

Shadforth Civil Pty Ltd
99 Sandalwood Lane
Forest Glen QLD 4556

Project 207131.00
16 November 2022
R.001.REV3CD
CW:gm

Attention: Nick Gentle

Email: nick.gentle@shadcivil.com.au

Report on Earthworks Inspection & Testing
Riverton Residential Estate, Stages 2C & 2D
Cusack Lane, Jimboomba

1. Introduction

This report presents the results of the inspection and testing of bulk earthworks fill placement for the proposed residential development at Riverton Residential Estate, Stages 2C and 2D at Cusack Lane, Jimboomba. The fill was placed and tested from 30 July 2021 to 29 September 2021.

Due to the Q100 design finish level changing in the area, an additional 631m³ of fill was placed on Lots 2170-2174. The fill was placed and tested from 2 November 2021 to 3 November 2021.

The scope of testing and inspections provided by Douglas Partners Pty Ltd (DP) comprised 'Level 1' geotechnical inspection and testing as defined in AS 3798-2007 "*Guidelines on Earthworks for Commercial and Residential Developments*", and as required by the earthworks requirements shown on the project drawings as described below. No other earthworks specification was provided for the work.

This report must be read in conjunction with the attached notes entitled '*About This Inspection Report*' and any other attached information and should be kept in its entirety without separation of individual pages or sections.

2. Scope of Works

This report only addresses the fill placed at the development during the abovementioned periods and only within the extents of the test locations (including elevation) noted on the results and as shown on the attached test location plans. Any other part of the site or fill placed after the above periods are not addressed by this report unless stated otherwise.

The specification shown on the earthworks plan 5544-ENG-CW2CD-007 prepared by Gassman Development Perspectives and supplied by Shadforth Civil Pty Ltd, required compaction to a minimum of 95% Standard dry density in accordance with the requirements of AS 3798-2007. No moisture specification was noted on the supplied drawings.

In general, the bulk earthworks operations comprised stripping and grubbing of the existing surface, removal of pockets of unsuitable soils within areas of fill (if any), then placement and compaction of cut to fill won from on site to bring the ground level up to design surface level for the required works.

The stripped subgrade was inspected by DP prior to the placement of bulk fill. The subgrade was test rolled and was considered suitable to accept the placement of fill.

The fill materials predominantly comprised clayey sandy gravel won from on site cuts.

Fill materials were placed by Moxi loads and spread by an 815 compactor and D6 dozer. Compaction was achieved using an 815 compactor and padfoot roller with loose layer thickness typically ranging from approximately 200 mm to 300 mm. Moisture was controlled by an on site water cart.

Inspections were made by a technician from DP, who was present during the placement of fill. Following the compaction of each layer, where possible, the layer was tested to assess if the specified minimum dry density ratio had been achieved. All layers, including where density testing was not carried out, were test rolled with a fully loaded water cart under the observation of the technician.

Testing was carried using the nuclear gauge method outlined in test method AS 1289 5.8.1. The relative compaction was determined using the Hilf Density Ratio method outlined in test method AS 1289 5.7.1. A total of 23 density tests were carried out during the earthworks for Stage 2C. A summary of the test results are presented in Table 1. A total of 4 density tests were carried out during the earthworks for Stage 2D. A summary of the test results are presented in Table 2. A total of 2 density tests were carried out during the earthworks for design finish level changes in lots 2170-2174 . A summary of the test results are presented in Table 3.

Table 1: Summary of Density Testing for Stage 2C

Item	Compaction	Moisture Variation
Specification	95% Std	N/A
No. of tests	23	23
Range	95.0 to 107.0% Std	2.5% wet to 4.5% dry of OMC
No of tests outside specification	0	0
Mean	100.8% Std	1.2% dry of OMC

Notes: OMC – Optimum Moisture Content for Standard compaction

N/A – Not Applicable

Table 2: Summary of Density Testing for Stage 2D

Item	Compaction	Moisture Variation
Specification	95% Std	N/A
No. of tests	4	4
Range	97.5 to 102.5% Std	0.5% wet to 2.5% dry of OMC
No of tests outside specification	0	0
Mean	100.3% Std	1.1% dry of OMC

Notes: OMC – Optimum Moisture Content for Standard compaction

N/A – Not Applicable

Table 3: Summary of Density Testing for Stage 2C

Item	Compaction	Moisture Variation
Specification	95% Std	N/A
No. of tests	2	2
Range	97.5 to 98.0% Std	0.5% wet to 0.5% dry of OMC
No of tests outside specification	0	0
Mean	97.8% Std	0% dry of OMC

Notes: OMC – Optimum Moisture Content for Standard compaction

N/A – Not Applicable

The following allotments, as presented in Table 4, are considered to be “controlled fill” in accordance with AS3798:2007:

Table 4: Stages C & D Lots Subject to “Controlled Filling” and Testing

Lot Numbers						
2086	2128	2160	2175	2190	2205	
2091	2129	2161	2176	2191	2206	
2092	2130	2162	2177	2192	2207	
2093	2131	2163	2178	2193	2208	
2094	2149	2164	2179	2194	2209	
2095	2150	2165	2180	2195	2210	
2096	2151	2166	2181	2196	2211	
2097	2152	2167	2182	2197		
2098	2153	2168	2183	2198		
2099	2154	2169	2184	2199		
2100	2155	2170	2185	2200		
2101	2156	2171	2186	2201		
2102	2157	2172	2187	2202		
2103	2158	2173	2188	2203		
2127	2159	2174	2189	2204		

3. Comments

DP undertook inspection and testing of earthworks in accordance with a 'Level 1' standard as defined in AS 3798-2007 *"Guideline on Earthworks for Commercial and Residential Developments"*.

It is considered that the placement and compaction of the fill placed by Shadforth Civil Pty Ltd from 30 July 2021 to 29 September 2021 and from 2 November to 3 November 2022, within the extents of the test locations (including elevation) noted on the results and as shown on the attached test location plan, has been carried out in general accordance with the requirements of the specification. Based on the inspection and testing, it is considered that the fill referred to in this report may be considered as "controlled fill" as defined in AS2870-2011 *"Residential Slabs and Footings"* for site classification purposes. However, DP does not undertake to guarantee the work of the contractor nor relieve their responsibility to produce a complete product conforming to the requirements of the specification.

For building on the controlled filled areas, consideration should be given by the user to the following:

- Possible disruption of the compacted fill by the installation of services;
- The possibility that additional fill has been placed before and after the dates of field density tests or at times when DP has not been notified that filling operations are in progress;
- Adequate containment of the filled areas;
- The suitability of the filled land to support structure of various types without excessive deflection, in particular, the shrink-swell properties of the filling and natural soils must be considered in foundation/footing slab design in detailing future structure; and
- Variation in fill depth.

4. Limitations

Douglas Partners (DP) has prepared this report for this project at Riverton Residential Estate, Stages 2C and 2D at Cusack Lane, Jimboomba in accordance with DP's proposal. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Shadforth Civil Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

The assessment of atypical safety hazards arising from this advice is restricted to the geotechnical components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Please contact the undersigned if you have any questions on this matter.

Yours faithfully

Douglas Partners Pty Ltd



Chad Whatley
Laboratory Manager

Reviewed by



Gary Samuels
Senior Associate

Attachments: About this Inspection Report
 Compaction Control Test Reports
 Test Location Plans – Drawing 1 & 2

About this Inspection Report

Douglas Partners



Introduction

These notes are provided to amplify DP's inspection report in regard to the limitations of carrying out inspection work. Not all notes are necessarily relevant to this report.

Standards

This inspection report has been prepared by qualified personnel to current engineering standards of interpretation and analysis.

Copyright and Limits of Use

This inspection report is the property of DP and is provided for the exclusive use of the client for the specific project and purpose as described in the report. It should not be used by a third party for any purpose other than to confirm that the construction works addressed in the report have been inspected as described. Use of the inspection report is limited in accordance with the Conditions of Engagement for the commission.

DP does not undertake to guarantee the works of the contractors or relieve them of their responsibility to produce a completed product conforming to the design.

Reports

This inspection report may include advice or opinion that is based on engineering and/or geological interpretation, information provided by the client or the client's agent, and information gained from:

- an investigation report for the project (if available to DP);
- inspection of the work, exposed ground conditions, excavation spoil and performance of excavating equipment while DP was on site;
- investigation and testing that was carried out during the site inspection;
- anecdotal information provided by authoritative site personnel; and

- DP's experience and knowledge of local geology.

Such information may be limited by the frequency of any inspection or testing that was able to be practically carried out, including possible site or cost constraints imposed by the client/contractor(s). For these reasons, the reliability of this inspection report is limited by the scope of information on which it relies.

Every care is taken with the inspection report as it relates to interpretation of subsurface conditions and any recommendations or suggestions for construction or design. However, DP cannot anticipate or assume responsibility for:

- unexpected variations in subsurface conditions that are not evident from the inspection; and
- the actions of contractors responding to commercial pressures.

Should these issues occur, then additional advice should be sought from DP and, if required, amendments made.

This inspection report must be read in conjunction with any attached information. This inspection report should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions from review by others of this inspection report or test data, which are not otherwise supported by an expressed statement, interpretation, outcome or conclusion stated in this inspection report.

Material Test Report

Report Number: 207131.00-1
Issue Number: 1
Date Issued: 06/08/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Stage 3, Jimboomba QLD
Work Request: 9006
Dates Tested: 02/08/2021 - 03/08/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Level 1 - Cut / Fill Area - Stage 3
Material: Silty Gravelly Clay



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9006A	GL-9006B	GL-9006C
Date Tested	02/08/2021	02/08/2021	02/08/2021
Time Tested	10:41	10:49	11:01
Test Request #/Location	Allotment Fill	Allotment Fill	Allotment Fill
Easting	501176	501167	501159
Northing	6922115	6922139	6922158
Elevation (m)	30.59	30.59	30.59
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	14	0	1
Field Wet Density (FWD) t/m ³	2.12	1.97	2.15
Field Dry Density (FDD) t/m ³	**	**	**
Peak Converted Wet Density t/m ³	**	1.99	**
Adjusted Peak Converted Wet Density t/m ³	2.08	**	2.09
Moisture Variation (Wv) %	**	1.5	**
Adjusted Moisture Variation %	1.0	**	0.5
Hilf Density Ratio (%)	101.5	99.0	103.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-2
Issue Number: 1
Date Issued: 09/08/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Stage 3, Jimboomba QLD
Work Request: 8985
Dates Tested: 30/07/2021 - 05/08/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Level 1 - Cut / Fill Area - Stage 3
Material: Silty Gravelly Clay



Accredited for compliance with ISO/IEC 17025 - Testing

 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-8985A	GL-8985B	GL-8985C	GL-8985D	GL-8985E	GL-8985F
Date Tested	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021
Time Tested	10:09	10:17	10:20	10:23	10:25	10:28
Test Request #/Location	Allotment Fill	Allotment Fill	Allotment Fill	Allotment Fill	Allotment Fill	Allotment Fill
Easting	501018	501127	501121	501138	501143	501150
Northing	6922183	6922203	6922191	6922181	6922158	6922194
Elevation (m)	30.59	30.59	30.59	30.59	30.59	30.59
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	9	3	12	18	8	4
Field Wet Density (FWD) t/m ³	2.03	2.08	2.08	2.02	2.01	2.04
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.08	2.06	2.11	2.09	2.06	2.05
Moisture Variation (Wv) %	**	**	**	**	**	**
Adjusted Moisture Variation %	1.0	0.0	2.0	0.5	1.0	0.0
Hilf Density Ratio (%)	97.5	101.0	98.5	97.0	97.5	99.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-3
Issue Number: 1
Date Issued: 11/08/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Stage 3, Jimboomba QLD
Work Request: 9067
Dates Tested: 06/08/2021 - 11/08/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Level 1 - Cut / Fill Area - Stage 3
Material Source: Silty Gravelly Clay



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9067A	GL-9067B	
Date Tested	06/08/2021	06/08/2021	
Time Tested	09:19	09:43	
Test Request #/Location	allotment Fill	Basin Fill	
Easting	501108	501221	
Northing	6922244	6922097	
Elevation (m)	30.59	**	
Layer / Reduced Level	**	FL	
Thickness of Layer (mm)	300	300	
Soil Description	Silty Gravelly Clay	Silty Gravelly Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	5	0	
Field Wet Density (FWD) t/m ³	2.16	2.12	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	**	2.04	
Adjusted Peak Converted Wet Density t/m ³	2.10	**	
Moisture Variation (Wv) %	**	1.5	
Adjusted Moisture Variation %	2.0	**	
Hilf Density Ratio (%)	103.0	104.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-4
Issue Number: 1
Date Issued: 11/08/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Stage 3, Jimboomba QLD
Work Request: 9039
Dates Tested: 04/08/2021 - 11/08/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Level 1 - Cut / Fill Area - Stage 3
Material: Silty Gravelly Clay



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9039A	GL-9039B	GL-9039C	GL-9039D	GL-9039E	GL-9039F
Date Tested	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021
Time Tested	11:43	11:46	11:51	14:46	14:54	14:59
Test Request #/Location	Allotment Fill	Allotment Fill	Allotment Fill	Allotment Fill	Allotment Fill	Allotment Fill
Easting	501105	501111	501094	501331	501354	501309
Northing	6922193	6922226	6922213	6922345	6922371	6922349
Elevation (m)	30.59	30.59	30.59	32.51	32.51	32.51
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	9	4	0	0	0	1
Field Wet Density (FWD) t/m ³	2.23	2.22	2.12	2.15	2.12	2.23
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	**	**	2.06	2.08	2.16	**
Adjusted Peak Converted Wet Density t/m ³	2.10	2.09	**	**	**	2.13
Moisture Variation (Wv) %	**	**	0.5	0.0	-1.0	**
Adjusted Moisture Variation %	2.5	2.0	**	**	**	1.5
Hilf Density Ratio (%)	106.0	106.0	102.5	103.5	98.0	104.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-5
Issue Number: 1
Date Issued: 16/08/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Stage 3, Jimboomba QLD
Work Request: 9094
Dates Tested: 10/08/2021 - 13/08/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Level 1 - Cut / Fill Area - Stage 3
Material: Silty Gravelly Clay

Douglas Partners Pty Ltd
 Gold Coast Laboratory
 Unit 2/3 Distribution Avenue Molendinar QLD 4214
 Phone: (07) 5568 8900
 Email: chad.whatley@douglaspartners.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

	GL-9094A	GL-9094B	
Sample Number	GL-9094A	GL-9094B	
Date Tested	10/08/2021	10/08/2021	
Time Tested	10:49	14:31	
Test Request #/Location	Allotment Fill	Allotment Fill	
Easting	501148	501107	
Northing	6922412	6922247	
Elevation (m)	32.31	32.82	
Thickness of Layer (mm)	300	300	
Soil Description	Silty Gravelly Clay	Silty Gravelly Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.17	2.02	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	2.13	2.06	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	1.0	1.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	102.0	98.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-6
Issue Number: 1
Date Issued: 18/08/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Stage 3, Jimboomba QLD
Work Request: 9108
Dates Tested: 11/08/2021 - 16/08/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Level 1 - Cut / Fill Area - Stage 3
Material: Silty Gravelly Clay
Material Source: onsite allotment fill

Douglas Partners Pty Ltd
 Gold Coast Laboratory
 Unit 2/3 Distribution Avenue Molendinar QLD 4214
 Phone: (07) 5568 8900
 Email: chad.whatley@douglaspartners.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	GL-9108A	GL-9108B	GL-9108C	GL-9108D
Date Tested	11/08/2021	11/08/2021	11/08/2021	11/08/2021
Time Tested	13:38	13:45	14:07	14:16
Test Request #/Location	Allotment Fill	Allotment Fill	Allotment Fill	Allotment Fill
Easting	501123	501087	501114	501086
Northing	6922213	6922236	6922148	6922177
Elevation (m)	32.4	32.4	58.96	58.96
Thickness of Layer (mm)	300	300	300	300
Soil Description	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	10	0	19	12
Field Wet Density (FWD) t/m ³	2.13	1.97	2.00	2.05
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	**	2.00	**	**
Adjusted Peak Converted Wet Density t/m ³	2.08	**	2.11	2.06
Moisture Variation (Wv) %	**	4.5	**	**
Adjusted Moisture Variation %	-2.5	**	0.0	3.5
Hilf Density Ratio (%)	102.0	98.5	95.0	99.5
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Geotechnics | Environment | Groundwater

Douglas Partners Pty Ltd

Gold Coast Laboratory

Unit 2/3 Distribution Avenue Molendinar QLD 4214

Phone: (07) 5568 8900

Email: chad.whatley@douglaspartners.com.au

Report Number: 207131.00-7
Issue Number: 1
Date Issued: 21/08/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Stage 3, Jimboomba QLD
Work Request: 9146
Dates Tested: 16/08/2021 - 21/08/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Level 1 - Cut / Fill Area - Stage 3
Material: Silty Gravelly Clay
Material Source: Allotment Fill



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Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

	GL-9146A	GL-9146B	
Sample Number	GL-9146A	GL-9146B	
Date Tested	16/08/2021	16/08/2021	
Time Tested	11:09	11:16	
Test Request #/Location	Allotment Fill	Allotment Fill	
Easting	501094	501116	
Northing	6922198	6922178	
Elevation (m)	30.65	30.65	
Thickness of Layer (mm)	300	300	
Soil Description	Silty Gravelly Clay	Silty Gravelly Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	1	**	
Field Wet Density (FWD) t/m ³	2.11	2.02	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	**	1.98	
Adjusted Peak Converted Wet Density t/m ³	1.98	**	
Moisture Variation (Wv) %	**	2.0	
Adjusted Moisture Variation %	2.0	**	
Hilf Density Ratio (%)	107.0	102.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-8
Issue Number: 1
Date Issued: 23/08/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Stage 3, Jimboomba QLD
Work Request: 9149
Dates Tested: 17/08/2021 - 23/08/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Level 1 - Cut / Fill Area - Stage 3
Material: Silty Gravelly Clay
Material Source: Allotment Fill/ road Fill



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9149A		
Date Tested	17/08/2021		
Time Tested	09:06		
Test Request #/Location	Allotment fill		
Easting	501083		
Northing	6922169		
Elevation (m)	29.36		
Thickness of Layer (mm)	300		
Soil Description	Silty Gravelly Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	3		
Field Wet Density (FWD) t/m ³	2.12		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	**		
Adjusted Peak Converted Wet Density t/m ³	2.13		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	0.0		
Hilf Density Ratio (%)	99.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-9
Issue Number: 1
Date Issued: 24/08/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Stage 3, Jimboomba QLD
Work Request: 9160
Dates Tested: 18/08/2021 - 24/08/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Level 1 - Cut / Fill Area - Stage 3
Material: Silty Gravelly Clay
Material Source: Allotment Fill



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Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9160A		
Date Tested	18/08/2021		
Time Tested	10:09		
Test Request #/Location	Allotment Fill		
Easting	501019		
Northing	6922196		
Layer / Reduced Level	FL		
Thickness of Layer (mm)	300		
Soil Description	Silty Gravelly Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.08		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	2.08		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	1.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	100.0		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-10
Issue Number: 1
Date Issued: 06/09/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9227
Date Sampled: 26/08/2021
Dates Tested: 26/08/2021 - 01/09/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Location: road 1
Material: onsite fill



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Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

	GL-9227A	GL-9227B	
Sample Number	GL-9227A	GL-9227B	
Date Tested	26/08/2021	26/08/2021	
Time Tested	11:14	11:28	
Test Request #/Location	Allotment Fill	Allotment Fill	
Easting	501121	501121	
Northing	6922334	6922350	
Elevation (m)	31.2	31.3	
Thickness of Layer (mm)	300	300	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	6	5	
Field Wet Density (FWD) t/m ³	2.02	2.04	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	**	**	
Adjusted Peak Converted Wet Density t/m ³	2.03	2.06	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	2.0	1.5	
Hilf Density Ratio (%)	99.5	99.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-11
Issue Number: 1
Date Issued: 06/09/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9235
Date Sampled: 27/08/2021
Dates Tested: 27/08/2021 - 01/09/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Location: ROAD 1
Material: Onsite fill

Douglas Partners Pty Ltd
 Gold Coast Laboratory
 Unit 2/3 Distribution Avenue Molendinar QLD 4214
 Phone: (07) 5568 8900
 Email: chad.whatley@douglaspartners.com.au



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Approved Signatory: Chad Whatley
 Lab Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

	GL-9235A	GL-9235B	GL-9235C	GL-9235D
Sample Number				
Date Tested	27/08/2021	27/08/2021	27/08/2021	27/08/2021
Time Tested	11:09	**	13:14	**
Test Request #/Location	allotment fill	allotment fill	allotment fill	allotment fill
Easting	501180	501121	501215	501223
Northing	6922392	6922348	6922431	6922443
Elevation (m)	31.6	31.6	30.0	29.9
Thickness of Layer (mm)	300	300	300	300
Soil Description	**	**	**	**
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	5	**	12	5
Field Wet Density (FWD) t/m ³	1.90	2.00	2.04	2.06
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	**	1.94	**	**
Adjusted Peak Converted Wet Density t/m ³	1.93	**	1.99	1.99
Moisture Variation (Wv) %	**	4.5	**	**
Adjusted Moisture Variation %	3.5	**	2.5	0.0
Hilf Density Ratio (%)	98.5	103.5	102.5	104.0
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-12
Issue Number: 1
Date Issued: 06/09/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9253
Date Sampled: 01/09/2021
Dates Tested: 01/09/2021 - 02/09/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Allotment Fill Area
Material: Gravelly Sandy Clay
Material Source: On site



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 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9253A	GL-9253B	
Date Tested	01/09/2021	01/09/2021	
Time Tested	09:35	11:50	
Test Request #/Location	Allotment Fill	Allotment Fill	
Easting	501224	501263	
Northing	6922447	6922415	
Elevation (m)	30.6	30.9	
Thickness of Layer (mm)	300	300	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	1	0	
Field Wet Density (FWD) t/m ³	2.09	2.09	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	**	2.09	
Adjusted Peak Converted Wet Density t/m ³	2.09	**	
Moisture Variation (Wv) %	**	-0.5	
Adjusted Moisture Variation %	0.0	**	
Hilf Density Ratio (%)	100.5	99.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-13
Issue Number: 1
Date Issued: 07/09/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9214
Date Sampled: 25/08/2021
Dates Tested: 25/08/2021 - 26/08/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Location: ROAD 1
Material: ONSITE FILL



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 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9214A	GL-9214B	GL-9214C	GL-9214D	GL-9214E
Date Tested	25/08/2021	25/08/2021	25/08/2021	25/08/2021	25/08/2021
Time Tested	11:13	**	**	13:54	**
Test Request #/Location	Allotment	Allotment	Allotment	Allotment	Allotment
Easting	501195	501161	501128	501177	501170
Northing	6922414	6922385	6922348	6922409	6922384
Elevation (m)	29.6	29.7	29.6	30.4	30.4
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	10	1	0	0	0
Field Wet Density (FWD) t/m ³	2.15	2.19	2.23	1.99	2.02
Field Dry Density (FDD) t/m ³	**	**	**	**	**
Peak Converted Wet Density t/m ³	**	**	2.10	1.99	2.03
Adjusted Peak Converted Wet Density t/m ³	2.06	2.03	**	**	**
Moisture Variation (Wv) %	**	**	5.0	5.0	4.5
Adjusted Moisture Variation %	4.0	5.0	**	**	**
Hilf Density Ratio (%)	104.0	108.0	106.0	100.0	99.5
Compaction Method	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-14
Issue Number: 1
Date Issued: 07/09/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9239
Date Sampled: 30/08/2021
Dates Tested: 30/08/2021 - 01/09/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Allotment Fill Area
Material: Gravelly Sandy Clay



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 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

	GL-9239A	GL-9239B	
Sample Number	GL-9239A	GL-9239B	
Date Tested	30/08/2021	30/08/2021	
Time Tested	11:05	11:10	
Test Request #/Location	Allotment Fill	Allotment Fill	
Easting	501123	501133	
Northing	6922346	6922361	
Elevation (m)	32.2	32.5	
Thickness of Layer (mm)	300	300	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.01	1.97	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	1.94	1.95	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	1.5	2.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	103.5	101.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-15
Issue Number: 1
Date Issued: 08/09/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9287
Date Sampled: 07/09/2021
Dates Tested: 07/09/2021 - 08/09/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Allotment Fill Area
Material: Gravelly Sandy Clay
Material Source: on site fill

Douglas Partners Pty Ltd
 Gold Coast Laboratory
 Unit 2/3 Distribution Avenue Molendinar QLD 4214
 Phone: (07) 5568 8900
 Email: chad.whatley@douglaspartners.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9287A	GL-9287B	GL-9287C
Date Tested	07/09/2021	07/09/2021	07/09/2021
Time Tested	09:20	11:40	12:00
Test Request #/Location	Allotment Fill	Allotment Fill	Allotment Fill
Easting	501289	501287	501277
Northing	6922407	6922411	6922422
Elevation (m)	31.0	31.3	31.2
Thickness of Layer (mm)	300	300	300
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	2	0	1
Field Wet Density (FWD) t/m ³	2.19	2.18	2.17
Field Dry Density (FDD) t/m ³	**	**	**
Peak Converted Wet Density t/m ³	**	2.09	**
Adjusted Peak Converted Wet Density t/m ³	2.06	**	2.06
Moisture Variation (Wv) %	**	2.5	**
Adjusted Moisture Variation %	2.5	**	3.0
Hilf Density Ratio (%)	106.5	104.5	105.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-17
Issue Number: 1
Date Issued: 13/09/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9301
Date Sampled: 08/09/2021
Dates Tested: 08/09/2021 - 09/09/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Allotment fill area
Material: Gravelly Sandy Clay
Material Source: On site fill



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Approved Signatory: Joel Alford

Assistant Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9301A	GL-9301B	
Date Tested	08/09/2021	08/09/2021	
Time Tested	10:30	01:00	
Test Request #/Location	Allotment Fill	Allotment Fill	
Easting	501378	501363	
Northing	6922363	6922325	
Elevation (m)	31.5	31.9	
Thickness of Layer (mm)	300	300	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.03	2.02	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	2.12	2.13	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	3.5	3.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	95.5	95.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-19
Issue Number: 1
Date Issued: 23/09/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9375
Date Sampled: 16/09/2021
Dates Tested: 16/09/2021 - 22/09/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Location: Allotment fill area
Material: Gravelly Sandy Clay
Material Source: on sites fill

Douglas Partners Pty Ltd
 Gold Coast Laboratory
 Unit 2/3 Distribution Avenue Molendinar QLD 4214
 Phone: (07) 5568 8900
 Email: chad.whatley@douglaspartners.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

	GL-9375A	GL-9375B	
Sample Number	GL-9375A	GL-9375B	
Date Tested	16/09/2021	16/09/2021	
Time Tested	11:40	12:55	
Test Request #/Location	Allotment	Allotment	
Easting	501237	501244	
Northing	6922357	6922364	
Elevation (m)	34.2	34.6	
Thickness of Layer (mm)	300	300	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	20	13	
Field Wet Density (FWD) t/m ³	2.15	2.14	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	**	**	
Adjusted Peak Converted Wet Density t/m ³	2.05	2.08	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	1.0	3.5	
Hilf Density Ratio (%)	105.0	103.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-22
Issue Number: 1
Date Issued: 05/10/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9404
Date Sampled: 20/09/2021
Dates Tested: 20/09/2021 - 24/09/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Allotment fill area
Material: Gravelly Sandy Clay
Material Source: on site fill



Accredited for compliance with ISO/IEC 17025 - Testing

 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9404A	GL-9404B	
Date Tested	20/09/2021	20/09/2021	
Time Tested	09:30	11:30	
Test Request #/Location	Allotment fill area	Allotment fill area	
Easting	501189	501206	
Northing	6922310	6922329	
Elevation (m)	31.5	31.1	
Thickness of Layer (mm)	300	300	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.02	2.05	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	2.03	2.01	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	5.0	4.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	100.0	102.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-25
Issue Number: 1
Date Issued: 05/10/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9470
Date Sampled: 29/09/2021
Dates Tested: 29/09/2021 - 01/10/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Allotment Fill Area
Material: Gravelly Sandy Clay
Material Source: On site fill



Accredited for compliance with ISO/IEC 17025 - Testing

 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

	GL-9470A	GL-9470B	
Sample Number	GL-9470A	GL-9470B	
Date Tested	29/09/2021	29/09/2021	
Time Tested	09:10	11:20	
Test Request #/Location	Allotment Fill Area	Allotment Fill Area	
Easting	501374	501370	
Northing	6932248	6922232	
Elevation (m)	31.1	31.4	
Thickness of Layer (mm)	300	300	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	1.89	1.91	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	1.94	1.96	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	2.5	2.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	97.5	97.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-27
Issue Number: 1
Date Issued: 11/10/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9422
Date Sampled: 22/09/2021
Dates Tested: 22/09/2021 - 24/09/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Location: Allotment fill area
Material: Gravelly Sandy Clay
Material Source: on site fill

Douglas Partners Pty Ltd
 Gold Coast Laboratory
 Unit 2/3 Distribution Avenue Molendinar QLD 4214
 Phone: (07) 5568 8900
 Email: chad.whatley@douglaspartners.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9422A	GL-9422B	GL-9422C	GL-9422D
Date Tested	22/09/2021	22/09/2021	22/09/2021	22/09/2021
Time Tested	09:00	10:40	09:10	10:50
Test Request #/Location	Allotment	Allotment	Allotment	Allotment
Easting	501156	501156	501191	501191
Northing	6922274	6922274	6922309	6922309
Elevation (m)	32.7	33.0	32.0	32.4
Thickness of Layer (mm)	300	300	300	300
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	2	0	6	4
Field Wet Density (FWD) t/m ³	2.04	2.04	2.02	2.10
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	**	2.04	**	**
Adjusted Peak Converted Wet Density t/m ³	2.04	**	2.11	2.04
Moisture Variation (Wv) %	**	2.5	**	**
Adjusted Moisture Variation %	3.0	**	1.5	1.5
Hilf Density Ratio (%)	100.0	100.0	96.0	103.0
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 207131.00-28
Issue Number: 1
Date Issued: 11/10/2021
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 207131.00
Project Name: Riverton Residential Estate, Stage 2B
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 9461
Date Sampled: 28/09/2021
Dates Tested: 28/09/2021 - 30/09/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Allotment Fill Area - Stage 2D
Material: Gravelly Sandy Clay
Material Source: On site fill

Douglas Partners Pty Ltd
 Gold Coast Laboratory
 Unit 2/3 Distribution Avenue Molendinar QLD 4214
 Phone: (07) 5568 8900
 Email: chad.whatley@douglaspartners.com.au



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Approved Signatory: Chad Whatley
 Lab Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-9461A	GL-9461B	
Date Tested	28/09/2021	28/09/2021	
Time Tested	10:00	12:20	
Test Request #/Location	Allotment Fill Area	Allotment Fill Area	
Easting	501385	501374	
Northing	6922254	6922248	
Elevation (m)	30.7	31.0	
Thickness of Layer (mm)	300	300	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.07	2.06	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	2.01	2.01	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	-0.5	0.0	
Adjusted Moisture Variation %	**	**	
Hill Density Ratio (%)	103.5	102.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 218542.00-1
Issue Number: 1
Date Issued: 14/11/2022
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Liam Brassington
Project Number: 218542.00
Project Name: Riverton Residential Estate, Stage 2C & D
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 12120
Dates Tested: 03/11/2022 - 04/11/2022
Location: Level 1 monitoring

Douglas Partners Pty Ltd
 Gold Coast Laboratory
 Unit 2/3 Distribution Avenue Molendinar QLD 4214
 Phone: (07) 5568 8900
 Email: chad.whatley@douglaspartners.com.au



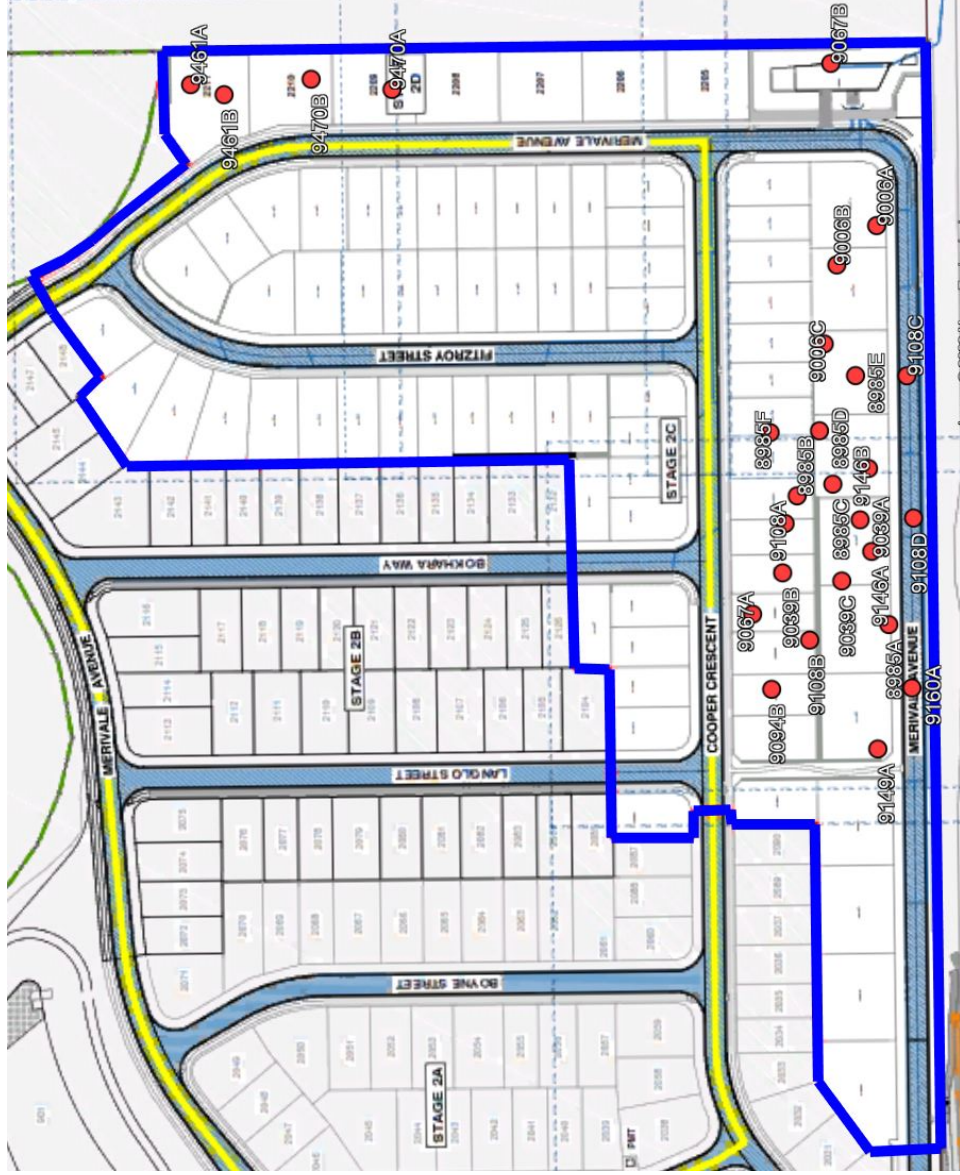
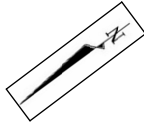
Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	GL-12120A	GL-12120B	
Date Tested	03/11/2022	03/11/2022	
Time Tested	09:43	09:43	
Test Request #/Location	Alottment fill area	Alottment fill area	
Easting	501167	501184	
Northing	6922118	6922111	
Elevation (m)	29.9	30.0	
Thickness of Layer (mm)	125	125	
Soil Description	Gravelly sandy clay	Gravelly sandy clay	
Test Depth (mm)	100	100	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	**	
Field Wet Density (FWD) t/m ³	2.00	2.04	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	2.03	2.09	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	0.5	-0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	98.0	97.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC



Notes:

1. Test locations are approximate only and are shown with reference to existing site features.
2. Drawing Not To Scale.
3. Image adapted from client supplied drawing no. 5544-ENG-CW2CD-007 prepared by Gassman Development Perspectives.

Legend:

- Field Density Test Location and Number



Douglas Partners
 Geotechnics | Environment | Groundwater

CLIENT: Shadforth Civil Pty Ltd

OFFICE: Gold Coast

DATE: November 2022

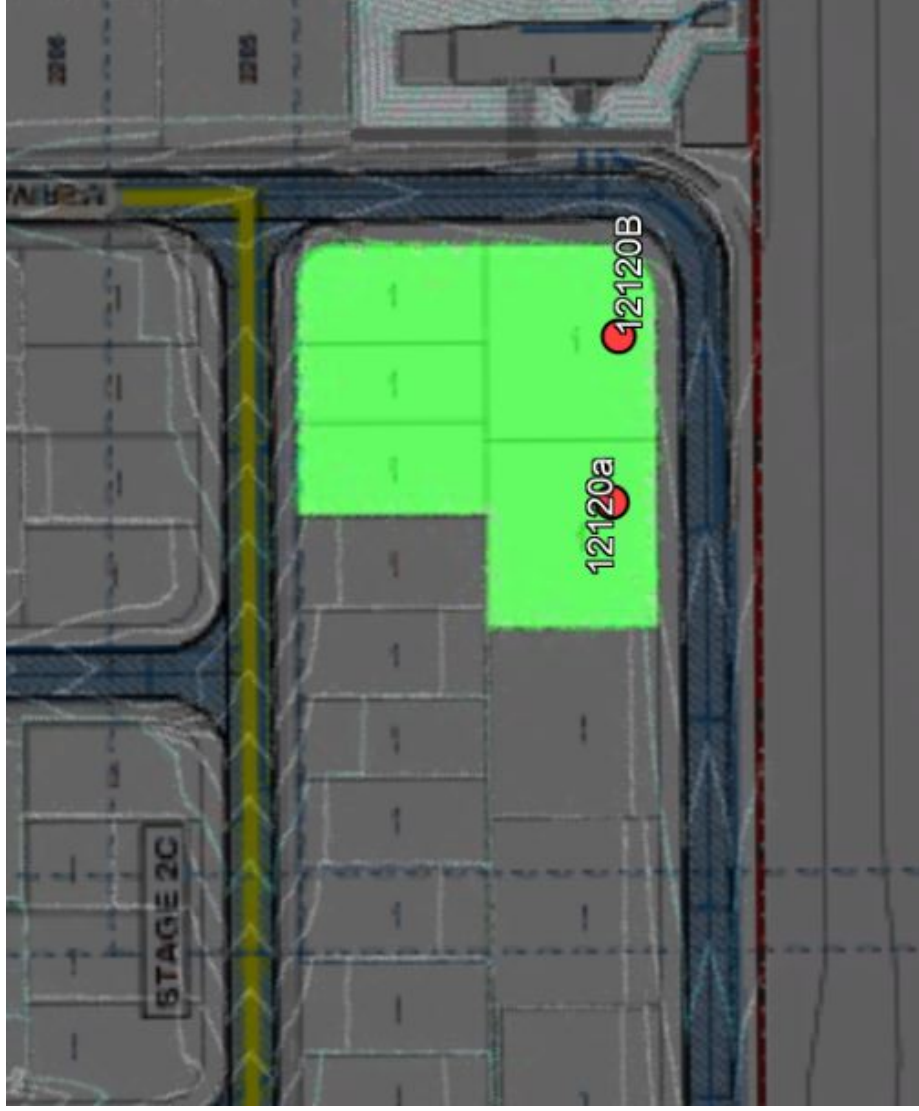
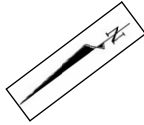
Test Location Plan

Riverton Residential Estate
Stages 2C & 2D Cusack Lane,
Jimboomba

PROJECT No: 207131.00

DRAWING No: 1

REVISION: 0



Notes:

1. Test locations are approximate only and are shown with reference to existing site features.
2. Drawing Not To Scale.
3. Image adapted from client supplied drawing no. 5544-ENG-CW2CD-007 prepared by Gassman Development Perspectives.

Legend:

- Field Density Test Location and Number



CLIENT: Shadforth Civil Pty Ltd

OFFICE: Gold Coast

DATE: November 2022

Test Location Plan

Riverton Residential Estate
Stages 2C & 2D Cusack Lane,
Jimboomba

PROJECT No: 207131.00

DRAWING No: 2

REVISION: 0