

Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project:

Location: Perth

Area Description:

Component:

Keane Road Pressure Main

Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

Test Procedures: AS1289.3.6.1 Sample Number 5029/S/6514

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 25/08/2015

Material Source

Sample Location

5029/R/1804-1

A11 Sample 2 Depth 0.2m

Page 1 of 1

5029/P/256

Area

Test Request

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-500		PAR	TICLE	SIZ	E DIS	TRIBL	TION	GR/	\PH	1		
75.0		100		100	I				/	_	_				_	
37.5		100		00	-			1								
19.0		100		90												
9.5		100		80	-			1								
4.75		100		ou												
2.36		100		70				 								
1.18		100			-											
0.600		93		Percent Passing (%)	1											
0.425		72		5 up			- 1									
0.300		43		% 50	-		-1									
0.150		23		100	1		-1									
0.075		20		9 40	4-		1									
					1		/									
				30		1										
				-24	1	1										
				20	•											
				10	-											
				10	4											
				0	1											
				9	0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.50	13.2	26.5	37.5	53.0
					-		100	100	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax:**

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Material Source

Component:

Report Number: 5029/R/1839-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A11 Sample 3 Depth 0.5m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6515

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled

Date Tested 25/08/2015

Sample Location
Test Request

Area

Material Type Yellow SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-527	ď	PAR	TICLE	SIZ	E DIS	TRIBU	TION	GRA	APH			
75.0		100		100	I				-	_	~	7			_	
37.5		100		22	-			1								
19.0		100		90				1								
9.5		100		00	-			/								
4.75		100		80				7								
2.36		100		70			_ /									
1.18		99			-											
0.600		94		€ 60			1									
0.425		80		5	1		/									
0.300		60		\$ 50	-		/									
0.150		37		H. F.		/										
0.075		30		Percent Passing (%)	4-	-/										
				М	į,	/										
				30	-											
				Cea												
				20	1											-
				16	1											
				10												
				0												
				0	0	0	0.0	0 0	7	N	4 0	0 0	9300 53 5	÷ 12	ωο	J >
					0.075	0.150	30	0,600	1.18	2,36	75	2.0	13.2	26.5	7.5	2 9
					01	9	9,1	. 9	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g gul-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1840-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A11 Sample 4 Depth 0.8m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6516

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

Material Source -

Sample Location

Area

Test Request

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	PARTICLE SIZE DISTRIBUTION GRAPH
75.0		100		100
37.5		100		**
19.0		100		90 -
9.5		100		80
4.75		100		00 1
2.36		100		70 -
1.18		96		
0.600		87		60
0.425		72		Die .
0.300		49		50 -
0.150		30		Tel .
0.075		24		90 - 60 - 60 - 60 - 60 - 60 - 60 - 60 -
				30 -
				20 -
				10
				10
				o - իլ է եր իր եր եր
				53.0 37.5 26.5 19.0 13.2 9.5 6.7 4.75 2.36 0.600 0.425 0.300 0.150
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g gul-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6517

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

AS1289.3.6.1

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 28/08/2015

Material Source -

Sample Location

5029/R/1805-1

A11 Sample 5 Depth 1.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Test Request Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	China		PAR	TICL	E SIZ	E DIS	TRIBU	TION	GRA	PH			
75.0		100		100	I				-		_	7	_	_		
37.5		100		00	-				/							
19.0		100		90				1								
9.5		100		80				/								
4.75		100		.00				1								
2.36		100		70				1								
1.18		97			-											
0.600		88		60 50 40	1		_ /									
0.425		72		Đuị.			- /									
0.300		50		% 50	-		1									
0.150		30		10			/									
0.075		23		9 40	4-		/_									
				4	1	-/										
				30		1										
				100	/											
				20												
				10	1											
				10	1											
				0	1											
				0	0.075	0.150	0.300	0.600	1.18	2,36	4.75	2.5	19,0	26.5	53.0	1.67
							157	V. 158	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Material Source

Component:

·

Report Number: 5029/R/1806-1

Project Number: 5029/P/256

Lot Number: A11 Sample 6 Depth1.3m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6518

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 28/08/2015

Date Tested 28/08/2015

Sample Location

Area

Test Request

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	PARTICLE SIZE DISTRIBUTION GRAPH
75.0		100		100
37.5		100		
19.0		100		90 -
9.5		100		90
4.75		100		80
2.36		100		70 -
1.18		99		
0.600		92		Percent Passing (%) 60 - 60 - 60 - 60 - 60 - 60 - 60 - 60
0.425		76		g .
0.300		55		50 -
0.150		37		TE .
0.075		30		8 40 -
				a /
				30 -
				20
				76
				10
				0 1,
				75.0 53.0 37.5 26.5 19.0 13.2 9.5 4.75 4.75 2.36 0.425 0.300 0.425 0.300

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god

AS Sieve Size (mm)



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1841-1

Project Number: 5029/P/256

Lot Number: A11 Sample 7 Depth 1.5m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6519

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 28/08/2015

Test Request

Area

Material Source - Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	PARTICLE SIZE DISTRIBUTION GRAPH
75.0		100		100
37.5		100		
19.0		100		90 -
9.5		100		80
4.75		100		00
2.36		100		70 -
1.18		97		
0.600		88		± 60 −
0.425		72		g .
0.300		49		50 -
0.150		31		2
0.075		26		90 - Solution 40 - 30 - 30 - 30 - 30 - 30 - 30 - 30 -
				20
				10
				75.0 53.0 37.5 26.5 19.0 13.2 9.5 0.600 0.425 0.300 0.150
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

5029/R/1842-1

A11 Sample 9 Depth 2.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

07/09/2015

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:
Test Procedures:

Sample Number

AS1289.3.6.1

5029/S/6521 Sample Location

Area

Sampling Method Tested As Received Test Request

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 28/08/2015

Date 163164 20/00/20

Material Source - Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		PAR	RTICLE	SIZ	E DIS	TRIBU	MOITL	GRA	PH		
75.0		100		100				-	_	_	7	-	_	_
37.5		100		45.				/						
19.0		100		90 -			1							
9.5		100		20										
4.75		100		80 -			1							
2.36		100		70 -			/							
1.18		99					-							
0.600		88		€ 60 -		/								
0.425		67		8		- /								
0.300		41		% 50 -										
0.150		25		12		- /								
0.075		21		Percent Passing (%)	_	-								
				8		/								
				30 -										
					1									
				20 -	-									
				10 -										
				0										
					0 0	0.0	0 0	+	N	2.4	n wo t	1 12	νω	Ø1 >
					0.150	300	0.600	1.18	2,36	75	2.5	2 9	6.5	53.0
						100	, 0	AC CIA	ve Size	a Course				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g gul-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Client Reference/s: 61/32259 Report Date / Page: 07/09/2015

5029/R/1843-1

A11 Sample 10 Depth 2.3m

Page 1 of 1

5029/P/256

5029/T/1144

08 9721 2348

Test Procedures: AS1289.3.6.1 Sample Number 5029/S/6522

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 28/08/2015

Material Source

Sample Location Test Request

Report Number:

Project Number:

Internal Test Request:

Lot Number:

Area

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E S	IZE	DIS	TRIB	UTI	ON	GRA	APF	+			
75.0		100		100	I					-	_		_				_	_	-
37.5		100		-	-														
19.0		100		90				10	1										
9.5		100		80															
4.75		100		.00				1											
2.36		100		70															
1.18		99			+			Į											
0.600		87		Percent Passing (%) 40	1			1											
0.425		65		5				1											
0.300		37		% 50	-														
0.150		21		15	1		- 1												
0.075		18		9 40	4-		-1												_
					1		1												
				30	1		/												
					1	/													
				20	-														
				16	H														
				10	1														
				0	7														
				,	0.075	0.150	0,300	0.425	0.600	1.18	2,36	1./0	6.7	9.5	13.2	19,0	37.5	53.0	mc/ 3
										AS Si	eve Si	ie (m	m)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax**:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1808-1

A11 Sample 11 Depth 2.4m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6523
Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 28/08/2015

Material Source -

6523 Sample Location

Test Request

Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICLE	SIZ	E DIS	TRIBL	MOIT	GR/	APH			
75.0		100		1	00				-		_				_	
37.5		100			00				/							
19.0		100			90 -			/								
9.5		100			80			1								
4.75		100			00											
2.36		100			70 -											
1.18		99						1								
0.600		84		Percent Passing (%)	60		-	1_								
0.425		60		5	200		1									
0.300		29		985	50 -		_									
0.150		8		DE F			- 1									
0.075		6		P) CB	40 -		-1									
				ď												
					30 -		1									
							/									
				17	20		/									-
					14	1										
					10 -											
					0											
					0.075	0.150	0.30	0.600	1.18	2,36	4.75	2.0	13.2	26.5	53.0	-
					cu.	0	0.0	0.0		eve Size					1	

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g zul-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Area Description:

Component:

Report Number:

Project Number: 5029/P/256

Lot Number: A12 Sample 1 Depth 0.0m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

5029/R/1844-1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6525

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 28/08/2015

Material Source Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	200	PART	TCLE S	IZE DIS	TRIBU	TION	GRAI	PH	
75.0		100		100			/	_	_			_
37.5		100		46								
19.0		100		90 -								
9.5		100		90		/						
4.75		100		80 -								
2.36		100		70 -								
1.18		100				- 1						
0.600		95		€ 60 -								
0.425		66		E .								
0.300		20		% 50 -		_						
0.150		5		12								
0.075		2		Percent Passing (%)								
				A								
				30 -		1						
				20 -		1						
				40	1							
				10 -	/							
				0								
				0 +	0	00	= +	N	4 0	, 70 H	12 12	8527
				0.075	0.150	0.425	1.18	2,36	4.75	9.5	0.5	75.0 53.0 37.5
				O.	9	9.00		eve Size	e (mm)			

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6526

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 28/08/2015

Material Source -

Report Number: 5029/R/1809-1

Project Number: 5029/P/256

Lot Number: A12 Sample 2 Depth 0.3m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

Page 1 of 1

Sample Location

Test Request

Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	563	PART	ICLE ST	ZE DIS	TRIBU	TION	GRA	PH	
75.0		100		100			/	_	_		7	_
37.5		100		46		Ĩ						
19.0		100		90 -		- 1						
9.5		100		90								
4.75		100		80 -								
2.36		100		70 -								
1.18		100										
0.600		95		€ 60 -		- 1						
0.425		64		5								
0.300		20		% 50 -								
0.150		4		at a		- 1						
0.075		2		Percent Passing (%)		-1-						
				-								
				30 -		1						
						1						
				20 -		1						
				40	/							
				10 -	/							
				0	_							
					0	000	-	N	4 0	9 7	— №	857
				0.075	0.150	0.600 0.425 0.300	1.18	2,36	4.75	9.5	9.65	75.0 53.0 37.5
				O.	9	2 0. 0		ve Size	(mm)			

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g July



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax:** 08 9721 2348

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6527

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

AS1289.3.6.1

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 27/08/2015

Material Source -

Report Number: 5029/R/1810-1

Project Number: 5029/P/256

Lot Number: A12 Sample 3 Depth 0.4m

Sample Location

Internal Test Request: 5029/T/1144
Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

9/2015 Page 1 of 1

Test Request

Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBL	TION	GR/	APH	ř.		
75.0		100		1	00 —				/	_	_				_	
37.5		100			00			1								
19.0		100			90 -			- /								
9.5		100			80											
4.75		100		2	00											
2.36		100			70 -			1								
1.18		100						1								
0.600		94		8	60			_								
0.425		72		5												
0.300		34		SSE	50 -											
0.150		8		DE F	-		- 1									
0.075		3		Percent Passing (%)	40 -		-1									
				P	1		Į.									
				- 1	30 -		/									
							/									
				- 7	20 -	1										
					4	- /										
				15	10 -											
					0											
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.0	13.2	26.5	37.5	53.0
					OI.	0	0	or O	AC CIA	wa Class	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Material Source

Report Number: 5029/R/1811-1

Project Number: 5029/P/256

Lot Number: A12 Sample 4 Depth 0.8m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6528

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled 27/08/2015

Date Tested

Test Request

Area

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	THE STEE STEE STOP (1911 SHIRT)
75.0		100		100
37.5		100		
19.0		100		90
9.5		100		80
4.75		100		00
2.36		100		70 -
1.18		100		/
0.600		91		€ 60
0.425		79		<u> </u>
0.300		56		50 -
0.150		21		100
0.075		8		(%) 60 - 60 - 60 - 60 - 60 - 60 - 60 - 60
				30
				30
				20
				10
				9 Treest resident in the second of the secon
				75.0 53.0 37.5 26.5 19.0 13.2 9.5 4.75 4.75 0.400 0.425 0.300
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Area Description:

Material Source

Component:

Report Number: 5029/R/1845-1

Project Number: 5029/P/256

Lot Number: A12 Sample 6 Depth 1.3m

08 9721 2348

5029/T/1144 Internal Test Request:

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6530

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 03/09/2015 Sample Location

Area

Test Request

Yellow Gravelly SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	- 544	, f	PAR	TICL	E SIZ	E DIS	TRIBU	MOITL	GR/	APH		
75.0		100		100	1									1	
37.5		100		42	-									/	
19.0		86		90									-		
9.5		80		90	-							- 0			
4.75		77		80						_	_				
2.36		76		70											
1.18		75			-			/							
0.600		70		€ 60	1			1							
0.425		63		5			1								
0.300		50		% 50	-		1								
0.150		26		11			/								
0.075		16		Percent Passing (%)	4-		/-								
				4	1	/									
				30		1									
				6.77	1	1									
				20	1	-									
				176											
				10											
				0											
				0	0	0	0	0 0	÷.	N.	4	0 0	77 H	NG	0.7
					0.075	0.150	0,300	0.600	1.18	2,36	4.75	2.6	19,0	26.5	75.0 53.0
					J.	0	-	J. U		eve Sizi	a (mm)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax:**

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1813-1

A12 Sample 7 Depth 1.5m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

AS1289.3.6.1 5029/S/6531

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 27/08/2015

Material Source -

Sample Location

Test Request Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-555		PAR	TICL	E SIZ	E DIS	TRIBL	TION	GR	API	H			
75.0		100		100	I				-	_	-	7		-	_		
37.5		100		42	-												
19.0		100		90				1									П
9.5		100		90	-			-/-									
4.75		100		80	1			1									
2.36		100		70	1			1									
1.18		99			-												
0.600		91		€ 60	1												
0.425		72		60 50 40 (%)													
0.300		43		% 50	-		-1										
0.150		24		nt F			- 1										
0.075		19		8 40	4-		1										-
				ď			/										
				30	+	-/											-
						1											
				20	-												
				14													
				10	1												
				0	0.075	0.150	0.300	0.600	1.18	2,36	4.75	2.0	13.2	19.0	37.5	53.0	75.0
					-			100	AS Sie	ve Size	(mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 08 9721 2348 Phone: Fax:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6532

Location: Perth

Area Description: Test Procedures:

Sample Number

Component:

AS1289.3.6.1

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 27/08/2015

Material Source

Report Number: 5029/R/1814-1

Project Number: 5029/P/256

Lot Number: A12 Sample 8 Depth 1.8m

Sample Location

Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

Page 1 of 1

Test Request

Area

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	China i		PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		100	I				1	_	-		7	_	_	-
37.5		100		-	-											
19.0		100		90	1			1								
9.5		100		80	-											
4.75		100		.00				1								
2.36		100		70				1								
1.18		99			-											
0.600		91		€ 60	1											
0.425		74		5up												
0.300		44		Percent Passing (%)	-		-1									
0.150		24		DE.	1		Į									
0.075		20		8 40	4-		1									_
				4	1	- 5	/									
				30		-/										
				-24		1										
				20												Ī
				100	1											
				10	1											
				0	1											
				,	0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	19.0	37.5	53.0	1/5/1
								100	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax:**

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6534

27/08/2015

Location: Perth

Area Description:

Sample Number

Date Tested

Component:

Test Procedures: AS1289.3.6.1

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled

Material Source -

Report Number: 5029/R/1815-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A12 Sample 10 Depth 2.3m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

Page 1 of 1

Sample Location

Test Request

Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		2.1	PAR	TICL	E S	IZE	DIS	TRIE	BUTI	ION	GF	RAP	H			
75.0		100		100	T				- 2	1	_		_					_	
37.5		100		00					/										
19.0		100		90															
9.5		100		80															
4.75		100		.00				1											
2.36		100		70				1											
1.18		100			+			1											
0.600		91		€ 60	1			1											
0.425		72		5				1											
0.300		36		% 50	-														
0.150		20		16	1		- 1												
0.075		18		Percent Passing (%)	4-		Į												
				30	-		1												
				20		1	_												
				10	1														
				0	4				1	-71-			Trees	2100	en e	0.121	ujao	openo	2.112
					0.075	0.150	0.300	0.425	2.600	1.18	2,36		4.75	1 20	13,2	19.0	26.5	37.5	75.0
										AS SI	eve Si	ze (r	nm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

08 9721 2348

5029/R/1816-1

A12 Sample 11 Depth 2.5m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

AS1289.3.6.1

Project: Keane Road Pressure Main

Location:

Area Description: Test Procedures:

Sample Number

Component:

Perth

5029/S/6535 Sample Location

Area

Sampling Method Tested As Received Test Request

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 27/08/2015

Material Source **Grey SAND** Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBU	TION	GRA	\PH	1		
75.0		100		10	0				/		_					
37.5		100		à				1								
19.0		100		9	0 -											
9.5		100		8	0											
4.75		100		0												
2.36		100		7	0			1								
1.18		100														
0.600		94		Percent Passing (%)	0											
0.425		74		E .												
0.300		32		S 5	0 -											
0.150		15		ar a												
0.075		14		8 4	0		-1									
				a												
				3	0 -		1									
				2	0 -	-/	-									
					-	_										
				1	0 -											
					2											
					0.075	0.150	0.3	0.600	1.18	2,36	4.75	0.50	3 ;	26.	37.5	3 è
					75	20	8	8 8					0 (⊃ 0	01 0	2 0
									AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

5029/R/1836-1 Report Number:

08 9721 2348

Project Number: 5029/P/256

Lot Number: A09 Sample 12 Depth 2.6m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6506

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested

25/08/2015

Material Source Material Type Sample Location

Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	.555	40	PAR	TICLE	SIZE	DIS	RIBL	TIO	N G	RAP	H		
75.0		100		100	T				1	_	_			-	_	_
37.5		100		- 42	+			,								
19.0		100		90	1			1								
9.5		100		200	. 1											
4.75		100		80												
2.36		100		70	1											
1.18		100			-		+									
0.600		88		Percent Passing (%) 40	1											
0.425		67		5												
0.300		37		50	1											
0.150		16		P. P.			- 1									
0.075		14		E 40	4-											
				2	1		1									
				30	1		/									
					1	1										
				20	-	-/										
					-	_										
				10	1											
				0		erije.	e alimin	ong -	T.	B.1		O vo	mqn		100mm	of the
					0.075	0.150	0.425	0.600	1.18	2,36	1.75	6.7	3.2	9.0	7.5	53.0
					0.	_	C 0.	0	AS Sie	un Siza	Conin	As-				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Report Number: 5029/R/1817-1 Project Number: 5029/P/256

Lot Number: A12 Sample 12 Depth 2.8m

Sample Location

08 9721 2348

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6536

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 27/08/2015

Material Source **Grey SAND** Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	174		PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		10					/	_	~		7			_
37.5		100		à				I								
19.0		100		9	0 -											
9.5		100		8	0											
4.75		100														
2.36		100		7	0 -			1								
1.18		100														
0.600		96		Percent Passing (%)	0			_								
0.425		74		E E												
0.300		32		\$ 5	0		-1									
0.150		15		145	- 1		- 1									
0.075		14		2 4	0		-1									
				-	- 1		1									
				3	0 -		1									
				G.		,										
				2	0	1										
				1		_										
				1	0											
				11	0											
					0.075	0.150	0.300	0.600 0.425	1.18	2,36	4.75	5.5	19.0	26.5	53.0	150
					2.		1	100	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

5029/R/1847-1 Report Number:

Project Number: 5029/P/256

Lot Number: A13 Sample 1 Depth 0.0m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6537

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 28/08/2015

Material Source

Sample Location

Area

Test Request

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DI	STRIB	UTIO	N GF	RAP	H		
75.0		100		100	T				/	_	_				_	
37.5		100		0.0				1								
19.0		100		90	1			1								
9.5		100		80												
4.75		100		00				1								
2.36		100		70												
1.18		100			+											
0.600		94		Percent Passing (%)	1											
0.425		77		Đu,			- 1									
0.300		47		% 50	1		-1									
0.150		15		N. F			1									
0.075		4		9 40	1	_	1									
				P	1		1									
				30	1											
						1										
				20	+	-/	-									
				- 76	1	1										
				10	1											
				0	-											
					- 0.075	0.150	0.300	0.600	1.18	2,36	4.75	6.7	13.2	19.0	37.5	53.0
										ileve Si	ze (mir	Ú1				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

5029/R/1818-1

A13 Sample 2 Depth 0.3m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:
Test Procedures:

Sample Number

ocation.

AS1289.3.6.1 Sample Location

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 28/08/2015

Material Source - Material Type Yellow SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		nini .	PAR	TICL	E SIZ	E DIS	TRIBU	TION	GRA	PH		
75.0		100			100				_	_	_		-	_	
37.5		100			45			/							
19.0		100			90			1							
9.5		100			00										
4.75		100			80 -										
2.36		100			70 -										
1.18		100		_	70		- 1								
0.600		97		8	60		1								
0.425		87		5											
0.300		62		388	50 -		1								
0.150		19		T.			1								
0.075		6		Percent Passing (%)	40 -		_								
				ď.											
					30 -	- 1									
					Cata I										
					20 -	-									
					16										
					10	4									
					0										
						0	0	0.0	7	N.	4 0	9 5	150	ည္ည	2 7
					0.075	0.150	0,300	0.600	1.18	2,36	4.75	9.5	6 6	5 5	75.0 53.0
					J.	~		٠, ح		ve Size	(mm)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1819-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A13 Sample 3 Depth 0.5m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6539

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 28/08/2015

Material Source Yellow SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBU	TION	GRA	PH			
75.0		100		1	00					_	_		-	_		-
37.5		100														
19.0		100			90			1								ī
9.5		100			80 -			1								
4.75		100		- 1	00			1								
2.36		100			70											
1.18		100			,											
0.600		96		8	60											
0.425		82		5	200		- 1									
0.300		49		985	50 -		ı									
0.150		11		IL F												
0.075		3		Percent Passing (%)	40		-									-
				4	. 1		1									
					30 -	10										÷
				1		- /	٧.									
				17	20 -	- /										ī
					10											J
				- 10	10											
					0							************			7101.77	
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	5.6	19.0	26.5	53.0	75.0
									AS Sie	ve Size	(min)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Material Source

Component:

Report Number: 5029/R/1849-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A13 Sample 4 Depth 0.8m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6540

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled

Date Tested 28/08/2015

Sample Location
Test Request

Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		10					1		_				_	
37.5		100		ò				1								
19.0		100		9	u -											
9.5		100		8	0											
4.75		100		.0	0											
2.36		100		7	0			1								
1.18		100		2-1	-											
0.600		91		Percent Passing (%)	0											
0.425		72		5 up												
0.300		38		SSE 5	0 -		- 1									
0.150		10		DE F			- 1									
0.075		4		4	0		-1									
				4	- 1		1									
				3	0 -		/									
				2	0	_/										
				14												
				1	u											
					0											
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	12.0	26.5	37.5	200
								4	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Sample Number

Component:

AS1289.3.6.1 5029/S/6541

Area

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Client Sampled Sampled By 28/08/2015 **Date Tested**

Material Source Material Type

Sample Location

08 9721 2348

5029/R/1820-1

A13 Sample 5 Depth 1.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Fax:

Test Request

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

Grey SAND Specification Percent Specification PARTICLE SIZE DISTRIBUTION GRAPH AS Sieve (mm) Minimum Passing (%) Maximum 100 75.0 100 37.5 100 90 19.0 100 100 9.5 80 4.75 100 2.36 100 70 100 1.18 88 0.600 60 Percent Passing 0.425 70 0.300 47 50 20 0.150 0.075 40 30 20 10 Ø 75.0 53.0 37.5 26.5 19.0 19.0 13.2 9.5 4.75 0.075 AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Report Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

AS1289.3.6.1

Test Procedures: Sample Number 5029/S/6543

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 28/08/2015

Material Source

Project Number: 5029/P/256

Lot Number: A13 Sample 7 Depth 1.5m

Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259

Report Date / Page: 05/09/2015 Page 1 of 1

5029/R/1821-1

Sample Location **Test Request**

Area

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-500	, rī	PAR	TICLE	SIZ	E DIS	TRIBU	NOIT	GRA	PH		
75.0		100		100 -	1				1	_	_		7	_	
37.5		100		00	-				/						
19.0		100		90 -				1							
9.5		100		80											
4.75		100		00				1							
2.36		100		70 -											
1.18		100			-										
0.600		86		€ 60 ·	1			ŧ							
0.425		61		5 up	1										
0.300		35		% 50 -	-										
0.150		24		100	1										
0.075		21		(%) 60 - Sercent Passing (%) 30 -	-	1	1								
				10 -	0.075	- 0.150	0,300	0.600	1.18 AS Sie	2,36 eve Size	4.75 (mm)		19.0	37.5	75.0

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1822-1

A13 Sample 8 Depth 1.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

paul.kent@cardno.com Email:

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Test Procedures: AS1289.3.6.1 Sample Number

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 28/08/2015

Material Source

5029/S/6544 Sample Location

Test Request

Area

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-50		PAR	TICL	E SIZ	E DIS	TRIBU	TIO	N G	RAF	H	
75.0		100		100	1				-		~			7	_
37.5		100		00	-				/						
19.0		100		90				- 3	/						
9.5		100		80				1							
4.75		100		.00											
2.36		100		70											
1.18		99			+										
0.600		82		€ 60	1										
0.425		54		5				1							
0.300		31		% 50	-			1							
0.150		24		15	1										
0.075		22		Percent Passing (%)	4-										
				-	1		- 1								
				30	1		^								
				-	-	-									
				20											
				10	-										
				10	1										
				0	1										
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	6.7	9.5	19.0	37.5
					2.		100	100	AS SI	eve Size	(mn	n)			

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Test Request

Area

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Sample Location

Report Date / Page: 05/09/2015 Page 1 of 1

A13 Sample 9 Depth 2.0m

5029/R/1823-1

5029/P/256

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6545

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled

Date Tested 28/08/2015

Material Source **Grey SAND** Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-555		PAR	TICL	E SIZ	E DIS	TRIBU	ITION	GRA	PH			
75.0		100		100	I				-	_	~		_		_	_
37.5		100		00	-				/							
19.0		100		90				,	/							
9.5		100		80				1								
4.75		100		00												
2.36		100		70	1											
1.18		98			+											
0.600		83		€ 60	1			1_								
0.425		57		6wg				t								
0.300		35		\$ 50	-											
0.150		27		JUE I	1		- 1									
0.075		25		Percent Passing (%)	4-		-/									
				7	1		1									
				30	1	1										
				-24	-											
				20	1											
				10	-											
				10	7											
				0	1											
				,	0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	19,0	26.5	37.5	3 00
					0,		-	2	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

5029/R/1851-1 Report Number:

Project Number: 5029/P/256

Lot Number: A13 Sample 10 Depth 2.3m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6546

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 28/08/2015

Material Source

Sample Location **Test Request**

Area

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	PARTICLE SIZE DISTRIBUTION GRAPH
75.0		100		100
37.5		100		
19.0		100		90
9.5		100		80
4.75		100		00
2.36		100		70 -
1.18		99		
0.600		85		€ 60
0.425		56		<u>e</u>
0.300		30		% 50 -
0.150		20		25
0.075		19		60 - 50 - 40 - 40 - 60 - 60 - 60 - 60 - 60 - 6
				30
				20
				10
				10
				0
				75.0 53.0 37.5 26.5 19.0 13.2 9.5 4.75 2.36 0.425 0.300 0.150
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 08 9721 2348 Phone: Fax:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s: Report Date / Page:

Lot Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Area

Material Type

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Component:

Area Description:

5029/R/1855-1

A13 Sample 12 Depth 2.8m

Page 1 of 1

5029/P/256

5029/T/1144 61/32259

07/09/2015

Grey SAND

Sample Location

AS1289.3.6.1 Test Procedures: Sample Number 5029/S/6548

Sampling Method Tested As Received

Date Sampled 11/08/2015 Client Sampled Sampled By 28/08/2015

Date Tested Material Source Test Request

Specification Percent Specification PARTICLE SIZE DISTRIBUTION GRAPH AS Sieve (mm) Minimum Passing (%) Maximum 100 75.0 100 37.5 100 90 19.0 100 100 9.5 80 4.75 100 2.36 100 70 1.18 100 87 0.600 60 Percent Passing 0.425 64 0.300 31 50 0.150 14 0.075 40 30 20 10 0 0.075 AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax:**

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Component:

Porth

AS1289.3.6.1

Sample Number 5029/S/6549
Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 28/08/2015

Material Source -

Sample Location

08 9721 2348

5029/R/1824-1

A14 Sample 1 Depth 0.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Test Request

Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	PH		
75.0		100		- 1	100				/	_	_		7	_	_
37.5		100			46			T							
19.0		100			90 -			- 1							
9.5		100			200			- 1							
4.75		100			80 -										
2.36		100			70 -										
1.18		100		~	,,,			+							
0.600		95		8	60			1							
0.425		67		5											
0.300		24		388	50 -										
0.150		3		T D				I							
0.075		1		Percent Passing (%)	40 -										
				a	1										
					30 -		-1								
							J								
					20 -		1								
					10	1									
					0	0	0	0 0		N	4 0	v 20 +	10000	υ ω Innit	OI >
					0.075	0.150	30	0.600	1.18	2,36	4.75	5.6	0.61	יי ע	53.0
					OH.	0	0	5 0	Ac ci	eve Size	Acrise V.				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Area Description:

Material Source

Component:

5029/R/1856-1 Report Number:

Project Number: 5029/P/256

Lot Number: A14 Sample 2 Depth 0.3m

Sample Location

08 9721 2348

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6550

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested

28/08/2015

Test Request

Area

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIB	UTIC	N C	GRAP	H		
75.0		100			100 —				1	_	_		7		_	
37.5		100			80				/							
19.0		100			90 -			1								
9.5		100			80											
4.75		100			80			1								
2.36		100			70 -											
1.18		100		~												
0.600		89		8	60			1								
0.425		60		5				1								
0.300		25		355	50 -											
0.150		8		15												
0.075		7		Percent Passing (%)	40 -		- 1									
				4	- 1		- 1									
					30 -		-1									
					524		1									
					20 -		/									
					10	/										
					10	_										
					0											
					0.075	0.150	0.30	0.600	1.18	2,36	4.75	6.7	13.2 9.5	19,0	37.5	53.0
					cri	Ö	ō	0 0		eve Siz					1	

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

5029/R/1825-1

A14 Sample 3 Depth 0.4m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

Sample Location

05/09/2015

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:
Test Procedures:

Sample Number

uon. Perin

AS1289.3.6.1 5029/S/6551

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 28/08/2015

Material Source - Material Type Yellow SAND

Specification Percent Specification PARTICLE SIZE DISTRIBUTION GRAPH AS Sieve (mm) Minimum Passing (%) Maximum 100 75.0 100 37.5 100 90 19.0 100 100 9.5 80 4.75 100 2.36 100 70 1.18 100 8 0.600 84 60 Percent Passing 0.425 54 0.300 25 50 0.150 14 0.075 13 40 30 20 10 0 0.075 AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:

god



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

AS1289.3.6.1

5029/S/6553

Location: Perth

Component:

Area Description: Test Procedures:

Sample Number

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 02/09/2015

Material Source

Sample Location

5029/R/1858-1

A14 Sample 5 Depth 1.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

07/09/2015

Area

Test Request

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SI	ZE T	DIST	RIBU	JTIO	N GR	AP	H			
75.0		100		100	T					1	_	_				_	_	
37.5		100		00	-				/									
19.0		100		90					/									
9.5		100		80				- 1										
4.75		100		.00	1			- 1										ī
2.36		100		70	1			- 1										
1.18		100			+			1										
0.600		86		60 50 40 (%) Buisseut bassaud (%)	1			-										
0.425		57		5up				1										
0.300		30		\$ 50	1			1										
0.150		18		nt F	1			1										
0.075		16		8 40	4-													
				d	1		_/											
				30	+		1											
				7.2	1		/											
				20		_/												
				126	-													
				10	1													
					7													
				0	0.075	0.150	0.300	0.425		1.18	2.36	4.75	6.7	13.2	19.0	37,5	53.0	P.C/ E
										S Sie	ve Size	e (mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1949-1

Project Number: 5029/P/256

Lot Number: A14 Sample 6 Depth 1.3m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6554

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 02/09/2015

Material Source - Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	PARTICLE SIZE DISTRI	BUTION GRAPH
75.0		100		100	
37.5		100		-	
19.0		100		90 -	
9.5		100		80	
4.75		100		00	
2.36		100		70	
1.18		100			
0.600		85		60	
0.425		54		1	
0.300		26		50	
0.150		13		1 1	
0.075		11		40	
				30	
				20	
				10	
				10	
				0 1	
				1.18 0.600 0.425 0.300 0.150	75.0 53.0 37.5 26.5 19.0 13.2 4.75
				AS Sieve S	Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

5029/R/1862-1 Report Number:

Project Number: 5029/P/256

Lot Number: A14 Sample 8 Depth 1.8m

Sample Location

5029/T/1144 Internal Test Request:

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6556

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 02/09/2015

Material Source

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	China I	ď	PAR	TICL	SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		100	T				1	_	_			_	_	
37.5		100		42	-											
19.0		100		90				1								1
9.5		100		200	-			- 1								
4.75		100		80												
2.36		100		70	1											
1.18		100			-			1								
0.600		87		€ 60	1			1								
0.425		60		5												
0.300		30		% 50	1			-								_
0.150		18		DE P			- 1									
0.075		15		60 50 40 (%)	4-		-1	-								-
				4	1		_ /									
				30	-		1									1
				674	1	-										
				20		1										1
				10	-											
				10	1											
				0	1											
				0	0	0	0	0 0	+	rs.	4 0	95	120	ကိုက်	ài .	7
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	0 0	37.5 26.5	30	0
					01	-	9	0, 0	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

5029/R/1863-1 Report Number:

Project Number: 5029/P/256

Lot Number: A14 Sample 9 Depth 2.1m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6557

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 02/09/2015

Material Source

Sample Location

Test Request Area

Material Type

Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E ST	E DIS	TRIBU	TIO	N G	RAF	H			
75.0		100		1	00				1	_	_	_	_	-	_	_	
37.5		100			45				/								
19.0		100			90 -				/								
9.5		100			001												
4.75		100		- 4	80 -			1									
2.36		100			70 -			- 1									
1.18		100			70			-1									
0.600		79		(%)	60												
0.425		47		5	00												
0.300		21		988	50 -			1									
0.150		14		H P				†									
0.075		13		Percent Passing (%)	40			_									_
				a			_ 4										
				. 13	30 -		- 1										-
							- /										
				11	20 -		/										
						_											
					10 -												
					0												
					0	0	0	0 0	7	N	4	6	9 7	12	N G	o OI	7
					0.075	0.150	0,300	0.600 0.425	1.18	2,36	75	6.7	13,2	0.6	26,5	3.0	0.0
					0,	9		J. U		ve Size	(mm	Ón.					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description: Test Procedures:

Sample Number

08 9721 2348

5029/R/1865-1

A14 Sample 10 Depth 2.3m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

Sample Location

07/09/2015

AS1289.3.6.1

Sampling Method Tested As Received

5029/S/6558

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 02/09/2015 Area

Test Request

Material Source Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	ES	IZE	DIST	RIBL	TIO	N (GRA	PH				
75.0		100			100					1	_	_		-	_	_	_	_	1
37.5		100			45				1										
19.0		100			90			T	Ī										
9.5		100			-				-										
4.75		100		. 1	80 -			1											1
2.36		100			70 -			- 1											
1.18		100			70			1											
0.600		91		8	60			1											
0.425		60		5	-			1											
0.300		20		25.0	50 -			1											
0.150		9		H				ı											
0.075		8		Percent Passing (%)	40 -														
				d															
				. *1	30 -		-1												l
							- 1												l
					20 -		1												ı
					14	/													l
				1.1	10	_													
					0														
					0 -	0	0	0	0		N	4	6	9 5	1000	N	w	OI >	1
					0.075	0.150	30	0.425	0.600	1.18	2,36	75	6.7	9.5	0.0	6,5	7.5	53.0)
					OI.	0	0	01	9	AS Sie	ue Size	(min	ń.						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1950-1

Fax:

08 9721 2348

Project Number: 5029/P/256

Lot Number: A14 Sample 11 Depth 2.5m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6559

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled

Date Tested 02/09/2015

,,,2010

Sample Location

Area

Test Request

Material Source - Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBU	MOITL	GR	APH	i i		
75.0		100		1	100				1	_	-	7		_	_	_
37.5		100			40			1								
19.0		100		. 14	90 -											
9.5		100			00											
4.75		100		- 1	80 -											
2.36		100			70 -											
1.18		100			70			+								
0.600		92		(%)	60			1								
0.425		67		5				1								
0.300		22		388	50 -											
0.150		6		H P			1									
0.075		5		Percent Passing (%)	40 -											
				ď	1		- 1									
					30 -		-1									
							- 1									
				. 11	20 -		1									
					32. 1	/										
					10 -	_/										
					0											
					0	0	0	0 0	4	N	0.4	D 40	eque et e	÷ N	ω or	
					0.075	0.150	0.300	0.600 0.425	1.18	2,36	4.75	2 2	2 0	5.5	53.0 37.5	
					on	0	0	01 0		eve Size	a Commis					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

5029/R/1951-1 Report Number:

08 9721 2348

Project Number: 5029/P/256

Lot Number: A14 Sample 12 Depth 2.8m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6560

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 02/09/2015

Material Source **Grey Clayey SAND** Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBU	TION	GRA	PH		
75.0		100		1	.00				1	_	_	7	7	_	
37.5		100			-										
19.0		100		1.4	90 -			1							
9.5		100			on										
4.75		100		- 1	80 -			1							
2.36		100			70 -										
1.18		100			, ,			1							
0.600		89		Percent Passing (%)	60			1							
0.425		55		DE .				1							
0.300		19		388	50 -			1							
0.150		9		11											
0.075		8		BYCB.	40 -										
				4	1										
				. 1	30 -		- 1								
							- 1								
					20 -		1								
					15	1									
				1.1	10	-									
					0										
					0	0	0	0 0		N	4 0	, 40 t	t e	Nω	Q V
					0.075	0.150	0.300	0.600 0.425	1.18	2,36	4.75	9.56	19,0	37.5 26.5	3.0
					OI.	0	0	01 0	AC CIA	ve Size	Courses of				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Material Type

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Material Source

Component:

5029/R/1866-1 Report Number:

Project Number: 5029/P/256

Lot Number: A15 Sample 1 Depth 0.0m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Grey Silty SAND

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6561

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled Date Tested

02/09/2015

Sample Location

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	- Print		PAR	TICL	SIZ	E DIS	TRIBU	TION	GR	APF	1		
75.0		100		100	I			-		_	-				_	_
37.5		100		00	-			/								
19.0		100		90				1								
9.5		100		80			/									
4.75		100		00	1		1									
2.36		100		70			/									
1.18		98			-		/									
0.600		96		€ 60	1	_/										
0.425		90		E .	1	1										
0.300		78		% 50	-	1										
0.150		52		H	1-1											
0.075		34		Percent Passing (%) 40	+/											
				4	1											
				30	-											
					1											
				20	1											
				146	1											
				10	1											
				0	1											
				0	0	0	0	9 9	-	N.	40	0	12 dan	15 N	ω	άi .
					0.075	0.150	300	0.600	1.18	2,36	4.75	ı (n	2	0.5	37.5	30
					01	-	-	0, 0	No. of Section	ve Size						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Material Source

Component:

5029/R/1952-1 Report Number:

Project Number: 5029/P/256

Lot Number: A15 Sample 2 Depth 0.2m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6562

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 02/09/2015

Grey SAND Material Type

Test Request

Area

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	1764		PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		100	1				/	_	_		-	_	_	
37.5		100		43	-			T								
19.0		100		90	1			/								1
9.5		100		00	+			1								
4.75		100		80												
2.36		100		70	1											
1.18		100			+		- 1									
0.600		96		€ 60	1											
0.425		82		5	1		1									1
0.300		57		\$ 50	1		-									
0.150		22		DE P	1		1									
0.075		13		Percent Passing (%)	4-		_									-
				2	1											
				30	-	- /										1
				100	1	1										
				20	1											1
				146	1											
				10	1											
				0												
					0	0	0	0 0	÷.	N	4 0	0 0	1 12	NW	OI .	7
					0.075	0.150	0,300	0.600	1.18	2,36	4.75	2.5	2 9	37.5 26.5	3	50
					0,	0	9	J. J	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

AS1289.3.6.1

5029/S/6563

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Sample Number

Sampling Method

Component:

Sample Location

Internal Test Request:

Client Reference/s:

Report Date / Page:

Report Number:

Project Number:

Lot Number:

5029/R/1954-1

A15 Sample 3 Depth 0.5m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

09/09/2015

Tested As Received Test Request

11/08/2015 Date Sampled

Sampled By Client Sampled Date Tested 02/09/2015

Material Source Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	PARTICLE SIZE DISTRIBUTION GRAPH	
75.0		100		100	_
37.5		100		40	
19.0		100		90 -	
9.5		100		80	
4.75		100		.00	
2.36		100		70 -	
1.18		100			
0.600		95		(%) 60 - 40 - 40 - 40 - 40 - 40 - 40 - 40 -	
0.425		80		2	
0.300		54		50 -	
0.150		20		2	
0.075		13		\$ 40	
				30	
				CCT 1	
				20	
				10	
				10	
				0	
				26.5 19.0 13.2 13.2 2.36 0.600 0.425 0.150	53.0 37.5
				AS Sieve Size (mm)	

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

5029/R/1868-1 Report Number:

08 9721 2348

Project Number: 5029/P/256

Lot Number: A15 Sample 4 Depth 0.9m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6564

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 02/09/2015

Material Source

Sample Location Test Request

Area

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	China i		PAR	TICLE	SIZ	E DIS	TRIBL	TION	GRA	PH		
75.0		100		100	T				/	_	_	-	-	_	_
37.5		100		40	+			1							
19.0		100		90	1			1							
9.5		100		00	-			/							
4.75		100		80	1			1							
2.36		100		70	1										
1.18		100		-	-										
0.600		94		€ 60	1										
0.425		79		5	-										
0.300		52		\$ 50	1		1								
0.150		24		12	1		/								
0.075		17		(%) Buisseut passang (%) 40	4-		1								
				ď	1	1	/								
				30	1	-/									
				6.74	1	1									
				20	1										
				1/4	-										
				10	1										
					1										
				0	0	0	0	0 0		N	4 0	4 O F	100011	N W	O1 ~
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	5.6	0.0	6.5	53.0
					U	0	0	or O	AS Slo	we Siza	(mm)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Area Description:

Component:

5029/R/1955-1 Report Number:

08 9721 2348

Project Number: 5029/P/256

Lot Number: A15 Sample 6 Depth 1.3m

5029/T/1144 Internal Test Request:

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6566

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 02/09/2015

Material Source

Sample Location

Area

Test Request

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	PARTICLE SIZE DISTRIBUTION GRAPH
75.0		100		100
37.5		100		
19.0		100		90 -
9.5		100		80
4.75		100		
2.36		100		70 -
1.18		98		
0.600		92		£ 60 −
0.425		77		G.
0.300		56		% 50 - /
0.150		33		2
0.075		27		90 - 30 - 30 - 30 - 30 - 30 - 30 - 30 -
				20 -
				10
				75.0 53.0 37.5 26.5 19.0 13.2 9.5 0.600 0.425 0.300
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Lot Number: A15 Sample 7 Depth 1.5m

08 9721 2348

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

5029/R/1956-1

5029/P/256

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6567

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled Date Tested

02/09/2015

Material Source Material Type Sample Location

Test Request

Report Number:

Project Number:

Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICLE	SIZ	E DIS	RIBU	TION	GR	AP	H		
75.0		100		100	1				-		~				_	
37.5		100		00				1								
19.0		100		90				1								
9.5		100		80				/								
4.75		100		00				Į –								
2.36		100		70												
1.18		98		7-60	-		- 1									
0.600		92		€ 60	1		_/									
0.425		76		60 50 40 (%) Buissed Tuested			- /									
0.300		53		% 50			1									
0.150		30		T. I	1		/									
0.075		24		9 40	4-	- 1	_									
				ď	1	1										
				30	1	1										
				7.1	-											
				20	1											
				- 74	4											
				10												
				0	1											
				0	0	0	99	0		N.	44 0	0 0	13	15 E	oω	OI :
					0.075	0.150	0.300	600	1.18	2,36	75	a in	2	9.0	7 7	53.0
					O.	0	0,0		N 4 20	ve Size						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Component:

Area Description:

Material Source

5029/R/1957-1 Report Number:

Project Number: 5029/P/256

Lot Number: A15 Sample 8 Depth 1.8m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6568

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled 31/08/2015

Date Tested

Sample Location **Test Request**

Area

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	200	, Th	PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	PH		
75.0		100		100 -	1						_		7	_	
37.5		100		-	-				1						
19.0		100		90 -											
9.5		100		90				1							
4.75		100		80											
2.36		100		70 -											
1.18		95			-										
0.600		84		€ 60 -				<i>f</i>							
0.425		63		5 up											
0.300		40		% 50 -			_ /								
0.150		24		100			- 1								
0.075		20		(%) 60 - 40 - 40 - 40 - 40 - 40 - 40 - 40 -			1								
				30 - 20 - 10 -	_	1									
				0 -	0.075	- 0,150	0.300	0.600	1.18 AS Sie	2,36 eve Size	4.75 (mm)		19,0	37.5 5	75.0 53.0

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Material Source

Component:

Project Number: 5029/P/256

Lot Number: A15 Sample 10 Depth 2.3m

08 9721 2348

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

5029/R/1958-1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6570

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 31/08/2015

Sample Location **Test Request**

Area

Grey SAND Material Type

Report Number:

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-	T	PARTI	ICLE	SIZ	E DIST	RIBU	TION	GR	AP	H			
75.0		100		100 -					-	_	~	7		-	_		
37.5		100		425	-				/								
19.0		100		90 -				1									
9.5		100		80 -				1									
4.75		100		00				1									
2.36		100		70 -													
1.18		98					- 1										
0.600		85		£ 60 -			_/										
0.425		66		Đuị.			- /										
0.300		42		S 50 -			-										
0.150		21		0.1	1		1										
0.075		13		Percent Passing (%)	-		1										
						1											
				30 -		-/											
				554													
				20 -	1												
				10	1												
				10 -	1												
				0 -	1												
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	13,2	19.0	37.5	53.0	1000
							-54 47		AS Sie	ve Size	(mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

5029/R/1959-1 Report Number:

Project Number: 5029/P/256

Lot Number: A15 Sample 11 Depth 2.5m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6571

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 31/08/2015

Sample Location

Area

Test Request

Material Source Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	(24)		PAR	TICL	E SIZ	E DIS	TRIBL	TION	GR	API	H		
75.0		100		100	I				-	_	~	_			_	_
37.5		100		00	-				/							
19.0		100		90	1				/							
9.5		100		90				1								
4.75		100		80												
2.36		100		70	1											
1.18		98			-			1								
0.600		84		Percent Passing (%)	1			1_								
0.425		63		5u	1											
0.300		40		\$ 50	1											
0.150		18		nt.F	1		1									
0.075		12		8 40	4-		-									
				P			/									
				30	+											
				6.74		/										
				20	+	1										
				126	1											
				10	1											
				0	0.075	0.150	0.300	0,600	1.18	2.36	4.75	7 2	13,2	19.0	37.5	53.0
				1 "	CÚ.	Ö	6	4 9		ve Size					1	

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Sampling Method

Component:

Sample Location

Internal Test Request:

Client Reference/s:

Report Date / Page:

5029/R/1960-1

A15 Sample 12 Depth 2.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

09/09/2015

Tested As Received Test Request

Date Sampled 11/08/2015
Sampled By Client Sampled

AS1289.3.6.1

5029/S/6572

Date Tested 31/08/2015

Material Source - Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SI	ZE DIS	TRIBL	MOIT	GRA	APF	1			
75.0		100			100				-		_				_		7
37.5		100			40												
19.0		100			90				/								
9.5		100			200												
4.75		100			80			- 1									ī
2.36		100			70 -			- 1									
1.18		98			,0												
0.600		79		(%)	60												
0.425		53		5													
0.300		30		355	50 -			1									
0.150		10		A.P													
0.075		5		Percent Passing (%)	40												_
				Pe			- /										
					30 -		- }										
							/										
					20 -												÷
					- 1	-/											
					10 -	1											
					-												
					0	100	e e vijer	marin O	7	P. 5		P 4C	da.	marin	OH:	of the	न ~
					0.075	0.150	30	0.600	1.18	2,36	1.75	2 2	3.2	9.0	37.5	33.0	õ
					ű	0	0	O G								7	
									A5 516	ve Size	(win)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1961-1

Project Number: 5029/P/256

Lot Number: A15 Sample 13 Depth 3.2m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6573

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tarket 1 24/08/2015

Date Tested 31/08/2015

Material Source - Material Type

Sample Location

Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		PAR	TICLE	SIZ	E DIS	TRIBL	MOIT	GR	APH	1		١
75.0		100		100				-	_	~	-			_	
37.5		100		45.7				/							
19.0		100		90 -				/							
9.5		100		20				/							
4.75		100		80 -			_/								
2.36		100		70 -			1								
1.18		99													
0.600		73		£ 60 -											
0.425		48		E .											
0.300		31		% 50											
0.150		13		at i			7								
0.075		5		(%) Bursaut Passing (%)		-/									
				30 - 20 -		1									
				10 -											
				0.075	0.150	0,300	0.600	-1.18	2,36	4.75	2, 2, 0, 4,	13,2	26.5	37.5	53.0
								AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1962-1

Project Number: 5029/P/256

Lot Number: A15 Sample 14 Depth 4.2m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6574

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 31/08/2015

Material Source - 31/08/20

Sample Location
Test Request

Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-041	, ď	PAR	TICL	E SIZ	E DIS	TRIBU	TION	GRA	PH			
75.0		100		100	I				1	_	_		-	_	_	
37.5		100		43	-											
19.0		100		90	1			1								1
9.5		100		90				- /								
4.75		100		80	1			7								
2.36		100		70	1											
1.18		100			+											
0.600		88		€ 60	1		_	1								
0.425		63		5				1								
0.300		32		% 50	-		-1									
0.150		12		15	1		- 1									
0.075		10		Percent Passing (%)	4-		-1									-
				7	1		1									1
				30	1		1									1
				154			/									
				20	1	1										1
				10	1	1										4
				10	1											
				0	1											
				,	0	0	0	00	-	N.	4 0	9 5	1 19	26 33	83 3	7
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	6	50 50	53.0	5
					~			2	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number: Project Number:

Lot Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

5029/R/1963-1

A16 Sample 1 Depth 0.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

09/09/2015

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:
Test Procedures:

Sample Number

Sampling Method

Date Sampled

AS1289.3.6.1

5029/S/6575

Sample Location

Tested As Received Test Request

11/08/2015

Sampled By Client Sampled Date Tested 31/08/2015

Material Source - Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBU	ITIO	N G	RAP	'H			
75.0		100			100				/		~						
37.5		100			90 -			1									
19.0		100		- 14	90			- 1									
9.5		100			80 -												
4.75		100		- 1	00												
2.36		100			70 -												
1.18		99		~													
0.600		93		8	60			I_									
0.425		64		5				1									
0.300		28		988	50 -												
0.150		6		H				-									
0.075		3		Percent Passing (%)	40 -		-1										
				a													
					30 -		ı										
							/										
					20 -		/										
					4	/											
					10 -	1											
					0												
					0.075	0.150	0.30	0.600	1.18	2.36	4.79	6.7	13.2	19,0	26.5	53.0	
					3	8	8	20		0,	O.		1-5	_	01 6		

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:

g god-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 08 9721 2348 Phone: Fax:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s: Report Date / Page:

Lot Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

AS1289.3.6.1

Location: Perth

Area Description: Test Procedures:

Material Source

Component:

5029/R/1964-1

A16 Sample 2 Depth 0.3m

Page 1 of 1

5029/P/256

5029/T/1144 61/32259

09/09/2015

Sample Location

Sample Number 5029/S/6576

Sampling Method Tested As Received

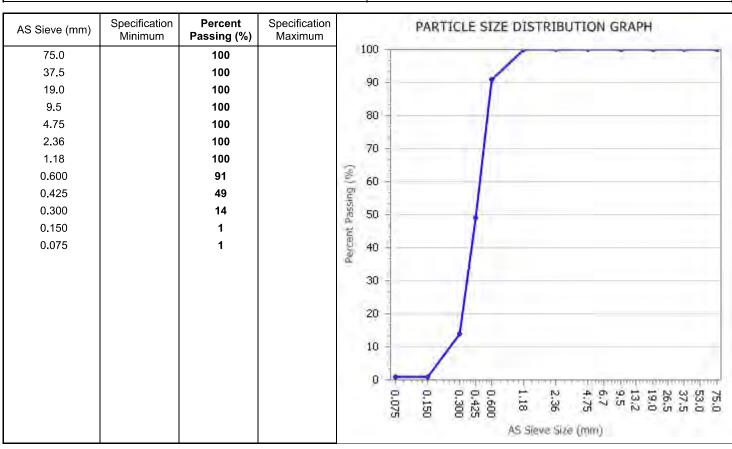
Date Sampled 11/08/2015 Client Sampled Sampled By

31/08/2015 **Date Tested**

Test Request

Area

Grey SAND Material Type



Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

Approved Signatory: Janine Fischer

Form ID: W9Rep Rev 2



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Area Description:

Material Source

Component:

5029/R/1965-1 Report Number:

08 9721 2348

Project Number: 5029/P/256

Fax:

Lot Number: A16 Sample 4 Depth 0.8m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6578

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 31/08/2015 **Test Request**

Area

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	.555		PAR	TCLE	SIZ	E DIS	RIBL	ITIO	I GR	RAPI	H		
75.0		100		100	1				/	_	_	_			_	_
37.5		100		425	-			1								
19.0		100		90				/								
9.5		100		20	-			/								
4.75		100		80												
2.36		100		70			_/									
1.18		100			-											
0.600		94		€ 60	1											
0.425		81		5	1		1									
0.300		59		% 50 ·	-		/									
0.150		34		12	1	/										
0.075		26		Percent Passing (%)	4_	_/	_									
				ď	j.	1										
				30	1											
				7.5												
				20	1											
				1/4	1											
				10												
				0	1											
				0	0	0	0.0	0 0		N	4	9 9	. 1 (÷ №	ω	(7 h
					0.075	0.150	300	0.600	1.18	2,36	75	6.7	13,2	26.5	75	53.0
					31	0	0,1	, 0	AS Sie	un Class	s (many					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Sample Number

Internal Test Request: 5029/T/1144
Client Reference/s: 61/32259

08 9721 2348

Report Date / Page: 09/09/2015 Page 1 of 1

5029/R/1966-1

A16 Sample 5 Depth 1.0m

5029/P/256

Test Procedures: AS1289.3.6.1

Sampling Method Tested As Received

5029/S/6579

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 31/08/2015

Material Source -

Sample Location
Test Request

Report Number:

Project Number:

Lot Number:

Area

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	Ossi	ď	PAR	TICLE	SIZ	E DIS	TRIBU	ITION	GRA	PH			
75.0		100		100	1				-	_	_		7	_		1
37.5		100		42	-			8								
19.0		100		90	1			/								
9.5		100		90	-			/								
4.75		100		80			1									1
2.36		100		70	1											
1.18		99			-											
0.600		94		€ 60	1		1									
0.425		81		5	1		/									
0.300		62		\$ 50	1	- /										
0.150		41		H. F.	1	/										
0.075		35		60 50 40 (%) Buissed Tueched	4-	1										-
				4	-											
				30	-											ł
				C.A.	1											l
				20	1											
				16	+											l
				10	1											1
				0	1											
				0	0	0	0.0	0 0	÷	N	4 0	, 70 £	100000	N Ω	97 >	1
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	0.0	5 5	53.0	5
					٥,	9	00,0		AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g Juli



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Report Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Component:

Area Description:

Project Number: 5029/P/256

Lot Number: A16 Sample 6 Depth 1.3m

Sample Location

08 9721 2348

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

5029/R/1967-1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6580

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 31/08/2015

Area

Material Source Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	555	, f	PAR	TICLE	SIZ	E DIS	TRIBU	MOIT	GR/	NPH			
75.0		100		100	1				-	_	_					
37.5		100		-	-											
19.0		100		90				1								
9.5		100		90				/								
6.7		100		80				1								
4.75		100		70												
2.36		100			-		1									
1.18		98		€ 60	1		_/_									
0.600		91		Percent Passing (%)			1									
0.425		77		% 50 ·	-	,										4
0.300		58		12		/										
0.150		43		8 40	1											-
0.075		37		a												
				30	-											-
					1											
				20												
					-											
				10	1											
				0												
				ů.	0	0	0 9	20	÷	IV.	4 0	0 0	diam'r	N	o Oi	7
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	2.0	13.2	26.5	7 0	75.0
					0,	9	9.		AS Sie	ve Size	(mim)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Report Number: 5029/R/1968-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A16 Sample 7 Depth 1.5m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6581

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 31/08/2015

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	1744		PAR	TICL	E SIZ	E DIS	TRIBU	MOITL	G	RAP	H			
75.0		100		100	T				-		~					_	
37.5		100		00				1									
19.0		100		90				/									
9.5		100		80				1									
4.75		100		00			1										
2.36		100		70			_ /										
1.18		99			-												
0.600		93		€ 60	1		1										
0.425		81		5	1												
0.300		64		% 50	-	_/											
0.150		48		H	1	_											
0.075		42		Percent Passing (%)	-	1											
				a	1												
				30	1												
					1												
				20	1												
				- 14	1												
				10	1												
				0	0.0	9.	9,	6.6	1.18	2,36	4.75	D 4	13	19,0	26	3 53	75
					0.075	0.150	0.300	0.600 0.425	20	8	24	4 0	N	0	in i	ло	0
									AS Sie	ve Size	e (mm)	Ü					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

Test Request

Area

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

5029/R/1969-1 Report Number:

08 9721 2348

Project Number: 5029/P/256

Lot Number: A16 Sample 9 Depth 2.0m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6583

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 31/08/2015

Material Source Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-	ď	PAR	TICLE	SIZ	E DIS	TRIBU	ITION	GRA	PH		
75.0		100		100	T				-	_	~		-	_	_
37.5		100		42	+			-							
19.0		100		90	1			1							
9.5		100		90	-			/							
4.75		100		80			- 1	-							
2.36		100		70			_ /								
1.18		99			-		- /								
0.600		92		€ 60	1										
0.425		78		5	1		1								
0.300		57		\$ 50	1		/								
0.150		38		T. I	1	/									
0.075		33		(%) Buissed tueched	4-	1									
				4	-										
				30	1										
				7.4											
				20	1										
				10	+										
				10	1										
				0	1										
				0	0	0	00	0 0	<u> </u>	N	4 0	9 5	100000	N W	97 >
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	6	5 5	53.0
					01	9	0.6	. 0	AS Sie	ve Size	(mm)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

5029/R/1970-1 Report Number:

Project Number: 5029/P/256

Lot Number: A16 Sample 10 Depth 2.3m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6584

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 31/08/2015

Material Source

Sample Location **Test Request**

Area

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	500	P	ART	TCLE	SIZ	E DIS	TRIBU	NOITL	GRA	APH			
75.0		100		100					-	_	_	-			_	
37.5		100							/							
19.0		100		90 -				1	/							
9.5		100		on				1								
4.75		100		80 -												
2.36		100		70 -												
1.18		99														
0.600		85		€ 60 -				ŧ								
0.425		62		5												
0.300		39		% 50 -			_ /									
0.150		26		THE P			- /									
0.075		24		60 50 40 (%)	-		J									-
				-												
				30 -		/										
					_											
				20 -												
				10												
				10 -												
				0 1												
					0	0	0	0 0	+	N	4	0 0	22 2	22	ယ္လက္	7
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	2 2	13,2	26.5	5 0	75.0
							2	7	AS Sie	ve Size	e (mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax:** 08 9721 2348

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

AS1289.3.6.1

5029/S/6585

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Sampling Method

Date Sampled

Component:

Sample Location

Internal Test Request:

Client Reference/s:

Report Date / Page:

5029/R/1971-1

A16 Sample 11 Depth 2.5m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

09/09/2015

Tested As Received Test Request

11/08/2015

Sampled By Client Sampled
Date Tested 31/08/2015

Material Source - Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	200	PAR	TICLE S	IZE DI	TRIBU	NOITL	GRA	PH		
75.0		100		100			-		_			_	
37.5		100		40			/						
19.0		100		90 -			/						
9.5		100		80 -			/						
4.75		100		.00									
2.36		100		70 -									
1.18		98											
0.600		81		Percent Passing (%)									
0.425		56		5		+							
0.300		27		% 50									_
0.150		14		at a									
0.075		12		8 40		-1-							-
				-									
				30 -		1							
				CGA									
				20 -	1								
				10	1								
				10 -									
				0 1									
				0	0	00	0 +	IV.	4 0	95	# 15 N	ည်လည်	7
				0.075	0.150	0.425 0.300	1.18	2,36	4.75	5.6	0.0	53.0 37.5	75.0
				0,	9	- 0		ieve Siz	e (mm)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Report Number:

Project Number:

Lot Number:

5029/R/1972-1

A16 Sample 12 Depth 2.9m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

09/09/2015

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description: Test Procedures:

Sample Number

Sampling Method

Sample Location

Internal Test Request:

Client Reference/s:

Report Date / Page:

Tested As Received **Test Request**

11/08/2015 **Date Sampled** Sampled By Client Sampled

AS1289.3.6.1

5029/S/6586

Date Tested 31/08/2015

Material Source **Grey SAND** Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICLE	SIZ	E DIS	TRIBL	MOIT	GR	AP	H		
75.0		100		10	00				1							
37.5		100			30											
19.0		100		-	90 -			1								
9.5		100		3	30 -											
4.75		100		-				1								
2.36		100			70 -											
1.18		100						1								
0.600		87		8	50			t								
0.425		62		E E												
0.300		24		388	50 -		_									
0.150		7		14			- 1									
0.075		6		Percent Passing (%)	10 -		-1									
				773	- 1											
				-	30 -		-1									
							+									
				4	20 -		/									
				18		_/										
					10	_/										
					0											
					0.075	0.150	0.300	0.600	1.18	2,36	4.78	9.5	13,2	19,0	37,5	53.0
					Oi.	8	8	йğ	-	0,	0,		1.00	-	. 01	-

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Material Source

Report Number: 5029/R/1973-1

Project Number: 5029/P/256

Lot Number: A17 Sample 1 Depth 0.0m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6587

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Track In 24/08/2015

Date Tested 31/08/2015

Sample Location
Test Request

Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		2.0	PAR	TICLE	SIZ	E DIS	RIBU	TION	GRA	PH			
75.0		100		10	0				/	_	_		_		_	_
37.5		100		- 2	5 -			1								
19.0		100		91	0 -											
9.5		100			0			/								
4.75		100		8	0 -			1								П
2.36		100		7	0		/									
1.18		100			-		- /									
0.600		95		≥ 6I	0											
0.425		78		5			+									
0.300		56		Percent Passing (%)	0 -		1									
0.150		19		12			1									
0.075		7		9 41	0		/									
				30	0 -	- /										
				63												
				21	0	1										
				41												
				10	1											
				11	o 👢											
						0	99	5 6	-	2,36	4.75	. 0.	3 19	26	3 53	75.0
					0.075	0.150	38 5	0.600	1.18	36	3	1 04 1	5 6	26.5	лõ	ě
									AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Report Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Project Number: 5029/P/256

Lot Number: A17 Sample 2 Depth 0.3m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

5029/R/1974-1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6588

Sampling Method Tested As Received 11/08/2015 Date Sampled

Sampled By Client Sampled Date Tested 31/08/2015

Material Source

Sample Location

Test Request Area

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	200	PA	ART	ICLE	SIZ	E DIS	TRIBU	TION	GRA	PH			
75.0		100		100					1	_	_			_	_	
37.5		100		43.												
19.0		100		90 -				1								
9.5		100		00				- [
4.75		100		80 -				1								
2.36		100		70 -												
1.18		100						1								
0.600		91		€ 60				Į.								
0.425		61		5												
0.300		34		\$ 50 -			- 1									-
0.150		10		DE P			1									
0.075		6		Percent Passing (%)	-		-1									-
				~			1									
				30 -			/									1
				CCA		1										
				20 -		1										
				10												1
				10 -												
				0 1												
					3 9	5	9	0 0	+	in.	4 0	95	15	2 3	57	75
				9	0.175	ή	0.300	0.600	1.18	2,36	4.75	9.5	6 6	37.5 26.5	ä	0
				,	200		0.0		AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

5029/R/1975-1 Report Number:

Project Number: 5029/P/256

Lot Number: A17 Sample 4 Depth 0.8m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6590

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested

02/09/2015

Material Source Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZ	E DIST	RIBU	TION	GRA	PH			
75.0		100		100	I					/	_				_	
37.5		100		00	-											
19.0		100		90												
9.5		100		90				1								
4.75		100		80	1			/								
2.36		100		70	1			1								
1.18		92			-		1									-
0.600		84		Percent Passing (%)	1		1									
0.425		74		5	-		/									
0.300		60		\$ 50	1		/									
0.150		37		12	1	/										
0.075		26		9 40	4-	_/										
				ď.	1	1										
				30	1											
				20	+											
				.16	1											
				10	1											
				2	1											
				0	0		0.0	100	7	N	0 4	40 +	in the	M	ω σ	1 V
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	i çu ç	9.0	6.5	37,5	2 0
					on	0	0,0	n 0	AS Sie							

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Area Description:

Component:

5029/R/1976-1 Report Number:

Project Number: 5029/P/256

Lot Number: A17 Sample 5 Depth 1.1m

08 9721 2348

5029/T/1144 Internal Test Request:

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6591

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 02/09/2015

Material Source

Sample Location

Test Request

Area

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		ď	PAR	TICLE	SIZ	E DIS	TRIBU	MOIT	GRA	PH		
75.0		100		100	1						_	7	7	_	_
37.5		100			-										
19.0		100		90				1							
9.5		100		90	-			/							
4.75		100		80	1			1							
2.36		100		70	1		/								
1.18		96			-										
0.600		89		≥ 60 ·	1		1								
0.425		79		5											
0.300		64		% 50	-	_/									
0.150		44		10		1									
0.075		37		Percent Passing (%)	-										
				30											
				.5.4											
				20											
				10	1										
				10	1										
				0	1										
				,	0	0	0.9	0		N.	4 0	2.6	2 15	26	95 7
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	1 01	19.0	26.5	53.0
							(3,1)		AS Sie	ve Size	e (mm)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Area Description: Test Procedures:

Sample Number

Component:

5029/R/1977-1

A17 Sample 6 Depth 1.3m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

09/09/2015

AS1289.3.6.1

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled

Date Tested 02/09/2015

Material Source

5029/S/6592

Sample Location

Area

Test Request

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICLE	SIZ	E DIS	TRIBL	TION	GR/	APF	4			
75.0		100		100	T				سف		-				_	_	-
37.5		100		o.													
19.0		100		90				1									٦
9.5		100		80													
4.75		100		OU.				7									1
2.36		100		70			_/										d
1.18		97			-		1										
0.600		90		€ 60			/										
0.425		80		8		/											
0.300		66		S 50		1											
0.150		51		7	-												
0.075		45		Percent Passing (%)	4-												4
				ď	į												
				30	1												
				20	1												f
				- 12	4												
				10													
				10	7												
				0	0	9	9	9.0	-	in.	4.0	0	5	15 6	3	57	77
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	ı m	Ñ	19.0	ion	ö	0
					2.				AS Sie	un Size	(mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax**:

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6594

Location: Perth

Area Description:

Sample Number

Component:

OTID Floude, 200 Addialac Foliade, FERTITI

Internal Test Request: 5029/T/1144
Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

5029/R/1979-1

A17 Sample 8 Depth 1.8m

5029/P/256

Test Procedures: AS1289.3.6.1

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 02/09/2015

Material Source -

Sample Location

08 9721 2348

Area

Test Request

Material Type Grey Sandy CLAY

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	THE STATE OF
75.0		100		100
37.5		100		00
19.0		100		90
9.5		100		80
4.75		100		
2.36		100		70 -
1.18		100		
0.600		95		£ 60
0.425		85		Die .
0.300		70		50
0.150		56		12
0.075		52		(%) 60 - 60 - 60 - 60 - 60 - 60 - 60 - 60
				<u>a</u>
				30 -
				- Car 1
				20
				10
				10
				p 4
				75.0 53.0 37.5 26.5 19.0 13.2 9.5 6.7 4.75 4.75 0.425 0.425 0.300
				of B B of B AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Component:

Area Description:

5029/R/1980-1 Report Number:

Project Number: 5029/P/256

Lot Number: A17 Sample 9 Depth 2.0m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6595

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested**

02/09/2015

Material Source Material Type Sample Location

Test Request

Grey Sandy CLAY

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	100		PAR	TICLE	SIZ	E DIS	TRIBU	ITIOI	V G	RAP	H			
75.0		100		100	1			- 113			_						
37.5		100		00	-			1									
19.0		100		90				1									
9.5		100		80													
4.75		100		-00			1										
2.36		100		70	1		/										
1.18		100			-												
0.600		93		€ 60	1		1										
0.425		80		8	+	1											
0.300		64		% 50	1	1											
0.150		51		12	-												
0.075		47		Percent Passing (%) 0 20 09	4												
				2	1												
				30	+												
				7.5	1												
				20	1												
				-14	1												
				10	1												
				0	7												
					- 0.075	0.150	0.300	0.60	1.18	2,36	4.75	6.7	13.2	19.0	26.5	53.0	1
					cu.	0	0 0	0	AS Sie								

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Material Source

Component:

5029/R/1981-1 Report Number:

Project Number: 5029/P/256

Lot Number: A17 Sample 10 Depth 2.3m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6596

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled 03/09/2015

Date Tested

Material Type

Test Request

Area

Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-533	ď	PART	TICL	E ST	ZE DIS	TRIBU	ITIO	N C	GRAF	H			
75.0		100		100	T				1	_	_		-	7	_	_	
37.5		100		22	+												
19.0		100		90	1			1									
9.5		100		.00	-			/									
4.75		100		80				7									
2.36		100		70				1									
1.18		100			-												
0.600		91		€ 60	1		_/										
0.425		74		5	1		1										
0.300		55		\$ 50	-		/										
0.150		40		12	1	/											
0.075		36		Percent Passing (%)	4-												-
				ď.	-												
				30	-												-1
				7.4	1												
				20	1												
				1/4	A .												
				10	1												
				0													
				0	0	0	0	0 0	4	P.S.	4	6	9 ;	- 12	D C	o Ou	24
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	V	13.2 9.5	9.6	26.5	30	0
					O.	0	9	, <u> </u>		ve Size	(mm	Ó.					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187 **Fax**:

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

K D ID M:

Internal Test Request: 5029/T/1144
Client Reference/s: 61/32259

Report Date / Page: 09/09/2015 Page 1 of 1

5029/R/1982-1

A17 Sample 11 Depth 2.5m

5029/P/256

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6597
Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 02/09/2015

Material Source -

Sample Location

08 9721 2348

Area

Test Request

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		ď	PAR	TICLE	SIZ	E DIS	TRIBL	TION	GRA	PH		
75.0		100		100	T				-	_	~		-	_	_
37.5		100		45	+				/						
19.0		100		90	1			1							
9.5		100		00	-			- [
4.75		100		80	1			1							
2.36		100		70	1			1							
1.18		99			-										
0.600		86		€ 60	1			1							
0.425		64		5	1		1								
0.300		40		\$ 50	1		_ /								
0.150		24		11	1		- /								
0.075		20		Percent Passing (%)	4-		1								
				ď.	1		/								
				30	+	1									
					1	1									
				20	-										
				. 24	+										
				10	1										
					1										
				0	0		0.0	0 0		N	υ 4 Ο 4	9 -	1000 p.m	N ω	OI A
					.07	.15	30	60	1.18	2,36	4.75	9.5	0.0	5 5	53.0
					on	0	0.0	n 0	AS Sla	wa Slaz	(min)				
					0.075	0.150	0.300	0.600			~ 16. (mm) ∈	រ ហ ខ្ល	0.6	7.5	

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g zul-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

5029/R/1983-1

A17 Sample 12 Depth 2.9m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

09/09/2015

Email: paul.kent@cardno.com

PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location:

Component:

Area Description: Test Procedures:

Sample Number

Perth

AS1289.3.6.1 5029/S/6598 Sample Location

Area

Sampling Method Tested As Received **Test Request**

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 02/09/2015

Material Source Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	.500	ď	PAR	TICLE	SIZ	E DIS	TRIBU	JTION	GRA	PH			
75.0		100		100	1				1	_	_		7	_	_	
37.5		100		-	-											
19.0		100		90				1								1
9.5		100		90												
4.75		100		80												
2.36		100		70	1			1								
1.18		100			-			f								
0.600		88		€ 60	1											
0.425		68		5	1		- /									
0.300		45		% 50	-											_
0.150		24		H	1		1									
0.075		16		(%) Busseut Passing (%) 30		/										
				20 10 0	0.075	0.150	0.300	0.600	1.18	2,36	4.75	, v, r	19,0	T 26.5	53.0	F 75.0
					75	50	8	8 2			e (mm)		. U	or or		_

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:



72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

www.cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/\$/6396 Date: 18-Aug-15

Tested By: P.Kent

Client: **GHD Pty Ltd** Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

Test Location: A01 Sample 3 Depth 0.6m

Material Description: Grey clayey SAND

Sampled By: Client Sample date: -

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1 Sampling Method:

Field Site #: Chainage: -Offset: -Offset From: -

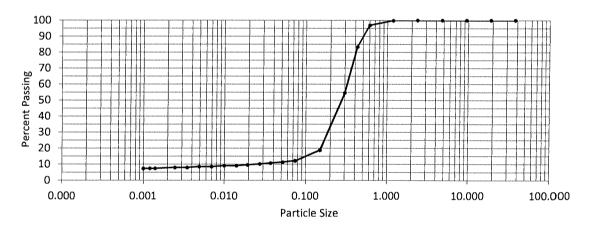
Hydrometer Type: ASTM E100 152H, Grams per litre

Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



	Notes:
-	

Soil Particle Density -2.36mm (t/m³): 2.65 (Tested in accordance with AS1289,3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

	PSD -	- AS:	L289	.3.	6.	1
PSD - AS1289.3.6.1	חכת	Λ C 1	เวอก	2	_	1
	rou.	- MJ.	しとのフ	· O ·	υ.	т

e Size (mm)	Passing (%)
75.0	100
37.5	100
19.0	100
9.5	100
4.75	100
2.36	100
1.18	100
0.600	97
0.425	83
0.300	55
0.150	19
0.075	12
	75.0 37.5 19.0 9.5 4.75 2.36 1.18 0.600 0.425 0.300 0.150

PSD Hydrometer - AS1289.3.6.3

Sieve Size	(µm)	Passing	(%)
------------	------	---------	-----

	9 1
73.89	12.2
52.25	11.3
36.95	10.7
27.44	10.2
19.41	9.6
14.17	9.0
10.02	9.0
7.00	8.5
4.95	8.5
3.50	7.9
2.48	7.9
1.41	7.4
1.21	7.4
1.00	7.3

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348 www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 N. (08) 9726 2187

paul.kent@cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

5029/S/6401 Sample ID: Date: 21-Aug-15

Tested By: P.Kent

Client: **GHD Pty Ltd** Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

A01 Sample 8 Depth 1.8m **Test Location:** Material Description: Light brown clayey SAND

Client Sampled By: Sample date: -

Sampling Method: Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #: Offset: -Offset From: -Chainage: -

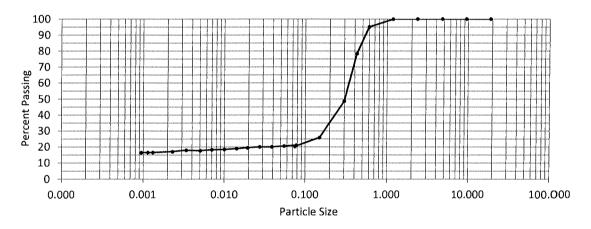
Hydrometer Type: ASTM E100 152H, Grams per litre

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate **Dispersant Type:**

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



Notes:		

2.66 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025.

PSL) - ,	AS.	128	9.3	3.6	٠.]

ieve Size (mm)		Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2,36	100
	1.18	100
	0.600	95
	0.425	78
	0.300	49
	0.150	26
	0.075	20

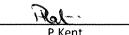
PSD Hydrometer - AS1289.3.6.3

Sieve Size (µm) Passing (%)

	<u> </u>
77.99	21.1
55.15	20.5
39.00	20.0
27.57	20.0
19.50	19.5
14.24	19.0
10.07	18.4
7.03	18.2
5.06	17 .7
3.41	18.0
2.31	17.1
1.33	16.6
1.15	16 .6
0.95	1 6 .5

This report only valid when reproduced in full.

Approved Signatory:





ABN 48 137 480 034 72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348 www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

18-Aug-15

Date:

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/S/6414

Tested By: P.Kent

Client: **GHD Pty Ltd** Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

Test Location: A02 Sample 6 Depth 1.3m Material Description: Light brown clayey SAND

Client Sampled By: Sample date: -

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1 Sampling Method:

Field Site #: Chainage: -Offset: -Offset From: -

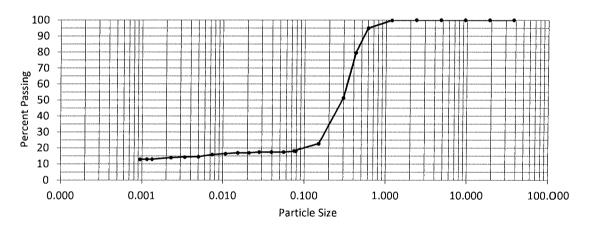
ASTM E100 152H, Grams per litre **Hydrometer Type:**

Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



Notes:				
	 -,	***************************************	***************************************	

2.67 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - A\$1289.3.6.1

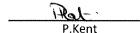
ze (mm)	Passing (%)
75.0	100
37.5	100
19.0	100
9.5	100
4.75	100
2.36	100
1.18	100
0.600	95
0.425	80
0.300	51
0.150	23
0.075	18
	75.0 37.5 19.0 9.5 4.75 2.36

PSD Hydrometer - AS1289.3.6.3

Sieve Size	(µm)	Passing	(%)
------------	------	---------	-----

17.9
17.4
17.4
17.4
16.9
16.9
16.4
15.9
14.6
14.3
14.0
13.0
13 .0
12.9

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348 www.cardno.com.au



TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/S/6419 Date: 18-Aug-15

Tested By: P.Kent

GHD Pty Ltd Client: Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

A02 Sample 11 Depth 2.5m **Test Location:**

Material Description: **Grey clayey SAND**

Client Sampled By: Sample date: -

Sampling Method: Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #: Offset: -Chainage: -Offset From: -

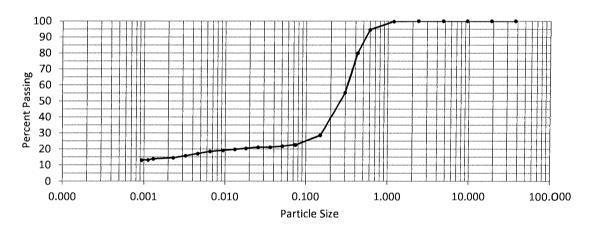
Hydrometer Type: ASTM E100 152H, Grams per litre

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate **Dispersant Type:**

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



Notes:			
	·····	 	

2.72 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS1289.3.6.1

Sieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	95
	0.425	80
	0.300	55
	0.150	29
	0.075	23

PSD Hydrometer - AS1289.3.6.3

			I			
Siev	re Si	7e (1)	mll	Passi	ne i	(%)

72.47	22.6
51.25	2 1 .7
36.24	2 1 .1
25.62	2 1 .1
18.12	20.4
13.23	19.8
9.36	19.1
6.54	18.4
4.63	17.1
3.27	15.8
2.31	14.4
1.32	13.8
1.13	13.1
0.93	13.0

Approved Signatory: P.Kent



www.cardno.com.au

ARN 48 137 480 034 72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/S/6423 Date: 18-Aug-15

Tested By: P.Kent

Client: GHD Pty Ltd Test Request: 6132259

Project: Keane Road Pressure Main A03 Sample 3 Depth 0.5m **Test Location:** Material Description: **Grey clayey SAND**

Client Sampled By: Sample date: -

Sampling Method: Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #: Offset: -Chainage: -Offset From: -

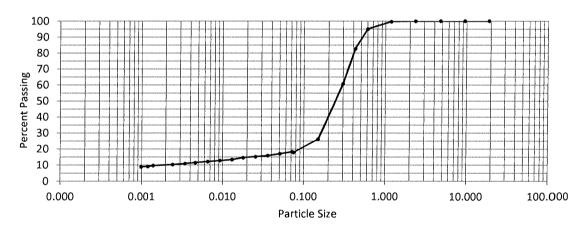
Hydrometer Type: ASTM E100 152H, Grams per litre

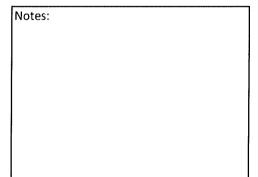
Sodium Hexametaphosphate and Anhydrous Sodium Carbonate **Dispersant Type:**

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution





2.68 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS1289.3.6.1

iev	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	95
	0.425	83
	0.300	61
	0.150	26
	0.075	18

PSD Hydrometer - AS1289.3.6.3

Sieve	e Size	e (μm)	Passing (%)
ľ			

71.94	18.2
50.87	17.1
35.97	15.8
25.43	15.2
17.98	14.6
13.13	13.4
9.29	12.8
6.57	12.1
4.64	11.5
3.45	10.9
2.44	10.3
1.41	9.7
1.21	9.1
0.99	8.9

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/\$/6426 Date: 24-Aug-15

Tested By: P.Kent

Client: **GHD Pty Ltd** Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

Test Location: A03 Sample 6 Depth 1.3m **Material Description:** Light brown clayey SAND

Client Sampled By: Sample date: -

Sampling Method: Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #: Chainage: -Offset: -Offset From: -

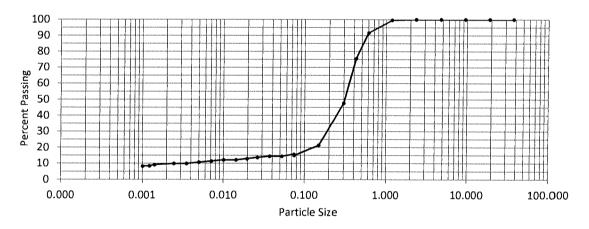
Hydrometer Type: ASTM E100 152H, Grams per litre

Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



PSD - AS1289 3.6.1

Notes:			

2.62 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025.

,	JU	- A.	J I Z	.00	 υ

Size (mm)	Passing (%)
75.0	100
37.5	100
19.0	100
9.5	100
4.75	100
2.36	100
1.18	100
0.600	92
0.425	76
0.300	48
0.150	21
0.075	15
	75.0 37.5 19.0 9.5 4.75 2.36 1.18 0.600 0.425 0.300 0.150

PSD Hydrometer - AS1289.3.6.3

Sieve Size (µm) Passing (%)

74.70	15.7
52.82	14.5
37.35	14.5
26.41	13.7
19.62	12.9
14.33	12.2
10.13	12.2
7.16	11.4
5.01	10.6
3.54	9.9
2.48	9.9
1.43	9.1
1.24	8.4
1.01	8.2

This report only valid when reproduced in full.

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

24-Aug-15

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID:

5029/S/6437

Tested By:

P.Kent

Client:

GHD Pty Ltd

Project: **Test Location:** Keane Road Pressure Main, Balannup

Material Description:

A04 Sample 5 Depth 1.0m Light brown clayey SAND

Sampled By:

Client

Sample date: -

Date:

Test Request: 6132259

Sampling Method: Field Site #:

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Chainage: -

Offset: -

Offset From: -

Hydrometer Type:

ASTM E100 152H, Grams per litre

Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

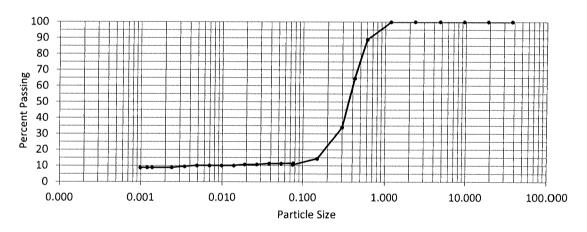
Pretreatment:

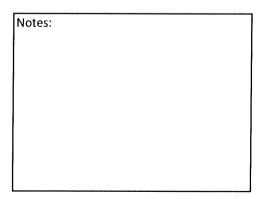
AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment:

None

Particle Size Distribution





Soil Particle Density -2.36mm (t/m³): 2.72 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS1289.3.6.1

ieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	89
	0.425	65
	0.300	34
	0.150	14
	0.075	11

PSD Hydrometer - AS1289.3.6.3

Siev	e Size (μm)	Passing (%)
	76.29	11.6
	53.95	11.4
	38.14	11.4
	26.97	10.7
	19.07	10.7
	13.93	10.1
	9.85	10.1
	6.96	10.1
	4.87	10.1
i	3.44	9.5
	2.41	8.9
	1.39	8.9
	1.20	8.9
	0.98	8.8

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348 Bunbury Base Lab

NATA SR#5029

72 McCombe Road, Halifax WA 6230

(08) 9726 2187

paul.kent@cardno.com.au

24-Aug-15

Date:

Test Request: 6132259

www.cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/S/6443

Tested By: P.Kent

Client: GHD Pty Ltd

Project: Keane Road Pressure Main, Balannup

Test Location: A04 Sample 11 Depth 2.5m

Material Description: Brownish grey slightly clayey SAND

Sampled By: Client Sample date: -

Sampling Method: Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #: - Chainage: - Offset: - Offset From: -

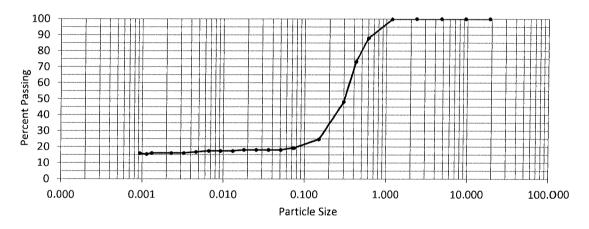
Hydrometer Type: ASTM E100 152H, Grams per litre

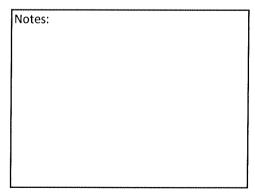
Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution





Soil Particle Density -2.36mm (t/m³): 2.70 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS1289.3.6.1

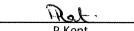
Sieve Size (mm)		Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
l	0.600	88
	0.425	73
	0.300	48
	0.150	25
[0.075	19

PSD Hydrometer - AS1289.3.6.3

iev	e	Size	(µm)	Passing (%	5)

19.3
18.0
18.0
18.0
18.0
17.4
17.4
17.4
16.7
16.1
16.1
16.1
15.4
16.0

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348 www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/S/6453 Date: 24-Aug-15

Tested By: P.Kent

Client: GHD Pty Ltd Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

Test Location: A05 Sample 9 Depth 2.0m Material Description: Light grey slightly clayey SAND

Sampled By: Client Sample date: -

Sampling Method: Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #: Chainage: -Offset: -Offset From: -

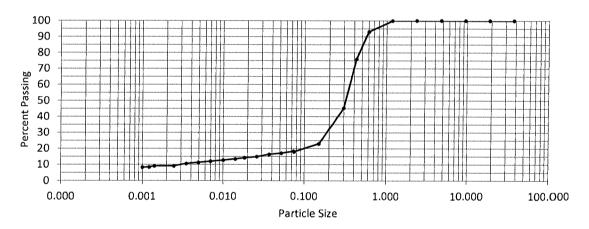
Hydrometer Type: ASTM E100 152H, Grams per litre

Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



PSD - AS1289.3.6.1

23

18

Notes:	Sieve	Size (mm)	Passing (%)
		75.0	100
e e		37.5	100
		19.0	100
		9.5	100
		4.75	100
		2.36	100
		1.18	100
		0.600	93
		0.425	76
		0.300	45

PSD Hydrometer - AS1289.3.6.3

Sieve Size (µm)		Passing (%
	73.89	18.4
	52.25	17.2
	36.95	16.4
	26.12	15.0
	18.47	14.2
	14.17	13.5
	10.02	12.8
	7.00	12.1
l	4.95	1 1 .3
	3.50	10.6
	2.45	9.1
	1.41	9.1
	1.22	8.4
	1.00	8.3

Soil Particle Density -2.36mm (t/m³): 2.66 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

> **Approved Signatory: Date:** 08-Sep-15

0.150

0.075



72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348 www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/S/6454 Date: 24-Aug-15

Tested By: P.Kent

Client: GHD Pty Ltd Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

Test Location: A05 Sample 10 Depth 2.2m Material Description: Light grey clayey SAND

Sampled By: Client Sample date: -

Sampling Method: Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #: Chainage: -Offset: -Offset From: -

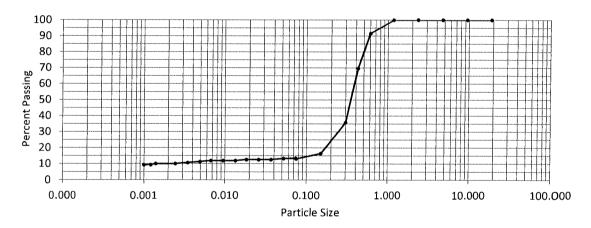
Hydrometer Type: ASTM E100 152H, Grams per litre

Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 ~ 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



PSD - AS1289.3.6.1

İ

Soil Particle Density -2.36mm (t/m³): 2.66 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

ieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	91
	0.425	70
	0.300	36
	0.150	16
	0.075	13

PSD Hydrometer - AS1289.3.6.3

ieve:	Size	(um)	Passing	(%)
		,	1. assirib	.,.,

13.4
13.2
12.6
12.6
12.6
12.0
12.0
12.0
11.3
10.7
10.1
10.1
9.4
9.3

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

21-Aug-15

Date:

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/\$/6467

Tested By: P.Kent

Client: **GHD Pty Ltd** Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

A06 Sample 8 Depth 1.7m **Test Location:** Material Description: Greyish brown clayey SAND

Sampled By: Client Sample date: -

Sampling Method: Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #: Offset: -Chainage: -Offset From: -

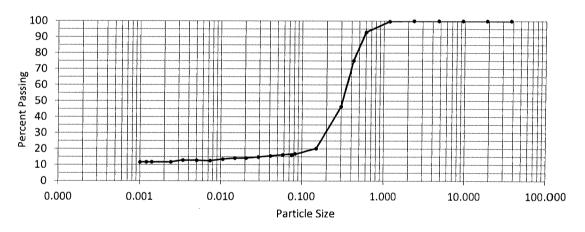
Hydrometer Type: ASTM E100 152H, Grams per litre

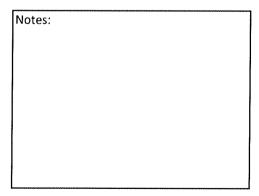
Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution





Soil Particle Density -2.36mm (t/m³): 2.66 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025.

PSD - AS1289.3.6.1

Sieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	93
	0.425	75
[0.300	46
[0.150	20
	0.075	16

PSD Hydrometer - AS1289.3.6.3

Sieve	e Size	(µm)	Passing	(%)
Г		4-		

82.45	16.9
58.30	16.2
41.23	15.5
29.15	14.9
20.61	14.2
15.05	14.2
10.64	13.5
7.43	12.6
5.06	12.8
3.41	12.9
2.42	11.8
1.41	11.8
1.21	11.8
1.00	11.6

This report only valid when reproduced in full.

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

26-Aug-15

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/S/6473

Tested By:

P.Kent

Client: Project: GHD Pty Ltd

Test Location:

A07 Sample 3 Depth 0.5m

Material Description:

Brown slightly clayey SAND

Sampled By: Sampling Method: Client

Sample date: -Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #:

Chainage: -

Offset: -

Offset From: -

Test Request: 6132259

Date:

Hydrometer Type:

ASTM E100 152H, Grams per litre

Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment:

AS 1289.3.6.3 - 6.1(a)

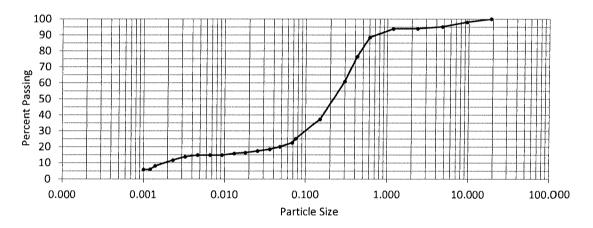
Keane Road Pressure Main, Balannup

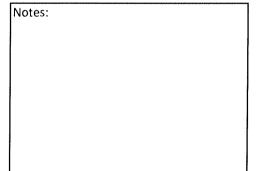
Loss on Pretreatment:

None

S.

Particle Size Distribution





2.67 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS1289.3.6.1

Sieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	98
	4.75	95
	2.36	94
	1.18	94
	0.600	88
	0.425	77
	0.300	61
	0.150	37
	0.075	25

PSD Hydrometer - AS1289.3.6.3

ieve Size	(µm)	Passing (%)
-----------	------	-------------

68.32	22.6
48.31	20.1
36.08	18.5
25.52	17 .5
18.04	16.4
13.18	15.9
9.32	14 .9
6.66	14.9
4.71	14.9
3.29	13.8
2.33	11.7
1.41	8.1
1.22	6.0
1.00	5.9

Approved Signatory:

P.Kent



72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

Date:

Bunbury Base Lab

24-Aug-15

www.cardno.com.au

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/\$/6479

Tested By: P.Kent

Client: GHD Pty Ltd Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

. A.

Test Location: A07 Sample 9 Depth 2.0m Material Description: Grey slightly clayey SAND

Sampled By: Client Sample date: -

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1 Sampling Method:

Field Site #: Chainage: -Offset: -Offset From: -

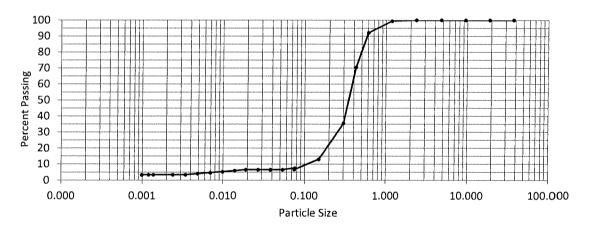
Hydrometer Type: ASTM E100 152H, Grams per litre

Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



Notes:			
	***************************************	 ·····	

2.68 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS1289.3.6.1

e Size (mm)	Passing (%)
75.0	100
37.5	100
19.0	100
9.5	100
4.75	100
2.36	100
1.18	99
0.600	92
0.425	71
0.300	36
0.150	13
0.075	7
	75.0 37.5 19.0 9.5 4.75 2.36 1.18 0.600 0.425 0.300 0.150

PSD Hydrometer - AS1289.3.6.3

Sieve Size (µm) Passing (%)	Sieve	Size	(µm)	Passing	(%)
-----------------------------	-------	------	------	---------	-----

76.48	7.5
54.08	6.5
38.24	6.5
27.04	6.5
19.12	6.5
13.96	5.9
9.87	5.2
6.98	4.6
4.88	4.0
3.45	3.3
2.41	3.3
1.39	3.3
1.21	3.3
0.99	3.2

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

26-Aug-15

www.cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID:

5029/\$/6489

Tested By:

P.Kent

Client:

GHD Pty Ltd

Project: **Test Location:** Keane Road Pressure Main, Balannup

Material Description:

A08 Sample 7 Depth 1.5m Greyish brown clayey SAND

Sampled By:

Client

Sample date: -

Sampling Method:

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #:

Chainage: -

Offset: -

Offset From: -

Date:

Test Request: 6132259

Hydrometer Type:

ASTM E100 152H, Grams per litre

Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

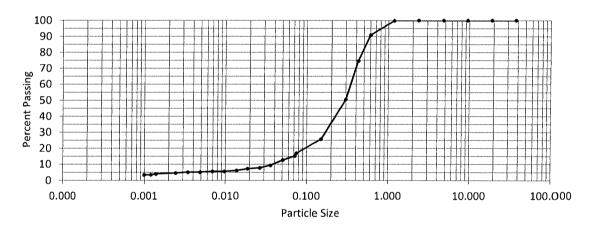
Pretreatment:

AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment:

None

Particle Size Distribution



Notes:		 	

Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1) 2.64

S

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS1289.3.6.1

ieve Size (mm)		Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	91
	0.425	75
	0.300	51
	0.150	26
	0.075	17

PSD Hydrometer - AS1289.3.6.3

Sieve Size (µm) Passin	۱B (%)
------------------------	------	----

ve size (µiii)	r assirig (70)
71.90	15.3
50.84	12.7
35.95	9.4
26.71	7.8
18.88	7.3
13.79	6.2
9.75	5.6
6.97	5.6
4.88	5.1
3.45	5.1
2.44	4.6
1.41	4.0
1.22	3.5
1.00	3.4

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au

Bunbury Base Lab

NATA \$R#5029

72 McCombe Road, Halifax WA 6230

(08) 9726 2187

paul.kent@cardno.com.au

26-Aug-15

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID:

5029/S/6491

Tested By:

P.Kent

Client:

GHD Pty Ltd

Project:

Keane Road Pressure Main, Balannup

Test Location:

A08 Sample 9 Depth 2.0m

Material Description:

Greyish brown slightly clayey SAND

Sampled By:

Client

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

- Chainage: -

Offset: -

Sample date: -9 1.2.1 Offset From: --

Date:

Test Request: 6132259

Hydrometer Type:

Sampling Method: Field Site #:

ASTM E100 152H, Grams per litre

Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

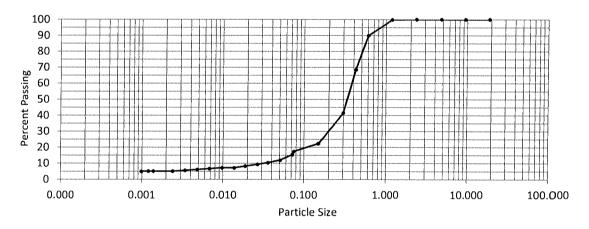
Pretreatment:

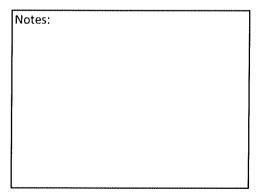
AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment:

None

Particle Size Distribution





Soil Particle Density -2.36mm (t/m³): 2.68 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS1289.3.6.1

Sieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	90
	0.425	69
	0.300	42
	0.150	22
	0.075	17

PSD Hydrometer - AS1289.3.6.3

Sieve Size (μm)	Passing (%)
71.94	15.4

71.94	15.4
50.87	12.0
35.97	10.4
26.74	9.3
18.91	8.3
13.81	7.2
9.76	7.2
6.83	6.7
4.83	6.1
3.41	5.6
2.41	5.1
1.39	5.1
1.21	5.1
0.99	4.9

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348 www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID:

5029/S/6496

Date:

26-Aug-15

Tested By:

P.Kent

Client:

GHD Pty Ltd

Project:

Keane Road Pressure Main, Balannup

Test Request: 6132259

Test Location:

A09 Sample 2 Depth 0.2m

Material Description:

Dark grey slightly clayey SAND

Sampled By:

Field Site #:

Client

Sample date: -

Sampling Method:

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1 Chainage: -

Offset: -

Offset From: -

Hydrometer Type:

ASTM E100 152H, Grams per litre

S

Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

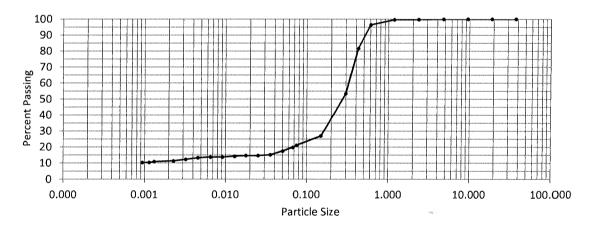
Pretreatment:

AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment:

None

Particle Size Distribution



PSD - AS1289.3.6.1

Notes:		

2.68 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

ieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	96
	0.425	82
	0.300	53
	0.150	27
	0.075	21

PSD Hydrometer - AS1289.3.6.3

Sieve Size (µm) Passing (%)

67.45	19.8
50.34	17.5
35.60	15.1
25.17	14.7
17.80	14.7
13.00	14.2
9.19	13.7
6.57	13.7
4.60	13.2
3.25	12.3
2.30	1 1 .3
1.33	10.9

10.4

10.3

Approved Signatory:



Date: 08-Sep-15

1.15

0.94



ABN 48 137 480 034 72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia

Phone: +61 8 9726 2187 Fax: +61 8 9721 2348 www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

26-Aug-15

Date:

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/\$/6498

Tested By: P.Kent

Client: **GHD Pty Ltd** Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

Test Location: A09 Sample 4 Depth 0.8m **Material Description:** Light brown slightly clayey SAND

Client Sampled By: Sample date: -

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1 Sampling Method:

Field Site #: Chainage: -Offset: -Offset From: -

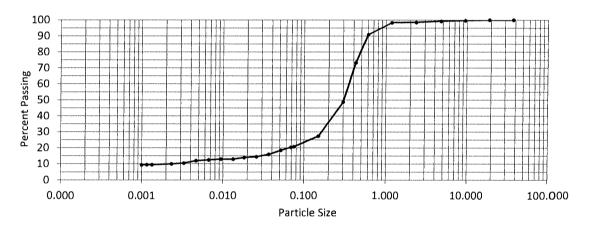
ASTM E100 152H, Grams per litre **Hydrometer Type:**

Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



	Notes:
Ì	
1	
l	
l	
L	

2.66 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

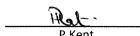
PS	D	- ,	AS	12	89	١.3	.6.	.1	

iev	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	99
	2.36	99
	1.18	98
	0.600	91
	0.425	73
	0.300	49
	0.150	27
	0.075	21

PSD Hydrometer - AS1289.3.6.3

ieve Size	(µm)	Passing	(%)	
-----------	------	---------	-----	--

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

www.cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/\$/6520 Date: 26-Aug-15

Tested By: P.Kent

Client: **GHD Pty Ltd** Test Request: 6132259

Keane Road Pressure Main, Balannup Project:

A11 Sample 8 Depth 1.8m **Test Location:**

Grey clayey SAND Material Description:

Sampled By: Client Sample date: -

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1 Sampling Method:

Field Site #: Chainage: -Offset: -Offset From: -

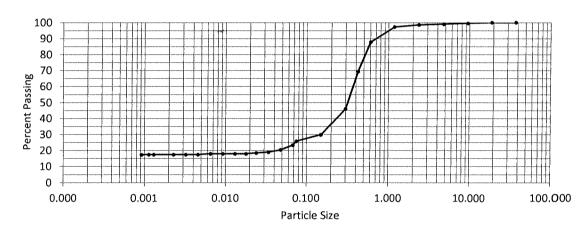
ASTM E100 152H, Grams per litre **Hydrometer Type:**

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate Dispersant Type:

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



-	Notes:
İ	
ĺ	

2.68 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

e Size (mm)	Passing (%)
75.0	100
37.5	100
19.0	100
9.5	100
4.75	99
2.36	99
1.18	97
0.600	88
0.425	69
0.300	46
0.150	30
0.075	26
	75.0 37.5 19.0 9.5 4.75 2.36 1.18 0.600 0.425 0.300 0.150

PSD Hydrometer - AS1289.3.6.3

Sieve	Size	(um)	Passing	(%)
-------	------	------	---------	-----

67.89	23.4
48.00	20.5
33.94	19.0
24.00	18.5
17.92	18.0
13.09	18.0
9.25	18.0
6.54	18.0
4.57	17 .5
3.23	17 .5
2.29	17 .5
1.32	17 .5
1.14	17 .5
0.92	17.4

Approved Signatory:



ABN 48 137 480 034 72 McCombe Road, Halifax WA 6230, Australia

PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au



26-Aug-15

Date:

Test Request: 6132259

Offset From: -

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/S/6524

Tested By: P.Kent

Client: **GHD Pty Ltd**

Project: Keane Road Pressure Main, Balannup

Test Location: A11 Sample 12 Depth 2.8m Material Description: Dark grey clayey SAND

Sampled By: Client Sample date: -

Sampling Method: Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #: Chainage: -Offset: -

Hydrometer Type:

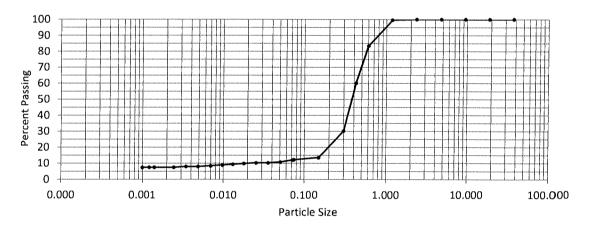
ASTM E100 152H, Grams per litre

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate **Dispersant Type:**

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



Notes:			

Soil Particle Density -2.36mm (t/m³): 2.65 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

ieve Size (mm)		Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	83
	0.425	60
	0.300	30
	0.150	14
	0.075	12

PSD Hydrometer - AS1289.3.6.3

12 1

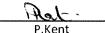
Sieve Size (µm) Passing (%)

72.01

	, _	12.1
	50.92	10.8
	36.01	10.3
	25.46	10.3
	18.00	9.9
	13.15	9.4
	9.77	8.9
	6.99	8.4
	4.89	8.0
ı	3.45	8.0

8.0 2.44 7.5 1.41 7.5 1.22 7.5 1.00 7.4

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au

Bunbury Base Lab

NATA SR#5029
72 McCombe Road, Halifax WA 6230

(08) 9726 2187

paul.kent@cardno.com.au

31-Aug-15

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID:

5029/S/6529

Tested By:

P.Kent

Client: Project: GHD Pty Ltd

Test Location:

Keane Road Pressure Main, Balannup A12 Sample 5 Depth 1.0m

Material Description:

Dark brown clayey SAND

Sampled By:

Client

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Sampling Method: Field Site #:

Chainage: –

Offset: –

Offset From: -

Sample date: -

Test Request: 6132259

Date:

Hydrometer Type:

ASTM E100 152H, Grams per litre

Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment:

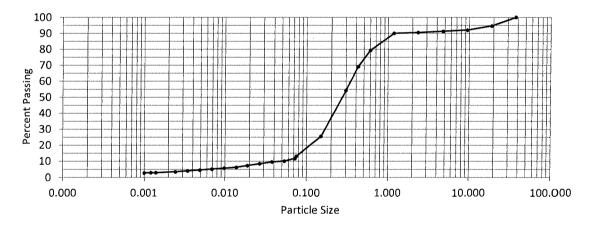
Notes:

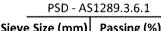
AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment:

None

Particle Size Distribution





	JIEV.	e size (IIIIII)	rassing (70)
		75.0	100
		37.5	100
		19.0	95
		9.5	92
		4.75	91
		2.36	90
		1.18	90
	ļ	0.600	79
	_	0.425	69
		0.300	54
ensity -2.36mm (t/m³):	2.67	0.150	26

PSD Hydrometer - AS1289.3.6.3

Siev	e Size (μm)	Passing (%)
	72.23	11.7
	53.65	10.1
	37.94	9.6
i	26.82	8.5
	18.97	7.3
	13.85	6.2
	9.80	5.7
	6.93	5.1
	4.90	4.5
	3.46	4.0
	2.45	3.4
	1.41	2.9
	1.22	2.9
	1.00	2.8

Soil Particle Density -2.36mm (t/m³): 2.6 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

Approved Signatory:



13

0.075



ABN 48 137 480 034 72 McCombe Road, Halifax WA 6230, Australia

PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au



31-Aug-15

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/S/6533

Tested By:

P.Kent

Client: Project: **GHD Pty Ltd**

Test Location:

A12 Sample 9 Depth 2.0m Grey slightly clayey SAND

Chainage: -

Material Description: Sampled By:

Client

Sampling Method:

Offset: -

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Offset From: -

Sample date: -

Date:

Test Request: 6132259

Hydrometer Type:

ASTM E100 152H, Grams per litre

Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment:

Field Site #:

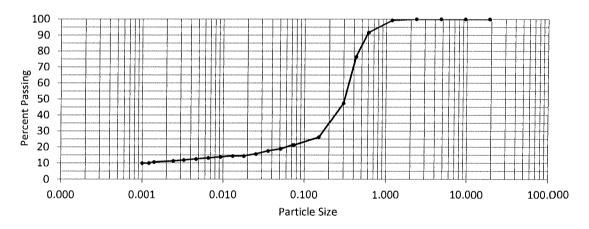
AS 1289.3.6.3 - 6.1(a)

Keane Road Pressure Main, Balannup

Loss on Pretreatment:

None

Particle Size Distribution



PSD - AS1289.3.6.1

Notes:		

2.66 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

iev	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	99
	0.600	92
	0.425	76
	0.300	47
	0.150	26
	0.075	21

PSD Hydrometer - AS1289.3.6.3

Sieve Size (µm) Passing (%)

72.17	21.3
51.03	18.9
36.08	17.6
25.52	15.7
18.04	14.4
13.18	14.4
9.32	13.8
6.59	13.2
4.66	12.5
3.29	11.9
2.45	11.2
1.41	10.6
1.22	10.0

Approved Signatory:



Date: 08-Sep-15

1.00

9.9



72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348 www.cardno.com.au

NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187

paul.kent@cardno.com.au

Bunbury Base Lab

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

5029/\$/6542 Sample ID: Date: 31-Aug-15

Tested By: P.Kent

Client: **GHD Pty Ltd** Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

A13 Sample 6 Depth 1.4m **Test Location:** Material Description: Brownish grey clayey SAND

Sampled By: Client Sample date: -

Sampling Method: Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #: Chainage: -Offset: -Offset From: -

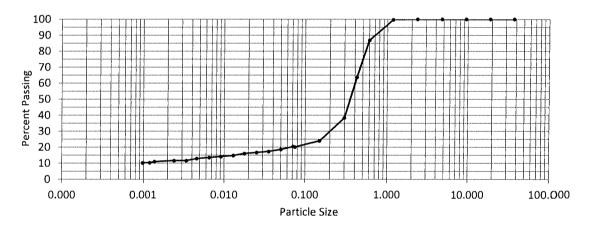
Hydrometer Type: ASTM E100 152H, Grams per litre

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate Dispersant Type:

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



Notes:		

2.69 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD	-	A۵	12	85	١.3	.6	١. ا	

ieve	Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	87
	0.425	64
	0.300	38
	0.150	24
	0.075	20

PSD Hydrometer - AS1289.3.6.3

Siev	e	Size	(µm)	Passing (%)

20.3
18.6
17.3
16.7
16.0
14.8
14.1
13.5
12.9
1 1 .6
1 1 .6
1 1 .0
1 0 .3
10.2

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au

Bunbury Base Lab
NATA SR#5029
72 McCombe Road, Halifax WA 6230
(08) 9726 2187
paul.kent@cardno.com.au

31-Aug-15

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID:

5029/\$/6547

Tested By: P.Kent

Client: Project: GHD Pty Ltd Keane Road Pressure Main, Balannup

Test Location:

Sampling Method:

A13 Sample 11 Depth 2.5m

Material Description:

ption: Grey clayey SAND

Client

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Chainage: –

Offset: -

Sample date: -3 1.2.1 Offset From: --

Test Request: 6132259

Date:

Field Site #:

Sampled By:

ASTM E100 152H, Grams per litre

Hydrometer Type: Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

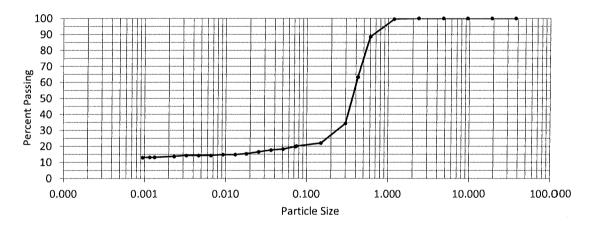
Pretreatment:

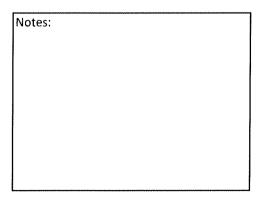
AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment:

None

Particle Size Distribution





Soil Particle Density -2.36mm (t/m³): 2.65 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS1289.3.6.1

Sieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	88
	0.425	63
	0.300	34
	0.150	22
	0.075	20

PSD Hydrometer - AS1289.3.6.3

Sieve Size (µm) Passing (%)

(party	
72.23	19.9
51.07	18.3
36.11	17.7
25.54	16.6
18.06	15.4
13.19	14.9
9.32	14.9
6.59	14.3
4.66	14.3
3.30	14.3
2.33	13.7
1.35	13.1
1.17	13.1
0.95	13.0

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au



TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID:

5029/S/6552

P.Kent

Date:

03-Sep-15

Tested By:

Client: Project: **GHD Pty Ltd**

Test Request: 6132259

Test Location:

Keane Road Pressure Main, Balannup

Material Description:

A14 Sample 4 Depth 0.8m

Grey clayey SAND Client

Sample date: -

Sampled By: Sampling Method:

Field Site #:

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1 Chainage: -

Offset: -

Offset From: -

Hydrometer Type:

ASTM E100 152H, Grams per litre

Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment:

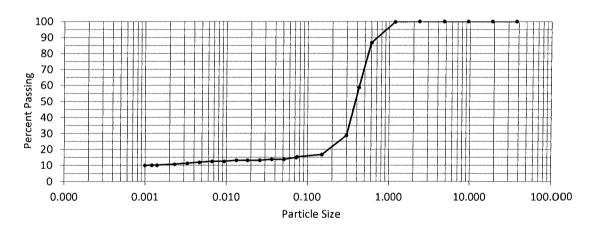
Notes:

AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment:

None

Particle Size Distribution



PSD - AS1289.3.6.1

Sieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	87
	0.425	59
	0.300	29
	0.150	17
	0.075	15

PSD Hydrometer - AS1289.3.6.3

Sieve Size (μm)		Passing (%)
	72.70	14.9
	51.41	13.7
	36.35	13.7
	25.70	13.1
	18.18	13.1
	13.27	13.1
	9.39	12.5
	6.64	12.5
	4.69	11.9
	3.32	11.3
	2.30	10.7
	1.41	10.1
	1.22	10.1
	1.00	10.0

Notes.		
ŀ		
į.		
		Ì
1		
1		
		Ì
1		
ł		
1		ŀ
l		- 1
		- 1
L	 	

Soil Particle Density -2.36mm (t/m³): 2.66 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

Approved Signatory:



72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au



03-Sep-15

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: **Tested By:**

5029/\$/6555

P.Kent

Client:

GHD Pty Ltd

Project: **Test Location:**

Keane Road Pressure Main, Balannup A14 Sample 7 Depth 1.5m

Material Description:

Grey clayey SAND

Sampled By:

Client

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Sampling Method: Field Site #:

Chainage: -

Offset: -

Sample date: -Offset From: -

Test Request: 6132259

Date:

Hydrometer Type:

ASTM E100 152H, Grams per litre

Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

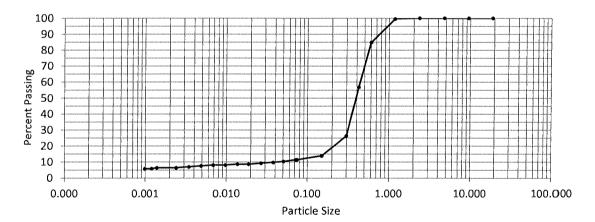
Pretreatment:

AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment:

None

Particle Size Distribution



Notes:			

2.69 Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS1289.3.6.1

sieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	100
	0.600	85
	0.425	57
	0.300	26
	0.150	14
	0.075	11

PSD Hydrometer - AS1289.3.6.3

ieve Size	(um)	Passing	(%)

71.94	11.4
50.87	10.4
37.81	9.8
26.74	9.2
18.91	8.7
13.81	8.7
9.76	8.1
6.90	8.1
4.88	7.6
3.45	7.0
2.41	6.4
1.39	6.4
1.21	5.9
0.99	5.8

Approved Signatory:



72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au



TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID:

5029/S/6565

Date:

31-Aug-15

Tested By:

P.Kent

Client:

GHD Pty Ltd

Test Request: 6132259

Project:

Keane Road Pressure Main, Balannup

Test Location:

A15 Sample 5 Depth 1.0m

Material Description:

Grey clayey SAND Client

Sample date: -

Sampled By: Sampling Method:

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Chainage: -

Field Site #:

Offset: -

Offset From: -

Hydrometer Type:

ASTM E100 152H, Grams per litre

Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

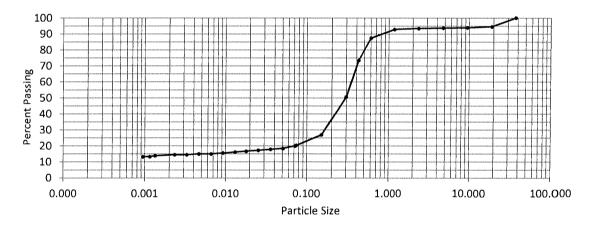
Pretreatment:

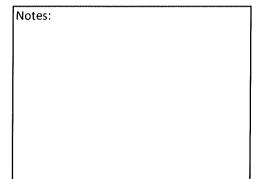
AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment:

None

Particle Size Distribution





Soil Particle Density -2.36mm (t/m³): 2.63 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS1289.3.6.1

ieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	95
	9.5	94
	4.75	94
	2.36	93
	1.18	93
	0.600	87
	0.425	73
	0.300	51
	0.150	27
	0.075	20

PSD Hydrometer - AS1289.3.6.3

ieve	Size	(µm)	Passing	(%)

72.17	20.0
51.03	18.4
36.08	17.8
25.52	17.3
18.04	16.7
13.18	16.1
9.32	15.6
6.59	15.0
4.66	15.0
3.29	14.4
2.33	14.4
1.34	13 .9
1.16	13.3
0.95	13.2

Approved Signatory:

P.Kent



72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/\$/6569 Date: 03-Sep-15

Tested By: P.Kent

Client: **GHD Pty Ltd** Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

A15 Sample 9 Depth 2.0m **Test Location:**

Material Description: **Grey clayey SAND**

Client Sampled By: Sample date: -

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1 Sampling Method:

Offset: -Offset From: -Field Site #: Chainage: -

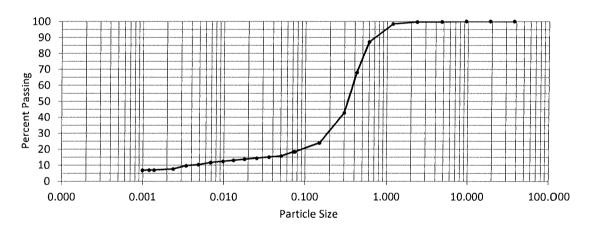
Hydrometer Type: ASTM E100 152H, Grams per litre

Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



	Notes:	
İ		

Soil Particle Density -2.36mm (t/m³): 2.68 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD -	AS1	289.	3.6	.1
-------	-----	------	-----	----

Sieve	e Size (mm)	Passing (%)
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100
	2.36	100
	1.18	98
	0.600	87
	0.425	68
	0.300	43
	0.150	24
	0.075	18

PSD Hydrometer - AS1289.3.6.3

10/

Sieve Size (µm) Passing (%)

72.00	18.4
50.91	15.8
36.00	15.1
25.45	14.4
18.00	13.8
13.14	13.1
9.76	12.4
6.90	1 1 .7
4.88	10.4
3.45	9.7

2.39 7.7 1.39 7.0 1.21 7.0 0.99 6.9

Approved Signatory:





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au



TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID:

5029/S/6577

Date:

03-Sep-15

Tested By:

P.Kent

Client:

GHD Pty Ltd

Test Request: 6132259

Project:

Keane Road Pressure Main, Balannup

Test Location:

A16 Sample 3 Depth 0.6m

Material Description:

Grey clayey SAND

Sampled By:

Client

Sample date: -

Sampling Method:

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #:

Chainage: -

Offset: -

Offset From: -

Hydrometer Type:

ASTM E100 152H, Grams per litre

Dispersant Type:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

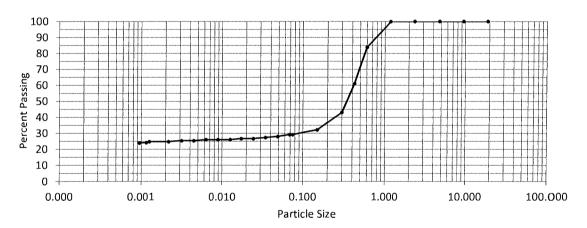
Pretreatment:

AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment:

None

Particle Size Distribution



Sieve Size (mm)		Passing
	75.0	100
	37.5	100
	19.0	100
	9.5	100
	4.75	100

PSD - AS1289.3.6.1

(%)

PSD Hydrometer - AS1289.3.6.3

Sieve Size (µm) Passing (%)

Notes:		

Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

, ,	0 ()
75.0	100
37.5	100
19.0	100
9.5	100
4.75	100
2.36	100
1.18	100
0.600	84
0.425	61
0.300	43
0.150	32
0.075	29

	69.08	29.2
	48.85	28.0
	34.54	27.3
	24.42	26.7
	17.27	26.7
	12.61	26.0
	8.92	26.0
	6.31	26.0
	4.46	25.4
	3.15	25.4
	2.18	24.8
Ì	1.27	24.8
	1.16	24.1
1	0.95	24.0

Approved Signatory:

2.64



72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au



TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID:

5029/S/6582

Date:

03-Sep-15

Tested By:

P.Kent

Client:

GHD Pty Ltd

Test Request: 6132259

Project:

Keane Road Pressure Main, Balannup A16 Sample 8 Depth 1.8m

Test Location: Material Description:

Grey clayey silty SAND

Sampled By:

Client

Sample date: -

Sampling Method:

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1

Field Site #:

Chainage: -

Offset: -

Offset From: -

Hydrometer Type:

ASTM E100 152H, Grams per litre

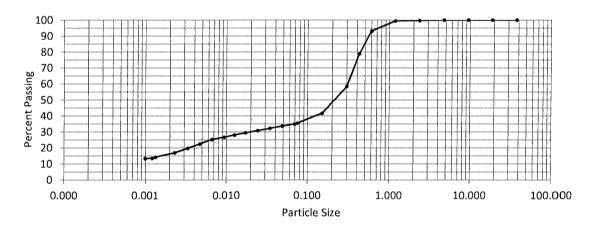
Dispersant Type: Pretreatment:

Sodium Hexametaphosphate and Anhydrous Sodium Carbonate AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment:

None

Particle Size Distribution



PSD - AS1289.3.6.1

Notes:	Sieve Size (mm)
	75.0
	37.5
	19.0
	9.5
	4.75
	2.36
	1.18
	0.600
	0.425
	0.300

Passing (%)

75.0	100
37.5	100
19.0	100
9.5	100
4.75	100
2.36	100
1.18	99
0.600	93
0.425	79
0.300	58
0.150	42
0.075	35
	37.5 19.0 9.5 4.75 2.36 1.18 0.600 0.425 0.300 0.150

PSD Hydrometer - AS1289.3.6.3

Siev	e Size	(μm)	Passi	ng (%)
	68.96		3	4.9

68.96	34.9
48.76	33.6
34.48	32.2
24.38	30.8
17.24	29.5
12.59	28.1
9.40	26.7
6.65	25.3
4.70	22.5
3.32	19.7
2.30	17.0
1.34	14.2
1.22	13.5
1.00	13.4

Soil Particle Density -2.36mm (t/m³): (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

Approved Signatory:

2.67





72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

www.cardno.com.au

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187 paul.kent@cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/S/6589 Date: 26-Aug-15

Tested By: P.Kent

Client: **GHD Pty Ltd** Test Request: 6132259

Project: Keane Road Pressure Main, Balannup

A17 Sample 3 Depth 0.6m **Test Location:** Material Description: Grey slightly clayey SAND

Sampled By: Client Sample date: -

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1 Sampling Method:

Field Site #: Offset: -Offset From: -Chainage: -

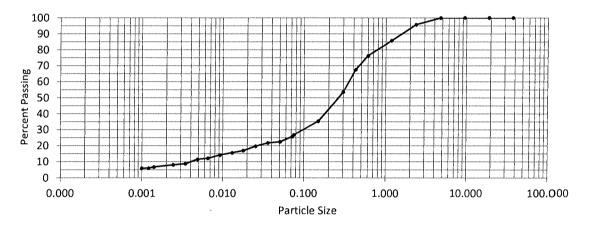
Hydrometer Type: ASTM E100 152H, Grams per litre

Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



. 451380 2 6

Notes:			

Soil Particle Density -2.36mm (t/m³): 2.65 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

PSD - AS	1289.3.6.1
Size /mml	Paccing (%)

ieve size (mm)		Passing (%)			
	75.0	100			
	37.5	100			
	19.0	100			
	9.5	100			
	4.75	100			
	2.36	96			
	1.18	86			
	0.600	76			
İ	0.425	68			
	0.300	54			
	0.150	35			
	0.075	27			

PSD Hydrometer - AS1289.3.6.3

Siev	e Size (μm)	Passing (%)
	71.90	25.7

71.90	25.7
50.84	22.4
35.95	21.7
25.42	19.7
17.98	17.0
13.13	15.6
9.28	14.2
6.56	12.2
4.88	11.5
3.45	8.8
2.44	8.1
1.41	6.7
1.22	6.0
1.00	5.9

Approved Signatory:

P.Kent



www.cardno.com.au

ABN 48 137 480 034 72 McCombe Road, Halifax WA 6230, Australia PO BOX 5004, Bunbury DC, WA 6230, Australia Phone: +61 8 9726 2187 Fax: +61 8 9721 2348

Bunbury Base Lab NATA SR#5029 72 McCombe Road, Halifax WA 6230 (08) 9726 2187

paul.kent@cardno.com.au

TEST CERTIFICATE PARTICLE SIZE DISTRIBUTION - AS 1289 3.6.1 / 3.6.3

Sample ID: 5029/S/6593 Date: 03-Sep-15

Tested By: P.Kent

Client: GHD Pty Ltd Test Request: 6132259

Keane Road Pressure Main, Balannup Project:

Test Location: A17 Sample 7 Depth 1.5m Dark grey sandy CLAY **Material Description:**

Sampled By: Client Sample date: -

Sample supplied by Client, and prepared in accordance with AS 1289 1.2.1 Sampling Method:

Field Site #: Offset: -Offset From: -Chainage: -

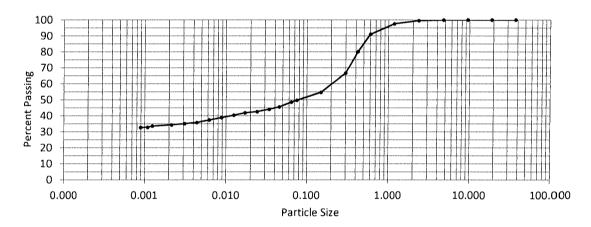
ASTM E100 152H, Grams per litre **Hydrometer Type:**

Dispersant Type: Sodium Hexametaphosphate and Anhydrous Sodium Carbonate

Pretreatment: AS 1289.3.6.3 - 6.1(a)

Loss on Pretreatment: None

Particle Size Distribution



PSD - AS1289.3.6.1

55

50

Notes:	Sieve	e Size (mm)	Passing (%)
		75.0	100
		37.5	100
		19.0	100
		9.5	100
		4.75	100
		2.36	100
		1.18	98
		0.600	91
		0.425	80
		0.300	67
•			

PSD Hydrometer - AS1289.3.6.3

Sieve Size (μm)		Passing (%)
	64.18	48.5
	45.38	45.6
	34.11	44.1
	24.12	42.6
	17.05	41.8
	12.45	40.3
	8.81	38.8
	6.23	37.3
	4.40	35.8
	3.11	35.0
	2.15	34.3
	1.26	33.5
	1.09	32.8
	0.89	32.6
_	4	

Soil Particle Density -2.36mm (t/m 3): 2.71 (Tested in accordance with AS1289.3.5.1)

Accredited for compliance with ISO/IEC 17025. This report only valid when reproduced in full.

Approved Signatory:

P.Kent

0.150

0.075