THE MOUNT LYELL MINING AND RAILWAY COMPANY LIMITED

APPENDIX H

Form 211

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DIAMOND DRILL RECORD

Hole Number	HA6
Location	E.L. 9/66 HOWARD'S ANOMALY AREA
Grid:	HOWARD'S ANOMALY
Co-ordinates	LINE 21N, 950'W
Collar R.L.	
Length	250m
Rod Size	0-6.0m, HW; 6.0-78.0m, HQ; 78.0-117.0m, NQ; 117.0-250.0m, BQ;
Machine	MINDRILL 250
Contractor:	Associated Diamond Drillers
Logged by	PETER KOMYSHAN
1:500 Plans	
1:500 Sections	
Core Location	I.O.S.

Purpose.

TO TEST Ag; BEARING ROCKS LOCATED IN HA4 (TO THE SOUTH), HA3 (TO THE NORTH) AND OUTCROPS IN TYNDALL CREEK ON LINE 21N WHICH ASSAYED 10M AT 73 G/T

Survey Depth	0m	7m	16m	52m	88m	124m	133m	142m	151m	160m	175m	190m	205m	220m	235m	250m	
Bearing	273° mag.	269°	269°	269°	269°	269°	271°	271°	271°	270°	268°	271°	270°	270°	270.5°	270°	
Inclination	-60°	-61°	-61°	-62°	-61°	-60°	-60°	-59°	-58°	-58°	-56.5°	-56°	-56.5°	-56°	-56°	-55°	

Comments: Best intersection 94.4 - 98.5m : 4.1m at 6.3 g/t Ag, 146.5 - 149.5m : 3m at 0.2% Cu. Ag mineralization appears to be sporadic and not directly related to hematite, but associated with it.

Commenced	10TH JULY, 1981
Completed	20TH JULY, 1981

749217

MOUNT LYELL MINING AND RAILWAY COMPANY LIMITED APPENDIX H Continued

HOLE NUMBER HA6

	DESCRIPTION	REMARKS
0 - 5.50m	Drill site debris and weathered bedrock.	
5.50 - 19.50m	Tyndall Group. Splotchy pink to green medium to coarse grained rhyolitic ash flow agglomerate which are rounded to angular, small to large (2-200m) and consist of:- (a) dark green medium to coarse grained crystal lithic tuff (?) with phenocrysts of pink to white, euhedral to subhedral feldspar and minor subhedral quartz in a fine grained chloritic matrix. (b) pink medium grained to coarse grained rhyolite containing subhedral phenocrysts of pink feldspar and quartz. This rock has been extensively albitized in a splotchy manner across fragmental boundaries. The unit appears to be partially silicified at 9.00 - 9.60m, 10.00-10.70m and 18.50 - 19.50m. Minor quartz veins occur throughout as well as minor chlorite veinlets.	
19.50 - 47.00m	Interbedded fine to coarse grained dacite/andesite crystal lithic tuff and grey shale both containing small to large rounded fragments of rhyolite. The tuff is a grey/green fine to medium grained dacite/andesite crystal lithic tuff with phenocrysts of feldspar and minor quartz in a feldspatho chlorite matrix and also contains small elongate chloritic fragments. Minor disseminated pyrite. The shale is grey, intraformationally brecciated and in places is partially incorporated within the enclosed rhyolitic fragments. The shale which contains minor veins of pyrite, occurs at 24.60m, 34.20-34.30m, 34.60-35.10m, 35.30-35.40m, 38.00m and 42.80m. Throughout this section there is a variable percentage of small to large (5-100mm), generally rounded fragments of white to grey, medium grained feldspar, quartz phyric rhyolite. Some siliceous (?) alteration particularly at fragments boundaries has given rize to hazy fragment outlines. The fragments decrease in size and percentage downhole.	B.C.A. at 41.60m 25°
	Occasional large angular white carbonate fragments also occur e.g. at 33.80m.	B.C.A. at 47.50m 55°
47.00 - 52.00m	Interbedded green grey, fine to medium grained air fall crystal tuff with phenocrysts of feldspar and quartz in a particularly chloritic and sericitic matrix, and tuffaceous grey shale. A very weathered fine to medium grained reworked tuff occurs at 48.50-51.50m. A minor quartz vein occurs at 48.30m. Minor disseminated pyrite.	B.C.A. at 48.70m 55°
52.00 - 52.20m	Grey/green medium grained siliceous ash flow crystal lithic tuff containing phenocrystsof feldspar and minor quartz, with variable rounded and elongate chloritic fragments. Disseminated pyrite.	
52.20 - 54.10m	FAULT.	
54.10 - 67.00m	Very weathered and cleaved, brown to purple, fine to medium grained hematitic crystal lithic tuff containing elongate streched, sericitized fledspar and hematitic fragments. The rock is crudely banded due to a variable chlorite heamtite component of the matrix. There is a distinct lack of carbonate. The rock is also heavily limonite and Mn stained.	
67.00 - 90.80m	Purple to green fine to medium grained hematite to chloritic crystal lithic tuff interbedded with hematite and zones of carbonate. This unit consists essentially of three components which are interbedded and individually dominant in	B.C.A. AT 67.50m 50°

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	DESCRIPTION	REMARKS
67.00 - 90.80m	Various parts of the core. 1) The most dominant component is a fine grained purple red hematite sediment (?) with a minor jasper component. This occurs as lenses elongate to the bedding or wisps with variable thickness (1-200mm) and length (1mm to greater than core width). It generally contains a variable component of carbonate pods and lenses as well as a variable component of elongate wisps and interbedded with: 2) Green, fine to medium grained carbonate rich andesitic crystal lithic tuff with phenocrysts of partially stretched and sericitized with irregular but elongate shaped fragments of pale brown very fine grained sericitic tuff (?), hematite fragments and carbonate lenses and beds. Chlorite component is dominant at 72.20-72.80m but occurs throughout. 3) Fine to coarse grained, pale grey to white bedded carbonate with a minor hematite component. Minor styolitization is developed. There is predominant remobilization of carbonate in veins, veinlets and pods throughout the sequence, particularly at 71.90m and 70.50m.	B.C.A. 75.80m 50° B.C.A. 82.30m 50°
68.00 - 70.00m	FAULT.	
90.80 - 94.40m	Similar to 67.00-90.80 but predominantely pale green to pink carbonate interbedded and mixed with a variable component of fine to medium grained, chloritic, andesitic crystal lithic tuff with phenocrysts of white to pink feldspar and hematite.	
94.40 - 105.70m	Pale green, fine to medium (and minor coarse) grained andesitic crystal (lithic) tuff with phenocrysts of white subhedral feldspar in a carbonate rich chlorite matrix. Minor lithic fragments of carbonate and stretched, elongate very fine grained sericitic tuffs (1-20mm in length). Minor carbonate veins and veinlets	
105.70 - 109.40m	Interbedded grey green fine to medium grained carbonate rich andesitic crystal lithic tuff (airfall?) and fine grained grey shale. Minor disseminated pyrite. Veins of carbonatate occur as small (less than 10mm) tension gashes.	B.C.A. AT 106.50M 40°
105.70 - 117.10m	Gradational boundary to interbedded banded, pink to white, tuff rich carbonate and carbonate rich andesitic medium grained, crystal lithic tuff. The carbonate is fine to medium grained and contains a variable amount of fine to medium grained rounded crystals and matrix of feldspar and quartz. Minor fine grained elongate (silver like), jaspertitic liths occur. Medium grained recrystlized pyrite occurs parallel to the banding and may be recrystalized syngenetic material. The carbonate occurs at 109.40-110.20m, 110.00-111.30 119.00-112.10m, 112.60-172.80m, 114.20-114.30m, 115.00-115.40m and 116.60-116.70m. The tuff is a dark green fine to medium grained crystal lithic tuff with phenocrysts of white to pink feldspar and very minor homblende in a carbonate-chlorite matrix. The tuff contains elongate slivers of green chloritic fragments. At 113.30-113.70m, 115.40-115.70m and 115.80-115.85m. There occurs a pink to orange, medium to coarse grained andesitic lava? with phenocrysts of pink feldspar and subhedral to euhedral hornblende in a feldspatho matrix. This andesite has a sharp boundary with the host rock and may be a fragmental from a nearby lava source. This unit is heavily veined by carbonate. Disseminated pyrite occurs throughout.	B.C.A. AT 111.00M 40°
117.10 - 120.00m	Dark green, fine grained, andesitic crystal lithic tuff phenocrysts of feldspar in a chloritic, carbonate rich matrix. Fragments are generally chloritic and occur as elongate slivers of less than 5mm in length. Minor bands of carbonate occur at 119.00m.	
120.00 - 141.30m	Dark green to purple, medium to coarse grained agglomeratic tuff with fragments 1-100mm of rounded to angular:	

	DESCRIPTION	REMARKS
120.00 - 141.30m (continued)	a) Dark green, fine grained, andesitic crystal lithic tuff with phenocrysts of feldspar and elongate chloritic slivers (as for 117.10-120.00m).	
	b) pink-purple hematitic, crystal lithic tuff with phenocrysts of feldspar in a hematitic matrix. Rounded siliceous fragments and minor jasper occur.	
	c) Coarse grained, pink to grey minor carbonate.	
	The matrix of the agglomerate is pink-grey carbonate rich.	
	At 121.30-121.80m, 140.30-140.70m there occurs a pale brown medium grained crystal lithic tuff with phenocrysts of feldspar and elongate chloritic liths of 2-10mm in length.	
	Extensive minor veins of carbonate occur throughout but major veins occur at 122.70m, 135.30-135.70m, 136.00-136.30m, 140.70-141.00m.	
141.30 - 173.70m	Dark green, fine to medium grained, andesitic crystal lithic tuff with phenocrysts of feldspar in a variable chlorite-carbonate rich matrix. Liths which are of similar composition to the host rock, but have a variable chlorite composition, occur as elongate lensoids (2-100mm). Disseminated pyrite and minor chalcopyrite occurs. There is a gradational increase in hematite content in the matrix and as lithic fragments from 152.50-170.20m (downhole). Between 161.50m and 166.50m, hematite/jasper occurs as large wispy liths or as matrix between large sized (>10mm) tuffaceous fragments. Minor carbonate veins and minor quartz (chlorite) veins (e.g. 162.30-162.40m) occur.	
173.70 - 176.70m	Graditional boundary zone containing tuffs as for 141.30-173.70m; minor pink/brown medium grained crystal lithic tuffs with phenocrysts of pink feldspar; quartz-chlorite (specular hematite) veins at 173.80-274.40m, 175.80m; and an increase down hole of banded pink carbonate.	
176.70 - 183.40m	White to pink-pale green, fine to medium grained, banded carbonate with a variable proportion of hematite chlorite and minor fine grained crystal tuff. Some styolites parallel to bedding.	B.C.A. AT 178.30M 40°
		B.C.A. AT 181.50M 35°
183.40 - 224.40m	Dark green to purple brown, medium to coarse grained, andesitic, crystal (lithic) tuff with zones of banded carbonate. The tuff contains subhedral pink feldspar in a feldspathic matrix containing minor chlorite, hematite and carbonate.	B.C.A. AT 191.00M 40°
	Fragments are small (<5mm), irregular shaped and altered to chlorite.	B.C.A. AT 195.30M 45°
	The carbonate is well banded varying in colour with variable proportions of hematite, chlorite and minor fine grained crystal tuff. The carbonate occurs at: 186.30m, 189.70m, 190.60m, 190.80-191.20m,	MINOR FOLD AT 197.50M TO 197.60M
	195.40-195.50m, 197.50-197.60m, 191.50m, 201.70-202.00m, 202.30m, 204.40m, 204.50m, 206.00-206.80m, 206.90m	B.C.A.'s 50° TO 15° TO 50°
	207.00m, 207.70-208.00m, 209.00-209.20m, 209.30-209.50m, 211.30-211.50m, 211.90-213.00m, 214.40-214.70m,	B.C.A. AT 201.20M 45°
	215.00-215.60m, 215.70-215.90m, 216.50-216.70m, 217.10-217.20m, 220.90-230.00m, 228.40-222.80m,	B.C.A. AT 204.30M 50°
	223.70-224.00m.	B.C.A. AT 207.70M 40°
	Veins of quartz/chlorite with minor carbonate and specular hematite veins occur at 184.10m, 189.00-189.40m,	B.C.A. AT 209.80M 60°
	191.30-193.00m, 203.30-203.60m, 204.00m, 205.20m, 205.30m, 208.40m, 210.40m.	B.C.A. AT 214.40M 40°
		B.C.A. AT 215.90M 30°
224.40 - 243.00m	Gradational boundary to interbedded:-	B.C.A. AT 217.20M 45°
	1) Pink to pale green fine grained andesitic crystal lithic tuff with phenocrysts of feldspar and elongate liths of carbonate and minor hematite e.g. 226.70-229.20m. This unit may be part air fall in origin as indicated by some fine layering.	B.C.A. AT222.50M 50°
		B.C.A. AT 226.70M 45°
	2) Pink to pale green carbonate with a variable content of fine grained tuff, hematite and chlorite.	B.C.A. AT 229.40M 30°
	Veins and veinlets of carbonate throughout.	B.C.A. AT 234.20M 25°
		B.C.A. AT 239.80M 30°
243.00 - 250.00m	As for 183.40-224.40m with carbonate occuring at 244.20-244.50m, 244.80-245.50m, 245.90-246.20m.	B.C.A. AT 242.20M 25°

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	DESCRIPTION	REMARKS
243.00 - 250.00m (Continued)	247.00-247.10, 247.40-247.60m, 248.80-249.00m.	B.C.A. AT 244.20M 25° B.C.A. AT 244.50M 25° B.C.A. AT 244.60M 15° B.C.A. AT 244.90M 40°
250.00m	E.O.H.	
LITHOLOGICAL SUMMARY		
0 - 5.50m	Scree	
5.50 - 19.50m	Tyndall Group. Felsic medium-coarse grained ash flow crystal lithic tuff.	
19.50 - 47.00m	Interbedded dacite/andesitic crystal lithic tuff and grey shale with enclosed rhyolite fragments.	
47.00 - 52.00m	Interbedded air fall andesitic crystal tuff and tuffaceous grey shale.	
52.00 - 54.10m	FAULT.	
54.10 - 67.00m	Very weathered and cleaved hematitic fine-medium grained crystal lithic tuff.	
67.00 - 90.80m	Hematitic to chloritic crystal lithic tuff interbedded with hematite and zones of carbonate.	
90.80 - 141.30m	Medium grained chloritic crystal (lithic) tuff interbedded with hematitic carbonate.	
141.30 - 173.70m	Medium grained andesitic crystal lithic tuff in a chlorite carbonate matrix.	
173.70 - 183.40m	Banded carbonate beds.	
183.40 - 224.40m	Purple brown medium grained andesitic crystal (lithic) tuff, phenocrysts of feldspar and hornblende with zones of banded carbonate.	
224.00 - 243.00m	Interbedded banded carbonate and andesitic crystal lithic tuff.	
243.00 - 250.00m	As for 183.50 - 224.00m.	
E.O.H.		