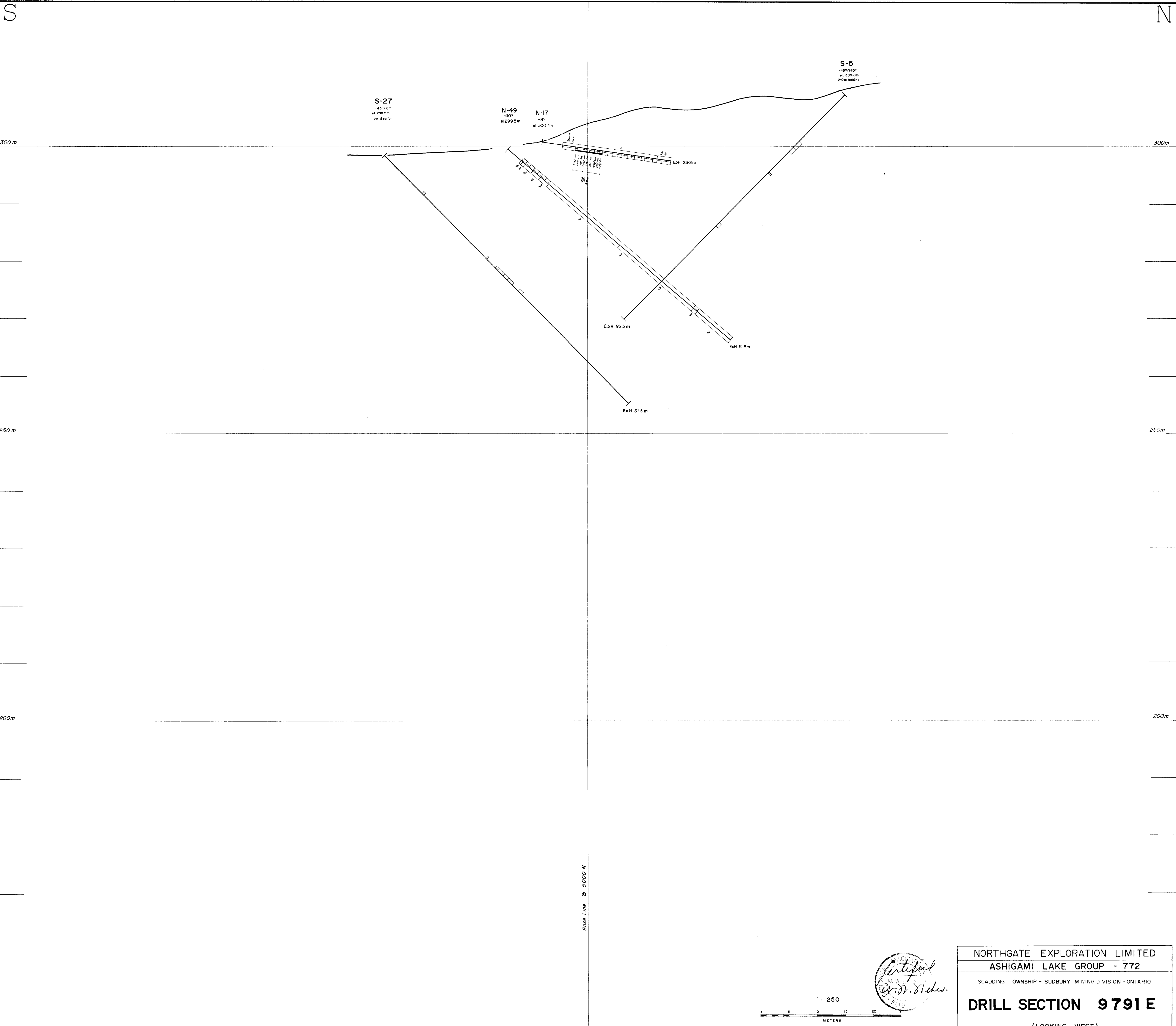
- LATE PRECAMBRIAN
- 8 Olivine Diabase
- HURONIAN - MIDDLE PRECAMBRIAN
- 7 Onaping Formation
 - a Tuffs
 - 6 Nipissing Diabase
 - 5 Gowanda Formation
 - a Conglomerate b Arkose c Greywacke
 - 4 Serpent Formation
 - a Arkose b Quartzite, arenite c Chloritic Zones
 - 3 Espanola Formation
 - a Limestone b Siltstone
 - 2 Bruce Formation
 - a Limestone b Siltstone c Quartzite, arenite
 - 1 Mississauga Formation
 - a Siltstone b Arkose, arenite c Conglomerate

Base Line @ 5000 N



SCADDING DR #20
 NORTHGATE EXPLORATION LIMITED
 ASHIGAMI LAKE GROUP - 772
 SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO
DRILL SECTION 9776 E
 (LOOKING WEST)



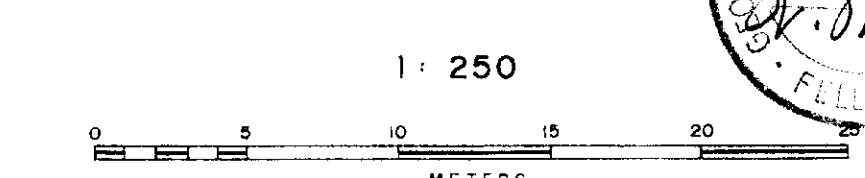


300 m

250 m

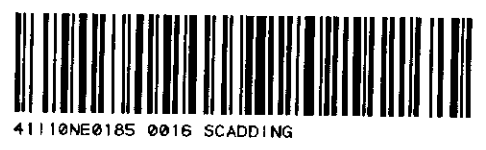
200 m

Besse Line @ 5000 N



NORTHGATE EXPLORATION LIMITED			
ASHIGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION 9791 E			
(LOOKING WEST)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING NO.
A.R. Gunther			
DATE	SCALE		
Nov. 1980	1:250		

SCADDING-0016 #35



S

N

300 m

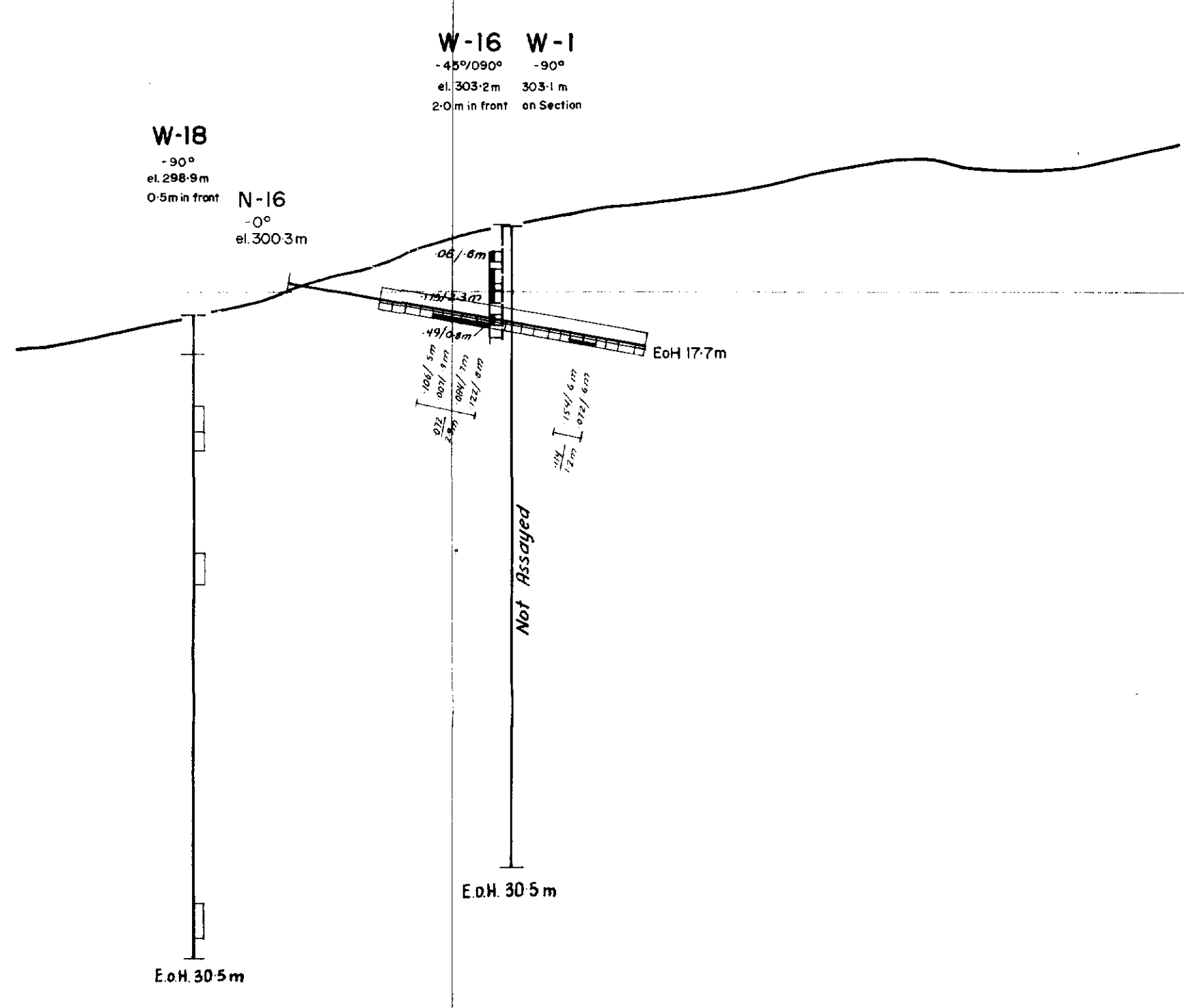
300 m

250 m

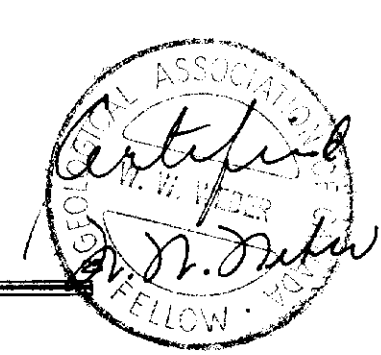
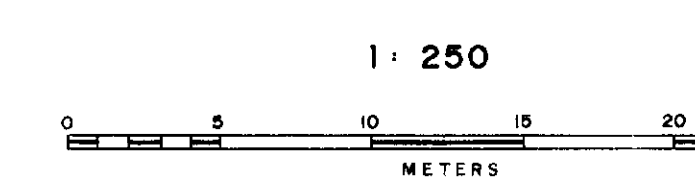
250 m

200 m

200 m



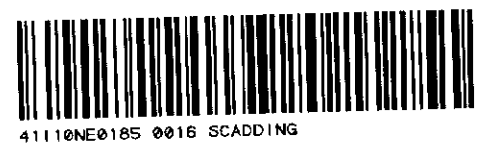
Base Line @ 5000 N



SCADDING-0016 #36

SCADDING DDR #20

NORTHGATE EXPLORATION LIMITED			
ASHIGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION 9 806 E			
(LOOKING WEST)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING No.
DATE	SCALE		
Nov. 1980	1:250		



S

N

300 m

300 m

250 m

250 m

200 m

200 m

N-14
of
el. 300.7 m

Ech 16.5 m

Base Line @ 5000 N

LEGEND

LATE PRECAMBRIAN

8 Olivine Diabase

HURONIAN - MIDDLE PRECAMBRIAN

7 Onaping Formation
a Tuffs

6 Nipissing Diabase

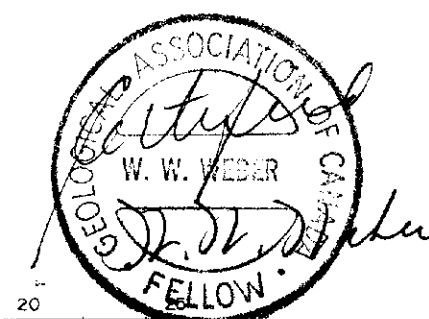
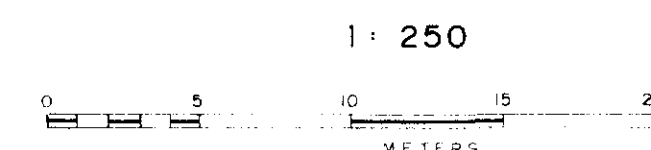
5 Gowanda Formation
a Conglomerate b Arkose c Greywacke

4 Serpent Formation
a Arkose b Quartzite, arenite c Chloritic Zones

3 Espanola Formation
a Limestone b Siltstone

2 Bruce Formation
a Limestone b Siltstone c Quartzite, arenite

1 Mississauga Formation
a Siltstone b Arkose, arenite c Conglomerate



SCADDING - 0016 #38

SCADDING DRR #20

NORTHGATE EXPLORATION LIMITED
ASHIGAMI LAKE GROUP - 772

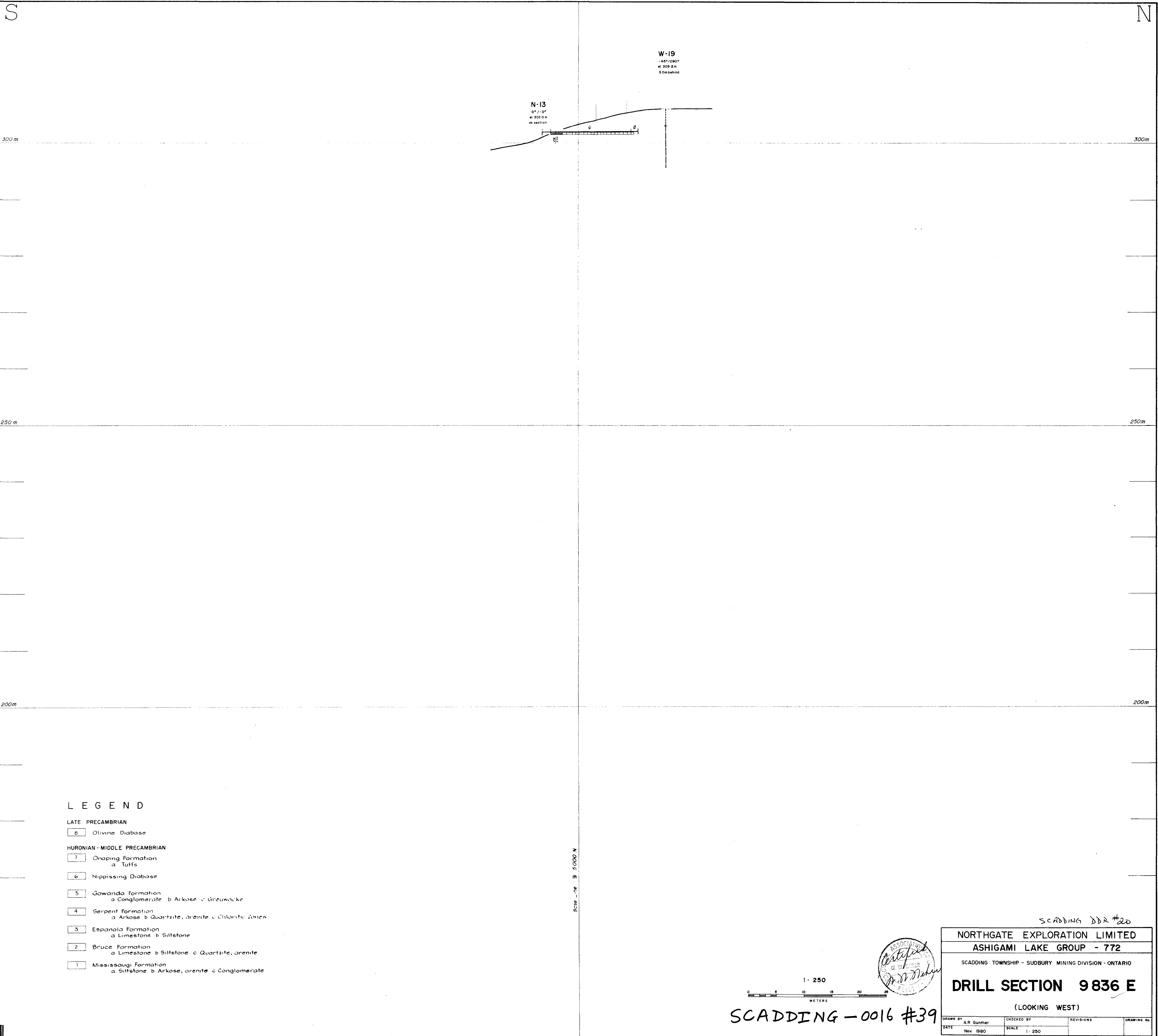
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO

DRILL SECTION 9828 E

(LOOKING WEST)

DRAWN BY A.R. Gunther CHECKED BY REVISIONS DRAWING NO.
DATE Nov 1980 SCALE 1:250





LEGEND

LATE PRECAMBRIAN

8 Olivine Diabase

HURONIAN - MIDDLE PRECAMBRIAN

7 Onaping Formation
a Tuffs

6 Nipissing Diabase

5 Gowanda Formation
a Conglomerate b Arkose c Gneuwacke

4 Serpent Formation
a Arkose b Quartzite, arenite c Chloritic Zones

3 Espanola Formation
a Limestone b Siltstone

2 Bruce Formation
a Limestone b Siltstone c Quartzite, arenite

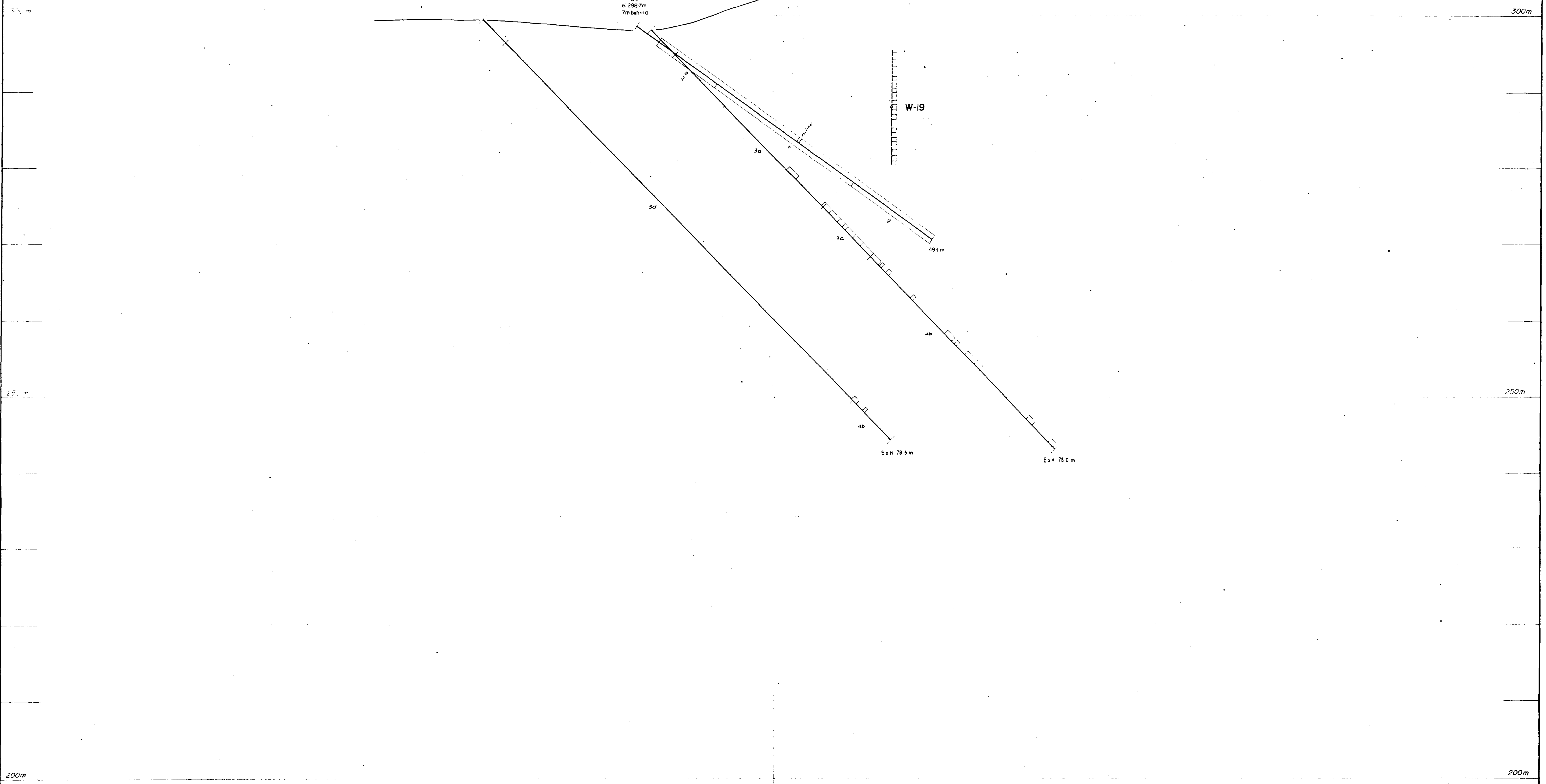
1 Mississauga Formation
a Siltstone b Arkose, arenite c Conglomerate

SCADDING DR #20

NORTHGATE EXPLORATION LIMITED			
ASHGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION 9836 E			
(LOOKING WEST)			
DRAWN BY A.R. Gunther	CHECKED BY	REVISIONS	DRAWING No.
DATE Nov 1980	SCALE 1:250		

1:250
0 5 10 15 20
METERS
SCADDING - 0016 #39

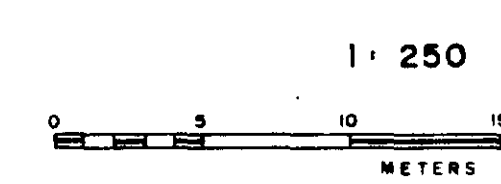
S N



LEGEND

- LATE PRECAMBRIAN
 - 8 Olivine Diabase
- HURONIAN - MIDDLE PRECAMBRIAN
 - 7 Onaping Formation
 - a Tuffs
 - 6 Nipissing Diabase
 - 5 Gowanda Formation
 - a Conglomerate b Arkose c Greywacke
 - 4 Serpent Formation
 - a Arkose b Quartzite, arenite c Chloritic Zones
 - 3 Espanola Formation
 - a Limestone b Siltstone
 - 2 Bruce Formation
 - a Limestone b Siltstone c Quartzite, arenite
 - 1 Mississauga Formation
 - a Siltstone b Arkose, arenite c Conglomerate

Base Line @ 5000 N



SCADDING-0016 #40

SCADDING DDR #20

NORTHGATE EXPLORATION LIMITED			
ASHGAMI LAKE GROUP - 772			
SCADDING TOWNSHIP - SUDBURY MINING DIVISION - ONTARIO			
DRILL SECTION 9851 E			
(LOOKING WEST)			
DRAWN BY	CHECKED BY	REVISIONS	DRAWING NO.
DATE	Nov 1980	SCALE	1:250

