

Borehole No. NBH30

Sheet

1 of 1

**Engineering Log - Piezometer** Infrastructure NSW

Project No: Date started: GEOTLCOV24303AC 27.4.2012

Principal:

Date completed:

27.4.2012

Project:

Logged by:

**ACM** 

SICEEP

	diam			ng:XP60 T	(1.71 Will				sting: thing:	slope:				Surface: 2.7
_	illing	2000		100.00		-				bearing bearin	ig: N/A		dat	tum: AHD
method	no penetration	support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle colour, secondary and mino	characteristics, or components.	moisture condition	consistency/ density index	structure and additional observations
TOWN		≅ N		E		_2	- - - 1		CL	ASPHALTIC CONCRETE: (0.1n FILL: Clayey GRAVEL: Medium subangular to angular sandstone, medium plasticity clay fines   FILL: SAND: Fine to medium grantled pale brown, cement stabil Sandy CLAY: Medium to low plamottled orange-brown, fine to medium grantled	to coarse grained, pale brown, ained, pale grey, zed sticity, pale brown,	M D <wp< td=""><td>VS</td><td>PAVEMENT FILL No Odour, PID = 0.3ppm ALLUVIUM No Odour, Dup 12 + Dup 12a</td></wp<>	VS	PAVEMENT FILL No Odour, PID = 0.3ppm ALLUVIUM No Odour, Dup 12 + Dup 12a
ADT				SPT 1,0,0 N*=0		1_1	2		CH	Sandy CLAY: Medium to high pl brown, mottled red-brown, mediur sand	n to coarse grained			No Odour, PID = 0.9ppm
				SPT 1,3,1 N*=4		0	3 - - - 4		CL	Silty CLAY: Medium plasticity, da black	ark grey, mottled	>Wp	F	No Odour, PID = 1.7ppm
				SPT 0,0,1 N*=1		2	5		CL	CLAY: Medium plasticity, pale gre Borehole terminated at 5m	<del>эу</del> ————	-	VS	No Odour, PID = 1.8ppm
						_3 _4	6 7 8							
nethous S D R V T T	od own by	rolli was cab dia blai V b TC	ger dril er/trico shbore ele tool ube nk bit it bit ex	one		ion In ore rangii refusi	N nil	NO NA NA P BS R E PIII	50 C S	mples, tests undisturbed sample 50mm diameter disturbed sample standard penetration test (SPT) SPT - sample recovered SPT with solid cone pressure meter bulk sample refusal environmental sample PID measurement water sample piezometer	classification symb soil description bas unified classification  moisture D dry W M moist Wp W well details betonite sand slotted PVC	sed on		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense



Sheet 1 of 1

Borehole No.

Office Job No.: GEOTLCOV24303AD

CBH5

Client: INSW Date started: 25.7.2012

Principal: Date completed: 25.7.2012

Project: SICEEP, Darling Harbour, Sydney NSW Logged by: PD

Borehole Location: SICEEP Darling Harbour, Sydney NSW Checked by: ML

drill n										our, Sydney NSW K Easting:	26			Checke		_	ML
hole				Juri		120 m		DKILL	. IRAC	•	slope:						Surface:
	ling	-	_	nati		20 m	m	mate	erial s	Northing ubstance	bearing	g:			C	datur	m:
nethod	2 penetration	poort			notes samples, tests, etc	RL	depth metres	aphic log	classification symbol	mater soil type: plasticity or pa colour, secondary and	rticle character	istics,	moisture condition	consistency/ density index	100 pocket 200 penetro-	a	structure and additional observations
ADV										SAND: Yellow brown, medium ROADBASE:	m grained.		D	F			No odour or staining.
ADT				Ē	+-3.1ppm		0. <u>5</u>			FILL: Gravelly clayey sand, g gravel dark grey rock materia		grained					Dup 4
				Ē	+-4.2ppm		1. <u>0</u>										
				E	+-5.8ppm		1. <u>5</u>			White gravel fragments. FILL: Gravelly clay, low plast	oity dorly are						
				E	+-6.2ppm		2.0			glass/shell fragments.	icity, dark grey (	gravei,					
							-			Borehole CBH5 terminated a	t 2.2m						
							2. <u>5</u> - - -										
							3.0										
							3. <u>5</u>										
							4. <u>0</u>										
							4. <u>5</u>										
nethod	d					sup	5.0			notes, samples, tests	<del></del>	classifica	tion sum	hole sad			consistence de la
AS AD RR V CT HA OT B V Sp.		ro wa ca ha dia bla V	iger ller/t ashb ble t and a atub ank l bit bit ix	drillin ricon ore ool auge	ie I	M r C c pene 1 2 water	mud exasing extration 3 4 no ra	shown low	ce	U <sub>59</sub> undisturbed sample 50 U <sub>68</sub> undisturbed sample 63 D disturbed sample N standard penetration te N* SPT - sample recovere Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal	est (SPT)	soil descr based on system  moisture D dry M moi W wet Wp plas	ription unified da				consistency/density index           VS         very soft           S         soft           F         firm           St         stiff           VSt         very stiff           H         hard           Fb         friable           VL         very loose           L         loose           MD         medium dense           D         dense           VD         very dense



Sheet 1 of 1

Borehole No.

Checked by:

Office Job No.: GEOTLCOV24303AD Date started: 27.7.2012

ML

CBH5A

Principal: Date completed: 27.7.2012

SICEEP, Darling Harbour, Sydney NSW Project: PDLogged by: Borehole Location: SICEEP Darling Harbour, Sydney NSW

B80 MOBILE DRILL TRACK Easting: drill model and mounting: slope: -90 R.L. Surface: Northing hole diameter: 120 mm bearing: datum: drilling information material substance classification symbol pocket penetro-meter notes consistency/ density index g material structure and samples. penet graphic additional observations method support tests, etc water soil type: plasticity or particle characteristics, colour, secondary and minor components. kPa depth RL metre 123 200 200 400 No odour, No staining observed. SAND: Medium grained, yellow and brown. ROADBASE E+ 0.7ppm FILL: GRAVELY CLAYEYSAND, fine grained, grey brown. Gravel fine to medium grained, dark grey. 1 E+ 1.9ppm E+ 5.0ppm Some white gravel fragments. **GRAVELLY CLAY:** Low plasticity, dark grey, 1-5 cm rockpieces, some white shell fragments. 2 E+ 3.0ppm E+ 1.3ppm Becoming brown, minor shell and shell fragments.. 3 E+ 2.0ppm Orange brick fragments, shells and shell fragments. Dup8 E+ 1.1ppm Increasing sand content. W ASS1 4 E+0.6ppm Becoming grey. E+ 0.9ppm 5 E+ 1.3ppm Ironstone band, red grey D Н SAND, Highly weathered. Sandstone, medium to F fine grained, red. 6 E+ 1.9ppm ASS2 Borehole CBH5A terminated at 6m method notes, samples, tests classification symbols and consistency/density index

undisturbed sample 50mm diameter

undisturbed sample 63mm diameter

standard penetration test (SPT)

SPT - sample recovered

disturbed sample

SPT with solid cone

environmental sample

vane shear (kPa)

pressuremeter

bulk sample

refusal

soil description

dry

moist

plastic limit

liquid limit

system

moisture

Wn

based on unified classification

very soft

very stiff

very loose

very dense

medium dense

soft

firm

stiff

hard

friable

dense

St

VSt

Fb

VL

MD

VD

AS

AD RR

W

CT HA DT

В

e.g.

GEO 5.3 Issue 3 Rev.2

auger screwing\*

auger drilling\*

roller/tricone

washbore

cable tool

hand auger

diatube

blank bit

TC bit

\*bit shown by suffix

M mud

C casing

penetration

no res

10/1/98 water level

on date shown

water inflow

water outflow

ranging to refusal

N nil

Usa

D

N\*

No

V P

Bs

R



### **Engineering Log - Piezometer**

Sheet 1 of 1

Borehole No.

Office Job No.: GEOTLCOV24303AD

CBH6/MW6

Client: INSW Date started: 25.7.2012

Principal: Date completed: 25.7.2012

Project: SICEEP, Darling Harbour, Sydney NSW Logged by: PD
Borehole Location: SICEEP Darling Harbour, Sydney NSW Checked by: ML

				n: <b>SICI</b>						ydney NSW	Check	ked by:	
	diame		ai Idi	ig. Doo MC	יטובב טר	NLL	HACK		sting:	slope: -90°			R.L. Surface:
	ling i		ma	tion				-	rthing:	bearing:		d	latum:
nethod	5 penetration	Ę	water	notes samples, tests, etc	well details	RL	depth metre	aphic log	classification symbol	material  soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture	condition consistency/	structure and additional observations
ADV					8	Š				BRICK:	D	S	No odour or staining.
ADT A				E+-9.0ppm						SAND: Yellow brown, medium grained. ROADBASE: FILL:Gravelly clayey sand, fine grained, dark grey, fine gravel.		F	The castal of Stalling.
				E+-9.0ppm			1			GRAVELLY SANDY CLAY: Low-medium plasticity, brown, coarse grey, cream, white gravel, igneous rocks and sandstone.	-		
				E+-8.6ppm			- - 2			CLAY: Medium plasticity, red-grey.			
		•	-	E+-10.0ppm			_			Becoming slightly paler in colour.	-		
				E+-10.2ppm			:- :-			<b>GRAVELLY CLAY</b> : medium plasticity, red. Coarse grey and orange gravel.	М		(ASS1)
			Ī	E+-9.7ppm			3			CLAYEY SAND: Fine grained, dark grey, shell fragments.			(ASS2)
				=+-9.6ppm			-			<b>SANDY CLAY:</b> Medium plasticity, dark grey, shell fragments.	W	9	
				_ · - 9.0ppiii		*	\ <del>-</del>			CLAY: High plasticity, dark grey.	М	_	(ASS3)
			E	E+-9.7ppm			4			OD W. High plasticity, daily grey.	IVI		(ASS4)
							25	/		CLAYEY SAND: Medium grained, dark grey.		Н	
			III)	+-10.0ppm									(ASS5)
			E)	+-13.9ppm	H		<u>5</u> -	/		Orange grey mottled.	-		(ASS6)
			Ē	+-15.8ppm	H		-						(ASS7)
										Borehole terminated at 5.6m			,,
							6						
							-						
							-						
							=						
							7						
netho	d	roller wash cable diatu blank V bit TC b	r dril /tricc bore too be bit	one e		ation 4 no rar ref	N ni resistance nging to usal water leve shown		notes, sa U <sub>50</sub> D N N* NC P Bs R	mples, tests undisturbed sample 50mm diameter disturbed sample 50mm diameter disturbed sample 50mm diameter disturbed sample 50mm diameter bandard penetration test (SPT) SPT - sample recovered SPT with solid cone pressure meter bulk sample refusal environmental sample PID measurement  classification sy soil description based on unified system  moisture D dry M moist W wet Wp plastic lim	classificat		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose
BX bit sho	own by	Tube suffix ADT	^		wa wa	ter inf ter ou			NS PZ ALT				MD medium dense D dense VD very dense



CBH7

Sheet

1 of 1 GEOTLCOV24303AD

Office Job No.: Date started:

Borehole No.

25.7.2012

Client: Principal:

Date completed:

25.7.2012

Project:

SICEEP, Darling Harbour, Sydney NSW

Logged by:

PD

Borehole Location: SICEEP Darling Harbour, Sydney NSW

Checked by:

ML

	_	_					5 TRA		Easting:	slope:	: -90°		Shecke	d D		IVIL
	diam		mou	(Z)	120 m		5 1104	OIC	Northing							L. Surface:
100000	man coccided	(FBEWER)	rma	tion	,2011		mate	erial s	ubstance	bearir	ıy.				da	tum:
T					1									1927	<u>.</u>	
Domain	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	materia soil type: plasticity or part colour, secondary and n	icle characte	ristics, nents.	moisture condition	consistency/ density index	100 pocket	°a	
1									ASPHALT:					П	П	
:						7 -			ROADBASE:							
						_			GRAVELLY CLAYEY SAND: Nedium gravel, dark grey, cre	Yellow brown, am, crushed	, fine to stones.	D	Ê			FILL. No odour or staining.
						0.5										
				E+-8.7ppm		_										
						_										
						1. <u>0</u>										Dup 3 Dup 3A.
				E+-9.6ppm		-										Бар з Бар эл.
						:			GRAVELLY SAND: Low plastic medium shale gravel.	city, grey, gra	vel,					
				E+-9.3ppm		1. <u>5</u>										*
+	H			_ оторрии			<b>***</b>		Borehole CBH7 terminated at	1.6m				11	H	
						-										
						-										
						2.0										
		П				-										
						-										
						-										
						_										
						2.5										
						1						-	-		١,	
						-										
П						-										
П																
П						3.0										
tho	d			rewing*	M	port	N	nil	notes, samples, tests U <sub>50</sub> undisturbed sample 50m U <sub>63</sub> undisturbed sample 63m		classifica soil descr based on	iption				consistency/density index VS very soft S soft
		rolle	er/tric	one	pen	etration			D disturbed sample		system					F firm
			hbor le toc	977	===	no	resistan	ce	<ul> <li>N standard penetration tes</li> <li>N* SPT - sample recovered</li> </ul>		moisture					St stiff VSt very stiff
		han diat	d aug	ger	1474		nging to fusal		No SPT with solid cone		D dry	c+				H hard
		blar	ık bit		wat		water le	vel	V vane shear (kPa) P pressuremeter		M moi W wet					Fb friable VL very loose
		V bi				on date			Bs bulk sample		Wp plas	stic limit				L loose
sho	own by	/ suffix	(			water in			E environmental sample R refusal		W <sub>L</sub> liqui	id limit				MD medium dense D dense
		ADT	Ē.		-	water or	utflow		an ear control (							VD very dense



Client:

Sheet 1 of 1

Borehole No.

GEOTLCOV24303AD Office Job No.:

CBH7A

Date started: 27.7.2012

Principal: 27.7.2012 Date completed:

Project: SICEEP, Darling Harbour, Sydney NSW Logged by: PD

Bore	ehole	Loc	atio	n: <b>SIC</b>	EEP	Dari	ing I	larbo	our, Sydney NSW			Checke	ed by:	ML
	nodel		noun	iting:	KOMA	ATSU 0	5 TRA	CK	Easting: slope:	-90°			R	R.L. Surface:
	diame				120 m	ım	· ·		Northing bearing	g:			d	atum:
arıı	ling i	Intor	mat	ion	1	1	mate		ubstance				1	
	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle character colour, secondary and minor compon	ristics, ents.	moisture condition	consistency/ density index	200 × pocket 300 × penetro-	
AMERICA				E+ 1.3ppm  =+ 1.1ppm  =+ 5.4ppm  =+ 7.0ppm  =+ 9.7ppm  =+ 9.7ppm  =+ 9.2ppm  =+ 9.3ppm		1 1 2 3 3 4 5 5 5		CL	ASPHALT: ROADBASE: FILL: Gravelly sandy CLAY, ow plasticity, ye brown. 1mm - 3 cm Gravel, dark grey and corushed stones/ rock pieces  Becoming dark grey.  GRAVELLY CLAY: Low plasticity, yellow b gravel (1-5cm), dark grey rock.  GRAVELLY SAND CLAY: Low plasticity, day (1-5mm), grey.  Becoming grey brown, medium plasticity, meshale gravel.  CLAY: Redish brown, gravel (1-5cm), red b grey sandstone.  GRAVELLY SANDY CLAY: Medium plasticity grey, medium grained gravel.	rown, ark grey	D	F		No odour, no staining observed  Dup 7, Dup 7A, ASS4.
				E+ 11.4ppm / E+ 12.1ppm /		6			CLAY: Less sandy, white shell and shell frag	gments.				ASS3
ethod S D R T A	d own by	auge rolle wash cable hand diatu blan V bit TC b	er drill /trico bore e tool l auge be c bit	ne	M C open 1 2	ra re	o resistano nging to fusal water le shown	œ	notes, samples, tests  U <sub>50</sub> undisturbed sample 50mm diameter undisturbed sample 63mm diameter disturbed sample 63mm diameter D disturbed sample  N standard penetration test (SPT)  N* SPT - sample recovered  Nc SPT with solid cone  V vane shear (kPa)  P pressuremeter  Bs bulk sample  E environmental sample  R refusal	classificatic soil descrip based on ur system  moisture D dry M moist W wet Wp plastic Wt liquid	otion nified cla			consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense



GEOTLCOV24303AD Office Job No.:

Borehole No.

Sheet

CBH8

1 of 1

VD

very dense

24.7.2012 Date started:

Principal: 24.7.2012 Date completed:

SICEEP, Darling Harbour, Sydney NSW Project: PD Logged by: Borehole Location: SICEEP Darling Harbour, Sydney NSW

Checked by: ML KOMATSU 05 TRACK drill model and mounting: Fasting: -90 slope: R.L. Surface: hole diameter: 120 mm Northing bearing: datum: drilling information material substance penetration classification symbol pocket penetro-meter notes consistency/ density index index material structure and samples, moisture condition additional observations graphic method support tests, etc water kPa soil type: plasticity or particle characteristics, depth RI colour, secondary and minor components. 8888 123 BS FILL: Gravelly clayey silt, dark grey, medium dark V-BI grey gravel. D No odour or staining. E+9.9ppm 1 E+10.9ppm GRAVEL: Some sand, orange, clay/brick GRAVELLY CLAY: Low plasticity, grey, medium crushed shale gravel, some orange fragments. E+11.2ppm ASS1 GRAVELLY SANDY CLAY: Low-medium plasticity, grey brown, gravelly gravel, orange-grey. 2 E+11.1ppm M E+11.3ppm Becoming orange in colour. Organic matter odour, no staining. CLAYEY SAND: Medium-fine grained, dark grey. 3 E+14.6ppm Dup1, Dup 1A E+12.9ppm Increasing clay content, some white shell fragments. ASS2 4 E+12.5ppm ASS3 E+11.8ppm ASS4 5 GRAVELLY SANDY CLAY: Medium plasticity, yellow E+12.8ppm brown, medium dark yellow grey gravel. ASS5 E+11.8ppm Dup2, ASS6 6 E+12.7ppm ASS7 Borehole CBH8 terminated at 6m method support notes, samples, tests classification symbols and consistency/density index M mud undisturbed sample 50mm diameter soil description U<sub>50</sub> VS very soft AD RR auger drilling\* C casing U<sub>63</sub> undisturbed sample 63mm diameter based on unified classification S soft roller/tricone D N disturbed sample firm W washbore standard penetration test (SPT) St stiff no resistance ranging to refusal СТ cable tool N\* SPT - sample recovered moisture VSt very stiff HA DT hand auger SPT with solid cone dry hard diatube vane shear (kPa) FЬ friable В blank bit 10/1/98 water level on date shown pressuremeter wet VL very loose V bit Bs bulk sample Wp plastic limit loose TC bit E environmental sample liquid limit MD medium dense \*bit shown by suffix refusal dense water outflow



# **Engineering Log - Piezometer**

Sheet

CBH9 / MW9

Office Job No.:

1 of 1

GEOTLCOV24303AD

INSW

Date started:

Borehole No.

26.7.2012

Principal:

Date completed:

26.7.2012

Project:

SICEEP, Darling Harbour, Sydney NSW

Logged by:

PD

Borehole Location: SICEEP Darling Harbour, Sydney NSW

							-	arboi	ur, Sy	dney NSW		hecked	l by:	ML
drill m	nodel	& mo	unting	g: B80 MC	BILE DRI	LL T	RACK	Eas	sting:	slope	-90°		R.L	Surface:
	diame	_						-	thing:	bearin	ng:		dat	um:
ariii	ling i ⊏	ntor	mati	on		T -		ma		substance				
	s penetration	support		notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle colour, secondary and mind	characteristics, or components.	moisture condition	consistency/ density index	structure and additional observations
משטפט				E+ 3.1 ppm  E+ 5.2 ppm  E+ 6.4 ppm  E+ 6.8 ppm  E+ 6.7 ppm  E+ 6.7 ppm  E+ 5.8 ppm  E+ 5.0 ppm  E+ 4.2 ppm  E+ 4.5 ppm	7.4.7.4.70 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		1 2 3 4			BRICK: SAND: GRAVELLY CLAYEY SAND: Fine grey. Fine, dark grey gravel, min shards.  Some yellow coarse grained sand clayey sand, fragments of orange increasing clay content, orange be ceramic pieces.  CLAY:< <b> Medium plasticity, y  Becoming grey-red.  SANDY CLAY: Medium plasticity,  Minor white shell fragments.  White shells and shell fragments (  CLAY: Medium plasticity, red. sligt mottled.</b>	d, plus dark grey bricks.  rick fragments and ellow brown.  dark grey.	M W	F	FILL. No odour, no staining observed.  Dup 5A  ASS1  ASS2  ASS3  ASS4  ASS5
							6_	////		Borehole terminated at 5.8m				
							- - 7							
nethoo S D R V T T BX bit sho	<b>d</b> own by	auge roller wash cable diatu bland V bit TC b	k bit iit	ng*	<u>—</u> on c	tion  no refus  refus  1/98 w. date sh	ater leve nown w		J <sub>50</sub> 0 1 1* 1/c 0 8 8 8	mples, tests undisturbed sample 50mm diameter disturbed sample standard penetration test (SPT) SPT - sample recovered SPT with solid cone pressure meter bulk sample refusal environmental sample PID measurement water sample piezometer air lift test	classification symt soil description based on unified cla system  moisture D dry M moist W wet Wp plastic limit W <sub>L</sub> liquid limit		ń	consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense



Sheet 1 of 1

Borehole No.

Office Job No.: **GEOTLCOV24303AD** 

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CBH10

Client: INSW Date started: 26.7.2012

Principal: Date completed: 26.7.2012

Project: SICEEP, Darling Harbour, Sydney NSW Logged by: JG

Borehole Location: SICEEP Darling Harbour, Sydney NSW Checked by: MI

drill mode						375		our, Sydney NSW  K Easting: s	ope: -9	0°	Checke		ML R.L. Surface:
hole diam	meter:			120 m	m			9.47 P-0.47 P-0.47	earing:				datum:
drilling		matio				mate	erial s	ubstance					adum.
method 5 7 7 9	5	sa	notes amples, sts, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle char		moisture condition	consistency/ density index	200 x pocket 300 y penetro-	ř
		E+77	E+2.4 ppm E+2.3 ppm 7.3 ppm 7.3 ppm F+6.3 ppm + 6.1 ppm		1.5 2.0 3.0 4.5		СН	BRICK: GRAVELLY SAND: Medium to coarse brown pale grey, fine to medium graine cemented material).  GRAVELLY SANDY CLAY: Low plastic / dark brow, with orange brown mottling cobbles.  CLAYEY SAND: Medium to coarse grapale grey with orange brown mottling, to coarse gravel.  SANDY CLAY: Low plasticity, dark grey grained sand, trace of fine to medium grained sand, trace of fine grained sand, brown, dark grey, trace of fine grained sand.  SANDY CLAY: Fine to medium grained brown, trace of fine gravels.  CLAY: High plasticity, mottled grey / pale orange brown, trace of fine gravels.  CLAY: High plasticity, dark grey.  SANDY CLAY: Fine to medium grained trace of shell fragments.  Borehole CBH10 terminated at 4m	d gravel (  ity, dark grey it, trace of  ined, grey race of fine to  rained gravel.  orange iand.				Brick pavement.  Dup 5, Dup 5A  ASS1
nethod SS DD RR V LT IdA DT Gott shown b	auge roller wash cable hand diatu blank V bit TC bi	tool auger be bit		pene	nud asing etration 3 4 no rai		œ	notes, samples, tests  U <sub>50</sub> undisturbed sample 50mm diamet U <sub>53</sub> undisturbed sample 63mm diamet D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (KPa) P pressuremeter Bs bulk sample E environmental sample R refusal	soil de based de system  moistu D c M r W w Wp p				consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense



Client:

Principal: Project:

SICEEP, Darling Harbour, Sydney NSW

Borehole No.

Office Job No.:

CBH11

Sheet

1 of 1

GEOTLCOV24303AD

25.7.2012

25.7.2012 Date started:

Date completed: Logged by:

PD

	_		_					200-200		our, Sydney NSW		(	Checke	ed by:	ML
	mode			oun				DRILL	TRAC	K Easting: slope	: -90°			R	R.L. Surface:
10.00000	diam		200			120 m	ım	1		Northing bearing	ng:			da	latum:
arı	lling	J In	TOF	nat	ion	_		mate	A CONTRACTOR OF THE CONTRACTOR	ubstance		_			
method	benetration	3	support	water	notes samples, tests, etc	RL	depth metres		classification symbol	material soil type: plasticity or particle characte colour, secondary and minor compor	ristics, nents.	moisture condition	consistency/ density index	200 A pocket 300 a penetro-	
ADT ADV				E	E+-4.2ppm E+-7.1ppm =+-9.2ppm +-10.9ppm +-11.7ppm		1 2 3			BRICK:  SAND: medium grained, yellow brown.  ROADBASE: FILL: Gravelly sandy clay, low plasticity, da gravel, some orange clay brick fragments.  CONCRETE: FILL: Gravelly sand, fine grained, dark grewith grey rock pieces.  GRAVELLY SAND: Medium grained, yellow gravel, some red-brown fragments.  GRAVELLY CLAY: Low plasticity gravel, so grey-brown rock pieces.  Increasing clay content, medium plasticity, some stone pieces, yellow-brown.	y gravel	D	F S		FILL. No odour or staining.
					+12.1ppm +11.4ppm		- 4 -			Increase sand content, white shell fragment Borehole CBH11 terminated at 4m	is. — — —	W			ASS1  Dup6, Ass2
method AS AD RR W CT HA DT 3 / r	ood	by s	auger vash cable nand diatub olank / bit FC bir	drill trico bore tool auge be bit	ne	M C pen 1 2 wat	er re	o resistan enging to efusal water le shown	£%	notes, samples, tests U <sub>50</sub> undisturbed sample 50mm diameter U <sub>63</sub> undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal		iption unified da			consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense



Principal:

Sheet 1 of 1

Borehole No.

Date completed:

GEOTLCOV24303AF Office Job No.:

BH118

12.12.2012

Infrastructure NSW Date started: 12.12.2012

Project: SICEEP Logged by: PD

uriii i	node	l and				tsu 05		NSV	Easting: slope: -90		Checke		ML L. Surface:
hole	diam	eter		3	100 m	nm			Northing bearing:				tum: AHD
	_			ation			mate	erial s	ubstance			ua	tum: AHD
method	2 penetration	Support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture	consistency/ density index	200 pocket 300 penetro- 400 meter	
SS				E+2.0ppm		1 to 1			ASPHALT  FILL: Gravelly SAND: Fine grained, dark grey brown. Gravel is fine crushed concrete and orange brick fragments	D	F		No odour or staining
				E, A+1.5ppm		-							
SPT			C	E, QC21, QC21A+1.6pp	dm	1_			Some crushed concrete and metal pieces				
55				E+1.6ppm		-			FILL: Clayey SAND: Fine grained, brown	D	F		No odour or staining
				E, A+1.8ppm	/	2							
				E+2.0ppm		-							
				E+1.5ppm		3			ALLUVIUM: SAND: Fine to medium grained, dark grey, organic	М	F		Organic matter odour, no stainii
				E+1.6ppm						W			
				E+1.8ppm		4			Large white shell pieces				
				E+5.7ppm		_			Minor white shell fragments and sandstone pieces Borehole BH118 terminated at 4.5m				
						- <u>5</u>							
						- - 6							
netho	od	ro wa ca ha dia bla V	ger of ler/tr ashbo ble to and a atube ank b	ool uger	M C pen 1 2	er	o resistand inging to ifusal water le	ce	U <sub>so</sub> undisturbed sample 50mm diameter undisturbed sample 63mm diameter based o system       D     disturbed sample 63mm diameter standard penetration test (SPT)       N*     SPT - sample recovered       Nc     SPT with solid cone     D       V     vane shear (kPa)     M       P     pressuremeter     W       Bs     bulk sample     Wp	n unified cl			consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense



Sheet 1 of 1 Office Job No.: GEOTLCOV24303AF

Infrastructure NSW Date started: 12.12.2012 Principal:

Borehole No.

Date completed:

**BH119** 

12.12.2012

Project: **SICEEP** Logged by: PD

Bor	ehole	Loca	ation: <b>D</b>	arlin	g Hark	our,	NSV	/			(	Checke	ed by:	ML	
			ounting:		natsu 05	Track		Easting:	slope	e: -90°			R	.L. Surface:	
	diame	_	nation	100	mm	1		Northing	bear	ing:			da	atum:	AHD
uri	_	morr	nation		_	mat		ubstance				-		+	
method	5 penetration	support	sample tests,	es, etc	depth L metres	graphic log	classification symbol	colour, second	material ity or particle charact ary and minor compo		moisture	consistency/ density index	200 a pocket 300 a penetro-		structure and ional observations
Ŧ					_	4.4		CONCRETE	ned, yellow to brown.		D ,			No adams	
			E, A+1.1p	pm)	-			FILL: Gravelly Claye	y SAND: Fine grained neidum, grey rock pie	d, dark ces.		∖S./ F		No odour o	
			E, QC20+1.	Зррт	0. <u>5</u>			FILL: Gravelly CLAY Gravel fine, orange i	: Low plasticity, orange	ge to grey.	D	F		No odour o	or staining.
					-			Gravelly Sandy CLA	Y: Low plasticity, dark	c grey.	D	Н		No odour o	or staining.
			E+1.1p	pm	-	/////		Clayey SAND: Highl	weathered sandstor		D	Н		No odour o	
SPT					1. <u>0</u>			grained, orange to b	own.						·
			E, A+1.1p	om/	1. <u>5</u>			Sandy CLAY: Low p	asticity, yellow to brow		D	н		No odour o	r staining.
			E+1.2p		2.0				medium to high plast by seams of potentien		D	Н		No odour o	r staining.
			E+1.4p	om	3.0										
						1/1//		Borehole BH119 tern	ninated at 3m						
					-										
					-										
					3.5										
					_										
					4.0-										
eth	od			s	4.0 upport			notes, samples, tests		classifica	tion sym	bols and		consisten	cy/density index
S D			screwing* drilling*		1 mud casing	Ν	nil		sample 50mm diameter sample 63mm diameter	soil desci based on		assification	on	VS S	very soft soft
R /		roller wash	tricone oore	l p	enetration 2 3 4	Ē		D disturbed sar		system			Nagar X	F St	firm stiff
Т		cable	tool	E	n ra	o resistan	ce	N* SPT - sample	recovered	moisture				VSt	very stiff
A T		diatul		W	ater	efusal		Nc SPT with soli V vane shear (	(Pa)	D dry M moi				H Fb	hard friable
		blank V bit	bit		10/1/98 on date		evel	P pressuremeter Bs bulk sample	er	W wet	t stic limit			VL L	very loose loose
it sh	nown by	TC bi			- water in			E environmenta	l sample	77227.5	id limit			MD	medium dense
g.	lown by	ADT			■ water o			R refusal						D VD	dense very dense



**Environmental Log - Piezometer** 

Sheet 1 of 1

Borehole No.

GEOTLCOV24303AF

BH120/MW120

Client:

Infrastructure NSW

Office Job No.: Date started:

18.12.2012

Principal:

Date completed:

18.12.2012

Project:

Logged by:

PD

Borehole Location: Darling Harbour, NSW

SICEEP

2016	eno	le	Loc	atio	n: <b>Darl</b>	ing Ha	rbo	ur, N	SW				C	Checked	l by:	ML	
				unti	ng:Komatsı	u 05 Trac	k		Eas	sting:	333679.383	slope:	-90°		R.L	Surface: 2.710	
-	diar	_	-	and the same	115				_		6249893.26	bearing:			dat	tum: AHD	
dril	_		for	ma	tion		_		ma		substance						
method	1 penetration		support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol		erial particle cha nd minor co	aracteristics, omponents.	moisture	consistency/ density index	structure and additional observat	ions
SS					E, A+2.3ppm			ï_			ASPHALT FILL: Silty GRAVEL: Fine	o medium	grained, grey	D	F	No odour or staining	
					E+0.9ppm		_2	-			FILL: Gravelly SAND: Fine cream, crushed sandstone	to medium	n grained,	D	F	No odour or staining	_
					E+5.6ppm			<u>1</u> -			Sandstone becoming more brick fragments	brown in o	colour, orange		Н	_	
					E, A+10ppm E+6.6ppm		_1	- - 2			Material turns grey and be	omes sligh	ntly clayey				
				<b>V</b>	E+7.3ppm		_0	-			ALLUVIUM: Clayey SAND brown	Fine grain	red, yellow	w	F	No odour or staining	
				Q	E, C34+6.8pp/	n		<u>3</u> - -			Clayey SAND: Alluvial, fine	grained, d	lark grey	W	F	No odour or staining	
					E+5.5ppm		1									organic matter odour, no s	ain
$^{+}$	H	H	$^{+}$		E+5.9ppm			4			Abundant white shells Borehole terminated at 4m						
							2	- - - 5									
							3	-									
etho S C C T	od		auge rolle wash cable diatu blan blan V bit TC b	er dri r/trico nboro e toc ibe k bit iit ex	9		tion 4 no re rang refus	ater level nown		J <sub>50</sub> ) 1 1* 4c o 3s	amples, tests undisturbed sample 50mm diar disturbed sample standard penetration test (SPT) SPT - sample recovered SPT with solid cone pressure meter bulk sample refusal environmental sample PID measurement water sample	neter D				consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium den	



Sheet

BH121

Borehole No.

Office Job No.:

1 of 1

GEOTLCOV24303AF

Infrastructure NSW

Date started:

18.12.2012

Principal: Project:

SICEEP

Date completed: Logged by:

18.12.2012 PD

				on: <i>Darl</i> nting:	_	tsu 05		NOVI	Easting: slop	e: -90°		Checke	100	.L. Surface:
nole d	diame	ter:			100 m	m			Northing bea	ring:				atum: AHD
drill	ling i	nfor	mat	ion			mate	erial su	bstance					F. 11. (1997)
_	ν penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle charac	teristics, onents.	moisture condition	consistency/ density index	200 A pocket 300 a penetro-	
SST				E+7.3ppm		_			ASPHALT FILL: Silty GRAVEL: Medium grained, br is fine to medium grey igneous rock piece	own. Gravel	D	F		No odour or staining
			•	E, A+9.3ppm		0. <u>5</u>			FILL: Gravelly Clayey SAND: Medium grey. Gravel is fine to medium dark grey brown rock fragments with some crushed brick fragments  Concrete Slab  Borehole BH121 terminated at 0.6m	and orange				
						1.0								
						1. <u>5</u>								
eethood S D R R T T	d	rolle was cabl	er dri er/trice hbore e too d aug ube k bit	one e I	M pen 1 2 wate	ra re er	N resistant name of the state o	ce vel	notes, samples, tests  U <sub>50</sub> undisturbed sample 50mm diameter undisturbed sample 63mm diameter b disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample	classificate soil describased on system  moisture D dry M moi W wet VVp plass W_ liqui	iption unified cla			consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose



Office Job No.: GEOTLCOV24303AF Infrastructure NSW Date started: 18.12.2012

Borehole No.

Sheet

**BH121A** 

1 of 1

Principal: 18.12.2012 Date completed:

Project: SICEEP PD Logged by:

				on: <i>Dari</i>		Hark tsu 05		NSV	Easting: slope: -90'		Checke		ML L. Surface:				
hole	nole diameter: 100 mm								Northing bearing:								
-		4001810		ition			mate	erial si	ubstance	-	datum: AHD						
method	v penetration	Support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	200 a pocket 300 a penetro- 400 meter					
SST				E+3.1ppm					ASPHALT FILL: Gravelly Clayey SAND: Fine to medium grained, dark grey. Gravel is fine to medium grained, Dark grey rock pieces	D	F		No odour or staining				
				E+9.0ppm	-	0. <u>5</u>			FILL: Gravelly SAND: Fine grained, brown. Gravel is fine to medium grey brown rock pieces with some crushed red brick fragments	D	F		No odour or staining				
				E, A+12ppm	-	1. <u>0</u>			FILL: Gravelly Sandy CLAY: Low plasticity, dark grey. Gravel is fine grey rock pieces and crushed concrete and orange brick fragments with some rusted metal pieces	D	F		No odour or staining				
			Q	E, QC35, 35A+11.3p	pm	1. <u>5</u>			White ceramic piece and more metal pieces and red/orange brick pieces								
			2	E+8.0ppm		2.0			More white ceramic/porcelain pieces								
				E, (A+8.0ppm)		2. <u>5</u>			ALLUVIUM: Clayey SAND: Fine grained, yellow brown	М	F		No odour or staining				
				E+4.6ppm		3. <u>0</u> - - -			Sandy CLAY: Medium plasticity, dark grey	М	F	2	No odour or staining				
				E+5.2ppm		3.5			Some white shells Borehole BH121A terminated at 3.5m	W							
netho S	od	21	iner so	crewing*		4.0	N		notes, samples, tests classifice	ation sym	bols and		consistency/density index				
D auger drilling* C casing R roller/tricone / washbore T cable tool				etration 3 4 re er 10/1/98 on date	o resistance nging to fusal water le shown	ce		unified cl	assificatio	on	VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense						



Infrastructure NSW

Principal:

Project: SICEEP

Borehole No.

BH122

Sheet

1 of 1

Office Job No.: GEOTLCOV24303AF

Date started:

13.12.2012 13.12.2012

Date completed: Logged by:

PD

drill model and mounting: Komatsu 05 Track Easting: slope: -90°												R.I	Surface:
_	diame				100 n	nm			Northing bearing:			da	tum: AHD
dril	ling i	info	rma	tion		-	mate	erial su	bstance				1
method	v penetration	support	water	notes samples tests, etc		depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	200 A penetro- 300 a penetro- 400 meter	
Į.				E,					MULCH, SAWDUST AND TOPSOIL	D	L		No odour or staining
			Е	Ç22+12.9 <sub> </sub>	opm	_			FILL: Gravelly SAND: Fine grained, brown. Gravel i very fine brown and dark grey rock pieces	is D	S		No odour or staining
9				E, A+19.9pp	m)	0. <u>5</u>			Crushed grey sandstone noted		Н		
-				E+19.8pp	m	1. <u>0</u>			Ssandstone and dark grey igneous rocks and concrete noted				
3				E+19.9pp	m	1. <u>5</u>			Occassional orange crushed brick fragments				
T	Ш						XXX		Borehole BH122 terminated at 1.7m				
						2.0							
						2. <u>5</u> - -							
						3.0							
						3. <u>5</u>							
etho	od			rewing*	М	4.0 port mud casing	N	nil	U <sub>50</sub> undisturbed sample 50mm diameter soil d	ification sym			consistency/density index VS very soft
2		roll wa cal hai dia bla V b	ler/triceshbore to the total audienter to the	cone re ol ger	per	netration 2 3 4 ra re	o resistand anging to afusal water le		D         disturbed sample         syster           N         standard penetration test (SPT)         moist           N*         SPT - sample recovered         moist           Nc         SPT with solid cone         D           V         vane shear (kPa)         M           P         pressuremeter         W           Bs         bulk sample         Wp	ture dry moist wet plastic limit	assilica <u>I</u>	UI.	S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose
it sho	own by				<b>M</b>	water in			E environmental sample W <sub>L</sub> R refusal	liquid limit			MD medium dense D dense VD very dense

BOREHOLE GEOTLCOV24303AF.GPJ COFFEY.GDT 16.1.13



Infrastructure NSW Client:

Principal: Project:

SICEEP

Pershala Lasation: Dayling Harbary MCM

Date completed:

Sheet

GEOTLCOV24303AF 13.12.2012

13.12.2012

**BH122A** 

1 of 1

Date started:

PD Logged by:

Borehole No.

Office Job No.:

			_	on: <b>Dai</b>		Hark		NSV		1		(	Checke		ML	
	diame			armiy.	100 i		11ack		Easting: Northing	slope					L. Surface:	
200	lling			ition	1001	11111	mate	erial s	ubstance	bear	ing:			dat	tum:	AHD
nethod	2 benetration	upport		notes samples tests, etc	:	depth metres	aphic log	classification symbol	soil type: plastic	material sity or particle character ary and minor compo	eristics,	moisture condition	consistency/ density index	100 pocket 300 a penetro- 400 meter		structure and ional observations
₹	Ш			E,					MULCH, SAWDUST			D	L		No odour	
SS/T				A+2.3ppr E+1.5ppr		-			Gravel is very fine br fragments	D: Fine grained, grey be own and dark grey ro st and orange brick pi	ck	D	Н		No odour o	or staining
				E+1.6ppr E, A+1.6ppr		<u>1</u>										
- S			Q	E, QC25 Ç25A+1.4		2			Some ironstone piec		orange — — :	D	F		No odour o	r staining
				E+2.0ppn		3			grey		Juligo		·		No oddur c	i saiiiig
				A+1.5ppn E+1.9ppn	<u> </u>	-			SAND: Alluvial, fine to	o medium grained, da	irk grey	D	н		No odour o	r staining
-				E+2.5ppm	1	4			Borehole BH122A ter	minated at 4m					Slight organ	nic matter odour, no
						56									5	
methodas AD RR W CT HA DT 3 / bit she	own by	rol wa cal ha dia bla V t	ger d ler/tri shbo ble to nd au tube ink bi bit bit	re ol ger	M C pe 1	mud casing netration 2 3 4	o resistano nging to fusal water le shown	ce	U <sub>63</sub> undisturbed s D disturbed san	etration test (SPT) e recovered d cone (Pa) er		ription unified cla			consisten VS S F St VSt H Fb VL L MD D VD	cy/density index very soft soft firm stiff very stiff hard friable very loose loose medium dense dense very dense

BOREHOLE GEOTLCOV24303AF.GPJ COFFEY.GDT 16.1.13



SICEEP

Project:

Sheet 1 of 1 GEOTLCOV24303AF Office Job No.:

Borehole No.

Logged by:

BH123

PD

Infrastructure NSW Date started: 13.12.2012

Principal: 13.12.2012 Date completed:

Borehole Location: Darling Harbour, NSW ML Checked by:

					on: Da		atsu 05		1431		e: -90°	Ci	necke	ed by		ML			
	nole diameter: 100 mm								Track Easting: slope: -90°  Northing bearing:					R.L. Surface:					
				rma	tion	1001		mate	erial s	ubstance	my.				datu	m: AHD			
	_	-					1	1					×		5				
method	12		support	water	notes sample tests, e	S, C	depth	graphic log	classification symbol	material soil type: plasticity or particle charact	eristics, ionents.	condition	consistency/ density index	100 y pocket	a	structure and additional observations			
HA										MULCH, WOODCHIP AND TOPSOIL	[	0	L	П		No odour or staining			
SS/T					Е, А+19.2рр	om				FILL: Gravelly Clayey SAND: Fine grained Gravel is very fine brown and dark grey ro fragments	d, brown.	ס	Н			No odour or staining			
					E+20.1pp	om	0.5			Some white crushed concrete									
							-			Some very fine crushed orange brick fragr	nents								
					E+29.0pp	m	1.0												
					E, A+41.7pp	m	1. <u>5</u>												
										Borehole BH123 terminated at 1.7m				Ш	П				
nethos S D R V T	od		roll wa cat har dia	ger di er/tric shboi ile to id au tube	re ol ger	M C pee	2.0 pport mud casing netration 2 3 4		nil ce	notes, samples, tests       U <sub>50</sub> undisturbed sample 50mm diameter undisturbed sample 63mm diameter disturbed sample       D     disturbed sample       N     standard penetration test (SPT)       N*     SPT - sample recovered       Nc     SPT with solid cone       V     vane shear (kPa)	classification soil description based on unifie system moisture D dry M moist	on				consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable			
oit sh	iown	by	V b	bit x		<u>▼</u>	10/1/98 on date water ii water c	nflow	evel	P pressuremeter Bs bulk sample E environmental sample R refusal	W wet Wp plastic li W <sub>L</sub> liquid lin					VL very loose L loose MD medium dense D dense VD very dense			