Hydro Tasmania
the renewable energy business

Engineering Log
Borehole

borehole no: DH P1

sheet 1 of 4

Job no: P206708 file:

Project: RED HILLS CREEK DIVERSION

Borehole Location: mE 384816
mN 5365193 GDA MHGPS

Borehole commenced: 2/4/09
Borehole completed: 4/4/09
Supervised by: T. LAGDEN
Log checked by: RC

drill model and mounting: LONGYEAR LF70 slope: vertical

hole diameter: HQTT bearing: -

NOT SURVEYED
R.L surface 629.7 m
(from DTM)
datum AHD

BOART LONGYEAR

Driller: D. RHELAN

drilling information							material substance						
method	penetration 1 2 3	support	water	notes samples tests, etc	R.L depth metres	graphic log	classification symbol	material: soil type; plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency, density index	hand penetrometer kPa 100 200 300 400	structure and additional observations
HQTT					0.5		OL	PEAT; black, clayey,	W	S	x x	20-30 kPa
							GM	Gravel; fine to medium, pink to white, sandy fine, silty, grey		L-MD		GLACIAL TILL - silty sandy gravel with some cobbles to 200 mm being mostly quartzite & conglomerate
					1.0			Cobbles		MD-D		
					1.5							
					2.0							
								Cobble				
					2.5			GRAVEL; fine to coarse, pink to white, sand, fine, silty, grey.				
					3.0							
					3.5							
								GRAVEL; coarse, pink to white.				
					4.0							

CORE LOSS IS CONSIDERED TO BE IN THE SILTY SAND/GRAVEL LAYERS (OBSERVED IN THE DRILLWATER RETURN & TEST PITS IN THE AREA)

KEY

method
- AS auger screwing
- AD auger drilling
- RR roller/tricone
- W washbore
- HA hand auger
- HFA hollow flight auger

support
- T - timbering
- C - casing

penetration
- 1 2 3 no resistance
- ranging to
- refusal

water
- level (date)
- inflow
- outflow

notes - samples and tests
- U_{50} undisturbed sample 50mm diameter
- S disturbed sample
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Bs bulk sample
- R refusal

classification symbols and soil description
based on Unified Classification System

moisture condition
- D dry
- M moist
- W wet
- PL plastic limit

consistency/ density/ index
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very looose
- L loose
- MD medium dense
- D dense
- VD very dense

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Engineering Log
Borehole

borehole no: DH P1
sheet 2 of 4

Job no: P206708 file:

Project: RED HILLS CREEK DIVERSION
Borehole Location: mE 384816
mN 5365193 GDA MHGPS

Borehole commenced: 2/4/09
Borehole completed: 4/4/09
Supervised by: T. LAGDEN
Log checked by: RCi

drill model and mounting: BOART LONGYEAR LF70 slope: vertical
hole diameter: HQTT bearing: -

NOT SURVEYED
R.L surface 629.7 m BOART LONGYEAR
(from DTM)
datum AHD
Driller: D. PHELAM

drilling information						material substance						
method	penetration 1 2 3	support	water	notes samples tests, etc	R.L depth metres	graphic log	classification symbol	material: soil type; plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency, density index	hand penetrometer kPa 100 200 300 400	structure and additional observations
					4.0		GM	GRAVEL; coarse, pink to white,	N/A			GLACIAL TILL - Generally silty sandy gravel with some Cobbles to 200mm being mostly quartzite & Conglomerate.
HQTT					4.5							CORE LOSS IS CONSIDERED TO BE IN THE SILTY SANDY GRAVEL LAYERS (observed in the drillwater return & test pits in the area)
					5.0							
					5.5			Cobbles				
					6.0			Cobble				
					6.5			GRAVEL; fine to medium, angular, subangular, sand, silty, grey.				
					7.0							
					7.5							
					8.0							

KEY

method
AS auger screwing
AD auger drilling
RR roller/tricone
W washbore
HA hand auger
HFA hollow flight auger
HQTT Diamond Core Triple Tube

support
T - timbering
C - casing
WFT CASING
penetration
1 2 3 no resistance ranging to refusal
water
level (date)
inflow
outflow

notes - samples and tests
U_{50} undisturbed sample 50mm diameter
S disturbed sample
N standard penetration test (SPT)
N* SPT - sample recovered
Bs bulk sample
R refusal

classification symbols and soil description
based on Unified Classification System

moisture condition
D dry
M moist
W wet
PL plastic limit

consistency/ density/ index
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very looose
L loose
MD medium dense
D dense
VD very dense

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Engineering Log
Cored Borehole

borehole no: DH P1
Sheet 3 of 4

Job no: P206708 file:

Project: RED HILLS CREEK DIVERSION
hole commenced: 2/4/09
hole completed: 4/4/09
supervised by: T. LAGDEN
log checked by: RCi

borehole location: mE 384816
(MGA 94) mN 5365193

drill model and mounting: BOART LONGYEAR LF 70 slope: VERTICAL R.L surface: 62.9.7 m BOART LONGYEAR
barrel type and length: HQTT fluid bearing: - datum: AHD Driller D. PHELAN

drilling information				rock substance				rock mass defects		
method	case-lift	water	R.L depth (m)	graphic log / core loss	substance description: rock type: grain characteristics, colour, structure, minor components.	weathering	strength EL VL L M H VH EH	defect spacing mm 30 100 300 1000 3000	RQD %	defect description: thickness, type, inclination, planarity, roughness, coating — particular / general
HQTT			8.5		SEE BOREHOLE LOG					
					QUARTZITE; fine, grey, pink.	SW				Sub vertical joint, open, 8mm infilled with silt, sandy, grey.
						Fr			81	
			9.0							PLT Is(50) 4.84 MPa
										Joints typically subhorizontal, open, undulating, smooth to rough, with sandy silty coating
			9.5							
			10							
			10.5						98	
										Joints typically subhorizontal, closed, undulating, smooth to rough.
			11							PLT Is(50) 9.1MPa
			11.5							
			12							

KEY

method
- AS auger screwing
- AD auger drilling
- R roller/tricone
- W washbore
- NQ NQ triple tube core drilling

case-lift
- casing used
- barrel withdrawn

water
- 6 May 07 water level date shown
- water inflow
- partial drilling water loss
- complete drilling water loss

graphic log/ core loss
- core recovered (hatching indicates material)
- no core recovered

weathering
- Fr - fresh
- SW - slightly weathered
- DW - distinctly weathered
- EW - extremely weathered
- RS - residual soil

strength (indirect tensile strength)
- x Point Load Test
- EL extremely low
- VL very low
- L low
- M medium
- H high
- VH very high
- EH extremely high

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Engineering Log
Cored Borehole

borehole no: DH P1
Sheet 4 of 4

Job no: P206708 file:

Project: REDHILLS DIVERSION
borehole location: (MGA 94) mE 384816 mN 5365193
hole commenced: 2/4/09
hole completed: 4/4/09
supervised by: T. LAGDEN
log checked by: RG

drill model and mounting: BOART LONGYEAR LF70 slope: VERTICAL
barrel type and length: HQTT fluid bearing: -
R.L surface: 629.7 m BOART LONGYEAR datum: AHD Driller D PHELAN

drilling information				rock substance				rock mass defects		
method	case-lift	water	R.L depth (m)	graphic log / core loss	substance description: rock type: grain characteristics, colour, structure, minor components.	weathering	strength (EL VL L M H VH EH)	defect spacing mm (30 100 300 1000 3000)	RQD %	defect description: thickness, type, inclination, planarity, roughness, coating (particular / general)
HQTT			13		QUARTZITE; fine, grey, pink	Fr			98	Joints typically subhorizontal
			13.5							PLT Is(50) 8.0 Mpa
			14							
			14.5						63	
			15		CONGLOMERATE; pink to white					
			15.5							Jointing vertical
			16		EOH @ 16.1 m					Standpipe installed for groundwater monitoring. Once drilling water has subsided

KEY

method
- AS auger screwing
- AD auger drilling
- R roller/tricone
- W washbore
- NQ NQ triple tube core drilling

case-lift
- casing used
- barrel withdrawn

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- EL extremely low
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- M medium
- H high
- VH very high
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