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Clier	ot:	Ţ		; 40 ;**	<b>EC</b>			GEOT	ECHN	IC	AL LOG OF NON-CORE DRILLHOLE	5	Borehole Sheet Ne Project I	o: 1 OF 3
Proje Feat	ect:	Sm	ith O	lsen			Des	ign Geote	ch Inves	tiga	tion <b>Co-ordinates System:</b> UTM Zone 56 <b>Easting:</b> 535275.1m E <b>Northing:</b> 6906936.6m S	Α	Surface F Ingle fro Direction	<b>m Horz:</b> 90
	DR	ILLIN	G				TES	STING			SUBSTANCE			1
Method	Support Fast	Medium Slow Slow	Water	Sample	Depth (m)	Depth/RL	Type	Sample or Field Test	Graphic Log	USC Symbol	Description Soil Type: density/consistency, grain size/plasticity, colour, particle shape/secondary components, minor constituents, moisture, origin, additional observations.	Moisture	Consistency/ Density	Other Observations
1	2 3	4 5	6	7	8	9 31.50	10	11	12	13	14 Sandy CLAY: Firm, medium plasticity, grey-brown, moist, possible	15	16	17
					-	0.60 30.90	-			СІ	fill. Stiff, pale brown-orange, moist, possible fill.	-	F	-
ATC				U50	1	-	ucs	134 kPa						
					-	1.50 30.00		407		СН	Silty CLAY: Stiff, high plasticity, dark brown, organic rootlets, some	1		
				SPT	- 2— -	1.80 29.70	S	4,6,7 N=13		0		м	St	
					- - 3	<u>3.00</u> 28.50								-
MD				U50	-	-	UCS	190 kPa						
					- - 4	-							St VSt	
					-	4.20 27.30					METASILTSTONE: Extremely low to very low strength, extremely			-
					-	4.50					weathered, pale green-grey and pale orange-brown. Refer to Geotechnical Log of Cored Drillhole			
					-	-								
					5									
					-	-								
					- 6	-								
					-									
					-									
					- 7— -	-								
					-	-								
					- 8									
					-									
					-	1								
					- 9									
					-	-								
otes	i (Instr	ument	ation	etc):	_									
ontr	actor:	C	Drillsur	е							<b>Commenced:</b> 09/08/11			Logged By: ME/BD
quip	ment:				ack Ri			are given on e			<b>Completed:</b> 09/08/11			Checked By: AR

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ſ		Œ	Z	- N		<b>/E</b> 10 pres 292			GEOTECHNICAL	IN\	/E	ST	ΊG	ΓA	10	NS	6 LC	DG				Boreho Sheet Projec		<b>BH108</b> DF 3 03659	
	Fea	ject ture	<b>e</b> :	Si		Ols	en De ation		d Design Geotech Investigation Co-	ordin	nate	es S	iys	Е	: 53	352	Zon 75.1 936		i		4		e RL (m): rom Horz: on:	31.50 90 n/a	
ŀ		DRII							SUBSTANCE								TE						DEFECTS		
									Description	We	ath	ering	1	Esti	mate	d			Fra	cture			Descript	ion	
	g		%	%		Ē	/RL	ic				•	1		engtl			÷	Spaci	ng (mm)	•⊢		-		
	Method	Water	TCR %	RQD %	Lift	Depth (m)	Depth/RL	Graphic Log	ROCK TYPE, mineralogy, grain size, colour, fabric, etc.	2 2	< >	>				<b>-</b> -	Type	Result	40	300		Depth	Coating, P	ation, Spacing, I Ianarity, Rough Thickness.	intilling, ness,
	≥ 1	<b>5</b> 2	⊢ 3	<b>₽</b> 4	5	6	7	8	9	N N H	ة <u>ک</u> 10		티교		∑ <u>⊤</u> 11	シロ	⊢ 12	<b>≌</b> 13		00  100 4	0	15		16	
RRENT).GPJ 23/11/11	_					1	-																		
VESTIGATIONS/GINT FILES/SMITH - OLSEN BOREHOLES (CURRENT).GPJ 23/11/11	-					3-			Refer to Geotechnical log of Non-cored Drillhole																- - - - - - - - - - - - - - -
NS/C							<b>4.50</b> 27.00		Start Coring at 4.50m METASILTSTONE: Grey-brown, extremely																-
CALVINVESTIGATIC	-		58	0		5-	4.80 26.70 5.20 26.30		weathered (remoulds to medium plasticity silty clay with some weathered siltstone gravel) Dark grey, some iron staining in defects, highly fractured, low strength, highly weathered. CORE LOSS (5.20m to 5.70m)																-
S/DD15 GEOTECHNIC	-		100		5.7 6.2 6.4	6-	5.70 25.80 5.90 25.60 6.20 25.30 6.40 25.10		Fragmented, medium to high strength. Dark grey, some iron staining in defects, highly fractured, low strength, highly weathered. Fragmented, highly weathered, extremely weathered in parts. Pale grey, some dark grey laminations, thin beds													6.60	J, 33°, Vn, Cy, Un, 1 J, 4°, Vn, Cy, Pl, Sn	Sm	-
OPERATION	-		100	19	7.2	7-	7.10 24.200		at approximately 68°, some clay infill in defects, slightly fractured, medium to high strength, moderately weathered.													6.63 6.72 6.80 6.88 6.98 7.00 7.10-7.20	J, 4°, Vn, Cy, PI, Sn J, 4°, Vn, CI, PI, Sm Be, 55°, Vn, Cy, PI, J, 45°, St, Fe, Dis, 5 J, 23°, Vn, CI, St, Si Be, 55°, St, Fe, PI, 5 FZ, St, Fe, PI, Sm	Sm Sm m	-
SMEC GOLD COAST BOREHOLE CORE LOG 1:/PROJECTS/3003659/005_OPERATIONS/DD15 GEOTECHNICALIIN	NMLC		100	56		8-	24.30		Dark grey some pale grey laminations at 50°, slightly fractured, medium to high strength, slightly weathered to moderately weathered.													7.30	Be, 55°, St, Fe, Pl, \$	Sm	- - -
E LOG I:\PRO.					8.9	.   .	- <u>8.85</u> 22.65 9.05		Highly fractured.													8.40 8.85-9.05	J, 48°, Vn, Cl, Pl, R FZ	D	-
OREHOLE CORE	-		100	19		9 - -	9.05 22.45 9.80		Pale grey, irregular bedding, possible folds, fractured.																-
STB			100	100	9.9		21.70															9.80	J, 80°, Vn, Cl, Pl, R	o	-
COA	Note	es (In	stru	ime	ntati	on et	c):																		
0 0 0	Con	tract	or:		Drill	sure			Со	nmen	cec	l:	0	9/08/	11								Logged B	y: ME/B	D
SMEC G		<b>ipme</b> s of c		riptio			Track	-	Con iations are given on explanatory notes	nplete	ed:		0	9/08/	11								Checked	By: AR	

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		(t	J.		slebrating 2	<b>ЛЕ</b> ( 10 рек 1930			GEOTECHNIC	CAL	IN\	/E\$	STI	GA	TIC	DNS	S LO	CG				Boreh Sheet Projec		BH10 OF 3 03659	8
	Pro Fea	ent: oject ature catic	<b>e</b> :	Sr		Olse		etaile Plan	d Design Geotech Investigation	Co-o	rdin	ate	s Sy	I	E: 5	5352	Zon 275.1 3936	I	5			Surface	e RL (m): from Horz:	31.50 90 n/a	
F		DRI							SUBSTANCE					-				ST					DEFECTS		
									Description		Wo	athe	rina	Fei	timat	hod			Fra	acture			Descrip	ntion	
						Ē	R	U	-		100	atric	ing		reng				Spac	ing (m	im)				
	Method	Water	TCR %	RQD %	Lift	Depth (m)	Depth/RL	Graphic Log	ROCK TYPE, mineralogy, grain size, colour, fabric, etc.		N N H	WW SW	S H	ц <u>–</u> –	ιΣι	HU	Type	Result	40 20	) 300 100  1	000	Depth	Type, Orien Coating,	tation, Space Planarity, R Thickness	cing, Infilling, oughness,
	1	2	3	4	5	6	7	8	9			10			11		12	13		14		15		16	
			100	100	10.2				Uniform dark grey laminations at 50°, high strength, slightly weathered. (continued)		$\square$					Ц.									
╞						-			Hole discontinued at 10.20m		1														-
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CO/	Note	es (In	stru	Ime	ntati	on etc	;):																		
SMEC GOLD COAST BOREHOLE CORE LOG 1/2PROJECTS/3003659/005_OPERATIONS/DD15 GEOTECHNICAL/INVESTIGATIONS/GINT FILES/SMITH - OLSEN BOREHOLES (CURRENT).GP 23/11/11	Con	tract	or:		Drill	sure				Con	men	ced:		09/08	3/11								Logged	By: N	/IE/BD
ပ ပူ၊	Equ	ipme	nt:		Jacı	o 350	Track	Rig		Com	plete	ed:		09/08	3/11								Checked	IBy: A	R
SME	Basi	s of c	desc	riptio	on ar	nd deta	ails of	abbrevi	ations are given on explanatory notes																

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	Grey Scale	Borehole	Number	BH108		
SMEC		Box	1&2	of	2	
· _	Calaur Saala	Depth	4.5m	to	10.2m	
-	Colour Scale	Project	Smith St & O	sen Av		
		Number	3003659			
		Client	QDTMR			
				· · ·	SPACE	
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	and the second				the second se	
			CRAIG:	K.	888	
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# NOTES RELATING TO GEOTECHNICAL REPORTS AND SITE INVESTIGATION LOGS

## GEOTECHNICAL REPORTS AND SITE INVESTIGATION LOGS

Geotechnical reports/logs are prepared by qualified personnel on the information supplied or obtained and are based on current engineering standards of interpretation and analysis.

Information may be gained from limited subsurface testing, surface observations, previous work, and is supplemented by knowledge of the local geology and experience of the range of properties that may exhibited by the materials present. For this reason, geotechnical reports should be regarded as interpretative rather than factual documents, limited to some extent by the scope of information on which they rely.

Where the report/log has been prepared for a specific purpose (e.g. design of a three-storey building), the information and interpretation may not be appropriate if the design is changed (e.g. a twenty-storey building). In such cases, the report/log and the sufficiency of the existing work should be reviewed by SMEC in the light of the new proposal.

Every care is taken with the report/log content; however, it is not always possible to anticipate or assume responsibility for the following conditions:

- Unexpected variations in ground conditions. The potential for this depends on the amount of investigative work undertaken.
- Changes in policy or interpretation by statutory authorities
- The actions of contractors responding to commercial pressures

If these occur, SMEC would be pleased to resolve the matter through further investigation, analysis or advice.

## **UNFORESEEN CONDITIONS**

Should conditions encountered on site differ markedly from those anticipated from the information contained in the report/log, SMEC should be notified immediately. Early identification of site anomalies generally results in any problems being more readily resolved and allows re-interpretation and assessment of the implications for future work.

## SUBSURFACE INFORMATION

Logs of a borehole, recovered core, test pit, excavated face, or cone penetration test are an engineering and/or geological interpretation of the subsurface conditions. The reliability of the logged information depends on the drilling/testing method, sampling/observation spacing's and the ground conditions. It is not always possible or economic to obtain continuous high-quality data. It should also be recognised that the volume of material observed or tested is only a fraction of the total subsurface profile.

Interpretation of subsurface information and application to design and construction must take into consideration the spacing of the test locations, the frequency of observations and testing, and the possibility that geological boundaries may vary between observation points.

Groundwater observations and measurements outside of specially designed and constructed piezometers should be treated with care for the following reasons:

- In low permeability soils groundwater may not seep into an excavation or bore in the short time it is left open.
- A localised perched water table may not represent the true water table.
- Groundwater levels vary according to rainfall events or season.
- Some drilling and testing procedures mask or prevent groundwater inflow.

The installation of piezometers and long-term monitoring of groundwater levels may be required to adequately identify groundwater conditions.