

UTM East: 534796

Grid East: 106+30

Elevation : 161m

Dip : -89 deg

Azimuth : 264 deg

Total Depth : 920.2m

UTM North: 5409050

Grid North: -01+00

Claim Number: AND Charter

Core Size: NQ

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dodge

Corporation of Canada, Limited

DIAMOND DRILL CORE LOG

Project No: 294

Property: Mary March

NTS: 12A/15

Date Started: 19/07/2000

Contractor: Petro

Logged by: JG Thurlow

Hole No. MM-294-20

Grid Name: MM 1999

Completed: 09/08/2000

Remarks: Hole is capped and lined with small PVC pipe (ID=40mm, OD=48mm)

Depth (m)		Major Rock Description				Minor Rock Description				Assays						
From	To	Code	Lithology	Comments	From	To	Code	Comments	From	To	Sample	Cu %	Pb %	Zn %	Ag ppm	Au ppb
0.00	4.00	OB	Overburden													
4.00	140.40	M	Mafic Intrusives		4.00	8.40	Mg	Fine grained gabbro, leucoxene-rich. k = 0.04. Broken core.								
					8.40	27.00	Mdl	Massive, dark green, later magnetic (k up to 3.2) diabase containing a few anomalous xenoliths of brownish, pyritized more felsic rock. Generally more solid core than the unit above. Small amygdules with calcite cores and chlorite rims. Minor epidote veining. Local coarse disseminated pyrite, common finer pyrite. Basal contact runs along core for several metres and is chilled.								
					27.00	133.00	Mg	Fine grained gabbro, similar to 4m-8.4m. Some pegmatitic sections. Coarse ilmenite, fresh pyroxene, plagioclase altered to calcite in part. Fairly coherent core, some broken sections (e.g., 63m-80m). K = 0.03 generally but rises locally to 0.5. Minor hematite on fractures. Weak ductile shearing at 60 degrees to core axis at 82.5m. Sharp, unsheared basal contact.								
					133.00	140.40	I	Intermediate intrusive, medium brownish, fine grained. Upper contact is chilled against the gabbro - irregular contact at 65 degrees to core axis. Local trace pyrite. Basal contact is a strong ductile shear over 30 cm at 60 to 90 degrees to core.								

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From	To	Code	Lithology	Comments	From	To	Code	Comments	From	To	Sample	Cu %	Pb %	Zn %	Ag ppm	Au ppt	
140.40	920.20	Bv	Hangingwall mafic Volcaniclastics		140.40	154.30	BD	Intermediate hyaloclastic breccias comprising ruddy brownish fragments, elongate interstitial darker more wispy chloritic clasts in an arenaceous hyaloclastic matrix. Ruddy clasts contain elongate silica-filled amygdules. Traces disseminated pyrite - local speck chalcopyrite in late veinlet. Some 1 metre clasts. Basal contact is sharp and unshaped - above the contact, there seems to be clasts which resemble the next unit.									
					154.30	165.20	D2	Intermediate-felsic flow or synvolcanic sill. Small plagioclase phenocrysts, common thin, aligned silica-filled voids. Common melanocratic chlorite specks, possibly after amphibole. Common hyaloclastic fracturing and brecciation with injection of clastic material - abundant fine leucogene. Basal contact not sheared - looks chilled.									
					165.20	186.20	Bp	Weakly hematitic basaltic pillow lava and breccia. Spherical calcite amygdules. Some calcite in the matrix of breccias. Cut by early diabasic rock with chill on upper contact and a shear at the base from 178.5m-181.8m. Strong ductile shear at basal contact.									

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From	To	Code	Lithology	Comments	From	To	Code	Comments	From	To	Sample	Cu %	Pb %	Zn %	Ag ppm	Au ppb	
					186.20	246.60	BD	Intermediate volcanic breccia, very similar to unit from 140m-154m. Some wispy, melanocratic, chloritic clasts in the matrix. Well-developed perlitic cracks in some clasts. Common fine leucoxene. Some brown-orange colouration in some clasts. Locally very weakly silicified with disseminated pyrite. Incipient alteration overall. Generally hyaloclastic breccia but locally with accessory clast lithologies. Common silica-filled amygdules in clasts, generally with a small calcite core. Tight-packed, unsorted, angular. Good coring overall. Gradational basal contact is very difficult to identify.									
					246.60	308.50	Bv	Basaltic volcanoclastic characterized by leucocratic clasts with white calcite amygdules in a darker, very weakly chloritized matrix. Medium green overall. Good coring. Minor pyrite in amygdules, locally with common trace chalcopyrite as in other holes which cut this unit. Cut by intermediate intrusive from 278.2m to 281.1; the upper contact is broken at 20 degrees to core and basal contact is chilled at 45 degrees to core -this unit contains anomalous disseminated pyrite. Another intermediate intrusive from 289.7m to 294.3m. From 300.5m to 308.5m clasts are anomalously bleached and contain some anomalous green mica. This (carbonate?) alteration seems to be related to a number of thin zones of fault gouge (rock quality is lower in this section). Weak shear at basal contact.									

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Elevation : 161m	Claim Number: AND Charter		NTS: 12A/15 Grid Name: MM 1999	
Dip : -89 deg	Core Size: NQ		Date Started: 19/07/2000 Completed: 09/08/2000	
Azimuth : 264 deg			Contractor: Petro	
Total Depth : 920.2m			Logged by: JG Thurlow	
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From	To	Code	Lithology	Comments	From	To	Code	Comments	From	To	Sample	Cu %	Pb %	Zn %	Ag ppm	Au ppb	
					308.50	336.90	I	Olive green, massive, fine-grained intermediate intrusive. Only a few calcite-silica amygdules. Good coring. Common fine grained disseminated pyrite, abundant fine grained leucoxene. Locally very anomalous 1% fine disseminated pyrite. Lower contact is subparallel to core and has weak shearing along it.									
					336.90	348.00	Bv	Weakly altered basaltic volcanoclastic rock with bleached clasts in dark, chloritic matrix. Generally similar to the previous unit but generally lacks the calcite amygdules. Locally anomalous fine disseminated pyrite. Some clasts are fairly hard (silicified?).									
					348.00	361.20	Mdl	Dark green-black late, magnetic diabase. K up to 3.3. A few outsized plagioclase phenocrysts. Minor disseminated pyrite through out. Locally anomalous (0.5%) disseminated pyrite. Small diffuse calcite amygdules. Lower contact chilled and follows core.									
					361.20	430.10	Bv	Basaltic volcanoclastic rocks with leucocratic clasts in darker chloritic matrix. Weak hydrothermal alteration overall. Lithologically similar to the unit above the dyke. Some clasts with calcite amygdules, many do not. Unseparated diabasic and intermediate dykes from 366.9m-369.8m (somewhat broken core in this section). Another intermediate intrusive from 385.8m-386.8m. Weak carbonate bleaching and anomalous green mica related to minor faults from 386.8m-390.2m. Some clasts have scalloped margins, some have partial rims. Sections of this unit which contain fewer amygdular fragments resemble parts of Unit BD.									

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Contractor: Petro

Logged by: JG Thurlow

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From	To	Code	Lithology	Comments	From	To	Code	Comments	From	To	Sample	Cu %	Pb %	Zn %	Ag ppm	Au ppb
					430.10	434.90	M	Fine grained, chilled, steeply-dipping diabase (k = 0.03); contains minor host rock screens.								
					434.90	484.20	Bv	Foliated basaltic volcanic rocks; foliation waxes and wanes in intensity; containing a number of minor related brittle-ductile shears. Another chilled diabase from 439.2m-440.0m. A series of steeply-dipping, light olive-coloured, sericitized-pyritized, intermediate-felsic (D2?) dykelets and dykes associated with brittle-ductile shears from 440.55m-440.6m, 443.5m-449.8m, 458.3m-459.6m, 461.5m-464.75m, 466.0m-473.1m. These generally contain 1% disseminated pyrite and some carry traces disseminated and fracture-fill sphalerite. From 481.7m-484.2m bleaching with moderate ductile shearing; foliation at 35 degrees to core, minor silica-pyrite veining with trace sphalerite.								
					484.20	485.00	Mdl	Chilled, magnetic (k up to 1.7), post-tectonic diabase.								
					485.00	488.90	Bv	Strong ductile shearing in mafic volcanic protolith; foliation 35 degrees to core.								
					488.90	492.00	Mdl	Chilled magnetic (k = 2.3), post-tectonic diabase.								
					492.00	498.80	Bv	Weakly sheared, epidotized mafic volcanics with anomalous disseminated pyrite and trace chalcopyrite.								
					498.80	503.50	Mdl	Chilled diabase (k=3.6); steep contacts have no movement.								

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From	To	Code	Lithology	Comments	From	To	Code	Comments	From	To	Sample	Cu %	Pb %	Zn %	Ag ppm	Au ppb	
					503.50	537.40	Bv	Weakly to moderately epidotized, and chloritized mafic volcanoclastic. Peripheral VMS alteration. Looks like pillow breccia; plagioclase altered to epidote, epidote-calcite amygdules. Strong fragment:matrix contrast. Fairly good coring. Vague pinkish tinge to some clasts. Locally foliated and weakly sheared with core angles at 10 to 40 degrees to core axis. Anomalous disseminated pyrite and trace chalcopyrite.									
					537.40	541.30	I	Epidotized mafic-intermediate intrusive - k = 0.02-0.03 - largely post-dates the shearing in adjacent rocks. Abundant fine leucoxene, anomalous disseminated pyrite. Upper contact at 20 degrees, basal contact weakly sheared at 60 degrees to core axis.									
					541.30	561.20	Bv	Foliated, sheared, basaltic volcanic volcanoclastic; generally not epidotozed like the previous unit but this is more deformed. Core angles vary considerably - average might be 30 to 40 degrees to core axis. Abundant calcite veining. Moderate calcite and weak chlorite alteration. Anomalous disseminated pyrite, common traces chalcopyrite (especially associated with calcite amygdules and veinlets), rare trace sphalerite. Locally 1%-2% disseminated pyrite. Some discrete, moderate ductile shears. Magnetic (k = 1.6), post-tectonic diabase from 549.8m - 550.6m.									

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From	To	Code	Lithology	Comments	From	To	Code	Comments	From	To	Sample	Cu %	Pb %	Zn %	Ag ppm	Au ppb
					561.20	579.10	Bv	Moderately epidotized basalt, like that from 503m - 537m. Less shearing than the unit above - fairly good coring. Anomalous disseminated pyrite generally with local speck chalcopyrite. Minor patches of heavier pyrite with lesser sphalerite (the section from 600.1m - 600.3m contains approx. 3% Zn). Basal contact is broken, but not significantly sheared.								
					579.10	591.20	BD	Pyritized intermediate(?) volcanic. Medium-dark green with brownish alteration tint. Moderate alteration overall. Weak-moderate chloritic alteration with weak, brownish silica(?) - albite(?) and local weak epidotization. Average 1%-2% medium grained pyrite disseminated in small amygdules and throughout - locally 5% pyrite. Breccia rocks have zoned alteration in clasts from epidote rims to brownish cores and with chlorite in matrix. Alteration in this unit seems to be a peripheral phase of the next sub-unit. Only traces Zn, except around 589.2m where there is amygdule sphalerite. Lower contact is gradational over a metre or so?								
					591.20	597.70		Brownish-red-orange, fine grained, hard pyritized rock. Strong alteration. Protolith uncertain; may be mafic volcanics as in units above. Strongest alteration is adjacent to pyrite fractures and veinlets. Some sections of semi-massive pyrite over a few centimetres. Basal contact appears to be gradational.								

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Depth (m)		Major Rock Description				Minor Rock Description				Assays							
From	To	Code	Lithology	Comments	From	To	Code	Comments	From	To	Sample	Cu %	Pb %	Zn %	Ag ppm	Au ppt	
					597.70	622.10	B	Moderately epidotized and weakly chloritized basaltic flows with lesser volcanoclastic rocks. Generally epidote in amygdules. A few minor shears ranging from 20 degrees to 70 degrees to core axis. Contains anomalous pyrite throughout with some sections more than 1%. Local significant amygdule chalcopyrite and local Zn-rich veinlet. Increased shearing towards base of the unit.									
					622.10	624.75	Mdl	Zone of late diabase intrusives and strong shearing. Diabase dykelets are chilled and are not sheared. Host rocks are strongly sheared at 30 degrees to core axis. Includes a zone of sheared, pyritized intermediate? intrusives.									
					624.75	631.90	I	Pyritized, intermediate-felsic intrusive, fine grained. Weakly sericitized, especially along brittle fractures. Weakly chloritized, locally silicified. Some screens of mafic volcanic host rocks. Local relict amygdules filled with pyrite.1%-2% pyrite overall. Essentially no base metal except for rare speck chalcopyrite in late veinlet.									
					631.90	635.50	Md	Fine to coarse grained late diabase; irregular chilled contacts. Moderately magnetic (k = 0.8). Several screens of unseparated host rock in this unit.									
					635.50	646.80	B	Basaltic volcanics, not epidotized like the next unit. Broken core with several chilled late diabase dykelets. Poorer RQD than units on either side. Some fractures with bright red "warpaint" hematite (a candidate for steeply-dipping offset fault?). Weakly chloritized and locally weakly hematitized; weak calcite and epidote alteration. Basal contact is gradational; not sheared.									

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From	To	Code	Lithology	Comments		From	To	Code	Comments	From	To	Sample	Cu %	Pb %	Zn %	Ag ppm	Au ppb
						646.80	713.20	Bp	Moderately epidotized basaltic lava - pillowed? Weak chlorite-calcite alteration and local incipient hard brownish-pinkish alteration (albite?). Epidote-calcite-pyrite amygdules with common specks of chalcopyrite, trace sphalerite. Anomalous disseminated pyrite throughout. Relatively good coring.								
						713.20	803.61	Bv	Basaltic volcanoclastics; less epidotized than the sub-unit above. Weakly chloritized, epidotized and "pinkified" (albite?). From 713.2m-717.2m is broken core and weak shearing running subparallel to core axis. Contains anomalous disseminated pyrite and local trace chalcopyrite. Rare massive pyrite stringer with no associated alteration. At 745.55m, 6cm of "pinkified" basalt is cut by sphalerite-chalcopyrite veinlets and is followed by a 7cm massive pyrite band containing minor sphalerite-chalcopyrite. This appears to be vein material and resembles the massive pyrite seen in the Mary March Fault in MM-294-19. Elsewhere minor sphalerite-chalcopyrite associated with calcite veining. Strong shearing from 761.7m-765.1m; core angles vary from 70 degrees to subparallel to core. Shearing again from 767.8m - 769.0m. Late diabase from 777.3m - 780.3m chilled subparallel to core. More late diabase from 791.4m-793.0m and from 796.95m-797.45m.								
						803.61	806.66	Mdl	Late diabase, chilled non-broken contacts. Intrudes strongly sheared basaltic rocks. Contacts 55 to 75 degrees to core axis.								

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From	To	Code	Lithology	Comments	From	To	Code	Comments	From	To	Sample	Cu %	Pb %	Zn %	Ag ppm	Au ppb
					806.66	830.89	Bv	Variably sheared, bleached, veined basaltic volcanics with several orange-brown intermediate intrusives, some of which are veined by significant pyrite. Bleaching is related to carbonate veining which is in turn controlled by shearing. Several significant internal shears with core angles ranging from low to high. Several diabase dykelets from 823.0m-825.9m. Anomalous disseminated pyrite throughout, common specks chalcopyrite, especially in calcite amygdules.								
					830.89	836.99	Bv	Bleached, veined basaltic volcanoclastics. Clasts are more leucocratic than the matrix. Common silica-carbonate veinlets. Abundant anomalous green mica.								
					836.99	838.21	I	Brownish intermediate intrusive, fine grained. Some silica-filled amygdules. Contains unseparated interbanded sections of sheared basaltic volcanoclastic rocks.								
					838.21	838.51		Moderate shear at 45 degrees to core axis.								
					838.51	844.31	B	Bleached, veined basaltic rocks containing anomalous green mica. Amygdules filled with both silica and calcite. Bleaching emanates from both fractures and veinlets and is related to the brittle shearing above. Basal contact gradational.								

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From	To	Code	Lithology	Comments	From	To	Code	Comments	From	To	Sample	Cu %	Pb %	Zn %	Ag ppm	Au ppb	
					844.31	872.35	Bp	Basaltic pillow lava; dark green, fairly massive. Silica-calcite amygdules. Chloritic, palagonitic interpillow material but no sediments. A few bleached fractures and veinlets related to the shearing above. Minor disseminated pyrite and some pyritic fracture-fills and veinlets. Below 857.11 there are several unseparated intrusive phases intruding basalts which have weak carbonate-style bleaching. Basal contact is broken with weak shearing.									
					872.35	875.40	I	Brownish intermediate intrusive. Broken core with some brittle shearing. Basal contact is broken.									
					875.40	876.62	M	Unseparated diabasic intrusives and pillow lava. Basal contact chilled at 35 degrees to core axis.									
					876.62	891.86	B	Bleached, amygdular, massive mafic lithologies. In places, look like intrusives, elsewhere like pillow lavas. Similar to the unit above 872.35m. Calcite-filled amygdules. Bleaching looks like it might be related to chilling. Minor disseminated pyrite and minor pyritic veinlets. Basal contact is gradational and marked by a colour change.									
					891.86	899.17	M	Massive, medium greenish, early mafic intrusive rock. Brittle fracturing and some broken core. Minor gouge in places. Contains some unseparated intermediate intrusives.									

