42A12NE0074 2.17636 MACDIARMID

010

HOLE NUMBER: MCD42-03

FALCONBRIDGE LIMITED
DRILL HOLE RECORD

DATE: 03/24/1997
IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: 8172
PROJECT NUMBER: 8172
CLAIM NUMBER: P-995455
LOCATION: MacDiarmid TWP.

PLOTTING COORDS GRID: UTM
NORTH: 5391481.00N
EAST: 458038.00E
ELEV: 290.00

ALTERNATE COORDS GRID: Grid
NORTH: 4+ 0S
EAST: 6+50E
ELEV: 290.00

COLLAR DIP: -45° 0' 0"
LENGTH OF THE HOLE: 329.00M
START DEPTH: 0.00M
FINAL DEPTH: 329.00M

COLLAR ASTRONOMIC AZIMUTH: 180° 0' 0"

GRID ASTRONOMIC AZIMUTH: 0° 0' 0"

DATE STARTED: 02/21/1996
DATE COMPLETED: 02/27/1996
DATE LOGGED: 03/12/1996

COLLAR SURVEY: NO
RQD LOG: NO
HOLE MAKES WATER: NO

PULSE EM SURVEY: NO
PLUGGED: NO
HOLE SIZE: BQ

CONTRACTOR: Dominik Drilling
CASING: Casing pulled
CORE STORAGE: Kidd Minesite
UTM COORD.: Zone 17

COMMENTS :
WEDGES AT:

DIRECTIONAL DATA:

Depth (M)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
120.00	0° ' "	-48°30' 0"	A	OK	
180.00	° ' "	-51° 0' 0"	A	OK	
240.00	° ' "	-39°30' 0"	A		Bad test.
300.00	° ' "	-52° 0' 0"	A	OK	

Depth (M)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
-	-	-	-	-	

HOLE NUMBER: MCD42-03

DRILL HOLE RECORD

LOGGED BY: Chris Halchuk

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for C. HALCHUK

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 53.00	«┤OB├» Overburden					
53.00 TO 61.20	«2,bx,e,p,*e» Mafic Volcanic breccia amygdaloidal/vesicular pillowed autoclastic /hyaloclastite	Mafic pillow? breccia: 53.00-54.50 medium greenish-grey to dark grey -85% medium grey green subangular fragments which vary in size from 1mm to >10cm (avg 2cm). Fragments are generally not very elongate (avg 1.5:1) and show a slight preferential orietation with long axes between 45 and 70° to CA. -10% amygdules (avg 0.5mm) filled with quartz and in some cases carbonate. Amygdules are round to oval shaped and are found within the fragments. -15% dark greenish grey fine grained matrix with moderate hardness (chlorite + minor carbon -very weakly conductive). 54.50-59.30 mafic breccia with medium grey green colour and mottled appearance. Core is somewhat vesicular (decreasing downsection) due to weathering out of carbonate filled amygdules and stringers) -60% pale grey green fragments with ragged irregular outlines. Fragments have moderate hardness and vary in size (1mm-5cm -avg 0.6cm). Slight elongation of fragments (avg < 1.5:1) with weak preferential orientation of long axes at 55° to CA. -matrix is medium green colour; fine grained with moderate hardness (slightly softer than fragments). 10-15% amygdules filled with quartz, calcite and minor pyrrhotite; round to oval shape (1mm avg). 59.30-61.20 same as previous interval except much less matrix (5%) and fragment size increases. Much more homogeneous with medium grey green colour. Less vesicular with less weathered. -weakly foliated at 45° to CA. -lower contact sharp at 45° to CA.		-weak fracture control chlorite; weak to moderate spotty and fracture control carbonate.	53.00-54.50 0.5-1% disseminated non-magnetic pyrrhotite? mostly in matrix and in amygdules. Trace disseminated pyrite. 54.50-61.20 <0.5% disseminated non-magnetic pyrrhotite? in matrix and amygdules. Trace disseminated Pyrite.	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
61.20 TO 67.25	«7,b,m,G» Mafic Intrusive medium grained massive leucoxene bearing	-pale to medium grey green colour; medium grained; moderate hardness -50% greenish white plagioclase laths (1-3mm, avg. 1.5mm). -45% medium to dark green stubby laths and equant sections (avg 2mm). -5% grey-white opaque finely disseminated leucoxene (avg 0.2mm). 61.20-61.50 3-4% dark green clots (<2mm); oval to irregular in shape. Possible amygdules filled with chlorite and calcite. These clots decrease in abundance downsection from 62 metres and decrease in size toward the upper contact. Long axes of amygdules (2:1) show preferential orientation between 80 and 45° to CA. -grain size decreases gradually within 50cm of upper and 80cm of lower contacts. -both contacts sharp at 45° to CA		-weak to moderate fracture control and spotty carbonate and chlorite. -fracture conrol alteration most common at 45° to CA.	-trace disseminated pyrite and pyrrhotite.	
67.25 TO 127.70	«2,bx,p,*e» Mafic Volcanic breccia pillowed autoclastic	-mafic pillow breccia and hyaloclastite which displays two or three alternating sets of characteristics. These sets of characteristics have been are broken out into intervals as subunits which are often gradational with each other. 67.25 - 70.45 Subunit A (similar to subunit from 54.50 to 59.30) Fragments - 60% -very pale green to medium green fragments. Fragments are angular to subangular and range in size from <1mm to 10cm (avg. 2mm). Paler green to grey fragments tend to be smaller (consistently <3cm) and more ragged (partially remelted). All fragments are fine grained with moderate to high hardness and may be either silicified mafic fragments (medium green?) or weakly chloritic felsic fragments (pale green coloured ones). Fragments have variable length to width ratios (avg 2:1). Elongate fragments show preferential orientation with long axes at 45 to 80° to CA (avg 60° to CA). Matrix - 40% -medium green colour; fine grained; moderate		67.25-74.00 -moderate fracture control and spotty carbonate; weak to moderate fracture control and spotty chlorite; weak fracture control and spotty silica. 74.00-79.00 -moderate to strong fracture control carbonate as a replacement of the matrix; weak to moderate fracture control chlorite; weak fracture control and spotty silica. 79.00-104.00 same as 67.25 to 74.00 104.00-113.00 -weak to moderate fracture control carbonate and chlorite. 113.00-116.00 -moderate to strong fracture control carbonate; weak to moderate fracture control chlorite 116.00-121.80 -weak fracture control carbonate and	-pyrrhotite often occurs in amygdules with calcite quartz and or chlorite and may also be fracture controlled with carbonate. 67.25-74.00 «PoD0.5-1.0%,CpD0.0-0.1%,PyD0.0-0.1%,» 0.5-1.0% disseminated/blebby pyrrhotite; 0.0-0.1% disseminated/blebby chalcopyrite; 0.0-0.1% disseminated/blebby pyrite 74.00-79.00 «PoD1.0-1.5%,PyD0.0-0.1%,CpD0.0-0.1%,» 1.0-1.5% disseminated/blebby and fracture control pyrrhotite; 0.0-0.1% disseminated/blebby pyrite; 0.0-0.1% disseminated/blebby chalcopyrite 79.00-80.00 «PoD2.0-3.0%,PyD0.0-0.1%,» 2.0-3.0% disseminated/blebby and f/c pyrrhotite; 0.0-0.1% disseminated/blebby pyrite 80.00-89.75 «PoD0.5-1.5%,PyD0.0-0.1%,»	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		hardness (softer than fragments) and weakly chloritic. -10% amydules filled with quartz and lesser amounts of carbonated and minor chlorite. Amygdules are <0.5mm to 3mm (avg 0.7mm); generally oval in shape; and are concentrated in the fragments (some fragments have up to 30% amygdules). 70.45 - 79.00 Subunit B (Similar to subunit from 53.00 to 54.50) -has an overall darker grey green colour than Subunit A. Fragments - 80% -fragments are generally a medium green colour with moderate hardness (slightly softer than fragments in Subunit A). Fragments are generally larger (avg 4cm), ovoid in shape (not elongate) and have very distinct subrounded outlines. Fragments are fine grained and likely mafic in composition. These fragments tend to have a low amygdule content but may have strong spotty to pervasive carbonate alteration. -About 30% of these fragments have darker green cores with paler green bleached rims up to 1cm wide. In some cases the bleaching occurs as a narrower band displaced from the fragments outer edge. In other cases these fragments may have a narrow dark green grey band (~1mm wide) that also parallel their outer edges (displaced by about 1cm). Fragments usually have a dark grey colour along the edge that fades into the fragment centre (within 1cm). -about 20% of the fragments are the same as those found in subunit A including amygdule content and composition. One exception is their less ragged outlines. The majority of these fragments are located in the upper portion of this interval from 70.45 to 74.00. Matrix - 20% -dark grey to slightly green with moderate hardness. Dark colour may be due to carbon and minor chlorite content. For this unit much of the matrix consists mostly of carbonate (below 74 metres) and is smokey grey to white in colour.		chlorite 121.80-127.70 -weak to moderate fracture control carbonate and chlorite.	0.5-1.5% disseminated/blebby and f/c pyrrhotite; 0.0-0.1% disseminated/blebby pyrite 89.75-98.00 «PoD2.0-4.0%,PyD0.0-0.1%,» 2.0-4.0% disseminated/blebby pyrrhotite; 0.0-0.1% disseminated/blebby pyrite; possible sulphide fragments occur between 89.75 and 90.00 (avg 1cm). Pyrrhotite in blebs up to 1cm locally and also occurs in fractures with carbonate. 98.00-108.90 «PoD0.5-1.5%,PyD0.0%,» 0.5-1.5% disseminated/blebby pyrrhotite; 0.0% disseminated/blebby pyrite 108.90-114.90 «PoD2.0-3.0%,PyD0.0-0.1%,» 2.0-3.0% disseminated/blebby pyrrhotite; 0.0-0.1% disseminated/blebby pyrite ╣114.90-116.00╠«PoD5.0-7.0%,PyD0.0-0.1% » 5.0-7.0% disseminated/blebby pyrrhotite which is also fracture controlled. The sulphide mineralization is concentrated in the dark grey chlorite-carbon? matrix of the breccia. ; 0.0-0.1% disseminated/blebby pyrite 116.00-118.00 «PoD2.0-4.0%,PyD0.0-0.1%,» 2.0-4.0% disseminated/blebby pyrrhotite; 0.0-0.1% disseminated/blebby pyrite 118.00-122.00 «PoD0.5-1.5%,PyC0.0-0.1%,» 0.5-1.5% disseminated/blebby pyrrhotite; 0.0-0.1% clasts/fragment of pyrite ╣122.00-123.50╠«PoF6.0-8.0%,CpD0.0-0.1%	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		79.00-82.20 Subunit A - fragments are larger 82.20-85.90 Sununit B - except most fragments are those found in Subunit A. 85.90-89.00 Subunit A. 89.00-89.75 more massive fine grained mafic section. Lower contact missing; possible upper contact sharp at 70° to CA. 89.75-91.70 Subunit B - possible pyrrhotite sulphide clasts from 89.75-90.10. (avg 1cm) 91.70-108.90 Subunit A 98.30-99.80 core becomes more broken and fractured; missing core and minor gouge - fault? (99.10-99.60). 108.90-127.70 Similar to Subunit B except almost no amygdaloidal fragments as in Subunit A. Fragments have soft to moderate hardness. Trace to 0.5% soft bright green mineral (fuschite?) in fractrures and along fragment rims. Green mineral is negligible below 122.00. 108.90-113.85 <3% dark grey carbon-chlorite matrix; fragments exclusively mafic with indistinct outlines. Locally fragments have several 1-5mm wide concentric bands parallel to their edges. 113.85-116.00 dark grey carbon-chlorite matrix increases to 15%. Fragments have distinct angular outlines with an average size of about 2.5cm and elogation of 1.5:1. Over 50% of the fragments are paler green to beige in colour (similar to subunit A fragments) with 20% possible amygdules (chlorite and pyrrhotite filled). 116.00-121.80 same as 108.90 to 113.85. 118.00-122.20 more massive less fragmental appearance. 122.80-127.10 dark grey chlorite-carbon matrix increases to 20%. Same as 113.85 to 116.00 except fragments are smaller (avg. 1.5cm) and more elongate (avg 3:1). 127.10-127.70 unit becomes more massive; paler green and fine grained.			,PyD0.0-0.1%» 6.0-8.0% fracture/vein controlled and blebby/disseminated pyrrhotite; 0.0-0.1% disseminated/blebby chalcopyrite; 0.0-0.1% disseminated/blebby pyrite. Sulfides are disseminated mostly in the fragments and stringers are concetrated mostly in the dark grey matrix (carbon-rich?). 123.50-127.70 «PoD2.0-3.0%,CpD0.0-0.2%,PyD0.0-0.1%,» 2.0-3.0% disseminated/blebby and fracture control pyrrhotite; 0.0-0.2% disseminated/blebby chalcopyrite; 0.0-0.1% disseminated/blebby pyrite. Note: from 126.00-127.00 the pyrrhotite content increases to 3-5% and there is up to 0.2% chalcopyrite. From 127.00 to 127.70 there is only 1% finely disseminated pyrrhotite.	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		╣67.25-127.70╠«┤S2 65°├ weak to moderate» Note (all subunits): wherever fragments are consistently elongated they show a preferential orientation with their long axes at 65° to CA. The foliation is weak to moderate at the same angle as expressed by flattening of amygdules and disseminated sulfides. -upper contact for the entire unit is sharp at 45° to CA. -lower contact sharp at 30° to CA.				
127.70 TO 141.60	«7,b,m,G» Mafic Intrusive medium grained massive leucoxene bearing	-medium grained; grey green colour; moderate hardness. -45% pale green to white coloured plagioclase laths (1-3mm long - avg 2mm) -45% medium green coloured pyroxene and amphibole laths(1mm-1.5cm avg. 2.5mm). Laths increase in size locally from 130.00 to 133.00 -3-4% greyish to yellowish white leucoxene grains (avg <0.5mm) -3-5%subrounded quartz filled structures (amygdules?) that are 1-2mm in size. -grain size decreases within 2 metres of upper contact (127.70 - 129.70) -little or no grain size decrease at lower contact. -upper contact sharp at 30° to CA. -lower contact sharp at 65° to CA.		-weak fracture control carbonate and chlorite. Fracture control stringers at variable angles to CA.	-0.5% fracture control and disseminated pyrrhotite; trace disseminated pyrite.	
141.60 TO 142.50	«2/7,a,m» Mafic Volcanic or Intrusive fine grained massive	-medium grey green colour; fine grained; moderate hardness. -this unit shows a slight decrease in grain size within 5cm of both contacts with slight bleaching within 1cm of the contacts. This suggests it may be intrusive. -upper and lower contacts sharp at 75 and 45° to CA respectively.		-weak fracture control carbonate and chlorite with no preferential stringer orientation.	-0.5% fracture control and disseminated pyrrhotite and trace disseminated pyrite.	
142.50 TO 206.00	«7,b,m,G» Mafic Intrusive medium grained massive	-medium green grey colour; medium grained; moderate hardness. -same as intrusive mafic unit from 127.70 to 141.60 except darker grey appearance. -lower quantity of quartz filled amygdules?(<1%) which continues to decrease downsection.		-weak fracture control silica and carbonate occuring as 1-5mm wide milky white, fairly hard stringers of mostly quartz and minor carbonate. These stringers have varbiable orientations but are most commonly at high angles	-trace to 1% disseminated pyrrhotite (avg <0.5%) and trace disseminated pyrite.	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
	leucoxene bearing	200.45-200.85 fine grained mafic intrusive; medium grey colour; non-magnetic and fairly soft. Upper contact sharp and irregular (35° to CA.). Lower contact sharp at 85° to CA. 205.55-205.65 same as previous subunit. Upper and lower contacts sharp at 65° to CA -main unit upper contact sharp at 45° to CA. -lower contact missing at end of run. There is a large change in grain size from medium in this unit to very fine in the underlying unit below 206.00		(70 to 90°) to CA. -very weak fracture control epidote in association with quartz carbonate stringers which may have a pale green hue; weak fracture control chlorite occuring at variable orientations. 189.00-200.00 moderate fracture control silica and carbonate (quartz-cabonate stringers increase to about 5%) 200.00-206.00 Epidote alteration increases downhole. Also plagioclase grains often take on a greener hue. (Weak to moderate fracture control epidote, carbonate and silica)		
206.00 TO 213.40	«7/10,b,m» Mafic Intrusive or Diabase medium grained massive	-dark to medium grey colour; soft to moderate hardness; locally magnetic; medium grained -50% black to dark grey biotite occurring as books which pseudomorph after amphibole or pyroxene laths (1-5mm long - avg 2mm) -45% greenish white plagioclase laths (1-3mm long) 211.00-213.00 moderately magnetic (disseminated pyrrhotite or magnetite?) -grain size decreases gradually within 1m and 1.5m of upper and lower contacts respectively. -possible upper contact at 45° to CA. -lower contact sharp at 55° to CA.		-moderate pervasive and fracture control carbonate; weak fracture control silica and chlorite at variable orientations to CA.	trace to 1% disseminated pyrrhotite and trace dissemintated pyrite; 211-213 possibly disseminated magnetite (1%)	
213.40 TO 316.45	«7,b/c,m,G» Mafic Intrusive medium grained to coarse grained massive leucoxene bearing	-medium greenish grey colour; moderate hardness; medium to coarse grained. -same as unit from 142.50 to 206.00 but coarser grained and no quartz filled structures (amygdules). -45% dark green amphibole and possibly pyroxene laths (1mm-1cm; avg 4mm) which may be pseudomorphed by chlorite. -45% pale white to transluscent subhedral indistinct plagioclase grains (1-5mm; avg 2mm) -7% opaque leucoxene grains (1mm avg). -the rock becomes more green in appearance as some of the plagioclase and leucoxene grains take		-weak to moderate fracture control silica and epidote with weak fracture control carbonate. Epidote alteration occurs in association with quartz and minor carbonate stringers which are milky white to pale green in colour and fairly hard. The stringers are at variable orientations but most commonlyat a high angle (70-90°) to CA. -also weak pervasive epidote which seems to locally replace plagioclase and leucoxene.	-trace to 0.5% disseminated pyrrhotite and trace disseminated pyrite.	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		on a greenish hue (replacement by epidote?) -note grain size increases downsection from medium grained at 213.40 to nearly coarse grained at 220.00. 274.00-310.00 locally the matrix is pale green to reddish orange in colour (epidote and potassium alteration) 304.20-304.60 10,a,m -fine grained diabase unit; medium grey; weakly magnetic. Upper and lower conacts sharp at 45° to CA . Note: for the main unit the grain size very gradually decreases downsection below 290 metres to the lower contact where it is medium grained (avg 2mm). -upper contact sharp at 50° to CA. -lower contact sharp at 45° to CA.		-weak fracture control chlorite. 229.00-242.00 3% quartz-epidote-carbonate stringers (weak to moderate f/c epidote and quartz; weak f/c carbonate). ╣274.00-310.00╠«EpFM ,K>?FM» moderate, fracture/vein controlled, epidotization; moderate, fracture/vein controlled, postassic alteration or hematization? -stringers of just epidote ± quartz and carbonate tend to be at high angles to CA (1mm-3cm wide) -stringers with hematite or potassic feldspar with epitdote, quartz and carbonate have more variable orientations and often at low angles to the CA. These stringers may also be wider (up to 10cm); and less continuous. -hematization/potassic alteration locally changes the colour of the feldspars to pale orange. 287.00-290.00 and 296.00-298.50 fracture control potassic alteration/hematization is moderate to strong.		
316.45 TO 327.80	«10,a,m» Diabase fine grained massive	-medium grey colour; fine grained; moderate hardness; moderately magnetic. -45% white to pale green plagioclase laths (<1mm) -grain size decreases within 10cm of both contacts . -upper contact sharp at 45° to CA. -lower contact sharp at 25° to CA.		-weak fracture control chlorite, silica and carbonate at variable orientations to CA.	-trace disseminated pyrite and pyrrhotite.	
327.80 TO 329.00	«7,b,m,» Mafic Intrusive medium grained massive	-medium greenish grey; me dium grained; moderate hardness. -same as unit from 213.40 to 316.45 except not as coarse grained; leucoxene is not visible and plagioclase is a more opaque milky colour.		-weak to moderate fracture control chlorite, weak fracture control silica and carbonate with stringers at varible orientations to CA.	-trace dissemniated pyrrhotite.	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
329.00 TO 329.00	«EOH» End-Of-Hole					

Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm	Est.Ni %	Est.Po %	Est.Py %	Est.Cp %	Est.Sp %	Est.Gn %	ROCK TYPE	Comments
AT02730	0.00	0.00	0.00	12	118	15	8	<2	0.3										0.0	0.0	0.0	0.0	0.0	0.0	KR-AP Standard	
AT02730	0.00	0.00	0.00	11	117	15	8	<2	0.3										0.0	0.0	0.0	0.0	0.0	0.0	KR-AP Standard	
AT02729	78.00	79.00	1.00	74	49	1	223	<2	0.1										0.0	1.5	0.1	0.0	0.0	0.0	2,bx,p,ChPM	
AT02731	79.00	80.00	1.00	50	50	1	77	3	0.1										0.0	3.0	0.1	0.0	0.0	0.0	2,e,bx,p CbFW-M	
AT02732	80.00	81.00	1.00	51	63	1	91	3	0.1										0.0	1.0	0.1	0.0	0.0	0.0	2,e,bx,p,CbFW-M	
AT02733	88.00	89.00	1.00	46	68	1	84	<2	0.1										0.0	0.5	0.1	0.0	0.0	0.0	2,e,bx,p,CbFW-M	
AT02734	89.00	89.75	0.75	69	66	1	152	<2	0.1										0.0	1.0	0.1	0.0	0.0	0.0	2,bx,p,CbChFM	
AT02735	89.75	91.00	1.25	46	44	1	235	<2	0.1										0.0	4.0	0.1	0.0	0.0	0.0	2,e,bx,p,CbFW-M	
AT02736	91.00	92.00	1.00	53	53	1	361	<2	0.1										0.0	1.5	0.1	0.0	0.0	0.0	2,e,bx,p,CbFW-M	
AT02737	92.00	93.50	1.50	51	46	1	101	<2	0.1										0.0	1.5	0.1	0.0	0.0	0.0	2,e,bx,p,CbFW-M	
AT02738	93.50	95.00	1.50	44	57	1	95	<2	0.1										0.0	2.0	0.1	0.0	0.0	0.0	2,e,bx,p,ChFW-M	
AT02739	95.00	96.50	1.50	56	69	1	100	<2	0.1										0.0	3.0	0.1	0.0	0.0	0.0	2,e,bx,p,CbFW-M	
AT02740	96.50	98.00	1.50	37	61	1	305	<2	0.1										0.0	1.9	0.1	0.0	0.0	0.0	2,e,bx,p,ChFW-M	
AT02741	108.00	109.00	1.00	40	66	1	120	<2	0.1										0.0	1.0	0.1	0.0	0.0	0.0	2,e,bx,p CbFW	
AT02742	109.00	110.00	1.00	54	45	1	275	<2	0.1										0.0	2.5	0.1	0.0	0.0	0.0	2,bx,p,ChFW-M	
AT02743	110.00	111.50	1.50	63	38	1	343	3	0.1										0.0	1.5	0.1	0.0	0.0	0.0	2,bx,p,ChFW-M	
AT02744	111.50	113.00	1.50	59	39	1	435	<2	0.1										0.0	2.0	0.1	0.0	0.0	0.0	2,bx,p,ChFW-M	
AT02745	113.00	114.00	1.00	57	52	1	671	<2	0.1										0.0	3.0	0.1	0.0	0.0	0.0	2,bx,p,CbFW-M	
AT02746	114.00	115.00	1.00	32	61	1	112	<2	0.1										0.0	3.5	0.1	0.0	0.0	0.0	2,bx,p,CbFM	
AT02747	115.00	116.00	1.00	41	59	1	300	<2	0.1										0.0	6.0	0.1	0.0	0.0	0.0	2,bx,p,CbFM	
AT02748	116.00	117.00	1.00	48	37	1	331	<2	0.1										0.0	3.5	0.1	0.0	0.0	0.0	2,bx,p,ChFW	
AT02749	117.00	118.00	1.00	55	34	1	370	<2	0.1										0.0	2.5	0.1	0.0	0.0	0.0	2,bx,p,ChFW	
AT02751	118.00	119.00	1.00	27	46	1	504	<2	0.1										0.0	1.0	0.1	0.0	0.0	0.0	2,bx,p,CbFW	
AT02752	121.00	122.00	1.00	44	47	1	291	<2	0.1										0.0	1.5	0.1	0.0	0.0	0.0	2,bx,p,CbFM	
AT02753	122.00	123.50	1.50	91	43	1	451	<2	0.1										0.0	7.0	0.1	0.1	0.0	0.0	2,bx,(g?),CbFM	
AT02754	123.50	125.00	1.50	48	74	1	324	<2	0.1										0.0	2.5	0.1	0.0	0.0	0.0	2,bx,(g?),ChFM	
AT02755	125.00	126.00	1.00	55	87	1	135	<2	0.1										0.0	2.0	0.1	0.1	0.0	0.0	2,bx,(g?),CbFM	
AT02756	126.00	127.00	1.00	600	91	1	422	<2	0.3										0.0	3.5	0.1	0.2	0.0	0.0	2,bx,(g?),CbFM	
AT02757	127.00	128.00	1.00	92	41	1	231	<2	0.1										0.0	1.0	0.1	0.0	0.0	0.0	2,bx/m,CbFW	
AT02758	143.80	144.80	1.00	133	45	1	37	<2	0.1										0.0	0.5	0.1	0.1	0.0	0.0	7,b,m,e?,CbFW	
AT02759	144.80	145.30	0.50	671	66	1	27	<2	0.3										0.0	2.5	0.1	0.3	0.0	0.0	7,b,m,e?,ChFM	
AT02760	145.30	146.30	1.00	77	47	1	29	<2	0.1										0.0	0.5	0.1	0.0	0.0	0.0	7,b,m,e?,CbFW	

Sample	From (M)	To (M)	Leng. (M)	SIO2 %	AL2O3 %	CAO %	MGO %	NA2O %	K2O %	FE2O3 %	TIO2 %	P2O5 %	MNO %	CR2O3 %	LOI %	SUM %	Y PPM	ZR PPM	BA PPM	CU PPM	ZN PPM	NI PPM	CR PPM	FIELD NAME	CHEM ID	ALUM
AT03610	0.00	0.00	0.00																							
AT03601	56.00	59.00	3.00																							
AT03602	62.00	65.00	3.00																							
AT03603	67.50	70.40	2.90																							
AT03604	74.00	77.00	3.00																							
AT03605	92.00	95.00	3.00																							
AT03606	104.00	107.00	3.00																							
AT03607	110.00	113.00	3.00																							
AT03608	122.00	125.00	3.00																							
AT03609	137.00	140.00	3.00																							
AT03611	141.70	142.40	0.70																							
AT03612	167.00	170.00	3.00																							
AT03613	194.00	197.00	3.00																							
AT03614	200.00	203.00	3.00																							
AT03615	209.00	212.00	3.00																							
AT03616	214.00	217.00	3.00																							
AT03617	242.00	245.00	3.00																							
AT03618	263.00	266.00	3.00																							
AT03619	287.00	290.00	3.00																							
AT03620	311.00	314.00	3.00																							
AT00099	328.00	329.00	1.00																							

HOLE NUMBER: MCD42-04

FALCONBRIDGE LIMITED
DRILL HOLE RECORD

DATE: 03/24/1997
IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: 8172
PROJECT NUMBER: 8172
CLAIM NUMBER: P-995457
LOCATION: Macdiarmid TWP.

PLOTTING COORDS GRID: UTM
NORTH: 5391998.00N
EAST: 458190.00E
ELEV: 290.00

ALTERNATE COORDS GRID: Grid
NORTH: 1+20N
EAST: 7+ 0E
ELEV: 290.00

COLLAR DIP: -50° 0' 0"
LENGTH OF THE HOLE: 208.00M
START DEPTH: 0.00M
FINAL DEPTH: 208.00M

COLLAR ASTRONOMIC AZIMUTH: 180° 0' 0"

GRID ASTRONOMIC AZIMUTH: 180° 0' 0"

DATE STARTED: 02/28/1996
DATE COMPLETED: 03/05/1996
DATE LOGGED: 03/26/1996

COLLAR SURVEY: NO
RQD LOG: NO
HOLE MAKES WATER: NO

PULSE EM SURVEY: NO
PLUGGED: NO
HOLE SIZE: BQ

CONTRACTOR: Dominik Drilling
CASING: pulled
CORE STORAGE: Kidd Minesite
UTM COORD.: Zone 17

COMMENTS :
WEDGES AT:

DIRECTIONAL DATA:

Depth (M)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
63.00	186° 0' 0"	-51°30' 0"	S	OK	
120.00	183° 0' 0"	-51° 0' 0"	S	OK	
180.00	186° 0' 0"	-51° 0' 0"	S	OK	

Depth (M)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 59.60	«fob» Overburden					
59.60 TO 62.75	«2/7,a,m» Mafic Volcanic or Intrusive fine grained massive	59.60-60.50 2/7,a,m,G? -pale to medium grey green colour; moderate hardness; fine grained mafic volcanic -50% white to grey coloured stubby plagioclase laths (<0.3mm) -1% very fine white opaque leucoxene? (<0.1mm) -core busted up in this interval and lower contact missing (RQD < 20%) 60.50-61.25 5,a,*g,(g) -dark grey, very hard, very fine grained siliceous wacke/graphite -finely laminated with alternating pale grey (75%) and dark grey (25%) bands -pale grey bands are 0.5-3mm wide (avg 1mm) and probably consist of very fine clastic material. -dark grey bands are narrower (<1mm, avg 0.5mm) and may consist of even finer grains or strongly silicified graphite (very hard). A small percentage (1%) of the dark grey bands are moderately conductive and strongly conductive on fracture surfaces -locally in-situ brecciation with 1mm to 10cm sub-angular fragments (avg. 2cm) -fractures (<1-3mm wide) between the fragments are filled with a very fine dark grey material that appear identical to that in the dark grey bands. -fragments may show minor displacement and rotation and banding may be kinked, discontinous or disrupted -most common orientation of the banding is at 40° to CA but may be affected by brecciation and shearing -upper contact is missing (broken and missing core) -lower contact is sharp at 70° to CA which appears to truncate banding at a 30° angle. 61.25-62.75 2/7,a,m,G? -pale to medium grey green; moderate hardness, fine grained mafic volcanic or intrusive		-weak to moderate fracture control carbonate; weak fracture control chlorite	-0.5% finely disseminated pyrrhotite and trace disseminate pyrite	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-same as subunit from 59.60 to 60.50 -grain size decreases within 10 cm of upper contact which is at 70° to CA. -lower contact sharp at 60° to CA with a slight decrease in grain size with 10cm				
62.75 TO 75.60	«5,a,*g,g» Sedimentary fine grained laminated graphitic	-dark grey, very fine grained and very hard -same as subunit from 60.50 to 61.25 -either a strongly silicified sediment or a felsic volcanic with fracture control carbon -show concoidal fracture in places 62.75-66.00 same as subunit from 60.50-61.25 -finely laminated and in-situ breciated as describe previously -banding most commony at 40° to CA. 66.00-72.00 -more massive appearance with much less banding -consists 95% pale grey massive sections and 5% of dark grey bands. -locally up to 10% very fine white opaque grains (<0.1mm) quartz? 67.25 possible 1-2mm scale flame structures (tops are not definitive) 72.00-75.60 -banding increases but bands tend to be wider (up to 10cm wide) ╣62.75-75.60╠«┤S0 40°├» -upper contact sharp at 60° to CA -lower contact sharp and slightly undulatory at 65° to CA -lower contact appears to truncate banding		-weak fracture control carbonate and chlorite; moderate to strong pervasive silicification.	<0.5% finely disseminated pyrrhotite <0.5% finely disseminated and bedded pyrite 72.45-72.55 interval with up to 10% finely disseminated pyrite with concentration varying between bands	
75.60 TO 111.00	«2/7,a,m,e, G» Mafic Volcanic or Intrusive fine grained massive amygdaloida	-pale to medium grey green, fine grained, moderately hard -same as unit from 59.60 to 62.75 -60% pale grey stubby plagioclase laths (~0.5mm) -1% white opaque leucoxene grains? (<0.2mm) -20% dark green subhedral grains (<1mm) -locally 1% dark grey hard xenoliths of graphitic sediment? which are highly irregular in shape (due to partial melting?) with no prefered		-weak fracure control chlorite, very weak fracture control carbonate and silica. -stringers at variable orientatations (commonly 70, 45 and 20° to CA.	<0.5% finely disseminated pyrrhotite -trace disseminated pyrite 110.50-111.00 1-2% disseminated and blebby pyrrhotite (blebs up to 1cm) -trace fracture control pyrite.	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
	1/vesicular leucoxene bearing?	orientation and are 1mm-1.5cm in size (avg 5mm) 75.60-78.00 3-5% carbonate, chlorite and quartz filled amygdules. Amygdules are round to oval shape (1-5mm avg 2mm) with long axes (2:1) showing preferential alignment at 40° to CA. -grain size decreases slightly within 10cm of both contacts which are both sharp at 70° to CA. -rock becomes greyer colour within 10cm of lower contact and has fine (<1mm) fractures filled with dark grey carbon material. -this unit if volcanic may have flowed over the underlying graphitic sediment and cooling fractures were filled with carbon rich material from the underlying sediments suggesting tops up-section.				
111.00 TO 116.10	«5,a,g,*g» Sediments fine grained graphitic	-dark grey, very fine grained, hard -same as unit from 62.75 to 75.60 ╣111.00-116.00╠«┤S0 75°├» locally banded with alternating dark grey and pale grey bands at 70 to 80° to CA. -upper contact sharp at 65° to CA (bedding may be truncated at a shallow angle) -lower contact sharp, slightly undulatory and parallel to bedding at 80° to CA (conformable).		-moderate fracture control carbonate and silica in 1-3mm wide stringers which are variable in orientation but most commonly at 70° and 45° to CA.	1-2% finely disseminated and fracture control pyrrhotite (with f/c silica and carbonate) <0.5% disseminated and fracture control pyite	
116.10 TO 129.60	«2/7,a,e,G» Mafic volcanic or Intrusive fine grained amygdaloida l/vesicular leucoxene bearing	-pale to medium grey green; moderate hardness; fine grained -same as unit from 75.60-111.00 -55% grey to pale green plagioclase laths (0.5mm) -2% white opaque leucoxene grains? (<0.2mm) 116.10-117.95 3% carbonate, pyrrhotite and silica filled amygdules. Amygdules are round, (1mm -1cm avg 5mm) and have no preferential orientation. -amygdules decrease down from upper contact along with their pyrrhotite content. 117.95-118.05 -dark grey, moderately hard to soft section with 10% angular mafic fragments		-weak fracture control carbonate, chlorite and silica. -fracture control chrlorite stirgers are fairly random -carbonate and silica stringers in two main fracture sets as described for fracture contol pyrite	116.10-124.00 -trace disseminated pyrite <0.5% finely disseminated pyrrhotite ╣124.00-126.00╠«5-15%PoD,0.3%PyD,tr.CpF» 5-15% disseminated pyrrhotite; trace disseminated pyrite; 125.40-125.80 5-10% fracture control pyrrhotite with trace fracture control chalcopyrite ╣126.00-127.00╠«0-10%PoD,15%PyD» -disseminated pyrrhotite decreases downsection from 126.00 to 126.30 from 10% to trace amounts. In the same	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		118.00-118.35 -brecciated section with 70% sub-angular mafic (2cm avg) fragments in a dark grey fine grained fairly hard matrix. 124.00-129.60 -rock becomes less green and darker grey in colour due to addition of sulphides and plagioclase becoming more grey colour. -grain size increases gradually from top to bottom of unit. Note top of unit is not chilled and upper contact may be weathered surface. -upper contact sharp and undulatory, at 80° to CA -lower contact is indistinct possibly at at 80° to CA. Within 20cm of lower contact grain size decreases considerably and there are subangular xenoliths of graphite and the rock is weakly brecciated.			interval disseminated pyrite increases downsection from <0.5% to 15% -fracture control pyrite also increases downsection (see last interval for orientation) ╣127.00-129.60╠«5-7%PyF,5%PyD» 5-7% fracture control pyrite in two fracture sets sometimes with carbonate and silica. -fracture set one contains generally 1mm wide pyrite stringers which vary in orientation from about 35° at 127.00 to about 70° at 129.50. These fractures occur at very regular intervals (about 1 stringer every 2cm at 127.00 to one stringer every 5mm between 5 to 10mm) and are parallel to their neighbours. The stringers are discontinous and ofter kinked. The fractures are probably pull apart structures -a second probably conjugate fracture set varies from 50° at 127.00 to about 20° at 129.50 (avg 45°). Pyrite stringers for this fracture set are 1-3mm wide and may be accompanied by carbonate and silica. These fractures are less abundant (about 1 every 10cm) and more continous	
129.60 TO 139.57	«5,a,g» Sedimentary fine grained graphitic argillite	╣129.60-131.27╠«┤S0 70°├» 5,a,g,*g -dark grey; fairly hard, fine grained -moderately to strongly conductive, graphitic -locally laminated with alternating 90% graphite rich (dark grey) and 10% graphite poor(pale grey) bands. Also locally laminated banded with pyrite rich and poor bands. Banding varies from 45 to 80° to CA. -upper contact sharp and irregular at 80° to CA. -lower contact sharp at 70° to CA. 131.27-132.00 2,a,m -medium grey, fine grained, moderate to fairly hard 60% white opaque feldspar grains? (<0.5mm)		129.60-130.40 -moderate fracture control carbonate, weak to moderate pervasive silica? 130.40-131.27 -weak fracture control carbonate; weak to moderate pervasive silica 131.27-132.00 -moderate fracture control carbonate, weak fracture control and pervasive silica 132.00-133.30 -weak fracture control carbonate and	129.60-131.27 1-2% fracture control and disseminated pyrite; trace disseminated pyrrhotite ╣131.27-132.00╠«5%PyD,3%PyF» 5% disseminated pyrite; 3% fracture control pyrtie in 1-3mm wide stringers with carbonate at 45-70° to CA. 132.00-133.30 1% finely disseminated pyrite often concentrated in <1mm wide bands ╣133.30-139.57╣«5-8%PyD» 4-5% disseminated pyrite occurring	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		-finer grained within 2cm of both contacts -lower contact sharp at 60° to CA. ╣132.00-133.40╠«┤S0 45-50°├» 5,a,g,*g -dark grey, fine grained, moderately hard, strongly conductive graphitic argillite -locally lamintated or foliated with (<1mm wide) graphite rich and pyrite rich bands -gradational into underlying subunit 133.40-139.57 5,a,g,bx -dark grey, fine grained, moderately hard to soft, strongly conductive grahitic argillite -brecciated with 70% dark grey subangular to angular graphitic fragments. -2% fragments with finely disseminated pyrite -matrix consists of fracture control carbonate, graphite and disseminated pyrite -locally fragments are elongated with long axes parallel to foliation/bedding at 45° to CA. -fragments possibly primary with fracture control carbonate preferentially in matrix. lower contact sharp at 50° to CA.		silica 133.30-139.57 -weak to moderate fracture control carbonate, weak fracture control silica	mostly in the matrix; 0-1% pyrite nodules 2mm-2cm (avg 1cm) 0-1% fractrue control pyrite with carbonate 1mm wide stringers (generally at 45° to CA.) 1% pyrite occurring with in subangular pytitic fragments -locally <1% pyrite is finely dissminated in <1mm bands.	
139.57 TO 141.98	«1/2,a,H?» Ultramafic volcanic fine grained (basaltic komatiite?)	139.57-139.85 1/2,a,H,*e? -pale to medium yellowy beige/grey basaltic komatiite? which is fairly soft -30% dark grey semi-translucent laths (<1mm) which may be pyroxene? -possible hyaloclastite occurs as 1-2mm spherical structures (10%) which may have concentric bands. -upper and lower contacts sharp at 50° to CA with a slight decrease in grain size within 2cm of both contacts -very weak foliation at 40° to CA. 139.85-140.45 5,a,g -dark grey, soft, fine grained, strongly conductive graphite. -core is highly broken up and fissile (foliation 40° to CA) 139.85-139.88 highly incompetent core (black mush) at top of unit which may be a possible fault paralleling the upper contact -lower contact is missing		-moderate frature control carbonate	╣139.57-141.98╠«10-15%PyD» 139.57-139.85 10% disseminated pyrite 139.85-140.45 2-3% disseminated pyrite 140.45-141.98 15-20% very finely disseminated pyrite which obscures primary textures	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		140.45-141.98 1/2,a,m,H -pale to medium yellowy beige/grey basaltic komatiite? with moderate hardness -similar to subunit from 139.57-139.85 except increased disseminated pyrite completely obscures any primary textures. 140.45-140.90 several 1-3cm wide graphitic seams or flattened fragments at 45 to 50° to CA. -no visible change in grain size near either contact -lower contact sharp at 45° to CA.				
141.98 TO 143.20	S,a,g,bx Sedimentary fine grained graphitic	-dark grey, fine grained, fairly soft, conductive graphite. -moderately brecciated by carbonate stringers -upper contact sharp at 45°to CA. -lower contact sharp at 80° to CA. 142.00-142.05 -very broken and ground up core 142.05-142.75 -70cm of lost core - possible fault zone?		-moderate fracture control carbonate with 1-3mm wide stringers at random orientations	╣142.75-143.20╠«6%PyD,4%PyF» 6% disseminated pyrite and 4% fracture control pyrite in discontinous 1mm wide stringers at high angle to core axes	
143.20 TO 159.60	«1,a,k,U,V» Ultramafic volcanic fine grained komatiitic pyroxene and olivine spinifex	143.20-144.40 1,a,k,U,V -pale to medium grey green colour; fine grained; moderately hard to fairly soft komatiite -spinifex texture with 20% dark green needles and blades (3mm-5cm - avg 1cm long; <1mm wide) -fine grained matrix -grain size decreases within 60 of upper contact and rock is darker grey colour. Upper contact sharp at 80° to CA. -lower contact sharp and undulatory at 45° to CA with no apparent grain size change (spinifex grains are parallel to contact within 3cm of contact) 144.40-144.82 7/2,a,m -medium grey, very fine grained, moderately hard mafic volcanic or intrusive -lower contact sharp at 60° to CA. 144.82-157.60 1,a/b,k,U,V 144.82-147.80 -same as subunit from 143.20-144.40 except for: -pale green semi-translucent needles (0.5cm long		143.20-148.00 -weak to moderate pervasive talc, weak fractrue control carbonate, very weak fracture control serpentine ╣148.00-153.00╠«TkPM-S,CbFW-M,SpW-M» -moderate to strong pervasive talc; weak to moderate fracture control carbonate; moderate fracture control serpentine -fracture control serpentine is emerald green colour in 1mm to 1cm wide stringers at variable orientations with or without carbonate. ╣153.00-154.20╠«TkPM-S,CbFW-M,SpFM-S» -moderate to strong pervasive talc, moderate to strong fracture serpentine, weak to moderate fracture control carbonate -fracture control serpentine in stringers (5mm wide avg) commonly	╣143.20-144.40╠«7%PyD,0.1%PoD» -7% disseminated pyrite commonly concentrated along and replacing dark green spinifex needles or fine fractures; 0.1% disseminated pyrrhotite with most of it concentrated from 144.30-144.40 near contact with mafic intrusive 143.27-143.28 pyrite vein at 80° TCA. 143.36-143.42 pyrite vein (1-5cm wide) at 65° to CA. 143.50-143.51 discontinuous 1cm wide pyrite vein or elongate fragment at 70° to CA. ╣144.40-145.50╠«5%PoD,0.1%PyD» -5% disseminated pyrrhotite mostly along dark green spinifex needles; 0.1% disseminated pyrite 145.50-153.20 2-4% disseminated pyrrhotite (non-magnetic below 149.50)	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		avg) which are almost indistinguishable and probably compose the pale green matrix. 147.80-148.20 -rock gradually becomes more massive as spinifex decreases downsection 148.20-157.60 1,a/b,m -medium to dark grey green colour, soft, fine to medium grained, massive 30-55% greyish white subhedral equant soft grains (1mm avg) 40-70% dark grey green soft stubby laths and subhedral grains and/or matrix (0.5-1.5mm). These grains increase slightly in size and concentration downsection -rock becomes paler green colour within 1 metre of contact and grain size decreases within 5 cm of contact -possible lower contact undulatory at 85° to CA.		between 70 and 90° to CA. ╣154.20-157.60╠«TkPM-S,CbFW-M,SpW-M» -moderate to strong pervasive talc; weak to moderate fracture control carbonate; moderate fracture control serpentine -fracture control stringers at variable orientations to CA but most commonly perpendicular to CA.	153.20-157.60 1-2% finely disseminate pyrrhotite (non-magnetic)	
159.60 TO 167.00	«1/2a,H» Mafic or Ultramafic Volcanic fine grained	157.60-160.25 1/2,a,H? -medium grey green colour, fine grained, moderate hardness to slightly soft 157.60-158.50 flow top breccia? -85% subangular mafic fragments (1cm avg) with carbonate and dark grey chlorite? matrix -upper contact sharp and undular at 85° to CA. 158.50-160.25 -more massive appearance -40% pale green plagioclase? laths (0.5mm) -7% angular and irregular xenoliths of graphite (5mm-4cm avg 2cm) which may be elongate with long axes preferentially between 60 and 90° to CA. Xenoliths are brecciated by weak to moderate fracture control carbonate stringers -grain size gradually decreases downsection to lower contact -lower contact sharp at 30° to CA. 160.25-161.10 7,a/b,m -fine to medium grained, medium grey green mafic? volcanic or intrusive; fairly soft -50% pale green to white plagioclase laths (0.5-1.5mm) -20% dark green laths -grain size decreases within 3cm of both contacts -lower contact sharp at 20° to CA.		157.60-160.25 -moderate fracture control carbonate in 0.1-5mm wide randomly orientated stringers. Intensity of stringers more intense in sections with brecciated graphite xenoliths; weak fracutre control chlorite 167.25-161.10 -moderate pervasive carbonate 161.10-164.80 -moderate fracture control carbonate in randomly orientated 1-5mm wide stringers that increase in intensity in brecciated graphite sections. -weak fracture control chlorite 164.80-167.00 -weak fracure control carbonate and chlorite; moderate pervasive carbonate in top 20 cm of interval.	157.60-158.50 -trace disseminated pyrite and pyrrhotite 158.50-159.25 -0.5% disseminated and fracture control pyrrhotite; 0.2% disseminated pyrite; 0.2% disseminated sphalerite; trace disseminated chalcopyrite -sulphides concentrated near stringers of fracture control carbonate and chlorite and near graphite fragments ╣159.25-160.25╠«1%PoF,1.5%SpF,0.3%PyF,0.1%CpF» 1.5% fracture control sphalerite (red brown colour soft; 1% fracture control sphalerite; 0.3% fracture control pyrite and 0.1% fracture control chalcopyrite. Fracture control sulphides occur in irregular discontinuous stringers +/- carbonate (0.1-5mm wide) near xenoliths of graphite.	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		161.10-164.20 1/2/7,a,H? -same as subunit from 158.50-160.25 except approxiamately 30% graphitic sections or xenoliths. -graphitic sections are brecciated into very angular fragments (70%) by random 0.1-10mm wide dykelets (20%) of the surrounding mafic? unit and by 1-5mm wide carbonate stringers (replacing the mafic material). -Individual graphitic fragments/xenoliths average about 2cm and are strongly conductive. -most graphitic sections are less than 5cm wide and are orientated along with individual xenoliths at 70 to 90° to CA. Two longer brecciated graphitic intervals occur from 162.23-162.70 and 163.35-164.20. Note the mafic unit(s) surrounding both these sections appears to truncate the brecciating dykelets and stringers within these sections. This may suggest there are several intrusive mafic episodes or simply a rapid cooling of the dykelets within the graphitic sections that are later truncated. -grain size of mafic groundmass is fine grained becoming slightly coarser from 162.70-163.00 -possible lower contact at bottom of second graphitic section at 80° to CA. 164.20-164.65 1/2,a/b,U,H -medium grey colour; fine grained moderately hard basaltic komatiite? -20% dark green needles (spinifex?) up to 1cm long becoming finer toward lower contact -lower contact sharp and irregular at 75° to CA. 164.65-164.80 5,a,g -fine grained, dark grey to black graphite. -lower contact missing, possibly at 70° to CA. 164.80-167.00 1/2,a/b,H? -fine to medium grained; medium grey green basaltic komatiite? -45% greenish white plagioclase grains (0.5-1mm) -no visible change in grain size near contacts. -lower contact sharp at 75° to CA.			160.25-161.10 -0.5% disseminated pyrrhotite; trace disseminated pyrite and chalcopyrite 161.10-164.80 1-2% disseminated and fracture control pyrrhotite with the highest concentrations in the brecciated graphite sections, trace disseminated and fracture control pyrite 164.80-167.00 <0.5% disseminated pyrrhotite; trace disseminated pyrite	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
167.00 TO 167.60	«5,a,g» Sedimentary fine grained graphitic argillite	-dark grey; fine grained moderately hard and conductive -weakly foliated at 80° to CA -upper contact sharp at 75° to CA -lower contact irregular at 80° to CA.		-moderate to strong patchy and pervasive carbonate	-trace fracture control pyrrhotite and pyrite	
167.60 TO 190.02	«1,a/b,k,U, V» Ultramafic Volcanic, fine to medium grained, komatiitic pyroxene and olivine spinifex	167.60-172.40 1,a/b,k,U -medium grey colour; moderate hardness to soft; fine to medium grained komatiite -45% greyish white to pale green grains (<1mm) (feldspar?) -30% dark grey green needles (1mm-5cm, avg 1cm) that are responsible for spinifex texture 169.20-172.40 same as above except spinifex texture is less apparent and percentage of dark green needles over 2mm drops off. 172.40-181.90 1,a/b,m -medium grey to dark grey, fine to medium grained and soft to moderately hard komatiite -more massive appearance and darker grey than above subunit 40-60% pale green to white grains (1mm avg) 40-60% dark green stubby laths and needles (1mm) -possible lower flow contact at 70° to CA. 181.90-182.35 1,a,bx,e? (flow top breccia?) -rock appears paler green colour, is soft to moderately hard and is brecciated -80% angular, irregular fragments (2cm avg) which are greenish grey colour and aphanitic. -fragments coarsen downsection and show weak preferential alignment at 70° to CA. -20% greyish carbonated matrix 1-2% round carbonate filled amygdules. 182.35-185.00 1,a,k,U -similar to subunit from 167.60-172.40 -spinifex texture is not as well developed. -dark green needles coarsen downsection in this interval 185.00-190.00 1,a,m (more massive appearance) -similar to subunit from 172.40-187.90 -becomes paler greenish grey and finer grained		167.60-181.90 -weak to moderate pervasive talk; weak to moderate fracture control serpentine and carbonate generally in 1mm-1cm wide stringers at 40° to CA (ranges from 30-70° to CA) 181.90-190.00 -weak to moderate pervasive talc; moderate fracture control carbonate, weaker fracture control serpentine.	167.60-169.00 -3-4% disseminated and fracture control pyrrhotite; trace disseminated pyrite 169.00-181.90 1-2% disseminated pyrrhotite; trace disseminated chalcopyrite and pyrite 181.90-190.00 0.5% disseminated pyrrhotite	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
		from 189.00-190.00 near base of unit -lower contact sharp at 35° to CA.				
190.02 TO 198.30	«2/1,a,m,H» Ultramafic or mafic volcanic fine grained massive	190.02-194.90 7/2,a,m -fine grained; medium to pale grey green; moderately hard to soft mafic intrusive? -50% pale green plagioclase laths (avg 0.5mm) -30% dark green laths (0.5mm avg) -grain size decreases within 20 cm of lower contact -lower contact sharp at 15° to CA. 194.90-198.30 2/1,a/b,m -pale to medium green, fine to medium grained, soft to moderately hard basaltic komatiite? -similar to above subunit except coarser grained (avg grain size ~1mm) -no chilling at upper contact; grain size decreases slightly toward lower contact -lower contact sharp at 70° to CA. 197.95-198.10 1,a -dark grey fine grained soft to moderately hard ultramafic volcanic or dyke -upper contact sharp at 80° to CA. -lower contact sharp at 70° to CA.		-weak fracture control carbonate, silica, and serpentine in 1-3mm wide stringers at <45° to CA; minor rusty fractures; -weak pervasive talc?	-trace disseminated pyrrhotite	
198.30 TO 208.00	«1,a\b,k» Ultramafic Volcanic fine to medium grained komatiitic	-dark grey; fine to medium grained; moderately hard to soft 40-65% dark green grey stubby laths and equant sections (<0.5mm - 5mm avg 1mm) 35-60% paler grey matrix or pale grey to white grains (<1mm) -grain size generally increases downsection from upper contact. -upper contact sharp at 70° to CA.		-moderate fracture control talc; weak to moderate pervasive talc; weak to moderate fracture control carbonate; weak to moderate fracture control serpentine -fracture control stringers generally 1-5mm wide and at random orientations	-0.5% disseminated and fracture control pyrrhotite; trace fracture control and disseminated chalcopyrite (with pyrrhotite) 202.30-202.70 -0.5% fracture control chalcopyrite; 1.0% fracture control pyrrhotite -sulphides in talc,carbonate and serpentine veins 207.80-208.00 0.5% fracture control pyrrhotite and 0.5% fracture control chalcopyrite with talc and serpentine stringers	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
208.00 TO 208.00	«EOH» End-Of-Hole					

Sample	From (M)	To (M)	Leng. (M)	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Au ppb	Ag ppm	Cu/Zn	Co ppm	Pt ppb	Pd ppb	S ppm	Se ppm	As ppm	Hg ppm	Sb ppm	Est.Ni %	Est.Po %	Est.Py %	Est.Cp %	Est.Sp %	Est.Gn %	ROCK TYPE	Comments
AT02780	0.00	0.00	0.00	12	114	12	7	<2	0.2																KR-AP Standard	
AT02800	0.00	0.00	0.00	12	113	13	7	<2	0.3																KR-AP Standard	
AT02769	123.00	124.00	1.00	77	61	1	153	<2	0.1											0.5	0.1				7,a,m,G,CbFW	
AT02770	124.00	125.00	1.00	80	35	1	157	<2	0.1											5.0	0.2				7,a,m,G,CbFW	
AT02771	125.00	126.00	1.00	123	55	1	168	10	0.1											12.0	0.5	0.1			7,a,m,G,CbFW	
AT02772	126.00	127.00	1.00	65	67	1	173	<2	0.1											2.0	12.0				7,a,m,G,CbFW	
AT02773	127.00	128.50	1.50	73	67	1	156	<2	0.1											0.1	12.0				7,a,m,G,CbFW	
AT02774	128.50	129.60	1.10	67	83	1	153	<2	0.1											0.1	12.0				7,a,m,G,CbFW-M	
AT02775	129.60	130.50	0.90	15	77	3	11	<2	0.1												1.5				5,a,g,*g?,CbFM	
AT02776	130.50	131.27	0.77	18	128	4	10	<2	0.1												2.0				5,a,g,*g?,CbFW	
AT02777	131.27	132.00	0.73	33	78	3	152	<2	0.1												8.0				2/7,a,m,CbFW-M	
AT02778	132.00	133.00	1.00	55	211	5	46	<2	0.2												0.7				5,a,g,*g?CbFW-M	
AT02779	133.00	134.50	1.50	1100	2990	51	1750	<2	1.3												8.0				5,a,g,*g?CbFM-S	
AT02781	134.50	136.00	1.50	462	2050	74	742	<2	1.1												7.0				5,a,g,CbFM	
AT02782	136.00	137.00	1.00	381	1770	53	906	3	0.8												6.0				5,a,g,CbFW-M	
AT02783	137.00	138.00	1.00	400	1690	57	993	3	0.9												6.0				5,a,g,CbFW-M	
AT02784	138.00	139.50	1.50	767	2340	62	1020	<2	1.2												5.0				5,a,g,CbFW-M	
AT02785	139.50	141.00	1.50	187	928	14	273	<2	0.3												10.0				5ag;1/2a,CbPM	
AT02786	141.00	142.00	1.00	80	248	15	76	<2	0.2												15.0				1/2,a,m,CbF/PM	
AT02787	142.75	143.20	0.45	211	3360	20	282	3	0.3												10.0				5,a,g,bx,CbFM-S	
AT02788	143.20	144.40	1.20	55	69	1	326	<2	0.1											0.1	7.0				1aV,CbFM,TkPW-M	
AT02789	144.40	145.50	1.10	98	37	1	427	<2	0.1											5.0	0.1				1aVk/7am,TkPW-M	
AT02790	145.50	147.00	1.50	52	59	1	569	<2	0.1											2.5	0.1				1aUVk,TkPW-M	
AT02791	147.00	148.00	1.00	69	44	1	823	<2	0.1											2.0	0.1				1aUVk,TkPW-M	
AT02792	148.00	149.50	1.50	50	30	1	1640	7	0.1											3.5					1ak,TkPM-S	
AT02793	149.50	151.00	1.50	34	33	1	1610	<2	0.1											3.0					1ak,TkPM-S,SrFW	
AT02794	151.00	152.00	1.00	46	30	1	1510	<2	0.1											3.0					1ak,TkPM-S,SrFM	
AT02795	152.00	153.20	1.20	45	35	1	1430	<2	0.1											2.5					1ak,TkPM-S,SrFS	
AT02796	153.20	154.20	1.00	35	29	1	1340	3	0.1											1.5					1ak,TkPM-S,SrFM	
AT02797	158.25	159.25	1.00	131	464	1	823	<2	0.1											0.5	0.2	0.1	0.2		1/2,a,H,CbFW-M	
AT02798	159.25	160.25	1.00	285	7920	1	1000	<2	0.1											1.0	0.3	0.1	1.5		1/2,a,H,CbFM	
AT02799	160.25	161.25	1.00	130	124	2	420	<2	0.1											0.5	0.1	0.1	0.1		7a/b,m,CbPM	
AT03663	166.00	167.00	1.00	70	119	1	620	3	0.1											0.4					1/2a/bH,CbFW	
AT03664	167.00	167.60	0.60	38	1960	3	572	<2	0.1											0.2	0.1				5ag,CbPM	
AT03665	167.60	169.00	1.40	113	60	1	991	<2	0.1											3.5	0.1				1a/b,U,k,TkPW-M	
AT03666	169.00	170.00	1.00	47	47	1	1600	3	0.1											1.8	0.1				1a/b,U,k,TkPW-M	
AT03667	201.30	202.30	1.00	85	46	1	1510	<2	0.1											0.5		0.1			1,a/b,k,TkFM	
AT03668	202.30	202.70	0.40	411	42	1	987	<2	0.1											1.0		0.5			1,a/b,k,TkFM	
AT03669	202.70	203.70	1.00	82	36	1	433	<2	0.1											0.5		0.1			1,a/b,k,TkFM-S	

Sample	From (M)	To (M)	Leng. (M)	SIO2 %	AL2O3 %	CAO %	MGO %	NA2O %	K2O %	FE2O3 %	TIO2 %	P2O5 %	MNO %	CR2O3 %	LOI %	SUM %	Y PPM	ZR PPM	BA PPM	CU PPM	ZN PPM	NI PPM	CR PPM	FIELD NAME	CHEM ID	ALUM
AT03650	0.00	0.00	0.00																							
AT03646	59.80	62.60	2.80																							
AT03647	63.00	66.00	3.00																							
AT03648	69.00	72.00	3.00																							
AT03649	94.00	97.00	3.00																							
AT03651	112.00	115.00	3.00																							
AT03652	118.00	121.00	3.00																							
AT03653	141.10	141.90	0.80																							
AT03654	145.00	147.80	2.80																							
AT03655	150.00	153.00	3.00																							
AT03656	161.30	163.30	2.00																							
AT03657	164.90	167.00	2.10																							
AT03658	169.00	172.00	3.00																							
AT03659	175.00	178.00	3.00																							
AT03660	186.00	189.00	3.00																							
AT03661	195.00	197.90	2.90																							
AT03662	205.00	208.00	3.00																							

HOLE NUMBER: MCD42-05

FALCONBRIDGE LIMITED
DRILL HOLE RECORD

DATE: 03/24/1997
IMPERIAL UNITS: METRIC UNITS: X

PROJECT NAME: 8172
PROJECT NUMBER: 8172
CLAIM NUMBER: P-995455
LOCATION: Macdiarmid TWP.

PLOTTING COORDS GRID: UTM
NORTH: 5391331.00N
EAST: 458038.00E
ELEV: 290.00

ALTERNATE COORDS GRID: Grid
NORTH: 6+50S
EAST: 6+50E
ELEV: 290.00

COLLAR DIP: -50° 0' 0"
LENGTH OF THE HOLE: 167.80M
START DEPTH: 0.00M
FINAL DEPTH: 167.80M

COLLAR ASTRONOMIC AZIMUTH: 360° 0' 0"

GRID ASTRONOMIC AZIMUTH: 360° 0' 0"

DATE STARTED: 03/05/1996
DATE COMPLETED: 03/08/1996
DATE LOGGED: 03/14/1996

COLLAR SURVEY: NO
RQD LOG: NO
HOLE MAKES WATER: NO

PULSE EM SURVEY: YES
PLUGGED: NO
HOLE SIZE: BQ

CONTRACTOR: Dominik Drilling
CASING: NW,BW left in hole
CORE STORAGE: Kidd Minesite
UTM COORD.: Zone 17

COMMENTS :
WEDGES AT:

DIRECTIONAL DATA:

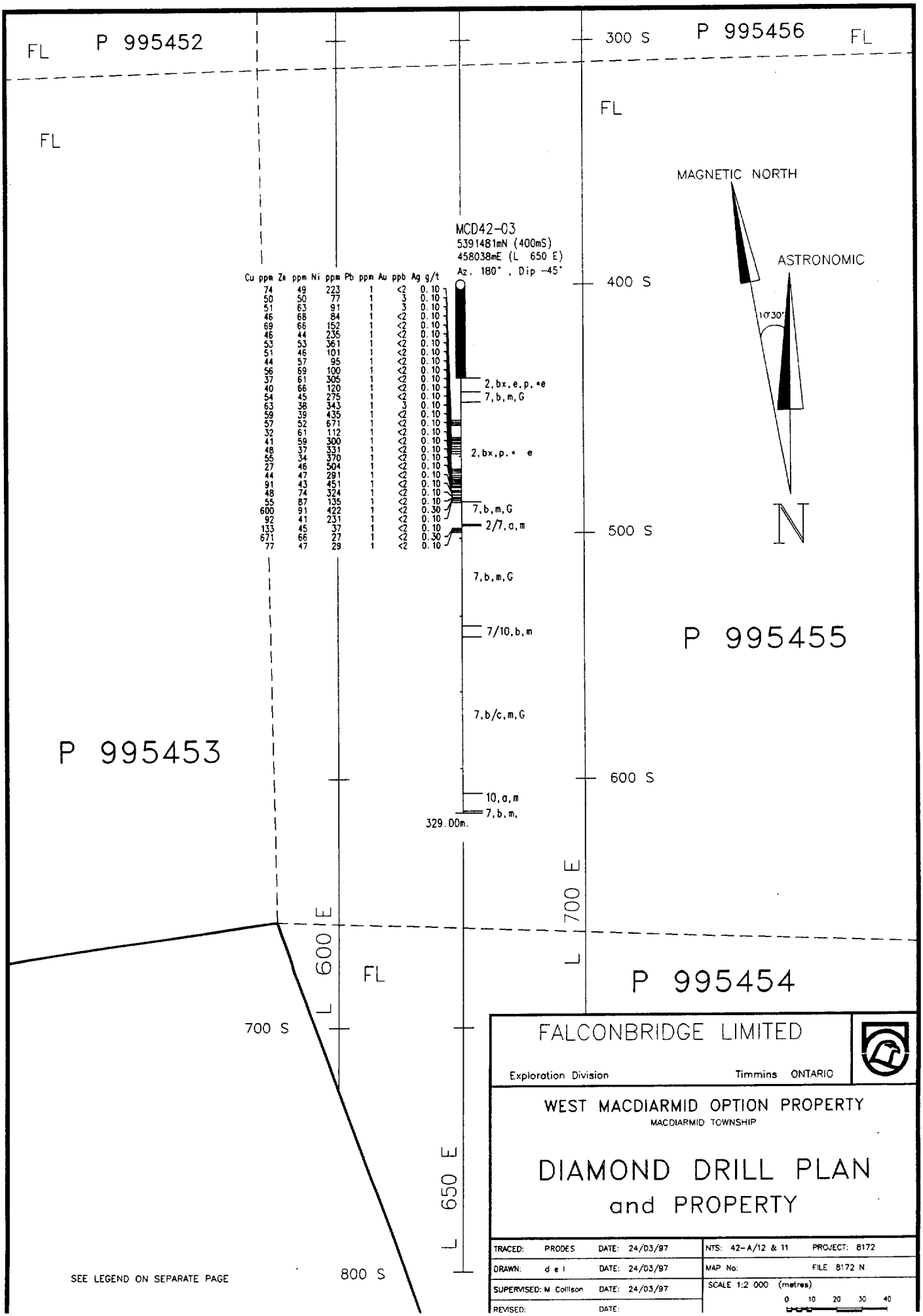
Depth (M)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
20.00	357° 0' 0"	-50°30' 0"	S	OK	
80.00	356° 0' 0"	-50° 0' 0"	S	OK	
140.00	357° 0' 0"	-50°30' 0"	S	OK	

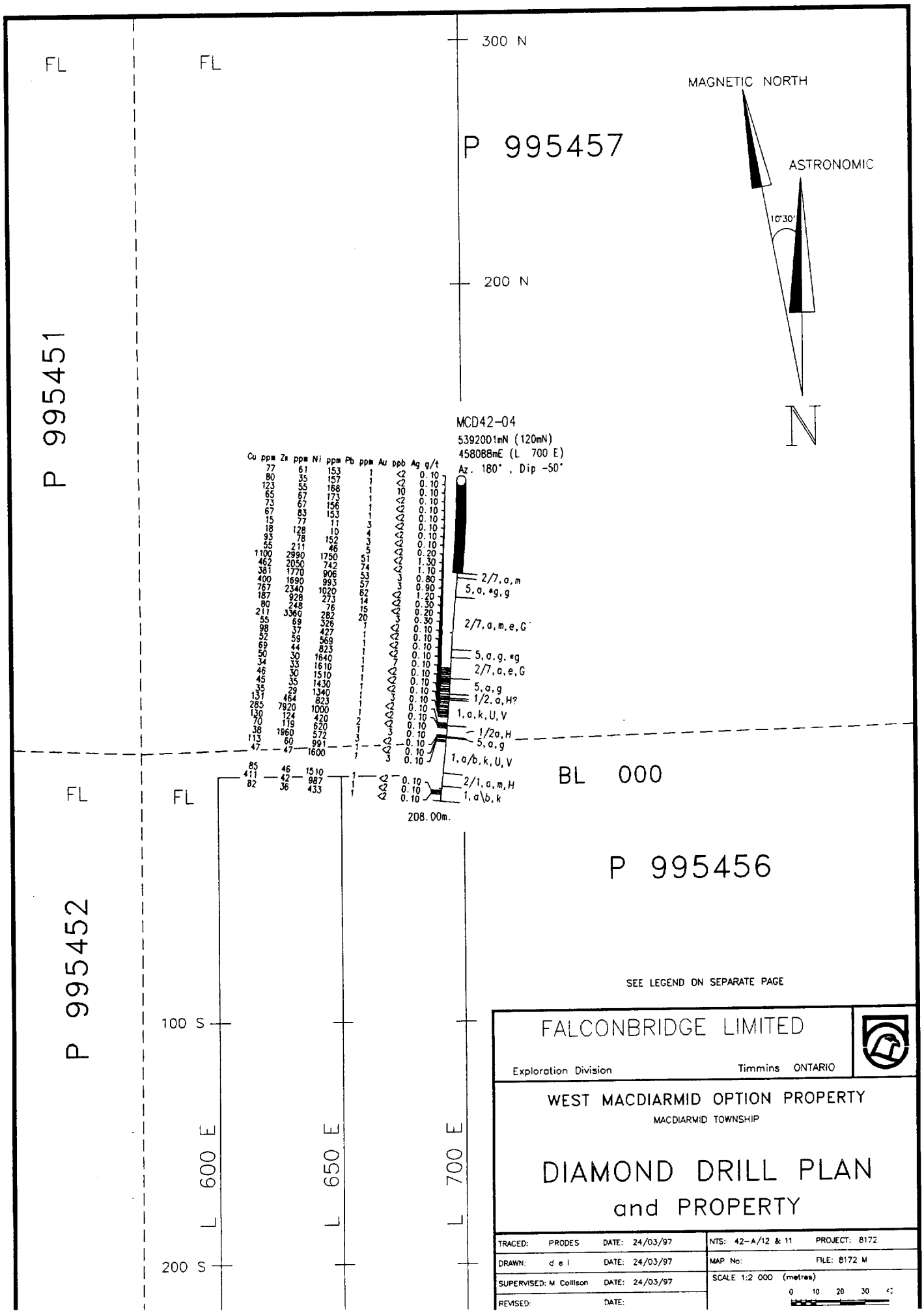
Depth (M)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
-	-	-	-	-	

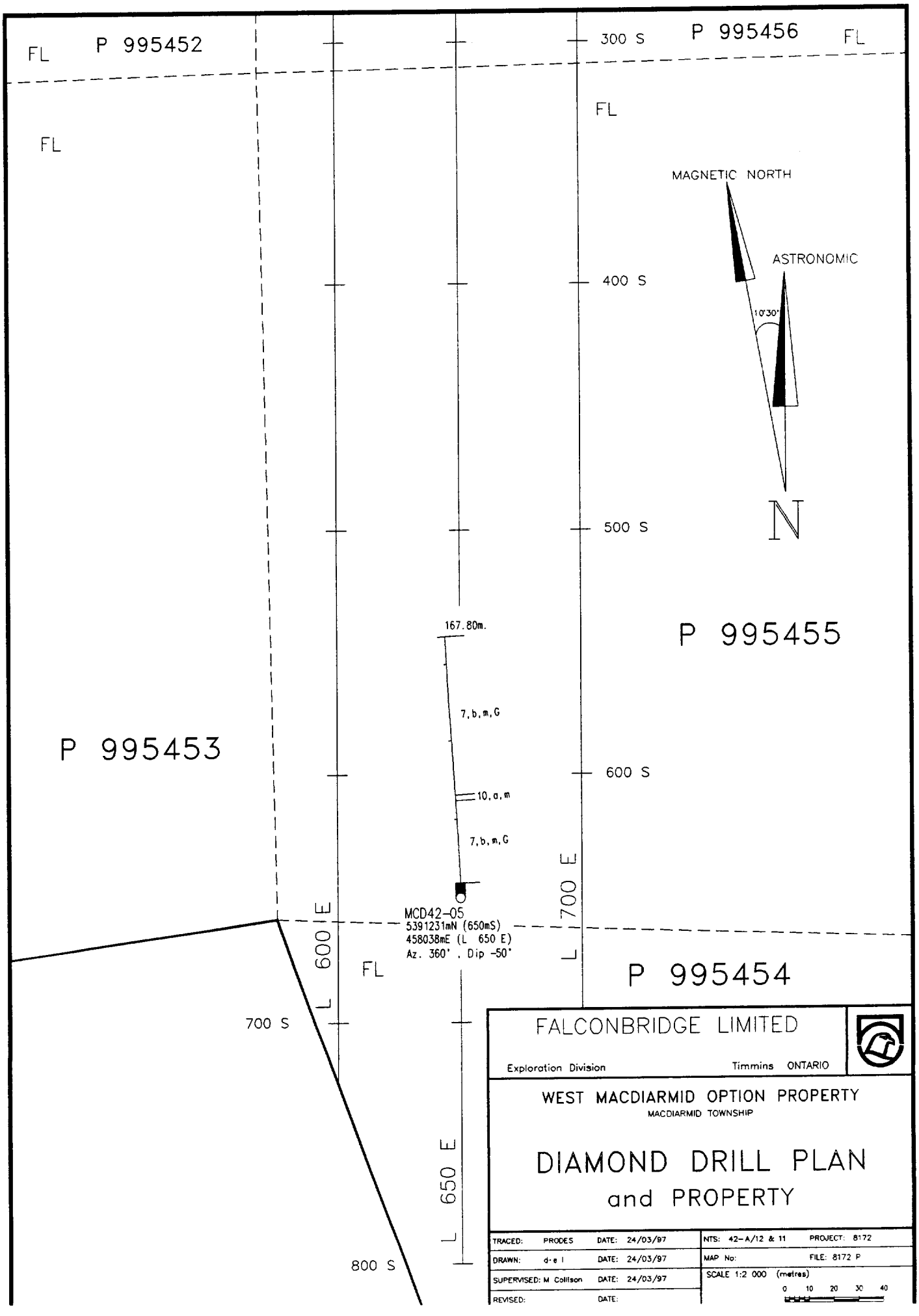
FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 9.00	«¦ob¦» Overburden Casing					
9.00 TO 61.50	«7,b,m,G» Mafic Intrusive medium grained leucoxene bearing	-medium greenish grey; medium grained; moderate harness -40% milky white semi-transluscent subhedral plagiclase grains (avg. 2mm) -30% medium green semi-transluscent narrow laths and needles (5:1 lenth to width) (avg 2mm) -25% medium green opaque indistint grains (avg 2mm or matrix. Fairly soft, possibly replaced by chlorite -5% opaque white irregular leucoxene grains <1mm -locally rock is greener where epidote content increases replacing feldspar and leucoxene. Similarly rock becomes orange in colour due to either hematite or potassic alteration. -lower contact is missing and underlying unit is broken up considerably (RQD<20%).		-weak to moderate fracture contol epidote and silica; very weak fracture control carbonate and chlorite. Fracture control stringers at variable orientations but most commonly betwee 60 and 90° to CA. -weak fracture control hematite or potassic alteration which occurs as an orange hard substance in stringers with epidote or quartz or sometimes as a local discoloration of feldspar and leucoxene grains. ¦14.00-21.00¦ «EpFW-M,K>/HeFW-M» weak to moderate fracture control epidote and hematite or potassic alteration 17.80-17.83 3cm wide quartz(80%) - carbonate(15%) vein with minor epidote and chlorite at 35° to CA. 25.95-26.03 8cm wide quartz(95%) - carbonate(3%) with minor hematite or potassic alteration 27.50-28.80 discontinuous ~3cm wide quartz vein at a very shallow angle to CA or quartz flooding. This section also contains moderate fracture control chlorite and weak fracture control carbonate associated with the quartz vein.	-trace to <1% disseminated pyrite and trace disseminated pyrrhotite (non-magnetic)	
61.50 TO 65.30	«10,a,m» Diabase medium grained massive	-fine grained; dark grey brown colour; moderate hardness; moderately magnetic -50% grey white plagioclase laths (<1mm) -both contacts missing -lower contact possibly at 70° to CA		-weak fracture control carbonate and chlorite with 1mm wide stringers at variable orietations to CA.	<0.5% disseminated pyrite	
65.30 TO 167.80	«7,b,m,G» Mafic Intrusive medium grained	-medium greenish grey; medium grained; moderate hardness. -same as unit from 9.00 to 61.50 metres 87.40 - 87.43 quartz vein with minor carbonate		-weak to moderate fracture control silica; weak fracture control chlorite, carbonate and epidote; very weak fracture control hematite or potassic alteration.	-trace disseminated pyrite and pyrrhotite. 155.00-162.00 trace to 0.5% disseminated pyrrhotite and pyrite.	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALIZATION	REMARKS
	massive leucoxene bearing	(5%) and chlorite at 40° to CA. 92.00-92.10 7,a,m -fine grained(aphanitic); medium grey green; moderately hard mafic dyke. -both contacts sharp at 80 to 90° to CA. 92.50-92.52 quartz-carbonate vein with chlorite and minor hematite or K-feldspar at 35° to CA. 92.65-92.67 same as previous quartz-carbonate vein except at 40° to CA. 123.80-123.95 quartz-carbonate vein with minor chlorite and K-feldpar or hematite at 40° to CA. -upper contact of main unit is missing		-fracture control silica, carbonate and epidote often occur together in 1mm to 3cm wide veins that are milky white; opaque; hard and occasionally slightly green. These stringers are fairly random in orientation but most common between 40 and 80° to CA. -fracture control chlorite most common between 30 and 50° to CA. ‡68.20-71.00‡«EpFM,SiFM,CbFW-M» -moderate fracture control epidote and silica; weak to moderate fracture control carbonate. -alteration consists of two or three stringers at a low angle to CA. 100.00-115.00 weak to moderate fracture control silica; weak fracture control carbonate, chlorite and epidote. Stringers of quartz carbonate increase slightly to 3% total ‡140.70-141.80‡«SiFM-S,CbFW-M,EpFW» moderate to strong fracture control silica; weak to moderate fracture control carbonate and weak fracture control epidote -alteration consists of one or two stringers at a low angle to CA.		
167.80 TO 167.80	«EOH» End-of-Hole					

Sample	From (M)	To (M)	Leng. (M)	SIO2 %	AL2O3 %	CAO %	MGO %	NA2O %	K2O %	FE2O3 %	TIO2 %	P2O5 %	MNO %	CR2O3 %	LOI %	SUM %	Y PPM	ZR PPM	BA PPM	CU PPM	ZN PPM	NI PPM	CR PPM	FIELD NAME	CHEM ID	ALUM
AT03629	0.00	0.00	0.00																							
AT03621	14.00	17.00	3.00																							
AT03622	38.00	41.00	3.00																							
AT03623	57.00	60.00	3.00																							
AT03624	68.00	71.00	3.00																							
AT03625	86.00	89.00	3.00																							
AT03626	107.00	110.00	3.00																							
AT03627	137.00	140.00	3.00																							
AT03628	164.00	167.00	3.00																							


P 995452
FL
FL
300 S
P 995456
FL
FL
MAGNETIC NORTH
ASTRONOMIC
10°30'
N
MCD42-03
5391481mN (400mS)
458038mE (L 650 E)
Az. 180° , Dip -45°
Cu ppm Zn ppm Ni ppm Pb ppm Au ppb Ag g/t
74 49 223 1 <2 0.10
50 50 77 1 3 0.10
51 63 91 1 3 0.10
46 68 84 1 <2 0.10
69 66 152 1 <2 0.10
46 44 235 1 <2 0.10
53 53 361 1 <2 0.10
51 46 101 1 <2 0.10
44 57 95 1 <2 0.10
56 69 100 1 <2 0.10
37 61 305 1 <2 0.10
40 66 120 1 <2 0.10
54 45 275 1 <2 0.10
63 38 343 1 <2 0.10
59 39 435 1 <2 0.10
57 52 671 1 <2 0.10
32 61 112 1 <2 0.10
41 59 300 1 <2 0.10
48 37 331 1 <2 0.10
55 34 370 1 <2 0.10
27 46 504 1 <2 0.10
44 47 291 1 <2 0.10
91 43 451 1 <2 0.10
48 74 324 1 <2 0.10
55 87 135 1 <2 0.10
600 91 422 1 <2 0.30
92 41 231 1 <2 0.10
133 45 37 1 <2 0.10
671 66 27 1 <2 0.30
77 47 29 1 <2 0.10
2,bx,e,p,*e
7,b,m,G
2,bx,p,* e
7,b,m,G
2/7,a,m
7,b,m,G
7/10,b,m
7,b/c,m,G
10,a,m
7,b,m,
329.00m.
400 S
500 S
600 S
700 S
P 995455
P 995453
P 995454
L 600 E
L 700 E
L 650 E
FL
FL
FALCONBRIDGE LIMITED
Exploration Division
Timmins ONTARIO
WEST MACDIARMID OPTION PROPERTY
MACDIARMID TOWNSHIP
DIAMOND DRILL PLAN
and PROPERTY
TRACED: PRODES DATE: 24/03/97
DRAWN: d e l DATE: 24/03/97
SUPERVISED: M Collison DATE: 24/03/97
REVISED: DATE:
NTS: 42-A/12 & 11 PROJECT: 8172
MAP No: FILE: 8172 N
SCALE 1:2 000 (metres)
0 10 20 30 40
SEE LEGEND ON SEPARATE PAGE


FL
FL
300 N
P 995457
MAGNETIC NORTH
ASTRONOMIC
10°30'
200 N
N
P 995451
MCD42-04
5392001mN (120mN)
458088mE (L 700 E)
Az. 180° , Dip -50°
Cu ppm Zn ppm Ni ppm Pb ppm Au ppb Ag g/t
77 61 153 1 <2 0.10
80 35 157 1 <2 0.10
123 55 168 1 10 0.10
65 67 173 1 <2 0.10
73 67 156 1 <2 0.10
67 83 153 1 <2 0.10
15 77 11 3 <2 0.10
18 128 10 4 <2 0.10
93 78 152 3 <2 0.10
55 211 46 5 <2 0.10
1100 2990 1750 51 <2 0.20
462 2050 742 74 <2 1.30
381 1770 906 53 <2 1.10
400 1690 993 57 <2 0.80
767 2340 1020 62 <2 0.90
187 928 273 14 <2 1.20
80 248 76 15 <2 0.30
211 3360 282 20 <2 0.20
55 69 326 1 <2 0.30
98 37 427 1 <2 0.10
52 59 569 1 <2 0.10
69 44 823 1 <2 0.10
50 30 1640 1 <2 0.10
34 33 1610 1 <2 0.10
46 30 1510 1 <2 0.10
45 35 1430 1 <2 0.10
35 28 1340 1 <2 0.10
131 464 823 1 <2 0.10
285 7920 1000 1 <2 0.10
130 124 420 2 <2 0.10
70 119 670 1 <2 0.10
38 1960 572 3 <2 0.10
113 60 991 1 <2 0.10
47 47 1600 1 3 0.10
85 46 1510 1 <2 0.10
411 42 987 1 <2 0.10
82 36 433 1 <2 0.10
2/7, a, m
5, a, *g, g
2/7, a, m, e, G
5, a, g, *g
2/7, a, e, G
5, a, g
1/2, a, H?
1, a, k, U, V
1/2a, H
5, a, g
1, a/b, k, U, V
2/1, a, m, H
1, a\b, k
208.00m.
BL 000
FL
FL
P 995456
P 995452
100 S
200 S
L 600 E
L 650 E
L 700 E
SEE LEGEND ON SEPARATE PAGE
FALCONBRIDGE LIMITED
Exploration Division
Timmins ONTARIO
WEST MACDIARMID OPTION PROPERTY
MACDIARMID TOWNSHIP
DIAMOND DRILL PLAN
and PROPERTY
TRACED: PRODES DATE: 24/03/97
DRAWN: d e l DATE: 24/03/97
SUPERVISED: M Collison DATE: 24/03/97
REVISED: DATE:
NTS: 42-A/12 & 11 PROJECT: 8172
MAP No: FILE: 8172 M
SCALE 1:2 000 (metres)
0 10 20 30



FALCONBRIDGE LIMITED

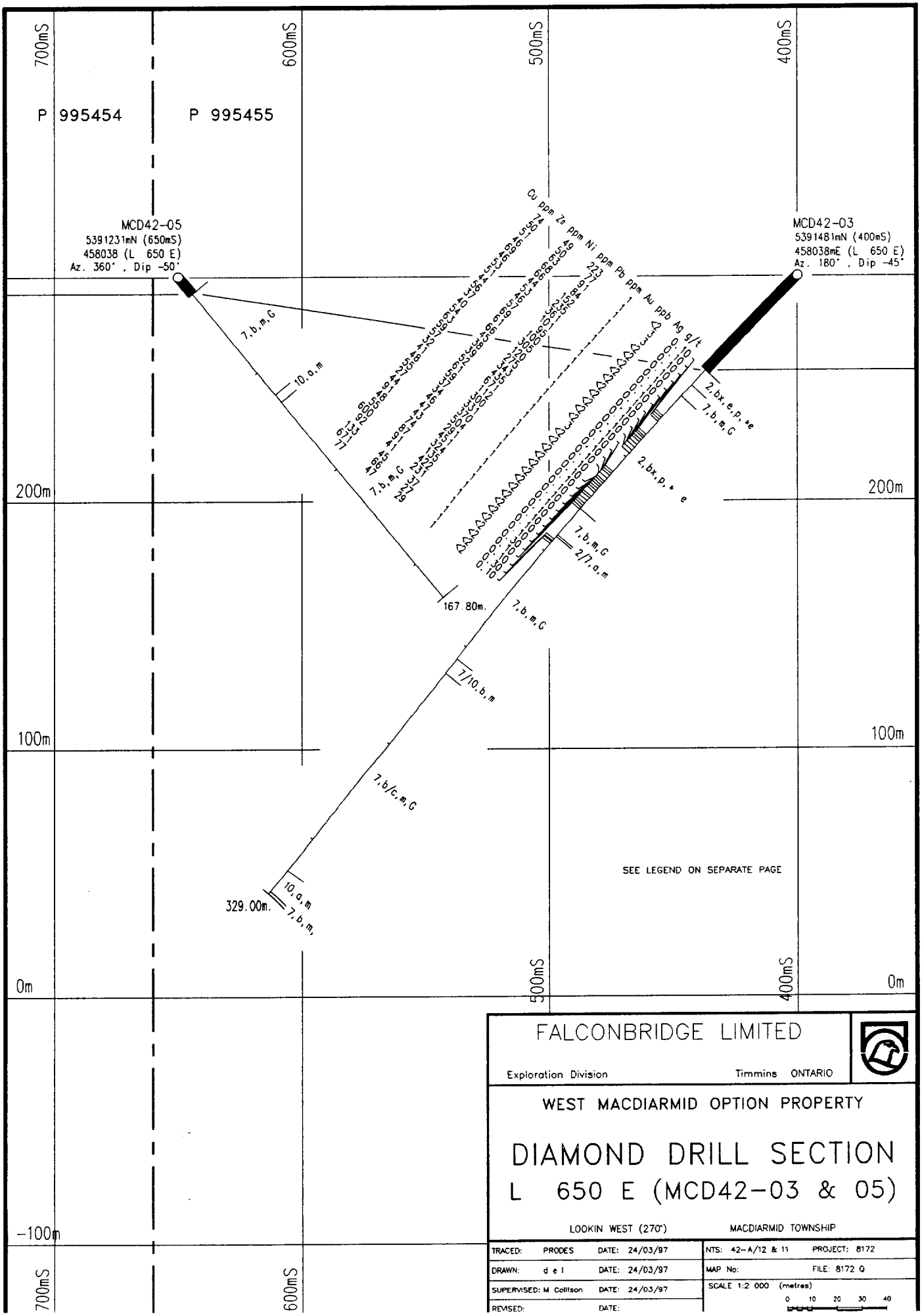
Exploration Division — Timmins ONTARIO

WEST MACDIARMID OPTION PROPERTY

MACDIARMID TOWNSHIP

DIAMOND DRILL PLAN and PROPERTY

TRACED: PRODES	DATE: 24/03/97	NTS: 42-A/12 & 11	PROJECT: 8172
DRAWN: d-e l	DATE: 24/03/97	MAP No:	FILE: 8172 P
SUPERVISED: M Collison	DATE: 24/03/97	SCALE 1:2 000 (metres)	
REVISED:	DATE:	0 10 20 30 40	



FALCONBRIDGE LIMITED

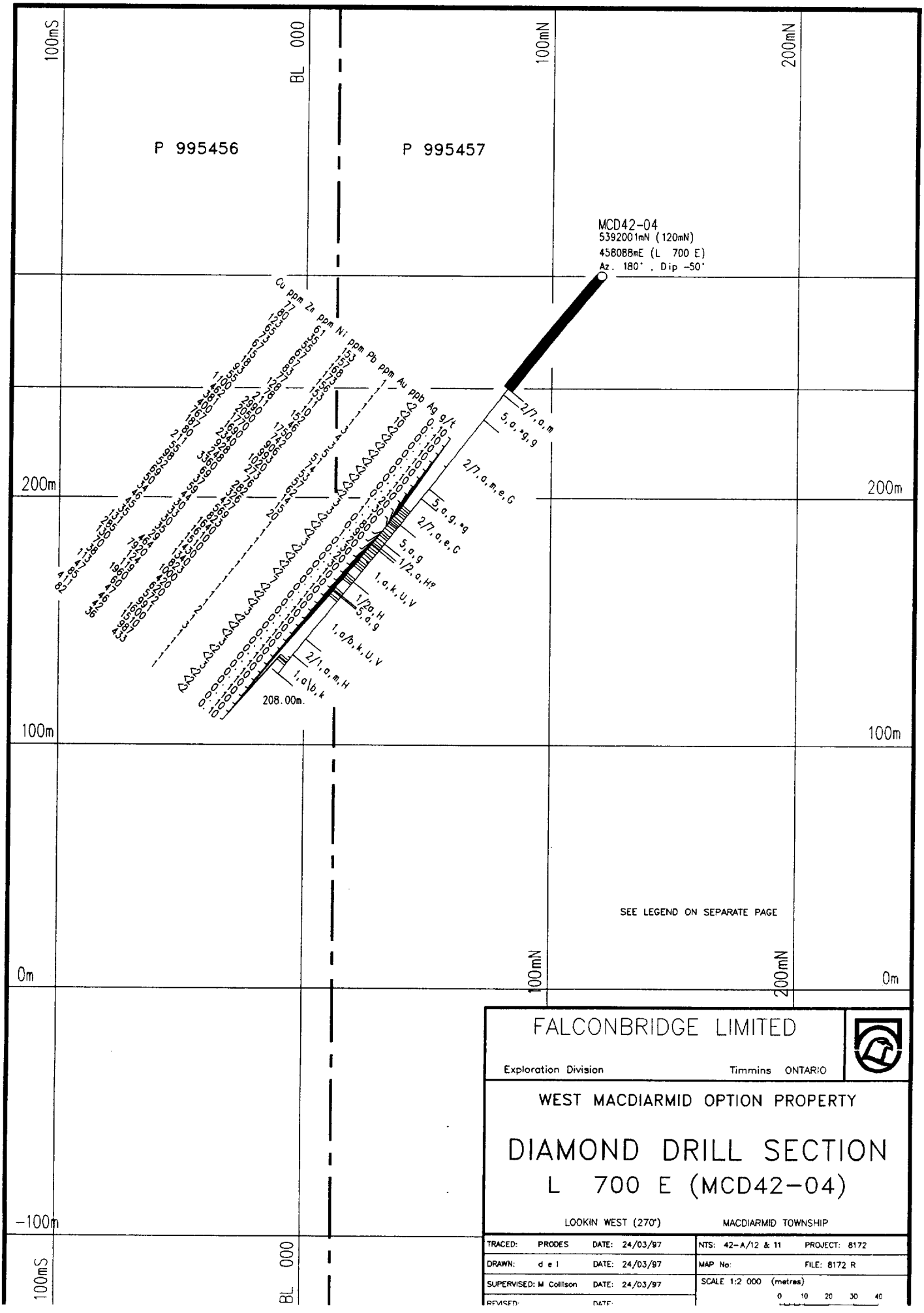
Exploration Division — Timmins ONTARIO

WEST MACDIARMID OPTION PROPERTY

DIAMOND DRILL SECTION
L 650 E (MCD42-03 & 05)

LOOKIN WEST (270°) — MACDIARMID TOWNSHIP

TRACED: PRODES	DATE: 24/03/97	NTS: 42-A/12 & 11	PROJECT: 8172
DRAWN: d e l	DATE: 24/03/97	MAP No:	FILE: 8172 Q
SUPERVISED: M Collison	DATE: 24/03/97	SCALE 1:2 000 (metres)	
REVISED:	DATE:	0 10 20 30 40	



FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

WEST MACDIARMID OPTION PROPERTY

DIAMOND DRILL SECTION

L 700 E (MCD42-04)

LOOKIN WEST (270°) MACDIARMID TOWNSHIP

TRACED:	PRODES	DATE: 24/03/97	NTS: 42-A/12 & 11	PROJECT: 8172	
DRAWN:	d e l	DATE: 24/03/97	MAP No:	FILE: 8172 R	
SUPERVISED:	M Collison	DATE: 24/03/97	SCALE 1:2 000 (metres)		
REVISED:		DATE:	0 10 20 30 40		

Symbols

CONTACTS

- Outcrop (small, observed, inferred, boulder/float)
- Geological Boundary (observed, approximate, assumed)
- Geological Boundary (gradational, geophysically inferred)
- Flow Contact (defined, approximate)

MEASUREMENTS

- Bedding with tops known (horizontal, inclined, vertical, overturned, dip unknown)
- Bedding with tops unknown (inclined, vertical, dip unknown)
- Pillow top (horizontal, inclined, vertical, overturned, dip unknown)
- Spinifex top
- Schistosity, gneissosity, cleavage or foliation (horizontal, inclined, vertical, dip unknown) (No. of ticks = generation – S1, S2, S3)
- Jointing (horizontal, inclined, vertical, dip unknown)
- Lineation (horizontal, inclined, vertical)
- Folding – defined folds (S fold, Z fold, multiple S, multiple Z)
- Folding – undetermined type
- Fault (defined, approximate, assumed) (inclined, vertical, movement w/circle on downthrow side)
- Fault (Geophysically inferred, Lineament inferred)
- Thrust Fault (defined, approximate, assumed) (teeth indicate upthrust side)
- Shear zone
- Dyke, vein (defined, approximate, assumed)
- Anticline, Antiform (with or without plunge, overturned)
- Syncline, Synform (with or without plunge, overturned)
- Glacial striae (ice movement known, unknown) (numbers indicate relative age)
- Limit of Geological Mapping

PHYSICAL WORK

- Mineral Occurrence
- Trench (1:20,000 +, 1:5,000 –)
- Diamond Drill Hole (collar surveyed, collar located, collar unlocated)
- Overburden Drill Hole
- Mine, quarry or glory hole (active, abandoned)
- Shaft (vertical, inclined, raise, winze)
- Adit, Ramp
- Rock Dump, Tailings
- Gravel Pit (active, abandoned)

CULTURAL AND PHYSIOGRAPHIC FEATURES

- All weather road (paved, gravel)
- Four wheel drive road
- Track
- Trail
- Buildings
- Campsite
- Power Line (major line, regular line)
- Telephone Line (usable, unusable)
- Railroad Track
- Tower
- Bridge
- River (open, rapids)
- Intermittent Stream
- Lake
- Swamp
- Esker
- Claim Post (OLS surveyed, inspected survey, located, unlocated, witness, in water)
- Grids (current grid, old grid)
- Survey Pin (located, unlocated)
- Lot/Concession Corner Pin (located, government defined)

Geophysics

GROUND

- UNIDENTIFIED EM SYSTEM
- HORIZONTAL LOOP (MAX–MIN)
- VERTICAL LOOP
- VERY LOW FREQUENCY
- JUNIOR CRONE UNIT
- HORIZONTAL LOOP (PULSE EM)
- TURAM
- INDUCED POLARIZATION (CONDUCTIVITY, RESISTIVITY)
- IP – DEFINITE, PROBABLE, POSSIBLE

AIRBORNE

- 1–2 CHANNEL (350, 450 MICROSECONDS)
- 3–4 CHANNEL (550, 670 MICROSECONDS)
- 5–6 CHANNEL (790, 910 MICROSECONDS)
- 7–8 CHANNEL (1050, 1190 MICROSECONDS)
- 9–10 CHANNEL (1350, 1510 MICROSECONDS)
- 11–12 CHANNEL (1680, 1870 MICROSECONDS)

DECARLE INTERPRETATION

- WELL DEFINED CONDUCTOR AXIS
- POORLY DEFINED CONDUCTOR AXIS
- UNCERTAIN CONDUCTOR AXIS
- WIDE CONDUCTIVE ZONE

- AEM CONDUCTOR AXIS
- AIRBORNE VERY LOW FREQUENCY
- SPARTAN AERO SYSTEM

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENTS	SYMBOL
PATENT . SURFACE & MINING RIGHTS	P
PATENT . SURFACE RIGHTS ONLY	S.R.O.
PATENT . MINING RIGHTS ONLY	M.R.O.
LEASE . SURFACE & MINING RIGHTS	L
LEASE . SURFACE RIGHTS ONLY	
LEASE . MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	L.O.
ORDER–IN–COUNCIL	O C
RESERVATION	R
PRODUCING MINES	

TYPE OF DOCUMENTS	SYMBOL
CANCELLED	C, X
SAND & GRAVEL . PIT . QUARRY	S
CROWN LAND SALE	CS
LOCATED LAND	LOC
REMOTE TOURIST SETUP	RTS
SURFACE AND/OR MINING RIGHTS WITHDRAWN FROM STAKING	W
SUBJECT TO FOREST ACTIVITIES	F

NOTE : 400' SURFACE RIGHTS RESERVATION AROUND ALL LAKES AND RIVERS

- FALCONBRIDGE LIMITED 100 %
- FALCONBRIDGE LIMITED AND JOINT VENTURE OPTIONS
- FALCONBRIDGE LIMITED LEASE
- OTHER COMPANIES 100 %
- OTHER COMPANIES AND JOINT VENTURE OPTIONS
- OTHER COMPANIES LEASE

ROCKLEGEND.XLS

TIMMINS EXPLORATION - AMENDED ROCK LEGEND - v8.0

1. MAIN ROCK DIVISIONS

15	To be Announced
14	Huronian Supergroup
13	Metamorphic (Unknown)
12	Gneiss
11	Schist
10	Diabase
9	Felsic Intrusive
8	Intermediate Intr. Rocks
7	Mafic Intrusive Rocks
6	Ultramafic Intr. Rocks
5	Sedimentary Rocks
5,s	Sulphide (>40%)
4	Felsic Volcanic Rocks
3	Intermediate Volcanic Rocks
3,C	Heterolithic Volcanic Rocks
2	Mafic Volcanic rocks
1	Ultramafic Volcanic Rocks

2. TEXTURAL/GEOCHEMICAL MODIFIERS

a	Fine Grained	A	Primitive (Y<20)
b	Medium Grained	B	Evolved (Y>20<60)
bx	Breccia		
c	Coarse Grained	C	Heterolithic
d	Quartz-Feldspar Phyric	D	Feldspar Phyric
e	Amygdaloidal/Vesicular	E	Chert
f	Primary Fragmentals	F	Wacke
g	Graphitic/Argillaceous	G	Leucoxene Bearing
h	Tholeiitic	H	Basaltic Komatiite
i	Alkalic		
j	Calc-Alkalic	J	Pyroxenite
k	Komatiitic	K	Net Textured
l	Flows (banded)	L	Peridotite
m	Massive	M	Dunite
n	Variolitic/Spherulitic	N	Ophitic
p	Pillowed	P	Porphyritic
q	Quartz Phyric	Q	
r	Oxide Iron Formation	R	Polysutured
s	Sulphides, Exhallites	S	Fractured
t	Pyroclastic	T	Gabbroic Textured
u	High Mg	U	Pyroxene Spinifex
v	High Fe	V	Olivine Spinifex
w	High Al	W	Skeletal/Crescumulate
x	Andesite	X	Adcumulate
y	Icelandite	Y	Mesocumulate
z	Highly Evolved (Y>60)	Z	Orthocumulate

ROCK NAMES MUST HAVE ALL MODIFIERS COMMA DELIMITED AND CAN BE NO LONGER THAN 15 CHARACTERS, COMMAS INCLUDED. Example: 3,*y,d,<DAC>,*t

3. ALTERATION MODIFIERS

Ab	Albitization
Bl	Bleached
C>	Carbonaceous
Cb	Carbonatization
Ch	Chloritization
Ep	Epidotization
F>	Iron Carbonatization
He	Hematization
K>	Potassic Alteration
Ka	Kaolinitization
Rs	Rust Stained
Se	Sericitization
Si	Silicification
Sr	Serpentinization
Tc	Talc-Carbonatization
Tk	Talc

4. Textural./Structural MODIFIERS

*a	Tuff (67% <2mm)	*n	Graded Bedding
*b	Lapilli Tuff (2-64mm)	*o	Cross bedding
*c	Lapillistone (76% <264mm)	*p	Fault Gouge
*ct	Cataclastic	*q	Augen
*d	Block (>64mm)/Xenolith	*r	Porphyroblastic
*e	Autoclastic/Hyaloclastic	*s	Hornfels
*f	Thickly Laminated	*t	foliated/sheared
*g	Thinly Laminated	*u	folded
*h	Clast Supported	*v	boudinage
*i	Matrix Supported	*w	fragmental (felsic>mafic)
*j	Granule (grit 2-4mm)	*x	fragmental (mafic>felsic)
*k	Pebble (4-64mm)	*y	Crystal Tuff (>50% of frags)
*l	Cobble (64-256mm)	*z	Lithic Tuff (>50% of frags)
*m	Boulder (>256)		

ALTERATION CODES

FORM	
S	Spots
F	Fracture/vein controlled
P	Pervasive
STRENGTH	
S	Strong
M	Moderate
W	Weak

Example: EpPW = Epidote,Pervasive,Weak

MINERALIZATION CODES

FORM	
D	Disseminated/Blebs
F	Fracture/vein controlled
M	Massive
B	Bedded
C	Clasts/Fragments

PERCENTAGE

Numeric pecentage, or percentage range (i.e. 1-3%), must always be specified

Example: CpB3% = Chalcopyrite, Bedded, 3%

5. MINERALOGICAL NAMES

Ak	Actinolite	Fc	Fuchsite	Pn	Pentlandite
Alb	Albite	Gn	Galena	Py	Pyrite
Al	Almandine	Gt	Garnet	Px	Pyroxene
Am	Amphibolite	VG	Gold	Po	Pyrrhotite
Ah	Anhydrite	Gf	Graphite	Qt	Quartz
Ad	Andalusite	GS	Gravel & sand	Ro	Rhodochrosite
Ay	Anthophyllite	Gyp	Gypsum	Ru	Rutile
Ap	Apatite	Hem	Hematite	Sur	Serpentine
Ar	Argentite	Hb	Hornblende	Sc	Sericite
Asp	Arsenopyrite	Hy	Hypersthene	Sh	Scheelite
Asb	Asbestos	Il	Ilmenite	Sid	Siderite
Aug	Augite	I-F	Iron Formation	Sil	Silica
Az	Azurite	Jr	Jarosite	Slm	Silliminite
Ba	Barite	Ky	Kyanite	Sps	Spessarite
bi	Bismuthite	Ls	Limestone	Sph	Sphalerite
Bi	Biotite	Lm	Limonite	Ti	Sphene (Titanite)
Bo	Bornite	Mag	Magnetite	Ag	Silver
Ca	Calcite	Mc	Malachite	Sp	Spinel
Cn	Chalcedony	Ma	Marcasite	Spd	Spodumene
Cc	Chalcocite	Mi	Mica	St	Staurolite
Cp	Chalcopyrite	Mk	Microcline	Sb	Stibnite
Chl	Chlorite	Mi	Millerite	Sul	Sulphides
Ch>	Chloritoid	Mo	Molybdenite	S-M	Mass.Sulphides
Cr	Chromite	Mu	Muscovite	S-D	Diss.Sulphides
Cpx	Clinopyroxene	Ne	Nepheline	Tk	Talc
Co	Cobalt Minerals	Nc	Niccolite	Te	Telluride
Cv	Covellite	Ni	Nickel minerals	Tt	Tertrahedrite
Ct	Cordierite	Ov	Olivine	Ta-Cl	Tantalite-Columbite
Dp	Diopside	Or	Orthoclase	Tl	Tourmaline
Dol	Dolomite	Opx	Orthopyroxene	Tr	Tremolite
Epi	Epidote	Pl	Phlogopite	Wo	Wollastonite
Fel	Feldspar	Pg	Plagioclase	Zr	Zircon
Fl	Fluorite				

6. ROCK TYPE / PROTOLITH

<QFG>	Quartzofeldspathic	<PER>	Peridotite	<CHM>	Chem. Precip.
<QTZ>	Quartzite	<SER>	Serpentinite	<SLA>	Slate
<MAR>	Marble	<DUN>	Dunite	<KIM>	Kimberlite
<SKA>	Skarn(Calc-Silicate)	<PRX>	Pyroxenite	<CAR>	Carbonatite
<PHY>	Phyllite	<LMP>	Lamprophyre	<AMP>	Amphibolite
<TON>	Tonalite	<SST>	Sandstone	<MIG>	Migmatite
<SYN>	Syenite	<ARK>	Arkosic sandstone	<PEG>	Pegmatite
<GRA>	Granite	<WCK>	Graywacke	<LEU>	Leucocratic
<MON>	Monzonite	<CGL>	Conglomerate	<MEL>	Melanocratic
<GRD>	Granodiorite	<SLT>	Siltstone	<UNK>	Unknown Protolith
<APL>	Aplite	<ARG>	Mudstone-argillite	<UMF>	Ultramafic
<FEL>	Felsite	<EXH>	Chert/exhalite	<MAF>	Mafic
<QDI>	Quartz Diorite	<QIF>	Silicate IF	<AND>	Andesite
<GAB>	Gabbro	<OIF>	Oxide IF	<DAC>	Dacite
<NOR>	Norite	<SIF>	Sulphide IF	<RYD>	Rhyodacite
<ANT>	Anorthosite	<CIF>	Carbonate IF	<RHY>	Rhyolite
<DIO>	Diorite	<SHA>	Shale	<SCL>	Sulphide Clasts
		<LST>	Limestone	<RWV>	Reworked Volcanic Debris

7. HURONIAN SUPERGROUP

BR	Bar River Formation	
GL	Gordon Lake Formation	Cobalt Group
LR	Lorrain Formation	
GW	Gowganda Formation	
SP	Serpent Formation	
ES	Espanola Formation	Quirke Lake Group
BC	Bruce Formation	
MS	Mississagi Formation	
PC	Pecors Formation	Hough Lake Group
RL	Ramsey Lake Formation	
MK	McKim Formation	Elliot Lake Group
MT	Matinenda Formation	

Swastika Laboratories

A Division of TSL/Assayers Inc.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

6W-0946-RG1

Company: **FALCONBRIDGE LTD (EXPLORATION)**
Project: 8172 EXPL
Attn: J. Pattison

Date: MAR-18-96

We hereby certify the following Geochemical Analysis of 32 Core samples submitted MAR-12-96 by .

Sample Number		Au PPB	Cu PPM	Zn PPM	Pb PPM	Ag PPM	Ni PPM
AT02729		<2	74	49	1	0.1	223
AT02730	Control	<2	12	118	15	0.3	8
AT02731		3	50	50	1	0.1	77
AT02732		3	51	63	1	0.1	91
AT02733		<2	46	68	1	0.1	84
AT02734		<2	69	66	1	0.1	152
AT02735		<2	46	44	1	0.1	235
AT02736		<2	53	53	1	0.1	361
AT02737		<2	51	46	1	0.1	101
AT02738		<2	44	57	1	0.1	95
AT02739		<2	56	69	1	0.1	100
AT02740		<2	37	61	1	0.1	305
AT02741		<2	40	66	1	0.1	120
AT02742		<2	54	45	1	0.1	275
AT02743		3	63	38	1	0.1	343
AT02744		<2	59	39	1	0.1	435
AT02745		<2	57	52	1	0.1	671
AT02746		<2	32	61	1	0.1	112
AT02747		<2	41	59	1	0.1	300
AT02748		<2	48	37	1	0.1	331
AT02749		<2	55	34	1	0.1	370
AT02750	Control	<2	11	117	15	0.3	8
AT02751		<2	27	46	1	0.1	504
AT02752		<2	44	47	1	0.1	291
AT02753		<2	91	43	1	0.1	451
AT02754		<2	48	74	1	0.1	324
AT02755		<2	55	87	1	0.1	135
AT02756		<2	600	91	1	0.3	422
AT02757		<2	92	41	1	0.1	231
AT02758		<2	133	45	1	0.1	37

Certified by G. Gelop

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244 FAX (705) 642-3300

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Assaying - Consulting - Representation

Geochemical Analysis Certificate

6W-0946-RG1

Company: **FALCONBRIDGE LTD (EXPLORATION)**
Project: 8172 EXPL
Attn: J. Pattison

Date: MAR-18-96

We hereby certify the following Geochemical Analysis of 32 Core samples submitted MAR-12-96 by .

Sample Number	Au PPB	Cu PPM	Zn PPM	Pb PPM	Ag PPM	Ni PPM
AT02759	<2	671	66	1	0.3	27
AT02760	<2	77	47	1	0.1	29

Certified by _____

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244 FAX (705)642-3300

Swastika Laboratories

A Division of TSL/Assayers Inc.

Established 1928

Assaying - Consulting - Representation

Geochemical Analysis Certificate

6W-1244-RG1

Company: **FALCONBRIDGE LTD (EXPLORATION)**
Project: 8172 EXPL
Attn: J. Pattison

Date: APR-09-96

We hereby certify the following Geochemical Analysis of 39 Core samples submitted APR-01-96 by .

Sample Number	Au PPB	Cu PPM	Zn PPM	Pb PPM	Ag PPM	Ni PPM
AT02769	<2	77	61	1	0.1	153
AT02770	<2	80	35	1	0.1	157
AT02771	10	123	55	1	0.1	168
AT02772	<2	65	67	1	0.1	173
AT02773	<2	73	67	1	0.1	156
AT02774	<2	67	83	1	0.1	153
AT02775	<2	15	77	3	0.1	11
AT02776	<2	18	128	4	0.1	10
AT02777	<2	93	78	3	0.1	152
AT02778	<2	55	211	5	0.2	46
AT02779	<2	1100	2990	51	1.3	1750
AT02780 Control	<2	12	114	12	0.2	7
AT02781	<2	462	2050	74	1.1	742
AT02782	3	381	1770	53	0.8	906
AT02783	3	400	1690	57	0.9	993
AT02784	<2	767	2340	62	1.2	1020
AT02785	<2	187	928	14	0.3	273
AT02786	<2	80	248	15	0.2	76
AT02787	3	211	3360	20	0.3	282
AT02788	<2	55	69	1	0.1	326
AT02789	<2	98	37	1	0.1	427
AT02790	<2	52	59	1	0.1	569
AT02791	<2	69	44	1	0.1	823
AT02792	7	50	30	1	0.1	1640
AT02793	<2	34	33	1	0.1	1610
AT02794	<2	46	30	1	0.1	1510
AT02795	<2	45	35	1	0.1	1430
AT02796	3	35	29	1	0.1	1340
AT02797	<2	131	464	1	0.1	823
AT02798	<2	285	7920	1	0.1	1000

Certified by _____

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244 FAX (705) 642-3300

Established 1928

Swastika Laboratories

A Division of TSL/Assayers Inc.

Assaying - Consulting - Representation

Geochemical Analysis Certificate

6W-1244-RG1

Company: **FALCONBRIDGE LTD (EXPLORATION)** Date: APR-09-96
Project: 8172 EXPL
Attn: J. Pattison

We hereby certify the following Geochemical Analysis of 39 Core samples submitted APR-01-96 by .

Sample Number	Au PPB	Cu PPM	Zn PPM	Pb PPM	Ag PPM	Ni PPM
AT02799	<2	130	124	2	0.1	420
AT02800 Control	<2	12	113	13	0.3	7
AT03663	3	70	119	1	0.1	620
AT03664	<2	38	1960	3	0.1	572
AT03665	<2	113	60	1	0.1	991
AT03666	3	47	47	1	0.1	1600
AT03667	<2	85	46	1	0.1	1510
AT03668	<2	411	42	1	0.1	987
AT03669	<2	82	36	1	0.1	433

Certified by G. Leboy

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244 FAX (705)642-3300

Ontario

Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use)
W9760.00299
Assessment Files Research Imaging

Personal information c
Mining Act, the inform
Questions about this
933 Ramsey Lake Ro

42A12NE0074 2.17636 MACDIARMID

66(3) of the Mining Act. Under section 8 of the
ork and correspond with the mining land holder.
Northern Development and Mines, 6th Floor,

900

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240.
- Please type or print in ink.

2.17636

1. Recorded holder(s) (Attach a list if necessary)

Name	Client Number
FALCONBRIDGE LIMITED	130679
Address	**Telephone Number**
P.O. BOX 1140, 571 MONETA AVE	(705) 267-1188
TIMMINS, ONTARIO P4N 7H9	**Fax Number** (705) 264-6080
Name	**Client Number**
Address	**Telephone Number**
	Fax Number

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

☐ Geotechnical: prospecting, surveys, assays and work under section 18 (regs)

☑ Physical: drilling, stripping, trenching and associated assays

☐ Rehabilitation

Work Type: DIAMOND DRILLING & ASSAYS	Office Use
	Commodity
	Total $ Value of Work Claimed: 37,392.00
Dates Work Performed: From 20 Day / 02 Month / 96 Year To 26 Day / 03 Month / 96 Year	NTS Reference
Global Positioning System Data (if available) — Township/Area: MacDIARMID & LOVELAND	Mining Division: Porcupine
M or G-Plan Number: G-3242, M-293	Resident Geologist District: Timmins

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name	Telephone Number
MIKE COLLISON	(705) 267-1188
Address	**Fax Number**
P.O. BOX 1140, 571 MONETA AVE, TIMMINS, ONT. P4N 7H9	(705) 264-6080
Name	**Telephone Number**
Address	**Fax Number**
Name	**Telephone Number**
Address	**Fax Number**

RECEIVED (c)
MAR 27 1997
TB 4:05
PORCUPINE MINING DIVISION

4. Certification by Recorded Holder or Agent

I, MIKE COLLISON (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent		Date
M. Collison		27 MAR 97
Agent's Address	**Telephone Number**	**Fax Number**
571 MONETA AVE, TIMMINS, ONT. P4N 7H9	(705) 267-1188	(705) 264-6080

0241 (02/96)

JUNE 25/97

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

	Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	**Number of Claim Units.** For other mining land, list hectares.	**Value of work performed** on this claim or other mining land.	**Value of work applied** to this claim.	**Value of work assigned** to other mining claims.	**Bank.** Value of work to be distributed at a future date.
eg	TB 7827	16 ha	$26, 825	N/A	$24,000	$2,825
eg	1234567	12	0	$24,000	0	0
eg	1234568	2	$ 8, 892	$ 4,000	0	$4,892
1	SEE	ATTATCHED		SHEET		
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
		Column Totals				

I, MIKE COLLISON (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing	Date
M. Collison	27 MAR 97

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- ☑ 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- ☑ 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- ☐ 3. Credits are to be cut back equally over all claims listed in this declaration; or
- ☐ 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

2.17636

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp

RECEIVED (c) MAR 27 1997 TB 4:05 PORCUPINE MINING DIVISION

Deemed Approved Date	Date Notification Sent
Date Approved	Total Value of Credit Approved
Approved for Recording by Mining Recorder (Signature)	

0241 (02/96)

	Claim Number. Or if work was done other eligigle mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date.
1	986731	1		$260		
2	986732	1		$260		
3	986733	1		$40		
4	986734	1		$40		
5	986735	1		$40		
6	986736	1		$260		
7	986737	1		$260		
8	995397	1		$260		
9	995398	1		$260		
10	995399	1		$260		
11	995400	1		$260		
12	995401	1		$260		
13	995402	1		$260		
14	995403	1		$260		
15	995404	1		$260		
16	995405	1		$260		
17	995406	1		$260		
18	995407	1		$260		
19	995408	1		$260		
20	995409	1		$260		
21	995410	1		$260		
22	995411	1		$260		
23	995412	1		$260		
24	995447	1		$260		
25	995448	1		$260		
26	995449	1		$260		
27	995450	1		$260		
28	995451	1		$260		
29	995452	1		$260		
30	995453	1		$260		
31	995454	1		$260		
32	995455	1	$24,940	$260	$17,267	$7,413
33	995456	1	$3,263	$260		$3,003
34	995457	1	$9,189	$260		$8,929
35	995458	1		$260		
36	995459	1		$260		
37	995460	1		$260		
38	995461	1		$260		
39	995462	1		$260		
40	995475	1		$247		
41	995476	1		$260		
42	995477	1		$260		
43	995478	1		$260		
44	995479	1		$260		
45	995480	1		$260		
46	995481	1		$260		
47	995482	1		$260		
48	996042	1		$260		
49	996043	1		$260		
50	996044	1		$260		
51	996045	1		$260		
52	996046	1		$260		
53	996047	1		$260		
54	996048	1		$260		
55	996049	1		$260		
56	996050	1		$260		
57	996051	1		$260		
58	996054	1		$260		
59	996055	1		$260		
60	996056	1		$260		
61	996066	1		$260		
62	996067	1		$260		
63	996068	1		$260		
64	996069	1		$260		
65	996070	1		$260		
66	996071	1		$260		
67	996072	1		$260		
68	996073	1		$260		
69	996074	1		$260		
70	996075	1		$260		
71	996076	1		$260		
72	996077	1		$260		
		Column Totals	$37,392	$18,047	$17,267	$19,345

2.17636

Ontario Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use)
W9760.00299.

Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of Work Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
DIAMOND DRILLING	744.8 M	37.29 $/M	27,770
ASSAYS	71 SAMPLES	14.45	1026
SUPERVISION & LOGGING	15 DAYS	200 /DAY	3000
CORE SAWING	2 DAYS	100 /DAY	200
Associated Costs (e.g. supplies, mobilization and demobilization).			
DRILL MOBILIZATION			2050
DRILL DEMOBILIZATION			3071
Transportation Costs			
TRUCK RENTAL		700 /MTH	175
GAS			100
Food and Lodging Costs			
Total Value of Assessment Work			37392

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK × 0.50 = Total $ value of worked claimed.

Note:
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification cannot made, the Minister may reject all or part of the assessment work submitted.

RECEIVED
MAR 27 1997
TB 4:05
PORCUPINE MINING DIVISION

Certification verifying costs:

I, MIKE COLLISON (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as SENIOR FIELD GEOLOGIST (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature	Date
M. Collison	27 MAR 97

0212 (02/96)

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Ontario

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

Telephone: (888) 415-9846
Fax: (705) 670-5863

September 5, 1997

Mike Collison
FALCONBRIDGE LIMITED
P.O. Box 1140
571 Moneta Ave
Timmins, ONTARIO
P4N 7H9

Dear Sir or Madam:

Submission Number: 2.17636

Subject: Transaction Number(s):		**Status**
	W9760.00299	Deemed Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Steve Beneteau by e-mail at beneteau_s@torv05.ndm.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,

ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 11312
Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.17636

Date Correspondence Sent: September 05, 1997 **Assessor:** Steve Beneteau

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9760.00299	995455	MACDIARMID, LOVELAND	Deemed Approval	June 25, 1997

Section:
16 Drilling PDRILL

Correspondence to:

Resident Geologist
South Porcupine, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):

Mike Collison
FALCONBRIDGE LIMITED
Timmins, ONTARIO

Correspondence ID: 11312

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY

S.R.O. – SURFACE RIGHTS ONLY

M.+ S. – MINING AND SURFACE RIGHTS

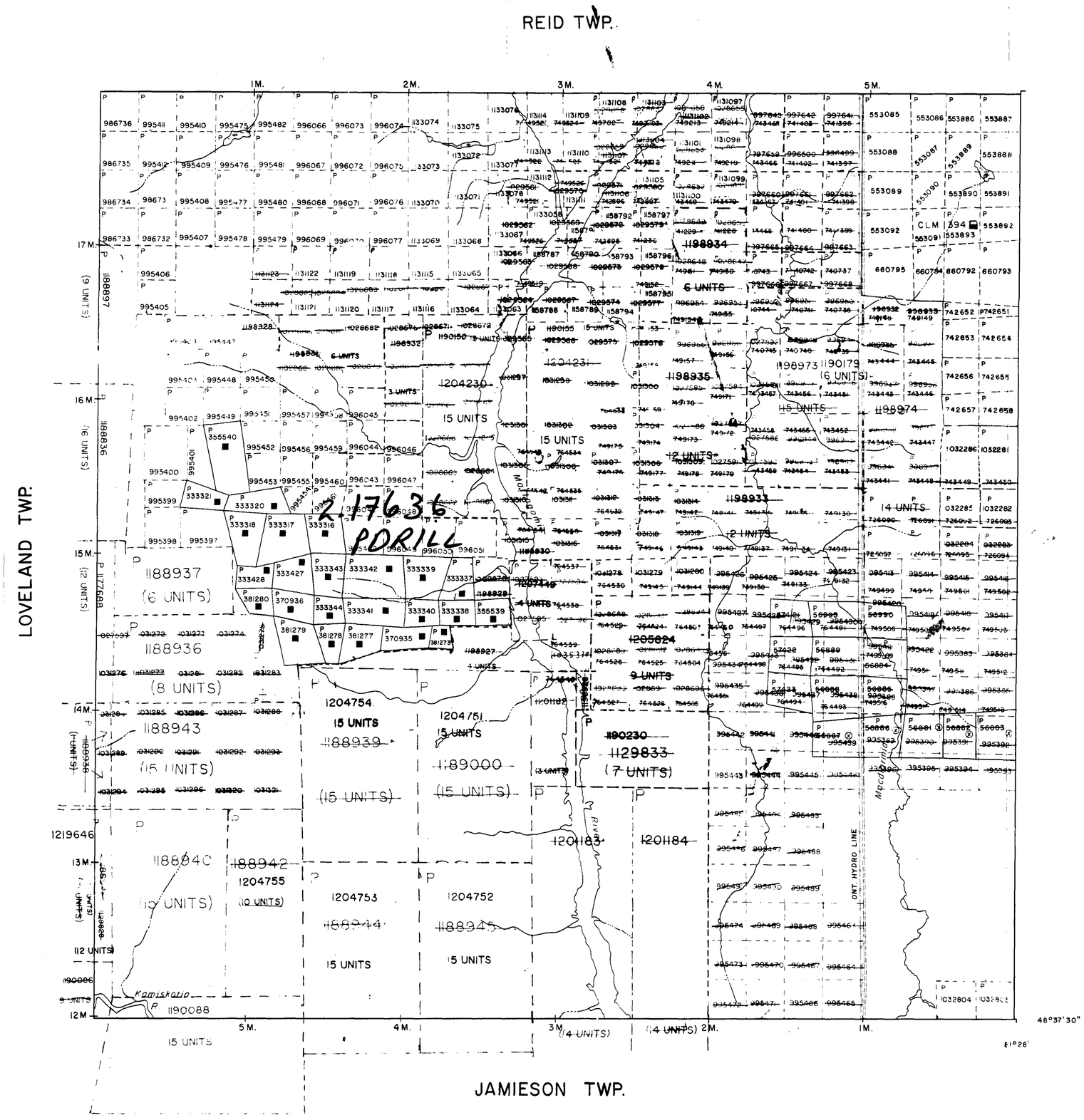
Description	Order No.	Date	Disposition	File

NOTES

THIS TOWNSHIP LIES WITHIN THE MUNICIPALITY OF THE CITY OF TIMMINS.

FLOODING RIGHTS ALONG MATTAGAMI RIVER RESERVED TO ONT HYDRO, L.O. 7085

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES. FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON



LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
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	OC
RESERVATION	Ⓡ
CANCELLED	⊗
SAND & GRAVEL	Ⓢ

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC 1

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000

METRES 0 200 1000 (1 KM) 2000 (2 KM)

TOWNSHIP

MACDIARMID

M.N.R. ADMINISTRATIVE DISTRICT

TIMMINS

MINING DIVISION

PORCUPINE

LAND TITLES / REGISTRY DIVISION

COCHRANE

Ontario Ministry of Natural Resources — Land Management Branch

Date MARCH, 1985

Number G-3242

42A12NE0074 2.17636 MACDIARMID