

# **REPORT**

---

**Places Victoria C/- Dalton Consulting  
Engineers Pty Ltd**

**Level 1 Inspection and Testing-  
Riverwalk Estate Stages 7 & 8**

**Including the School site and Lots 258  
to 260, 262 to 264, 270 to 276, 281  
and 282 and 285 to 289.**

**Report prepared for:**

**Places Victoria C/- Dalton Consulting Engineers Pty Ltd**

**Report prepared by:**

**Tonkin & Taylor Pty Ltd**

**Distribution:**

**Places Victoria C/- Dalton Consulting Engineers Pty Ltd**

**Tonkin & Taylor Pty Ltd**

**May 2015**

**T&T Ref: 4246.001**



# Table of contents

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
<b>2</b>	<b>PROJECT DETAILS</b>	<b>1</b>
<b>3</b>	<b>GEOLOGY</b>	<b>2</b>
<b>4</b>	<b>SPECIFICATION</b>	<b>2</b>
<b>5</b>	<b>INSPECTION AND TESTING</b>	<b>2</b>
<b>6</b>	<b>CONCLUSION</b>	<b>3</b>
<b>7</b>	<b>APPLICABILITY</b>	<b>4</b>

<b>Appendix A:</b>	<b>Density Test Location Plan</b>
<b>Appendix B:</b>	<b>Table of Field Density Test Results</b>
<b>Appendix C:</b>	<b>NATA Endorsed Laboratory Test Reports</b>
<b>Appendix D:</b>	<b>Controlled Fill Certificates</b>

# 1 INTRODUCTION

Tonkin & Taylor Pty Ltd (T&T) has been engaged by Dalton Consulting Engineers Pty Ltd on behalf of Places Victoria, to provide Level 1 Inspection and testing services for the earthworks (including stripping, proof rolling and associated works) within the School site and Lots 258 to 260, 262 to 264, 270 to 276, 281 and 282 and 285 to 289 in Stage 7 & 8, at the Riverwalk Estate in Werribee.

The inspection and testing of earthworks has been carried out by our associated company, Chadwick Geotechnics Pty Ltd (CG), under the guidance of T&T personnel and in accordance with AS3798-2007, *Guidelines on earthworks for commercial and residential developments*, with a frequency of field density tests as per a Type 1 project (large scale operations).

# 2 PROJECT DETAILS

<b>Project Name</b>	: Riverwalk Estate, Stage 7 & 8 : School site and Lots 258 to 260, 262 to 264, 270 to 276, 281 and 282 and 285 to 289
<b>Project Location</b>	: Werribee
<b>Municipality</b>	: Wyndham City Council
<b>Client</b>	: Places Victoria C/- Dalton Consulting Engineers Pty Ltd
<b>Project Manager</b>	: Robert Barden - Geotechnical Engineer
<b>Inspections &amp; Testing by</b>	: Boban Taseski - Field Technician and other technical staff as required

The location of the site is shown in Figure 1 and a site plan is included in Appendix A.

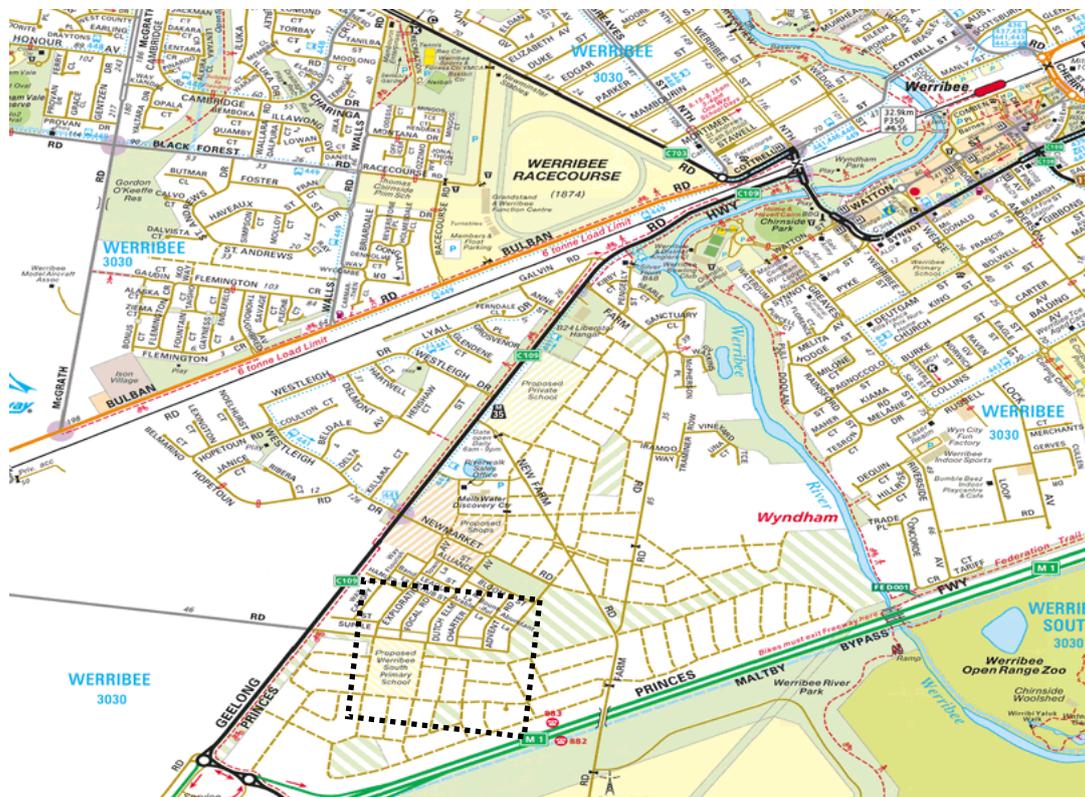


Figure 1: Location of Site  
Source: Melway Maps  
Not to Scale

**LEGEND**

Approximate Area of Works

### **3 GEOLOGY**

Based on the information published by the Department of Primary Industries on the GeoVic on-line geological map<sup>1</sup> the site is underlain by Quaternary Age unnamed sheetflow basalt of the Newer Volcanic Group generally described as basalt, minor scoria and ash.

### **4 SPECIFICATION**

Fill materials were placed in accordance with AS 3798-2007 Table 5.1 within 'The Guidelines on earthworks for commercial and residential developments'.

The minimum density ratio to be achieved in the compacted fill was specified to be 95% for the residential lots and 98% for the school site of the soils maximum wet density (HILF density).

A moisture limit of  $\pm 3.0\%$  of the soils optimum moisture content of the fill material was adopted.

The material must be free from organic and foreign matter.

### **5 INSPECTION AND TESTING**

Prior to any fill being placed, the stripped surface of the fill areas was inspected. The Initial stripped surface inspection was performed by CGEO staff on the 14<sup>th</sup> of August 2014, in accordance with the Level 1 guidelines presented in AS 3798-2007. No soft spots were encountered during the inspection, and the area was firm and free of vegetation or other deleterious material.

Full time Level 1 inspection and testing of the filling operations commenced on 14<sup>th</sup> August 2014 and was completed on 28<sup>th</sup> March 2015. During this period, the CGEO field technician observed all works related to the construction including the supply of material, conditioning of material (moisture conditioning and oversize removal), placement and compaction of the fill.

The project was classified as Type 1 Project (large scale operation) and the fill was compacted in accordance with the requirements of AS 3798-2007.

All fill material was placed in lift sequences and the CGEO field technician verified that the surface of the stripped surface and additional lifts were thoroughly scarified and moisture conditioned prior to placement to prevent delamination at the layer interface.

Visual inspections of the fill materials were carried out at regular intervals throughout works, and where required, the contractor removed unsuitable material as required.

Field density and moisture content testing was carried out using a calibrated nuclear density gauge in accordance with AS 1289.5.8.1. The HILF rapid compaction test was used for peak converted wet density determinations in accordance with AS 1289.5.7.1. Test locations were recorded using a handheld GPS unit. A site plan showing the field density and moisture content test locations is provided in Appendix A.

A total of one-hundred and ninety-one (191) tests were performed during the filling process. The results show that a number of the tests failed to achieve the specified minimum density ratio or moisture limits. The contractor was advised of the tests that failed to meet the minimum density and moisture criteria, and the fill relevant to those areas was re-conditioned, re-compacted, and subsequently re-tested (this procedure would be repeated, if necessary) until the lift was compliant with the specification.

---

<sup>1</sup> <http://www.dse.vic.gov.au/about-dse/interactive-maps>

The final results show that the specified density ratio was achieved at moisture limits between  $\pm 3.0\%$  of optimum moisture content.

A site plan showing the test locations is provided in Appendix A. A summary table of Hilf density tests is provided in Appendix B and the laboratory test reports are provided in Appendix C.

## 6 CONCLUSION

On the basis of our direct supervision and after considering all test results relating to the project it is our opinion, so far as it is able to be determined, that:

- The materials used by Excell Gray Bruni Pty Ltd (on behalf of Places Victoria) met the geotechnical property requirements of the specification.
- The sourced fill was considered to be natural and clean, and was suitable for use at the site .
- The fill material placed was tested at a suitable frequency in accordance with AS 3798-2007- Table 8.1 and the results indicate the compacted clay achieved density and moisture requirements of the specification.
- Given the consistent construction practices followed by Excell Gray Bruni Pty Ltd and witnessed by the T&T field engineer and relevant CGEO staff, combined with the satisfactory verification of test results achieved, it is inferred that areas of the site between test locations was performed to the same standard as those areas that have been tested.

It is our opinion that the earthworks undertaken at the School site and Lots 258 to 260, 262 to 264, 270 to 276, 281 and 282 and 285 to 289 at the Riverwalk Estate in Werribee have been performed in accordance with the Level 1 Filling requirements of AS 3798-2007.

The Controlled Fill Certificates for the School site and Lots 258 to 260, 262 to 264, 270 to 276, 281 and 282 and 285 to 289 are provided in Appendix D.

## 7 APPLICABILITY

This report has been prepared in good faith in accordance with the T&T quality system for the filling of the School site and Lots 258 to 260, 262 to 264, 270 to 276, 281 and 282 and 285 to 289 within Stages 7 & 8, at the Riverwalk Estate in Werribee by Places Victoria C/- Dalton Consulting Engineers Pty Ltd. No responsibility or liability will be accepted for the use of this report for any purpose other than for that which T&T was engaged, specifically Level 1 inspection and testing.

This report is based on the nature of the project and the conditions present in, or factors affecting the soil as at the time of inspection, namely 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted, and T&T is indemnified to the full extent permitted by law in respect of the use of this report where there has been a change in the nature of the project or the conditions on site that may alter or affect the conclusions of this report.

No responsibility or liability is accepted where any part of this report is used in isolation, out of context or without consideration of the total document.

Should you require any further information regarding this report, please do not hesitate to contact the undersigned on (03) 8796 7900.

Tonkin & Taylor Pty Ltd

Environmental and Engineering Consultants

Report prepared by:

Authorised for T&T by:

.....  


Robert Barden  
 Project Manager

.....  


Tim Chadwick  
 Project Director

© 2014 Tonkin & Taylor Pty Ltd

Other than for the exclusive use of our client Places Victoria C/- Dalton Consulting Engineers Pty Ltd, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Tonkin & Taylor Pty Ltd.

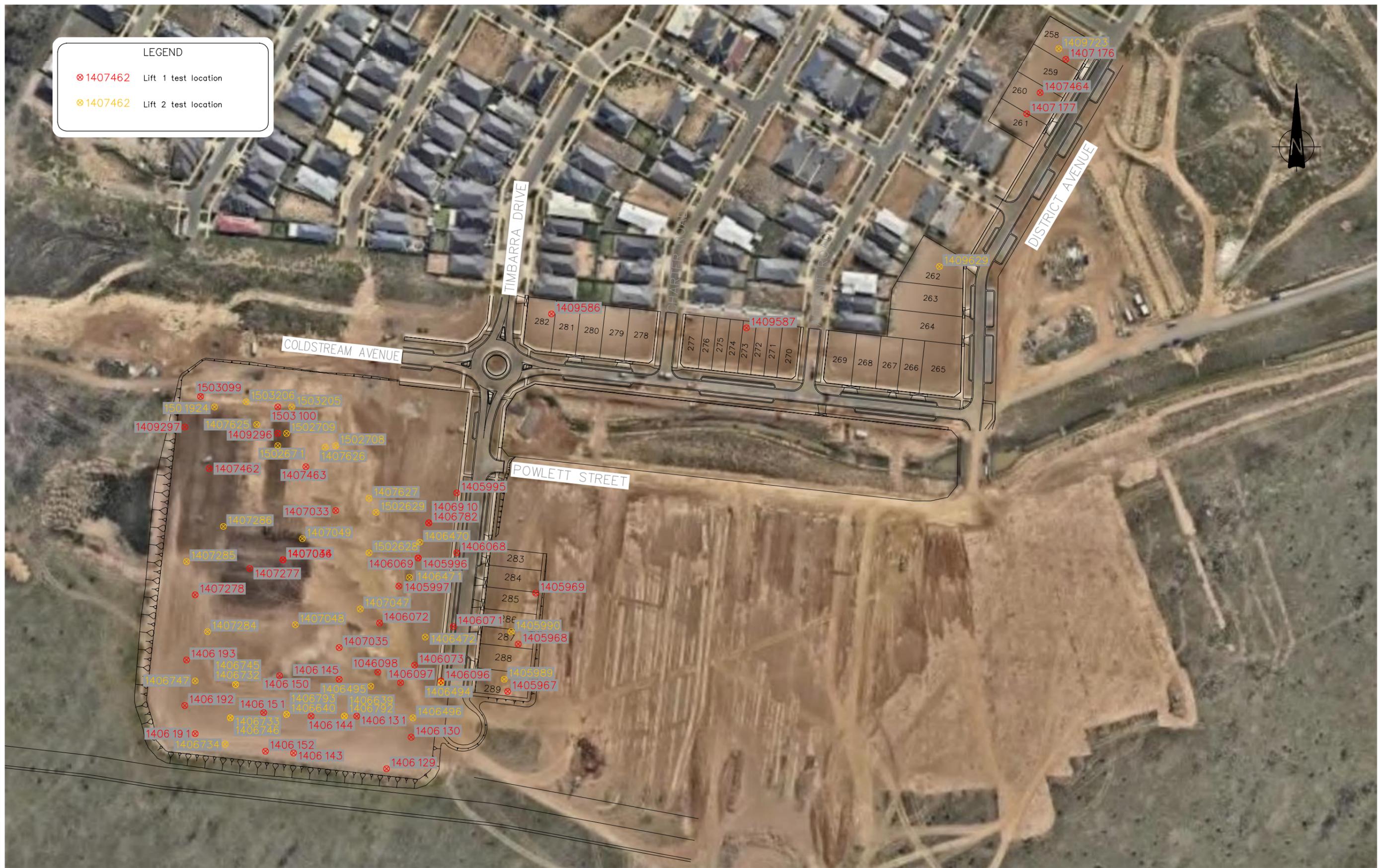
[www.tonkintaylor.com.au](http://www.tonkintaylor.com.au)

t:\south melbourne\projects\4246\4246.0010\workingmaterial\final\4246.001 final report.2.0.docx

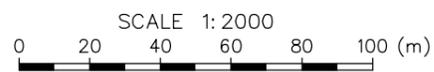
**Appendix A: Density Test Location Plan**

**LEGEND**

- ⊗ 1407462 Lift 1 test location
- ⊗ 1407462 Lift 2 test location



P:\4246\4246.0010\WorkingMaterial\CAD\4246.001-F1.dwg, F01, 9/06/2015 1:42:22 p.m., jld



Aerials sourced from NearMaps data (Images Copyright: 2015).  
Imagery Date: February 20 15.

**Tonkin & Taylor Pty Ltd**  
Environmental and Engineering Consultants  
Kings Technology Park, Ground Floor 95 Coventry St  
Southbank, Victoria, 3006  
Ph: (03) 9863 8686  
www.tonkintaylor.com.au

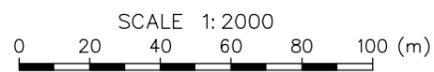
DRAWN	LJD	Jun. 15
DRAFTING CHECKED		
APPROVED		
CADFILE : \\4246.001-F1.dwg		
SCALES (AT A3 SIZE)		
AS SHOWN		
PROJECT No.	4246.001	

**PLACES VICTORIA C/- DCE**  
**LEVEL 1 INSPECTION & TESTING**  
**RIVERWALK ESTATE 7 & 8**  
**Lift 1 to Lift 2 Test Locations Plan**

FIG. No. **Figure 1** REV. **0**

**LEGEND**

- ⊗ 1407462 Lift 3 test location
- ⊗ 1407462 Lift 4 test location
- ⊗ 1407462 Lift 5 test location
- ⊗ 1407462 Lift 6 test location



Aerials sourced from NearMaps data (Images Copyright: 2015).  
Imagery Date: February 2015.

**Tonkin & Taylor Pty Ltd**  
Environmental and Engineering Consultants  
Kings Technology Park, Ground Floor 95 Coventry St  
Southbank, Victoria, 3006  
Ph: (03) 9863 8686  
www.tonkintaylor.com.au

DRAWN	LJD	Jun. 15
DRAFTING CHECKED		
APPROVED		
CADFILE :	\\4246.00 1-F 1.dwg	
SCALES (AT A3 SIZE)	AS SHOWN	
PROJECT No.	4246.00 1	

**PLACES VICTORIA C/- DCE**  
**LEVEL 1 INSPECTION & TESTING**  
**RIVERWALK ESTATE 7 & 8**  
**Lift 3 to Lift 6 Test Locations Plan**

FIG. No. **Figure 2** REV. **0**

P:\4246\4246.0010\WorkingMaterial\CAD\4246.001-F1.dwg, F02, 9/06/2015 1:42:23 p.m., jld

**LEGEND**

- ⊗ 1407462 Lift 7 test location
- ⊗ 1407462 Lift 8 test location
- ⊗ 1407462 Lift 9 test location
- ⊗ 1407462 Lift 10 test location



Aerials sourced from NearMaps data (Images Copyright: 2015).  
Imagery Date: February 2015.

**Tonkin & Taylor Pty Ltd**  
Environmental and Engineering Consultants  
Kings Technology Park, Ground Floor 95 Coventry St  
Southbank, Victoria, 3006  
Ph: (03) 9863 8686  
www.tonkintaylor.com.au

DRAWN	LJD	Jun. 15
DRAFTING CHECKED		
APPROVED		
CADFILE :	\\4246.001-F1.dwg	
SCALES (AT A3 SIZE)	AS SHOWN	
PROJECT No.	4246.001	

**PLACES VICTORIA C/- DCE**  
**LEVEL 1 INSPECTION & TESTING**  
**RIVERWALK ESTATE 7 & 8**  
**Lift 7 to Lift 10 Test Locations Plan**

FIG. No. **Figure 3**

REV. **0**

P:\4246\4246.001\010\WorkingMaterial\CAD\4246.001-F1.dwg, F03, 9/06/2015 1:42:24 p.m., jld

**Appendix B: Table of Field Density Test Results**



CHADWICK  
GEOTECHNICS

# Riverwalk Estate Stage 8

4246.001 / 307684

Chadwick Geotechnics

32 Fiveways Blvd  
Keysborough VIC 3173

Tel : ( 03 ) 8796 7900

Fax: ( 03 ) 8796 7944

Report No	Sample No	Date	Test Number	Lot Number	Location [N]	Location [E]	Layer	Density Ratio HILF test (%)	Moisture Variation From OMC	Pass / Fail	Remarks
1	1405967	14/08/2014	1	289	5800154	292546	1	99.5	0.5% d	Pass	
	1405968		2	288	5800181	292552	1	98.5	0.5% d	Pass	
	1405969		3	287	5800210	292562	1	100	1% dry	Pass	
2	1405989	15/08/2014	4	289	5800161	292544	2	96	0.5% dry	Pass	
	1405990		5	288	5800188	292548	2	95.5	0.5% dry	Pass	
	1405991		6	289	5800157	292552	3	92.5	0.5% dry	Fail	Area reworked refer Rep 4 - 1406070
3	1405995	16/08/2014	7	School Site	5800433	292517	1	95	0.5% dry	Fail	Area reworked refer Rep 4 - 1406068
	1405996		8	School Site	5800230	292495	1	97	0.5% dry	Fail	Area reworked refer Rep 4 - 1406069
	1405997		9	School Site	5800214	292484	1	102.5	1.5% dry	Pass	
4	1406068	20/08/2014	10	School Site	5800233	292517	1	100	omc	Pass	Retest of Rep 3 - 1405995
	1406069		11	School Site	5800230	292495	1	100.5	omc	Pass	Retest of Rep 3 - 1405996
	1406070		12	289	5780157	292552	3	101	0.5% dry	Pass	Retest of Rep 2 - 1405991
	1406071		13	School Site	5800191	292515	1	99.5	omc	Pass	
	1406072		14	School Site	5800193	292473	1	98	0.5% dry	Pass	
	1406073		15	School Site	5800169	292493	1	98.5	omc	Pass	
5	1406096	21/08/2014	16	School Site	5800160	292508	1	99.5	omc	Pass	
	1406097		17	School Site	5800159	292485	1	98	0.5% dry	Pass	
	1046098		18	School Site	5800165	292472	1	100.5	omc	Pass	
6	1406129	22/08/2014	19	School Site	5800110	292477	1	99.5	omc	Pass	
	1406130		20	School Site	5800128	292491	1	99.5	omc	Pass	
	1406131		21	School Site	5800140	292460	1	99	omc	Pass	
7	1406143	23/08/2014	22	School Site	5800119	292424	1	99	omc	Pass	
	1406144		23	School Site	5800140	292434	1	99	omc	Pass	
	1406145		24	School Site	5800161	292450	1	98.5	omc	Pass	
8	1406150	25/08/2014	25	School Site	5800163	292416	1	98.5	omc	Pass	
	1406151		26	School Site	5800142	292407	1	99	omc	Pass	

	1406152		27	School Site	5800120	292408	1	98.5	omc	Pass	
9	1406191	26/08/2014	28	School Site	5800130	292368	1	100	omc	Pass	
	1406192		29	School Site	5800146	292362	1	99	omc	Pass	
	1406193		30	School Site	5800172	292363	1	99.5	2% wet	Pass	
10	1406470	27/08/2014	31	School Site	5800239	292496	2	98.5	1% wet	Pass	
	1406471		32	School Site	5800219	292490	2	98	omc	Pass	
	1406472		33	School Site	5800185	292499	2	98.5	omc	Pass	
11	1406494	28/08/2014	34	School Site	5800159	292508	2	98.5	omc	Pass	
	1406495		35	School Site	5800157	292468	2	98	1% wet	Pass	
	1406496		36	School Site	5800139	292492	2	98	0.5% wet	Pass	
12	1406637	1/09/2014	37	School Site	5800128	292499	3	100	omc	Pass	
	1406638		38	School Site	5800137	292474	3	99.5	1% wet	Pass	
	1406639		39	School Site	5800140	292453	2	100	3% wet	Pass	
	1406640		40	School Site	5800141	292420	2	100.5	2.5% wet	Pass	
13	1406732	2/09/2014	41	School Site	5800158	292391	2	97	0.5% wet	Fail	Area reworked refer Rep 14 - 1406745
	1406733		42	School Site	5800139	292388	2	97.5	1% wet	Fail	Area reworked refer Rep 14 - 1406746
	1406734		43	School Site	5800124	292385	2	98.5	0.5% wet	Pass	
14	1406745	3/09/2014	44	School Site	5800158	292391	2	99	0.5% dry	Pass	Retest of Rep 13 - 1406732
	1406746		45	School Site	5800139	292388	2	98.5	2% wet	Pass	Retest of Rep 13 - 1406733
	1406747		46	School Site	5800160	292368	2	101	0.5% dry	Pass	
	1406748		47	School Site	5800176	292487	4	95	0.5% wet	Fail	Area reworked refer Rep 15 - 1406764
	1406749		48	School Site	5800150	292495	4	93	3% wet	Fail	Area reworked refer Rep 15 - 1406765
15	1406764	4/09/2014	49	School Site	5800172	292487	4	100.5	omc	Pass	Retest of Rep 14 - 1406748
	1406765		50	School Site	5800150	292495	4	101	omc	Pass	Retest of Rep 14 - 1406749
	1406766		51	School Site	5800119	292481	4	98.5	omc	Pass	
16	1406778	5/09/2014	52	School Site	5800132	292387	3	99	0.5% wet	Pass	
	1406779		53	School Site	5800159	292360	3	100.5	0.5% dry	Pass	
	1406780		54	School Site	5800148	292495	5	102.5	2% dry	Pass	
	1406781		55	School Site	5800118	292497	5	98	1% dry	Pass	
	1406782		56	School Site	5800250	292501	1	105	2.5% dry	Fail	Area reworked refer rep 18 - 1406910
17	1406792	6/09/2014	57	School Site	5800140	292453	2	98.5	0.5% wet	Pass	
	1406793		58	School Site	5800141	292420	2	101.5	0.5% dry	Pass	
	1406794		59	School Site	5800126	292389	4	102	0.5% dry	Pass	
	1406795		60	School Site	5800147	292401	4	102	0.5% dry	Pass	
18	1406910	8/09/2014	61	School Site	5800250	292501	1	98	omc	Pass	Retest of Rep 16 - 1406782

	1406911		62	School Site	5800152	292442	3	98	omc	Pass	
	1406912		63	School Site	5800128	292397	5	100.5	0.5% dry	Pass	
	1406913		64	School Site	5800159	292382	5	100	0.5% dry	Pass	
19	1406928	9/09/2014	65	School Site	5800148	292431	4	98	omc	Pass	
	1406929		66	School Site	5800177	292404	6	98	omc	Pass	
	1406930		67	School Site	5800163	292390	6	102.5	1.5% dry	Pass	
20	1406977	10/09/2014	68	School Site	5800151	292447	5	100	omc	Pass	
	1406978		69	School Site	5800127	292421	6	101	0.5% dry	Pass	
	1406979		70	School Site	5800112	292497	6	98	omc	Pass	
	1406980		71	School Site	5800136	292375	7	102.5	2% dry	Pass	
21	1407033	11/09/2014	72	School Site	5800257	292448	1	101.5	0.5% dry	Pass	
	1407034		73	School Site	5800229	292418	1	97	0.5% dry	Fail	Area reworked - 1407046
	1407035		74	School Site	5800179	292450	1	98.5	0.5% dry	Pass	
22	1407046	12/09/2014	75	School Site	5800229	292418	1	98	0.5% wet	Pass	Retest of Rep 21 - 1407034
	1407047		76	School Site	5800201	292462	2	98	omc	Pass	
	1407048		77	School Site	5800192	292425	2	99	1% dry	Pass	
	1407049		78	School Site	5800241	292429	2	100	omc	Pass	
23	1407057	13/09/2014	79	School Site	5800182	292453	3	99.5	omc	Pass	
	1407058		80	School Site	5800204	292455	3	99	omc	Pass	
	1407059		81	School Site	5800228	292422	3	99.5	omc	Pass	
24	1407074	15/09/2014	82	School Site	5800227	292436	4	102	1.5% dry	Pass	
	1407075		83	School Site	5800197	292456	4	103	1% dry	Pass	
	1707076		84	School Site	5800194	292431	4	101.5	2% dry	Pass	
25	1407103	16/09/2014	85	School Site	5800133	292454	7	106	1.5% dry	Pass	
	1407104		86	School Site	5800129	292412	8	102	2% dry	Pass	
	1407105		87	School Site	5800132	292373	8	102	1% dry	Pass	
26	1407176	17/09/2014	88	259	5800514	292864	1	96.5	0.5% dry	Pass	

	1407177		89	263	5800483	292801	1	100.5	1.5% dry	Pass	
27	1407205	18/09/2014	90	School Site	5800170	292362	8	98.5	omc	Pass	
	1407206		91	School Site	5800153	292393	9	101	omc	Pass	
	1407207		92	School Site	5800122	292427	8	101	0.5% dry	Pass	
28	1407277	19/09/2014	93	School Site	5800224	292399	1	101.5	2% dry	Pass	
	1407278		94	School Site	5800209	292368	1	102.5	0.5% dry	Pass	
29	1407284	20/09/2014	95	School Site	5800188	292375	2	100	omc	Pass	
	1407285		96	School Site	5800228	292363	2	100.5	0.5% wet	Pass	
	1407286		97	School Site	5800248	292384	2	100.5	0.5% wet	Pass	
30	1407321	22/09/2014	98	School Site	5800187	292448	5	96.5	0.5% dry	Fail	Area reworked refer rep 31 - 1407352
	1407322		99	School Site	5800214	292458	5	99.5	omc	Pass	
	1407323		100	School Site	5800242	292444	5	100.5	0.5% dry	Pass	
31	1407352	23/09/2014	101	School Site	5800187	292448	5	104	0.5% dry	Pass	Retest of Rep 30 - 1407321
	1407353		102	School Site	5800258	292388	3	102.5	0.5% dry	Pass	
	1407354		103	School Site	5800231	292412	3	100.5	0.5% dry	Pass	
	1407355		104	School Site	5800215	292371	3	102	0.5% wet	Pass	
32	1407394	24/09/2014	105	School Site	5800173	292468	6	103.5	0.5% dry	Pass	
	1407395		106	School Site	5800219	292427	6	101.5	0.5% dry	Pass	
	1407396		107	School Site	5800231	292460	6	100.5	omc	Pass	
33	1407433	25/09/2014	108	School Site	5800187	292394	4	100	omc	Pass	
	1407434		109	School Site	5800222	292375	4	104.5	0.5% dry	Pass	
	1407435		110	School Site	5800286	292415	4	99.5	omc	Pass	
34	1407462	26/09/2014	111	School Site	5800281	292376	1	100	omc	Pass	
	1407463		112	School Site	5800282	292431	1	99.5	0.5% wet	Pass	
	1407464		113	262	5800487	292793	1	96	omc	Pass	
35	1407465	27/09/2014	114	School Site	5800246	292446	7	98.5	omc	Pass	
	1407466		115	School Site	5800237	292468	7	99	omc	Pass	
	1407467		116	School Site	5800175	292438	7	102	0.5% dry	Pass	
36	1407574	1/10/2014	117	School Site	5800193	292381	6	103	1.5% wet	Pass	
	1407575		118	School Site	5800232	292373	6	98	omc	Pass	
	1407576		119	School Site	5800256	292390	6	99.5	0.5% wet	Pass	
37	1407625	2/10/2014	120	School Site	5800306	292403	2	102.5	0.5% dry	Pass	

	1407626		121	School Site	5800293	292442	2	102	omc	Pass	
	1407627		122	School Site	5800264	292467	2	103.5	0.5% dry	Pass	
38	1408393	28/10/2014	123	School Site	5800187	292357	7	98	omc	Pass	
39	1408418	29/10/2014	124	School Site	5800219	292353	7	102.5	0.5% dry	Pass	
	1408419		125	School Site	5800235	292371	7	102.5	omc	Pass	
	1408420		126	School Site	5800179	292421	8	102	0.5% dry	Pass	
40	1408454	30/10/2014	127	School Site	5800238	292366	3	99.5	omc	Pass	
	1408455		128	School Site	5800239	292419	3	98	1.5% wet	Pass	
	1408456		129	School Site	5800236	292443	3	101	omc	Pass	
41	1408523	31/10/2014	130	School Site	5800280	292442	3	97	omc	Fail	Area reworked refer rep 42 - 1408618
	1408524		131	School Site	5800288	292408	3	102.5	0.5% wet	Pass	
	1408525		132	School Site	5800287	292381	3	102	2% wet	Pass	
42	1408618	7/11/2014	133	School Site	5800280	292442	3	99	omc	Pass	Retest of Rep 41 - 1408523
	1408619		134	School Site	5800226	292371	8	100.5	omc	Pass	
	1408620		135	School Site	5800985	292363	8	99	omc	Pass	
	1406821		136	School Site	5800272	292392	4	101.5	omc	Pass	
43	1409141	26/11/2014	137	School Site	5800217	292378	9	101.5	0.5% wet	Pass	
	1409142		138	School Site	5800203	292359	9	102	omc	Pass	
	1409143		139	School Site	5800176	292376	9	99	0.5% wet	pass	
44	1409160	27/11/2014	140	School Site	5800259	292368	9	98.5	0.5% wet	Pass	
	1409161		141	School Site	5800269	292393	9	100.5	0.5% wet	pass	
	1409162		142	School Site	5800295	292360	9	100	omc	pass	
45	1409235	28/11/2014	143	School Site	5800173	292358	10	99	omc	Pass	
	1409236		144	School Site	5800194	292369	10	98	omc	pass	
	1409237		145	School Site	5800221	292381	10	99.5	omc	Pass	
46	1409283	1/12/2014	146	School Site	5800245	292367	5	101	0.5% wet	Pass	
	1409284		147	School Site	5800283	292371	5	101.5	1% dry	Pass	
	1409285		148	School Site	5800302	292378	5	101.5	1% wet	Pass	
47	1409296	2/12/2014	149	School Site	5800301	292415	1	100	omc	Pass	
	1409297		150	School Site	5800311	292318	1	99	omc	Pass	
	1409298		151	School Site	5800214	292356	11	101.5	omc	Pass	
48	1409586	10/12/2014	152	282	5800369	292571	1	97	omc	Pass	

	1409587		153	273	5800361	292682	1	97.5	omc	Pass	
49	1409629	11/12/2014	154	262	5800396	292792	2	99	0.5% wet	Pass	
	1409630		155	263	5800377	292787	3	98	1% wet	Pass	
	1409631		156	262 & 263	5800385	292800	4	98.5	0.5% wet	Pass	
50	1409723	12/12/2014	157	258	5800520	292860	2	98	0.5% wet	Pass	
	1409724		158	258	5800518	292865	3	98	omc	Pass	
51	1501922	3/03/2015	159	School Site	5800249	292380	6	100.5	omc	Pass	
	1501923		160	School Site	5800279	292366	6	100	omc	Pass	
	1501924		161	School Site	5800316	292379	2	98.5	omc	Pass	
52	1502040	4/03/2015	162	School Site	5800181	292394	8	100.5	omc	Pass	
53	1502476	16/03/2015	163	School Site	5800216	292417	9	98	0.5% dry	Pass	
	1502477		164	School Site	5800234	292394	9	100	omc	Pass	
	1502478		165	School Site	5800253	292419	4	95.5	omc	Pass	see retest
54	1502627	17/03/2015	166	School Site	5800253	292419	4	100.5	omc	Pass	retest of 1502478
	1502628		167	School Site	5800233	292467	2	100	0.5% wet	Pass	
	1502629		168	School Site	5800256	292471	2	100	omc	Pass	
55	1502668	18/03/2015	169	School Site	5800260	292464	3	99.5	omc	Pass	
	1502669		170	School Site	5800279	292444	4	100	omc	Pass	
	1502670		171	School Site	5800286	292409	4	99	0.5% wet	Pass	
	1502671		172	School Site	5800294	292415	2	100.5	omc	Pass	
56	1502708	19/03/2015	173	School Site	5800294	292448	2	100.5	omc	Pass	
	1502709		174	School Site	5800301	292420	2	99.5	omc	pass	
57	1502767	20/03/2015	175	School Site	5800251	292445	5	99.5	omc	pass	
	1502768		176	School Site	5800254	292411	5	99.5	omc	pass	
	1502769		177	School Site	5800264	292373	7	99.5	omc	pass	
58	1502804	21/03/2015	178	School Site	5800277	292359	7	99	omc	Pass	
	1502805		179	School Site	5800282	292374	7	99	omc	Pass	
	1502806		180	School Site	5800283	292390	3	100	omc	Pass	
59	1502991	25/03/2015	181	School Site	5800314	292376	3	100.5	omc	Pass	
	1502992		182	School Site	5800307	292398	3	100.5	omc	Pass	
	1502993		183	School Site	5800251	292378	8	99	0.5% wet	Pass	
60	1503097	26/03/2015	184	School Site	5800279	292360	8	100.5	omc	Pass	
	1503098		185	School Site	5800275	292392	8	101	omc	pass	
	1503099		186	School Site	5800322	292371	1	99.5	omc	Pass	
	1503100		187	School Site	5800316	292415	1	99	omc	pass	



**Appendix C: NATA Endorsed Laboratory Test Reports**

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 -1**

Report Date: 15/08/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1405967	1405968	1405969						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	14/08/2014	14/08/2014	14/08/2014						
Time Sampled:	am	am	am						
Date Tested:	14/08/2014	14/08/2014	14/08/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	Lot 289 N 5800154 E 292546 Layer 1	Lot 288 N 5800181 E 292552 Layer 1	Lot 287 N 5800210 E 292562 Layer 1						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289 1.2.1.6.4(b)	AS1289 1.2.1.6.4(b)	AS1289 1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.03</b>	<b>1.99</b>	<b>2.09</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.04</b>	<b>2.02</b>	<b>2.09</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>	<b>1% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.5</b>	<b>98.5</b>	<b>100.0</b>						
Min Hilf Density Ratio (%):	95	95	95						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 -2**

Report Date: 18/08/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1405989	1405990	1405991						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	15/08/2014	15/08/2014	15/08/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	18/08/2014	18/08/2014	18/08/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	Lot 289 N 5800161 E 292544 Layer 2	Lot 288 N 5800188 E 292548 Layer 2	Lot 289 N 5800157 E 292552 Layer 3						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289 1.2.1.6.4(b)	AS1289 1.2.1.6.4(b)	AS1289 1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>1.92</b>	<b>1.99</b>	<b>1.93</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.00</b>	<b>2.08</b>	<b>2.09</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>96.0</b>	<b>95.5</b>	<b>92.5</b>						
Min Hilf Density Ratio (%):	95	95	95						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 3**

Report Date: 18/08/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1405995	1405996	1405997						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	16/08/2014	16/08/2014	16/08/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	18/08/2014	18/08/2014	18/08/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	Fill	Fill	Fill						
Sample Location :	School Site N 5800433 E 292517 Layer 1	School Site N 5800230 E 292495 Layer 1	School Site N 5800214 E 292484 Layer 1						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289 1.2.1.6.4(b)	AS1289 1.2.1.6.4(b)	AS1289 1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>1.94</b>	<b>1.98</b>	<b>2.06</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.04</b>	<b>2.04</b>	<b>2.01</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>	<b>1.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>95.0</b>	<b>97.0</b>	<b>102.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 4**

Report Date: 25/08/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406068	1406069	1406070	1406071	1406072	1406073			
ID No.:	1	2	3	4	5	6			
Lot No.:	-	-	-	-	-	-			
Date Sampled:	20/08/2014	20/08/2014	20/08/2014	20/08/2014	20/08/2014	20/08/2014			
Time Sampled:	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm			
Date Tested:	20/08/2014	20/08/2014	20/08/2014	20/08/2014	20/08/2014	20/08/2014			
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived	Site Derived	Site Derived			
Material Type:	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay			
To Be Used As	-	-	-	-	-	-			
Sample Location :	School Site N 5800233 E 292517 Layer 1	School Site N 5800230 E 292495 Layer 1	Lot 289 N 5780157 E 292552 Layer 3	School Site N 5800191 E 292515 Layer 1	School Site N 5800193 E 292473 Layer 1	School Site N 5800169 E 292493 Layer 1			
Layer Depth (mm):	150	150	150	150	150	150			
Test Depth (mm):	125	125	125	125	125	125			
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)			
Max Size (mm):	19.0	19.0	19.0	19.0	19.0	19.0			
Oversize Wet (%):	0	0	0	0	0	0			
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.15</b>	<b>2.11</b>	<b>2.08</b>	<b>2.07</b>	<b>2.09</b>	<b>2.09</b>			
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-	-	-			
PCWD (t/m <sup>3</sup> ):	<b>2.15</b>	<b>2.10</b>	<b>2.06</b>	<b>2.08</b>	<b>2.13</b>	<b>2.13</b>			
APCWD (t/m <sup>3</sup> )	-	-	-	-	-	-			
O.M.C (%) AS1289.5.7.1:	-	-	-	-	-	-			
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-	-	-			
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>0.5% (dry)</b>	<b>omc</b>	<b>0.5% (dry)</b>	<b>omc</b>			
Adjusted Moisture Variation (of omc):	-	-	-	-	-	-			
Compactive Effort:	Standard	Standard	Standard	Standard	Standard	Standard			
<b>Hilf Density Ratio (%):</b>	<b>100.0</b>	<b>100.5</b>	<b>101.0</b>	<b>99.5</b>	<b>98.0</b>	<b>98.5</b>			
Min Hilf Density Ratio (%):	95	95	95	95	95	95			

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001** - 5

Report Date: 18/08/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406096	1406097	1406098						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	21/08/2014	21/08/2014	21/08/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	21/08/2014	21/08/2014	21/08/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800160 E 292508 Layer 1	School Site N 5800159 E 292485 Layer 1	School Site N 5800165 E 292472 Layer 1						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.12</b>	<b>2.06</b>	<b>2.20</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.13</b>	<b>2.10</b>	<b>2.18</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>0.5% (dry)</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.5</b>	<b>98.0</b>	<b>100.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 6**

Report Date: 25/08/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406129	1406130	1406131						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	22/08/2014	22/08/2014	22/08/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	23/08/2014	23/08/2014	23/08/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800110 E 292477 Layer 1	School Site N 5800128 E 292491 Layer 1	School Site N 5800140 E 292460 Layer 1						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.07</b>	<b>2.08</b>	<b>2.06</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.08</b>	<b>2.09</b>	<b>2.09</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.5</b>	<b>99.5</b>	<b>99.0</b>						
Min Hilf Density Ratio (%):	95	95	95						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001** - 7

Report Date: 25/08/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406143	1406144	1406145						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	23/08/2014	23/08/2014	23/08/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	23/08/2014	23/08/2014	23/08/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800119 E 292424 Layer 1	School Site N 5800140 E 292434 Layer 1	School Site N 5800161 E 292450 Layer 1						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.11</b>	<b>2.06</b>	<b>2.06</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.13</b>	<b>2.07</b>	<b>2.08</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.0</b>	<b>99.0</b>	<b>98.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 8**

Report Date: 26/08/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406150	1406151	1406152						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	25/08/2014	25/08/2014	25/08/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	25/08/2014	25/08/2014	25/08/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800163 E 292416 Layer 1	School Site N 5800142 E 292407 Layer 1	School Site N 5800120 E 292408 Layer 1						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.04</b>	<b>2.10</b>	<b>2.06</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.08</b>	<b>2.12</b>	<b>2.09</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.5</b>	<b>99.0</b>	<b>98.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 9**

Report Date: 27/08/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406191	1406192	1406193						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	26/08/2014	26/08/2014	26/08/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	26/08/2014	26/08/2014	26/08/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800130 E 292368 Layer 1	School Site N 5800146 E 292362 Layer 1	School Site N 5800172 E 292363 Layer 1						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.09</b>	<b>2.08</b>	<b>2.09</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.09</b>	<b>2.10</b>	<b>2.10</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>2% (wet)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.0</b>	<b>99.0</b>	<b>99.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 10**

Report Date: 28/08/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406470	1406471	1406472						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	27/08/2014	27/08/2014	27/08/2014						
Time Sampled:	sm/pm	sm/pm	sm/pm						
Date Tested:	27/08/2014	27/08/2014	27/08/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800239 E 292496 Layer 2	School Site N 5800219 E 292490 Layer 2	School Site N 5800185 E 292499 Layer 2						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.06</b>	<b>2.06</b>	<b>2.09</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.09</b>	<b>2.11</b>	<b>2.12</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>1% (wet)</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.5</b>	<b>98.0</b>	<b>98.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001** - 11

Report Date: 29/08/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406494	1406495	1406496						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	28/08/2014	28/08/2014	28/08/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	28/08/2014	28/08/2014	28/08/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800159 E 292508 Layer 2	School Site N 5800157 E 292468 Layer 2	School Site N 5800139 E 292492 Layer 2						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.08</b>	<b>2.09</b>	<b>2.07</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.12</b>	<b>2.13</b>	<b>2.11</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>1% (wet)</b>	<b>0.5% (wet)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.5</b>	<b>98.0</b>	<b>98.0</b>						
Min Hilf Density Ratio (%):	95	95	95						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 -12**

Report Date: 02/09/14

C.G Order No: **0**

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406637	1406638	1406639	1406640						
ID No.:	1	2	3	4						
Lot No.:	-	-	-	-						
Date Sampled:	1/09/2014	1/09/2014	1/09/2014	1/09/2014						
Time Sampled:	am/pm	am/pm	am/pm	am/pm						
Date Tested:	1/09/2014	1/09/2014	1/09/2014	2/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-	-						
Sample Location :	School Site N 5800128 E 292499 Layer 3	School Site N 5800137 E 292474 Layer 3	School Site N 5800140 E 292453 Layer 2	School Site N 5800141 E 292420 Layer 2						
Layer Depth (mm):	150	150	150	150						
Test Depth (mm):	125	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.12</b>	<b>2.08</b>	<b>2.07</b>	<b>2.08</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.13</b>	<b>2.09</b>	<b>2.08</b>	<b>2.07</b>						
APCWD (t/m <sup>3</sup> )	-	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>1% (wet)</b>	<b>3% (wet)</b>	<b>2.5% (wet)</b>						
Adjusted Moisture Variation (of omc):	-	-	-	-						
Compactive Effort:	Standard	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.0</b>	<b>99.5</b>	<b>100.0</b>	<b>100.5</b>						
Min Hilf Density Ratio (%):	98	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 13**

Report Date: 03/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406732	1406733	1406734						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	2/09/2014	2/09/2014	2/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	3/09/2014	3/09/2014	3/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800158 E 292391 Layer 2	School Site N 5800139 E 292388 Layer 2	School Site N 5800124 E 292385 Layer 2						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.05</b>	<b>2.07</b>	<b>2.06</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.12</b>	<b>2.13</b>	<b>2.10</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (wet)</b>	<b>1% (wet)</b>	<b>0.5% (wet)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>97.0</b>	<b>97.5</b>	<b>98.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 14**

Report Date: 04/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406745	1406746	1406747	1406748	1406749					
ID No.:	1	2	3	4	5					
Lot No.:	-	-	-	-	-					
Date Sampled:	3/09/2014	3/09/2014	3/09/2014	3/09/2014	3/09/2014					
Time Sampled:	am/pm	am/pm	am/pm	am/pm	am/pm					
Date Tested:	4/09/2014	4/09/2014	4/09/2014	4/09/2014	4/09/2014					
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived	Site Derived					
Material Type:	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay					
To Be Used As	-	-	-	-	-					
Sample Location :	School Site N 5800158 E 292391 Layer 2 - Retest	School Site N 5800139 E 292388 Layer 2 - Retest	School Site N 5800160 E 292363 Layer 2	School Site N 5800176 E 292487 Layer 4	School Site N 5800150 E 292495 Layer 4					
Layer Depth (mm):	150	150	150	150	150					
Test Depth (mm):	125	125	125	125	125					
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)					
Max Size (mm):	19.0	19.0	19.0	19.0	19.0					
Oversize Wet (%):	0	0	0	0	0					
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.11</b>	<b>2.10</b>	<b>2.08</b>	<b>2.00</b>	<b>1.97</b>					
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-	-					
PCWD (t/m <sup>3</sup> ):	<b>2.13</b>	<b>2.13</b>	<b>2.06</b>	<b>2.11</b>	<b>2.11</b>					
APCWD (t/m <sup>3</sup> )	-	-	-	-	-					
O.M.C (%) AS1289.5.7.1:	-	-	-	-	-					
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-	-					
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>2% (wet)</b>	<b>0.5% (dry)</b>	<b>0.5% (wet)</b>	<b>3% (wet)</b>					
Adjusted Moisture Variation (of omc):	-	-	-	-	-					
Compactive Effort:	Standard	Standard	Standard	Standard	Standard					
<b>Hilf Density Ratio (%):</b>	<b>99.0</b>	<b>98.5</b>	<b>101.0</b>	<b>95.0</b>	<b>93.0</b>					
Min Hilf Density Ratio (%):	98	98	98	98	98					

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 15**

Report Date: 05/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406764	1406765	1406766						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	4/09/2014	4/09/2014	4/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	5/09/2014	5/09/2014	5/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800172 E 292487 Layer 4	School Site N 5800150 E 292495 Layer 4	School Site N 5800119 E 292481 Layer 4						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.10</b>	<b>2.12</b>	<b>2.08</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.09</b>	<b>2.10</b>	<b>2.11</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.5</b>	<b>101.0</b>	<b>98.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 16**

Report Date: 08/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406778	1406779	1406780	1406781	1406782					
ID No.:	1	2	3	4	5					
Lot No.:	-	-	-	-	-					
Date Sampled:	5/09/2014	5/09/2014	5/09/2014	5/09/2014	5/09/2014					
Time Sampled:	am/pm	am/pm	am/pm	am/pm	am/pm					
Date Tested:	8/09/2014	8/09/2014	8/09/2014	6/09/2014	8/09/2014					
Material Source:	Site Derived									
Material Type:	Silty Clay									
To Be Used As	-	-	-	-	-					
Sample Location :	School Site N 5800132 E 292387 Layer 3	School Site N 5800159 E 292360 Layer 3	School Site N 5800148 E 292495 Layer 5	School Site N 5800118 E 292497 Layer 5	School Site N 5800250 E 292501 Layer 1					
Layer Depth (mm):	150	150	150	150	150					
Test Depth (mm):	125	125	125	125	125					
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)					
Max Size (mm):	19.0	19.0	19.0	19.0	19.0					
Oversize Wet (%):	0	0	0	0	0					
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.11</b>	<b>2.09</b>	<b>2.07</b>	<b>2.00</b>	<b>2.10</b>					
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-	-					
PCWD (t/m <sup>3</sup> ):	<b>2.13</b>	<b>2.07</b>	<b>2.02</b>	<b>2.04</b>	<b>2.00</b>					
APCWD (t/m <sup>3</sup> )	-	-	-	-	-					
O.M.C (%) AS1289.5.7.1:	-	-	-	-	-					
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-	-					
Moisture Variation (of omc):	<b>0.5% (wet)</b>	<b>0.5% (dry)</b>	<b>2% (dry)</b>	<b>1% (dry)</b>	<b>2.5% (dry)</b>					
Adjusted Moisture Variation (of omc):	-	-	-	-	-					
Compactive Effort:	Standard	Standard	Standard	Standard	Standard					
<b>Hilf Density Ratio (%):</b>	<b>99.0</b>	<b>100.5</b>	<b>102.5</b>	<b>98.0</b>	<b>105.0</b>					
Min Hilf Density Ratio (%):	98	98	98	98	98					

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 17**

Report Date: 08/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406792	1406793	1406794	1406795						
ID No.:	1	2	3	4						
Lot No.:	-	-	-	-						
Date Sampled:	6/09/2014	6/09/2014	6/09/2014	6/09/2014						
Time Sampled:	am/pm	am/pm	am/pm	am/pm						
Date Tested:	8/09/2014	8/09/2014	8/09/2014	8/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-	-						
Sample Location :	School Site N 5800140 E 292501 Layer 2	School Site N 5800141 E 292420 Layer 2	School Site N 5800126 E 292389 Layer 4	School Site N 5800147 E 292401 Layer 4						
Layer Depth (mm):	150	150	150	150						
Test Depth (mm):	125	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.10</b>	<b>2.10</b>	<b>2.10</b>	<b>2.10</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.13</b>	<b>2.06</b>	<b>2.06</b>	<b>2.06</b>						
APCWD (t/m <sup>3</sup> )	-	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-						
Moisture Variation (of omc):	<b>0.5% (wet)</b>	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-	-						
Compactive Effort:	Standard	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.5</b>	<b>101.5</b>	<b>102.0</b>	<b>102.0</b>						
Min Hilf Density Ratio (%):	95	95	95	95						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 18**

Report Date: 09/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406910	1406911	1406912	1406913						
ID No.:	1	2	3	4						
Lot No.:	-	-	-	-						
Date Sampled:	8/09/2014	8/09/2014	8/09/2014	8/09/2014						
Time Sampled:	am/pm	am/pm	am/pm	am/pm						
Date Tested:	9/09/2014	9/09/2014	9/09/2014	9/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-	-						
Sample Location :	School Site N 5800250 E 292201 Layer 1	School Site N 5800152 E 292442 Layer 3	School Site N 5800128 E 292397 Layer 5	School Site N 5800159 E 292382 Layer 5						
Layer Depth (mm):	150	150	150	150						
Test Depth (mm):	125	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.10</b>	<b>2.09</b>	<b>2.08</b>	<b>2.10</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.14</b>	<b>2.13</b>	<b>2.07</b>	<b>2.10</b>						
APCWD (t/m <sup>3</sup> )	-	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-	-						
Compactive Effort:	Standard	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.0</b>	<b>98.0</b>	<b>100.5</b>	<b>100.0</b>						
Min Hilf Density Ratio (%):	98	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 19**

Report Date: 10/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406928	1406929	1406930						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	9/09/2014	9/09/2014	9/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	10/09/2014	10/09/2014	10/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800148 E 292431 Layer 4	School Site N 5800177 E 292404 Layer 6	School Site N 5800163 E 292390 Layer 6						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.06</b>	<b>2.08</b>	<b>2.06</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.10</b>	<b>2.12</b>	<b>2.01</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>1.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.0</b>	<b>98.0</b>	<b>102.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 20**

Report Date: 11/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1406977	1406978	1406979	1406980						
ID No.:	1	2	3	4						
Lot No.:	-	-	-	-						
Date Sampled:	10/09/2014	10/09/2014	10/09/2014	10/09/2014						
Time Sampled:	am/pm	am/pm	am/pm	am/pm						
Date Tested:	11/09/2014	11/09/2014	11/09/2014	11/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-	-						
Sample Location :	School Site N 5800151 E 292447 Layer 5	School Site N 5800127 E 292421 Layer 6	School Site N 5800112 E 292497 Layer 6	School Site N 5800136 E 292375 Layer 7						
Layer Depth (mm):	150	150	150	150						
Test Depth (mm):	125	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.12</b>	<b>2.09</b>	<b>2.07</b>	<b>2.12</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.13</b>	<b>2.07</b>	<b>2.11</b>	<b>2.08</b>						
APCWD (t/m <sup>3</sup> )	-	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>0.5% (dry)</b>	<b>omc</b>	<b>2% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-	-						
Compactive Effort:	Standard	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.0</b>	<b>101.0</b>	<b>98.0</b>	<b>102.5</b>						
Min Hilf Density Ratio (%):	98	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 21**

Report Date: 12/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407033	1407034	1407035						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	11/09/2014	11/09/2014	11/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	12/09/2014	12/09/2014	12/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Gravelly Clay	Gravelly Clay	Gravelly Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800257 E 292448 Layer 1	School Site N 5800229 E 292418 Layer 1	School Site N 5800179 E 292450 Layer 1						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.13</b>	<b>2.10</b>	<b>2.09</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.10</b>	<b>2.16</b>	<b>2.12</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>101.5</b>	<b>97.0</b>	<b>98.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 22**

Report Date: 13/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407046	1407047	1407048	1407049						
ID No.:	1	2	3	4						
Lot No.:	-	-	-	-						
Date Sampled:	12/09/2014	12/09/2014	12/09/2014	12/09/2014						
Time Sampled:	am/pm	am/pm	am/pm	am/pm						
Date Tested:	13/09/2014	13/09/2014	13/09/2014	13/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived						
Material Type:	Gravelly Clay	Gravelly Clay	Gravelly Clay	Gravelly Clay						
To Be Used As	-	-	-	-						
Sample Location :	School Site N 5800229 E 292418 Layer 1	School Site N 5800201 E 292462 Layer 2	School Site N 5800192 E 292425 Layer 2	School Site N 5800241 E 292429 Layer 2						
Layer Depth (mm):	150	150	150	150						
Test Depth (mm):	125	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.14</b>	<b>2.08</b>	<b>2.11</b>	<b>2.10</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.19</b>	<b>2.12</b>	<b>2.13</b>	<b>2.10</b>						
APCWD (t/m <sup>3</sup> )	-	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-						
Moisture Variation (of omc):	<b>0.5% (wet)</b>	<b>omc</b>	<b>1% (dry)</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-	-						
Compactive Effort:	Standard	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.0</b>	<b>98.0</b>	<b>99.0</b>	<b>100.0</b>						
Min Hilf Density Ratio (%):	98	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 23**

Report Date: 16/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407057	1407058	1407059						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	13/09/2014	13/09/2014	13/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	13/09/2014	13/09/2014	13/08/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Gravelly Clay	Gravelly Clay	Gravelly Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800182 E 292453 Layer 3	School Site N 5800204 E 292455 Layer 3	School Site N 5800228 E 292422 Layer 3						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	1						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.10</b>	<b>2.10</b>	<b>2.09</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.11</b>	<b>2.12</b>	-						
APCWD (t/m <sup>3</sup> )	-	-	<b>2.10</b>						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	-						
Adjusted Moisture Variation (of omc):	-	-	<b>omc</b>						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.5</b>	<b>99.0</b>	<b>99.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 24**

Report Date: 16/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407074	1407075	1407076						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	15/09/2014	15/09/2014	15/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	16/09/2014	16/09/2014	16/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800227 E 292436 Layer 4	School Site N 5800197 E 292456 Layer 4	School Site N 5800194 E 292431 Layer 4						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.09</b>	<b>2.13</b>	<b>2.09</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.05</b>	<b>2.07</b>	<b>2.06</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>1.5% (dry)</b>	<b>1% (dry)</b>	<b>2% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>102.0</b>	<b>103.0</b>	<b>101.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 25**

Report Date: 18/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407103	1407104	1407105						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	16/09/2014	16/09/2014	16/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	17/09/2014	17/09/2014	17/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800133 E 292454 Layer 7	School Site N 5800129 E 292412 Layer 8	School Site N 5800132 E 292373 Layer 8						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.11</b>	<b>2.09</b>	<b>2.12</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>1.98</b>	<b>2.05</b>	<b>2.08</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>1.5% (dry)</b>	<b>2% (dry)</b>	<b>1% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>106.0</b>	<b>102.0</b>	<b>102.0</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 -26**

Report Date: 17/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407176	1407177								
ID No.:	1	2								
Lot No.:	-	-								
Date Sampled:	17/09/2014	17/09/2014								
Time Sampled:	am/pm	am/pm								
Date Tested:	18/09/2014	18/09/2014								
Material Source:	Site Derived	Site Derived								
Material Type:	Silty Clay	Silty Clay								
To Be Used As	-	-								
Sample Location :	Lot 259 N 5800514 E 292864 Layer 1	Lot 263 N 5800483 E 292801 Layer 1								
Layer Depth (mm):	150	150								
Test Depth (mm):	125	125								
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)								
Max Size (mm):	19.0	19.0								
Oversize Wet (%):	0	0								
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.05</b>	<b>1.99</b>								
Fld. Moisture Content (%) AS1289.2.1.1:	-	-								
PCWD (t/m <sup>3</sup> ):	<b>2.13</b>	<b>1.98</b>								
APCWD (t/m <sup>3</sup> )	-	-								
O.M.C (%) AS1289.5.7.1:	-	-								
Moisture Ratio (%) AS1289.5.4.1:	-	-								
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>1.5% (dry)</b>								
Adjusted Moisture Variation (of omc):	-	-								
Compactive Effort:	Standard	Standard								
<b>Hilf Density Ratio (%):</b>	<b>96.5</b>	<b>100.5</b>								
Min Hilf Density Ratio (%):	95	95								

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 27**

Report Date: 20/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407205	1407206	1407207						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	18/09/2014	18/09/2014	18/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	19/09/2014	19/09/2014	19/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800170 E 292362 Layer 8	School Site N 5800153 E 292393 Layer 9	School Site N 5800122 E 292427 Layer 8						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.06</b>	<b>2.14</b>	<b>2.10</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.09</b>	<b>2.12</b>	<b>2.08</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>0.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.5</b>	<b>101.0</b>	<b>101.0</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 28**

Report Date: 23/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407277	1407278								
ID No.:	1	2								
Lot No.:	-	-								
Date Sampled:	19/09/2014	19/09/2014								
Time Sampled:	am/pm	am/pm								
Date Tested:	23/09/2014	23/09/2014								
Material Source:	Site Derived	Site Derived								
Material Type:	Silty Clay	Silty Clay								
To Be Used As	-	-								
Sample Location :	School Site N 5800224 E 292399 Layer 1	School Site N 5800209 E 292368 Layer 1								
Layer Depth (mm):	150	150								
Test Depth (mm):	125	125								
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)								
Max Size (mm):	19.0	19.0								
Oversize Wet (%):	0	0								
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.06</b>	<b>2.08</b>								
Fld. Moisture Content (%) AS1289.2.1.1:	-	-								
PCWD (t/m <sup>3</sup> ):	<b>2.03</b>	<b>2.03</b>								
APCWD (t/m <sup>3</sup> )	-	-								
O.M.C (%) AS1289.5.7.1:	-	-								
Moisture Ratio (%) AS1289.5.4.1:	-	-								
Moisture Variation (of omc):	<b>2% (dry)</b>	<b>0.5% (dry)</b>								
Adjusted Moisture Variation (of omc):	-	-								
Compactive Effort:	Standard	Standard								
<b>Hilf Density Ratio (%):</b>	<b>101.5</b>	<b>102.5</b>								
Min Hilf Density Ratio (%):	98	98								

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 29**

Report Date: 23/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407284	1407285	1407286						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	20/09/2014	20/09/2014	20/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	22/09/2014	23/09/2014	22/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800188 E 292375 Layer 2	School Site N 5800228 E 292363 Layer 2	School Site N 5800248 E 292384 Layer 2						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.09</b>	<b>2.08</b>	<b>2.08</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.09</b>	<b>2.08</b>	<b>2.07</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>0.5% (wet)</b>	<b>0.5% (wet)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.0</b>	<b>100.5</b>	<b>100.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 30**

Report Date: 23/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407321	1407322	1407323						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	22/09/2014	22/09/2014	22/09/2014						
Time Sampled:	pm	pm	pm						
Date Tested:	22/09/2014	22/09/2014	22/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800187 E 292448 Layer 5	School Site N 5800214 E 292458 Layer 5	School Site N 5800242 E 292444 Layer 5						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.06</b>	<b>2.13</b>	<b>2.12</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.14</b>	<b>2.15</b>	<b>2.11</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>omc</b>	<b>0.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>96.5</b>	<b>99.5</b>	<b>100.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 31**

Report Date: 24/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407352	1407353	1407354	1407355						
ID No.:	1	2	3	4						
Lot No.:	-	-	-	-						
Date Sampled:	23/09/2014	23/09/2014	23/09/2014	23/09/2014						
Time Sampled:	am/pm	am/pm	am/pm	am/pm						
Date Tested:	24/09/2014	24/09/2014	24/09/2014	24/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-	-						
Sample Location :	School Site N 5800187 E 292448 Layer 5	School Site N 5800258 E 292388 Layer 3	School Site N 5800231 E 292412 Layer 3	School Site N 5800215 E 292371 Layer 3						
Layer Depth (mm):	150	150	150	150						
Test Depth (mm):	125	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.12</b>	<b>2.12</b>	<b>2.10</b>	<b>2.10</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.05</b>	<b>2.06</b>	<b>2.09</b>	<b>2.07</b>						
APCWD (t/m <sup>3</sup> )	-	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-						
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>	<b>0.5% (wet)</b>						
Adjusted Moisture Variation (of omc):	-	-	-	-						
Compactive Effort:	Standard	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>104.0</b>	<b>102.5</b>	<b>100.5</b>	<b>102.0</b>						
Min Hilf Density Ratio (%):	98	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 32**

Report Date: 25/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407394	1407395	1407396						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	24/09/2014	24/09/2014	24/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	25/09/2014	25/09/2014	25/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800173 E 292468 Layer 6	School Site N 5800219 E 292427 Layer 6	School Site N 5800231 E 292460 Layer 6						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.13</b>	<b>2.10</b>	<b>2.12</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.06</b>	<b>2.06</b>	<b>2.10</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>103.5</b>	<b>101.5</b>	<b>100.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 33**

Report Date: 26/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407433	1407434	1407435						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	25/09/2014	25/09/2014	25/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	26/09/2014	26/09/2014	26/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800187 E 292394 Layer 4	School Site N 5800222 E 292375 Layer 4	School Site N 5800286 E 292415 Layer 4						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.11</b>	<b>2.13</b>	<b>2.11</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.12</b>	<b>2.04</b>	<b>2.12</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>0.5% (dry)</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.0</b>	<b>104.5</b>	<b>99.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 34**

Report Date: 29/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407462	1407463	1407464						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	26/09/2014	26/09/2014	26/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	29/09/2014	29/09/2014	29/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800281 E 292376 Layer 1	School Site N 5800282 E 292431 Layer 1	Lot 262 N 5800487 E 292793 Layer 1						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.12</b>	<b>2.10</b>	<b>2.00</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.12</b>	<b>2.11</b>	<b>2.09</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>0.5% (wet)</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.0</b>	<b>99.5</b>	<b>96.0</b>						
Min Hilf Density Ratio (%):	98	98	95						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 35**

Report Date: 29/09/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407465	1407466	1407467						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	27/09/2014	27/09/2014	27/09/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	29/09/2014	29/09/2014	29/09/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800246 E 292446 Layer 7	School Site N 5800237 E 292468 Layer 7	School Site N 5800175 E 292438 Layer 7						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.06</b>	<b>2.06</b>	<b>2.12</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.09</b>	<b>2.08</b>	<b>2.08</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>0.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.5</b>	<b>99.0</b>	<b>102.0</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 36**

Report Date: 01/10/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407574	1407575	1407576						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	1/10/2014	1/10/2014	1/10/2014						
Time Sampled:	am	am	am						
Date Tested:	3/10/2014	3/10/2014	3/10/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800193 E 292381 Layer 6	School Site N 5800232 E 292373 Layer 6	School Site N 5800256 E 292390 Layer 6						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.13</b>	<b>2.13</b>	<b>2.11</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.07</b>	<b>2.17</b>	<b>2.12</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>1.5% (dry)</b>	<b>omc</b>	<b>0.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>103.0</b>	<b>98.0</b>	<b>99.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 37**

Report Date: 03/10/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1407625	1407626	1407627						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	2/10/2014	2/10/2014	2/10/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	2/10/2014	2/10/2014	2/10/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800306 E 292403 Layer 2	School Site N 5800293 E 292442 Layer 2	School Site N 5800264 E 292357 Layer 2						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.11</b>	<b>2.13</b>	<b>2.11</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.06</b>	<b>2.08</b>	<b>2.03</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>omc</b>	<b>0.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>102.5</b>	<b>102.0</b>	<b>103.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

P Di Meglio  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 38**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 30/10/14

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

<b>Sample No.:</b>	<b>1408393</b>									
ID No.:	1									
Lot No.:	-									
Date Sampled:	28/10/2014									
Time Sampled:	am/pm									
Date Tested:	29/10/2014									
Material Source:	Site derived									
Material Type:	Silty Clay									
To Be Used As	-									
Sample Location :	School Site N 5800187 E 292357 Layer 7									
Layer Depth (mm):	150									
Test Depth (mm):	125									
Sampling Procedure:	AS1289.1.2.1.6.4(b)									
Max Size (mm):	19.0									
Oversize Wet (%):	0									
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.08</b>									
Fld. Moisture Content (%) AS1289.2.1.1:	-									
PCWD (t/m <sup>3</sup> ):	<b>2.12</b>									
APCWD (t/m <sup>3</sup> )	-									
O.M.C (%) AS1289.5.7.1:	-									
Moisture Ratio (%) AS1289.5.4.1:	-									
Moisture Variation (of omc):	<b>omc</b>									
Adjusted Moisture Variation (of omc):	-									
Compactive Effort:	Standard									
<b>Hilf Density Ratio (%):</b>	<b>98.0</b>									
Min Hilf Density Ratio (%):	98									

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 39**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 30/10/14

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1408418	1408419	1408420						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	29/10/2014	29/10/2014	29/10/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	30/10/2014	30/10/2014	30/10/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800219 E 292353 Layer 7	School Site N 5800235 E 292371 Layer 7	School Site N 5800179 E 292421 Layer 8						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.02</b>	<b>2.09</b>	<b>2.07</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>1.98</b>	<b>2.03</b>	<b>2.03</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>omc</b>	<b>0.5% (dry)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>102.5</b>	<b>102.5</b>	<b>102.0</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 40**

Report Date: 06/10/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1408454	1408455	1408456						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	30/10/2014	30/10/2014	30/10/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	31/10/2014	31/10/2014	31/10/2014						
Material Source:	Imported	Imported	Imported						
Material Type:	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800238 E 292366 Layer 3	School Site N 5800239 E 292419 Layer 3	School Site N 5800236 E 292443 Layer 3						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	8	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.10</b>	<b>2.07</b>	<b>2.10</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.10</b>	-	<b>2.08</b>						
APCWD (t/m <sup>3</sup> )	-	<b>2.11</b>	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	-	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	<b>1.5% (wet)</b>	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.5</b>	<b>98.0</b>	<b>101.0</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 41**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 06/10/14

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1408523	1408524	1408525						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	31/10/2014	31/10/2014	31/10/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	3/11/2014	31/10/2014	31/10/2014						
Material Source:	Imported	Imported	Imported						
Material Type:	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800280 E 292442 Layer 3	School Site N 5800288 E 292408 Layer 3	School Site N 5800287 E 292381 Layer 3						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	8	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.08</b>	<b>2.15</b>	<b>2.11</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.14</b>	-	<b>2.06</b>						
APCWD (t/m <sup>3</sup> ):	-	<b>2.09</b>	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	-	<b>2% (wet)</b>						
Adjusted Moisture Variation (of omc):	-	<b>0.5% (wet)</b>	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>97.0</b>	<b>102.5</b>	<b>102.0</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 42**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 10/11/14

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1408618	1408619	1408620	1408621						
ID No.:	1	2	3	4						
Lot No.:	-	-	-	-						
Date Sampled:	7/11/2014	7/11/2014	7/11/2014	7/11/2014						
Time Sampled:	am/pm	am/pm	am/pm	am/pm						
Date Tested:	8/11/2014	8/11/2014	8/11/2014	8/11/2014						
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-	-						
Sample Location :	School Site N 5800280 E 292442 Layer 3	School Site N 5800226 E 292371 Layer 8	School Site N 5800985 E 292363 Layer 8	School Site N 5800272 E 292392 Layer 4						
Layer Depth (mm):	150	150	150	150						
Test Depth (mm):	125	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.06</b>	<b>2.11</b>	<b>2.06</b>	<b>2.14</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.08</b>	<b>2.10</b>	<b>2.09</b>	<b>2.12</b>						
APCWD (t/m <sup>3</sup> )	-	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-	-						
Compactive Effort:	Standard	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.0</b>	<b>100.5</b>	<b>99.0</b>	<b>101.5</b>						
Min Hilf Density Ratio (%):	98	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 43**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 29/11/14

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1409141	1409142	1409143						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	26/11/2014	26/11/2014	26/11/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	27/11/2014	27/11/2014	27/11/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Gravelly Clay	Gravelly Clay	Gravelly Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800217 E 292378 Layer 9	School Site N 5800203 E 292359 Layer 9	School Site N 5800176 E 292376 Layer 9						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.07</b>	<b>2.09</b>	<b>2.09</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.04</b>	<b>2.05</b>	<b>2.10</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (wet)</b>	<b>omc</b>	<b>0.5% (wet)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>101.5</b>	<b>102.0</b>	<b>99.0</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 44**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 29/11/14

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1409160	1409161	1409162						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	27/11/2014	27/11/2014	27/11/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	28/11/2014	28/11/2014	28/11/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800259 E 292368 Layer 9	School Site N 5800269 E 292393 Layer 9	School Site N 5800295 E 292360 Layer 9						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.07</b>	<b>2.10</b>	<b>2.07</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.09</b>	<b>2.09</b>	<b>2.07</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (wet)</b>	<b>0.5% (wet)</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.5</b>	<b>100.5</b>	<b>100.0</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 45**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 29/11/14

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1409235	1409236	1409237						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	28/11/2014	28/11/2014	28/11/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	29/11/2014	29/11/2014	29/11/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800173 E 292358 Layer 10	School Site N 5800194 E 292369 Layer 10	School Site N 5800221 E 292381 Layer 10						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.05</b>	<b>2.07</b>	<b>2.08</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.07</b>	<b>2.11</b>	<b>2.09</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.0</b>	<b>98.0</b>	<b>99.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 46**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 04/12/14

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1409283	1409284	1409285						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	1/12/2014	1/12/2014	1/12/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	2/12/2014	2/12/2014	2/12/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800245 E 292367 Layer 5	School Site N 5800283 E 292371 Layer 5	School Site N 5800302 E 292378 Layer 5						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.05</b>	<b>2.06</b>	<b>2.06</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.04</b>	<b>2.03</b>	<b>2.03</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (wet)</b>	<b>1% (dry)</b>	<b>1% (wet)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>101.0</b>	<b>101.5</b>	<b>101.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 47**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 04/12/14

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1409296	1409297	1409298						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	2/12/2014	2/12/2014	2/12/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	3/12/2014	3/12/2014	3/12/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800301 E 292415 Layer 1	School Site N 5800311 E 292318 Layer 1	School Site N 5800214 E 292356 Layer 11						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.02</b>	<b>2.04</b>	<b>2.04</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.02</b>	<b>2.05</b>	<b>2.01</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.0</b>	<b>99.0</b>	<b>101.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 48**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 17/12/14

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1409586	1409587								
ID No.:	1	2								
Lot No.:	-	-								
Date Sampled:	10/12/2014	10/12/2014								
Time Sampled:	am/pm	am/pm								
Date Tested:	11/12/2014	11/12/2014								
Material Source:	Site Derived	Site Derived								
Material Type:	Silty Clay	Silty Clay								
To Be Used As	-	-								
Sample Location :	Lot: 282 N 5800369 E 292571 Layer 1	Lot: 273 N 5800361 E 292682 Layer 1								
Layer Depth (mm):	150	150								
Test Depth (mm):	125	125								
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)								
Max Size (mm):	19.0	19.0								
Oversize Wet (%):	0	0								
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.04</b>	<b>2.02</b>								
Fld. Moisture Content (%) AS1289.2.1.1:	-	-								
PCWD (t/m <sup>3</sup> ):	<b>2.10</b>	<b>2.08</b>								
APCWD (t/m <sup>3</sup> )	-	-								
O.M.C (%) AS1289.5.7.1:	-	-								
Moisture Ratio (%) AS1289.5.4.1:	-	-								
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>								
Adjusted Moisture Variation (of omc):	-	-								
Compactive Effort:	Standard	Standard								
<b>Hilf Density Ratio (%):</b>	<b>97.0</b>	<b>97.5</b>								
Min Hilf Density Ratio (%):	95	95								

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 49**

Report Date: 17/12/14

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1409629	1409630	1409631						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	11/12/2014	11/12/2014	11/12/2014						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	12/12/2014	12/12/2014	12/12/2014						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	Lot: 262 N 5800396 E 292792 Layer 2	Lot: 263 N 5800377 E 292787 Layer 3	Lots: 262/263 N 5800385 E 292800 Layer 4						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.05</b>	<b>2.05</b>	<b>2.06</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.07</b>	<b>2.09</b>	<b>2.09</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (wet)</b>	<b>1% (wet)</b>	<b>0.5% (wet)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.0</b>	<b>98.0</b>	<b>98.5</b>						
Min Hilf Density Ratio (%):	95	95	95						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 50**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 17/12/14

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1409723	1409724							
ID No.:	1	2							
Lot No.:	-	-							
Date Sampled:	12/12/2014	12/12/2014							
Time Sampled:	am/pm	am/pm							
Date Tested:	12/12/2014	12/12/2014							
Material Source:	Site Derived	Site Derived							
Material Type:	Silty Clay	Silty Clay							
To Be Used As	-	-							
Sample Location :	Lot: 258 N 5800520 E 292860 Layer 2	Lot: 258 N 5800518 E 292865 Layer 3							
Layer Depth (mm):	150	150							
Test Depth (mm):	125	125							
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)							
Max Size (mm):	19.0	19.0							
Oversize Wet (%):	0	0							
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.06</b>	<b>2.05</b>							
Fld. Moisture Content (%) AS1289.2.1.1:	-	-							
PCWD (t/m <sup>3</sup> ):	<b>2.10</b>	<b>2.09</b>							
APCWD (t/m <sup>3</sup> )	-	-							
O.M.C (%) AS1289.5.7.1:	-	-							
Moisture Ratio (%) AS1289.5.4.1:	-	-							
Moisture Variation (of omc):	<b>0.5% (wet)</b>	<b>omc</b>							
Adjusted Moisture Variation (of omc):	-	-							
Compactive Effort:	Standard	Standard							
<b>Hilf Density Ratio (%):</b>	<b>98.0</b>	<b>98.0</b>							
Min Hilf Density Ratio (%):	95	95							

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 51**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 04/03/15

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1501922	1501923	1501924						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	3/03/2015	3/03/2015	3/03/2015						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	3/03/2015	3/03/2015	3/03/2015						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	N 5800249 E 0292380 Layer 6 School Site	N 5800279 E 0292366 Layer 6 School Site	N 5800316 E 0292379 Layer 2 School Site						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.08</b>	<b>2.05</b>	<b>2.00</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.08</b>	<b>2.05</b>	<b>2.04</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.5</b>	<b>100.0</b>	<b>98.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 52**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 05/03/15

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

<b>Sample No.:</b>	<b>1502040</b>									
ID No.:	1									
Lot No.:	-									
Date Sampled:	4/03/2015									
Time Sampled:	am/pm									
Date Tested:	4/03/2015									
Material Source:	Site Derived									
Material Type:	Silty clay									
To Be Used As	-									
Sample Location :	School Site N 5800181 E 0292394 Layer 8									
Layer Depth (mm):	150									
Test Depth (mm):	125									
Sampling Procedure:	AS1289.1.2.1.6.4(b)									
Max Size (mm):	19.0									
Oversize Wet (%):	0									
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.06</b>									
Fld. Moisture Content (%) AS1289.2.1.1:	-									
PCWD (t/m <sup>3</sup> ):	<b>2.05</b>									
APCWD (t/m <sup>3</sup> )	-									
O.M.C (%) AS1289.5.7.1:	-									
Moisture Ratio (%) AS1289.5.4.1:	-									
Moisture Variation (of omc):	<b>omc</b>									
Adjusted Moisture Variation (of omc):	-									
Compactive Effort:	Standard									
<b>Hilf Density Ratio (%):</b>	<b>100.5</b>									
Min Hilf Density Ratio (%):	98									

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Report Number: **307684.001 - 53**

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Report Date: 18/03/15

Project: Riverwalk Estate - Stage 7 & 8

## HILF DENSITY RATIO REPORT

C.G Order No: -

Location: Werribee

Test Method: AS1289.5.7.1

Customer Order No.: 4246

Page: 1 of 1

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1502476	1502477	1502478						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	16/03/2015	16/03/2015	16/03/2015						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	16/03/2015	16/03/2015	16/03/2015						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800216 E 0292417 Layer 9	School Site N 5800234 E 0292394 Layer 9	School Site N 5800253 E 0292419 Layer 4						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>1.95</b>	<b>2.05</b>	<b>1.94</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>1.99</b>	<b>2.06</b>	<b>2.03</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.0</b>	<b>100.0</b>	<b>95.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 54**

Report Date: 18/03/15

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1502627	1502628	1502629						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	17/03/2015	17/03/2015	17/03/2015						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	17/03/2015	17/03/2015	17/03/2015						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800253 E 0292419 Layer 4	School Site N 5800233 E 0292467 Layer 2	School Site N 5800256 E 0292471 Layer 2						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.06</b>	<b>2.03</b>	<b>2.04</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.05</b>	<b>2.03</b>	<b>2.04</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>0.5% (wet)</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.5</b>	<b>100.0</b>	<b>100.0</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

J Lamont  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 55**

Report Date: 19/03/15

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1502668	1502669	1502670	1502671						
ID No.:	1	2	3	4						
Lot No.:	-	-	-	-						
Date Sampled:	18/03/2015	18/03/2015	18/03/2015	18/03/2015						
Time Sampled:	am/pm	am/pm	am/pm	am/pm						
Date Tested:	18/03/2015	18/03/2015	18/03/2015	18/03/2015						
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-	-						
Sample Location :	School Site N 5800260 E 0292464 Layer 3	School Site N 5800279 E 0292444 Layer 4	School Site N 5800286 E 0292409 Layer 4	School Site N 5800294 E 0292415 Layer 2						
Layer Depth (mm):	150	150	150	150						
Test Depth (mm):	125	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.07</b>	<b>2.03</b>	<b>2.01</b>	<b>2.07</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.08</b>	<b>2.03</b>	<b>2.03</b>	<b>2.06</b>						
APCWD (t/m <sup>3</sup> )	-	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>0.5% (wet)</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-	-						
Compactive Effort:	Standard	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.5</b>	<b>100.0</b>	<b>99.0</b>	<b>100.5</b>						
Min Hilf Density Ratio (%):	98	98	98	98						

Remarks:



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

APPROVED SIGNATORY

**M Robinson**  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 56**

Report Date: 24/03/15

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1502708	1502709								
ID No.:	1	2								
Lot No.:	-	-								
Date Sampled:	19/03/2015	19/03/2015								
Time Sampled:	am/pm	am/pm								
Date Tested:	19/03/2015	19/03/2015								
Material Source:	Site Derived	Site Derived								
Material Type:	Silty Clay	Silty Clay								
To Be Used As	-	-								
Sample Location :	School Site N 5800294 E 0292448 Layer 2	School Site N 5800301 E 0292420 Layer 2								
Layer Depth (mm):	150	150								
Test Depth (mm):	125	125								
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)								
Max Size (mm):	19.0	19.0								
Oversize Wet (%):	0	0								
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.06</b>	<b>2.03</b>								
Fld. Moisture Content (%) AS1289.2.1.1:	-	-								
PCWD (t/m <sup>3</sup> ):	<b>2.05</b>	<b>2.04</b>								
APCWD (t/m <sup>3</sup> )	-	-								
O.M.C (%) AS1289.5.7.1:	-	-								
Moisture Ratio (%) AS1289.5.4.1:	-	-								
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>								
Adjusted Moisture Variation (of omc):	-	-								
Compactive Effort:	Standard	Standard								
<b>Hilf Density Ratio (%):</b>	<b>100.5</b>	<b>99.5</b>								
Min Hilf Density Ratio (%):	98	98								

Remarks:



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

APPROVED SIGNATORY

M Robinson  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 57**

Report Date: 24/03/15

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1502767	1502768	1502769						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	17/03/2015	17/03/2015	17/03/2015						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	20/03/2015	20/03/2015	21/03/2015						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800251 E 0292445 Layer 5	School Site N 5800254 E 0292411 Layer 5	School Site N 5800264 E 0292373 Layer 7						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.03</b>	<b>2.05</b>	<b>2.02</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.04</b>	<b>2.06</b>	<b>2.03</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.5</b>	<b>99.5</b>	<b>99.5</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

**M Robinson**  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 58**

Report Date: 24/03/15

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1502804	1502805	1502806						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	21/03/2015	21/03/2015	21/03/2015						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	21/03/2015	21/03/2015	21/03/2015						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800277 E 0292359 Layer 7	School Site N 5800282 E 0292374 Layer 7	School Site N 5800283 E 0292390 Layer 3						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.03</b>	<b>2.03</b>	<b>2.03</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.06</b>	<b>2.05</b>	<b>2.03</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>99.0</b>	<b>99.0</b>	<b>100.0</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

M Robinson  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 59**

Report Date: 27/03/15

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1502991	1502992	1502993						
ID No.:	1	2	3						
Lot No.:	-	-	-						
Date Sampled:	25/03/2015	25/03/2015	25/03/2015						
Time Sampled:	am/pm	am/pm	am/pm						
Date Tested:	25/03/2015	27/03/2015	25/03/2015						
Material Source:	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-						
Sample Location :	School Site N 5800314 E 0292376 Layer 3	School Site N 5800307 E 0292398 Layer 3	School Site N 5800251 E 0292378 Layer 8						
Layer Depth (mm):	150	150	150						
Test Depth (mm):	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.09</b>	<b>2.07</b>	<b>2.02</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.08</b>	<b>2.06</b>	<b>2.04</b>						
APCWD (t/m <sup>3</sup> )	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>0.5% (wet)</b>						
Adjusted Moisture Variation (of omc):	-	-	-						
Compactive Effort:	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.5</b>	<b>100.5</b>	<b>99.0</b>						
Min Hilf Density Ratio (%):	98	98	98						

Remarks:



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

APPROVED SIGNATORY

M Robinson  
NATA Accreditation No. 12719

Form No.: CG.315.002

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 60**

Report Date: 09/04/15

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1503097	1503098	1503099	1503100						
ID No.:	1	2	3	4						
Lot No.:	-	-	-	-						
Date Sampled:	26/03/2015	26/03/2015	26/03/2015	26/03/2015						
Time Sampled:	am/pm	am/pm	am/pm	am/pm						
Date Tested:	26/03/2015	26/03/2015	26/03/2015	26/03/2015						
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-	-						
Sample Location :	School Site N 5800279 E 0292360 Layer 8	School Site N 5800275 E 0292392 Layer 8	School Site N 5800322 E 0292371 Layer 1	School Site N 5800316 E 0292415 Layer 1						
Layer Depth (mm):	150	150	150	150						
Test Depth (mm):	125	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.09</b>	<b>2.06</b>	<b>2.03</b>	<b>2.04</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.08</b>	<b>2.04</b>	<b>2.04</b>	<b>2.06</b>						
APCWD (t/m <sup>3</sup> )	-	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-						
Moisture Variation (of omc):	<b>omc</b>	<b>omc</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-	-						
Compactive Effort:	Standard	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>100.5</b>	<b>101.0</b>	<b>99.5</b>	<b>99.0</b>						
Min Hilf Density Ratio (%):	95	95	95	95						

Remarks:



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

APPROVED SIGNATORY

**M Robinson**  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

Head Office  
32 Fiveways Boulevard  
KEYSBOROUGH VIC 3173

Ph: +61 3 8796 7900  
Fax: +61 3 8796 7944



Customer: Tonkin & Taylor Pty Ltd

Customer Address: Ground Floor, 95 Coventry Street, Southbank VIC 3205

Project: Riverwalk Estate - Stage 7 & 8

Location: Werribee

Customer Order No.: 4246

Report Number: **307684.001 - 61**

Report Date: 09/04/15

C.G Order No: -

Test Method: AS1289.5.7.1

Page: 1 of 1

## HILF DENSITY RATIO REPORT

Testing performed and reported at our Keysborough Laboratory

Sample No.:	1503205	1503206	1503207	1503208						
ID No.:	1	2	3	4						
Lot No.:	-	-	-	-						
Date Sampled:	28/03/2015	28/03/2015	28/03/2015	28/03/2015						
Time Sampled:	7:00am	7:00am	7:00am	7:00am						
Date Tested:	28/03/2015	28/03/2015	28/03/2015	28/03/2015						
Material Source:	Site Derived	Site Derived	Site Derived	Site Derived						
Material Type:	Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As	-	-	-	-						
Sample Location :	School Site N 5800316 E 0292423 Layer 2	School Site N 5800319 E 0292397 Layer 2	School Site N 5800294 E 0292390 Layer 4	School Site N 5800299 E 0292360 Layer 4						
Layer Depth (mm):	150	150	150	150						
Test Depth (mm):	125	125	125	125						
Sampling Procedure:	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)	AS1289.1.2.1.6.4(b)						
Max Size (mm):	19.0	19.0	19.0	19.0						
Oversize Wet (%):	0	0	0	0						
Fld. Wet Density (t/m <sup>3</sup> ) AS 1289.5.8.1:	<b>2.02</b>	<b>2.10</b>	<b>2.05</b>	<b>2.06</b>						
Fld. Moisture Content (%) AS1289.2.1.1:	-	-	-	-						
PCWD (t/m <sup>3</sup> ):	<b>2.05</b>	<b>2.06</b>	<b>2.03</b>	<b>2.05</b>						
APCWD (t/m <sup>3</sup> )	-	-	-	-						
O.M.C (%) AS1289.5.7.1:	-	-	-	-						
Moisture Ratio (%) AS1289.5.4.1:	-	-	-	-						
Moisture Variation (of omc):	<b>0.5% (dry)</b>	<b>0.5% (dry)</b>	<b>omc</b>	<b>omc</b>						
Adjusted Moisture Variation (of omc):	-	-	-	-						
Compactive Effort:	Standard	Standard	Standard	Standard						
<b>Hilf Density Ratio (%):</b>	<b>98.5</b>	<b>102.0</b>	<b>100.5</b>	<b>100.0</b>						
Min Hilf Density Ratio (%):	95	95	95	95						

Remarks:



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

APPROVED SIGNATORY

**M Robinson**  
NATA Accreditation No. 12719

Form No.: **CG.315.002**

Issue Date: 19/02/2013

**Appendix D:           Controlled Fill Certificates**

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 258  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 259  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

<b>PROJECT</b>	: Lot 260 Stage 7, Riverwalk Estate Werribee, VIC. 3030	<b>T&amp;T REF</b>	: 4246.001
<b>CLIENT</b>	: Places Victoria C/- DCE Pty Ltd 255 Whitehorse Road, PO Box 349 Balwyn, VIC. 3103	<b>DATE</b>	: May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 262  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 263  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 264  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 270  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 271  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 272  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 273  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 274  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 275  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 276  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 281  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 282  
Stage 7, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 285  
Stage 8, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 286  
Stage 8, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 287  
Stage 8, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 288  
Stage 8, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Lot 289  
Stage 8, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the residential lots within Stages 7 & 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director

## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Reserve Fill Area – School site  
Stage 8, Riverwalk Estate  
Werribee, VIC. 3030

**T&T REF** : 4246.001

**CLIENT** : Places Victoria C/- DCE Pty Ltd  
255 Whitehorse Road,  
PO Box 349  
Balwyn, VIC. 3103

**DATE** : May 2015

---

### SUMMARY

Tonkin & Taylor Pty Ltd conducted Level 1 inspection and testing, in accordance with *AS3798-2007, Guidelines on earthworks for commercial and residential developments*, during the filling of the school site within Stage 8 at the Riverwalk Estate, Werribee.

So far as it is able to be determined, the Clay fill was placed in accordance with the Specification that required a minimum density ratio of 98% of HILF Density (AS1289.5.7.1) to be achieved within moisture content limits of 3.0% wet and 3.0% dry of optimum moisture content (OMC).

### LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Tonkin & Taylor Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil as at the time of inspection, which was within the construction period of 14<sup>th</sup> August 2014 to 28<sup>th</sup> March 2015. No responsibility or liability will be accepted and Tonkin & Taylor Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions, since the site testing.

### TONKIN & TAYLOR PTY LTD

**Robert Barden**  
Project Manager

**Tim Chadwick**  
Project Director