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Kunda Park QLD 4556
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Shadforth Civil Pty Ltd
99 Sandalwood Lane
Forest Glen QLD 4556

Project 216705.00
29 March 2023
R.001.docx
SDH:BWE

Attention: Alex Watson

Email: Alex.watson@shadcivil.com.au

Geotechnical Inspections and Testing
Proposed Bulk Earthworks
Phase 5, Harmony Estate

1. Introduction

This report presents the results of the inspection and testing of bulk earthworks for Phase 5, as part of the Harmony Subdivision at Palmview. The work was undertaken at the request of Shadforth Civil Pty Ltd (Shadforth).

The scope of testing and inspections provided by Douglas Partners Pty Ltd (DP) comprised 'Level 1' geotechnical inspection and testing of bulk earthworks in general accordance with AS 3798 (2007). 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' along with any other explanatory notes and should be kept in its entirety without separation of individual pages or sections.

2. Bulk Filling

2.1 Extent of Works

This report only addresses the bulk fill placed at the development as shown on the layout plan Drawing No. 251-105 prepared by Calibre Professional Services Pty Ltd and supplied by Shadforth over the period 22 August 2022 to 10 March 2023, as covered by the test locations (including elevation) noted on the test report sheets and test location plan attached to this report. Any other part of the site is not covered by this report unless stated otherwise.

In general, the bulk earthworks operations comprised stripping of the existing surface, then placement and compaction of fill material sourced from onsite to bring the ground level up to the design surface level required for the works.

2.2 Stripping Inspections and Proof Rolling

Geotechnical personnel from DP inspected the stripped subgrade areas prior to the placement of bulk fill. All subgrade areas were stripped of vegetation or any other unsuitable material. The subgrade was test rolled using on site construction equipment (ie. vibrating pad foot compactor, loaded truck) and was considered suitable to accept the placement of fill. Any identified 'weak' or problem subgrade areas were rectified prior to the placement of fill.

2.3 Fill Materials

Fill material typically comprised sandy and silty clays and silty and clayey sands sourced from onsite.

2.4 Placement and Testing of Fill

Fill materials were placed on site by conventional earthmoving equipment, spread out in uniform layers of appropriate thicknesses for the equipment used and test procedures adopted, and then compacted using a vibrating roller.

Observations were made on site by the supervising geotechnical personnel from DP who were present during the placement of fill over the period 22 August 2022 to 10 March 2023.

The compaction requirements for the earthworks included a minimum density ratio of 95% Standard compaction. No moisture range was specified.

Following the compaction of each layer, testing was carried out to assess compliance with the specified density ratio. In conjunction with test rolling where applicable, testing was carried out using the nuclear gauge method AS 1289.5.8.1 (2007) at the testing frequency nominated in AS 3798 and the project requirements. The relative compaction was determined using the Hilf method AS 1289.5.7.1 (2006).

Where a layer was considered to have failed based on the wet density values measured by the nuclear gauge, these test values were not recorded and the contractor was advised that the layer required further rolling and testing prior to the placement of any further fill. At times when fill material was either too wet or dry, the contractor was advised to dry back or add moisture to the fill, in order to bring the field moisture content back closer to the optimum moisture content.

A total of 200 density tests were recorded by DP on fill placed over the period 22 August 2022 to 10 March 2023. A summary of the testing is presented in Table 1.

Table 1: Summary of Density Testing

	Compaction	Moisture
Specification	95% Std.	-
No. of Tests	200	200
Range	91.5% to 107.0%	4.0% dry to 3.5% wet of OMC
Mean Average	98.8%	0.4% wet of OMC
No. of Tests Outside Specification	2	-

Note: Std. –Standard compaction

With respect to the failed test results, the layer in which the failure was recorded was subsequently re-rolled. The failed area was then retested near to the location of the failure. The retests passed the compaction specification.

3. Comments

DP undertook inspection and earthworks testing in general accordance with a Level 1 standard as defined in AS 3798 (2007).

It is considered that the placement and compaction of the bulk fill over the period 22 August 2022 to 10 March 2023 for Phase 5, as part of the Harmony Subdivision at Palmview has been carried out in general accordance with the requirements of the specification. DP does not undertake to guarantee the work of the contractors nor relieve their responsibility to produce a completed product conforming to the requirements of the specification.

For building on 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 structures of various types without excessive deflection, in particular, the shrink-swell properties of the fill and natural soils must be considered in foundation/footing slab design and in detailing future structures;
- the potential for differential settlements due to differential thicknesses of fill; and
- any topsoil which may have been placed following the completion of bulk filling.

Based on the inspection and test results, it is considered the fill referred to in this report may be considered as 'controlled fill' as defined in AS 2870 (2011) for site classification purposes.

4. References

AS 1289.5.7.1. (2006). *Methods for testing soils for engineering purposes - Soil compaction and density tests - Compaction control test - Hilf density ratio and Hilf moisture variation (rapid method).* Standards Australia.

AS 1289.5.8.1. (2007). *Methods for testing soils for engineering purposes - Soil compaction and density tests - Determination of field density and field moisture content of a soil using a nuclear surface moisture-density gauge - Direct transmission mode.* Standards Australia.

AS 2870. (2011). *Residential Slabs and Footings.* Standards Australia.

AS 3798. (2007). *Guidelines on Earthworks for Commercial and Residential Developments.* Standards Australia.

5. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report (or services) for the bulk earthworks for Phase 5, as part of the Harmony Subdivision at Palmview. 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.

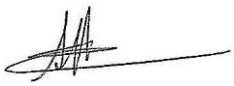
The results provided in the report are indicative of the subsurface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub surface conditions can change abruptly due to variable geological processes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

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.

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

Yours faithfully

Douglas Partners Pty Ltd



Shae Harry
Laboratory Manager

Reviewed by

Brett Egen (RPEQ 8597)
Senior Associate

Attachments: About this Inspection Report
Laboratory Test Results
Test Location Plan

About this Inspection Report

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

Douglas Partners
Geotechnics / Environment / Groundwater
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Sunshine Coast Laboratory
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Phone: (07) 5351 0400
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Report Number:	**216705.00-1**
Issue Number:	1
Date Issued:	23/09/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	19450
Date Sampled:	22/08/2022
Dates Tested:	22/08/2022 - 30/08/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	SS-19450A	SS-19450B	SS-19450C	SS-19450D	SS-19450E
Date Tested	22/08/2022	22/08/2022	22/08/2022	22/08/2022	22/08/2022
Time Tested	14:14	14:21	14:29	14:35	14:41
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505843	505855	505836	505827	505839
Northing	7041774	7041854	7041726	7041698	7041753
Elevation (m)	R.L 11.87	R.L 11.14	R.L 11.17	R.L 10.80	R.L 10.91
Thickness of Layer (mm)	150	150	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay	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 (%)	0	0	0	0	0
Field Wet Density (FWD) t/m^3	2.13	2.06	1.97	2.03	2.13
Field Dry Density (FDD) t/m^3	**	**	**	**	**
Peak Converted Wet Density t/m^3	2.20	2.06	1.97	1.97	2.19
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	1.5	-1.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**96.5**	**100.0**	**100.0**	**103.0**	**97.5**
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

Douglas Partners
Geotechnics / Environment / Groundwater
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Report Number:	**216705.00-2**
Issue Number:	1
Date Issued:	23/09/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	19517
Date Sampled:	25/08/2022
Dates Tested:	25/08/2022 - 02/09/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	SS-19517A	SS-19517B	SS-19517C	SS-19517D	SS-19517E
Date Tested	25/08/2022	25/08/2022	25/08/2022	25/08/2022	25/08/2022
Time Tested	10:23	10:29	10:35	14:44	14:49
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505866	505892	505881	505828	505859
Northing	7041826	7041798	7041780	7041700	7041773
Elevation (m)	R.L 12.06	R.L 11.83	R.L 11.78	R.L 11.45	R.L 11.79
Thickness of Layer (mm)	150	150	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay	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 (%)	0	0	0	0	0
Field Wet Density (FWD) t/m^3	1.99	2.02	2.06	2.08	2.10
Field Dry Density (FDD) t/m^3	**	**	**	**	**
Peak Converted Wet Density t/m^3	1.99	2.00	2.05	2.08	2.09
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	1.5	2.5	1.5	2.0	2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**100.0**	**101.0**	**100.5**	**100.0**	**100.5**
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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
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Report Number: **216705.00-3**
Issue Number: 1
Date Issued: 06/10/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20047
Date Sampled: 20/09/2022
Dates Tested: 21/09/2022 - 04/10/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20047A	SS-20047B	SS-20047C	SS-20047D
Date Tested	20/09/2022	20/09/2022	20/09/2022	20/09/2022
Time Tested	09:10	09:17	09:22	09:26
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505844	505840	505874	505934
Northing	7041722	7041687	7041690	7041685
Elevation (m)	R.L 11.28	R.L 11.04	R.L 11.01	R.L 10.48
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.06	2.11	2.11	2.17
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.13	2.05	2.12	2.10
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-0.5	0.5	0.0	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**97.0**	**103.0**	**99.5**	**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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
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Report Number: **216705.00-4**
Issue Number: 1
Date Issued: 21/10/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20121
Date Sampled: 27/09/2022
Dates Tested: 27/09/2022 - 11/10/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20121A	SS-20121B	SS-20121C	SS-20121D
Date Tested	27/09/2022	27/09/2022	27/09/2022	27/09/2022
Time Tested	10:18	10:24	10:30	10:35
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505516	0505522	0505509	0505479
Northing	7041544	7041574	7041596	7041603
Elevation (m)	R.L 13.36	R.L 13.06	R.L 12.83	R.L 12.47
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.10	2.13	2.17	2.18
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.02	2.16	2.16	2.21
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	1.0	-1.0	0.0	-1.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**103.5**	**98.5**	**100.5**	**99.0**
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

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Report Number: **216705.00-4**
Issue Number: 1
Date Issued: 21/10/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20121
Date Sampled: 27/09/2022
Dates Tested: 27/09/2022 - 11/10/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20121E	SS-20121F	SS-20121G	SS-20121H
Date Tested	27/09/2022	27/09/2022	27/09/2022	27/09/2022
Time Tested	10:41	10:48	10:56	11:03
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505543	0505615	0505669	0505755
Northing	7041597	7041580	7041579	7041560
Elevation (m)	R.L 11.92	R.L 11.83	R.L 11.05	R.L 11.09
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.12	2.15	2.10	2.17
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.08	2.14	2.09	2.22
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	1.5	-0.5	-0.5	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**101.5**	**100.5**	**100.0**	**98.0**
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

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Sunshine Coast Laboratory
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Report Number: **216705.00-5**
Issue Number: 1
Date Issued: 21/10/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20178
Date Sampled: 30/09/2022
Dates Tested: 30/09/2022 - 12/10/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20178A	SS-20178B	SS-20178C	SS-20178D
Date Tested	30/09/2022	30/09/2022	30/09/2022	30/09/2022
Time Tested	09:32	09:41	09:48	09:55
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505589	0505592	0505593	0505603
Northing	7041521	7041553	7041575	7041545
Elevation (m)	R.L 12.7	R.L 12.3	R.L 12.2	R.L 12.6
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay	Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.09	2.09	2.02	1.99
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.04	2.05	2.05	1.90
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-0.5	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**102.5**	**101.5**	**98.5**	**104.5**
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

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Report Number:	**216705.00-5**
Issue Number:	1
Date Issued:	21/10/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	20178
Date Sampled:	30/09/2022
Dates Tested:	30/09/2022 - 12/10/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20178E	SS-20178F	SS-20178G	
Date Tested	30/09/2022	30/09/2022	30/09/2022	
Time Tested	10:09	10:16	10:21	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	
Easting	0505554	0505541	0505532	
Northing	7041567	7041556	7041546	
Elevation (m)	R.L 13.1	R.L 12.8	R.L 12.6	
Thickness of Layer (mm)	150	150	150	
Soil Description	Silty Clay	Silty Clay	Silty Clay	
Test Depth (mm)	150	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	0	
Field Wet Density (FWD) t/m^3	2.04	2.01	2.03	
Field Dry Density (FDD) t/m^3	**	**	**	
Peak Converted Wet Density t/m^3	1.96	1.97	1.93	
Adjusted Peak Converted Wet Density t/m^3	**	**	**	
Moisture Variation (Wv) %	2.0	-0.5	1.0	
Adjusted Moisture Variation %	**	**	**	
Hilf Density Ratio (%)	**104.0**	**102.0**	**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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
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Email: martin.cook@douglaspartners.com.au

Report Number: **216705.00-6**
Issue Number: 1
Date Issued: 21/10/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20229
Date Sampled: 05/10/2022
Dates Tested: 05/10/2022 - 13/10/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-20229A	SS-20229B	SS-20229C
Date Tested	05/10/2022	05/10/2022	05/10/2022
Time Tested	10:22	10:29	10:41
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505613	0505604	0505584
Northing	7041519	7041517	7041525
Elevation (m)	R.L 11.7	R.L 12.1	R.L 12.2
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.00	2.01	2.06
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.08	2.02	2.07
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-1.5	-3.5	-2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**96.5**	**99.5**	**99.5**
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

Douglas Partners
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Report Number:	**216705.00-7**
Issue Number:	1
Date Issued:	24/10/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	20391
Date Sampled:	14/10/2022
Dates Tested:	14/10/2022 - 24/10/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20391A	SS-20391B	SS-20391C	SS-20391D
Date Tested	14/10/2022	14/10/2022	14/10/2022	14/10/2022
Time Tested	09:35	09:43	09:49	10:17
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505665	0505688	0505744	0505617
Northing	7041560	7041554	7041554	7041564
Elevation (m)	R.L 11.6	R.L 11.5	R.L 11.1	R.L 12.2
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.12	2.10	2.09	2.08
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.17	2.19	2.18	2.12
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-2.0	-2.0	-2.0	-2.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**97.5**	**96.5**	**96.0**	**97.5**
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

Douglas Partners
Geotechnics / Environment / Groundwater
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Report Number: **216705.00-8**
Issue Number: 1
Date Issued: 26/10/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20450
Date Sampled: 18/10/2022
Dates Tested: 18/10/2022 - 25/10/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20450A	SS-20450B	SS-20450C	SS-20450D
Date Tested	18/10/2022	18/10/2022	18/10/2022	18/10/2022
Time Tested	10:53	10:58	11:01	11:08
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505713	505694	505664	505687
Northing	7041518	7041534	7041526	7041556
Elevation (m)	R.L 11.3	R.L 11.6	R.L 11.7	R.L 11.4
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Clay	Sandy Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.08	2.08	2.08	2.10
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.06	1.98	2.05	2.06
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	2.0	0.5	1.0	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**101.0**	**105.0**	**101.5**	**101.5**
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

Douglas Partners
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Report Number: **216705.00-9**
Issue Number: 1
Date Issued: 27/10/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20489
Date Sampled: 19/10/2022
Dates Tested: 19/10/2022 - 26/10/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-20489A	SS-20489B	SS-20489C
Date Tested	19/10/2022	19/10/2022	19/10/2022
Time Tested	09:19	09:33	09:44
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505717	505752	505746
Northing	7041520	7041545	7041519
Elevation (m)	R.L 12.1	R.L 11.9	R.L 12.0
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.06	2.17	2.08
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.12	2.14	2.11
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.5	0.0	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**97.5**	**101.5**	**98.5**
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

Douglas Partners
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Report Number: **216705.00-10**
Issue Number: 1
Date Issued: 07/11/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20539
Date Sampled: 27/10/2022
Dates Tested: 27/10/2022 - 28/10/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20539A	SS-20539B	SS-20539C	SS-20539D
Date Tested	27/10/2022	27/10/2022	27/10/2022	27/10/2022
Time Tested	09:36	09:39	09:45	09:52
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505540	505539	505522	505509
Northing	7041521	7041503	7041515	7041508
Elevation (m)	R.L 12.4	R.L 12.3	R.L 12.6	R.L 12.8
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay	Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.07	2.06	2.03	2.06
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.08	2.08	2.06	2.08
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	-2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**99.5**	**99.5**	**99.0**	**99.0**
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

Douglas Partners
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Report Number: **216705.00-11**
Issue Number: 1
Date Issued: 07/11/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20574
Date Sampled: 28/10/2022
Dates Tested: 28/10/2022 - 31/10/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20574A	SS-20574B	SS-20574C	SS-20574D
Date Tested	28/10/2022	28/10/2022	28/10/2022	28/10/2022
Time Tested	09:37	09:44	09:51	09:58
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505543	505537	505501	505509
Northing	7041490	7041468	7041478	7041497
Elevation (m)	R.L 12.92	R.L 12.84	R.L 13.07	R.L 13.17
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay	Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.03	2.01	2.06	1.98
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.03	2.04	2.04	2.03
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-1.0	0.0	-0.5	-2.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**100.5**	**99.0**	**101.0**	**97.5**
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

Douglas Partners
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Report Number:	**216705.00-12**
Issue Number:	1
Date Issued:	18/11/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	20681
Date Sampled:	04/11/2022
Dates Tested:	04/11/2022 - 11/11/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20681A	SS-20681B	SS-20681C	SS-20681D
Date Tested	04/11/2022	04/11/2022	04/11/2022	04/11/2022
Time Tested	10:49	10:56	11:00	11:06
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505641	505636	505649	505612
Northing	7041474	7041451	7041463	7041459
Elevation (m)	R.L. 12.2	R.L. 11.9	R.L. 12.2	R.L. 12.6
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay	Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.02	1.99	1.97	1.98
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	1.98	1.98	1.95	1.99
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-1.0	-0.5	-1.0	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**102.0**	**100.5**	**101.0**	**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

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Report Number: **216705.00-12**
Issue Number: 1
Date Issued: 18/11/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20681
Date Sampled: 04/11/2022
Dates Tested: 04/11/2022 - 11/11/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20681E	SS-20681F	SS-20681G	
Date Tested	04/11/2022	04/11/2022	04/11/2022	
Time Tested	11:11	12:58	13:02	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	
Easting	505586	505688	505673	
Northing	7041493	7041478	7041455	
Elevation (m)	R.L. 12.2	R.L. 11.8	R.L. 11.8	
Thickness of Layer (mm)	150	150	150	
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Clay	
Test Depth (mm)	150	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	0	
Field Wet Density (FWD) t/m^3	2.04	2.01	1.98	
Field Dry Density (FDD) t/m^3	**	**	**	
Peak Converted Wet Density t/m^3	1.93	1.99	1.94	
Adjusted Peak Converted Wet Density t/m^3	**	**	**	
Moisture Variation (Wv) %	0.5	0.5	-1.0	
Adjusted Moisture Variation %	**	**	**	
Hilf Density Ratio (%)	**105.5**	**101.0**	**101.5**	
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

Douglas Partners
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Douglas Partners Pty Ltd
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Report Number: **216705.00-13**
Issue Number: 1
Date Issued: 18/11/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20700
Date Sampled: 07/11/2022
Dates Tested: 07/11/2022 - 11/11/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20700A	SS-20700B	SS-20700C	SS-20700D
Date Tested	07/11/2022	07/11/2022	07/11/2022	07/11/2022
Time Tested	09:37	09:43	09:49	09:55
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505738	0505715	0505718	0505699
Northing	7041454	7041442	7041473	7041459
Elevation (m)	R.L. 11.9	R.L. 12.0	R.L. 12.0	R.L. 12.1
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	1.98	1.89	1.98	1.97
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	1.96	1.89	1.94	1.89
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	0.0	-0.5	0.0	2.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**101.0**	**100.0**	**102.0**	**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

Douglas Partners
Geotechnics / Environment / Groundwater
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Report Number: **216705.00-14**
Issue Number: 1
Date Issued: 01/12/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20742
Date Sampled: 08/11/2022
Dates Tested: 08/11/2022 - 18/11/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20742A	SS-20742B	SS-20742C	SS-20742D
Date Tested	08/11/2022	08/11/2022	08/11/2022	08/11/2022
Time Tested	13:05	13:08	13:15	13:20
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505695	505683	505672	505661
Northing	7041482	7041467	7041453	7041471
Elevation (m)	R.L. 12.6	R.L. 12.4	R.L. 12.4	R.L. 12.2
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Clay	Silty Clay	Sandy Silty Clay	Sandy Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	1.94	2.05	1.98	2.01
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	1.98	1.97	2.00	2.00
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-2.0	-2.5	-1.5	-1.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**98.0**	**104.0**	**98.5**	**100.0**
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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
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Report Number: **216705.00-15**
Issue Number: 1
Date Issued: 01/12/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20754
Date Sampled: 09/11/2022
Dates Tested: 09/11/2022 - 22/11/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20754A	SS-20754B	SS-20754C	SS-20754D
Date Tested	09/11/2022	09/11/2022	09/11/2022	09/11/2022
Time Tested	09:11	09:18	09:26	09:36
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505422	505396	505412	505396
Northing	7041481	7041501	7041518	7041531
Elevation (m)	R.L. 13.3	R.L. 13.7	R.L. 13.6	R.L. 13.6
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	1.99	1.98	2.04	1.95
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.02	2.00	2.03	1.96
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-0.5	-1.0	0.5	-1.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**98.5**	**99.0**	**100.5**	**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

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Sunshine Coast Laboratory
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Report Number: **216705.00-16**
Issue Number: 1
Date Issued: 12/12/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 20821
Date Sampled: 11/11/2022
Dates Tested: 11/11/2022 - 23/11/2022
Sampling Method: AS 1289.1.2.1 6.4 (a) - Sampling from layers in earthworks or pavement - uncompacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20821A	SS-20821B	SS-20821C	SS-20821D
Date Tested	11/11/2022	11/11/2022	11/11/2022	11/11/2022
Time Tested	**	**	**	**
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505393	0505410	0505434	0505463
Northing	7041519	7041484	7041488	7041481
Elevation (m)	R.L. 13.5	R.L. 13.6	R.L. 13.5	R.L. 13.3
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay	Clayey Sand
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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	1.96	1.91	1.93	1.88
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	1.92	1.92	1.97	1.95
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-1.0	-3.5	-1.0	-0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**102.5**	**99.0**	**97.5**	**96.5**
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

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Report Number:	**216705.00-17**
Issue Number:	1
Date Issued:	12/12/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	20847
Date Sampled:	14/11/2022
Dates Tested:	14/11/2022 - 25/11/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-20847A	SS-20847B	SS-20847C
Date Tested	14/11/2022	14/11/2022	14/11/2022
Time Tested	09:32	09:44	13:01
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505780	0505785	0505783
Northing	7041580	7041590	7041595
Elevation (m)	R.L 9.9	R.L 9.3	R.L 9.8
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.12	2.09	2.06
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.18	2.19	2.15
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-2.0	-3.0	-3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**97.0**	**95.5**	**96.0**
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

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Report Number:	**216705.00-18**
Issue Number:	1
Date Issued:	12/12/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	20870
Date Sampled:	15/11/2022
Dates Tested:	15/11/2022 - 26/11/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-20870A	SS-20870B	SS-20870C
Date Tested	15/11/2022	15/11/2022	15/11/2022
Time Tested	09:31	09:37	09:45
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505791	0505795	0505782
Northing	7041586	7041610	7041597
Elevation (m)	R.L 10.27	R.L 10.41	R.L 10.31
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.06	2.06	2.09
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.03	2.08	2.06
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-0.5	0.5	-0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**101.5**	**99.0**	**101.0**
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

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Report Number:	**216705.00-19**
Issue Number:	1
Date Issued:	12/12/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	20900
Date Sampled:	16/11/2022
Dates Tested:	16/11/2022 - 29/11/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-20900A	SS-20900B	SS-20900C	SS-20900D
Date Tested	16/11/2022	16/11/2022	16/11/2022	16/11/2022
Time Tested	09:47	09:51	09:55	11:45
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505415	0505441	0505471	0505810
Northing	7041429	7041429	7041423	7041702
Elevation (m)	R.L 13.8	R.L. 13.5	R.L 13.3	R.L. 11.14
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.08	2.08	2.06	1.98
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.18	2.17	2.11	2.01
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-0.5	0.5	0.0	-0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**95.5**	**95.5**	**98.0**	**98.5**
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

Douglas Partners
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Sunshine Coast Laboratory
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Report Number:	**216705.00-20**
Issue Number:	1
Date Issued:	12/12/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	20924
Date Sampled:	17/11/2022
Dates Tested:	17/11/2022 - 28/11/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-20924A	SS-20924B	SS-20924C
Date Tested	17/11/2022	17/11/2022	17/11/2022
Time Tested	09:37	09:43	09:47
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505426	0505448	0505482
Northing	7041425	7041429	7041422
Elevation (m)	R.L 14.0	R.L 13.9	R.L 13.7
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Sand	Silty Sand	Silty Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.09	2.20	2.06
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.11	2.15	2.16
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-0.5	0.5	3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**99.0**	**102.5**	**95.0**
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

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Report Number:	**216705.00-21**
Issue Number:	1
Date Issued:	12/12/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	20964
Date Sampled:	18/11/2022
Dates Tested:	18/11/2022 - 01/12/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-20964A	SS-20964B	SS-20964C
Date Tested	18/11/2022	18/11/2022	18/11/2022
Time Tested	09:34	09:45	09:54
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505501	505467	505422
Northing	7041390	7041401	7041401
Elevation (m)	R.L. 13.3	R.L. 13.5	R.L. 13.9
Thickness of Layer (mm)	150	150	150
Soil Description	Sand	Sand	Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.08	2.18	2.11
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.15	2.21	2.17
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	4.0	2.0	3.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**97.0**	**99.0**	**97.0**
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

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Report Number: **216705.00-22**
Issue Number: 1
Date Issued: 12/12/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 21001
Date Sampled: 21/11/2022
Dates Tested: 21/11/2022 - 30/11/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-21001A	SS-21001B	SS-21001C	SS-21001D
Date Tested	21/11/2022	21/11/2022	21/11/2022	21/11/2022
Time Tested	09:31	09:37	09:41	09:45
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505457	505482	505468	505449
Northing	7041319	7041315	7041346	7041356
Elevation (m)	R.L. 13.4	R.L. 13.2	R.L. 13.4	R.L. 13.5
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	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 (%)	0	**	0	0
Field Wet Density (FWD) t/m^3	2.00	2.04	2.01	2.00
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.01	2.05	2.01	2.06
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	2.0	-2.5	0.5	-1.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**99.5**	**99.5**	**100.5**	**97.0**
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

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Report Number:	**216705.00-23**
Issue Number:	1
Date Issued:	12/12/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21029
Date Sampled:	22/11/2022
Dates Tested:	22/11/2022 - 02/12/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21029A	SS-21029B	SS-21029C
Date Tested	22/11/2022	22/11/2022	22/11/2022
Time Tested	09:55	10:02	10:07
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505498	505509	505514
Northing	7041359	7041342	7041306
Elevation (m)	R.L 13.2	R.L 13.2	R.L 13.1
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	1.99	1.93	2.02
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.02	2.02	2.07
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-0.5	-0.5	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**99.0**	**95.5**	**97.0**
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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**216705.00-24**
Issue Number:	1
Date Issued:	12/12/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21066
Date Sampled:	23/11/2022
Dates Tested:	23/11/2022 - 02/12/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21066A	SS-21066B	SS-21066C
Date Tested	23/11/2022	23/11/2022	23/11/2022
Time Tested	09:44	09:50	09:54
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505601	505575	505558
Northing	7041412	7041414	7041421
Elevation (m)	R.L. 12.3	R.L. 12.5	R.L. 12.5
Thickness of Layer (mm)	150	150	150
Soil Description	Gravelly Clayey Sand	Gravelly Clayey Sand	Gravelly Clayey Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.10	2.11	2.09
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.20	2.22	2.20
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-1.5	-1.5	-1.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**95.5**	**95.0**	**95.0**
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

Douglas Partners
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Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
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Report Number: **216705.00-25**
Issue Number: 1
Date Issued: 15/12/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 21095
Date Sampled: 24/11/2022
Dates Tested: 24/11/2022 - 09/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21095A	SS-21095B	SS-21095C
Date Tested	24/11/2022	24/11/2022	24/11/2022
Time Tested	09:47	09:50	09:57
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505547	505588	505578
Northing	7041347	7041383	7041263
Elevation (m)	R.L 12.8	R.L 12.6	R.L 12.7
Thickness of Layer (mm)	150	150	150
Soil Description	Clayey Silty Sand	Clayey Silty Sand	Clayey Silty Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.09	2.03	2.14
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.18	2.12	2.22
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	-2.0	-0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**96.0**	**96.0**	**96.5**
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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
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Email: Shae.Harry@douglaspartners.com.au

Report Number:	**216705.00-26**
Issue Number:	2 - *This version supersedes all previous issues*
Reissue Reason:	*Location Error*
Date Issued:	22/03/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21119
Date Sampled:	25/11/2022
Dates Tested:	25/11/2022 - 12/12/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Shae Harry
Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21119A	SS-21119B	SS-21119D
Date Tested	25/11/2022	25/11/2022	25/11/2022
Time Tested	09:38	09:46	10:01
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505577	505590	505560
Northing	7041415	7041388	7041310
Elevation (m)	R.L 12.9	R.L 12.7	R.L 12.5
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.04	2.06	2.02
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.13	2.12	2.07
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	0.0	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**95.5**	**97.0**	**97.5**
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

Douglas Partners
Geotechnics / Environment / Groundwater
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Sunshine Coast Laboratory
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Report Number: **216705.00-27**
Issue Number: 1
Date Issued: 15/12/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 21186
Date Sampled: 06/12/2022
Dates Tested: 06/12/2022 - 09/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Dry Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21186A	SS-21186B	SS-21186C
Date Tested	29/11/2022	29/11/2022	29/11/2022
Time Tested	09:44	09:52	13:16
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505575	505551	505607
Northing	7041295	7041355	7041650
Elevation (m)	R.L 12.5	R.L 13.4	R.L 11.7
Thickness of Layer (mm)	150	150	150
Soil Description	Clayey Sand	Clayey Sand	Clayey Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.12	2.12	2.02
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.19	2.22	1.99
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	-2.0	-2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**96.5**	**95.0**	**101.5**
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

Douglas Partners
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Report Number:	**216705.00-28**
Issue Number:	1
Date Issued:	15/12/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21208
Date Sampled:	30/11/2022
Dates Tested:	30/11/2022 - 15/12/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21208A	SS-21208B	SS-21208C
Date Tested	30/11/2022	30/11/2022	30/11/2022
Time Tested	09:33	09:45	09:57
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505560	505597	505592
Northing	7041383	7041386	7041339
Elevation (m)	R.L. 12.9	R.L. 12.8	R.L. 13.3
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.11	2.14	2.11
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.15	2.14	2.14
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	-0.5	-2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**98.5**	**100.0**	**99.0**
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

Douglas Partners
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Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
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Report Number:	**216705.00-29**
Issue Number:	1
Date Issued:	22/12/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21252
Date Sampled:	06/12/2022
Dates Tested:	06/12/2022 - 20/12/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21252A	SS-21252B	SS-21252C
Date Tested	06/12/2022	06/12/2022	06/12/2022
Time Tested	09:42	09:47	09:52
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505643	505652	505654
Northing	7041654	7041647	7041646
Elevation (m)	R.L 11.4	R.L 10.8	R.L 11.0
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Sand	Silty Sand	Silty Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.11	2.03	2.04
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.09	2.09	2.06
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.5	-0.5	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**101.0**	**97.0**	**99.0**
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

Douglas Partners
Geotechnics / Environment / Groundwater
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Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: sam.turner@douglaspartners.com.au

Report Number: **216705.00-30**
Issue Number: 1
Date Issued: 16/01/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 21277
Date Sampled: 07/12/2022
Dates Tested: 07/12/2022 - 22/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Senior Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21277A	SS-21277B	SS-21277C
Date Tested	07/12/2022	07/12/2022	07/12/2022
Time Tested	09:50	09:54	10:03
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505577	505613	505633
Northing	7041673	7041666	7041652
Elevation (m)	R.L. 11.6	R.L. 11.3	R.L. 11.2
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Sand	Silty Sand	Silty Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.08	2.03	2.04
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.18	2.12	2.23
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-1.5	-2.5	-3.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**95.5**	**95.5**	**91.5**
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

Douglas Partners
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1/28 Kessling Avenue Kunda Park QLD 4556
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Report Number: **216705.00-31**
Issue Number: 1
Date Issued: 16/01/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 21362
Date Sampled: 12/12/2022
Dates Tested: 12/12/2022 - 23/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Senior Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21362A	SS-21362B	SS-21362C
Date Tested	12/12/2022	12/12/2022	12/12/2022
Time Tested	09:45	09:47	09:55
Test Request #/Location	Earthworks	Earthworks	Earthworks
Easting	505657	505700	505679
Northing	7041639	7041628	7041646
Elevation (m)	R.L 10.4	R.L 10.1	R.L 10.6
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.07	2.08	2.08
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.16	2.16	2.17
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-3.0	-2.5	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**95.5**	**96.5**	**96.0**
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

Douglas Partners
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Report Number:	**216705.00-32**
Issue Number:	1
Date Issued:	17/01/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21407
Date Sampled:	13/12/2022
Dates Tested:	13/12/2022 - 09/01/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21407A	SS-21407B	
Date Tested	13/12/2022	13/12/2022	
Time Tested	09:42	09:49	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505759	505733	
Northing	7041630	7041628	
Elevation (m)	R.L 9.9	R.L 9.9	
Thickness of Layer (mm)	150	150	
Soil Description	Silty Clay	Silty 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	2.09	2.06	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.19	2.13	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	-0.5	-0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**95.5**	**96.5**	
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

Douglas Partners
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Report Number:	**216705.00-33**
Issue Number:	1
Date Issued:	17/01/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21454
Date Sampled:	15/12/2022
Dates Tested:	15/12/2022 - 10/01/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21454A	SS-21454B	
Date Tested	15/12/2022	15/12/2022	
Time Tested	09:43	09:48	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505660	505673	
Northing	7041675	7041659	
Elevation (m)	R.L 10.6	R.L 10.5	
Thickness of Layer (mm)	150	150	
Soil Description	Silty Clay	Silty 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	2.04	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.06	2.09	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.0	-0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**100.5**	**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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **216705.00-34**
Issue Number: 1
Date Issued: 17/01/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 21472
Date Sampled: 16/12/2022
Dates Tested: 16/12/2022 - 13/01/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21472A	SS-21472B	SS-21472C
Date Tested	16/12/2022	16/12/2022	16/12/2022
Time Tested	09:44	09:48	09:50
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505608	505590	505585
Northing	7041631	7041620	7041604
Elevation (m)	R.L 10.8	R.L 10.7	R.L 10.9
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.02	2.02	2.09
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.04	2.03	1.99
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-3.5	0.0	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**99.0**	**99.5**	**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

Douglas Partners
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Report Number:	**216705.00-35**
Issue Number:	1
Date Issued:	23/01/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21509
Date Sampled:	19/12/2022
Dates Tested:	19/12/2022 - 17/01/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21509B		
Date Tested	19/12/2022		
Time Tested	13:18		
Test Request #/Location	Bulk Earthworks		
Easting	505661		
Northing	7041281		
Elevation (m)	R.L 12.5		
Thickness of Layer (mm)	150		
Soil Description	Sandy Silty 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	2.01		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.12		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	-2.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**95.0**		
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

Douglas Partners
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Report Number:	**216705.00-36**
Issue Number:	1
Date Issued:	23/01/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21551
Date Sampled:	21/12/2022
Dates Tested:	21/12/2022 - 19/01/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21551A	SS-21551B	SS-21551C
Date Tested	21/12/2022	21/12/2022	21/12/2022
Time Tested	09:40	09:46	09:51
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505613	505640	505652
Northing	7041285	7041285	7041280
Elevation (m)	R.L 13.0	R.L 12.9	R.L 12.6
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.14	2.04	2.11
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.15	2.14	2.16
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	-0.5	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**99.5**	**95.5**	**97.5**
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

Douglas Partners
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Report Number: **216705.00-37**
Issue Number: 1
Date Issued: 24/01/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 21621
Date Sampled: 11/01/2023
Dates Tested: 11/01/2023 - 21/01/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	SS-21621A	SS-21621B	SS-21621C	SS-21621D	SS-21621E
Date Tested	11/01/2023	11/01/2023	11/01/2023	11/01/2023	11/01/2023
Time Tested	12:54	13:01	13:06	13:13	13:19
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505698	0505691	0505711	0505723	0505736
Northing	7041314	7041280	7041288	7041261	7041301
Elevation (m)	R.L 12.3	R.L 12.3	R.L 12.2	R.L 11.9	R.L 12.1
Thickness of Layer (mm)	150	150	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay	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 (%)	0	0	0	0	0
Field Wet Density (FWD) t/m^3	2.07	1.99	2.09	2.16	2.17
Field Dry Density (FDD) t/m^3	**	**	**	**	**
Peak Converted Wet Density t/m^3	2.07	2.06	2.12	2.14	2.15
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	0.5	0.0	-0.5	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**100.0**	**96.5**	**99.0**	**101.0**	**101.0**
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

Douglas Partners
Geotechnics / Environment / Groundwater
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Sunshine Coast Laboratory
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Report Number:	**216705.00-38**
Issue Number:	1
Date Issued:	24/01/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21662
Date Sampled:	12/01/2023
Dates Tested:	12/01/2023 - 24/01/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21662A	SS-21662B	
Date Tested	12/01/2023	12/01/2023	
Time Tested	13:07	13:17	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	0505712	0505722	
Northing	7041270	7041265	
Elevation (m)	R.L 12.5	R.L 12.4	
Thickness of Layer (mm)	150	150	
Soil Description	Silty Clay	Silty 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	2.05	1.99	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	1.92	1.90	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	-2.5	-0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**107.0**	**105.0**	
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

Douglas Partners
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Report Number:	**216705.00-39**
Issue Number:	1
Date Issued:	13/02/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21966
Date Sampled:	30/01/2023
Dates Tested:	30/01/2023 - 08/02/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Dry Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21966A		
Date Tested	30/01/2023		
Time Tested	13:24		
Test Request #/Location	Bulk Earthworks		
Easting	Retest		
Northing	SS-21277C		
Elevation (m)	-		
Thickness of Layer (mm)	150		
Soil Description	Silty 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	2.05		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.06		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	0.0		
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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
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Report Number:	**216705.00-40**
Issue Number:	1
Date Issued:	14/02/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21929
Date Sampled:	30/01/2023
Dates Tested:	30/01/2023 - 09/02/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method:	AS 1289.1.1 - Sampling and preparation of soils
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Senior Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21929A	SS-21929B	
Date Tested	30/01/2023	30/01/2023	
Time Tested	13:23	13:18	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505464	505473	
Northing	7041253	7041229	
Elevation (m)	R.L 12.3	R.L 12.4	
Thickness of Layer (mm)	150	150	
Soil Description	Silty Clay	Silty 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	1.96	1.99	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	1.97	2.07	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	-0.5	0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**99.5**	**96.5**	
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

Douglas Partners
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Report Number:	**216705.00-41**
Issue Number:	1
Date Issued:	14/02/2023
Client:	Shadforth Civil Pty Ltd 99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	21976
Date Sampled:	31/01/2023
Dates Tested:	31/01/2023 - 11/02/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method:	AS 1289.1.1 - Sampling and preparation of soils
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Senior Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21976A		
Date Tested	31/01/2023		
Time Tested	13:08		
Test Request #/Location	Bulk Earthworks		
Easting	505723		
Northing	7041273		
Elevation (m)	R.L. 14.8		
Thickness of Layer (mm)	150		
Soil Description	Silty 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	2.10		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.13		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	2.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**98.5**		
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

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Report Number:	**216705.00-42**
Issue Number:	1
Date Issued:	14/02/2023
Client:	Shadforth Civil Pty Ltd 99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	22008
Date Sampled:	01/02/2023
Dates Tested:	01/02/2023 - 11/02/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method:	AS 1289.1.1 - Sampling and preparation of soils
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Senior Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22008A	SS-22008B	SS-22008C
Date Tested	01/02/2023	01/02/2023	01/02/2023
Time Tested	13:16	13:20	13:26
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505740	505729	505722
Northing	7041295	7041289	7041299
Elevation (m)	R.L 12.6	R.L 12.6	R.L 12.5
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Clay	Silty Clay	Sandy Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.03	2.04	2.05
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.06	2.06	2.08
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-0.5	-1.0	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**98.5**	**99.0**	**98.5**
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

Douglas Partners
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Report Number:	**216705.00-43**
Issue Number:	1
Date Issued:	14/02/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	22050
Date Sampled:	02/02/2023
Dates Tested:	02/02/2023 - 11/02/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method:	AS 1289.1.1 - Sampling and preparation of soils
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Senior Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22050A	SS-22050B	
Date Tested	02/02/2023	02/02/2023	
Time Tested	13:04	13:12	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505737	505718	
Northing	7041290	7041291	
Elevation (m)	R.L 12.7	R.L 12.9	
Thickness of Layer (mm)	150	150	
Soil Description	Silty Clay	Silty 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	2.00	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.01	2.02	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.0	0.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**99.5**	**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

Douglas Partners
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Douglas Partners Pty Ltd
Sunshine Coast Laboratory
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Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**216705.00-44**
Issue Number:	1
Date Issued:	20/02/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	22063
Date Sampled:	03/02/2023
Dates Tested:	03/02/2023 - 16/02/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22063A	SS-22063B	
Date Tested	03/02/2023	03/02/2023	
Time Tested	13:07	13:13	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505712	505746	
Northing	7041385	7041383	
Elevation (m)	R.L 11.66	R.L 11.70	
Thickness of Layer (mm)	150	150	
Soil Description	Silty Clay	Silty 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	2.00	1.98	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.5	0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**101.5**	**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

Douglas Partners
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Report Number:	**216705.00-45**
Issue Number:	1
Date Issued:	20/02/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	22093
Date Sampled:	06/02/2023
Dates Tested:	06/02/2023 - 16/02/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22093A		
Date Tested	06/02/2023		
Time Tested	09:37		
Test Request #/Location	Bulk Earthworks		
Easting	505823		
Northing	7041659		
Elevation (m)	R.L 10.97		
Thickness of Layer (mm)	150		
Soil Description	Silty 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	2.06		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	2.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**101.0**		
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

Douglas Partners
Geotechnics / Environment / Groundwater
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1/28 Kessling Avenue Kunda Park QLD 4556
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Email: Craig.camm@douglaspartners.com.au

Report Number: **216705.00-46**
Issue Number: 1
Date Issued: 21/02/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 22122
Date Sampled: 07/02/2023
Dates Tested: 07/02/2023 - 20/02/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Craig Camm
Senior Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22122A	SS-22122B	SS-22122C
Date Tested	07/02/2023	07/02/2023	07/02/2023
Time Tested	13:04	13:12	13:19
Test Request #/Location	Bulk earthworks	Bulk earthworks	Bulk earthworks
Easting	505659	505672	505677
Northing	7041200	7041216	7041241
Elevation (m)	R.L 11.8	R.L 11.8	R.L 11.8
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.06	2.02	2.03
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.08	2.01	2.16
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-0.5	0.0	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**99.0**	**100.5**	**93.5**
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

Douglas Partners
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Report Number:	**216705.00-47**
Issue Number:	1
Date Issued:	21/02/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	22154
Date Sampled:	08/02/2023
Dates Tested:	08/02/2023 - 20/02/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Senior Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22154A		
Date Tested	08/02/2023		
Time Tested	13:07		
Test Request #/Location	Bulk Earthworks		
Easting	505532		
Northing	7041326		
Elevation (m)	R.L 12.8		
Thickness of Layer (mm)	150		
Soil Description	Silty 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	2.09		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.17		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	-1.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**96.5**		
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

Douglas Partners
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Report Number: **216705.00-48**
Issue Number: 1
Date Issued: 02/03/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 22339
Date Sampled: 16/02/2023
Dates Tested: 16/02/2023 - 01/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-22339A	SS-22339B	SS-22339C	SS-22339D
Date Tested	16/02/2023	16/02/2023	16/02/2023	16/02/2023
Time Tested	11:42	11:49	11:55	12:00
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505518	505510	505490	505482
Northing	7041278	7041232	7041235	7041289
Elevation (m)	R.L 12.86	R.L 12.80	R.L 12.83	R.L 13.04
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.08	2.06	2.07	2.05
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.17	2.14	2.16	2.09
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-0.5	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**96.0**	**96.5**	**96.0**	**98.0**
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

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Report Number: **216705.00-49**
Issue Number: 1
Date Issued: 14/03/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 22377
Date Sampled: 17/02/2023
Dates Tested: 17/02/2023 - 02/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22377A	SS-22377B	SS-22377C
Date Tested	17/02/2023	17/02/2023	17/02/2023
Time Tested	13:08	13:17	13:27
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505578	505609	505581
Northing	7041260	7041245	7041223
Elevation (m)	R.L 12.38	R.L 12.25	R.L 12.35
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Silt	Sandy Silt	Sandy Silt
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.04	2.14	2.14
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.00	2.21	2.23
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	1.0	-0.5	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**102.0**	**97.0**	**96.0**
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

Douglas Partners
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Report Number: **216705.00-50**
Issue Number: 1
Date Issued: 14/03/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 22388
Date Sampled: 20/02/2023
Dates Tested: 20/02/2023 - 02/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22388A	SS-22388B	SS-22388C
Date Tested	20/02/2023	20/02/2023	20/02/2023
Time Tested	13:07	13:12	13:19
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505697	505683	505685
Northing	7041243	7041222	7041198
Elevation (m)	R.L 12.3	R.L 12.3	R.L 12.1
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.08	2.11	2.09
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.16	2.20	2.17
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	-0.5	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**96.0**	**96.0**	**96.5**
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

Douglas Partners
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Report Number:	**216705.00-51**
Issue Number:	1
Date Issued:	14/03/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	22421
Date Sampled:	21/02/2023
Dates Tested:	21/02/2023 - 03/03/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22421A	SS-22421B	SS-22421C
Date Tested	21/02/2023	21/02/2023	21/02/2023
Time Tested	13:20	13:26	13:31
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505490	505495	505503
Northing	7041258	7041247	7041237
Elevation (m)	R.L 13.4	R.L 13.2	R.L 13.0
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.13	2.11	2.10
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.22	2.19	2.17
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-1.5	-1.5	-2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**95.5**	**96.5**	**96.5**
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

Douglas Partners
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Report Number:	**216705.00-52**
Issue Number:	2 - *This version supersedes all previous issues*
Reissue Reason:	*Location Error*
Date Issued:	22/03/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	22459
Date Sampled:	22/02/2023
Dates Tested:	22/02/2023 - 03/03/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Shae Harry
Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22459A	SS-22459C	SS-22459D
Date Tested	22/02/2023	22/02/2023	22/02/2023
Time Tested	13:05	13:15	13:21
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	Retest	505561	505572
Northing	SS-22122C	7041255	7041240
Elevation (m)	R.L 12.6	R.L 13.4	R.L 13.5
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.08	2.10	2.06
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.16	2.10	2.10
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-2.0	-0.5	-2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**96.5**	**100.0**	**98.0**
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

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Report Number:	**216705.00-53**
Issue Number:	2 - *This version supersedes all previous issues*
Reissue Reason:	*Location Error*
Date Issued:	22/03/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	22522
Date Sampled:	27/02/2023
Dates Tested:	27/02/2023 - 07/03/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Shae Harry
Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22522A	SS-22522C	SS-22522D
Date Tested	27/02/2023	27/02/2023	27/02/2023
Time Tested	13:09	13:16	13:22
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505558	505574	505553
Northing	7041247	7041220	7041226
Elevation (m)	R.L 13.2	R.L 12.9	R.L 13.1
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.09	2.10	2.08
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.20	2.19	2.19
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-1.0	-2.0	-1.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**95.0**	**96.0**	**95.0**
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

Douglas Partners
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Report Number: **216705.00-54**
Issue Number: 1
Date Issued: 14/03/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 22551
Date Sampled: 28/02/2023
Dates Tested: 28/02/2023 - 11/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-22551A	SS-22551B	SS-22551C	SS-22551D
Date Tested	28/02/2023	28/02/2023	28/02/2023	28/02/2023
Time Tested	12:59	13:06	13:12	13:21
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505487	505501	505524	505559
Northing	7041284	7041274	7041268	7041262
Elevation (m)	R.L 13.7	R.L 13.6	R.L 13.8	R.L 13.5
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Sand	Silty Sand	Silty Sand	Silty Sand
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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.04	2.03	2.01	2.10
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.08	2.12	2.10	2.08
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	0.0	-0.5	1.5	-0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**98.0**	**96.0**	**95.5**	**101.0**
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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**216705.00-55**
Issue Number:	1
Date Issued:	14/03/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	22578
Date Sampled:	01/03/2023
Dates Tested:	01/03/2023 - 11/03/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22578A	SS-22578B	SS-22578C
Date Tested	01/03/2023	01/03/2023	01/03/2023
Time Tested	12:10	12:14	12:21
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505628	505619	505601
Northing	7041252	7041249	7041265
Elevation (m)	R.L 12.59	R.L 12.70	R.L 13.06
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.08	2.06	2.03
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.12	2.11	2.10
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	1.5	-0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**98.0**	**97.5**	**96.5**
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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
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Email: martin.cook@douglaspartners.com.au

Report Number: **216705.00-56**
Issue Number: 1
Date Issued: 17/03/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 22596
Date Sampled: 02/03/2023
Dates Tested: 02/03/2023 - 13/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-22596A	SS-22596B	SS-22596C	SS-22596D
Date Tested	02/03/2023	02/03/2023	02/03/2023	02/03/2023
Time Tested	13:03	13:11	13:16	13:22
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505609	505616	505617	505609
Northing	7041253	7041223	7041239	7041227
Elevation (m)	R.L 13.1	R.L 13.1	R.L 13.4	R.L 13.0
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.00	2.05	2.04	2.04
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.09	2.10	2.07	2.08
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**95.5**	**98.0**	**98.5**	**98.0**
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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **216705.00-57**
Issue Number: 1
Date Issued: 17/03/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 22622
Date Sampled: 03/03/2023
Dates Tested: 03/03/2023 - 15/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-22622A	SS-22622B	SS-22622C	SS-22622D
Date Tested	03/03/2023	03/03/2023	03/03/2023	03/03/2023
Time Tested	13:01	13:07	13:13	13:17
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505680	505671	505673	505676
Northing	7041241	7041255	7041222	7041203
Elevation (m)	R.L 12.55	R.L 12.51	R.L 12.42	R.L 12.53
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay	Silty 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 (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.00	2.01	2.01	2.00
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.02	1.97	2.06	2.00
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-3.5	-1.5	-2.5	-1.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**99.5**	**102.0**	**97.5**	**100.5**
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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**216705.00-58**
Issue Number:	1
Date Issued:	17/03/2023
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	216705.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 5, Harmony Estate QLD
Work Request:	22650
Date Sampled:	06/03/2023
Dates Tested:	06/03/2023 - 15/03/2023
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22650A	SS-22650B	SS-22650C
Date Tested	06/03/2023	06/03/2023	06/03/2023
Time Tested	13:06	13:14	13:20
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505644	505638	505649
Northing	7041210	7041223	7041235
Elevation (m)	R.L 13.2	R.L 13.0	R.L 13.0
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.00	2.06	2.04
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.06	2.06	2.05
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	1.5	2.5	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**97.0**	**100.0**	**99.5**
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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: sam.turner@douglaspartners.com.au

Report Number: **216705.00-59**
Issue Number: 1
Date Issued: 22/03/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 22666
Date Sampled: 07/03/2023
Dates Tested: 07/03/2023 - 17/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Senior Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22666A	SS-22666B	
Date Tested	07/03/2023	07/03/2023	
Time Tested	13:03	13:10	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505688	505685	
Northing	7041242	7041216	
Elevation (m)	R.L 12.77	R.L 12.83	
Thickness of Layer (mm)	150	150	
Soil Description	Silty Clay	Silty 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	2.03	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.18	2.13	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	-0.5	0.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**95.0**	**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

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
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Email: sam.turner@douglaspartners.com.au

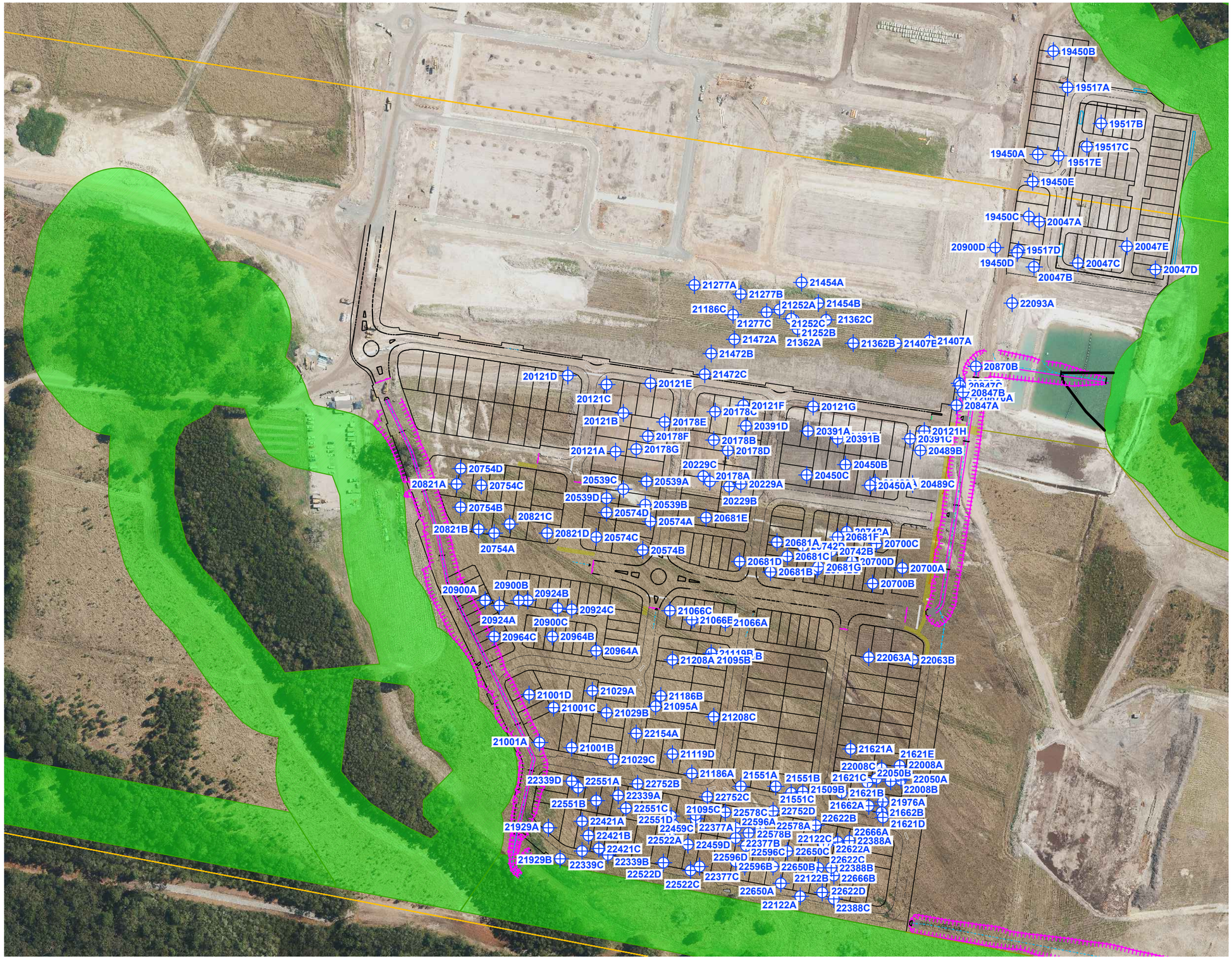
Report Number: **216705.00-60**
Issue Number: 1
Date Issued: 22/03/2023
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 216705.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 5, Harmony Estate QLD
Work Request: 22752
Date Sampled: 10/03/2023
Dates Tested: 10/03/2023 - 22/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Turner
Senior Technician
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22752B	SS-22752C	SS-22752D
Date Tested	10/03/2023	10/03/2023	10/03/2023
Time Tested	09:37	09:43	09:49
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505533	505587	505638
Northing	7041287	7041277	7041266
Elevation (m)	R.L 12.91	R.L 12.73	R.L 12.62
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.13	2.12	2.08
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.20	2.21	2.17
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	1.0	-1.5	-1.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**97.0**	**96.0**	**96.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC



Location Plan

0 20 40 60 80 100

SCALE 1:3,000 (A3)

LEGEND:-

Test Location and Number

NOTE:-

1. Test locations are approximate only and are shown with reference to existing site features.
2. Image obtained from Metromap. Date of imagery 30-09-2022.

Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: Shadforths Civil Pty Ltd		
OFFICE: Sunshine Coast	DRAWN BY: JST	
SCALE: As shown	DATE: March 2023	

TITLE: **Test Location Plan**
Proposed Bulk Earthworks
Phase 5, Harmony Estate

PROJECT No:	216705.00
DRAWING No:	1
REVISION:	0

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