

HOLE NO: TRIASSIC NO.1 (T.1)  
 LOCALITY: 'Swanston' property, upper Little Swanport River CO-ORDS 147°46'05"E 42°21'18"S  
 DATE COMMENCED: 31.7.81  
 DATE COMPLETED: 6.8.81  
 DRILLED BY: STACPOOLE DRILLING R.L. 280m ASL  
 DRILLER: Wayne Bald CASING 3m collar  
 LOGGED BY: Chris Sharples DEPRESSION vertical  
 BEARING -  
 RIG: Foxmobile B-80 Diamond Drill Rig

DEPTH FROM (m)	DEPTH TO (m)	THICKNESS (m)	DESCRIPTION	COMMENTS
0.00	3.68	3.68	SAND: Thin grey sandy soil layer at top, underlain by medium white-grey well sorted subrounded quartz sand with trace humic particles and <5% white clay chips. A few yellow Fe-cemented sandstone chips.	OPEN HOLED 0-3.68m
3.68	10.95	7.27	SANDSTONE: Hard white/grey quartz sandstone (cement <5%) with common yellow/brown Fe mottling. Grains medium angular-subangular well sorted. Bedding massive. sediment appears "moderately porous. Fracturing (usually subvertical)" is evident at 6-8m. No mineral grains other than quartz noted. Cement usually white, becoming more abundant (5-10%) and browner towards bottom. Minor Liesegang Rings at 10.38-10.5m. Yellow clay pellet at 10.75m (15mm dia.) Base of unit (10.8-10.95m) is a brown iron-stone band (up to ~70% brown Fe oxide cement).	CORED 3.68m ON ↓ QUARTZ ARENITE IRONSTONE BAND
10.95	16.01	5.06	SILTSTONE: Finely laminated (≤1mm laminae) well sorted siltstone, a little clayey (especially in top 1m). Laminations sub-horizontal and regular, but occasionally crossbedded or anastomosing. Colour of unit: light yellow/brown at 10.95-12.0m, pale grey/tinge of green at 12.0-13.0m and grey/brown to slightly purple/pink at 13.0-15.9m. At 15.9-16.01, unit becoming yellow/brown, sandier and crossbedding evident.	CORE LOSSES: 11.73-12.0m 14.8-15.0m
16.01	19.33	3.32	SANDSTONE: Quartz arenite as at 3.68-10.95m, mostly brown (Fe stained), with Liesegang Rings, and with crossbedding (individual beds 10mm or thicker, defined by Fe-concentrations). Coarse, poorly sorted and with small white clay pellets at 16.93-17.06. Clay-rich band at 16.62-16.84m. White sandstone at 17.3-17.6m.	
19.33	21.79	2.12	SILTSTONE/MUDSTONE: Fine well sorted siltstone with laminae 1-5mm thick (sub-horizontal, 'anastomosing' or 'splitting' rather than cross bedded). Pale grey and pale yellow at 19.33-19.68m, pale grey/green at 19.68-19.84m, then alternating laminae of pale grey/green and pale pink/purple (19.84-21.2m). Siltstone breaks easily. Below 20.35m, sediment is a mudstone and less prone to breaking. Below 21.2m, sediment is grey/white mudstone with fine quartz sandstone interbeds up to 0.2m thick.	

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21.79	22.98	1.19	<u>SANDSTONE</u> : A little silty in top 0.2m. Yellow-brown (Fe stained) medium quartz sandstone as at 3.68-10.95m. Manganese dendrites and minor 10-20mm ironstone bands present. Sub-vertical brown (Fe) stained fractures present.	↑ WEATHERED 22.98m BASE OF OXIDISING ZONE. ↓ UNWEATHERED
22.98	26.52	3.54	<u>SANDSTONE</u> : Dense grey/white sandstone (harder and possibly a little finer than sandstones above). Medium well sorted angular-subangular-quartz grains (no other minerals noted). A few high angle fractures. Minor silty bands and pods near base.	
26.52	28.0	1.48	<u>MUDSTONE</u> : hard light and dark grey (mottled and banded) fine mudstone, quartzose, grains generally microscopic (recrystallised). Black specks visible (<3%). Sub-vertical fractures common, often lined with soft white/pale green minerals (2-3 fractures per metre).	?CARBONACEOUS SPECKS
28.00	33.0	5.0	<u>MUDSTONE/SILTSTONE</u> : Hard siliceous dark grey/green recrystallised finegrained well sorted mudstones interbedded with dark grey and light grey siltstone bands. Beds sub-horizontal, 5-100mm thick, generally. Minor dark (carbonaceous?) specks and blotches present. Bottom 0.75m of unit is fine hard dark grey massive siltstone. Vertical fractures common, lined with pale grey/green mineral.	HARD SED-IMENTS (RE-CRYSTALLISED?) BELOW 23m MAY BE BAKED BY NEARBY DOLERITE?? (i.e., THEY ARE HORNFELS?)
33.0	37.08	4.08	<u>SANDSTONE</u> : Hard dense dark grey/green to pale green fine-medium grained well sorted and quartzose. Recrystallised texture. Shows irregular wispy banding above 34.5m, massive below that. A few tight fractures. Bands 5mm thick - "Herringbone". Several large rounded bodies 0.1-0.2m dia. of lighter colour coarser sandstone occur in the core. Banding (5-10mm thick) again evident below 36.0m. Large vertical fracture from 36.3-38.1m (in next unit) .	VERY HARD DRILLING MAFIC CONTENT? (METASOMATIC ALTERATION FROM DOLERITE INTRUSION?)
37.08	46.7	9.62	<u>MUDSTONE/SANDSTONE</u> : Fine hard dark grey mudstone (looks recrystallised) with sub-horizontal banding 1-10mm thick (light-dark alternations, sometimes anastomosing or splitting). Interbedded is (30% of unit) dense grey/green fine-medium grained sandstone (looks recrystallised) in bands 0.1-0.40m thick. Shows fine indistinct cross-bedded laminations. A quartz arenite with minor fine dark specks. Sub-vertical fractures at 38.5-39m and 40.5-41.0 m.	

DEPTH FROM (m)	DEPTH TO (m)	THICKNESS (m)	DESCRIPTION	COMMENTS
46.7	46.9	0.2	<u>SANDSTONE</u> : Hard pale green crossbedded recrystallised medium quartzose sandstone (as below).	
46.9	52.01	5.11	<p><u>SANDSTONE</u>: Top 0.8m grades down from a hard grey laminated recrystallised mudstone to sandstone as per remainder of unit:-</p> <p>Very hard pale white/green recrystallised medium grained sandstone: Individual grains indistinct but rock is ~60% white quartz, 30% green-stained and ?quartz blotches, and 10% fine-medium green-black grains (metamorphic or carbonaceous origin??)</p> <p>The green/black grains are often arranged in wispy sub-horizontal bands 1-3mm thick and up to several 100's of mm long, showing hints of crossbedding or "herringbone" bedding.</p> <p>A vertical fracture, lined with white and green minerals is present throughout the unit.</p>	<p>THIS UNIT IS VERY HARD DRILLING 4HRS/3M.</p> <p>FINAL 1m TOOK 4 hrs. TO DRILL</p>
52.01			END OF HOLE - Hole terminated. A simple calculation shows it would take 3 weeks at this rate, to complete hole to 100 metres!	

CONJECTURE - The vertical fractures may be due to cooling shrinkage around a vertically oriented dolerite body nearby (explaining relatively large thickness of metamorphosed sediments).