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ENGINEERING BOREHOLE

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/2-2004

BOREHOLE No	BH102
SHEET	_1_ of _3_
REFERENCE No	_ <u>_H9411</u> _

PR	OJECT	GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION												
											ORDINATES 9642.6 E; 169040.0 N			
PR	OJECT No	_FM2055			SURFACE R.L3.15	CE R.L. <u>3.15</u> DATE STARTED <u>3/8/04</u>				<u> </u>	DATUM SETP			
JOB No					DATUMAHD	DATE COMPLETED 4/8/04			<u> </u>	DRILLER R&D Drilling Pty Ltd				
o DEPTH (m)	R.L. (m)	CACSING WASH BORING OORE DRILLING % 033 % 034 % 038 % 038 % 038 % 038 %		SAMPLE	MATERIAL DESCRIPTION	гтногову	JSC VEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG		DDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS	
-	3.15	1	1110 70	,	SANDY GRAVEL - FILL	6 V	>	-11111		0				σ F
-	2.55					000	GP							, , ,
-					SILTY CLAY - FILL (??) Dark grey to mottled brown, mostly firm.		OL.							
-	1.95				Medium plasticity, slightly organic. SANDY CLAY - FILL (??) Brown, moist, soft.				-	Medi shawari i	MC=41.1% DD=1.26t/	6,WD=1.78t/m3, m3		U50 -
-2	0.65	And the second s					sc		-					, , , , , , , , , , , , , , , , , , , ,
-3	0.03				ESTUARINE (??) SILTY CLAY Dark grey to slightly mottled (top), moist, soft to firm.		СН				APD=2.67	s, WD=1.64t/m3,	6%	U50
-4	-1.20		,		SILTY SAND - ALLUVIUM						APD=2.66	, WD≃1.66t/m3,	3%	U50 -
PGRADE.GPJ ENG BOREHOLE FINAL.GDT 30/4/05					Dark grey to brown, moist, mainly very loose to loose.		en				99% passi	ng 2.36mm sieve	-,-,1 N<1	SPT
BOREHOLE WITH LITHOLOGY GATEWAY NORTHERN UPGRADE.GPJ ENG BOREH					Some gravel fraction from 7.0m to 7.25m.		SP- SM				12% passi	ng 75um sieve	1,2,2 N=4	SPT
BOREHOLE WITH LITHOLOGY	o -6.85				Becoming silty clayey with depth.						6% passin	g 2um sieve	-,-,1 N<1	SPT
	REMARKS	SPT	values	in cla	yey sandy gravel can overestimate density due to in	flen	ce of o	oarser size g	ravel partic	les.	Defect	LOGG	LOGGED BY	
					neasured with respect to a horizontal plane.							D.Dobe & A.I	Dissana	yake

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ENGINEERING BOREHOLE

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/2-2004

PROJECT	T GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION										
	CONTROL LINE: MCAO - Ch. 18420.2 - OFFSET 23.5 R COORDINAT								9642.6 E	; 169040.0 N	
PROJECT No	FM2055	<u> </u>			ATE STARTED _	ED <u>3/8/04</u>		DATUM SETP			
JOB No			DATUM AHD		DAT	E COMPLETED _	4/8/04		DRILLER _	R & D Drilling	Pty Ltd
(E) HLdd O	JGER VSING ASH BORING DRE DRILLING	ROD % ()% ()% ()% ()% ()% ()% ()% (MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	iNTACT DEFI STRENGTH SPAC (mi	CING 901		DITIONAL DA AND EST RESULT		SAMPLES TESTS
- 3.33 	An action of the control		SILTY SAND / SANDY SILT - ALLUVIUM Pale grey to mottled orange, moist, mainly medium dense to dense.		-1-					7,15,16 N=31	SPT
-11			Fine grained sand.			† † † † † † †				5,9,9 N=18	SPT
- 13			More sandy around 13m.		SM	+ + + + + + + + + + + + + + + + + + +				9,10,14 N=24	SPT
40LE FINAL.GDT 30/4/05		93.	Becoming more gravel towards bottom.			+ + + + + + + + + + + + + + + + + + + +				6,9,10 N=19	SPT
BOREHOLE WITH LITHOLOGY GATEWAY NORTHERN UPGRADE.GPJ ENG BOREH	matoria e estas em estas estas en esta Estas en estas en es		SAND - ALLUVIUM Orange brown to brown, wet, medium dense. Medium to coarse sand becoming fine with depth.							8,8,9 N=17	SPT
OGY GATEWAY NORTHERN					SP	† † † † † †				2,5,6 N=11	SPT
			Some gravel around 19m.			† † † † †				4,9,12 N=21	SPT
REMARKS			ayey sandy gravel can overestimate density due to i	i <u>nflen</u> c	e of o	oarser size gravel	p <u>articles.</u>	Defect		GGED BY	
	angles ha	ave been r	neasured with respect to a horizontal plane.					_	D.Dobe &	A.Dissana	yake



ENGINEERING BOREHOLE

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/2-2004

D.Dobe & A.Dissanayake

GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION **PROJECT** CONTROL LINE: MCAO - Ch. 18420.2 - OFFSET 23.5 R LOCATION COORDINATES 9642.6 E; 169040.0 N PROJECT No _FM2055 _ _ _ _ SURFACE R.L. __3.15_ __. DATE STARTED 3/8/04 DATUM SETP____ JOB No DRILLER R&D Drilling Pty Ltd DATUM _AHD __ DATE COMPLETED 4/8/04 R.L RQD INTACT DEFECT CORE DRILLING SPACING ()% STRENGTH ADDITIONAL DATA ဗ္ဗ DEPTH (m) MATERIAL AND GRAPHIC SAMPLES DESCRIPTION SAMPL CORE TEST RESULTS REC % 20 **CLAYEY SANDY GRAVEL - ALLUVIUM** Pale brown to orange brown, moist, dense to very dense. 24,20,30 Angular to subangular gravel sizing up to GC SPT N≃50 40mm. -2 -18.25 SANDSTONE FINE TO MEDIUM GRAINED, POORLY CEMENTED, MAINLY MASSIVE TO SLIGHTLY LAMINATED SEDIMENTARY 30/80 . - 22 **SER** N>50 ROCK. HW HW: Generally exhibits engineering properties of pale brown to orange brown, moist, very dense silty sand grading into very low to low strength rock. -19.85 (100) Is(50)=0.90 MPa O Grey to pale grey, mainly massive to slightly laminated, low to mainly medium to Is(50)=0.54 MPa occasional high strength. Defects - Generally rare.
- Occasional drilling induced lamination partings <10 deg (1/2m).
- Joint @ 60 deg(1/3m). Is(50)=0.39 MPa 0 Is(50)=0.50 MPa Defects are generally planar, rough, light with no alteration and ironstaining. - 25 GDT BOREHOLE FINAL SW (100)ls(50)=0.32 MPa 0 - 26 ls(50)=0.49 MPa ENG Is(50)=1.11 MPa Is(50)=0.42 MPa 0 UPGRADE.GPJ х -27 NORTHERN Is(50)=0.86 MPa Is(50)=0.98 MPa 0 x 100 -24.85 GATEWAY Borehole terminated at 28m BOREHOLE WITH LITHOLOGY REMARKS SPT N values in clayey sandy gravel can overestimate density due to inflence of coarser size gravel particles. Defect LOGGED BY

angles have been measured with respect to a horizontal plane.

Project: Gateway Upgrade Project Geotechnical Investigation

Borehole No: BH 102
Start Depth: 23.00m
Finish Depth: 28.00m

Project No: FM2055 H No: 9411

