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PROJECT

Gateway Upgrade North (GUN)

ENGINEERING BOREHOLE LOG

BOREHOLE No __<u>BH15</u>__ _<u>1_</u> of _<u>3_</u> SHEET <u>____H10444</u>___ **REFERENCE No**

AS/SAB

FOR GEOTECHNICAL TERMS AND
SYMBOLS REFER FORM F:GEOT 017/5-2009

	PROJECT Gateway Upgrade North (GUN)											
LOCATION <u>At Survey Peg</u> PROJECT No <u>FP5249</u> SURFACE R.L. <u>6.54 m</u> PLUNGE <u>-90 °</u> DATE STARTED <u>22/10/08</u> GRID DATUM <u>MGA94 Zone</u>												
JOE												
DEPTH (m)	R.L. (m) 6.54		VASH BORING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	USC WEATHERING	ਜ਼₽≖≥⊐ਖ਼ਜ਼	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
0	4.04			REC %	A	GRAVELLY SILTY CLAY (FILL?) Grey to mottled red, dry, stiff to very stiff. Low to medium plasticity; gravel fraction consists of iron concretions <10mm and quartzitic particles <10mm.	(CL- CI)			0	2,8,8 N=16	SPT -
dd-In 16/09/2009 09:04					В	RESIDUAL SILTY CLAY Yellow-grey to mottled red, dry to slightly moist, stiff to very stiff. Low to medium plasticity; occasional partly decomposed plant fragments.	(CL-				2,5,7 N=12	SPT
< <drawingfile>> Datget CPT Tool gINt Add-In 16/09/22009 09:04</drawingfile>	1.04				С		ĊIJ				4,8,11 N=19	SPT -
GF					D	RESIDUAL SILT Pale orange, dry, very stiff. Low plasticity; moderately ferrogenised.	(ML)				6,11,13 N=24 7,9,15	SPT
ERING BOREHOLE LOG FP5.	-1.36				E	BASALT FINE GRAINED TO MEDIUM GRAINED, EXTRUSIVE IGNEOUS ROCK					N=24	SPT
QLD_DMR_LLB_01.GLB_L0g_A_ENGINEERING BOREHOLE LOG_FP5249 GATEWAY NORTH PROJECT.) -3.46				F	Exhibits the engineering properties of reddish brown, dry to slightly moist, hard silt with some gravels present. (See next page)	xw			-	— Harder zone 30/100 N=>50	
	REMARK	s _					·				LOGGED BY	

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Gateway Upgrade North (GUN)

PROJECT

ENGINEERING BOREHOLE LOG

 BOREHOLE No
 ______BH15____

 SHEET
 _2____ of __3___

 REFERENCE No
 ______H10444____

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/5-2009

OCATION			rvey Pe							NATES 509517	.9 E; 6972258.	<u>2 N</u>
PROJECT No <u>FP5249</u> SURFACE R.L. <u>6.54 m</u> PLUNGE <u>-90 °</u> DATE STARTED <u>22/1</u>							GRID DATUM					
JOB No HEIGHT DATUM _AHD BEARING DATE COMPLETED <u>24/10/08</u> . DRILLER <u>Drillsure Pty Li</u>							<u>_td</u>					
R.L. (m) HI A HI A HI A HI A HI A HI A HI A HI A		WASH BURING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	USC WEATHERING	INTACT DEFE STRENGTH SPAC (mn 표풍ェ로그국교 유요않			ADDITIONAL AND TEST RESU		SAMPLES
11				G	XW BASALT (Cont) Low plasticity, occasional medium strength, ferrogenised angular relic basaltic fragments sizing up to 30mm; occasional very stiff zones.						14,28,25 N>50	SP
12				Н							17,30,30/100 N=>50	SP
13				J		xw				ard and soft zones rilling records)	oresent 25,30/100 N=>50	SP
15				к	Becoming sandy silt. Sand fraction consists of green, low strength, relic basaltic fragments which are highly altered to chlorite.					ery stiff zone	11,14,14 N=28	SF
-10.46				L				 * *<	-D	ifficult drilling (drillir	18,27,30/90 N=>50 g records)	SF
8 - <u>11.46</u>				M	HW: Exhibits the engineering properties of brown, moist, dense silty gravel. Gravel fraction consists of highly weathered medium to high strength angular basalt fragments sizing up to and possibly over 40mm.	нw					30/70 N=>50 50)=1:13MPa	SI
16 17 <u>-10.46</u> 18 <u>-11.46</u> 19 20 -13.46			(0) 100 (0)		HW-MW: Brown-grey, fine grained, low to medium strength with occasioal high strength basalt corestones in a sandy gravel matrix. Spheroidal weathering features throughout. (See next page)	J HW- MW				ls(ls(ls(50) = 1.59MPa 50) = 0.14MPa 50) = 0.09MPa 50) = 0.08MPa	
REMARKS	s					- <u></u> -					_OGGED BY	
REMARKS	5_										AS/SAB	

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ENGINEERING BOREHOLE LOG

BOREHOLE No	<u>BH15</u>
SHEET	<u>3</u> of <u>3</u>
REFERENCE No	<u> H10444 </u>

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/5-2009

	JECT				e North (GUN)						
			<u>urvey Pe</u> 249		SURFACE R.L. <u>6.54 m</u> PLUNGE <u>-90</u>					OORDINATES <u>509517.9 E; 6972258.</u> //08_ GRID DATUM <u>MGA94 Zone</u>	
JOB					HEIGHT DATUM <u>AHD</u> BEARING						
DEPTH (m)	R.L. (m)	R IG BORING DRILLING	RQD ()%	Е	MATERIAL	HERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND	, FES
出 20	-13.46	AUGE CASIN WASH CORE	CORE REC %	SAMPLE	DESCRIPTION	USC WEAT	₽₹∓≥¬≥₫	2000	GRAP	TEST RESULTS	SAMPLES TESTS
-			100		MW-HW BASALT (Cont) Defects: - Open planar smooth calcite infilled joints at 50° (2/m)					– Major water loss between 18.98-20.4m	
			(0)		 Open ironstained spheroidal weathering related defects (10/m) Open Ironstained mainly smooth to occasionally rough irregular joints/ defects (30/m) 	HW- MW					
	-14.96				- Crushed zones <80mm (1/m)			· · · · · ·			
22			(0)	$\left \right\rangle$	Probable XW Basalt (?)	xw		- · · · · · · · · · · · · · · · · · · ·		Possible interface between two basalt flows Core loss - 21.5-22.7m No weight on rods, very little cuttling required with blade	
			0	\square						(drilling records)	
-	-16.16		(<u></u>)	\vdash	Borehole terminated at 22.7m		· · · · · · · · · · · · · · · · · · ·			Borhole collapsed, no time to clean out and drill further due to night time traffic control	
										restrictions (drilling records)	· · ·
- 25											
F 1											
- 27											
- - - 28 - - - - -											
- 26											
	EMARK	ls								LOGGED BY	
										AS/SAB	

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Project: <u>GATEWAY NORTH UPGRADE</u>

Borehole No:	BH	15
	$\mathbf{D}\mathbf{I}\mathbf{I}$	10

Start Depth:	18.00m
Finish Depth:	22.70m
Project No:	FP5249
H No:	10346





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