

Diamond Drill Record

File No.
ML 94-01

Company LAG RESOURCES (1985) LTD.		Map Reference No. Claim Map G-4093 N.T.S.		Claim No. Boundary between 532377 & 1179591	
Date Started UGUST 9/94		Date Completed AUGUST 21/94 @ 1000' OCTOBER 21/94 @ 2500'		Location Rathbun Twp. - on N-S. Claimline 95' (29 m) S. of witness Post for #4 - 1179591 (175 m. S. of #4) which is 21' S. of shore of Matagamasi lake	
Core size: BQ		Dip of Hole from true North North		Total Footage Oct 21/94 - 2500'	
Dip of Hole - 90°		Support by Frank H. Toews, B.Sc.			
Company Erana Mines Ltd., Lively, Ontario					

Feet FROM	Feet TO	DESCRIPTION
0	5'	CASING - Sandy clay, boulders; bedrock at about 3' (laminated wackes)
~3'	29.7'	GOWGANDA FORMATION - LAMINATED WACKES + SUBBURY-TYPE BRECCIA ZONE Rocks are non-magnetic; wackes are light greenish greys (sericitic, very fine grained) and medium to darker greenish greys (chloritic-sericitic, fine to medium grained), thinly laminated to very thinly bedded, becoming more thinly bedded (+ thin laminations) down-hole from the zone of Subbury Breccia; bedding @ 10-50° to C.A. (Core Axis) above breccia and @ 25-30° to C.A. below breccia (the contacts of which are conformable to bedding); wackes are soft to moderately soft.

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FROM	TO	
3	11.1	Sericitic fractures along bedding, a few with limonitic staining; 3-6/foot; occasional pink quartz-carbonate gash veinlets, < 1-3 mm wide @ 60° and 35° to C.A. (cross-cut bedding)
11.1	21.3	Sudbury Breccia zone - medium to lighter greenish grey, fine grained, moderately soft, sericitic-chloritic matrix with flowage lines parallel to contacts and about inclusions in places; clasts are rounded to sub-rounded (and a few are ragged) varying in size from 1 mm (±) to ~25 cm, composed of wacke, laminated wacke, pink arkosic rock, some albitized (greenish, pink to reddish to tan, very hard, internally and on rims of clasts); fractures (± sericite ± slips) @ 50-60°, 25-35° to C.A., 2-6/foot, some broken core;
		12.9-13.4' - Brecciated, pink albitized inclusion with chlorite matrix; fragments are angular to sub-angular and also cut by chlorite fracture fillings; minor pyrite grains in matrix and possibly some dolomite (?)
		18.3-18.6' - harder, silicified(?) with albitized clasts and ~3% off-white dolomite flecks and small anhedral to sub-hedral porphyroblasts up to 1-2 mm in size in matrix and in clasts; minor dolomite gash @ 80° to C.A.

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	19.5-20.1'	Bleached, partly albitized, light grey to tan with thin chlorite laminations in wacke inclusion; an irregular, 0.5-2 cm wide, pink to reddish albite +/- quartz +/- chlorite veinlet with 1-3% disseminated Pyrite cuts the lamina. rad wacke; sericitic slip parallel to down-hole contact of inclusion @ ~15° to C.A.
21.3	29.7	Thinly bedded (up to 10 cm) and thinly laminated wackes; rocks fracture (+/- slips) parallel to bedding @ 25-35°; a few chloritic fractures/slips @ 60°, 45° to C.A.
	22.7-26'	some milky to grey quartz veinlets and gasches with pink to reddish (hematitic) carbonate (dolomite?) +/- chlorite; mainly irregular forms up to 0.5 cm wide
	26.5-29.7'	sericitic-chloritic slips parallel to sub-parallel to C.A.; locally some bleaching on margins; broken core in lower part
29.7	42.3	GOWGANDA FORMATION - MORE MASSIVE WACKE +/- BEDDING +/- QUARTZ-CARBONATE VEINLETS +/- BRECCIATION Medium to dark greenish greys, fine to medium grained, non-magnetic, chloritic, soft, becoming harder and partly silicified down-hole; some thin beds

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		and laminations @ 10-15° to c.a.; a few beds appear to be brecciated by soft sediment deformation; also about 10-15% sections brecciated by irregular chlorite "crackles" fracture fillings/small gaskes, which are sometimes cut by later, grey to milky quartz-dolomite veinlets/gaskes with creamy to reddish (hematitic) carbonate +/- chlorite, <1 to 5 mm wide @ 50-65°, 30-25° to c.a.; chloritic slips (1/2 pyrite grains or small scales) @ 40-50° mainly (2-6/foot) cut some of the quartz-carbonate veinlets and gaskes
		31-31.3' - partly brecciated soft to hard ^{light greenish-grey} laminated wacke fragment, partly enveloped by an irregular Sudbury Breccia vein/pateles
		some silicification(?) and several quartz-carbonate veinlets/gaskes in zone
		40.2-42.1' - about 15 ^{milky to reddish} quartz-carbonate veinlets and gaskes, 1-5 mm wide @ 60-70° to c.a. mainly
		42.2-42.3' - two milky to reddish quartz-carbonate +/- chlorite veinlets 0.5-1.0 cm wide @ ~76° to c.a. with partial brecciation of wackes in between; breccia matrix is chlorite

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FROM	TO	
42.3	59.6	GOWGANDA FORMATION - ALTERED, ALBITIZED ZONE + DOLomite +/- QUARTZ-CARBONATE VEINLETS
		Very hard, non-magnetic, pink ^{to reddish} fine grained, intensely recrystallized, albitized, massive ^{anhedral} rocks with occasional tan to pinkish, laminated band @ 0-20" to C.A.; Pale greenish to creamy dolomite occurs as 1-10 mm size, sub-hedral to anhedral porphyroblasts (Trace to 10%, average 5%); 50% irregular patches and veinlets (+ quartz), several (<5%) short sections with small chlorite "crackle" fracture fillings; ~2% milky quartz - pink to reddish (hematitic dolomite veinlets/gashes @ 60-70° to C.A.; a few reddish-orange, hematitic alteration veinlets; chloritic fractures/slips (+ sericite) @ 35-45°, 60-65° to C.A.; occasionally chlorite replaces dolomite porphyroblasts
		56.5' - 2 cm wide milky quartz veinlet @ 60° to C.A. with some hematitic carbonate and chlorite patches
		57.7 - 58.3' - Weak brecciation by ^{3% (±) irregular} milky quartz +/- dolomite veinlets, quartz partly cut by orange hematitic alteration veinlets
		59 - 59.5' - red hematitic alteration in parts of pink albitized rocks (+ chlorite gashes/veinlets) and in 10% quartz-carbonate veinlets
		59.5' - contact @ 70° to C.A.

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Feet		DESCRIPTION
FROM	TO	
59.5	73.4	GOWGANDA FORMATION - MASSIVE WACKES +/- BRECCIATION +/- QUARTZ - CARBONATE VEINLETS
		Non-magnetic, medium to darker greenish-grey, fine to medium grained, chloritic, soft to hard (patchy silicification); a few broken-up beds of light greenish grey laminated wackes present; 2-3% milky quartz - reddish (hematitic) carbonate veinlets, gashes & angular patches (± chlorite),
		15% Chloritic "crackle" fracture filling zones, sometimes brecciate host rocks;
		Chloritic (± sericitic) fractures/slips @ 30-45°, 10-20°, 60-70° to C.A.
		(2-5+ / foot) occasionally with Pyrite grains
		59.5-60.9' - 5-10% quartz - hematitic carbonate veinlets/gashes 0.1-1 cm wide @ 0-35° to C.A. and one ~4 cm wide @ 75-60° to C.A. near 59.7';
		Veining cuts a zone partly brecciated by chlorite "crackle" fractures
		61.7' (4') - limonitic, quartz-carbonate veinlet ≤ 1.5 cm wide,
		some small dolomite porphyre blasts in vicinity
		62-63' - some brecciation by "crackle" fracture fillings (chlorite)
		63.2-64' - 3% quartz - hematitic carbonate gashes and patches with minor Pyrite grains
		66-66.3' - 10-15% irregular quartz - hematitic carbonate veinlets/gashes & Pyrite

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Feet		DESCRIPTION
FROM	TO	
	72-73.4'	2% ragged patches, gasches and veinlets of quartz-carbonate (1/2 some disseminated Pyrite grains) in soft chloritic matrix with patchy slightly brownish albite alteration; some broken up bed fragments, disseminated dolomite
		porphyroblasts ($\leq 5\%$)
	73.4'	contact @ $\sim 60^\circ$ to C.A.
73.4	104.2'	GOWANANDA FORMATION - ALTERED, ALBITIZED ZONE + DOLOMITE +/- QUARTZ-CARBONATE VEINLETS (1/2 CHLORITE)
		Pink to reddish, intensely recrystallized, ^{albitized,} fine grained, very hard, non-magnetic; trace to locally 15% (avg. 5%) creamy dolomite porphyroblasts and patches (< 0.1 - 3 cm) sometimes replaced by hematitic alteration and sometimes rimmed by chloritic dolomite. Also occurs in milky to grey quartz veinlets often 1-5 mm wide @ $60-70^\circ$ to C.A., but some veining is 1-8 cm wide, (about 2-3% quartz-carbonate veining); trace to 5% reddish-orange pervasive hematitic alteration veinlets, anastomosing @ $15-70^\circ$ to C.A. and 1-5 mm wide mainly (w to 10/foot) and more prevalent between $\sim 70-95'$, ^{5%} scattered chloritic alteration veinlets are anastomosing, locally numerous, 1-3 mm wide @ 10-25' to C.A. and are cut by quartz-carbonate veinlets;

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Feet		DESCRIPTION
FROM	TO	
	Chd.	Chloritic + sericitic slips @ 20-35°, 50-60° to C.A. (<1-5/foot)
73.4	74.7	Feint pinkish grey zone
74.7	75	Pink; brecciated by quartz-carbonate-chlorite matrix
78.2	78.4	Irregular, grey to creamy dolomite vein, 0.2-2 cm wide with 2-3% disseminated Pyrite; vein partly brecciates host rock which is also partly brecciated by chlorite veinlets; chlorite margins +/- kersatite on dolomite vein
78.4	78.7	Milky quartz-chlorite-kersatitic carbonate vein(s) @ ~50° to C.A.
80.3		5 cm wide milky ^{to grey} quartz-chlorite-kersatitic carbonate vein(s) @ 65-70° to C.A. vein is partly vuggy
87.2	87.5	Two, 1.5-2 cm wide milky quartz veinlets @ 65° and 75° to C.A. (opposed) some vuggy kersatitic carbonate in 75° vein
88.5		8 cm wide milky quartz-chlorite vein @ 65-75° to C.A.; Vuggy kersatitic carbonate in vein
90.2	90.7	15-20% creamy carbonate (+ kersatite) - milky to grey quartz - chlorite veining/gashes patches partly brecciate host rocks
92	94.4	~10% greyish to creamy dolomite porphyroblasts, angular to irregular patches (+ kersatitic alteration +/- chloritic rims/fractures) and several quartz-chlorite veinlets

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FROM	TO	
96	98.2	10-15% greyish to creamy dolomite porphyroblasts and patches
98.5		1.5 cm wide milky to grey quartz veinlet (1/2 dolomite) @ 65° to C.A.
103.5		Pale greenish grey soft to hard (silicified?) Sudbury Breccia veinlet with flow lines @ ~30-35° to C.A. (opposed to contact at 104.2')
104.2		Minor disseminated Pyrite in several ragged quartz-dolomite (1/2 chlorite) veinlets/gashes
104.7		Chloritic shear/breccia, 0-1 cm wide @ ~10° to C.A. plus ^{muddy} chloritic-sericitic slip on contact with Sudbury Breccia. (contact over length of 0.6')
104.2	109.2	SUDBURY-TYPE BRECCIA
		Non-magnetic, soft (chloritic-sericitic), medium to light greenish grey, very fine grained matrix with flow lines; rounded to sub-rounded albitized-silicified pink to tan to grey to greenish mottled secondary clasts up to 6 cm in size; sometimes the matrix is very hard, silicified/albitized near clast margins; both matrix and clasts are cut by a few quartz-dolomite (1/2 hematite) veinlets 1-3 mm wide @ 20-30°, 50° to C.A. (a few vuggy); some small clasts ^{are} chloritic
		109.2' - contact sheared(?) (plus quartz-carbonate veinlet partly along contact and oriented @ 35° to C.A.; chloritic slip parallel to and above contact (disseminated Pyrite occurs in some clasts & also in matrix; < 1/2% Pyrite) PAGE 9 OF 89

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		DESCRIPTION
FROM	TO	
109.2	135.1	<p>GOWGANDA FORMATION - ALTERED, ALBITIZED - SILICIFIED +/- QUARTZ - CARBONATE (1/2-CHLORITE) VEINLETS</p> <p>Non-magmatic; Pink to pale pink and sometimes pale grey (more silicified?) and occasionally tan coloured, very hard, intensely recrystallized (occasionally a few lamellar structures visible), albitized-silicified metasedimentary rocks; 5% (+/-) of few locally numerous ^{tr-silicified} ^{chloritic} ^{fracture} fillings/veinlets ^{at base}</p> <p>awastramosing, low angle (5-30° to c.a.) chloritic alteration ^{also} locally brecciate host rocks and some appear to be associated with quartz-carbonate (although quartz-carbonate veinlets ^{also} cut the chloritic veinlets); chloritic fracture fillings/veinlets mainly to about 120';</p> <p>2-3% (locally 10%) milky to grey quartz-creamy to greyish dolomite (1/2 hematitic alteration) veinlets, irregular patches or gouges, sometimes with chlorite and sometimes hematitic and vuggy; the more uniform veinlets are 1-10 mm wide @ 60-75° to c.a.; some red-orange, hematitic alteration veinlets are also present @ 60-70° to c.a.;</p> <p>Scattered dolomite periphyroblasts, < 1 to 5 mm size, are also present locally up to 10% but mainly trace to 2%;</p> <p>Occasional Pyrite grains visible</p>
125.3	125.6	<p>Milky to grey quartz - hematitic carbonate - (minor) chlorite vein (with wall rock fragments)</p>

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Feet		DESCRIPTION
FROM	TO	
		at 60-70' to CA, (some apophyses also present) (% hematitic alteration) 10% irregular to ragged quartz-carbonate veinlets/gashes and patches partly brecciate host rocks
126.5	128.7	Silicified, partly brecciated, and quartz-carbonate veinlets near and at contact with Sudbury Breccia; slip parallel to contact which is about 30° to C.A.
135.1	149.5	SUDBURY-TYPE BRECCIA +/- QUARTZ-CARBONATE VEINLETS Non-magnetite; very fine to fine grained, medium to pale greenish grey, generally soft, chloritic-sericitic matrix with flow lines; rounded to sub-rounded; clasts ≤ 1 mm to 2' in size (40% clasts > 0.5') consisting of pink albitized fragments, very hard silicified light to dark greenish grey massive to bedded wackes, pink arkose, soft greenish laminated wackes; matrix of breccia is sometimes ^{hard} silicified; a few quartz-carbonate veinlets and gashes (% hematitic alteration) cut fragments and matrix; minor Pyrite grains in matrix 149.5' - contact @ 35° to CA.

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Feet	DESCRIPTION
FROM	TO
149.5	272.4
	<p>GONGGANDA FORMATION - ALTERED, ALBITIZED-SILICIFIED, MAINLY ARKOSIC, PARTLY BRECCIATED, +/- QUARTZ-CARBONATE VEINLETS; +/- SUBBURY-TYPE BRECCIA</p> <p>Non-magnetic, intensely to strongly recrystallized, often medium to coarse grained (< 1mm) very hard, silicified-albitized, pale to light pinks to pale pinkish greys; occasional bedding visible; 20% (+/-) brecciated zones, 0.5 - 4' long with greyish (+/- sericite) flood quartz matrix</p> <p>Containing hazy to sharp rounded to angular fragments of host rocks and some very fine grained pale greyish to tan to pinkish laminated wacke fragments; fragments vary in size from ~5 mm to 10 cm (t); breccia matrix is sometimes very minor but often < 5 to 25% in volume; flood quartz matrix can occur to about 25% (creamy to greyish dolomite porphyroblasts, 0.1 - 2 cm in size, sub-hedral to anhedral in shape have developed throughout - in amounts from trace to locally 10-20% (average ~5%) in the massive rocks, breccia matrix and in fragments; dolomite also occurs ^{in all rocks} as more uniform to irregular-ragged veinlets (0.1 - 1 cm wide) and small irregular blotches and patches and grades +/- quartz; dolomite is sometimes affected by reddish hematitic alteration</p> <p>~2% scattered, milky to grey quartz +/- dolomite (~2 hematitic) +/- chlorite veinlets mainly 1-5 mm wide (a few 2-6 cm wide) @ 60-70°, 35-45° to C.A.</p> <p>Scattered (locally numerous) red to orange hematite staining hematitic pervasive</p>

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Feet		DESCRIPTION
FROM	TO	
	std.	alteration veinlets, 1-5 mm wide, @ 10-70° to C.A., some veinlets have calcite and/or chloritic core on fracture/slip surface; occasionally the hematitic alteration veinlets appear to be cut by quartz-carbonate veinlets; some hematitic alteration also can be found as patchy areas
		Nil to very locally 1% (average < 1/8%) disseminated, 'sub-hedral' to rounded(?) Pyrite grains (mainly < 1 mm in size) occur throughout, sometimes within the dolomite porphyroblasts as well, occasionally as fracture fillings
149.5	150.3	10% Pink breccia cut by numerous dolomite veinlets/gashes, and by a quartz gash @ 50-65° to C.A., sub-perpendicular to contact @ 149.5'
150.3	150.5 1/2	Sudbury Breccia vein with sub-parallel contacts @ 65° and 40° (slip) to C.A. (sub-parallel to contact @ 149.5'); pale green to light greenish grey, flow lines, soft, sericitic, cut by quartz-carbonate veinlets (hematitic); several small (< 5 mm) albitized clasts present among others
150.5	153.5	20-25% porphyroblastic and patchy dolomite in ^{driller} pink albitized section; some patchy (and veinlets of) hematitic alteration, some quartz-dolomite (pink to reddish) veinlets, one with chlorite
150.5	159.5	Bedding @ ~ 30° to C.A.

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FROM	TO	
159.5	170.5	<p style="text-align: center;">Brecciated Zone</p> <p>160.6-161' - milky to white quartz vein ~ 3 cm wide @ ~ 20° to C.A. fractured and brecciated by greyish, translucent quartz, some creamy to slightly greenish dolomite patches partly replaced by reddish hematitic alteration; few wall rock inclusions; some hematitic alteration along margins of vein and partly cross-cutting lower portion of vein which exhibits apophyses</p> <p>164.2' - a 0.1' zone with 2% small veinlets, rags, splashes and some disseminated Pyrite</p>
172	175 1/2	Redrilled core, 0.5' ground core
175	176.6	<p>Several (10-15%) pale to light greenish greys irregular, soft (sericitized) to hard (silicified) Sudbury Breccia veins with flow lines and apophyses in pink plus reddish (hematitic alteration) and grey host rock which is brecciated/veined by milky and greyish translucent quartz veinlets/ragged small patches, some with white to greenish dolomite and some also containing dark green chlorite; dolomite patches and blotches also occur in brecciated host rocks; quartz-dolomite veinlets and some hematitic alteration cut. - the Sudbury Breccia as well; < 1/4% disseminated Pyrite present</p>

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FROM	TO	
176.6	184.7	Often brecciated 181.5-184.7 - Chloritic alteration also in matrix along with quartz and dolomite, some chloritic fracture fillings also present; ~3% chlorite, some Pyrite disseminated; Ref-orange, hematitic alteration veinlets, anastomosing @ 15-35°, 50-70° to CA, 5-10'/foot in pale ^{to light} pink rock
185	189	Similar to 185-189
192.5	193.5	~15-20% Breccia
191	220	196-197.5' - Similar to 185-189' 204.8-206.2' - Bedding @ 5-10° to C.A. in slightly pinkish, light grey fragment 206.5-208' - 10-15% dolomite patches and porphyroblasts in breccia and in fragments, some disseminated Pyrite in dolomite and host rocks Mainly brecciated; sometimes dolomite forms part of matrix; rocks pale pink to pale grey 236.3' - 4 cm zone of grey, strongly silicified @ 35-40° to C.A. with irregular fine dolomite veinlets ^{cross} cut by grey, translucent quartz (± dolomite) veinlets; some veinlets and disseminated Pyrite on up-hole contact; also hematitic alteration 236.4(4) - 4 cm wide vein of partly ^{bleached} silicified-albitized, sericitic-chloritic, pale to light greenish grey (± pinkish tinge) Sudbury Breccia @ ~10° to CA, cross-cut by quartz-

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Feet FROM	TO	DESCRIPTION
	cta	dolomite veinlets; breccia has flow lines
241 1/2	242	Medium grey + light grey silicification; speckled by dolomite flecks, some hematitic dolomite patches (small)
		242' - hematitic dolomite - quartz - chlorite veinlet with chloritic-hematitic slip contacts @ 55° to C.A.
242	249.1	Pale pink, somewhat locally brecciated by dolomite - chlorite and quartz 1/2 - dolomite 1/2 chlorite; also several ^{uniform} quartz - dolomite - chlorite veinlets 1-5mm size
		243.8' - 4-5cm wide zone of milky grey quartz 1/2 chlorite veining @ 55-60° to C.A.
		249' - 0.1' zone of grey silicification @ 75-80° to C.A.
249.1	249.3	Partly silicified, pale greenish grey, sericitic Sudbury Breccia vein with flow lines, cut by quartz-dolomite veinlet
249.3	249.7	Two milky (grey) quartz - chlorite 1/2 hematitic dolomite veins, 5cm and 2-3cm wide @ 75-80° and @ ~35° to C.A.
249.7	272	Pale pinks to pinkish greys; variable; few ^{cherty, light} grey and tan, massive to laminated fragments present to about 258.5'; brecciation by some flood quartz but usually accompanied by, or brecciated only by 2-10% dolomite-chlorite 1/2 quartz veinlets (irregular & ragged small gashes & patches); also some uniform quartz-dolomite-chlorite veinlets

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	up to 5 mm wide @ 60-70° to C.A.; hematitic alteration in some dolomite and as scattered veinlets and ^{small} patchy areas scattered areas with dolomite flecks and small blotches; Traces of Pyrite visible
	255.5-256' - six, wuggy, quartz - hematitic dolomite veinlets, 1-5 mm wide @ 60-70° to C.A.
	258.5-260' - ten (?) milky to grey quartz - hematitic dolomite veinlets and gaskes 1-5 mm wide @ 60-80° to C.A. (one with chlorite)
	263' - 6 cm wide milky to grey quartz - chlorite vein @ 60° to C.A.
	265-271' - chloritic (1/2-calcite) slips @ 45-50°, 30-35° to C.A.
	2-1 / foot; 271' - slips @ 15° to C.A.
	271.6' - Fault - mud seam @ 40° to C.A.
	271.6-272' - possibly some Sudbury Breccia veining in this area
	272' to contact with laminated waste in broken core - possibly @ 60° to C.A. parallel to mud seam above

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272	419	<p> GOWGANDA FORMATION - LAMINATED WACKES (Y-PEBBLES) ^{1/2" within box} Y-SUDBURY-TYPE BRECCIA Non-magnetic; soft, sericitic-chloritic, thin to thickly laminated with pale to light greenish to light grey and dark greenish grey laminations; rocks very fine to fine grained; bedding @ 30-60° to C.A. (some deformed) occasional disseminated Pyrite grains & clusters & splash; a few pinkish to white quartz-carbonate & chlorite & Pyrite veinlets/gashes (cross-cut bedding); < 1% small dropletstones from ~392' ~10% Sudbury Breccia veining (non-magnetic) to ~395'; flow lines present in matrix; occasional Pyrite present; one breccia vein with a rectangular quartz-carbonate clast?? replaced by Pyrite near 351'; breccia matrix is very fine grained, soft, sericitic-chloritic, medium to light greenish greys with rounded to elongate to ragged laminated wackeblocks Three Sudbury Breccia veins, 0.3-0.7' wide; with sub-parallel and opposing contacts @ 30-40° to C.A. oriented both parallel to and cross-cutting the bedding in the wacke which varies from about 50° to 25° to C.A. Several slips parallel to bedding @ 50° near 272; 272.5-272.8' - Sudbury Breccia vein, contacts sub-parallel @ 45° and 35° 272.8-273.8' - laminated wacke with bedding @ 20-10° to C.A. opposed to contacts with enclosing Sudbury Breccia; some shears @ 35° and 25° to C.A. cross-cut and disrupt bedding </p>
272.5	277 1/2	

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		2738-2744' - Sudbury Breccia vein with parallel contacts @ 35° to 25° (slip) to C.A.; down-hole contact parallel to bedding below
		2744'-2764' - laminated wackes with bedding @ 25° to 15° to 40° to C.A. cross-cut by seven fractures +/- carbonate @ 55° to 60° to C.A.; bedding cross-cut by Sudbury Breccia contact @ ~35° to C.A. at 2764'
		2764'-2777' - Sudbury Breccia; contacts opposed; down-hole contact @ ~35° to C.A. parallel to bedding below;
277	278.7	Laminated wackes, bedding @ 35° to 15° to C.A. and also partly deformed near lower contact with ^{cross-cutting} Sudbury Breccia veinlet, ± 1 cm wide @ 35° to C.A. (breccia veinlet is parallel to bedding below); several small cross-cutting shears @ 25-45° to C.A. also offset and disrupt bedding in this section; two quartz-carbonate veinlets, < 1 mm wide, sub-parallel to bedding occur near 277'
2782	299.1	Laminated wackes; bedding @ 35° increasing to ^{mainly} 55-60° by ~300'; in first two feet, some bedding offset along fractures @ 10-30° to C.A.; some scattered pinkish to grey quartz +/- carbonate veinlets < 1 mm wide, @ 50-55° to C.A. (cross-cut bedding) and one grey quartz cuts a sub-parallel shear @ 25° to C.A. which also cross-cuts bedding near 294.5'

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		299.1' - bedding cross-cut by contact with Sudbury Breccia vein @ 45-50° to C.A.
299.1	300.7	Sudbury Breccia - outer contacts apposed; down-hole contact @ 60° to C.A. truncates bedding @ ~ 5° to C.A.
300.7	303.7	Laminated wacke, bedding @ 5° to 15° to C.A.; contact with Sudbury Breccia parallel to bedding @ 45° to C.A.
303.7	305.9	Sudbury Breccia; contacts sub-parallel; down-hole contact @ 40° to C.A. (sub-parallel to bedding below)
305.9	311.	Laminated wackes; bedding @ 50-60° to C.A.
		307-309' - Several 1-3 mm wide quartz-carbonate-chlorite veinlets and gashes @ ~ 35° (+/-) to C.A. (cross-cut bedding)
311	311.7	Sudbury Breccia, contacts are sub-parallel @ 35° ± 60° to C.A. and truncate bedding
311.7	348.6	Laminated wackes; bedding @ 45-55° to C.A.; some scattered quartz-carbonate veinlets 1 mm wide @ 35-50° to C.A. (cross-cut bedding)
		322.2' - 3 cm Sudbury Breccia vein @ 35° to C.A. (cross-cuts bedding) with sericitic slip contacts
		322.4' (+) - 323.2' - chloritic fracture with carbonate and some scaly pyrite @ 0° to

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HOLE No. ML 94-01

Feet		DESCRIPTION
FROM	TO	
	ctd.	10° to C.A.
		323.7 - 328' - fractures +/- carbonate +/- Pyrite grains @ 50-60° to C.A. (parallel and cross-cut bedding), 3-7/foot
		329.7' - Chloritic fracture +/- carbonate +/- Pyrite scales @ 15° to C.A., sub-parallel to bedding @ 55° to C.A.
		334.7' - carbonate + Pyrite grains/scales on fracture @ 15° to C.A. (sub-parallel to bedding @ 55° to C.A. and cross-cuts quartz-carbonate veinlet +/- vein wide @ 50° to C.A.)
		337 - 339.5' - Sudbury Breccia; outer contacts @ 35° to C.A., sub-parallel to bedding; some locally disseminated, anhedral - subhedral dolomite (?) grains; Splashed and disseminated grains of Chalcopyrite on fracture @ 60° to C.A.
348.6	361	Sudbury Breccia zone with altered, laminated Wacke fragments; Breccia matrix is mainly dark greenish grey, chloritized, soft, very fine grained exhibiting flow lines but parts more massive; laminated wacke inclusions appear bleached, light greys with dark green chloritized laminations; the grey laminations are generally soft to moderately soft but some fragments or portions of fragments, are hard, silicified, possibly albitized; fragments

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Feet		DESCRIPTION
FROM	TO	
	ctd.	vary in size from < 5mm to 2.5', are rounded to ragged; some of the laminated fragments are kinked and deformed and some fragments have low angle chlorite fracture fillings/veinlets which cross-cut and offset the laminations; fragments have been rotated; breccia matrix contains patchy areas with small flecks of disseminated dolomite(?) (up to 2% locally), minor amounts of disseminated Pyrite
		348.6' - vague contact
		351.4' - Rectangular patch (porphyroblast?) 1 x 2.5 cm in size with 80% (+) Pyrite replacing a grey-white quartz-carbonate (calcite) matrix; some Pyrite is subhedral in patch (which occurs in breccia matrix)
		351.7 - 353' ± Kinked and deformed laminated matrix ^{veinlets} cut by chlorite + carbonate
		veinlet 1-2 mm wide which branches in an angular fashion, veinlets contain some Pyrite (minor Chalcopyrite) and several ^{pyrite} blebs + one cubic (3mm) porphyroblast?
		with quartz-carbonate (similar to 351.4') occur near the chloritic veinlet
		361' - contact @ 45° to C.A., sub-parallel to bedding @ 65° to C.A.
361	386.8	Thinly laminated to very thinly bedded, medium to darker grey - greenish grey(s); bedding @ 65-55° to C.A. (sometimes kinked), occasional dropstone < 1cm to 3cm in size (tops up-hole)

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Feet		DESCRIPTION
FROM	TO	
		361.9' - bleb of Pyrite + Chalcopyrite
		362.5' - somewhat ragged, pinkish to greyish quartz-dolomite - chlorite veinlet @ 15° to C.A. (cross-cuts bedding) \approx 1 cm wide
		385.3-386.9' - kinked; somewhat brecciated due to low angle ^{to horizon} chloritic fracture fillings and shears; bedding also flattens to about 10° to C.A. near contact with Sudbury Breccia below
386.9	388.7	Sudbury Breccia - outer contacts parallel @ 30-35° to C.A.; soft, light to medium grey - greenish greys $\frac{1}{2}$ -beige matrix with flowlines; deformed, thinly laminated wacke fragments, some bleaching and possibly weak albite alteration; some fragments cut by weakly brecciated by chlorite veinlets and small patches (+/- disseminated Pyrite)
		388.7' - contact sub-parallel to laminations below
388.7	393.5	Thinly laminated wackes; light to medium greenish greys, partly bleached(?) with bedding @ 65-45° to C.A. (sometimes kinked); occasional dropstone
		389-390.5' - gashes and veinlets (<1-2 mm wide) of quartz-carbonate-chlorite @ 30-35°, 45-50°, 65-75° to C.A., irregular to more uniform and sub-parallel; cross-cut bedding; minor disseminated Pyrite +/- Chalcopyrite in a few, 2-10/foot; wackes may be bleached here

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Feet		DESCRIPTION
FROM	TO	
		392.2 - 393' - chlorite-carbonate veinlet (1/2" nearby blotchy disseminated Pyrite) @ 0-5° to C.A.; ≤ 1mm wide
		393.5' - contact with Sudbury Breccia irregular @ ~55° to C.A.
393.5	394.4	Sudbury Breccia - light greys to somewhat beige, moderately soft matrix with flow lines; rounded to ragged clasts of laminated ^{soft} wackes, wackes and possibly oncoas, rounded clast of dark green metabasaltic(?) rocks; minor disseminated Pyrite; outer contacts of breccia are sub-parallel
		394.4' contact @ 60-65° to C.A.
394.4	419	Thinly laminated, medium to light greenish greys; soft; bedding @ 45-65° to C.A. mainly, and is sometimes vague and occasionally kinked; 1-2% dropstones < 5mm - 2cm in size, composed of pink to grey granitic, and green to grey meta-sedimentary ^{metavolcanic} rocks, some contain disseminated Pyrite; occasional ^{grey-white} quartz-carbonate-chlorite veinlet;
		400' (1/2) - 0.2' wide Sudbury Breccia vein(s) @ ~60° to C.A.
		419' - approximate contact

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Feet FROM	TO	DESCRIPTION
419	1530	<p>GOWGANDA FORMATION - MASSIVE PEBBLY WACKE (WEAKLY MINERALIZED WITH PYRRHOTITE/CHALCOPYRITE/PYRITE) WITH VERY OCCASIONAL LOCAL LAMINATIONS, + FRACTURE ZONES</p> <p>Wacke is non-magnetic (except for Pyrrhotite); medium greenish-grey, moderately soft to hard, fine grained, sericitic(?) matrix containing <math>\le 2\%</math> quartz & feldspar grains $\le 1\text{mm}(\frac{1}{4})$ in size, and $\le 1-5\%$ (average 2-3%) rounded to angular, granules and pebbles ($\le 2\text{mm}-0.4'$, average 1-2cm) of pink to grey granitic, greens to greys) metabasalts - dioritic, greys to greys to pink meta sedimentary quartzites to wackes - mudstones) and meta volcanic rocks, and occasional gneissic and schistose pebbles, some epidotized, or carbonatized, or cut by carbonate - quartz veinlets / fracture fillings; scattered throughout Pyrite & / or Pyrrhotite & / or Chalcopyrite partly (sometimes totally) replace some (not all) pebbles and granules as disseminations (internally & on margins), as internal veinlets / fracture fillings, as tiny rags, and as narrow, partial to complete rims about the clasts; disseminations of sulfides ($\le 0.5-5\text{mm}$) in the wacke matrix may represent completely replaced clasts (some are angular); Pyrrhotite first observed near 467'. Trace to very locally $\frac{1}{2}\%$ replacement sulfides average $\sim \frac{1}{8}\%$ in unit, also scattered throughout are pink (hematitic) to grey-white quartz carbonate veinlets / gashes, mainly $\le 1\text{mm}$ wide (but up to 1 cm) @ $10-80^\circ$ (often 45-60) to C.A. and varying from $\le 1-3'$ to more locally 2-6 / foot, the veinlets / gashes sometimes have chlorite on margins and / or internally, and some have a light greenish to greenish grey, bleached, soft sericitic alteration halos (which also occur about some of the pebbles); while the quartz - carbonate veinlets are often barren of sulfides, ^{generally} minor amounts of Pyrite /</p>

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Feet		DESCRIPTION
FROM	TO	
	cfd.	Chalcopyrite +/- Pyrrhotite ^{occurs} also very occasionally reddish Sphalerite (between 638 and 1410') or Galena (between 926 and 1225') occur within a few carbonate or quartz-carbonate fracture fillings or veinlets; also fractures (+/- slips) or fracture fillings +/- chlorite +/- carbonate or quartz-carbonate films (@ 5-80' to C.A.) fairly frequently contain ^{minor} scaley +/- or disseminated Pyrite +/- Chalcopyrite & sometimes Pyrrhotite; the quartz-carbonate (chlorite) veinlets containing Pyrrhotite +/- Chalcopyrite are more prevalent below ~ 1424'; several fracture zones and narrow mud seams present; several narrow beds of wacke and laminated wacke occur; Occasional Sudbury Breccia vein to about 682'
428.7		Sheared @ 65-70' to C.A.
430	435	Sericitic (+/- carbonate) fractures/slips @ 15-30', 45-50' to C.A.; 3-5/foot
440	441	Sericitic (+/- carbonate) fractures/slips @ 15-35' to C.A.; 5/foot
444	444.3	4 pink, hematitic, dolomitic-quartz veinlets and gashes +/- chlorite @ 60', 45' to C.A.; veinlets up to 5mm wide; minor Pyrite in vicinity & some Chalcopyrite & Pyrite in veinlets
449	450.7	Earthy, red hematite on fractures @ 60-75' to C.A. & on carbonate-chlorite slip @ 15' to C.A.

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HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
457.2		< 5 mm wide, quartz - pinkish carbonate veinlet @ 60° to C.A. with narrow bleached halo; minor disseminated Pyrite locally in host rock
453		1 cm wide Sudbury Breccia veinlet @ 35° to C.A., pale greenish, flow lines sericitic
457.5	458	Sudbury Breccia vein @ 35 to 25° to C.A., pale to medium greenish, flow lines
459.3	460.5	Sericitic-chloritic slip @ 5-10° to C.A. with sericitic shear parallel to slip
461	462.8	Sudbury Breccia veinlet @ 5-10° to C.A., pale greenish, flow lines
480.2	481.5	Sericitic slips (1/2 Pyrite scales + carbonate) @ 0°, 20-30° to C.A.
489	490	Hematitic, sericitic slips @ 10° and 35° to C.A.
498	499.5	Fractures (1/2 carbonate) @ 50-60° to C.A., 4-6/foot ^{1/2 Chalcopyrite}
528.5	585'	Pink to grey-white quartz - carbonate veinlets (1/2 Pyrite) and fracture fillings
		1 mm (1/2) wide @ 60-70°, 35-45° to C.A.; average ~ 1/foot
		534.7 - 538' - dull red hematitic stain in veinlets and fractures @ 65-80°, 40-50° to C.A., 4-10/foot
		539.4 - 542.3' - Pink (hematitic) to grey-white quartz - carbonate veinlets/gashes @ 0°, 60-65° to C.A., some with Pyrite grains; ~ 2/foot
		578 - 579.3' - chloritic - sericitic slip @ 0-5° to C.A. (1/2 carbonate + Pyrite)
587.5		Minor Pyrite in 1 cm wide quartz - sericitic (epidote?) - hematite - carbonate veinlet @ 25° to C.A.

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HOLE NO. ML 74-01

Feet	#	DESCRIPTION
FROM	TO	
598.4		1 cm wide partly brecciated/sheared zone @ 20° to C.A. bordered by pinkish to white quartz-carbonate-chlorite (hematitic) veinlets and a slip; minor Pyrite
599	600	Ten fractures (1/2 carbonate v. Pyrite) @ 60-65° to C.A.
627.1		1 cm wide, milky, to grey quartz-carbonate-chlorite veinlet @ 30° to C.A. with slip contacts (1/2 Pyrite) and narrow ^($< 5 \text{ mm}$) bleached margins in wall rocks
632.2	641	FAULT / FRACTURE ZONE - Fractured, broken core; fractures 1/2 slips @ 60-70°, 30-45° to C.A. Some with carbonate (1/2 minor Pyrite), some with chloritic slips, a few are vuggy; Sphalerite + carbonate on 70° ^{open} fracture @ ~638'
		632.2' - slips @ 40-45° to C.A.
		632.2'(4) - mud seams in broken core
641	646.5	Several pinkish quartz-carbonate veinlets (1/2 chlorite 1/2 Pyrite 1/2 Chalcopyrite) @ 60-65° 35° to C.A.; Fractures 2-3/foot Carbonate fracture @ 60° to C.A. with Galena (?) scales
641.5		Reddish, hematitic irregular, arkosic sandstone (1/2-2cm) @ ~40° to C.A. invaded by a parallel pink carbonate quartz (1/2 chlorite) veinlet
655.2		
655.2	657 (1)	Patchy, pervasive epidotization, minor disseminated Pyrite
		655.3-655.7 - coarse grained, pebbly sandstone bed (epidotized matrix) contacts @ 40 ± 75° to C.A.
		656-657 - top, pinkish, hematitic, ^{irregular} quartz-carbonate veinlets + gouges @ 0-70° to C.A. ($< 1-5 \text{ mm wide}$)

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HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
657.3		0.5-1 cm wide, milky-grey quartz-carbonate veinlet @ 35° to C.A., with chloritic slip margins (4 minor Pyrite)
659.8	660.8	Several pink quartz-carbonate gashes and veinlets @ 5-15° and 65° to C.A.; veinlets and gashes < 1-5 mm wide; minor Pyrite &/or Chalcopyrite grains
681.3	681.6	Dark to light greenish-grey, soft, Sudbury Breccia vein @ ~65° ± 80° to C.A.; flow lines and some dolomite(?) flecks; vein cut by a fine quartz-carbonate veinlet @ ~80° to C.A.
700	718	Scattered (occasionally locally 3-5/foot) pinkish (hematitic) to grey-white quartz-carbonate veinlets, < 1-5 mm wide, @ 10-15°, 20-35°, 55-75° to C.A., some gashes also; veinlets usually accompanied by scaly or disseminated Pyrite grains, sometimes with minor Pyrrhotite &/or Chalkopyrite; one low-angle veinlet has a weakly bleached alteration halo < 4 mm wide with darker margins near 701'.
720	734	Eleven, grey (1/2-reddish) quartz &/or carbonate veinlets and fracture fillings (1/2 scaly Pyrite) @ 10-20° to C.A. (with alteration haloes), and an equal number with scaly Pyrite (but no haloes) @ mainly 60-75° to C.A., which often cut the low-angle veinlets
742		1.5 cm wide, milky to grey quartz-pink carbonate-sericite-chlorite-epidote(?) veinlet with minor Pyrite @ 20° to C.A., plus scaly Pyrite on up-hole fracture contact
742.5		Branching epidote(?) - quartz veinlet ≤ 5 mm wide ± 1-2 mm wide @ 20° to C.A. (parallel

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HOLE NO. ML 94-01

Feet FROM	TO	DESCRIPTION
		to veinlet at 742' with minor Pyrrhotite - Chalcopyrite
744	746	Fracture zone; fractures (± carbonate-scales Pyrite) @ 50-65°, 30°, 15° to C.A.; 5-8'/foot
750.5	751.9	Pebbly matrix - paracrystalline with up to 10% pebbles and gravels in a medium to coarser grained matrix; greenish grey
		750.5-750.6' - thin bedding (fine and medium grained) @ 35° to C.A.
		750.6-751.2' - irregular, low-angle contact of fine grained matrix with the coarser grained matrix of fine grained matrix ^{pyrrhotite} into the coarser matrix (soft sediment mixing?)
		751.9-752' - some bedding @ 55-60° to C.A. (opposed to that at 750.5')
775.6		Pyrrhotite and Chalcopyrite on fracture with quartz-carbonate
792.5	796.2	Carbonate-chlorite fractures @ 35°, 60° to C.A.; 2-4'/foot
823	841	Several, low-angle (0-15° to C.A.) sub-parallel to parallel ^{mainly 1-2 mm wide} greyish carbonate-chlorite-quartz veinlets/fracture fillings plus scaley Pyrite on fracture contacts and some with minor Pyrite (disseminated), 2-3' long; with bleached (paler greenish to tan) alteration haloes & apophyses ≤ 1.5 cm wide; with darker tan margins; occasionally 2 parallel veinlets are present within the haloes and minor ladder-like quartz-carbonate veinlets (2 mm) are enclosed by the parallel veinlets; also present are some, 1-3 mm

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HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
	ctd.	wide quartz-carbonate (1/2 minor disseminated Pyrite) veinlets / tension gashes @ 30-15° to C.A. (<1 to occasionally locally 3-6/foot) sometimes truncated by the low-angle veinlets/fracture fillings and occasionally offset by the low-angle fractures; overall ≈ 1/2% Pyrite and ~3% veinlets/gashes in section; waxes are soft - moderately soft
843.3		2 mm wide chlorite mud seam (fault gouge) with minor quartz-carbonate on up-hole contact and slip on down hole contact, @ 35° to C.A.
843.3	844.5 1/2	Altered, cordoned, siliceous, soft, laminated waxes, dark grey (chloritic) and tan-grey (sericitic, some chloritization?); small pebble near up-hole contact
844.5	845.2	Massive waxe with several dark, small possible Sudbury Breccia veinlets and one small pale greenish sericitic shear @ 75° to C.A.
848	858	Some bleached alteration haloes, 2 cm to 2 mm wide, @ 5-15° to C.A., light greenish grey with darker margins, some with quartz-carbonate-chlorite (1/2 Pyrite) veinlet/gash in cores; some quartz-carbonate veinlets <1-2 mm wide @ 50-60° to C.A. intersect with low-angle veinlets in alteration haloes; host pebbly waxes soft
860.3	861.5	Scaley Pyrite on carbonate-chlorite slip @ 5-10° to C.A.

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HOLE NO. ML9A-01

Feet	FROM	TO	DESCRIPTION
883.6	884.4		Chlorite-carbonate slip @ 20° to C.A. at 883.6' followed by brecciated zone in hand, lighter greenish grey wacke with 15-20% darker, irregular angular silicate veinlets < 0.5-5mm wide. Bleached, light greenish grey alteration halo @ sub-parallel to C.A. with scaley Pyrite on chlorite-carbonate fracture/slip in core of halo.
910.7	914.2		Grey, carbonate-quartz fracture filling @ 75° to C.A. with disseminated Pyrite & Chalcopyrite(?) intersects with a sub-parallel chloritic fracture @ ~60° to C.A. with a Pyrite spot enclosed by Galena, then dark reddish Sphalerite and some Pyrrhotite; several other carbonate-quartz (± Pyrrhotite) gashes/veinlets (< 1-2mm wide) @ 60-65° to C.A. in vicinity.
931.5			Sheared quartz-carbonate-chlorite veinlets < 1-2mm wide @ 20° to C.A. with Pyrite, Pyrrhotite & Chalcopyrite; 2-3mm wide bleaching (with disseminated Pb, Cu) along up-hk contact.
932	934.4		Two pinkish to greyish quartz-carbonate veinlets (≅ 1-2mm wide) @ 0-5° to C.A. with some Pyrrhotite & Chalcopyrite, intersected by several quartz-carbonate veinlets/gashes ≅ 0.5mm wide @ 45-50°, 60°, 70-75° to C.A. ± Pyrrhotite ± Pyrite.
941.2	942.3		Soft, thinly laminated, greenish greys (tan near down-hk contact) sericitic-chloritic wackes (± pebbles) bedding @ 70-75° to C.A.; some small (< 1mm) carbonate gashes (± Py, ± Pb) mainly parallel to bedding.
942.3	947.5		Greyish carbonate-quartz veinlets/gashes/fracture fillings (< 0.5-2mm wide, 3-4/foot) @ 40-50°, 60-65° ± 70° to C.A. (sub-parallel to cross-cutting), with disseminated Pb &/or Py &/or Cp.
955.5	958.5		Three, regular to irregular, heikline to 3mm wide, pinkish carbonate-quartz (± Pyrrhotite) veinlets @ sub-parallel to C.A. with branches (gashes) @ 10-20° to C.A.; intersect with several, 0.5-2mm wide pink to grey quartz-carbonate (± Py, ± Cp) veinlets @ 60°, 70-75° to C.A. and fine fractures with carbonate (± scaley Pyrite) @ 0-10° to C.A.
961.3			Greyish quartz-carbonate veinlet (with branching gashes) ≅ 3mm wide @ 60-65° to C.A. with disseminated Pyrite, Chalcopyrite, Pyrrhotite and a few Galena grains.

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HOLE No. ML 94-01

Feet		DESCRIPTION
FROM	TO	
975.5	991	Carbonate-quartz veinlets (some pinkish; +/- Pyrrhotite - Chalcopyrite or disseminated Pyrite) 1-2 mm wide @ 60-70° to C.A., and fractures with carbonate +/- chlorite +/- scaly Pyrite @ 25-30°, 50-60° and 10-15° to C.A.; 2-3 / foot
994		~ 985' - Fracture @ 15° to C.A. with carbonate and possibly some Galena. 1-2 cm wide, sheared and/or banded quartz-carbonate-chlorite veinlet. @ 20° to C.A., with fine disseminated Pyrite and parallel discontinuous veinlet or lenses of Pyrite. ~ 2 mm wide; about 2-3% Pyrite in veinlet; below 994' some scattered veinlets, gashes & fracture fillings similar to 975-991 interval
1003.7		Pink quartz-carbonate veinlet, 3 mm wide @ 55° to C.A. with disseminated Pyrite & some tiny Galena (?) grains; scaly Pyrite on intersecting fracture @ 30° to C.A. near veinlet
1023.7		3-4 cm thick zone of light greenish, sericitic, thinly laminated, very fine grained wackes with undulating bedding, some broken laminations and a down-hole set of cross-beds overlying a coarse grained lense of sandstone 0.1-1 cm thick; the laminated wackes drape over some granules not the up-hole contact of the sandstone lense indicating tops are up-hole; up-hole ^{with} contact of laminated wackes @ ~ 75° to C.A. and the down-hole contact of the sandstone is @ ~ 60-65° to C.A.; several greyish quartz-carbonate (+/- Pyrrhotite +/- Chalcopyrite) veinlets, < 1-2 mm in width,

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HOLE No. ML 94-01

Feet		DESCRIPTION
FROM	TO	
	cld.	invade the laminated rocks along bedding, and a little disseminated Pyrrhotite occurs in the sandstone. lens
1026.5	41.	2-7 mm wide greyish quartz-carbonate veinlet with disseminated and veins of Pyrrhotite +/- Chalcopyrite, of 1/4 in. along margins of veinlet which is @ ~15° to C.A.
1038.2	1045.8	Five carbonate (1/4-chlorite +/- Pyrite +/- Pyrrhotite) fractures @ sub-parallel to C.A.; intersect with several quartz-carbonate fracture fillings with disseminated Pyrrhotite +/- Pyrite +/- Chalcopyrite @ 35° and 70° to C.A.
1063 1/2		Local bedding @ 50° to C.A.
1062.5	1072.5	Six fractures @ 15°, 0-5° to C.A. with carbonate +/- chlorite +/- scaly Pyrite and several 1-2 mm wide grey white quartz-carbonate veinlets @ 60-65° to C.A. (1/4 Pyrite)
		1065.4 - 1067' - 5-7% branching to ^{sub-parallel to} cross-cutting, irregular to more uniform, 1-15 mm wide carbonate-quartz veinlets/gashes @ 25° to 0° to C.A. with light greenish, soft, sericitic alteration haloes; Carbonate is pink to reddish (hematite) to white and quartz is milky to grey; veinlets contain small patches/blobs, disseminated Pyrite (~2% Pyrite in zone)
		1069.4 - 1071' - some weak bedding @ ~55° to C.A.

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HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
1075.5	1075.8	Five ground bed @ 50° to C.A.
1077	1081.5	About 15' carbonate +/- quartz +/- Pyrite +/- Chalcopyrite fractures and veinlets @ 25-35°, 50°, 0-15° to C.A.; minor sulphides; 1077.5-1078.5' - Chloritic slip with scaly Pyrite and carbonate @ 0-15° to C.A.
		1080' - 3-4 mm wide, quartz-carbonate-chlorite (+/- Pyrite) veinlet @ 25° to C.A.
1103		Quartz-carbonate-Pyrite Veinlet(s) up to 5 mm wide @ 25° to C.A. with sericite light greenish grey alteration halo with apophyses; broken core several thin beds @ 65-70° to C.A.
1116.5	1116.8	2 mm wide quartz-pink carbonate (+ Pyrite) veinlet @ 25° to C.A.
1126		2 mm wide quartz-carbonate (+/- Pyrite) veinlet @ 50° to C.A.
1143.4		Several chloritic slips with carbonate 1/2 Pyrite +/- Pyrrhotite (?)
1157.8	1158.4	Chlorite fracture @ 50-10° to C.A. with carbonate and scaly Pyrite, plus a parallel quartz-carbonate veinlet, 1 mm wide, with disseminated and small rags of Pyrrhotite enclosed in a light greenish grey alteration halo ~ 5 mm wide; a small granule with similar alteration halo occurs nearby
1163.6	1164.5	
1170.8		1 cm wide, sheared quartz-carbonate-chlorite veinlet with a little

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HOLE No. ML 94-01

Feet		DESCRIPTION
FROM	TO	
	cfd.	disseminated Pyrrhotite and a Blebs of Pyrite; internal slip parallel to contacts @ 25° to C.A.
1171.1	1171.8	Some pebbles and granules with light greenish grey soft alteration haloes (but all have this feature similar to alteration haloes near 1163.5' and those below)
1173.5	1175.5	7-14 carbonate-quartz (1/2 chlorite + Pyrite to Pyrrhotite) fracture fillings (veinlets), intersecting @ 10-15° to C.A., with 0.2-2cm wide, light greenish grey alteration haloes (trapphyses) about some of the structures and about some pebbles
1180		Pink quartz-carbonate veinlets (some) to C.A. with disseminated Pyrite
1181.4	1182.13	Pinkish quartz-carbonate veinlet, 1-3 mm wide @ 10° to C.A. with some disseminated Pyrrhotite and Chalcopyrite(?)
1183.7	1183.9	Strongly altered; soft, medium grey, with ^{some} quartz-carbonate veinlets and galshes <0.5-2 mm wide @ 5-75° to C.A.; contacts @ ~75-80° to C.A.;
		light greenish grey alteration for 1 cm along up-hole contact
1183.9	1186	60-70% light greenish grey, soft sericitic alteration as a more massive area, and as haloes (with apophyses) about some chlorite-carbonate-Pyrite fractures/fracture fillings @ 0-26° to C.A.; near 1184' irregular chloritic veinlets and "crackles" fractures
		(1/2-carbonate) contain a little disseminated Pyrite; and some patchy areas with small

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HOLE NO. ML94-01

Feet		DESCRIPTION
FROM	TO	
	ctd.	carbonate "crackles" fracture fillings occur in medium greenish grey soft host masses between 1184.2 - 1184.6'
1186		Two chlorite +/- carbonate slips @ ~80-85° to C.A.
1186		Light greenish grey, ragged to wispy sericitic shears (5-10%) @ 85° to 35° to C.A. in the probably crack.
1187		Dark quartz-carbonate-chlorite +/- Pyrite veinlet < 0.5-2 mm wide @ 0-5° to C.A. with light greenish grey alteration halo 2-3 cm wide
1188.3		Ragged, patchy, light greenish grey alteration bands/shears @ 65-75° to C.A.; chlorite-carbonate-pyrite veinlet @ 75° to C.A. near 1188.5'; possible Chalcopyrite in several (< 1 mm wide) quartz-carbonate gashes near 1188.6'
1189.3		Several carbonate-chlorite-scaly Pyrite fractures @ ~15° to C.A. with light greenish grey alteration haloes, partly offset along some quartz- carbonate +/- Pyrite veinlets/fracture fillings @ ~55° and 35° to C.A.
1192.3		White-grey carbonate-quartz +/- Pyrite fracture fillings @ 50-65°, 80° to C.A.; 3-6/ foot; 1192.7' - pink to greyish quartz-carbonate-pyrite veinlet 3-5 mm wide @ 50-55° to C.A.
1194.6		Irregular pink quartz-carbonate gash intersects with ^{grey} quartz-carbonate-chlorite +/- Pyrite fracture filling @ 5° to C.A.

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Feet FROM	TO	DESCRIPTION
1202.3	1207.9	About 10, grey ^{en-echelon} quartz-carbonate-chlorite - Pyrite or - Pyrrhotite veinlets @ ~10° to C.A. Some with intersecting tension veinlets @ 35-40°, 60° to C.A.; veinlets < 1-2 mm wide mainly; 1206.7 - two chlorite-carbonate-scaly Pyrite fracture fillings @ 75° to C.A. cut en-echelon veinlets @ 10° to C.A.
1209.4	1209.9	Two pink ^{transverse} quartz-carbonate-chlorite veinlets, 2 mm wide @ 60°, 45° to C.A. with a little disseminated Pyrite ^(up-hole) or Pyrrhotite (down-hole veinlet)
1213	1213.2	Three chlorite-carbonate-scaly Pyrite fracture fillings @ 70° to C.A. The down-hole fracture intersects with a quartz-carbonate-chlorite veinlet 1 mm wide @ 30° to C.A. containing some Pyrrhotite and Pyrite
1223.5	1225.5	About 10, en-echelon to branching, brownish fracture fillings/veinlets @ ~10° (?) to C.A. some with Pyrrhotite, carbonate and one with possible Galena specks
1225.5	1255.9	Some scattered carbonate + quartz + chlorite fracture fillings/veinlets @ mainly 60-70° to C.A., some with Pyrrhotite +/- Chalcopyrite and Pyrite +/- Pyrrhotite
1256		0.5 - 1 cm wide, banded, milky to grey quartz-carbonate - Pyrite veinlet @ 60° to C.A. with an apophysis @ 60° to C.A. (up-hole), weakly hematitic

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Feet	DESCRIPTION	
FROM	TO	
1257.5	1258.2	Two quartz-carbonate-chlorite veinlets ^{parallel} @ 30° and 20° to C.A., 2 and 5 mm thick; the up-hole veinlet contains a little pyrite and the down-hole (thicker) veinlet appears sheared and contains a little Pyrrhotite; a light greenish grey alteration (soft, sericitic) halo surrounds each veinlet, the up-hole halo is 2 cm thick and the down-hole halo is 5 cm thick; in the vicinity some pebbles are also surrounded by a similar halo both those with Pyrrhotite replacement and those pebbles without Pyrrhotite; a few brownish carbonate-chlorite fracture fillings @ 10°, 25° to C.A. are opposed and partly cross-cut the alteration halo on the upper veinlet, and one is parallel to the up-hole veinlet.
1260.5	1261.5	2-3 mm thick quartz-carbonate-chlorite veinlet @ 10° to C.A., slip contact with scaly pyrite; 2 cm thick light greenish grey alteration halo.
1270.6	1271.8	Chlorite-quartz-carbonate veinlet / fracture filling (with some Pyrrhotite + Chalcopyrite @ 5-10° to C.A., intersected by (and minor offset by) a carbonate fracture filling with minor Pyrrhotite @ 50° to C.A.
1291.	1291.3	Several pinkish quartz-carbonate gashes / veinlets @ 25-35° to C.A. with minor Pyrite and Pyrrhotite (?)

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Feet		DESCRIPTION
FROM	TO	
1292.7		Carbonate-chlorite fracture @ 25° to C.A. with scaly Pyrite; broken core
1295.4		1-2 mm wide pinkish quartz-carbonate veinlet with a little Pyrite, @ 60° to C.A.
1298.1		Slip along chlorite-carbonate-quartz-Pyrite veinlet @ 60° to C.A.
1300		Pyrrhotite and Chalcopyrite in 0.5 mm wide quartz-carbonate veinlet @ 60° to C.A.
1300.8		3 mm wide slightly pinkish carbonate-grey quartz veinlet with minor Pyrite @ 25° to C.A. veinlet contains a few angular wall rock fragments and
		braches into several fine sub-parallel veinlets; quartz appears to be precipitated?
		carbonate in places
1301.1	1306.7	Carbonate-chlorite fractures +/- slips @ 60° to C.A., some with Pyrite
		2-3/foot
1309		Carbonate-chlorite fracture/slip with scaly Pyrite @ 10° to C.A.
1313	1314	Quartz-carbonate chlorite veinlet 2 mm (+/-) wide @ 10° to C.A. with some
		scaly Pyrite, and 2 cm thick; light greenish grey alteration halo;
		some granules and pebbles (+/- Pyrrhotite) also have similar alteration
		haloes in vicinity of veinlet
1319.2	1526.6	Ten (+/-), 1-2 mm wide pinkish carbonate-quartz-chlorite veinlets @ 70-80°
		to C.A. with a little disseminated Pyrrhotite +/- Chalcopyrite +/- Pyrite;
		also several veinlet/slips with scaly Pyrite @ 45°, 25° to C.A.

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Feet FROM	TO	DESCRIPTION
1333.7	1334.5	Carbonate-Chlorite-sclerite Pyrite fracture filling @ ~5° to C.A. plus several other carbonate fracture fillings @ 45° and 20° to C.A.
1341.6	1342	Mafic metavolcanic clast with some disseminated and veinlets of Pyrite, veinlets with Pyrrhotite and disseminated Pyrrhotite and Chalcopyrite and a fracture with Pyrrhotite-Chalcopyrite; a low angle brownish (altered) carbonate fracture fillings cuts through the clast and surrounding pebbly waste
1343	1348	Fracture zone (+/- slips) ^{occ.} ; Fractures +/- carbonate +/- chlorite (occasional scaly Pyrite) @ 70-80°, 60-65°, 50-55° to C.A.; 5-8/foot
1349	1431.5	Pebbly wastes generally fractured (1-6/foot average 2-3/foot), often with chlorite-carbonate +/- scaly Pyrite (occasionally with Pyrrhotite) @ 70-75°, 60-65°, 50-55° and also 30-40° and occasionally 5-15° to C.A.; a few gray-white and pinkish quartz-carbonate veinlets @ 20-25°, 1-3 mm wide, occasionally with minor Pyrite or Pyrrhotite
		1366.3-1362.3' - reddish, Sphalerite(?) spotting with carbonate film on
		Six fractures @ 75-80° to C.A. (some with Chalcopyrite near 1362.8')
		1376' - possible Sphalerite? with carbonate film on fracture @ 50° to C.A.
		1393.4-1393.9' - pale greenish, epidotized clast (?) with irregular contacts which are light grey to pale reddish (hematized?) partly silicified

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Feet		DESCRIPTION
FROM	TO	
		and carbondized; some disseminated Pyrrhotite present; this fine to medium grained meta-sedimentary clast (?) or altered wacke (?) is cut by a pinkish, 1-2 mm wide, quartz-carbonate (?) veinlet @ 20° to C.A.
		1410' - fracture with carbonatic films and reddish Sphalerite (?) spotting,
		1423.8 - 1431.5' - ^{also present here} several 1-2 mm wide, grey-white quartz-carbonate (chloritic margins) veinlets with Pyrrhotite disseminations and narrow (1 mm) bleached lighter greenish grey halos @ 65-80° to C.A. these are similar to those found below 1431.5'
		1428.8 - 1429.2' - medium greenish grey epidotized, mafic clast cut by numerous, sub-parallel, gray white quartz-carbonate gashes/veinlets, 1-3 mm wide @ 15-45° to C.A. (some branchy)
1431.5	1524.4	Zone of grey-white, quartz-carbonate-chlorite-Pyrrhotite (1/2 Chalcopyrite + Pyrite) veinlets/fracture fillings, < 1-3 mm wide, mainly sub-parallel @ 65-80° to C.A. (occasionally 15-45°), 1-6/foot averaging < 2-3/foot; chlorite on margins or internal to veinlets; Pyrrhotite disseminated in veinlets or as small rags or as small veinlets sometimes oblique to veinlet walls and also as scales on veinlet margins; ^{most} veinlets have 1-3 mm wide, bleached, lighter greenish, sericitic(?) alteration halos; also, as usual, Pyrrhotite 1/2 Chalcopyrite partly replaces some pebbles and granules in the wacke < 1/2% sulfides in section

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FROM	TO	DESCRIPTION
		Some chlorite-carbonate scaly pyrite fractures/slips @ 35°-40°, 20-25° to C.A. scattered (< 1/5' to 2'/foot) - from about 1487'
1524	1530	Pebby washes with fewer grey-white to slightly pinkish quartz-carbonate veinlets/gashes (1/2- Pyrrhotite 1/2- Chalcopyrite 1/2- Pyrite) 1-3 mm wide @ 70°, 50-55°, 10-15° to C.A. (1-2/foot); also some pebbles partly replaced by disseminated and small blebs of Pyrrhotite 1/2- Chalcopyrite +/- sulphide minus; carbonate-chlorite fractures (1/2- Scaly Pyrite) @ 40-50° cut some veinlets and occasionally offset them; contact @ 1530' in broken core
		1525.1' - 1 cm wide slightly pinkish quartz-carbonate veinlet @ 70° to C.A. with small wall-rock inclusion and minor Pyrite blebs
		1525.15' - 1525.5' - quartz-carbonate veinlet, 2-4 mm wide @ 20° to C.A. (sub-parallel to veinlet at 1525.1') with angular wall rock fragments and a slip (with carbonate) parallel to veinlet, cut by chlorite-carbonate fracture @ 30° to C.A. with scaly pyrite
		1529.5' - 1-2 cm wide zone of quartz-carbonate 1/2-chlorite "cracks" fracture fillings/veinlets (1/2 Pyrite) bounded by 1 mm wide carbonate veinlets @ 70-75° to C.A. with disseminated or scaly pyrite and cut by a pyritic quartz-carbonate veinlet 1 mm wide @ 0-10° to C.A.

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Fret		DESCRIPTION
FROM	TO	
1530	1566 +/-	GOWANDA FORMATION - THIN-MEDIUM BEDDED LAMINATED WACKES +/- BLEACHING +/- QUARTZ-CARBONATE-CHLORITE VEINLETS
		Soft, non-magnetic, medium to darker greenish greys, very fine to fine grained, wackes, with bedding @ 70-80° to C.A.; a few scattered hard (siliceous?) epidotized beds 3-10 cm thick; ~10% short (< 5cm) sections (scattered to ~1554') of laminated interbeds often bleached (light grey stain to beige, soft, sericitic) and often invaded by grey-white (occasionally pinkish) carbonate-quartz-chlorite veinlets (< 1-3mm wide) parallel to bedding and accompanied by some Pyrrhotite &/or Pyrite (and occasionally a little Chalcopyrite) disseminations & small blebs; as well in the thin to medium (2-5cm) bedded sections some of the high angle veinlets branch or are cut by (and/or offset by) similar carbonate-quartz veinlets and gasles @ 15-30° to C.A.; veinlets occur at intervals of 2-60'/foot (with an average of ~ 3'/foot) down to about 1550' (A)
		Rocks fracture along (or parallel to) bedding; some chloritic fractures with carbonate +/- Scalesy Pyrite @ 10-25° to C.A. (7/8 slips); some broken fractured core locally; < 1/2% sulfides overall
		1546-1547.4' - Former zone of soft sediment deformation in laminated to thin bedded wackes, subsequently partly impregnated by a matrix of quartz-carbonate-chlorite

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Feet		DESCRIPTION
FROM	TO	
	ctd.	($\frac{1}{2}$ -Pyrrhotite $\frac{1}{2}$ -Chalcopyrite blebs, disseminations) and a few carbonate-quartz veinlets and chlorite-carbonate veinlets; zone is a "crackle" breccia in part; fragments are sub-rounded to angular, and lower parts of zone have numerous, small, angular, broken laminated wacke clasts set in a quartz-carbonate-chlorite matrix; Trace to 1% sulfides in section which has contacts parallel to bedding; just down-hole from section, a bleached bed(s) is broken up by ^{some} irregular, anastomosing, chlorite-carbonate veinlets @ 0° to 70-80° to C.A. over ~ 5 cm. length
		1553.9 - 1555.8' - massive wacke with a 3 mm wide quartz-carbonate-chlorite veinlet (minor Pyrite) @ 70° to C.A. (this would probably cross-cut a 1-3 cm wide zone of bleached bed(s) @ 75-80° to C.A., with branching ^{alteration} veinlets ($\frac{1}{2}$ -Pyrite) parallel to and cross-cutting bedding, up-hole @ 1553.8'); several chloritic fracture/slips with carbonatic and some scaly Pyrite @ 15-25° to C.A. in the massive wacke
	grained	1555.8 - 1566' +/- Soft, light to medium to dark greys - greenish greys, very fine-fine laminated to thinly bedded, sericitic to chloritic wackes; partly deformed due to soft sediment deformation (some folding, broken lenses and bedded balls); bedding @ 60-80° to C.A.; some lenses, balls and beds are hard (siliceous?) and epidotized; occasional small dropstones are present; a little Pyrite

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Feet FROM	TO	DESCRIPTION
	ctd.	is present as disseminations, small (≤ 5 mm) clusters of disseminations and in several quartz-carbonate-chlorite veinlets (≈ 3 mm wide); one minor granitic granule is partly replaced by Chalcopyrite near 1563.4'; several chloritic fractures (with carbonate and scaly pyrite) having dark brownish alteration haloes (< 2 mm wide), occur @ $0-15^\circ$ to C.A. between about 1562-1565.2' and these are cut by sub-parallel carbonate fractures/slips @ $\sim 30^\circ, 40^\circ$ to C.A. near 1564'
1566.4'	1583.6'	GOUGANDA FORMATION - PEBBLY WACKES + FRACTURE ZONE (γ -ALBITE HALOES) soft to moderately soft, non-magmatic, fine grained to very fine grained, light-medium greenish greys (sericitic chloritic) with ^{2%} scattered, rounded to sub-angular, pink to grey granitic, gabbroic(?), metasedimentary-metavolcanic pebbles and granules $< 1-3$ cm in size (a few partly replaced by disseminated Pyrite, occasionally by Chalcopyrite); very occasional weak bedding observed @ $55-60^\circ$ to C.A.; $< 1\%$ sulfides
		Rocks fractured (much mechanically broken core) mainly from about 1569' with carbonate (+/- chlorite) on numerous fractures often @ $0-15^\circ, 25-35^\circ$ occasionally $50-60^\circ$ to C.A.; (fracture zone to about 1507'); some scaly for disseminated Pyrite occurs

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Feet		DESCRIPTION
FROM	TO	
	ctd.	on many of the fractures with carbonate (occasionally Chalcopyrite present); the low angle (0-30° to C.A.) fractures often have dark brownish alteration halos in the outer parts of the fracture zone; and a pinkish albite alteration borders many of the fractures. (0-15°) from about 1570-1580'.
		1575.7' - local network of irregular, pinkish, hard, albite alteration veinlets cut by (and covered by) quartz-carbonate-chlorite - Pyrite veinlets
		1579' - similar to 1575.7'
		(A few quartz-carbonate +/- chlorite veinlets, 1-2 mm wide, @ 0-10°, 25°, 60° to C.A. are present in zone.)
		GOWGANDA FORMATION - VARIABLE, THICKLY BEDDED TO LAMINATED WACKES
1583.6	1626.9	TX SUBBURY-TYPE BRECCIA VEINING
		Soft, non-magnetic, fine to very fine grained, medium to light greys - (occasionally dark)
		greenish greys; thickly to medium bedded, inter bedded with 30% (+/-)
		thinly bedded to laminated wackes; bedding @ 50°, 65-75° to C.A.;
		Some parts with soft sediment deformation (slumping of laminations, balls);
		two directions between 1595-1598'; generally a few scattered carbonate
		+/- quartz +/- chlorite veinlets and fracture fillings parallel to bedding and

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	ctd.	@ 15-25° to C.A. (a little scaly Pyrite +/- Chalcopyrite in some);
1583.6	1587	Fracture zone continuing from above. (similar); a few Pyrite cubes (2-5 mm) have also developed.
1605.6	1607.4	Several, fine grained, pink, hard albitized, arkosic(?) laminations (plus several broken fractured lenses/fragments in a local soft sediment brecciation zone, few thick near 1605.7) up to 1 cm thick @ 70-75° to C.A., some appear partly epidotized and are cut by low-angle quartz-carbonate-chlorite veinlets 1606.1' - few irregular faintly pinkish veinlets emanate from the pink altered lamination
		1607.3-1607.4' - pink altered bed offset by irregular chloritic breccia (1/2 carbonate) with carbonate fracture filling @ ~40° to C.A.
1607.7	1619	Zone of 35% Sudbury Breccia veining; soft, pale to medium grey(s) to locally beige (bleached?) sericitic, aphanitic to fine grained matrix, with variable flow lines in matrix around clasts and contacts; clasts within veining are fine to medium grained (< 0.5 mm) wackes (occasionally laminated) rounded to elongated ^{-spherical} to ragged to contorted, < 1 mm to a few centimetres in size (clasts between veining range from 0.4-3' in size); vein contacts

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FROM	TO
	are parallel to sub-parallel to opposed @ 15-20° to C.A., smooth (± apophyses) and can be parallel to and also cross-cut bedding; breccia veining has widths from < 1 cm to 2'; some of the larger intervening clasts also show some disrupted bedding due to soft sediment deformation; and bedding varies from 0° to 40° to C.A. (often 25-35°); scattered sericitic ± chloritic ± carbonate fractures/slips @ 15-50° to C.A., some parallel to along breccia contacts, others cross-cut breccia;
	1607.7' - slip contact of 4 cm wide breccia vein @ 50° to C.A. (would cross-cut bedding @ 65° to C.A. up-hole from contact)
	1616-1619' - often fairly numerous, irregular, anastomosing carbonate-quartz veinlets and fracture fillings with chloritic-sericitic contacts @ 0-25° mainly, which cut breccia and larger clasts (some with minor pyrite); core partly broken
	1619' - irregular breccia contact plus apophyses
1619	1626.9' Medium to thinly bedded ^{very fine to fine grained} wackes with several ^{sub-parallel (mainly)} Sudbury Breccia veinlets up to 1 cm wide @ 60°, 30-40° to C.A. between 1623.1-1625.5'; wackes are light grey(s)-greenish grey(s) to dark greenish grey; soft, sericitic to chloritic
	1619-1624(1/2)' - often numerous, fine dark chloritic fracture fillings @ 0-45° to C.A.

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Feet FROM	TO	DESCRIPTION
	ctd.	Wackes are locally a network of "crackle" fracture fillings in light to medium grey(s) - greenish grey(s) medium to thick bedded (occasionally laminated) wackes with bedding @ 60° to 40° to C.A. (some deformed)
		1621.8 - 1% disseminated Chalcopyrite in/near a chloritic fracture filling, cut by carbonate veinlet @ 0-20° to C.A.
		1624.4-1626.9' - fine network of light greenish-grey sericitic fracture fillings (1/2-shears) @ 0-25° to C.A.
		1625.2-1625.5' - sericitic-chloritic Sudbury Breccia veinlets < 0.5-2cm wide @ 40° ± 50-60° to C.A. on margins of dark greenish grey, medium grained wacke bed
		1626.3' - Partly folded wacke bed (similar to 1625.2') < 0.5-2cm wide @ 30-45° to C.A. enclosed by dark, chloritic, fine grained, sheared wacke
		1626.8 - 3 cm wide wacke bed (similar to 1625.2') @ 55° to C.A.; bleached veining in surrounding wackes plus a fine network of sericitic fracture fillings
1626.9	1668.6	GOWGANDA FORMATION - MASSIVE TO THICK BEDDED WACKES (1/2-LAMINATIONS) WITH SHEARS AND BRECCIATED ZONES - ROCKS STRONGLY ALTERED
		Rocks are soft to very soft, non-magnetic, medium to dark grey(s) - greenish grey(s), fine grained to sometimes medium grained (≤ 0.5 mm), sericitic-chloritic to chloritized, occasionally hard and silicified; wackes are partly brecciated (not Sudbury Breccia) ~40% of interval between 1632-1656.3; fragments consist of very soft, chloritized/sericitized, sometimes laminated, angular to

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FROM	TO	DESCRIPTION
	ctd.	Sub-rounded wacke, @ 2-3 cm(t) in size, set in a fine to medium (≈ 0.5 mm) grained, altered, very soft, often contrasting somewhat lighter coloured chloritized-sericitized (+ carbonate??) wacke matrix (25-50% of breccia zones), sometimes breccia zones are vague with little contrast; contacts sub-parallel @ about 20-35° to C.A., with zones of brecciation up to ~ 2' long with intervening massive wacke (occasionally a few laminations @ 20° to 60° to C.A. sub-parallel to contacts and appressed to contacts) +/- somewhat lighter coloured bleached shears +/- alteration veinlets occasionally cored by fine carbonate(?) fracture fillings @ 20-50° to C.A. (sub-parallel to a vast majority); occasional quartz-carbonate ^{matrix} veinlet (+/- minor pyrite grains) ~ 1 mm wide, @ 20°, 30° to C.A., cuts breccia
16269	1638	Often numerous, anastomosing, light greenish gray bleaching veinlets +/- holes (< 0.2-2 cm wide) cored by locally intense, fine carbonate-quartz fracture fillings @ 10-35° to C.A.
		1631.8' - sericitic slip @ 25° to C.A.
		1632' - irregular breccia contact
		1637' - open fracture with quartz crystal coating @ 20-25° to C.A.
1656.3		Irregular breccia contact @ ~ 25° (+/-) to C.A. (some silicified wacke invaded by breccia)
1657.6		Medium greenish gray, fine grained wacke, silicified, very hard, with four, 2-3 mm wide quartz +/- carbonate veinlets @ 0-10°, 25°, 45° to C.A. in

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		central part; chloritic margins or veinlets
		1657.9' - Contact @ 55° to C.A. with local brecciation below
1657.8	1658.6	Very soft, chloritized, dark greenish grey with lighter (sericitized?) bleached bands/ haloes @ 20-25° to C.A., saw core'd by fine carbonate(?) fracture fillings
		sub-parallel to contact at 1657.9' where some small quartz patches are also present in matrix
1659.7	1660.7	Soft to very soft, often dark greenish grey, chloritized nodules; scattered laminations and some thin beds up to several cm. thick @ 60-70° to C.A.
		1661.8 - 1663.2' - harder, fine to medium grained matrix; contacts @ 65° to C.A.; several chloritic fractures (w/ carbonate?) @ 25° to C.A. opposed to contacts
		1663.2' - shearing @ 65° to C.A.
		1663.2' - 1663.8' - fine carbonate(?) fracture fillings @ 20° to C.A. (opposed to those at 1661.8') plus lighter bleaching
		1664.8' - sericitic shears @ 25° to C.A. cut and offset a lamination @ 75° to C.A.
		1666.7' - contact @ 20° to C.A.
1666.7	1668.6 1/2	Soft to very soft, very fine to fine grained, medium to dark greenish grey, chloritized, sericitized; some vuggy fractures and broken core; 2mm wide quartz-carbonate veinlet @ 10° to C.A. at 1668.3' (opposed to vein at 1668.6')

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		1668.6' - bleaching and silicification above and parallel to contact with quartz-carbonate @ ~20° to C.A.
1668.6	1686.3	GOWGANDA FORMATION - ALTERED (SILICIFICATION; CHLORITIZATION; SERICITIZATION), LOCALLY BRECCIATED, +/- PYRITE MINERALIZATION
		Rocks are non-magnetic; Traces to locally 5% rounded to subhedral Pyrite (< 1-2 mm)
1668.6		2-3 cm wide, broken, white, coarse grained, partly vuggy quartz-carbonate vein @ ~20° to C.A.; granular coating of Pyrite in fracture fillings, some vugs, and on contacts
1668.7	1674.8	Light greys to slightly greenish, very hard, silicified, weakly sericitic, fine-medium grained (50-500 μm) quartzite with minor disseminated, rounded Pyrite grains (≈ 1 mm) with some hazy, irregular chlorite veinlets & networks (1-3 mm wide) which occur mainly within 1' and 0.5' of contacts where they weakly brecciate host rocks; some sericitic fractures @ 60-70°, 20°, 35° to S.A.; a few quartz + carbonate veinlets < 0.1-2 mm wide @ 60-75° to C.A. (one with pinkish halo) mainly between 1669.3-1670.3'
		1674.8' - irregular contact with breccia band @ ~20° to C.A.; hazy contact
1674.8	1681	Very dark to medium-dark greenish greys, very soft to soft strongly chloritized to chloritic waxes; some weak brecciation to ~1676' plus fine, irregular, off-white carbonate (?) speckles and fracture fillings to ~1678'
		1674.8' - 0.1' breccia; chloritized + sericitized fragments + two silicified fragments

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		1677' - 30' clay Pyrite on slip @ 15° to SA.
		1677.5' - 2-3 mm wide grey, quartz-carbonate veinlet @ 35° to C.A. with Pyrite film contact
		1678.5-1679.2 (4') - low angle breccia vein with irregular contacts @ ~25° (up-hole) and 10° (down-hole) to C.A.; some breccia matrix appophyses branch off lower contact; fragments are < 0.2 to several cm. in size, angular to sub-angular and some small slabs of wall rocks, very soft chloritized-sericitized; about 30% matrix which is soft, chloritized-sericitized, cataclastic, medium to coarse grained (< 1-3 mm) work with some carbonate (?). flecks and fine fracture fillings, lower part has ~1% Pyrite as fine grained disseminations, clusters, and rims on clasts; Pyrite is anhedral but some cubes present; brecciation somewhat similar to that up-hole
		1679.2 - 1681' - waxes are medium greenish greys, soft, chloritic-sericitic, medium to coarser grained (≤ 1 mm); a few irregular veinlets (≤ 1-3 mm wide) near 1680' (4') contain disseminations and a few small rags of Pyrite (≤ 3 mm long); rocks appear weakly (mainly) brecciated in part; variable amounts (< 1/2 - 3%) of rounded to subrounded Pyrite ≤ 1 mm in size occur in section
1681	1681.6	Coarse-grained milky to greyish quartz (1/2 chlorite) vein @ ~75-85° to C.A., with 15%, mainly ragged patches & some small fragments of chloritized-sericitized wall rocks

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		containing a little disseminated pyrite (~1/2% overall); veins contacts are ragged to smooth, irregular; many small patches of grey carbonate? fill up-hole part of vein.
1681.6	1683.6	Medium to coarse grained ^{massive} fine to medium grained, soft to very soft with patchy, hard, lighter greenish silicification/precipitation + chlorite spotting from ~1681.8-1682.7. Trace to locally 20% (near 2-5 mm wide quartz + chlorite veinlet @ 50-55° to CA. at 1682.4) disseminated, rounded to subhedral pyrite, 0.5-3 mm in size (average ~2% pyrite).
		Four 1 mm (1/2) wide, irregular quartz-carbonate veinlets @ 0-10° to C.A.
		1682.7-1683.5' - numerous fine carbonate(?) anastomosing network fracture fillings, and some ^{curved} sericitic fracture fillings/shears @ 15-45° to C.A. cut by all irregular ^{curved} quartz-carbonate veinlet @ ~10° to C.A.
1683.6	1686.	Brecciated, silicified ^{hard} for sericitized ± for silicified/nilitized medium to very fine grained cracks may be recrystallized quartzites? below 1685'; 10% matrix consisting of ^{soft} a dark greenish grey mixture of chlorite + quartz-carbonate in irregular, network of veinlets (1-1 cm wide), some with ^{small} patches or veinlets of lot (pinkish quartz-carbonate (calcitic); Trace to locally 5% rounded to subhedral pyrite (0.5-2 mm) often in the fragments but also in some matrix (average ~2% pyrite) occasionally as small patches; fragments are ^{fractured} angular to sub-angular, <0.3-10 cm in.

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Feet	DESCRIPTION
FROM	TO
cfd.	size, soft to hard to very hard, light to pale greenish grey to dark greenish-grey (possibly broken up interbedded units)
	1684-1684.3 - pink to greyish, fine grained (≤ 1 mm) carbonate-quartz \pm chlorite vein with a few small chloritized wall rock fragments, $\leq 1\%$ disseminated sub-hedral Pyrite
	$\leq 1-2$ mm; vein contacts irregular, partly bordered by, invaded and displaced by a chlorite shear @ 20° to C.A. or down-hole contact, while up-hole contact is @ 75° to 45° to C.A.; contacts somewhat ragged
	1685'-1686.3 - most fragments are very fine grained, often very hard, recrystallized silicified and/or albitized(?) (some a weak tan-grey colour); $\sim 2\%$ Pyrite occasionally, as small patches in matrix; some chlorite spotting (fine carbonate rims) near 1685'
	$\sim 1686'$ (\pm) - breccia matrix (\pm carbonate veinlet/patches) on contact @ $\sim 15^\circ$ to C.A. with weak chloritic alteration adjacent to contact with quartzites below.
1686.3	1720.8
	WITH INTERBEDS OF WACKES (ALTERED)
1686.3	1710.5
	Very hard to hard, fine to medium grained (≤ 0.5 mm), mainly massive, light greys to pale greyish greys (weakly sericitic-chloritic) with patchy silicification in quartzites; throughout some ^{scattered} A milky to greyish quartz \pm carbonate veinlets (mainly 1-5 mm wide, occasionally with chlorite and/or Pyrite) @ $45^\circ-50^\circ$

Diamond Drill Record

HOLE NO. HL 94-01

Feet		DESCRIPTION
FROM	TO	
	cf. d.	25-35°, 45-50°, 70° to C.A.; sparsely disseminated, bounded to sub-hedral Pyrite $\le 1-2\text{ mm}$ in size, and Trace to $\frac{1}{4}\%$ in volume, down to about 1707' in the host rocks; a few chlorite-carbonate fractures/slips
		1686(1/2) - 1690.2' - about 10-15, hairline to 1-2 mm wide quartz \pm carbonate veinlets @ 25-70° to C.A., often with pinkish, narrow alteration haloes (albite?)
		1687.5 (1/2) - Two, ^{small} branching, sub-parallel, somewhat irregular quartz-carbonate (4 some small patches where veinlets ^{of} closer together) @ 35° and 40-45° to C.A., with chloritic alteration haloes and 5-10% disseminated and small patches of Pyrite locally in silicified quartzites; these veinlets are sub-parallel to contact with breccia zone at 1686', and would intersect with some of the barren veinlets 0.2-0.7 cm wide in the veinlet zone. From ~1686-1690.2'
		1690. - 1692. (1/2) - patchy faintly pinkish grey silicification; overall more or less @ 15-25° to C.A.
		1701' - 4 cm wide quartz (milky to grey) vein with 60% patches of dark green chlorite; vein @ 60-65° to C.A. with slip on up-hole contact; Trace Pyrite
		1702(1/2) - 0.5-1 cm wide milky to grey quartz veinlet with pinkish to white carbonate and patchy chloritic alteration halo, minor disseminated Pyrite in/near vein @ 20° to C.A.

Diamond Drill Record

HOLE No. NL 94-01

Feet		DESCRIPTION
FROM	TO	
	ctd.	which is sub-parallel to vein at 1701'; several other milky-grey quartz veinlets sub-parallel to 15-20', 70°, 40-45° to CA, and 2-5 mm wide down to 1703.5'; one with chlorite; a little disseminated Pyrite
		In silicified host rocks
		1708-1710.5 - rocks become ^{more} greenish, slightly softer, and chloritized
		dark greenish grey within 0.1' of contact at 1710.5'; chloritic-sericitic fracture fillings/ ^{veinlets} @ 55-65° (some at 75° near 1710') and a few cross-cut @ 45-55°, 30-35° to C.H.; some with carbonates; 5-10'/foot; 2-3 mm wide
		quartz-carbonate veinlet @ 15° to C.H. with brevels up-hole @ 5° to CA. cross-cuts veinlets/fracture fillings near 1710.'
		1710.5 - contact @ 75° with chloritized waxes
1710.5	1715.2'	Chloritized-sericitized, soft to very soft, fine to very fine grained, dark to medium greenish-grey, thin bedded to laminated waxes which appear to be brecciated below 1712.3'; brecciation is vague to more distinct (steering?) sometimes with darker fragments outlined by fine rims of carbonate(?) which also occurs as fine fracture fillings @ 0-50° to C.A.; breccias similar to those up-hole (eg. 1632-1656' section); bedding @ ~75° decreasing to ~45° to CA with fractures/slips oriented parallel; breccias sheared in part

Diamond Drill Record

HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
		175.2 - very soft, strongly chloritized-sericitized contact (partly wavy) @ 60° to C.A. with a chloritic alteration (minor brecciation) veinlet, 1-4 mm wide, emanating from contact) traverses down-hole @ ~ 10° to C.A. into quartzites below
176.2	1720.8	Pale to light greenish greys (weakly sericitic-chloritic), hard to very hard, fine to medium grained quartzitic arkosic quartzite, with some scattered chloritic alteration veinlets < 1-2 mm wide (+ see above) @ 40-75° to C.A.
		rock becomes softer, darker, more chloritic below 1720.4'
		1720.8' - contact @ ~ 40° to C.A. with chlorite-carbonate fracture on contact with bleached Sudbury breccia vein below
1720.8	1778.6	GOWGANDA FORMATION - ALTERED, VARIABLE WACKES + SOFT SEDIMENT DEFORMATION ? SUDBURY-TYPE BRECCIA
		Wackes are non-magnetic, medium to very fine grained, medium to dark greenish greys to grey; soft to very soft (chloritized &/or sericitized) with moderately hard to very hard (silicified) sections for beds;
		rocks are thick to medium to thin bedded with some thin laminations with bedding @ ~ 35 to 65° to C.A.; some offset along slips
		About 25% sections ^{upto 2' long} showing soft sediment deformation; i.e. beds with ragged

10/10 Mining Diamond Drill Record

10/10-1271
1965 and

1858-1871

HOLE NO. ML 94-01

FROM	TO	DESCRIPTION
1720.8	1721.4	Bleached, sericitic, soft, fine grained wacke with laminations @ 75° to 40° to SA, and with bleached, sericitic, soft Sudbury Breccia veinlet < 1.5 cm wide @ ~ 40° to SA.

Diamond Drill Record

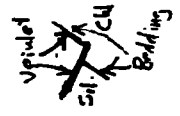
HOLE NO. ML 94-01

Feet	DESCRIPTION
FROM	TO
cfd.	(parallel to sub-parallel contact) at 1720.8', which is cut by chlorite veinlets and a few small quartz-carbonate gashes and may be brecciated in part near contact; bedding is cross-cut by Sudbury Breccia veinlet and by numerous fine, chlorite fracture fillings as well, often sub-perpendicular to contact @ 1720.8'; and from 1721.1' small chlorite veinlets occur along an irregular, low angle contact @ 0- 45 ¹⁰ to c.a.) brecciating at invading rocks in part
1721.4	1723.2
	Strongly chloritized, with vague brecciation and shearing @ low to high angles to c.a.
1723.2	1724.9
	Silicified, chloritic wacke or quartzite(?); ^{small} dolomitic blotches near 1724' along with fine quartz-carbonate fracture fillings @ 0-10° to c.a., some with pinkish (albite?) alteration haloes
1750	1751.8
	Silicified wacke containing a few quartz-carbonate veinlets/fracture fillings
1752.1	1753
	Zones of fine sericitic shears parallel to bedding @ 30-40° to c.a. and cross-cut by carbonate-chlorite-sericitic slips @ 35-45° to c.a.
~1756	1761
	Silicified, chloritic wackes +/- soft sediment deformation
1762.5	1776.5
	Dark to medium greenish grey, medium to thin bedded (± laminations), (mainly) soft-very

Diamond Drill Record

HOLE No. ML 94-01

Feet		DESCRIPTION
FROM	TO	
	Old	soft, chloritized/sericitized, fine to very fine grained wackes; bedding @ 50-60° to C.A.
176A1	1765.3	Shearing + fracture @ ~10° to C.A., offsets bedding @ 50-55° to C.A., by ≤ 1 cm.
	1766	2 mm quartz-carbonate +/- chlorite veinlet @ 25° to C.A. sharply turning along bedding @ 60° CA. silicified wacke above bedding plane which is offset < 1 cm along 25° plane of veinlet
1770.2	1771.4	Several chloritic (+/- carbonate) fractures @ 10-25° to C.A., cross-cut bedding @ 55° to C.A., and partly offset bedding; some cubic pyrite occurs in/wear fractures
1774		Cubic Pyrite ($< 1-5$ mm sized) developed along two ^{close-spaced} chlorite veinlets 1 mm (+) wide @ 60° to C.A.; fine chloritic fracture fillings bracketed off, perpendicular to veinlets (within 1 cm of veinlets)
1775	1778.5	Sudbury Breccia veining; some pyrite cubes and clusters present; probable clast of dark, pebbly wacke present in lower portion bordered by Sudbury Breccia veining with flow lines
		1778.5' - contact with pebbly wackes irregular @ ~35-50° to C.A. (some apophyses)



Diamond Drill Record

HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
1778	1857.6	GOWGANDI FORMATION - PEBBLY WACKES + SOME SUBBURY-TYPE BRECCIA VEINING
		Non-magmatic, moderately soft to moderately hard. light-medium greys to somewhat greenish, sericitic/chloritic, fine-medium grained, massive matrix with 1-5% (average 2-3%) rounded to angular, grey granitic, dioritic and greenish-grey megacrystic-dioritic, and various metasedimentary (quartzite, wackes, mudstones) clasts, < 0.2 to 10 cm in size (average < 0.5-2 cm), some carbonated; scattered throughout are sometimes fairly numerous, irregular ^{to more uniform, grey-white} anastomosing quartz-carbonate + chlorite veinlets/fracture fillings, mainly < 0.5 to 2 mm wide, @ 5-60% to CIA, occasionally with minor Pyrite visible; veinlets occasionally contain tiny well rock fragments (microbreccia)
		Generally minor sulphides (Pyrite, Pyrrhotite + Chalcopyrite) are present as disseminations in matrix and partly replacing some clasts (intervals or along rims); Pyrite grains sometimes occur in clusters; usually some quartz-carbonate veinlets are present in the host rocks and sometimes traverse the clasts; Pyrrhotite first observed near 1814'; $\leq 8\%$ sulphides
		A few scattered veins of Sudbury Breccia with flow lines; soft chloritic to sericitic

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HOLE NO. ML94-01

Feet		DESCRIPTION
FROM	TO	
1779.5	1780.1	Numerous light greenish grey alteration veinlets (1/2 shearing, 1/2-quartz) ^{hairline to} 2-3 mm wide, often @ $\sim 60^\circ$ to C.A., plus others @ $5-25^\circ$ in general area.
1780.6	1781.5	Wacke clast with soft-sediment deformation &/or alteration haloes along some of the numerous enastomosing fine chlorite fracture fillings; clast is bordered by dark Sudbury Breccia veinlets < 1-2 cm wide @ $\sim 50^\circ$ and 25° to C.A.; flow lines
1791.5	1793.8	Zone of Sudbury Breccia veining with flow lines, wacke fragments (some deformed and fractured, some silicified in part and cut by a few quartz-carbonate veinlets/fracture fillings)
1801.1	1805	Mechanically shattered core in pebbly wacke
1818	1823	Chloritic fractures 1/2-slips 1/2-carbonate @ $15-20, 30-40^\circ$ to C.A., occasionally with scaley pyrite; 1-3/foot
1824.1		< 1-2 cm wide Sudbury Breccia vein with apophyses; vein contacts @ $\sim 40^\circ$ to 30° to C.A.
1827.5		Sudbury Breccia veinlet @ 35° to C.A.
1832	1833	Silicified in part; fine chloritic fracture fillings @ $45-50^\circ$ to C.A.
1833	1835	Dark grey, soft chloritic Sudbury Breccia with some flow lines; opposing contacts @ $\sim 50^\circ$ and 75° to C.A.
1856	1857.6	Few quartz-carbonate veinlets, chloritic veinlets and fracture fillings @ $30-60^\circ$ to C.A.

Diamond Drill Record

HOLE No. ML 94-01

Feet		DESCRIPTION
FROM	TO	
		rocks harder (silicified?) near contact (85° to C.A.) with Sudbury Breccia Zone.
<u>1857.6</u>	<u>1873.9</u>	SUDBURY-TYPE BRECCIA ZONE IN GOWGANDA FORMATION WACKES
		Rocks non-magnetic; 15-20% breccia veining with dark grey, fine grained matrix exhibiting flow lines; breccia in variable wackes, including some deformed, soft peritic tan to pinkish bedded wackes, light greenish grey, hard, silicified wackes (some with anastomosing chloritic fracture fillings) and pebbly wackes; minor disseminated Pyrite and Pyrrhotite; a few 1-2 mm wide quartz-carbonate veinlets (1/2 Pyrite, 1/2 Pyrrhotite) @ ~15-20°, 40-50° to C.A. plus some irregular gashes
		1873.9' - contact @ 50° to C.A.; 2 mm wide quartz-carbonate-Pyrite veinlet on contact
<u>1873.9</u>	<u>1877</u>	GOWGANDA FORMATION - WACKES
		Non-magnetic; very fine five-grained, medium grey to slightly brownish tinge in part, soft; numerous anastomosing chloritic fracture fillings/ fine veinlets @ 5-30° to C.A. occasionally with Pyrite & some Pyrrhotite + Chalcopyrite near 1875' (over <1'); bleached near contact (carbonate veinlet) @ 25° to C.A. at 1877'

Diamond Drill Record

HOLE No. ML 94-01

Feet		DESCRIPTION
FROM	TO	
1877	1991.2	GOWANDA FORMATION - PEBBLY WACKES +/- MASSIVE WACKES +/- SUDBURY-TYPE BRECCIA Non-magnetic rocks; pebbly wackes are light to medium greys, fine to medium grained with 1-2% granules and pebbles (≤ 2 cm in size); generally very minor Pyrite and/or Pyrrhotite present; gradational into more massive wackes; scattered Sudbury Breccia veining; wackes partly silicified
1877		5 cm pebble with minor Pyrrhotite
1880		Fractures (+/- slips) with chlorite + carbonate @ 10-15°, 25-35° to C.A.; 2-4/foot; several, 0.2-1 cm wide quartz-carbonate veinlets with minor Pyrite @ 35-40° to C.A.
1908.3		Chlorite veinlet with some Pyrrhotite
1908.4	1917.2	More massive, fine grained wackes 1908.4-1908.6' - irregular Sudbury Breccia veinlets with flow lines and bleached fragments
		1908.6-1909.6' - brownish tinge; bleached contact; chloritic fracture fillings; < 1/2% Pyrrhotite as disseminations and fracture fillings
		1910.4-1911.4' - brownish tinge; numerous anastomosing chloritic fracture fillings, some with small blebs of Pyrrhotite
		1912.5' - locally brecciated by numerous irregular chloritic veinlets

Diamond Drill Record

HOLE No. ML 94-01

Feet.		DESCRIPTION
FROM	TO	
		1914.5 - 1917.2 - mechanically shattered core
1917.2	1925.4	Brownish tinge, hard, silicified(?)
		1917.7' - Sheared @ ~35° to CA.
		1919.7 - 1920.5' - locally brecciated + fine shearing; sub-parallel contacts @ ~40° and 30° to CA.
1950	1955.5	Fractures (+/- slips) with chlorite +/- carbonate +/- scaly Pyrite @ 10-15° to ~5° to CA.
	1956.3	4 cm vein of Sudbury Breccia; chloritized margins, +/- silicification(?), flow lines; irregular contacts @ ~45-50° to CA.; host wackes silicified in vicinity
1959.5	1959.7	5-10% squiggly, silicified rags @ 60-65° to CA. in silicified wacke
1963.8	1968.3	Light greenish, sericitized rags and deformed lenses (soft sediment deformation?) @ 20-35° to CA, and @ 70° to CA. (in lower 0.3')
1972.5	1974.2	Brownish, massive fine grained wacke. (+/- occasional pebble)
		1972.5' - 1 cm chloritized band @ 45° to CA. (Sudbury Breccia? veinlet)
		1972.5 - 1973' - Silicified + fine network of light grey siliceous(?) fracture fillings
		1974' - 0.2' thick deformed laminated wackes with chloritized laminations + bleaching @ ~50° to CA.
1974.2	1977.4	Sudbury Breccia with dark, soft chloritic matrix with flow lines; contains light

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HOLE NO. ML 94-01

Feet FROM	TO	DESCRIPTION
	cht	greenish grey pebbly wacke fragments + silicified massive wacke clasts; breccia zone contacts @ ~70° and 50° to C.A.; minor disseminated Pyrite
1977.1	1980	Pebbly wackes; silicified
1980	1983.3	Dark to light greenish grey(s) Sudbury Breccia veins with flow lines; breccia zone contacts @ ~75° to C.A. (irregular, up-hole) and sub-parallel to SA. (sinuous, down-hole contact)
1991	1991.2	Light to medium grey(s) Sudbury Breccia with flow lines and chloritic margins @ ~75° to C.A.
1991.2	2125.2	GOWGANDH FORMATION - PEBBLY WACKES Non-magnetic, medium to lighter grey(s) (+ faint brownish tinge in upper parts), fine to medium grained, often hard (silicified?) to about 2039', and often with numerous, irregular, ^{reddish} anastomosing light grey, siliceous veinlets (with variable disseminated chlorite grains) to about 2055', where they then become scattered and only weakly developed; the siliceous veinlets (+ shearing) are mainly < 0.5 mm to 3 mm wide, and occasionally contain minor disseminated Pyrite or Pyrrhotite; and one siliceous vein (2-3 cm wide @ 60-75° to C.A.) occurs near 2007' (and also a patch near 2051') containing patches and small fragments of host wackes;

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HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
	ctd.	the siliceous veinlets are oriented @ 0-70° to CA. and some are cut by fracture fillings with chlorite +/- carbonate +/- quartz; the matrix contains 2-3% (locally 5%) angular to rounded granules and pebbles (often, <0.5-2cm, but some 3-5cm in size) composed of grey granitic, dioritic and greenish-grey gabbroic-dioritic clasts, various metasedimentary and some metabasaltic clasts, sometimes bleached internally or marginal to pebbles; Trace to very locally 1/4% disseminated Pyrrhotite +/- Chalcopyrite and Pyrite in matrix, partly replacing clasts internally or on rims, and in fracture fillings; ≤ 1/8% sulfides; Pyrrhotite magnetic
		2001.3' - quartz fracture filling with some Pyrrhotite and Pyrite @ 25° to CA.
		2002' - 2-3 cm wide, chloritic, sheared + chlorite veinlet zone @ 45-80° to CA, with some disseminated and small patch Pyrrhotite +/- Chalcopyrite; zone opposed to quartz veinlet @ 2001.3'
		2006-2007.5' - Section of chloritic-sericitic fractures/slips @ 30-35° and 45-50° to CA. (opposed), 4/foot
		2020' - pebble offset by slip @ 45° to CA.
		2022' - pebble offset by slip @ 70° to CA.
		2035.5' - Pyrite scales on chloritic fracture @ 15° to CA.

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HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
		2038-2042.5' - chlorite +/- carbonate fractures (parallel) @ 15° to C.A. (mainly 1/foot) with several near 2038' with some scaly and fine disseminated Pyrite; also a few chloritic fractures @ 45-50° to C.A.
		2042.5-2045' - Fracture (+/- slips) zone; chloritic +/- carbonate (occasionally with some Pyrite scales) @ 70-80° to C.A.; 5-10/foot
		2045-2056' - Chlorite +/- carbonate fractures (+/- slips) @ 50-60°, 70° with some @ 40 and 20-25° to C.A.; < 1-3/foot; some have scaly Pyrite occasionally scaly Pyrrhotite; 'at 2047.5' is a ± 5mm wide greyish white quartz-carbonate veinlet @ 15° to C.A. with chlorite margins and shearing + minor scaly and disseminated Pyrite; veinlet also contains host rock slivers and intersects with a fracture @ 40° to C.A. with chlorite-carbonate +/- scaly Pyrite
		2064.5-2066' - mechanically shattered core (in pebbly waste) +/- quartz-carbonate fracture fillings
		2066-2080' - quartz-carbonate (+/- chlorite +/- minor Pyrite) veinlets (1-2mm) and fracture fillings (+/- slips) with some scaly Pyrite and/or Pyrrhotite; chloritic margins on fracture fillings and occasional bleaching; structures are sub-parallel to cross-cutting @ 15-25°, 40-50°, 60° to C.A.; < 1-7/foot (average 1-3/foot)

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HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
2097.8	2100 (4)	Mechanically shattered core in pebbly wacke; fracture (1/2-carbonate) @ 10-15° to C.A. at each end of zone
2107.1	2109.4	Chlorite (1/2-carbonate) slips @ 0-10°, one with scaly Pyrrhotite; several slips in broken core
2125.2		Contact with vein of Sudbury Breccia @ 20° to C.A.
2125.2	2136	SUDBURY-TYPE BRECCIA VEINING IN WEAKLY PEBBLY TO MASSIVE WACKES - ALTERED
		10-15% Sudbury Breccia; breccia veins variable, dark to light greenish greys
		Some fans, chloritized to sericitized, possibly locally partly silicified, with flow lines being irregular to convoluted (also some of the smaller clasts with a matrix) with larger fragments and patches between veins varying from 0.5 to 2' in length; some have bleached (1/2-silicification) margins near vein contacts which vary in attitude from 55° to sub-parallel to C.A.; breccia matrix (4-fragments) cut by some, 1-5 mm wide, irregular quartz-carbonate veinlets @ 0-20° to C.A. and a little Pyrite occurs in matrix as disseminations and rogs (minor Pyrrhotite rag near 2127.8'); rocks are non-magnetic
		~2128-2128.8' - dark greenish grey to black, strongly chloritized wacke with several pebbles, some partly replaced by Pyrite

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HOLE NO. ML94-01

Feet	DESCRIPTION
FROM	TO
~	2129-2133.5 - light-medium greenish grey, soft-moderately soft, sericitic-clastic wackes with bleached margins adjacent to external and internal (0-50°C) Sudbury Breccia veining; wacke often by numerous anastomosing darker, chloritic 1-3mm wide veinlets (some with minor Pyrite) giving wackes a ^{somewhat} brecciated to cataclastic appearance
pebbly	2134' - lower contact of main Sudbury Breccia veining @ 55° to CA, (quartz-carbonate fracture filling)
	2134-2136' - massive wacke (minor granules), medium grey-greenish grey with some chloritic anastomosing veinlets to ~ 2135'; Sudbury Breccia veinlets in broken core near 2135.7'; hard, silicified with minor Pyrite from 2135.7 - 2136', and minor Sudbury Breccia veinlet(s) @ ~ 80° to CA, at 2136'
2136	2135
	GOUNGANDA FORMATION - PEBBLY WACKES +/- ALTERATION
	Non-magnetic; variably hard to moderately hard, medium to darker grey, fine-medium grained pebbly wackes with 2-5% granules and pebbles (similar to above + occasional schist) mainly ≤ 0.5-2 cm size (but up to 4cm); some scattered pebbles with pale greenish grey bleached (soft to hard) haloes; occasional, irregular, fine grained, light grey siliceous veinlets with disseminated chlorite grains, 1-5 mm wide; ≤ 1/8% disseminated sulfides (magnetic Pyrrhotite +/- Chalcopyrite and Pyrite) in matrix and partly replacing clasts as before;

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HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
	cft.	Pyrite predominates below 2202' (+/-) and Pyrrhotite not observed below ~2339'; fractures & fracture fillings with quartz-carbonate +/- chlorite +/- scaly Pyrite mainly @ 15-30', 45-55', 60-70' to c.a. (<1/2' to 2-3' / foot)
2153	2155	Several quartz-carbonate-chlorite (+/- scaly Pyrite) fractures @ 0-10' to c.a.
2161	2166	Similar to 2153-2155
22228	2223.8	Several carbonate fracture fillings with chloritic margins, +/- Pyrite @ mainly 15' to c.a.
~2232.5	2234	Irrregular, sinuous, very hard, fine-medium grained, altered, light greenish (epidotized?) arkosic quartzite band < 2 cm thick @ 0-15' to c.a.; chlorite margins on band; light grey bleaching (ragged, hazy) in silicified pebbly wacke along band contacts; band terminates in a tail down-hole (may be soft-sediment deformation); minor Pyrite and Chalcopyrite replace granules in wacke near margins of band
2252.3	2253	Medium-coarse grained light grey dioritic cobble with hard, pale greenish grey bleaching along part of margins in pebbly wacke, all cut by quartz-carbonate fracture filling @ 25' to c.a. at 2252.3' (where weak pink feldspar alteration is also present on margin of cobble)
2259.8	2261	Mechanically shattered core
2266.7	2266.9	Patchy pale greenish-grey, moderately soft to very hard bleaching + smaller patchy red alteration (albitization?) partly cut(?) by a 1-5 mm wide quartz-carbonate veinlet with small wacke fragments in wide portion; veinlet @ ~70' to c.a. sub-parallel to

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HOLE No. ML 94-01

FROM	TO	DESCRIPTION
	ctd.	Two chloritic slips at 55-60° to C.A. (veinlet between slips)
2274	2275.1	Chloritic-sericitic fractures/slips with scaly Pyrite and dark brownish alteration haloes; (some Pyrite fracture fillings also); structures @ 30-55° to C.A., slip @ 40-45° to C.A. and sub-parallel; ~15-20 in interval which cut some irregular light grey, siliceous veinlets (1-5 mm wide) with chlorite disseminations some associated with brownish albite (?) alteration; also some small pebbles and granules partly replaced by Pyrite (± Pyrrhotite?)
2279	2335 1/2	Scattered, light greenish grey bleaching after care by quartz-carbonate & chlorite (1/2 Pyrite) veinlets (1-3 mm wide) @ 25-35, 45-50° & occasionally 15° and 60-65° to C.A.; below 2323.8' the quartz-carbonate-chlorite veinlets sometimes have a dark chloritic halo followed (outward) by a pale, greenish-beige (acc. hard pinkish) possibly albitized? halo (± 0.5-2 mm wide) with another chloritic rim, finally enclosed by the light greenish grey bleaching halo (moderately soft to very hard), which vary from < 0.5-1 cm wide (occasionally 3 cm wide) and are also present around some (not all) of the pebbles as seen previously (up-hole); Occasionally one of the veinlets with bleaching haloes is seen adjacent to the bleached halo around a pebble; also present are quartz-carbonate-chlorite (1/2 scaly Pyrite) fracture fillings and veinlets (± 1 mm wide) ± slips @ 40-20°

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HOLE NO. ML 94-01

Feet FROM	TO	DESCRIPTION
	ctd.	35-45°, 50-60°, 70° to C.A., occasionally seen to cut structures with the bleached matrix; fracture fillings and veinlets ~ 2-3' / foot (more so below ~ 2310')
		~ 2311-2312' - 10% (4%) irregular to more uniform to patchy (small), pale brownish-grey alteration veinlets (albitization?) 1-2 cm wide @ 15-70° to C.A.; parts silicified and very hard in vicinity; some shearing, +/- slips and chlorite (+/- Pyrite grains) gashes and veinlets @ ~ 70° to C.A. between 2311.5-2311.9' plus a few quartz-carbonate-chlorite fracture fillings / slips @ 70° and one @ sub-parallel to C.A.
2335	2437 1/2'	GONGANDA FORMATION - VARIABLE, PEBBY WACKES + ALTERATION + FRACTURE ZONES. Pebbly wackes are non-magmatic and more variable, light greenish-grey(s) to medium to dark grey (probably due to bleaching in part); 1-5% granules and pebbles similar to previous unit (some pink to reddish granitic pebbles also present); light greenish-grey bleaching occurs about some (not all) pebbles, about veinlets and as bands and alteration veinlets without chlorite-quartz-carbonate cores; chlorite +/- quartz-carbonate veinlets (with ^{pyrite} alteration similar to that in 2279-2335') are scattered throughout, more numerous by 2422' and epidote predominating over chlorite between ~ 2427.3-2435'; these veinlets are < 1-5 mm wide @ 15-25°, 45-50°, 60° to C.A. (a few are parallel by, cut or intersected by, later grey-white quartz-carbonate veinlets, 1-2 mm wide @ 0-50° to C.A.); < 1/4% Pyrite and occasional Chalcocopyrite occur in fractures, veinlets, in/marginal to some pebbles; minor Pyrrhotite below 2417'; several breccia

Diamond Drill Record

HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
		veinlets occur at 2347.3, 2353, 2356.9 & 2384.4' (Fault 7 Breccia). Breccia veinlets are dark grey-black, soft chloritic, non-magnetic, 1/2 Pyrite grains, irregular to more uniform with sharp margins; < 0.2 - 1 cm wide, contain 2-15% small (< 0.5-8 mm) angular to sub-rounded wall rock clasts; ^{hard} pale greenish grey &/or beige (Albitization?) bleaching/alteration occurs along parts of margins of breccia veinlets; chloritic veinlets/gastros (hairline to 1-2 mm wide, often parallel to sub-parallel but also sub-perpendicular to breccia veinlets) also occur in vicinity of breccia veinlets (see on map) and the larger veinlets contain tiny angular clasts; these veinlets occur near 2353' and 2357' and some are cut by later, hairline quartz-carbonate fracture fillings with narrow reddish alteration selvages, one of which ^{crosses} offsets a 2-3 mm wide breccia veinlet at 2356.9' (reddish alteration on breccia margins and some clasts also)
		15-20% very hard silicified (albitized?) parts, 0.1-2' long, in pebbly wackes throughout, often (not always) associated with albitization alteration veinlets or haloes
		More pervasive beige grey albitization/silicifications between 2399.5 - 2402.5 (1/2) in pebbly wackes with ~1-2% pebbles and granules; rocks often very hard
		Fracture zones similar to 2279-2335' section; fractures 1/2-slips often chloritic 1/2-quartz carbonate/1/2-scales or disseminated pyrite @ 50-60, 70-75, 15-25, occasionally 35-40, 0-10 to C.A.
		3-8'/foot, strongest fracturing 1/2-broken core from 2339-2353 & below 2374' PAGE 76 OF 89

Diamond Drill Record

HOLE NO. ML 94-01

Feet		DESCRIPTION
FROM	TO	
2347.3	2347.6	Branching, irregular breccia veinlets (with ^{pinching &} terminating apophyses), < 1 to 5 mm wide, partly ^{normal} parallel to and partly, perpendicular to a chloritic slip @ 10-15° to C.A.; in part cut by st/or truncated by several chloritic slips @ 55° to C.A. which are perpendicular to the low-angle slip; rocks are partly bleached with pale, beige albitization (?) substitution including some of the breccia clasts; some reddish alteration (hematitic?) or cross-cutting fractures which also affects some of the clasts in the breccia veinlets
2347.8	2357.3	75-80% softer, bleached, medium to light greenish grey bands and alteration veinlets (with remnant medium grey pebbly wacke bands) @ 50-65° to C.A., this alteration may be similar to the haloes about the pebbles (which are present but slightly darker than the haloes; the breccia veinlets are within the altered sections and some of the narrow alteration veinlets are covered by fine chlorite (< 1% carbonate?) fracture fillings and gasles which may be related to the breccia veinlets
2382.6	2383.4	Part of a recrystallized pinkish-arkosic or granitic cobble cut by ^{red} anastomosing hematitic alteration fractures (occasional carbonate core visible); fractures (no hematitic alteration) sometimes continue as chloritic fractures in ^{dark} wacke matrix and offset one contact of cobble; other opposing contact of cobble is along a chlorite (< 1% carbonate)

Diamond Drill Record

HOLE NO. ML94-01

Feet		DESCRIPTION
FROM	TO	
		slip with some scaly Chalcopyrite and Pyrite @ 15° to C.A., some hematitic alteration in cobble occurs along the slip contact, and some beige albite alteration occurs in the matrix along the slip contact; albite (pinkish-tan) alteration plus a micro-gabbro pebble which is cut by a chloritic-carbonate fracture (1/2 scaly Pyrite and Chalcopyrite) @ 16° to C.A. in broken core just below the cobble; albite alteration hole also occurs near the fracture.
2384.6	2384.7	Breccia (cataclastic) - partly similar to breccia. Veinlets up-hole near 2347.6, upper contact of irregular matrix veinlet @ ~70° to C.A., 1/4" - 1 cm wide, with apophyses and branching veinlets (mainly to locally bulging to 2 mm) on down hole side (and decreasing in intensity). Many of which are ~ parallel to a slip @ 40° to C.A.; wall rock fragments are angular to sub-rounded, < 0.5 - 10 mm in size, densely packed in a chloritic matrix, with occasional tiny quartz-carbonate gunk with reddish alteration halo; some fragments are bleached (beige) in main portion of breccia and a weak reddish alteration selvage occurs along the up-hole contact in part; minor disseminated Pyrite in breccia; host rocks in vicinity are ~ slightly brownish greys (bleached) moderately hard to very hard below slip
2385.1	2385.3	Irregular chlorite-quartz-carbonate 1/2 Pyrite veinlet @ ~20° to C.A. with ragged to 1/8" gunk

Diamond Drill Record

HOLE NO. NL94-01

Feet		DESCRIPTION
FROM	TO	
	ctd.	patchy beige to tan to slightly pinkish albite alteration halo; some of the pebbles in vicinity also have bleached, albitized haloes, and the host rock is very hard, brownish grey to dark grey
2392.3		0.1' wide cataclastic breccia band @ 45° to SA. in moderately hard to hard patchy lighter to medium grey, pebbly wacke; 15% darker grey chloritic matrix surrounds angular to sub-rounded clasts of host rock, 0.5-1 cm in size; minor carbonate gouges in breccia; minor Pyrite grains in breccia; faint pink albite alteration selvage along contact and in host rock about some chloritic fracture fillings near the breccia; slip @ 50° to SA. would cut the sub-parallel breccia band (esp. hole contact)
~ 2393.5	2394.6	Moderately hard, light grey-greenish grey pebbly wacke with numerous chloritic (4-sericitic) fractures/slips @ 0-10°, 20-25° (some vuggy) often with dull reddish hematitic alteration haloes (various); also chloritic slips / fine fracture fillings @ 30°, sometimes Pyrite or Chalcopyrite or Malachite, broken up in part
2394.6	2399.5	Dark grey to lighter grey, hard to moderately hard pebbly wackes with lighter greenish grey bleaching veinlets and alteration haloes about some chloritic 1/2-carbonate around pebble

Diamond Drill Record

HOLE No. ML 94-01

Feet	DESCRIPTION
FROM	TO
	Fracture fillings/slips (and a few albite alteration margins) @ 45-55, occ. 15°-20-25°C.A. as well as some of the pebbles (also occasionally with beige albited margins)
2399.5	Very hard to locally moderately hard, light greys (somewhat greenish) with patchy beige to somewhat pinkish portions, and patchy dark grey in upper part of section, rocks are albited/silicified; more pervasive in upper 2' of section where some of the pebbles and granules are reddish-orange and rocks are cut by a few carbonate fracture fillings with narrow reddish alteration haloes @ 20-45° to C.A. and a bluish-green chlorite (tr-carbonate) veinlet with reddish halo @ 10° to C.A.; some pebbles have beige alteration haloes
2402.3-2404(A)	several bluish-green chlorite gash veinlets (2-3 mm wide) with minor grey carbonate @ 10° (4/-) to C.A. one cuts a chlorite-quartz-carbonate veinlet with bleached and albited margin plus veinlets of beige albite alteration
2419.6	Variably hard to very hard to locally soft, silicified, partly albited dark grey matrix ^{narrow to broad} cracks with 10-15% light greenish grey, moderately hard to hard bleaching/alteration (patchy and haloes about chlorite 1/2-quartz-carbonate fracture fillings and small veinlets)
	1/2 disseminated Pyrite 1/2 slips with scales Pyrite - occasional Chalcopyrite; also beige to pinkish albite alteration selvages (1-5 mm wide) occur margined to the bleached

Diamond Drill Record

HOLE No. ML94-01

Feet		DESCRIPTION
FROM	TO	
	ctd.	pale greenish grey alteration immediately adjacent to the chlorite ^{1/2} quartz-carbonate veinlets
		which are < 1 to 2 mm wide (some times with apophyses and/or bulges) generally
		@ 253' 40-50', 60±70' sub-parallel and fairly uniform but sometimes irregular or gas-like
		and 1/2 to 1' foot, (especially between 2412' ± and 2417')
		2408.8' - pink albite alteration in angular felsic pebble (chlorite) with chlorite ^{1/2} carbonate ^{1/2} pyrite
		in margins, and followed by beige albitized selvage (^{1/2} chlorite)
		2410.6' - sheared chlorite + quartz + carbonate veinlet ~ 1 cm wide
		@ 35' to 61A.; weak albite selvage
		2417.6-2418.6' - minor Pyrrhotite (as well as Pyrite) replacing granules,
		and at 2418.6' Pyrrhotite replacement? of Pyrite occurs, almost completely
		replacing a 3-4 mm granule
		2419.1-2419.6' - Sudbury Breccia vein, 1-2 cm wide @ 15-25° to CA,
		breccia is fine grained ^{soft} chloritized & partly albitized with flow lines
		and a few rounded clasts (≤ 6mm), dark greens, medium greys & browns in flow bands
		which continue into an apophysis surrounding a larger well rock clast; breccia appears
		to be cross-cut and truncated by fault breccia at 2419.5';
		2419.5' - Fault breccia vein (altered) @ 40-45° to CA; this is a 1-2 mm wide

Diamond Drill Record

HOLE NO. ML94-01

Feet		DESCRIPTION
FROM	TO	
		dark chlorite vein which bulges into a breccia vein < 2 cm wide containing some
		tan, albitized, angular clasts as well as "normal" host wacke clasts; late, small
		quartz-carbonate gashes cut chlorite matrix; pinkish albite. Fims chlorite veinlets &
		fault breccia + Sudbury Breccia; several irregular to more uniform chlorite veinlets
		present up-hole from fault
2419.6	2437.4	Mainly black chloritic (with lighter zones) pebbly wacke gradational into
		bedded wackes below; pebbles (1-2%) disappear; moderately hard
		to locally soft to locally very hard; chlorite quartz-carbonate (some pinkish)
		veinlets, mainly @ 60-70° but also ^{1-5 mm} also ^{as before} quartz-carbonate @ 25-45° with alteration
		haloes of pinkish to beige albite; visible apple green epidote
		also occurs in veinlets, sometimes to the detriment of chlorite
		disseminated Pyrite and some small veinlets occur in the veinlets & selvages
		of alteration, ^(less) Pyrite cubes 1-3 mm in size occur sporadically in the
		wacke matrix and some ^{small} pyrites (also with alteration haloes); 1/2% Pyrite overall
		some Pyrrhotite replaces ^{some} Pyrite between ~2426.3 and 2434' (2 mm Pyrite
		cubes completely replaced by Pyrrhotite at 2434')
		Minor Chalcopyrite + Pyrrhotite + Pyrite in alteration veinlet near 2430.3'
		Chlorite veinlets, 2-10/foot, most intense (5-10/foot) between 2428-2435'

Diamond Drill Record

HOLE No. ML 94-01

Feet		DESCRIPTION
FROM	TO	
		2435-2437' - rocks more brownish grey (Fracture zone continues to about 2465')
2437	2471	GOWGANDA FORMATION - ALTERED, WACKES +/- ARKOSIC BEDS Gradational contacts Wackes are non-magmatic, dark grey-black or greenish black, medium to thin bedded + 5% laminated sections (bedding @ 60-75° to SA), often ^{fine-grained} soft chloritic-chloritized; 10-15% altered, scattered, arkosic beds and laminations which are very hard, fine to medium grained, pinkish to reddish to beige, albitized for silicified +/- pale greenish-beige epidotization(?); (patchy to gradational alteration also extends into some of the wackes); wackes also contain some scattered veinlets of light greenish grey alteration/bleaching, often as haloes about 1-3mm chlorite +/- quartz-carbonate veinlets +/- pyrite with epidote +/- albite haloes @ 45-75° to C.A., as in previous sections; some, 1-4 mm pyrite cubes developed, mainly in the altered parts, but also occurring in the host wackes Trace to locally < 3% Pyrite (average $\leq 1/2\%$); 2443.3 - 2445' - hard - very hard pinkish to reddish alteration (albitization/ silicification) in wackes and some arkosic bands; cut by quartz-carbonate veinlets and gashes @ mainly 15° to C.A.; one also invades a chlorite veinlet @ 70-80° to C.A. which offsets a gash; minor pyrite near 2444.5' (+)

Diamond Drill Record

HOLE No. ML 94-01

Feet		DESCRIPTION
FROM	TO	
		2443-2450' - few fractures
		2448.3-2449.8' - pink to pinkish grey albitization (~85%) cut by a few quartz-carbonate veinlets
		2450-2468' - often fractured @ 60-75° (parallel to bedding), to 50°, 25-35° to C.A.; 2-8' foot, some mechanically broken core
		2452.6' - pink carbonate-quartz (4% chlorite) veinlet 0.3-1 cm wide @ ~25° to C.A., intersects with a chlorite-quartz-carbonate veinlet with epidote-albite halo @ 25° to C.A.
		2453' - 4 cm wide albitized band @ 60° to C.A. with 3% Pyrite cubes
		2453.4' - 0-1.5 cm wide, angular pink carbonate-quartz veinlet @ 15-35° to C.A. with angular, dull reddish brown, albitized well rock fragments
		2454.3-2454.9' - Altered soft sediment deformation zone; tan to red, albitized broken, deformed beds and laminations in chloritic wacke matrix (in part), bedding @ ~60-65° to C.A.; slip + Chalcopyrite @ 35° to C.A. cuts reddish albitized bed with irregular quartz-carbonate gouges near 2454.4'
		2455.1' - Mud seams in chlorite veinlet with albite halo @ 75-80° to C.A. (Fault?)
		2456.5-2457' - Brecciated, albitized bands (partly soft sediment deformation?) with <5% quartz-carbonate in matrix and irregular veinlets; fragments are red, pink tan & green

Diamond Drill Record

HOLE No. ML94-01

Feet FROM	TO	DESCRIPTION
	c/d,	and breccia zones are more or less parallel to remnant internal, and to external
2458	2470	Wacke laminations @ ~ 75-80° to C.A. ~ 15% pale greenish to beige. (+ pinkish) silicified/albitized/epidotized, fine to medium grained, ^{mass} bands and arkosic beds ~ 0.2 - 0.8" thick, cut by some albite veinlets and by some quartz-carbonate-chlorite veinlets with epidote-albite haloes; some disseminated Pyrite
<u>2471</u>	<u>2491.5</u>	GOWGANDA FORMATION - PEBBLY WACKE +/- ALTERATION Non-magnetic; dark grey to black, moderately soft to hard +/- patchy areas which are very hard; chloritic; some light greenish-grey bleached patches and veinlets; occasional chlorite +/- quartz-carbonate veinlet with epidote/albite halo @ 30-60° to C.A.; < 1-2% granules and pebbles ~ 0.5-3 cm in size, rounded, and sometimes with bleached and/or albitized haloes and occasional replaced by Pyrite; some fractures @ 20-50° to C.A.
24733	2474.6	< 10% pebbles, 1-3 cm in size, +/- Pyrite, +/- alteration haloes
	2491.5	Gradational contact

Diamond Drill Record

HOLE No. ML 94-01

Feet		DESCRIPTION
FROM	TO	
2491.5	2498	GOWGANDA FORMATION - MASSIVE WACKE +/- THIN BEDS, LAMINATIONS Non-magnetic, dark grey wackes with a few thin beds and laminations, chloritic, moderately soft to hard; some alteration, minor Pyrite Chloritic fracture +/- slips @ 30-35°, 50-60°, occasionally @ 75° to CIA, 4-7 / foot
2493.4		Albitized, epidotized, very thinly bedded @ 75° to CIA.
2494.4		Pink, albitized, epidotized, very thinly bedded/laminated, over 2 cm @ 75-80° to CIA, 2% sub-hedral Pyrite cubes ≤ 3 mm in size
2496.8		1.5 cm sub-hedral Pyrite cube
2497.4	2498	Some disseminated Pyrite in very thin bedded/laminated, lighter to dark greenish grey wackes; Bedding @ ~ 70° to CIA.
2498	2500	GOWGANDA FORMATION - PEBBLY WACKES Non-magnetic, dark to medium grey(s), moderately soft to hard, with ~5% granules and pebbles 0.2-1 cm in size mainly; minor Pyrite in some pebbles 2498.5 - 7 cm, chloritized wacke pebble
2500		END
		Frank H. Toews, B.Sc. Geologist

Diamond Drill Record

HOLE No. ML94-01

Feet		DESCRIPTION
FROM	TO	
		ACID DIP TESTS
		485' - 89½°
		625' - 89°
		795' - 89°
		995' - 88°
		1405' - 87°
		1700' - 87°
		2000' - 87°
		2300' - 86°
		2500' - 86°

Diamond Drill Record

C. JACK SATIPLING

HOLE No. ML 94-01

	SAMPLE			ASSAYS			
	FROM	TO	WIDTH	No.	Ag (ppb)	Ni (ppm)	U (ppm)
Chloritic-sericitic, massive wacke, brecciated by chlorite fracture fillings +/- slips with scaley Py; 1-2% Quartz (hematitic) Dolomite veinlets and gashes; < 1/4% Pyrite in sample	35.0'	39.0'	4.0'	ML94-1-1	7	—	—
Chloritic-sericitic massive wacke with some weak, local brecciation by chlorite-sericite fracture fillings +/- slips; 2-3% Quartz - (hematitic) Dolomite +/- Chlorite veinlets and gashes; minor Py; rocks partially albitized below 42.3'	37.0	43.0	4.0'	ML94-1-2	6	—	—
Pink, albitized, arkosic with ~5% Quartz-Dolomite +/- hematite +/- Chlorite veinlets, Dolomite +/- Chlorite breccia blasts; Chloritic fracture fillings; minor Pyrite	56.0	59.5	3.5'	ML94-1-3	14	—	—
Green-grey, Chloritic-sericitic wacke (partly brecciated by chlorite fracture fillings) with 5-10% Qz - Dol (hem) +/- Chlorite veinlets; minor Pyrite; some Dol. porphyroblasts	59.5	63.0	4.5'	ML94-1-4	45	—	—
Sudbury Breccia +/- silicification +/- albization in some matrix and clasts; < 1% Qz - Dol (hem) veinlets; < 1/4% disseminated Py in matrix and clasts	105.0	109.0	4.0'	ML94-1-5	96	—	—
Brecciated, pale pinkish to pink, silicified, albitized with Dol. porphyroblasts, veinlets, fags, gashes; several Qz-Dol veinlets; minor disseminated Py; several Py fracture fillings & splashes near 164.2'; minor Chlorite, Sericite	162.0	165.0	3.0'	ML94-1-6	143	—	—
Light to medium greenish grey fine grained pebbly wacke incl. 1.2' section of med. - coarse grained pebbly wacke - paragonite < 1/8% Po +/- Cp as disseminations (or replaced granules) and in pebbles & as rims on pebbles; few Qz-Grb Fracture fillings +/- Po @ 70-75°, 65° to C.A.	750.0	755.0	5.0'	ML94-1-7	5	104	2.8

(See also ICAP Multi-element results by Spectro Lab Inc.)

Diamond Drill Record

CX SAMPLE LOG

HOLE No. ML94-01

SAMPLE				ASSAYS			
FROM	TO	WIDTH	No.	Au(ppb)	Ni(ppm)	Au(ppb)	Pt(ppb)
160	152'	Selected Combs	ML94-1-8	(See multi-element analysis by O.G.S. Lab)			
			"	Au(ppb) Pt(ppb) Pt(ppb)			
				513 25 92			
1465	1470	5.0'	ML94-1-9				
				Co(ppm) Ni(ppm) Au(ppb) Pt(ppb) Pt(ppb)			
				73 60 <5 <30 68			
1679	1683.5	4.5'	ML94-1-10				
				Au(ppb)			
				13			
1683.5	1686'	2.5'	ML94-1-11				
				19			
<p>Magnetic concentrate from selected grab samples in pebbly wacke containing magnetic Po (1-2%) which variably, partly replaces pebbles and granules interstitially and on rims (some granules may be totally replaced) and also in some Quartz-carbonate ± chlorite veinlets (Concentrate was assayed according to O.G.S. laboratory)</p>							
<p>16 Quartz-Carb-Chlorite veinlets + Po, Cp ± Py (± 10% Po, Cp in veinlets) < 1-3 mm wide (avg. 2mm) @ 60-75° to c.n. in pebbly wacke; also disseminated Po replaces some pebbles & granules; < 1% Po, Cp overall</p>							
<p>Chloritized - Sericitized Wacke ± Breccia to 0.6' Quartz-Chlorite vein; 2-3% disseminated by illwacke</p>							
<p>Chloritized - Sericitized Wacke, brecciated by Chlorite-Quartz-Carbonate - (1-1%) matrix veinlets ± some plink</p>							
<p>Quartz-Carbonate veinlet; 2-3% disseminated Pyrite</p>							
<p>20 10 30 4</p>							



Ministry of
Northern Development
and Mines

Ontario

Report of Work Conducted After Recording Claim

Mining Act

Transaction Number

67470-00230

Personal information collected on this form is obtained under the authority of the Access to Information Act. This collection should be directed to the Provincial Manager, Mining Lands, Sudbury, Ontario, P3E 6A5, telephone (705) 670-7284.



41115SE0027 2.15834 RATHBUN

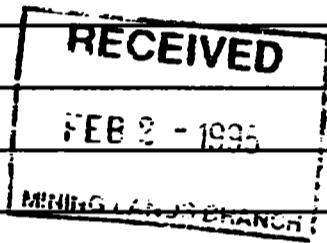
900

- Instructions:**
- Please type or print and submit in duplicate
 - Refer to the Mining Act and Regulations for requirements of Mining Recorder.
 - A separate copy of this form must be completed for each Work Group.
 - Technical reports and maps must accompany this form in duplicate.
 - A sketch, showing the claims the work is assigned to, must accompany this form.

Recorded Holder(s) FLAG RESOURCES (1985) LIMITED		Client No. 132 132
Address SUITE 1970-540-FIFTH AVENUE S.W. CALGARY, AB T2P 0M2		Telephone No. (403) 262 8883
Mining Division SUDBURY	Township/Area RATHBUN	M or G Plan No.
Date Work Performed From: AUGUST 8, 1994	To: OCTOBER 21, 1994	

Work Performed (Check One Work Group Only)

Work Group	Type
<input type="checkbox"/> Geotechnical Survey	
<input checked="" type="checkbox"/> Physical Work, including Drilling	DRILLING AND GEOLOGICAL CONSULTING
<input type="checkbox"/> Rehabilitation	
<input type="checkbox"/> Other Authorized Work	SECTION 18 ONLY
<input type="checkbox"/> Assays	
<input checked="" type="checkbox"/> Assignment from Reserve	



Total Assessment Work Claimed on the Attached Statement of Costs \$ 46,751.00

Note: The Minister may reject for assessment work credit all or part of the assessment work submitted if the recorded holder cannot verify expenditures claimed in the statement of costs within 30 days of a request for verification.

Persons and Survey Company Who Performed the Work (Give Name and Address of Author of Report)

Name	Address
ERANA MINES LIMITED	106 FIELDING ROAD, LIVELY, ONTARIO, P3Y 1L5
FRANK TOEWS	HIGHWAY 537, RR#3, SUDBURY, ONTARIO, P3E 4N1

(attach a schedule if necessary)

Certification of Beneficial Interest * See Note No. 1 on reverse side

I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.	Date DEC. 5. 94.	Recorded Holder or Agent (Signature) <i>[Signature]</i>
--	----------------------------	--

Certification of Work Report

I certify that I have a personal knowledge of the facts set forth in this Work report, having performed the work or witnessed same during and/or after its completion and annexed report is true.		
Name and Address of Person Certifying MURDO C. MCLEOD, SUITE 1970-540-FIFTH AVENUE S.W. CALGARY, AB T2P 0M2		
Telephone No. (403) 262 8883	Date DECEMBER 5, 1994	Certified By (Signature) <i>[Signature]</i>

For Office Use Only

Total Value Cr. Recorded <i>Rec'd 750 8591 Appt 88000</i>	Date Recorded Dec 8/94	Acting Mining Recorder <i>[Signature]</i>	Received Stamp RECEIVED DEC-8-1994
	Deemed Approval Date MARCH 8, 1995	Date Approved	
	Date Notice for Amendments Sent		

I certify that the recorded holder had a beneficial interest in the patented or leased land at the time the work was performed.

Signature _____ Date _____

Note 2: If work has been performed on patented or leased land, please complete the following:

Note 1: Examples of beneficial interests are unrecorded transfers, option agreements, memorandum of agreements, etc., with respect to the mining claims.

In the event that you have not specified your choice of priority, option one will be implemented.

Credits you are claiming in this report may be cut back. In order to minimize the adverse effects of such deletions, please indicate from which claims you wish to prioritize the deletion of credits. Please mark (✓) one of the following:

- 1. Credits are to be cut back starting with the claim listed last, working backwards.
- 2. Credits are to be cut back equally over all claims contained in this report of work.
- 3. Credits are to be cut back as prioritized on the attached appendix.

Value Assigned from this Claim	Reserve: Work to be Claimed at a Future Date
\$600.00	\$17,875.00
\$5,600.00	\$17,375.00
Total Assigned From	
Total Reserve	

RECEIVED
 FEB 2 - 1986
 MINING LANDS BRANCH

Value of Assessment Work Done on this Claim	Value Applied to this Claim
\$23,375.00	400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
	\$400
\$23,375.00	\$5,600.00
Total Value Work Done	
Total Value Work Applied	

2. 15834

Work Report Number for Applying Reserve	Claim Number (see Note 2)	Number of Claim Units
	S577377	1
	S586783	1
	S529169	1
	S586767	1
	S586728	1
	S586702	1
	S586701	1
	S1094347	1
	S1094346	1
	S1094345	1
	S1126212	1
	S586778	1
	S586779	1
	S586730	1
Total Number of Claims		



Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des mines

for Assessment Credit

État des coûts aux fins
du crédit d'évaluation

Transaction No./N° de transaction

W9470.00230

Mining Act/Loi sur les mines

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used to maintain a record and ongoing status of the mining claim(s). Questions about this collection should be directed to the Provincial Manager, Minings Lands, Ministry of Northern Development and Mines, 4th Floor, 159 Cedar Street, Sudbury, Ontario P3E 6A5, telephone (705) 670-7264.

Les renseignements personnels contenus dans la présente formule sont recueillis en vertu de la Loi sur les mines et serviront à tenir à jour un registre des concessions minières. Adresser toute question sur la collecte de ces renseignements au chef provincial des terrains miniers, ministère du Développement du Nord et des Mines, 159, rue Cedar, 4^e étage, Sudbury (Ontario) P3E 6A5, téléphone (705) 670-7264.

1. Direct Costs/Coûts directs

Type	Description	Amount Montant	Totals Total global
Wages Salaires	Labour Main-d'oeuvre		
	Field Supervision Supervision sur le terrain		
Contractor's and Consultant's Fees Droits de l'entrepreneur et de l'expert- conseil	Type		
	DRILLING	\$ 89,274.00	
	CONSULTING	\$ 4,447.00	
Supplies Used Fournitures utilisées	Type		
Equipment Rental Location de matériel	Type		
		\$43,751.00	
Total Direct Costs Total des coûts directs			\$43,751.00

2. Indirect Costs/Coûts indirects

** Note: When claiming Rehabilitation work Indirect costs are not allowable as assessment work.
Pour le remboursement des travaux de réhabilitation, les coûts indirects ne sont pas admissibles en tant que travaux d'évaluation.

Type	Description	Amount Montant	Totals Total global
Transportation Transport	Type		
	RECEIVED		
	FEB 2 1995		
	MINING LANDS BRANCH		
	2.15834		
Food and Lodging Nourriture et hébergement			
Mobilization and Demobilization Mobilisation et démobilisation			\$3,000.
Sub Total of Indirect Costs Total partiel des coûts indirects			\$3,000.
Amount Allowable (not greater than 20% of Direct Costs) Montant admissible (n'excedant pas 20 % des coûts directs)			\$43751.00
Total Value of Assessment Credit (Total of Direct and Allowable indirect costs)			\$46751.00
Total Value of Assessment Credit Valeur totale du crédit d'évaluation (Total des coûts directs et indirects admissibles)			\$46751.00

Note: The recorded holder will be required to verify expenditures claimed in this statement of costs within 30 days of a request for verification. If verification is not made, the Minister may reject for assessment work all or part of the assessment work submitted.

Note: Le titulaire enregistré sera tenu de vérifier les dépenses demandées dans le présent état des coûts dans les 30 jours suivant une demande à cet effet. Si la vérification n'est pas effectuée, le ministre peut rejeter tout ou une partie des travaux d'évaluation présentés.

Filing Discounts

1. Work filed within two years of completion is claimed at 100% of the above Total Value of Assessment Credit.
2. Work filed three, four or five years after completion is claimed at 50% of the above Total Value of Assessment Credit. See calculations below:

Total Value of Assessment Credit	Total Assessment Claimed
	x 0.50 =

Remises pour dépôt

1. Les travaux déposés dans les deux ans suivant leur achèvement sont remboursés à 100 % de la valeur totale susmentionnée du crédit d'évaluation.
2. Les travaux déposés trois, quatre ou cinq ans après leur achèvement sont remboursés à 50 % de la valeur totale du crédit d'évaluation susmentionné. Voir les calculs ci-dessous.

Valeur totale du crédit d'évaluation	Evaluation totale demandée
	x 0,50 =

Certification Verifying Statement of Costs

I hereby certify:
that the amounts shown are as accurate as possible and these costs were incurred while conducting assessment work on the lands shown on the accompanying Report of Work form.

that as PRESIDENT I am authorized
(Recorded Holder, Agent, Position in Company)

to make this certification

Attestation de l'état des coûts

J'atteste par la présente :
que les montants indiqués sont le plus exact possible et que ces dépenses ont été engagées pour effectuer les travaux d'évaluation sur les terrains indiqués dans la formule de rapport de travail ci-joint.

Et qu'à titre de _____ je suis autorisé
(titulaire enregistré, représentant, poste occupé dans la compagnie)

à faire cette attestation.

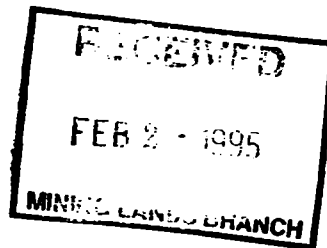
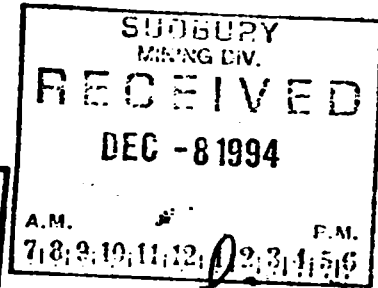
Signature [Signature] Date Feb 5/95

FLAG RESOURCES (1985) LIMITED

Suite 1970, 540 - 5th Avenue S.W.
Calgary, Alberta, Canada
T2P 0M2
TELEPHONE: (403) 262-8883
FAX: (403) 262-8886

2.15834

MINING RECORDERS OFFICE
WILLET GREEN MILLER CENTER
933 RAMSEY LAKE ROAD
3rd FLOOR
SUDBURY, ONTARIO
P3E 6B5



DECEMBER 4, 1994

Dear Sir:


Enclosed is a Report of Work and Statement of Costs on Drill Hole ML94-1, drilled on the boundary of S1179591 and S577377, as will be verified by Consulting Geologist, Frank H. Toews.

Two copies of the drill log will be submitted directly, to your office, by Mr. Toews.

There is an additional invoice, for consulting services, to be received from Mr. Toews, for this drill hole. It will be submitted when received.

Although costs are split on an equal basis between the two claims, we have submitted an assignment from reserve, from one claim only.

YOURS TRULY,


MURDO C. MCLEOD
PRESIDENT
FLAG RESOURCES
CALGARY, CANADA
MCM/mdm
ENCL

2.15834

ERANA MINES LIMITED
106 Fielding Road
Lively, Ontario
P3Y 1L5

Flag Resources (1985) Limited
1970 540 - 5TH AVE., S.W.
Calgary, Alberta
T2P 0M2

RECEIVED
FEB 2 - 1995
MINING LANDS BRANCH

INVOICE NO.: FRL-003
DATE : Sept. 29/94
TERMS : Due upon receipt.

ATTENTION: Mr. M.C. McLeod

Diamond Drilling (B.Q.) - "RATHBUN TOWNSHIP"
- claim number ~~S472996~~
- to deepen hole 1000 ft.

Boundary
S 1179591-~~R158~~
S 577977-~~R16~~

.. 7 - 29/94 : D.D. hole #ML94-1
to deepen hole
1000 to 2000 ft.
1000 ft. @ \$15./ft. \$15,000.00

.. 19/94 : haul drill core to 106 Fielding Rd.
for viewing by geologist
(Professor Naldrett)

2 men @ 12 hrs. each
17 hrs. @ \$20./hr. 340.00
7 hrs. @ \$30./hr. 210.00 550.00

Bombardier - 1 day @ \$200./day 200.00

Truck Rental - 1 day @ \$50./day
to haul core 50.00

t. 14, 15, &
94 : Tilden Rent-A-Car (Airport)
reservation #54261
for Mr. M.C. McLeod 223.44*
(copy of transaction attached)

\$16,023.44

7% G.S.T. calculated on \$15800.00 1,106.00

GST #R101000000 \$17,129.44

LESS: Sept. 6/94 tel. trsf. -15,500.00

\$ 1,629.44

ENTERED SEP 29 1994
SJ-284

FRANK H. TOEWS , B.Sc. GEOLOGIST
 Highway 537, R.R.# 3
 Sudbury, Ontario
 P3E 4N1
 Tel.(705) 694-4828

RECEIVED
 FEB 2 - 1995
 MINING LANDS BRANCH

Statement of Account

To : Flag Resources (1985) Ltd.
 Suite 1970, 540 - 5th Avenue S.W.
 Calgary, Alberta
 T2P 0M2

Date : October 2, 1994

Period : August 15 - September 30, 1994

2.15834

- Projects :
- a) -Laundry L., Mackelcan Twp.
 - b) -Rathbun L. Area, Rathbun Twp.
 - c) -Matagamasi L. Area, Rathbun Twp.
 - d) -General

Particulars	Amount	Balance
PREVIOUS BALANCE: (Statement August 14/94)		\$4,732.72
PAYMENT ON ACCOUNT: August 14/94	\$1,400.00	
September 1/94	\$3,332.00	
		\$0.72

FEES:

(a) - Laundry L., Mackelcan Twp. \$300.00
 (6 days - charge only 2 days @ 150/day)

Re-write wet log sheets for DDH LL94-01,
 convert metric to imperial measurements, plot
 section, and photocopy.

(b) Rathbun L. Area \$37.50
 August 17 /94 (0.25 day)

Photocopy & deliver log of DDH RL94-04 to
 Mining Recorder for M.C.M.

(c) Matagamasi L. Area, Rathbun Twp. \$3,262.50
 August 15 - Sept.30 /94 (21.75 days)

To drill (DDH ML94-01) to log & sample
 core; visit drill with Wilf Meyer &
 Mike Cosco of M.N.D.M. (Sept. 7) &
 M.C.M. (Sept. 16); take samples of pebbly
 wacke with pyrrhotite +/- chalcopyrite to
 O.G.S. Lab (Sept. 9 & again on Sept. 30);
 ship samples collect by bus to Spectrolab
 in Rouyn, PQ (Aug. 25 & Sept. 30); picked
 core & Tony Naldrett at airport, discussion,
 p. 1 of 2

Account

Surces (1985) Ltd.

per 2/94

Magamsi L. Area, ctd.
and review core from ML94-01 at Erana Mines,
take Tony back to conference at Sheraton,
and re-stack core (Sept. 19 & 20); also
checked outcrops & old pit or shaft? on
south shore of Cathro L. (Sept. 12);
picked up copy of Fax of Naldrett's report
at M.N.D.M. (Sept. 30).

2.15834

(d) General \$0.00
August - September/94 (No charge)
Phoning, etc.

Sub-total (Fees) : \$3,600.00

EXPENSES:

Vehicle Allowance (2875 Km @ 0.30/km) \$862.50
Photocopies \$14.21

Sub-total (Expenses) : \$876.71

TOTAL (Fees + Expenses) : \$4,476.71

BALANCE DUE : \$4,477.43

Frank H. Teed

ERANA MINES LIMITED
 106 Fielding Road
 Lively, Ontario
 P3Y 1L5

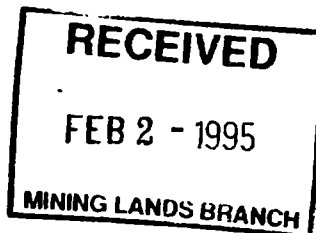
TO: Flag Resources (1985) Limited
 1970 540 - 5th Ave., S.W.
 Calgary, Alberta
 T2P 0M2

INVOICE NO.: FRL-002 A
 DATE : Aug. 26/94
 TERMS : Due upon receipt.

RE: Diamond Drilling (B.Q.) - "RATHBUN TOWNSHIP"
 - claim number 8220996

*Revised 11 7 99 - LT 50
 # 577377 - 496*

MOBILIZATION	: August 8, 1994		\$ 1,500.00
	August 10 - 24, 1994		
	<u>D.D. Hole #ML94-1</u>		
	drilled complete to		
	1000 ft. @ \$12./ft.		12,000.00
DEMOBILIZATION	: August 24, 1994		<u>1,500.00</u>
			\$15,000.00
G.S.T.	: 7% G.S.T.		<u>1,050.00</u>
	GST #R101671678		\$16,050.00
LESS:	Tel. Trsf. July 18/94		<u>-15,000.00</u>
			<u>\$ 1,050.00</u>



2.15834

ENTERED AUG 29 1994
 65-262

Core
Drilling/Per.
1/2

16. (1) Exploratory drilling by core or non-core method, including diamond or core drilling, and other drilling such as percussion, reverse circulation and auger drilling, is eligible for assessment work credit if the holder of the claim submits legible drill hole logs, suitable for photographic reproduction, in duplicate, a drilling plan and a drill hole section.

16. (2) The drill hole logs shall,

- ✓(a) identify the hole by number;
- ✓(b) give the mining claim numbers on which the hole is drilled;
- ✓(c) indicate the location of the drill hole collar in relation to the grid line co-ordinates, claim posts and identifiable geographic reference points;
- ✓(d) indicate the angle and azimuth of the hole;
- ✓(e) indicate the size of the core, or the diameter of the drill hole if bored other than by core drilling;
- ✓(f) state the starting and completion dates of the drilling;

16. (2) ✓(g) state the name of the drill contractor;
- (h) state the storage location of the core or drill sample material;
 - ✓(i) indicate the thickness of overburden in the core drilling holes;
 - ✓(j) adequately describe all geological units encountered in terms of their thickness, composition, colour, textures, structure, grain size, degree of sorting, mineralization and alteration, as appropriate;
 - ✓(k) indicate the total depth of penetration of the drill hole in bedrock and unconsolidated material;
 - ✓(l) indicate the location and type of all samples taken for assay or physical tests;
 - (m) state the date of completion of the log;
 - ✓(n) contain the printed name and signature of the author of the logs; and
 - NA (o) provide a legend of all symbols or abbreviations used in the logs.

16. (3) The drilling plan map shall be on durable paper, suitable for photographic reproduction, and shall,

- ✓(a) be at a scale between 1: 5000 and 1: 10;
- ✓(b) contain a graphic or bar scale and show the magnetic north and the declination;
- ✓(c) show all lakes, streams and other notable topographic features, and all relative cultural features such as railroads and hydro lines;
- ✓(d) accurately show all claim boundaries, claim posts, township boundary lines, roads, lot and concession lines, base lines, picket lines and survey stations where identifiable, in relation to topographic features; and
- ✓(e) show the location of drill hole collars and the numbers, angles and depths of all drill holes in relation to clauses (2)(c), (d) and (e) in such a manner that relocation of the hole is simplified.

10. (4) The drill hole section shall be on durable paper, suitable for photographic reproduction, and shall,

- Core
Drilling
2/2
- ✓(a) indicate the rock types or type of material intersected;
 - ✓(b) be at a scale between 1: 5000 and 1: 10;
 - ✓(c) contain a bar or graphic scale;
 - ✓(d) give the astronomic azimuth of the hole;
 - ✓(e) show co-ordinate lines corresponding with those shown on the drilling map;

16. (4) ✓(f) indicate the total length of the hole;
- ✓(g) contain a legend for codes or symbols corresponding to unconsolidated materials, mineralization and structure;
- ✓(h) show the location of the unconsolidated materials and mineralization designated by code or symbol corresponding to those mentioned in clause (g);
- ✓(i) indicate the mining claim number on which the hole is drilled; and
- ✓(j) show the number and angle of the drill hole.

16. (9) A holder of a mining claim who performs a program of diamond drilling or overburden drilling on it is eligible for an assessment work credit, in addition to that claimed elsewhere under this section, of 4 per cent of the cost of the drilling program if the appropriate resident geologist is advised that the holder does not wish to retain the core and samples.

16. (10) The holder of the mining claim shall,

- (a) dispose of the core and samples in an appropriate manner under the conditions of the holder's work permit issued under the Public Lands Act or the Forest Fires Prevention Act; or
- (b) if clause (a) does not apply and the resident geologist so requests, deliver the core and samples at the holder's sole expense to the nearest core library or to another location designated by the resident geologist.

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Geoscience Approvals Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (705) 670-5853
Fax: (705) 670-5863

February 9, 1995

Our File: 2.15834
Transaction #W9470.00230

Mining Recorder
Ministry of Northern Development
and Mines
3rd Floor
Sudbury, Ontario
P3E 6B5

Dear Mr. Denomme:

RE: APPROVAL OF ASSESSMENT WORK ON MINING CLAIM 8577377 IN RATHBUN TOWNSHIP.

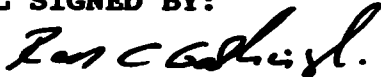
The assessment credits for Drilling, Section 16 of the Mining Act Regulations, as listed on the original Report of Work, have been approved as of February 8, 1995.

Please note there was an error in addition on the Statement of Cost form. Consulting geologist charges of \$4,477 is indicated on the invoices supplied, however only \$4,447 is shown on the form. Total Direct Cost of \$43,751 was obtained using the correct invoiced amount and the Total Value of Assessment Credit for this submission remains \$46,751.

Please indicate this approval on the claim record sheets.

If you have any questions concerning this correspondence please contact Bruce Gates at (705) 670-5856.

ORIGINAL SIGNED BY:

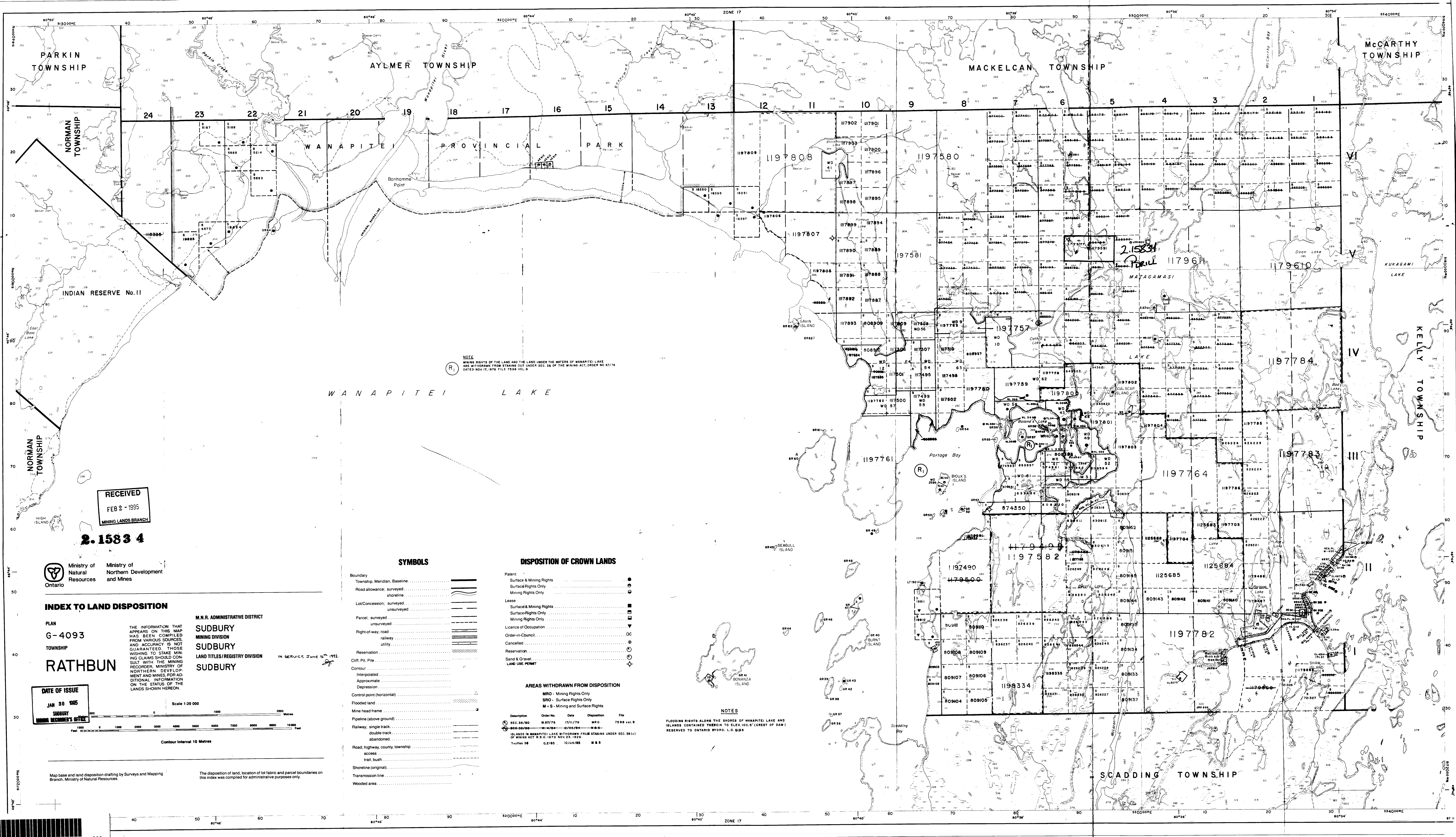


Ron C. Gashinski
Senior Manager, Mining Lands Section
Mining and Land Management Branch
Mines and Minerals Division

 BIG/jl
Enclosures:

cc: Assessment Files Office
Sudbury, Ontario

Resident Geologist
Sudbury, Ontario



NOTE
 MINING RIGHTS OF THE LAND AND THE LAND UNDER THE WATERS OF WANAPITEI LAKE
 ARE WITHDRAWN FROM STAKING UNDER SEC. 36 OF THE MINING ACT, ORDER NO. 6776
 DATED NOV. 17, 1976 FILE 7598 VOL. 9

RECEIVED
 FEB 2 - 1995
 MINING LANDS BRANCH

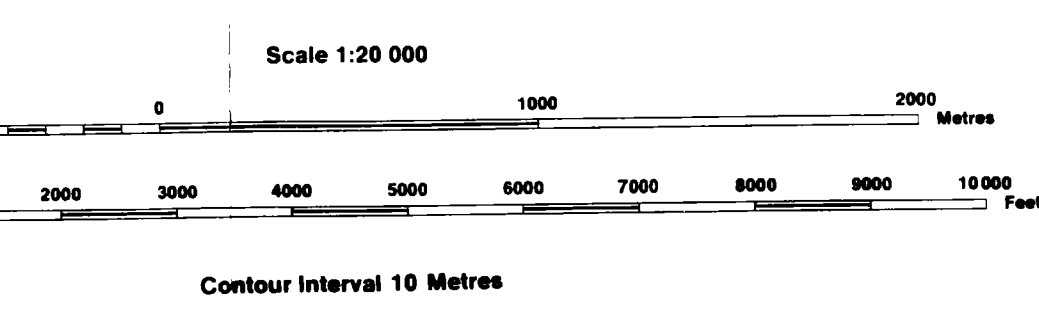
2.1583 4

Ministry of Natural Resources
 Ministry of Northern Development and Mines

INDEX TO LAND DISPOSITION

PLAN
 G-4093
 TOWNSHIP
RATHBUN
 DATE OF ISSUE
 JAN 30 1985
 SUDBURY
 MINING RECORDERS OFFICE

M.N.R. ADMINISTRATIVE DISTRICT
SUDBURY
 MINING DIVISION
SUDBURY
 LAND TITLES/REGISTRY DIVISION
SUDBURY
 IN SERVICE JUNE 16th 1982



SYMBOLS

Boundary	Township, Meridian, Baseline	—
Road allowance	surveyed, shoreline	—
Lot/Concession	surveyed, unsurveyed	—
Parcel	surveyed, unsurveyed	—
Right-of-way	road, railway, utility	—
Reservation	Cliff, Pit, Pile	—
Contour	Interpolated, Approximate, Depression	—
Control point	(horizontal)	—
Flooded land	Mine head frame	—
Pipeline	(above ground), double track, abandoned	—
Road	highway, county, township access, trail, bush	—
Shoreline	(original)	—
Transmission line	Wooded area	—

DISPOSITION OF CROWN LANDS

Patent	Surface & Mining Rights, Surface Rights Only, Mining Rights Only	—
Lease	Surface & Mining Rights, Surface Rights Only, Mining Rights Only	—
Licence of Occupation	Order-in-Council	—
Cancelled	Reservation	—
Sand & Gravel	LAND USE PERMIT	—

AREAS WITHDRAWN FROM DISPOSITION

MRO	- Mining Rights Only	—
SRO	- Surface Rights Only	—
M+S	- Mining and Surface Rights	—

Description	Order No.	Date	Disposition	File
SEC 36/80	W 6776	17/11/76	MRO	7598 VOL. 9
SEC 36/80	W 6776	12/09/84	M+S	
ISLANDS IN WANAPITEI LAKE WITHDRAWN FROM STAKING UNDER SEC. 36(1) OF MINING ACT R.S.O. 1970 NOV. 23, 1926				
Section 36	Q.2/85	10/04/85	M+S	

NOTES
 FLOODING RIGHTS ALONG THE SHORES OF WANAPITEI LAKE AND ISLANDS CONTAINED THEREIN TO ELEV. 100.0' (CREST OF DAM) RESERVED TO ONTARIO HYDRO. L.O. 618

577388-

595214

577377

1179591

M A T A G A M A S I

L A K E

RECEIVED
FEB 2 - 1995
MINING LANDS BRANCH

N

Witness Post For Claim
#1179591 (175 m S. of #4 Post)

Lakeshore

Collar DDH
ML 94-01 (-90°)

2.15834

Knoll

Drill Road

Base of Hill

To Forest Access
Road South of
Cathro Lake

#3-1179591

HILL

FLAG RESOURCES (1985) LTD

Location Sketch

D.D.H. ML 94-01

RATHBUN TOWNSHIP

Matagamasi Lake Area
On Boundary of Claims
S - 577377 & 1179591

Scale - 1 : 2000 Oct/94

0 50m

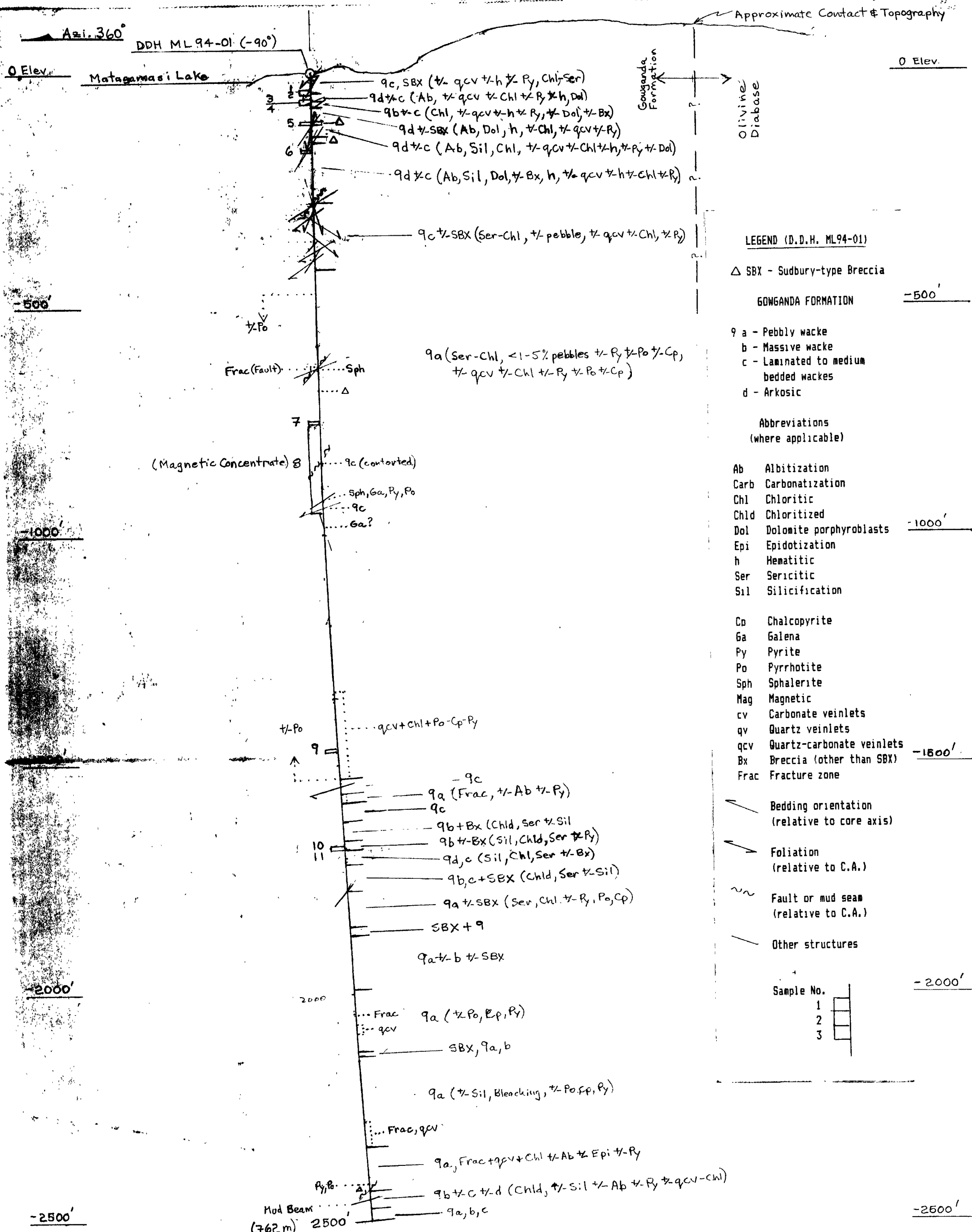
0 100ft

FHT



41115SE0027 2.15834 RATHBUN

210



Approximate Contact & Topography

Azi. 360° DDH ML94-01 (-90°)

0 Elev. Matagamasi Lake

0 Elev.

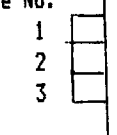
LEGEND (D.D.H. ML94-01)

- △ SBX - Sudbury-type Breccia
- GONGANDA FORMATION -500'
- 9 a - Pebbly wacke
- b - Massive wacke
- c - Laminated to medium bedded wackes
- d - Arkosic

Abbreviations (where applicable)

- Ab Albitization
- Carb Carbonatization
- Chl Chloritic
- Chld Chloritized
- Dol Dolomite porphyroblasts -1000'
- Epi Epidotization
- h Hematitic
- Ser Sericitic
- Sil Silicification
- Cp Chalcopyrite
- Ga Galena
- Py Pyrite
- Po Pyrrhotite
- Sph Sphalerite
- Mag Magnetic
- cv Carbonate veinlets
- qv Quartz veinlets
- qcv Quartz-carbonate veinlets -1500'
- Bx Breccia (other than SBX)
- Frac Fracture zone
- Bedding orientation (relative to core axis)
- Foliation (relative to C.A.)
- Fault or mud seam (relative to C.A.)
- Other structures

Sample No.



FLAG RESOURCES (1985) LTD.

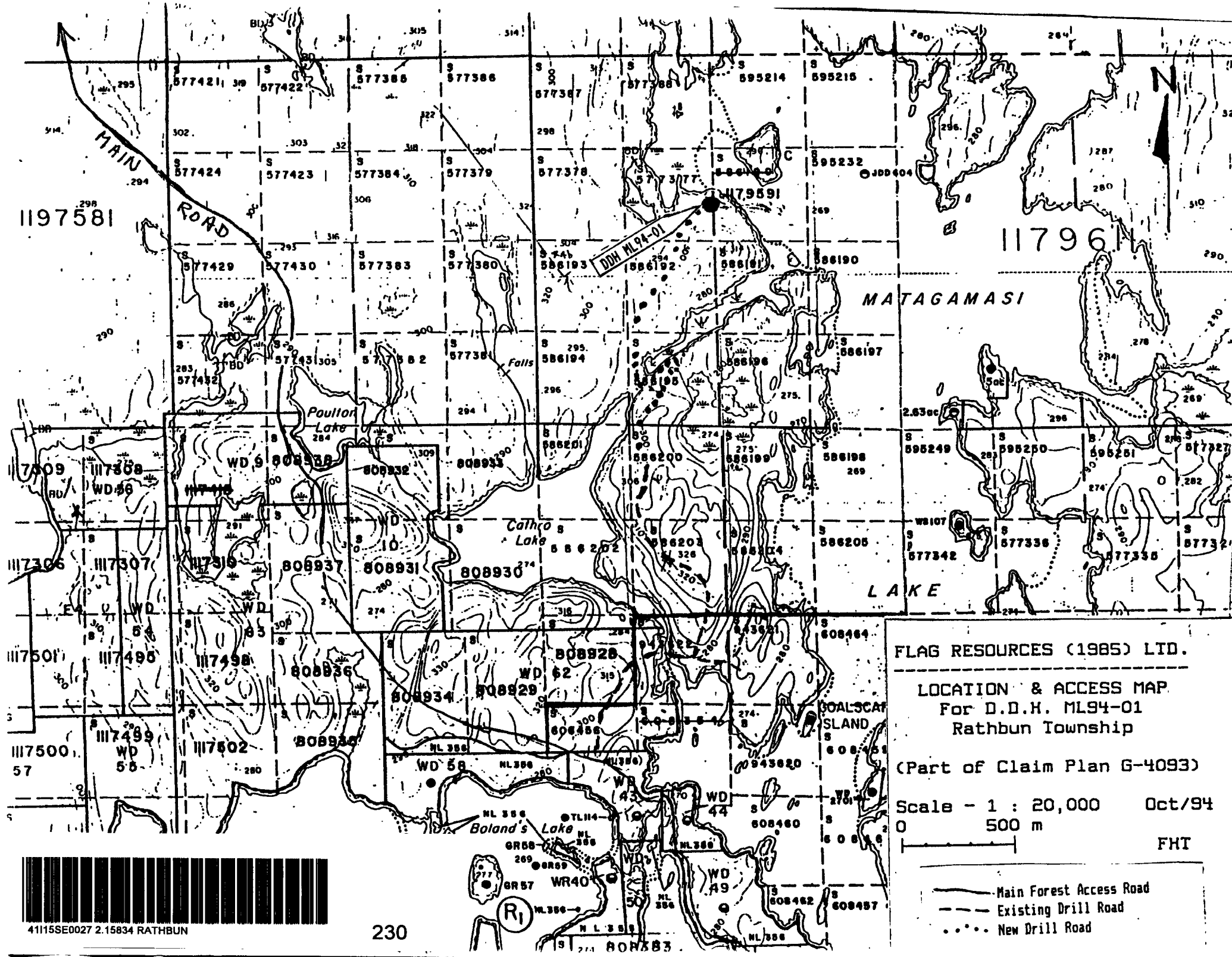
SECTION THROUGH D.D.H. ML94-01 (Looking East)
On Boundary Between Claims S - 577377 & 1179591

RATHBUN TOWNSHIP

Scale : 1" = 200' Oct. 1994
0 200 ft.
0 50 m FHT



41115SE0027 2.15834 RATHBUN



FLAG RESOURCES (1985) LTD.

LOCATION & ACCESS MAP
 For D.D.H. ML94-01
 Rathbun Township

(Part of Claim Plan G-4093)

Scale - 1 : 20,000 Oct/94
 0 500 m

FHT

- Main Forest Access Road
- - - Existing Drill Road
- ... New Drill Road



41115SE0027 2.15834 RATHBUN