TASMANIA DEPARTMENT OF MINES

ENGINEERING LOG – BOREHOLE

borehole no. MRDH 1
sheet 1 of 9

project Nat. Soil Cons. Programme location Meander River, Selbourne

co-ordinates
R.L.
inclination 90°
bearing

drill type Gemco
drill method Rotary Diamond Wireline
drill fluid Water

hole commenced 13.8.85
hole completed 20.8.85
drilled by D.W.
logged by A.L.T.
checked by

sand % (visual est.) V02030	support	water	notes samples, tests	metres R.L. / depth	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency density index	hand penetrometer kPa (25, 50, 100, 200, 400)	structure, geology
				1.0							
				2.0							
			Palynology	3.0							
				4.0		CH	CLAY: high plasticity, grey mottled yellow and green-brown. Fissured	M		×	
						CH-SC	Sandy CLAY: as above, sand increasing downward to (sc) clayey SAND at 3.8 m. Sand fine – medium	W		×	Very wet and loose. Clay fragments incorporated in slurry.
						CH	Sandy CLAY: high plasticity, grey mottled yellow. Sand fine to medium	M		×	
						CH	CLAY: high plasticity, grey mottled yellow, some red. Clay stiff and crumbly	M		×	Abundant red colour.
						CH	Sandy CLAY: as per 3.9m → 4.4m				Fibrous material at base of sand.
						CH	CLAY: as per 4.4 → 4.8m				

TASMANIA DEPARTMENT OF MINES

ENGINEERING LOG – BOREHOLE

borehole no. MRDH 1
sheet 2 of 9

project National Soil Conservation Programme location Meander River, Selbourne

co-ordinates
R.L.
inclination 90°
bearing

drill type Gemco
drill method Rotary diamond – wireline
drill fluid Water

hole commenced 13.8.85
hole completed 20.8.85
drilled by D.W.
logged by A.L.T.
checked by

sand % (visual est.) 10 20 30	support	water	notes samples, tests	metres R.L. / depth	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency density index	hand penetrometer kPa 25 50 100 200 400	structure, geology
			Mineralogy				grading to:				intersecting cleavages at ~70°. Grey for 1-2 mm either side of cleavage, then patches iron oxide
				6.0		CH	Sandy CLAY: high plasticity, grey. Sand fine – medium grained				
			Mineralogy			CH	CLAY: as per 4.4 → 4.8 m. Pockets yellow & red colour. Fissured, not slickensided → siderite pebble 30 mm × 20 mm				
				7.0			as above; mottled purple, red, yellow, green-grey. Mottling restricted to large pockets, sharp contact with (CH) CLAY: grey.				
				8.0		CH	CLAY: high plasticity, alternate stiff shiny, purple mottled red clay and softer, dull grey-purple clay. Alternate stiff blue-grey, soft brown. Alternate stiff purple, soft grey. Alternate stiff green-grey, soft grey. Alternate stiff purple, soft grey				Rythmites. Stiff clay 10-15 mm thick, softer clay ~ 2-5 mm thick, on average.
				9.0		CH	Sandy CLAY: high plasticity, grey, Sand fine – medium grained				
						CH	CLAY: high plasticity, green-grey, greasy feel. Highly fissured, vertically. Not slickensided				

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ENGINEERING LOG – BOREHOLE

borehole no. MRDH 1
sheet 3 of 9

project National Soil Conservation Programme location Meander River, Selbourne

co-ordinates
R.L.
inclination 90°
bearing

drill type Gemco
drill method Rotary diamond - wireline
drill fluid water

hole commenced 13·8·85
hole completed 20·8·85
drilled by D.W.
logged by A.L.T.
checked by

sand % (visual est.) 10 20 30	support	water	notes samples, tests	metres R.L.	metres depth	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency density index	hand penetrometer kPa 25 50 100 200 400	structure, geology
							CH	CLAY: as per 7.4m → 8.9m				
			Mineralogy		11.0		CH	CLAY: high plasticity, grey, essentially massive. Some sand, mottled yellow fissured, slickensides near vertical. as above, iron oxide with ? siderite pebbles	≈Wp			
							SC	Clayey SAND: fine → medium grained, grey mottled red. Clay high plasticity	M			
			Piezometer installed		12·0			CORE LOSS.				
			Shear testing Mineralogy		13·0		CH	Sandy CLAY; high plasticity, grey speckled red, with ? siderite pebbles				
							CH	CLAY: high plasticity, grey and light brown mottled red.	<Wp			
					14·0			persistant slickensided joints at 80°–90°. Abundant low angle slickensides at ~ 10–20°, many indicating horizontal movement as above: grey, some fine sand				>600 >600

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ENGINEERING LOG – BOREHOLE

borehole no. MRDH1
sheet 4 of 9

project National Soil Conservation Programme location Meander River, Selbourne

co-ordinates
R.L.
inclination 90°
bearing

drill type Cemco
drill method rotary diamond-wireline
drill fluid

hole commenced 13·8·85
hole completed 20·8·85
drilled by D.W.
logged by A.L.T.
checked by

penetration 1 2 3	support	water	notes samples, tests	metres R.L. / depth	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency density index	hand penetrometer kPa (25, 50, 100, 200, 400)	structure, geology
			Mineralogy				as above, sand increasing to 20%	<Wp		× × ×	no fissures, slickensides.
				16.0			CORE LOSS				
				17.0		CH	CLAY: high plasticity, grey to green-grey. Some fine sand. Iron oxide common, abundant in layers.				Iron oxide band >600 Iron oxide rich
						CH	CLAY: high plasticity, grey finely mottled dark grey.				>600
						CH	Sandy CLAY: high plasticity, white, sand fine				
						CH	CLAY: as per 17.0m → 17.3m				
				18.0		CH	Sandy CLAY: as per 17.3 → 17.4m. Indurated			×	Iron oxide rich
						CH	CLAY: as per 17.0 → 17.3m				
						SC	Clayey SAND: white to yellow, fine to coarse grained, unconsolidated				iron oxide cemented.
			Mineralogy	19.0		CH	CLAY: high plasticity, grey + green-grey. Laterisitised slickenside at ~60°. Laterite 5–8mm thick either side of slickenside. Iron oxide nodules to 5mm diam. in clay.	<WL		× ×	iron oxide rich laterisitised >600 Slickenside.
						CH	CLAY: high plasticity, grey, stiff, greasy feel.	<WL		× × ×	iron oxide rich, >600 indurated Base of iron oxide enrichment

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ENGINEERING LOG – BOREHOLE

borehole no. MRDH1
sheet 5 of 9

project National Soil Conservation Programme location Meander River, Selbourne

co-ordinates
R.L.
inclination 90°
bearing

drill type Gemco
drill method Diamond wireline
drill fluid

hole commenced 13.8.85
hole completed 20.8.85
drilled by D.W.
logged by A.L.T.
checked by

Sand % (visual est.) 10 20 30	support	water	notes samples, tests	metres R.L. / depth	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency density index	hand penetrometer kPa 25 50 100 200 400	structure, geology
				20.0			as above, with abundant fawn to white ?siderite flecks			>600	
							CORE LOSS				
			Thin section - siderite nodule	21.0		CH	CLAY: alternating high plasticity, grey waxy clay with some sand, and dull grey, soft (silty) CLAY				Rythmites. Waxy clay intervals to 45 mm, dull to 2-3 mm thick
						CH	Sandy CLAY: high plasticity, grey, sand fine to medium grained. Siderite nodules				
			Mineralogy			CH	as per 20.9 → 21.3 m				
				22.0							
						CH	CLAY: high plasticity, grey, some fine sand				
			XRD - siderite			CH	as per 20.9 → 21.3 m. Siderite flecks in shiny clay				
				23.0							
						CH	Sandy CLAY: high plasticity, grey, sand fine to medium. Thin interbeds (CH) CLAY, high plasticity, grey				
			Piezometer installed.				CORE LOSS				
				24.0		SC	Clayey SAND: sand fine → medium grained, grey white. Clay high plasticity. Cemented with siderite				
						CH	CLAY: as per 22.4 → 22.8 m				
						SC	Clayey SAND: as per 24.0 → 24.1 m. No siderite				
						CH	CLAY: as per 22.4 → 22.8 m				
						SC	Clayey SAND: as per 24.35 → 24.45 m				
							CORE LOSS				

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ENGINEERING LOG – BOREHOLE

borehole no. MRDH 1
sheet 6 of 9

project National Soil Conservation Programme location Meander River, Selbourne

co-ordinates
R.L.
inclination 90°
bearing

drill type Gemco
drill method Diamond wireline
drill fluid

hole commenced 13.8.85
hole completed 20.8.85
drilled by D.W.
logged by A.L.T.
checked by

sand % (visual est.)	support	water	notes samples, tests	metres R.L. / depth	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency density index	hand penetrometer kPa	structure, geology
			Palynology (barren)			CH	CLAY: as per 22.4 → 22.8 m				
						CH	CLAY: as per 20.9 → 21.3 m				Rythmites.
						CH	CLAY: as per 22.4 → 22.8 m				
				26.0			as above, with bands of siderite pebbles			>600	
						CH	CLAY: high plasticity, grey, abundant flecks of siderite				Bedding not apparent
								~Wp			
				27.0			as above, siderite flecks replaced by nodules to 30 mm diam.			>600	
							as above, sand apparent				
						SP	SAND: grey-white, fine to medium grained, cemented.	M		>600	
						CH	CLAY: as per 26.2 → 27.0 m Abundant slickensides at ~60°–70° dip. Up to three sets @ 120° rotation. Movement on slickensides is normal downward	<Wp			Abundant slickensides
				28.0		CH	Sandy CLAY: grey, high plasticity, sand fine to medium grained			>600	
			Mineralogy			CH	CLAY: as per 27.8 → 28.2 m				
						CH ↑ SC	Sandy CLAY: as per 28.2 → 28.3 m – grades into – Clayey SAND: clay as at 28.5, sand fine → med.				
				29.0		CH ↑ SC	Sandy CLAY: as per 28.5 → 28.85 Clayey SAND:				
						CH ↑ SC	Sandy CLAY: as per 28.5 → 28.85 Clayey SAND:				
			Palynology			CH	Sandy CLAY: as per 28.5 → 28.85 clay grey to black, carbonaceous in parts				
				30.0		SC	Clayey SAND:				– carbonaceous clay

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ENGINEERING LOG – BOREHOLE

borehole no. MRDH 1
sheet 7 of 9

project National Soil Conservation Programme location Meander River, Selbourne

co-ordinates
R.L.
inclination 90°
bearing

drill type Gemco
drill method Diamond Rotary
drill fluid Water

hole commenced 13.8.85
hole completed 20.8.85
drilled by DW.
logged by A.L.T.
checked by

sand % (visual est.) 1 2 3	support	water	notes samples, tests	metres R.L. / depth	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency density index	hand penetrometer kPa (25 50 100 200 400)	structure, geology
			Mineralogy	31.0		CH	CLAY: high plasticity, grey, sedimentary structures absent. Some sand, trace siderite flecks			×	
							as above, siderite nodules to 5mm			×	
							as above, less plastic	<Wp		×	>600
							as above, abundant siderite flecks				>600
							as per 30.0 → 30.6 m			×	
				32.0							>600
							as above, clay crumbly			×	
							CORE LOSS				
			optical mineralogy XRD Mineralogy	33.0			as per 30.0 → 30.6 m			×	
						CH	CLAY: high plasticity, grey. Alternations stiff waxy shiny & dull soft clays	~Wp		× × × ×	Rythmites. Hard waxy layers ~ 20mm thick, soft layers 2-4mm thick
				34.0			SIDERITE : siderite with some quartz				>600 Sharp contact. Top of siderite appears pebbly.
						SC	Clayey SAND; fine to medium sand, grey-white. Clay high plasticity.	W		×	
							CORE LOSS. SAND				
						CH	see over.				

TASMANIA DEPARTMENT OF MINES

ENGINEERING LOG – BOREHOLE

borehole no. MRDH 1
sheet 8 of 9

project National Soil Conservation Programme location Meander Rives, Selbourne

co-ordinates
R.L.
inclination 90°
bearing

drill type Gemco
drill method Diamond wireline
drill fluid water

hole commenced 13.8.85
hole completed 20.8.85
drilled by
logged by
checked by

sand % (visual est.) 1 2 3	support	water	notes samples, tests	metres R.L.	metres depth	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency density index	hand penetrometer kPa 25 50 100 200 400	structure, geology
			Mineralogy				CH	Sandy CLAY: high plasticity, grey. Sand fine → medium. Trace siderite. Some carbonaceous material (eg. sticks etc).	~Wp		× ×	Slickensides
								– grades to –				
							SC	Clayey SAND: as above, more sand.			×	
							CH	Sandy CLAY: as above			×	
				36.0				CORE LOSS – SAND				
			Mineralogy	37.0			SC	Clayey SAND: fine to medium grained, white to grey. Clay high plasticity. Siderite at base	~Wp		× >600 >600	
				38.0				CORE LOSS – SAND				
							SC	Clayey SAND; fine to coarse, white to grey. Clay high plasticity. Some lignite				
			Piezometer installed.	39.0				CORE LOSS – SAND				
							SC	Clayey SAND: as above, less clay.				