

drill log cover sheet

Project **ELLIOTT BAY** Prospect **WART HILL** Hole **EBT-89-WH9**
 Co-ordinates **13400 mN 10000 mE** Logged by **G Twomey**

AMG reference		Drilling company	Diamond Drilling Tasmania P/L
County		Rig type	Longyear 38
Parish		Drilling type	Diamond
Portion		Hole size	
Elevation	151.8m	Core size	HW:0-2m, HQ:2-66m, NQ:66-223.0
Declination	-55°	Depth of casing	
Direction	090°G 077M T	Assay sample type	Half core
Commenced	17.1.89	Water table	
Completed	22.1.89	Water yields	
Total depth	223.0m		

Borehole survey Type: Eastman

Depth	Dip	Brg.	Depth	Dip	Brg.	Depth	Dip	Brg.	Depth	Dip	Brg.
30m	54.5	073.5	150m	50.75	061						
60m	54.0	072.5	200m	49.0	057						
90m	53.5	066									
120m	51.75	065									

Notes

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From To Code Description mineralization in bold type

0	82.55	5a	<p>RHYOLITE QUARTZ/FELDSPAR PORPHYRY</p> <p>Highly to moderately weathered fine grained, moderately schistose, light greenish grey, moderately altered, non magnetic rhyolitic porphyry containing 5% partly recrystallized, rounded quartz phenocrysts up to 3mm in diameter and 10-15%, white to light green sericite altered feldspar laths up to 4mm long.</p> <p>A pervasive moderately strong sericite (+calcite) alteration has replaced much of the feldspathic matrix and phenocrysts.</p> <p>A moderately strong schistosity is developed at approximately 35° to the core axis.</p> <p>Scattered vuggy, variably orientated quartz veins occur throughout and crosscutting the schistosity.</p> <p>Only trace (<0.5%) sulfides occur and are generally associated with quartz veining PYRITE is the most abundant sulfide, followed by GALENA.</p> <p>0-4m: Oxidized. 4-21m: Partly oxidized. 21-EOH: Fresh.</p> <p>Orange-brown limonite is common on fracture surfaces within the oxidized and partly oxidized core.</p> <p>7.8-9.1m: Quartz vein consisting of a vugh rich white crystalline quartz matrix hosting minor angular rhyolite fragments and trace PYRITE. A band of weak to moderate chlorite alteration occurs at the base of the vein between 9.1-9.3m.</p> <p>16.8m: A 2mm wide GALENA dominated vein is orientated parallel to schistosity.</p> <p>70.5-70.9m: Dark green moderately chlorite altered band.</p> <p>The bottom contact is sharp, orientated 30° to the core axis.</p>
82.55	96.85		<p>EPICLASTIC SANDSTONE and BRECCIA</p> <p>Sedimentary sequence consisting of interbedded tuffaceous sandstone (80%) and epiclastic breccia (20%). The rock is fresh, moderately schistose, non magnetic, moderately sorted and generally poorly bedded.</p>

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			<p>Clasts within the breccia include (in order of decreasing abundance) quartz, porphyry, chert (often PYRITIC), marble and reworked epiclastics. Largest clast within the core is 10cm long.</p> <p>A weak to moderate sericitic alteration is pervasive throughout.</p> <p>The dominant foliation is due to a moderately developed schistosity orientated approximately 35° to the core axis. Locally fine bedding preserved with the sandstone appears to parallel the schistosity.</p> <p>Trace sulfides (dominantly PYRITE and trace GALENA) occur as elongate clasts parallel to schistosity, irregular stringers and thin envelopes around the margin of clasts.</p> <p>The bottom contact is obscured by a 3cm wide silicified band but would appear parallel to schistosity at 35° to the core axis.</p>
96.85	101.25	5h	<p>METADOLERITE</p> <p>Fine grained, massive, dark grey, non magnetic, fresh, moderately schistose dolerite.</p> <p>Common, thin calcite-chlorite-PYRITE veins are orientated parallel to schistosity at 35° to the core axis.</p> <p>A moderate, strongly preserved, chlorite/calcite alteration occurs throughout, making the rock quite soft (easily scratched by a knife).</p> <p>Trace SPHALERITE is associated with the PYRITE veins.</p> <p>The bottom contact consists of a 20cm wide clast supported PYRITIC breccia containing elongate 'wispy' clasts of chlorite altered epiclastic and dolerite in a PYRITIC matrix.</p>
101.25	115.65	5a1	<p>CARBONATE RICH EPICLASTIC SANDSTONE, LIMESTONE and BRECCIA</p> <p>An interbedded tuffaceous sandstone and epiclastic breccia unit as in 82.55-96.85m but with a much higher calcite contact. Two limestone units consisting of medium grained calcic sandstone and reworked calcic sandstone blocks in a medium grained sericite/calcite/quartz matrix extended between 105.3-107.2m and 110.3-112.9m.</p>

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			<p>Minor PYRITE mineralization occurs throughout the sequence but does not show any preference between the quartz rich and calcic rich sandstones. A silica/PYRITE enriched band occurs between 105.4-105.5m with PYRITE constituting 5-10% as euhedral striated cubes. The PYRITE partly oxidized to red hematite giving the GALENA/ QUARTZ vein occurs at 103.3m. The vein is orientated parallel to schistosity at 40° to the core axis. Minor SPHALERITE/GALENA does occur throughout the sequence but never exceeds 1% combined over a meter interval.</p> <p>A moderately developed schistosity is orientated 35-40° to the core axis.</p> <p>105.3-105.9m: Fibrous quartz veins indicating a possible fault zone cut the calcic sandstone. Veins are variably orientated and have a typical density of 5 veins/10cm.</p> <p>The bottom contact is sharp and orientated parallel to schistosity (40° to core axis).</p>
115.65	117.1	5h	<p>METADOLERITE</p> <p>Fine grained, fresh, non magnetic, greenish grey, brecciated dolerite dike. Zoned calcite/quartz infills vughs within the clast supported breccia. Over much of the interval the rock has a bleached appearance due to a moderately strong calcite/sericite alteration.</p> <p>Trace PYRITE occurs as euhedral cubes. The bottom contact is sharp and is orientated parallel to schistosity at 40° to the core axis.</p>
117.1	118.2	5a1	<p>EPICLASTIC? BRECCIA</p> <p>Epiclastic breccia consisting of subangular rhyolite quartz porphyry fragments within a fine grained volcanic? quartz/feldspar/biotite matrix.</p> <p>Clasts range up to 10cm in length and are elongated parallel to a weak to moderately developed schistosity which is orientated 40° to the core axis.</p> <p>A weak sericite/silica alteration is pervasive. Trace CHALCOPYRITE/GALENA occur in minor crosscutting quartz veins.</p> <p>The bottom contact is sharp and orientated 25° to the core axis.</p>

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118.2	120.2	5h	METADOLERITE	
			Massive, non-magnetic, moderately schistose, fine grained, metadolerite. Minor calcite veins are orientated parallel to schistosity at 30° to the core axis. The bottom contact is irregular and inter-fingered with the epiclastics.	
120.2	122.8	5a1	EPICLASTIC SANDSTONE and BRECCIA	
			Sedimentary unit consisting of tuffaceous sandstones and epiclastic breccias. Clasts within the breccia include, in order of decreasing abundance, rhyolitic quartz porphyry, reworked sandstone, chert, marble and massive sulfide (dominantly PYRITE).	
			The bottom contact is obscured by a 20cm wide breccia.	
122.8	136.5	5h	METADOLERITE	
			Massive, fine grained, weakly schistose, non magnetic, light grey, locally brecciated dolerite dike cut by abundant calcite/quartz veins generally orientated parallel to schistosity at 25-30° to the core axis. Zones of brecciation consist of calcite/quartz (+sulfide) veins infilling crackle brecciated dolerite.	
			A moderately strong calcite/sericite/chlorite alteration is pervasive throughout.	
			Very fine grained PYRITE with minor SPHALERITE and GALENA occurs in zones of brecciation and irregular veining. Maximum sulfide content/meter is <1%.	
			122.8-123.1m: Brecciated band containing up to 1% fine grained PYRITE/SPHALERITE as zoned veins.	
			126.65m: A 1cm wide clay rich shear zone orientated 30° to the core axis intersects a quartz vein within the dolerite.	
			127.5-127.8m: Brecciated band.	
			133.1-133.75m: Xenolith or irregular contact of epiclastic breccia unit.	
			The bottom unit is obscured by a brecciated contact between the two units which extend between 136.3-136.6m.	

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136.5	138.45	5a1	<p>EPICLASTIC SANDSTONE and BRECCIA</p> <p>Slightly reworked rhyolite quartz porphyry unit which is affected by a moderate pervasive silica/sericite alteration.</p> <p>A weakly developed schistosity is orientated 35° to the core axis.</p> <p>Trace GALENA occurs within the more carbonate rich clasts within the epiclastic breccia.</p> <p>The bottom contact is obscured by a 6cm quartz/calcite vein.</p>
138.45	146.85	5h	<p>METADOLERITE</p> <p>Fine grained, massive, non magnetic, light grey, weakly schistose calcite/sericite/chlorite altered dolerite dike.</p> <p>Abundant quartz/calcite veins are generally orientated parallel to the weak schistosity at 30-40° to the core axis. Trace ±PYRITE is occasionally associated with the veins.</p> <p>145.0-146.85m: The dolerite is highly fractured and cut by abundant variably orientated quartz/calcite veins. The core has a low competency indicating a possible fault zone.</p>
146.85	148.15	5a1	<p>EPICLASTIC BRECCIA</p> <p>Highly silicified, epiclastic breccia consisting dominantly of rhyolite quartz porphyry clasts. This zone is more highly altered than the typical moderately pervasive silica/sericite alteration affecting most of the countryrock.</p> <p>A 2mm wide irregular PYRITE vein is located at 47.7m.</p> <p>The bottom contact is irregular and is obscured by a calcite/quartz vein.</p>
148.15	152.1	5h	<p>METADOLERITE</p> <p>As in 122.8-136.5m. The majority of the dolerite is highly fractured and densely veined by irregular variably orientated quartz/calcite veins. Trace sulfides (dominantly PYRITE) occurs associated with the veins.</p>

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152.1	171.6	5a1	<p>EPICLASTIC SANDSTONE and BRECCIA</p> <p>Sedimentary sequence derived from rhyolitic quartz porphyry. Slightly to moderately reworked. The rock is altered by a moderate to strong silica/sericite/chlorite alteration. The rock consists dominantly of moderately sorted, medium to coarse grained sandstone with minor epiclastic breccias. The rock appears foliated due to a weak to moderately developed schistosity orientated 35° to the core axis.</p> <p>The rock is fresh, light greenish grey, non magnetic and locally highly fractured.</p> <p>Quartz veins up to 2cm wide are common throughout with a typical density of 2-5 veins/meter. The widest quartz vein occurs between 155.65-156.25m.</p> <p>Sulfide mineralization dominantly occurs as fine grains within quartz veins with PYRITE>GALENA>SPHALERITE. Total sulfide concentration/meter does not exceed 1%.</p> <p>165.5m: 10cm wide shear zone orientated 22° to the core axis.</p> <p>The bottom contact is orientated approximately 30° to the core axis.</p>
171.6	174.2	5h	<p>METADOLERITE/EPICLASTIC SEQUENCE</p> <p>Fine grained, brown to grey, massive, non magnetic, amygdaloidal dolerite has intruded the epiclastic sequence subparallel to the core axis. An irregular contact continues over 2.6m with thin fingers of dolerite branching off the main dike into the epiclastic breccia.</p>
174.2	203.7		<p>EPICLASTIC SANDSTONE and BRECCIA</p> <p>Sedimentary sequence consisting of tuffaceous sandstones and epiclastic breccias dominantly derived from reworked rhyolite quartz porphyry. Minor thin dolerite dikes are spaced over the top section of the interval.</p> <p>The rock is widely foliated due to a weak schistosity orientated 35° to the core axis.</p>

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		<p>A weak silica-sericite alteration is pervasive throughout. Only trace sulfide mineralization is evident and is dominated by PYRITE. The maximum sulfide content/meter does not exceed 0.5%. This epiclastic sequence appears less altered and mineralized compared to overlying epiclastic sequences.</p> <p>159.9-196.5m: Scattered narrow shear zones intersect the core at 25-40° to the core axis.</p> <p>Quartz veining and silicification increase from 197.0m towards the bottom contact. Chloritic slickensides on fracture surfaces indicates fault movement. The bottom contact is represented by a 20cm wide clay rich shear zone with shearing orientated 30° to the core axis. Due to the width of slickensided surfaces within the epiclastics bordering the bottom sheared contact it probably represents a major fault (possibly the Osmond Fault).</p>
203.7	205.1	<p>CONGLOMERATE (Ordovician?)</p> <p>Poorly sorted conglomerate consisting of rounded clasts of rhyolite quartz porphyry within a medium grained, quartz-feldspar-mica tuffaceous sandstone. The conglomerate differs from the Wart Hill pyroclastics in that the clasts are well rounded.</p> <p>The rock appears foliated due to a weak schistosity orientated 55° to the core axis.</p> <p>Trace PYRITE occurs on fracture surfaces as striated cubes.</p> <p>The bottom contact is gradational into a fine grained sandstone.</p>
205.1	223.0 (EOH)	<p>QUARTZ SANDSTONE (Cambro-Ordovician)</p> <p>Fine grained, massive, fresh, grey quartz sandstone with minor shale lenses. Possible lode structures have created an irregular fracture with 'pillows' of sandstone up to 5cm long being enveloped by a thin shale layer. The dominant foliation (schistosity) is orientated 27° to the core axis. Bedding is orientated 55° to the core axis and almost perpendicular to schistosity. Minor quartz veining is common towards the top contact with the dominant orientation being parallel to bedding. The interval 210.6-215.0m is highly fractured with numerous quartz veins up to 22cm wide. Minor white mica slickensides occur on fracture surfaces indicating at least minor movement along fault plans.</p> <p>Only trace PYRITE is evident and is associated with quartz veining.</p>