

Golder Boreholes 2013

PF LC	-IEN ROJI	T: ECT: TION:	Ports I	North Shippir Inlet, Ca	er ates ng Development Projec airns	ct (E	EIS)	SUI INC	ORDS: S 16 ^o 56.4406'E 145 ^o 46.9976' RFACE RL: -5.10 m DATUM: LAT CLINATION: -90° DIRECTION: 000° LE DEPTH: 5.15 m		DRILI CON ⁻ LOG(ET: 1 OF 1 L RIG: HYDRA SCT TRACTOR: Geo Investigate GED: JKW DATE: 5/8/13 CKED: JJP DATE: 8/8/13
	7	-	lling		Sampling			1	Field Material Des			
MEIHOD	PENETRATION	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
				-5.10	BH1-001 U75 0.10-0.50 m Rec = 400/400 mm PP = <0.1 kg/cm^2 Sv = <0.1 kg/cm^2		*	- CH	Silty CLAY high plasticity, grey, with some shells			Inner Harbour
			- 1 - -		BH1-002 U75 1.10-1.50 m Rec = 400/400 mm PP = 0.2 kg/cm*2 Sv = < 0.1 kg/cm*2			x X X			vs	
KU	L		2 - - -	<u>2.10</u> -7.20	BH1-003 U75 2.10-2.50 m Rec = 400/400 mm Insitu Shear Vane at 2.5m Sv = 10 kPa			· · · · · · · · · · · · · · · · · · ·	trace organics			
			3		BH1-004 U75 3.10-3.50 m Rec = 440/400 mm PP = 0.6-0.8 kg/cm*2 Sv = 0.2 kg/cm*2 Insitu Shear Vane at 3.5m Sv = 15 kPa		× 1 × 1 × 1 × 1 × 1 × 1 × 1 × 1				F	
			4	<u>4.00</u> -9.10	BH1-005 U75 4.10-4.50 m Rec = 400/400 mm PP = 2.0-2.3 kg/cm^2 Sv = 0.65 kg/cm^2			· · × · · × · · ×	grey and brown, with some shells, trace organics			
			5-		BH1-006 Rec = 450/450 mm SPT 4.70-5.15 m 3, 3, 6 N=9		*	*			St	
			-	-10.25					END OF BOREHOLE @ 5.15 m TARGET DEPTH DRILLED OVER WATER			
			- 6—									
			-									

Golder

CLIENT: Ports North PROJECT: Cairns Shipping Development Project (EIS) SURFACE RL: -6.20 m DATUM: LAT LOCATION: Trinity Inlet, Cairns JOB NO: 137632122

COORDS: \$ 16° 55.5741' E 145° 47.0603' INCLINATION: -90° DIRECTION: 000° HOLE DEPTH: 4.55 m

SHEET: 1 OF 1 DRILL RIG: HYDRA SCT CONTRACTOR: Geo Investigate DATE: 30/7/13 LOGGED: JKW DATE: 8/8/13 CHECKED: JJP

F			Dril	ling		Sampling				Field Material Desc	riptic	n		—
	PENETRATION	RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
F				0	-6.20			* — — ×	СН	Sitty CLAY high plasticity, grey, with some shells			Inner Harbour	T
				_				×						
				-				x. X						
				-				× - ×						
				1 —				××				VS		
				-		BH2-001 U75 1 10-1 50 m Rec = 400/400 mm		× ×						
		L		-		PP = 0.2-0.5 kg/cm^2 Sv = <0.1 kg/cm^2		×						
				_				×						
				2—				 						
				-		BH2-002 U75 2.10-2.50 m		^ x x						
1				-		Rec = 400/400 mm PP= 0.5-0.75 kg/cm^2 Sv = 0.4 kg/cm^2		* — — ×				F		
				-				×						
				-				×_ ×						
	-			3	<u>3.10</u> -9.30	BH2-003		×		grey and yellow brown pockets, with some shells				-
				_		Rec = 450/450 mm SPT 3.10-3.55 m 5, 7, 10 N=17		×						
				-				—× 						
ileo 1 1 001		м		-				× .				VSt		
003 Dai				4 —		BH2-004		× ·						-
U/ 8.3U				-		Rec = 450/450 mm SPT 4.10-4.55 m		×						
2013 13					-10.75	6, 10, 13 N=23 Insitu Shear Vane at		 		END OF BOREHOLE @ 4.55 m				_
20/03				_		4.55m Sv= 13kPa				TARGET DEPTH DRILLED OVER WATER				
/ingrile>				5 —										-
<< Urav				-										
122.6PJ				-										
13/032				-										
L PAGE				6										
				- 0										
				-										
GAPIN				-										
GLB LOC				-										
				7 —	T	his report of borehole r	nus	st be re	ead ii	n conjunction with accompanying notes and abbreviations.	l It has	beer	n prepared for	1
24P 8 U.						echnical purposes only	', wi	ithout a	atten	npt to assess possible contamination. Any references to pot ssarily indicate the presence or absence of soil or groundwa	entia	l cont	amination are for)1a รเ ว
													1	

Golder

 CLIENT:
 Ports North

 PROJECT:
 Cairns Shipping Development Project (EIS)

 LOCATION:
 Trinity Inlet, Cairns

 JOB NO:
 137632122

COORDS: S 16^o 55.0414' E 145^o 47.1200' SURFACE RL: -7.60 m DATUM: LAT INCLINATION: -90° DIRECTION: 000° HOLE DEPTH: 5.25 m
 SHEET:
 1
 OF
 1

 DRILL RIG:
 HYDRA SCT
 CONTRACTOR:
 Geo Investigate

 LOGGED:
 JJP
 DATE:
 29/7/13

 CHECKED:
 RJ
 DATE:
 8/8/13

			Dril	ling		Sampling				Field Material Desc	riptic	on	
	MEIHUU	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
F		L		0	-7.60		-	* — ×	СН	Silty CLAY high plasticity, pale orange brown, trace organics in surfical layer			Inner Channel
				-	<u>0.40</u> -8.00	BH3-001 U75 0.40-0.80 m Rec = 400/400 mm PP= 3.3-3.7 kg/cm^2 Sv = 1.8-2.0 kg/cm^2	-	× ×		pale grey with pale orange brown pockets		F - St	-
				1 - - 2	<u>1.40</u> -9.00	BH3-002 U75 1.40-1.80 m Rec = 400/400 mm PP = 3.6-4.7 kg/cm^2 Sv = 1.6-2.4 kg/cm^2				trace lower strength seams (<100mm thickness), trace cemented nodules (<5mm)	_		- - - -
ć	צח	м		- - 3	<u>2.50</u> -10.10	BH3-003 U75 2.40-2.63 m Rec = 230/230 mm PP = 4.2-4.5 kg/cm^2 Sv = 1.75-1.90 kg/cm ² 2 BH3-004 Rec = 230/450 mm SPT 2.80-3.25 m 6, 9, 10 N=19		<pre>< x x x x x x x x x </pre>		pale green grey with pale orange brown pockets, with some interbedded seams (<50 mm thickness) comprising increased silt content	_	VSt	-
GAP 8_07.13 LB.GLB Log GAP NON-CORED FULL PAGE 137632122.GPJ <<0rawingFile>> 23/09/2013 13:07 8.30.003 Datgel Tools				- - 4 - -	<u>4.25</u> -11.85	BH3-005 Rec = 380/450 mm SPT 3.80-4.25 m 4, 7, 9 N=16				pale brown with pale grey pockets, increasing silt content with depth, trace weakly to moderately cemented nodules (<10 mm), black	_		-
< <drawingfile>> 23/09</drawingfile>				5		BH3-006 Rec = 450/450 mm SPT 4.80-5.25 m 4, 7, 10 N=17		*					-
E 137632122.GPJ				-	-12.85					END OF BOREHOLE @ 5.25 m TARGET DEPTH DRILLED OVER WATER			-
3AP NON-CORED FULL PAG				6 — - -									
GAP 8_07 13 LIB GLB Log C				- 7—		echnical purposes only	, wit	thout a	attem	n conjunction with accompanying notes and abbreviations. Ipt to assess possible contamination. Any references to pot ssarily indicate the presence or absence of soil or groundwa	entia	l cont	amination are for

Golder
Associates

 CLIENT:
 Ports North

 PROJECT:
 Carins Shipping Development Project (EIS)

 LOCATION:
 Trinity Inlet, Carins

 JOB NO:
 137632122

COORDS: S 16° 54.3445' E 145° 47.2424' SURFACE RL: -8.40 m DATUM: LAT INCLINATION: -90° DIRECTION: 000° HOLE DEPTH: 5.85 m
 SHEET:
 1
 OF
 1

 DRILL RIG:
 HYDRA SCT
 CONTRACTOR:
 Geo Investigate

 LOGGED:
 JKW
 DATE:
 31/7/13

 CHECKED:
 JJP
 DATE:
 8/8/13

L		Dri	ling		Sampling				Field Material Desc	iptic	n		
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST		GKAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
F			0	-8.40		×	< —	СН	Silty CLAY			Approx. CH 15180	Γ
			-				× <		high plasticity, grey and brown, trace fine grained sand				
			-				×						
			-			×.	<u> </u>						
			_			*							
						×	<						
			1—				<						-
			-			- ×	— × < —						
			-				×						
			-			_	×				VS		
			-			*	← - - →				v3		
			2 —			×	<						-
			-			×	<						
			_				< —^						
			_		BH4-001 U75 2.40-2.80 m Rec = 400/400 mm		×						
					PP = 0.15-0.2 kg/cm^2 Sv = <0.1 kg/cm^2	-	×						
			-				×						
1			3 —			*	~						-
			-			×	<						
			-	3.50	BH4-002	×	<						
<u>_</u>			-	-11.90	U75 3 40-3 80 m Rec = 400/400 mm PP = 0.4-0.5 kg/cm^2	×	< —		trace shell fragments				
			-		Sv = <0.1 kg/cm ²	×	<						
nau U			4 —				×				s		
00.00			-			_	×				5		
0.0			_				×						
1 2 1 2				4.50 -12.90	BH4-003 U75 4.40-4.80 m	×	<×		grey and yellow brown pockets, trace shells				
201031			-		Rec = 400/400 mm PP = 2.1-2.9 kg/cm ² Sv = 0.7 kg/cm ²	×	<						
			-		of on hypoth 2	×	<						
awiiigr			5 —			_×	×				VSt		-
	м		-				×						
			-		BH4-004	_	×						
1200/			-		Rec = 450/450 mm SPT 5.40-5.85 m		<u> </u>				VSt - H		
					7, 9, 12 N=21		<×						
			6 —	-14.25					END OF BOREHOLE @ 5.85 m TARGET DEPTH				-
			-						DRILLED OVER WATER				
			_										
ð fo			-										
			-										
			7—	<u>і</u> т	his report of borehole m	 nust	be re	ad in	l n conjunction with accompanying notes and abbreviations. I	t has	L beer	n prepared for	1
0				geot	echnical purposes only,	, with	hout a	attem	npt to assess possible contamination. Any references to pot sesarily indicate the presence or absence of soil or groundwa	entia	I cont	tamination are for)1a
5											Sintal	F	:L3

Golder
Associates

 CLIENT:
 Ports North

 PROJECT:
 Carins Shipping Development Project (EIS)

 LOCATION:
 Trinity Inlet, Carins

 JOB NO:
 137632122

COORDS: S 16° 53.2749' E 145° 47.8804' SURFACE RL: -1.70 m DATUM: LAT INCLINATION: -90° DIRECTION: 000° HOLE DEPTH: 12.10 m SHEET: 1 OF 2 DRILL RIG: HYDRA SCT CONTRACTOR: Geo Investigate LOGGED: JKW DATE: 1/8/13 CHECKED: JJP DATE: 8/8/13

	_	Dri	ling		Sampling				Field Material Desc		_		
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
F			-0	-1.70			× —	C⊩	Silty CLAY			Approx. CH 17260	Τ
			-				×	СН	medium to high plasticity, grey, with some shells				
			_				××						
							×						
			-				- x -						
			-				×						
			1 —				×						
			-				×						
			-				× — ×						
			_				×						
							<u> </u>						
			_					•					
			2—				×						-
			-				_××						
			-		BH5-001		× — — ×						
			-		U75 2.40-2.80 m Rec = 360/400 mm		<u>×</u>						
			-		PP = 0.1-0.2 kg/cm ² Sv = < 0.1 kg/cm ²		^ 						
			3—				×						
			5										
			-				<u>×</u> ×						
ß	L		-		BH5-002 U75 3.40-3.80 m		××				vs		
			-		Rec = 400/400 mm PP = < 0.1 kg/cm^2		× —						
00 I 00			-		Sv = < 0.1 kg/cm ² Insitu Shear Vane at		×						
้ การเรื่อง			4 —		3.8m Sv = 10 kPa		×						-
00.00			_				$\stackrel{\sim}{\longrightarrow}$						
0 10:0							×>						
2 0 0					BH5-003 U75 4.40-4.80 m		×						
180/0			-		Rec = 400/400 mm PP = < 0.1 kg/cm^2		×						
622			-		Sv = < 0.1 kg/cm^2		×	1					
MINGE			5 —				×						-
			-				×						
29			-		BH5-004		×	ł					
22120			_		U75 5.40-5.80 m Rec = 400/400 mm		×						
2/2					PP = < 0.1 kg/cm ² Sv = < 0.1 kg/cm ²		×						
LAG					Insitu Shear Vane at 5.8m		×						
			6 —		Sv = 10 kPa		×						-
			-				<u>~</u> _×						
			-		BH5-005		×— · — —×						
GAP			-		Rec = 450/450 mm SPT 6.40-6.85 m		×						
D D			-		0, 0, 0 N=HW		×						
			7	7.00			×						
			'						n conjunction with accompanying notes and abbreviations.				
				geot					npt to assess possible contamination. Any references to possible samily indicate the presence or absence of soil or groundw			mination. GAP gINT FN. F0)1a
اد												F	RL3

PF LC	.IENT ROJE	Г: :СТ: :ION:	Ports N Cairns	North Shippin Inlet, Ca	g Development Proje airns	ect (E	EIS)	SUF INC	ORDS: S 16º 53.2749' E 145º 47.8804' RFACE RL: -1.70 m DATUM: LAT LINATION: -90° DIRECTION: 000° LE DEPTH: 12.10 m		DRILI CON ⁻ LOG(ET: 2 OF 2 L RIG: HYDRA SCT TRACTOR: Geo Investigate GED: JKW DATE: 1/8/13 CKED: JJP DATE: 8/8/13
			ling		Sampling	-			Field Material Des			
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
			7	-8.70	BH5-006		*	CH CH CH	Silty CLAY medium to high plasticity, grey, with some shells high plasticity		S	Approx. CH 17260
			-		U75 7.40-7.90 m Rec = 400/500 mm PP = 0.4-0.5 kg/cm^2 Sv = < 0.1 kg/cm^2		× × ×	- - -				
			8—		Insitu Shear Vane at 7.9m Sv = 14 kPa		×	4				
			-		BH5-007 U75 8.40-8.80 m Rec = 400/400 mm PP = 0.2-0.3 kg/cm^2 Sv = < 0.1 kg/cm^2		× 	•				
			9—	<u>9.20</u> -10.90			×	4	ayer of sand (~200mm thickness)			
2	L		-		BH5-008 U75 9.40-9.80 m Rec = 400/400 mm PP = < 0.1 kg/cm^2 Sv = < 0.1 kg/cm^2		~	¢ 			s	
			10 — -				> > > >	4 7 7				
			-		BH5-009 U75 10.40-10.80 m Rec = 400/400 mm PP = 0.2-0.3 kg/cm^2 Sv = < 0.1 kg/cm^2		×	4				
			11 — -				$ \\ \times \\ \xrightarrow$	4 				
			-		BH5-010 U63 11.40-11.80 m Rec = 400/400 mm PP = 0.1-0.2 kg/cm^2 Sv = < 0.1 kg/cm^2		×	4				
		-	12	-13.80			×> 		END OF BOREHOLE @ 12.10 m TARGET DEPTH	_		
			-						DRILLED OVER WATER			
			- 13—									
			- 14									

Golder

CLIENT: Ports North PROJECT: Cairns Shipping Development Project (EIS) SURFACE RL: -4.00 m DATUM: LAT LOCATION: Trinity Inlet, Cairns JOB NO: 137632122

COORDS: \$ 16° 51.9879' E 145° 48.6458' INCLINATION: -90° DIRECTION: 000° HOLE DEPTH: 9.95 m

SHEET: 1 OF 2 DRILL RIG: HYDRA SCT CONTRACTOR: Geo Investigate LOGGED: JKW DATE: 2/8/13 DATE: 8/8/13 CHECKED: JJP

Di	rilling		Sampling				Field Material Desc	riptic	on	
PENETRATION RESISTANCE WATER	DEPTH (metres)	<i>DEPTH</i> RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL			CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
		-4.00	BH6-001 U75 0.00-0.40 m Rec = 400/400 mm PP = < 0.1 kg/cm^2 Sv = <0.1 kg/cm^2		×	CI- CH	Sitty CLAY medium to high plasticity, grey, with some shells			Approx. CH 19985
		-	BH6-002 U75 1.00-1.40 m Rec = 400/400 mm PP = < 0.1 kg/cm*2 Sv = <0.1 kg/cm*2 Insitu Shear Vane at 1.4m Sv = 5 kPa			- - - - - - - - -				
	2	-	BH6-003 U75 2.00-2.40 m Rec = 400/400 mm PP1 = <-0.1 kg/cm^2 Sv= <0.1 kg/cm^2			4 			VS	
L	3	-	BH6-004 U75 3.00-3.40 m Rec = 400/400 mm PP = < 0.2 kg/cm*2 Sv = <0.1 kg/cm*2 Insitu Shear Vane at 3.4m Sv = 4 kPa			- - - - -				
	4	-	BH6-005 U75 4.00-4.40 m Rec = 400/400 mm PP = < 0.1 kg/cm^2 Sv = <0.1 kg/cm^2			- - - - - -				
	5	<u>5.00</u> -9.00	BH6-006 U75 5.00-5.40 m Rec = 400/400 mm PP = 0.5-0.6 kg/cm*2 Sv = <0.1 kg/cm*2 Insitu Shear Vane at 5.4m Sv = 17 kPa			СН	high plasticity		F	
м		<u>6.00</u> -10.00	BH6-007 U75 6.00-6.40 m Rec = 400/400 mm PP = 0.8 - 1.3kg/cm^2 Sv = 0.3 kg/cm^2			4	grey and brown and yellow brown, trace fine to medium grained sand		St	

Golder

 CLIENT:
 Ports North

 PROJECT:
 Cairns Shipping Development Project (EIS)

 LOCATION:
 Trinity Inlet, Cairns

 JOB NO:
 137632122

COORDS: \$ 16° 51.9879' E 145° 48.6458' SURFACE RL: 4.00 m DATUM: LAT INCLINATION: -90° DIRECTION: 000° HOLE DEPTH: 9.95 m
 SHEET:
 2 OF 2

 DRILL RIG:
 HYDRA SCT

 CONTRACTOR:
 Geo Investigate

 LOGGED:
 JKW
 DATE:
 2/8/13

 CHECKED:
 JJP
 DATE:
 8/8/13

L				ling		Sampling			Field Material Desci				
	МЕТНОD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
				7		BH6-008 Rec = 450/450 mm SPT 7.00-7.45 m 3, 4, 6 N=10		C⊢ CH	Silty CLAY medium to high plasticity, grey, with some shells			Approx. CH 19985	
	RD	М		8 — - - -		BH6-009 Rec = 450/450 mm SPT 8.00-8.45 m 3, 5, 6 N=11 BH6-010 Rec = 450/450 mm SPT 8.50-8.95 m 4, 5, 6 N=11		- - - - - -			St		
				9	<u>9.50</u> -13.50	BH6-011 Rec = 450/450 mm SPT 9.50-9.95 m 4, 5, 10		- - - - -	with some medium to coarse grained sand				-
-				10	-13.95	N=15			END OF BOREHOLE @ 9.95 m TARGET DEPTH DRILLED OVER WATER				-
109/2013 13:01 0 30 000 Daile				- 11 - -									-
07 177 0L1 -> D10 110 110 110 10 10 10 10 10 10 10 10 1				- 12 — - -									-
				- 13— - -									-
מאר מיתו וא רוח כרה בעא ר						echnical purposes only,	without	atten	n conjunction with accompanying notes and abbreviations. I npt to assess possible contamination. Any references to pot ssarily indicate the presence or absence of soil or groundwa	entia	l cont	tamination are for)1a

Golder
Associates

 CLIENT:
 Ports North

 PROJECT:
 Carins Shipping Development Project (EIS)

 LOCATION:
 Trinity Inlet, Carins

 JOB NO:
 137632122

COORDS: S 16° 50.5967' E 145° 49.3973' SURFACE RL: -6.90 m DATUM: LAT INCLINATION: -90° DIRECTION: 000° HOLE DEPTH: 5.90 m SHEET: 1 OF 1 DRILL RIG: HYDRA SCT CONTRACTOR: Geo Investigate LOGGED: JKW DATE: 1/8/13 CHECKED: JJP DATE: 8/8/13

L			Dril	ling		Sampling				Field Material Desc	riptic	n		
	METHOD	RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
F				0	-6.90			* —	CH	Silty CLAY			Approx. CH 22715	
				-				$\overline{\times}$	СН	medium to high plasticity, grey, with some shells				
I				-				×						
				_				×						
				_				×						
				1				×						
								×						
								× —						
								<u>×</u>						
				_		BH7-001		×						
				-		PT 1.70-2.10 m Rec = 0/400 mm		$ \times$						
		L		2 —				— — ×				vs		-
				-				^×						
				-				<u>~</u> _×						
				-				××						
				-				× ×						
	RD			3 —				×						-
				-		BH7-002		×						
				-		U75 3.20-3.60 m Rec = 400/400 mm PP = 0.1-0.4 kg/cm^2								
"				-		$Sv = < 0.1 \text{ kg/cm}^2$		x						
e 100				-				×						
3 Datg				4 —				×						-
5.30.00				-	4.20 -11.10	BH7-003		— —×						
13:07				-	11.10	1175 4 20-4 60 m		×		grey and brown and yellow brown pockets				
9/2013				-		Rec = $400/400 \text{ mm}$ PP = $1.0-1.2 \text{ kg/cm}^2$ Sv = 0.2 kg/cm^2		×						
23/03				_		Insitu Shear Vane at 4.6m Sv = >28 kPa		* — —×						
grie>.				5 —				× –				St -		
LIAWI		м		-				××				VSt		
ř L								×						
27179						BH7-004 Rec = 450/450 mm		×						
13/0				_		SPT 5.45-5.90 m 4, 7, 9		^ _×						
HAGE					-12.80	N=16		×		END OF BOREHOLE @ 5.90 m	-			
				6 —						TARGET DEPTH DRILLED OVER WATER				-
COKE				-										
NON				-										
DG CAL				-										
				-										
13 1 19				7 —	т	his report of borobale -	<u> </u>	et bo rr	ad :-		 theor		n prepared for	L_
10 8					l geot	echnical purposes only	/, W	/ithout a	atterr	n conjunction with accompanying notes and abbreviations. pt to assess possible contamination. Any references to po assarily indicate the presence or absence of soil or groundwa	entia	l cont	tamination are for)1a
§						internation only al	i u i			souring indicate the presence of absence of soil of groundware		und	F	L3



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	Atterb	oerg Limit	ts Report		
Client:	Ports North			Report Number:	137632122 - 2
Client Address:	Cnr Grafton & Hartley Str	eets Cairns QLD			
Job Number:	137632122			Report Date:	23/09/2013
Project:	Cairns Shipping Develop	ment		Order Number:	-
_ocation	Trinity Inlet , Cairns			Page	1 of 22
Lab No:	13303492			Sample I	ocation
Date Sampled / Receive	ed: 12/08/2013			BH1 (0.1-0.5 m)	
Date Tested:	30/08/2013			001 U75	
Sampled By:	Golder			Sampled 29/7/13	to 5/8/13
Sample Method:	-				
Material Source:	Insitu			Spec Description:	-
For Use As:	Investigation			Lot Number:	-
Remarks:	This replaces the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History:	Oven Dried low temp.		Minimum		Maximum
Moisture Content (%):°	C 105 to 110	AS1289.2.1.1	-	86.2	-
Liquid Limit (%)		AS1289.3.1.2		75	
Plastic Limit (%)		AS1289.3.2.1		31	
Plasticity Index (%)		AS1289.3.3.1		44	
Linear Shrinkage (%)		AS1289.3.4.1		17.5	
60 02 02 02 04 04 04 04 04 04 04 04 04 04 04 04 04	С. С.	•	Linear Shrinkage State after drying	No crumbling or curling	
20 10 0 0 0 10 0 0 10 20	ML&OL 30 40 50 60 70	80 90 100			
WORLD RECORNER ACCREDITATION	This document is issued in accorrequirements.	ordance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manag red No:1961 R37-RL-25



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	Atterb	perg Limit	ts Report		
Client:	Ports North			Report Number:	137632122 - 2
Client Address:	Cnr Grafton & Hartley Str	eets Cairns QLD			
Job Number:	137632122	-		Report Date:	23/09/2013
Project:	Cairns Shipping Developr	nent		Order Number:	-
Location	Trinity Inlet , Cairns			Page	2 of 22
Lab No:	13303493			Sample L	ocation
Date Sampled / Received	: 12/08/2013			BH1 (2.1-2.5 m)	
Date Tested:	30/08/2013			003 U75	
Sampled By:	Golder			Sampled 29/7/13 t	co 5/8/13
Sample Method:	-				
Material Source:	Insitu			Spec Description:	-
For Use As:	Investigation			Lot Number:	-
Remarks:	This replaces the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History:	Oven Dried low temp.		Minimum		Maximum
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	77.8	-
Liquid Limit (%)		AS1289.3.1.2		65	
Plastic Limit (%)		AS1289.3.2.1		23	
Plasticity Index (%)		AS1289.3.3.1		42	
Linear Shrinkage (%)		AS1289.3.4.1		16.0	
50 50 40 40 40 40 CL	СН		Linear Shrinkage State after drying	No crumbling or curling	
20 10 0 0 10 0 0 10 20	- Cl MH&OH ML&OL 30 40 50 60 70	80 90 100			
WORLD RECOGNIER ACCREDITATION	This document is issued in acco requirements.	rdance with NATA's ac	creditation	Mike Sandilands -	Laboratory Managed No:1961 R37-RL-25



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	Atterb	oerg Limit	s Report		
Client:	Ports North			Report Number:	137632122 - 2
Client Address:	Cnr Grafton & Hartley Str	eets Cairns QLD			
Job Number:	137632122			Report Date:	23/09/2013
Project:	Cairns Shipping Developr	ment		Order Number:	-
_ocation	Trinity Inlet , Cairns			Page	3 of 22
_ab No:	13303494			Sample L	ocation
Date Sampled / Received	: 12/08/2013			BH1 (3.1-3.5 m)	
Date Tested:	29/08/2013			004 U75	
Sampled By:	Golder			Sampled 29/7/13 t	to 5/8/13
Sample Method:	-				
Material Source:	Insitu			Spec Description:	-
For Use As:	Investigation			Lot Number:	-
Remarks:	This replaces the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History:	Oven Dried low temp.		Minimum		Maximum
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	88.1	-
_iquid Limit (%)		AS1289.3.1.2		65	
Plastic Limit (%)		AS1289.3.2.1		27	
Plasticity Index (%)		AS1289.3.3.1		38	
_inear Shrinkage (%)		AS1289.3.4.1		14.5	
60 50 40 XBONILL 50 40 40 20 40 20 40 CL */ML 0 0 0 10 20	CH CH ML&OL 30 40 50 60 70	60 90 100	Linear Shrinkage State after drying	No crumbling or curling	
WORLD RECORMISED ACCREDITATION	This document is issued in acco requirements.	rdance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manage red No:1961 R37-RL-25



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	Atterb	oerg Limit	ts Report		
Client: Ports Nor	th			Report Number:	137632122 - 2
Client Address: Cnr Graft	on & Hartley Str	eets Cairns QLD			
Job Number: 1376321	22			Report Date:	23/09/2013
Project: Cairns Sh	ment		Order Number:	_	
Location Trinity In	let , Cairns			Page	4 of 22
Lab No: 1330349	5			Sample L	ocation
Date Sampled / Received: 12/08/20	013			BH1 (4.1-4.5 m)	
Date Tested: 30/08/20	013			005 U75	
Sampled By: Golder				Sampled 29/7/13	to 5/8/13
Sample Method:					
Material Source: Insitu				Spec Description:	-
For Use As: Investiga	ition			Lot Number:	-
	es the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests	-	Test Method	Specification	Result	Specification
	ried low temp.		Minimum		Maximum
)5 to 110	AS1289.2.1.1	-	40.6	-
Liquid Limit (%)		AS1289.3.1.2		55	
Plastic Limit (%)		AS1289.3.2.1		18	
Plasticity Index (%)		AS1289.3.3.1		37	
Linear Shrinkage (%)		AS1289.3.4.1		16.5	
60 40 50 40 50 40 50 40 50 40 50 40 50 40 50 50 40 50 50 50 40 50 50 50 50 50 50 50 50 50 5	CH CH MH8.OH		Linear Shrinkage State after drying	No crumbling or curling	
This docum requiremen		rdance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manag red No:1961 R37-RL-25



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	Atterb	erg Limit	s Report		
Client: P	orts North			Report Number:	137632122 - 2
Client Address: C	nr Grafton & Hartley Str	eets Cairns QLD			
Job Number: 1	37632122			Report Date:	23/09/2013
Project: C	airns Shipping Developn	nent		Order Number:	-
Location T	rinity Inlet , Cairns			Page	5 of 22
Lab No: 1	3303497			Sample L	ocation
Date Sampled / Received: 1	2/08/2013			BH2 (2.1-2.5 m)	
Date Tested: 2	9/08/2013			002 U75	
Sampled By: G	older			Sampled 29/7/13 t	o 5/8/13
Sample Method:					
Material Source: I	nsitu			Spec Description:	-
For Use As: I	nvestigation			Lot Number:	-
Remarks: Th	his replaces the report dated 3	/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History:	Oven Dried low temp.		Minimum		Maximum
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	40.8	-
Liquid Limit (%)		AS1289.3.1.2		64	
Plastic Limit (%)		AS1289.3.2.1		30	
Plasticity Index (%)		AS1289.3.3.1		34	
Linear Shrinkage (%)		AS1289.3.4.1		16.5	
60 50 40 40 40 50 40 40 50 40 40 40 40 40 40 40 40 40 40 40 40 40	Cl Cl Cl ML&OL LOUID LIMT CD ML&OL	80 90 100	Linear Shrinkage State after drying	No crumbling or curling	
	his document is issued in accor equirements.	rdance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manag red No:1961 R37-RL-25



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	Atterb	oerg Limit	ts Report		
Client: Ports Nor	th			Report Number:	137632122 - 2
Client Address: Cnr Graft	on & Hartley Str	eets Cairns QLD			
Job Number: 1376321 2			Report Date:	23/09/2013	
Project: Cairns Sh	ment		Order Number:	-	
Location Trinity In	let , Cairns			Page	6 of 22
Lab No: 13303498	3			Sample L	ocation
Date Sampled / Received: 12/08/20)13			BH2 (3.1-3.55 m)	
Date Tested: 30/08/20)13			003 SPT	
Sampled By: Golder				Sampled 29/7/13	to 5/8/13
Sample Method:					
Material Source: Insitu				Spec Description:	-
For Use As: Investiga	tion			Lot Number:	-
	s the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History: Oven D	ried low temp.		Minimum		Maximum
Moisture Content (%):°C 10	5 to 110	AS1289.2.1.1	-	23.2	-
Liquid Limit (%)		AS1289.3.1.2		56	
Plastic Limit (%)		AS1289.3.2.1		18	
Plasticity Index (%)		AS1289.3.3.1		38	
Linear Shrinkage (%)		AS1289.3.4.1		17.0	
60 50 40 40 40 40 40 40 40 40 40 4	CH CH MH&OH		Linear Shrinkage State after drying	No crumbling or curling	
This docume requirement		rdance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manag red No:1961 R37-RL-25



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	Atterb	erg Limit	s Report		
Client:	Ports North			Report Number:	137632122 - 2
Client Address:	Cnr Grafton & Hartley Str	eets Cairns QLD			
Job Number:	137632122			Report Date:	23/09/2013
Project:	Cairns Shipping Developn	nent		Order Number:	-
Location	Trinity Inlet , Cairns			Page	7 of 22
Lab No:	13303499			Sample L	ocation
Date Sampled / Received: :	12/08/2013			BH3 (0.4-0.8 m)	
Date Tested:	29/08/2013			001 U75	
Sampled By:	Golder			Sampled 29/7/13 t	o 5/8/13
Sample Method:	-				
Material Source:	Insitu			Spec Description:	-
For Use As:	Investigation			Lot Number:	-
Remarks:	This replaces the report dated 3	6/09/2013		Spec Number:	
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History:	Oven Dried low temp.		Minimum		Maximum
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	36.1	-
Liquid Limit (%)		AS1289.3.1.2		62	
Plastic Limit (%)		AS1289.3.2.1		19	
Plasticity Index (%)		AS1289.3.3.1		43	
Linear Shrinkage (%)		AS1289.3.4.1		17.5	
60 50 40 40 40 40 40 40 40 40 40 40 40 40 40	Cl Cl ML&OL 0 40 50 60 70	80 90 100	Linear Shrinkage State after drying	No crumbling or curling	
	This document is issued in acco requirements.	rdance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manag red No:1961 R37-RL-25



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1	Atterb	erg Limit	ts Report		
Client: Ports North				Report Number:	137632122 - 2
Client Address: Cnr Grafton &	Hartley Stre	eets Cairns QLD			
Job Number: 137632122				Report Date:	23/09/2013
Project: Cairns Shippir	ng Developm	ent		Order Number:	-
Location Trinity Inlet ,	Cairns			Page	8 of 22
Lab No: 13303500				Sample L	ocation
Date Sampled / Received: 12/08/2013				BH3 (1.4-1.8 m)	
Date Tested: 29/08/2013				002 U75	
Sampled By: Golder				Sampled 29/7/13	to 5/8/13
Sample Method: -					
Material Source: Insitu				Spec Description:	-
For Use As: Investigation				Lot Number:	-
Remarks: This replaces the	report dated 3/	/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History: Oven Dried I	ow temp.		Minimum		Maximum
Moisture Content (%):°C 105 to	110	AS1289.2.1.1	-	33.3	-
Liquid Limit (%)		AS1289.3.1.2		69	
Plastic Limit (%)		AS1289.3.2.1		20	
Plasticity Index (%)		AS1289.3.3.1		49	
Linear Shrinkage (%)		AS1289.3.4.1		19.5	
60 40 40 40 40 40 40 40 40 40 4	CH MH&OH m		Linear Shrinkage State after drying	No crumbling or curling	
This document is requirements.	issued in accore	dance with NATA's ac	creditation	Mike Sandilands -	Laboratory Manag R37-RL-25



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	Atterb	oerg Limit	s Report		
Client: Ports Nor	th			Report Number:	137632122 - 2
Client Address: Cnr Graft	on & Hartley Str	eets Cairns QLD			
Iob Number: 1376321 2	22			Report Date:	23/09/2013
Project: Cairns Sh	ipping Developr	nent		Order Number:	-
Location Trinity In	let , Cairns			Page	9 of 22
Lab No: 1330350 :	1			Sample L	ocation
Date Sampled / Received: 12/08/20	013			BH3 (4.8-5.25 m)	
Date Tested: 29/08/20	013			006 SPT	
Sampled By: Golder				Sampled 29/7/13	to 5/8/13
Sample Method:					
Material Source: Insitu				Spec Description:	-
For Use As: Investiga	tion			Lot Number:	-
	s the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
	ried low temp.		Minimum		Maximum
)5 to 110	AS1289.2.1.1	-	29.8	-
Liquid Limit (%)		AS1289.3.1.2		61	
Plastic Limit (%)		AS1289.3.2.1		18	
Plasticity Index (%)		AS1289.3.3.1		43	
Linear Shrinkage (%)		AS1289.3.4.1		18.5	
60 50 40 40 20 40 40 40 40 40 40 40 40 40 40 40 40 40	CH CH MH&OH	80 90 100	Linear Shrinkage State after drying	No crumbling or curling	
This docume requirement		rdance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manage red No:1961 R37-RL-25



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Α	tterberg Limit	ts Report		
Client: Ports North			Report Number:	137632122 - 2
Client Address: Cnr Grafton & Ha	artley Streets Cairns QLD			
Job Number: 137632122			Report Date:	23/09/2013
Project: Cairns Shipping	Development		Order Number:	-
Location Trinity Inlet , Ca	irns		Page 1	10 of 22
Lab No: 13303502			Sample L	ocation
Date Sampled / Received: 12/08/2013			BH3 (2.4-2.63 m)	
Date Tested: 29/08/2013			003 U75	
Sampled By: Golder			Sampled 29/7/13	to 5/8/13
Sample Method:				
Material Source: Insitu			Spec Description:	-
For Use As: Investigation			Lot Number:	-
	ort dated 3/09/2013		Spec Number:	-
Plasticity Tests	Test Method	Specification	Result	Specification
Sample History: Oven Dried low	temp.	Minimum		Maximum
Moisture Content (%):°C 105 to 11	O AS1289.2.1.1	-	30.4	-
Liquid Limit (%)	AS1289.3.1.2		70	
Plastic Limit (%)	AS1289.3.2.1		26	
Plasticity Index (%)	AS1289.3.3.1		44	
Linear Shrinkage (%)	AS1289.3.4.1		18.0	
60 40 40 40 40 40 40 40 40 40 4	MH&OH	Linear Shrinkage State after drying	No crumbling or curling	
This document is iss requirements.	ued in accordance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manag red No:1961 R37-RL-25



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	Atterb	perg Limit	ts Report		
Client: Ports No	orth			Report Number:	137632122 - 2
Client Address: Cnr Graf	ton & Hartley Str	reets Cairns QLD			
Job Number: 137632 1	22			Report Date:	23/09/2013
Project: Cairns S	hipping Developr	ment		Order Number:	-
Location Trinity I	nlet , Cairns			Page 1	11 of 22
Lab No: 133035 0)3			Sample L	ocation
Date Sampled / Received: 12/08/2	2013			BH4 (2.4-2.8 m)	
Date Tested: 30/08/2	2013			001 U75	
Sampled By: Golder				Sampled 29/7/13	to 5/8/13
Sample Method: -					
Material Source: Insitu				Spec Description:	-
For Use As: Investig	ation			Lot Number:	-
Remarks: This replace	es the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History: Oven I	Dried low temp.		Minimum		Maximum
Moisture Content (%):°C 1	.05 to 110	AS1289.2.1.1	-	68.2	-
Liquid Limit (%)		AS1289.3.1.2		76	
Plastic Limit (%)		AS1289.3.2.1		25	
Plasticity Index (%)		AS1289.3.3.1		51	
Linear Shrinkage (%)		AS1289.3.4.1		17.5	
60 40 40 40 40 40 40 40 40 40 4	CH CH MH8.OH		Linear Shrinkage State after drying	No crumbling or curling	
This docum requireme		ordance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manag red No:1961 R37-RL-25



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	Atterb	oerg Limit	ts Report		
Client: Ports I	North			Report Number:	137632122 - 2
Client Address: Cnr Gr	afton & Hartley Str	eets Cairns QLD			
Job Number: 13763	2122			Report Date:	23/09/2013
Project: Cairns	Shipping Developr	ment		Order Number:	-
Location Trinity	Inlet , Cairns			Page :	12 of 22
Lab No: 13303	504			Sample L	ocation
Date Sampled / Received: 12/08	/2013			BH4 (3.4-3.8 m)	
Date Tested: 29/08	/2013			002 U75	
Sampled By: Golder				Sampled 29/7/13	to 5/8/13
Sample Method: –					
Material Source: Insitu				Spec Description:	-
For Use As: Invest	igation			Lot Number:	-
Remarks: This rep	laces the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History: Over	n Dried low temp.		Minimum		Maximum
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	71.5	-
Liquid Limit (%)		AS1289.3.1.2		70	
Plastic Limit (%)		AS1289.3.2.1		23	
Plasticity Index (%)		AS1289.3.3.1		47	
Linear Shrinkage (%)		AS1289.3.4.1		18.0	
60 50 40 40 40 40 40 40 40 40 40 4	CH CH &OL 0 50 60 70		Linear Shrinkage State after drying	No crumbling or curling	
This doc requirem	ument is issued in acco nents.	rdance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manag



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	Atterb	erg Limit	s Report		
Client: P	Ports North			Report Number:	137632122 - 2
Client Address: C	Cnr Grafton & Hartley Str	eets Cairns QLD			
Job Number: 1	37632122			Report Date:	23/09/2013
Project: C	airns Shipping Developn	nent		Order Number:	-
Location T	rinity Inlet , Cairns			Page 1	L3 of 22
Lab No: 1	3303505			Sample L	ocation
Date Sampled / Received: 1	2/08/2013			BH4 (4.4-4.8 m)	
Date Tested: 3	80/08/2013			003 U75	
Sampled By:	Golder			Sampled 29/7/13 t	o 5/8/13
Sample Method:					
Material Source:	nsitu			Spec Description:	-
For Use As: I	nvestigation			Lot Number:	-
Remarks: T	his replaces the report dated 3	/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History:	Oven Dried low temp.		Minimum		Maximum
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	44.0	-
Liquid Limit (%)		AS1289.3.1.2		66	
Plastic Limit (%)		AS1289.3.2.1		21	
Plasticity Index (%)		AS1289.3.3.1		45	
Linear Shrinkage (%)		AS1289.3.4.1		18.0	
60 50 40 Xao Mini 20 20 20 20 20 20 20 20 20 20 20 20 20 2	С СН		Linear Shrinkage State after drying	No crumbling or curling	
	ML&OL 40 50 60 70 LIQUE LIMT		creditation	APPROVED	SIGNATORY
	equirements.			Mike Sandilands - NATA Acco FORM NUMBER:	Laboratory Manag red No:1961 R37-RL-25



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	Atterb	oerg Limit	s Report		
Client:	Ports North			Report Number:	137632122 - 2
Client Address:	Cnr Grafton & Hartley Str	eets Cairns QLD			
Job Number:	137632122			Report Date:	23/09/2013
Project:	Cairns Shipping Developr	ment		Order Number:	-
_ocation	Trinity Inlet , Cairns			Page 1	L4 of 22
_ab No:	13303507			Sample L	ocation
Date Sampled / Received:	12/08/2013			BH5 (2.4-2.8 m)	
Date Tested:	29/08/2013			001 U75	
Sampled By:	Golder			Sampled 29/7/13 t	o 5/8/13
Sample Method:	_				
Material Source:	Insitu			Spec Description:	-
For Use As:	Investigation			Lot Number:	-
Remarks:	This replaces the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History:	Oven Dried low temp.		Minimum		Maximum
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	54.6	-
_iquid Limit (%)		AS1289.3.1.2		49	
Plastic Limit (%)		AS1289.3.2.1		21	
Plasticity Index (%)		AS1289.3.3.1		28	
_inear Shrinkage (%)		AS1289.3.4.1		12.0	
60 50 40 40 40 40 40 40 40 40 40 40 40 40 40	Cl CH MH&OH	80 90 100	Linear Shrinkage State after drying	No crumbling or curling	
	This document is issued in acco requirements.	rdance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manage red No:1961 R37-RL-25



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	Atterb	oerg Limit	s Report		
Client:	Ports North			Report Number:	137632122 - 2
Client Address:	Cnr Grafton & Hartley Str	eets Cairns QLD			
Job Number:	137632122			Report Date:	23/09/2013
Project:	Cairns Shipping Developr	ment		Order Number:	-
_ocation	Trinity Inlet , Cairns			Page 1	L5 of 22
_ab No:	13303509			Sample L	ocation
Date Sampled / Received	: 12/08/2013			BH5 (7.4-7.9 m)	
Date Tested:	30/08/2013			006 U75	
Sampled By:	Golder			Sampled 29/7/13 t	co 5/8/13
Sample Method:	-				
Material Source:	Insitu			Spec Description:	-
For Use As:	Investigation			Lot Number:	-
Remarks:	This replaces the report dated 3	8/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History:	Oven Dried low temp.		Minimum		Maximum
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	69.4	-
iquid Limit (%)		AS1289.3.1.2		79	
Plastic Limit (%)		AS1289.3.2.1		28	
Plasticity Index (%)		AS1289.3.3.1		51	
_inear Shrinkage (%)		AS1289.3.4.1		18.5	
60 50 40 40 20 10 20 40 40 40 40 40 40 40 40 40 40 40 40 40	CH CH ML&OL 30 40 50 60 70		Linear Shrinkage State after drying	No crumbling or curling	
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	Atterb	perg Limit	ts Report		
Client:	Ports North			Report Number:	137632122 - 2
Client Address:	Cnr Grafton & Hartley Str	reets Cairns QLD			
Job Number:	137632122			Report Date:	23/09/2013
Project:	Cairns Shipping Develop	ment		Order Number:	-
Location	Trinity Inlet , Cairns			Page	16 of 22
Lab No:	13303510			Sample I	ocation
Date Sampled / Receive	d: 12/08/2013			BH5 (10.4-10.8 m)
Date Tested:	29/08/2013			009 U75	
Sampled By:	Golder			Sampled 29/7/13	to 5/8/13
Sample Method:	-				
Material Source:	Insitu			Spec Description:	-
For Use As:	Investigation			Lot Number:	-
Remarks:	This replaces the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History:	Oven Dried low temp.		Minimum		Maximum
Moisture Content (%):°C	2 105 to 110	AS1289.2.1.1	-	58.0	-
Liquid Limit (%)		AS1289.3.1.2		71	
Plastic Limit (%)		AS1289.3.2.1		23	
Plasticity Index (%)		AS1289.3.3.1		48	
Linear Shrinkage (%)		AS1289.3.4.1		16.5	
50			Linear Shrinkage State after drying	No crumbling or curling	
	СН				
20	CL CI MH&OH				
10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ML&OL 30 40 50 60 70 LIQUELMT	80 90 100			
NATA	This document is issued in acco	rdance with NATA's ac	creditation		SIGNATORY
	requirements.	nuance with NATA S ac		Mike Sandilands -	Laboratory Manag red No:1961
				NATA ACC	



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	Atterb	erg Limit	ts Report		
Client: Ports Nort	:h			Report Number:	137632122 - 2
Client Address: Cnr Grafto	on & Hartley Str	eets Cairns QLD			
Job Number: 13763212	2			Report Date:	23/09/2013
Project: Cairns Shi	pping Developr	nent		Order Number:	-
Location Trinity Inl	et , Cairns			Page	17 of 22
Lab No: 13303512				Sample I	ocation
Date Sampled / Received: 12/08/20	13			BH6 (2.0-2.4 m)	
Date Tested: 30/08/20	13			003 U75	
Sampled By: Golder				Sampled 29/7/13	to 5/8/13
Sample Method:					
Material Source: Insitu				Spec Description:	-
For Use As: Investigat	ion			Lot Number:	-
Remarks: This replaces	the report dated 3	8/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History: Oven Dr	ied low temp.		Minimum		Maximum
Moisture Content (%):°C 10	5 to 110	AS1289.2.1.1	-	49.6	-
Liquid Limit (%)		AS1289.3.1.2		46	
Plastic Limit (%)		AS1289.3.2.1		22	
Plasticity Index (%)		AS1289.3.3.1		24	
Linear Shrinkage (%)		AS1289.3.4.1		9.5	
60 50 40 40 40 40 CL CL CL CL ML&OL 0 0 10 20 30 40 40 40 40 40 40 40 40 40 4	CH CH MH&OH		Linear Shrinkage State after drying	No crumbling or curling	
<u>^</u>		rdance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manag



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	Atterb	oerg Limit	s Report		
Client: Ports N	North			Report Number:	137632122 - 2
Client Address: Cnr Gra	afton & Hartley Str	eets Cairns QLD			
Job Number: 13763 :	2122			Report Date:	23/09/2013
Project: Cairns	Shipping Developr	nent		Order Number:	-
Location Trinity	Inlet , Cairns			Page 1	L8 of 22
Lab No: 13303	513			Sample L	ocation
Date Sampled / Received: 12/08,	/2013			BH6 (5.0-5.4 m)	
Date Tested: 30/08	/2013			006 U75	
Sampled By: Golder				Sampled 29/7/13 t	co 5/8/13
Sample Method:					
Material Source: Insitu				Spec Description:	-
For Use As: Invest	igation			Lot Number:	-
Remarks: This repl	aces the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History: Over	n Dried low temp.		Minimum		Maximum
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	81.9	-
_iquid Limit (%)		AS1289.3.1.2		61	
Plastic Limit (%)		AS1289.3.2.1		22	
Plasticity Index (%)		AS1289.3.3.1		39	
Linear Shrinkage (%)		AS1289.3.4.1		15.5	
80 50 40 Xaon Xaon Xaon Xaon Xaon Xaon Xaon Xaon			Linear Shrinkage State after drying	No crumbling or curling	
This doc requirem	ument is issued in acco ients.	rdance with NATA's ac	creditation	Mike Sandilands -	SIGNATORY Laboratory Manage red No:1961 R37-RL-25



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	Atterb	perg Limit	ts Report		
Client: Ports Nor	th			Report Number:	137632122 - 2
Client Address: Cnr Graft	on & Hartley Str	eets Cairns QLD			
Job Number: 1376321 2	22			Report Date:	23/09/2013
Project: Cairns Sh	ipping Developr	nent		Order Number:	-
Location Trinity In	let , Cairns			Page	19 of 22
Lab No: 1330351 4	1			Sample I	ocation
Date Sampled / Received: 12/08/20	013			BH6 (6.0-6.4 m)	
Date Tested: 30/08/20	013			007 U75	
Sampled By: Golder				Sampled 29/7/13	to 5/8/13
Sample Method:					
Material Source: Insitu				Spec Description:	-
For Use As: Investiga	tion			Lot Number:	-
Remarks: This replace	s the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History: Oven D	ried low temp.		Minimum		Maximum
Moisture Content (%):°C 10)5 to 110	AS1289.2.1.1	-	45.0	-
Liquid Limit (%)		AS1289.3.1.2		59	
Plastic Limit (%)		AS1289.3.2.1		21	
Plasticity Index (%)		AS1289.3.3.1		38	
Linear Shrinkage (%)		AS1289.3.4.1		16.0	
50 40 40 40 CL Cl	СН		Linear Shrinkage State after drying	No crumbling or curling	
D 20 20 10 CL CL CL Cl ML&OL 0 0 10 20 30 40	MH&OH-	80 90 100			
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	Atterb	erg Limit	ts Report		
Client:	Ports North			Report Number:	137632122 - 2
Client Address:	Cnr Grafton & Hartley Str	eets Cairns QLD			
Job Number:	137632122			Report Date:	23/09/2013
Project:	Cairns Shipping Developr	nent		Order Number:	-
Location	Trinity Inlet , Cairns			Page 2	20 of 22
Lab No:	13303516			Sample L	ocation
Date Sampled / Received:	12/08/2013			BH7 (3.2-3.6 m)	
Date Tested:	29/08/2013			002 U75	
Sampled By:	Golder			Sampled 29/7/13	o 5/8/13
Sample Method:	-				
Material Source:	Insitu			Spec Description:	-
For Use As:	Investigation			Lot Number:	-
Remarks:	This replaces the report dated 3	3/09/2013		Spec Number:	-
Plasticity Tests		Test Method	Specification	Result	Specification
Sample History:	Oven Dried low temp.		Minimum		Maximum
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	55.2	-
Liquid Limit (%)		AS1289.3.1.2		48	
Plastic Limit (%)		AS1289.3.2.1		19	
Plasticity Index (%)		AS1289.3.3.1		29	
Linear Shrinkage (%)		AS1289.3.4.1		12.5	
	СІ		Linear Shrinkage State after drying	No crumbling or curling	
	ML&OL 30 40 50 60 70			APPROVED	SIGNATORY
WORLD RECOGNISED	This document is issued in acco requirements.	ruance with NATA'S ac	creditation	Mike Sandilands - NATA Acc FORM NUMBER:	Laboratory Manag red No:1961 R37-RL-25



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	Atterb	oerg Limit	s Report			
Client:	Report Number:	137632122 - 2				
Client Address:	Cnr Grafton & Hartley Str	eets Cairns QLD				
Job Number:	137632122			Report Date:	23/09/2013	
Project:	Cairns Shipping Develop	nent		Order Number:	-	
Location	Trinity Inlet , Cairns			Page 2	21 of 22	
Lab No:	13303517	Sample Location				
Date Sampled / Received:	ed / Received: 12/08/2013				BH7 (4.2-4.6 m)	
Date Tested:	29/08/2013			003 U75		
Sampled By:	Golder			Sampled 29/7/13 t	to 5/8/13	
Sample Method:	-					
Material Source:	Insitu			Spec Description:	-	
For Use As: Investigation				Lot Number: -		
Remarks:	This replaces the report dated 3	3/09/2013		Spec Number:	-	
Plasticity Tests		Test Method	Specification	Result	Specification	
Sample History:	Oven Dried low temp.		Minimum		Maximum	
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	43.3	-	
Liquid Limit (%)		AS1289.3.1.2		56		
Plastic Limit (%)		AS1289.3.2.1		19		
Plasticity Index (%)		AS1289.3.3.1		37		
Linear Shrinkage (%)		AS1289.3.4.1		15.5		
40 40 40 40 40 40 40 40 40 40	CI CI MH&OH MH&OH MH&OH MH&OH		Linear Shrinkage State after drying	No crumbling or curling		
WORD RECORNED ACCREDITATION	Mike Sandilands -	SIGNATORY Laboratory Manag red No:1961 R37-RL-25				



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	Atterb	erg Limit	s Report			
Client: Po	orts North			Report Number:	137632122 - 2	
Client Address: Ci	nr Grafton & Hartley Str	eets Cairns QLD				
Job Number: 13	37632122			Report Date:	23/09/2013	
Project: Ca	airns Shipping Developn	nent		Order Number:	-	
Location Tr	rinity Inlet , Cairns			Page 2	22 of 22	
Lab No: 13	3303518	Sample Location				
Date Sampled / Received: 12	e Sampled / Received: 12/08/2013				BH7 (5.45-5.9 m)	
Date Tested: 29	9/08/2013			004 SPT		
Sampled By: Go	older			Sampled 29/7/13 t	o 5/8/13	
Sample Method:						
Material Source: Ir	nsitu			Spec Description:	-	
For Use As: Ir	nvestigation			Lot Number: -		
Remarks: Th	nis replaces the report dated 3	/09/2013		Spec Number:	-	
Plasticity Tests		Test Method	Specification	Result	Specification	
Sample History:	Oven Dried low temp.		Minimum		Maximum	
Moisture Content (%):°C	105 to 110	AS1289.2.1.1	-	22.8	-	
Liquid Limit (%)		AS1289.3.1.2		40		
Plastic Limit (%)		AS1289.3.2.1		14		
Plasticity Index (%)		AS1289.3.3.1		26		
Linear Shrinkage (%)		AS1289.3.4.1		12.0		
60 50 40 Xadru LUUS 90 20 10 0 0 10 20 30	CH CH ML&OL HOUD LIMT CO CH CH CH CH CH CH CH CH CH CH CH CH CH	80 90 100	Linear Shrinkage State after drying	No crumbling or curling		
	Mike Sandilands -	SIGNATORY Laboratory Manag red No:1961 R37-RL-25				