LEVEL ONE EARTHWORKS REPORT

Proposed Residential Development
Willow Stage 4
Loganview Rd North
Logan Reserve

APRIL 24 2025

Shadforth Civil

Authored by: QUALTEST LABORATORY PTY LTD

REF: 8218

Qualtest Laboratory
Est. 1987

Ref: 8218
Job: 24-404
Author: M. Bauer

Qualtest Laboratory
Est. 1987

24th April 2024

Shadforth Civil
99 Sandalwood Lane
Forest Glen Qld 4556

ATTENTION: **MR ASHLEY GWAMBA**
Email: Ashley.gwamba@shadcivil.com.au

Dear Sir,

RE: **LEVEL ONE EARTHWORKS REPORT**

PROJECT: **PROPOSED RESIDENTIAL DEVELOPMENT**
WILLOW STAGE 4
LOGANVIEW ROAD NORTH, LOGAN RESERVE

CLIENT: **SHADFORTH CIVIL**

CONSULTANT: **COLLIERS**

CONTRACTOR: **SHADFORTH CIVIL**

Revision	Date	Author	Reviewer	Description
0	24/04/25	M. Bauer	M. Morrison	For review / Issue to Client

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1.0 INTRODUCTION

1.1 General

This report presents results and documentation for the Level One Inspection and Testing of earthworks filling operations for the Proposed Residential Development, Willow Stage 4, Loganview Road North, Logan Reserve (The Site).

Qualtest Laboratory Pty Ltd was commissioned by Shadforth Civil (The Client) to provide Level 1 Earthworks Inspection and Testing services as defined in Section 8 of AS3798.

Filling operations covered by this report were constructed between 4th October 2024 and 13th February 2025.

The purpose of Level 1 commission and this report is to provide an opinion that the earthworks operations carried out by the Client have been carried out in accordance with AS3798, relevant project specifications and Local Authority requirements as appropriate.

This report has been carried out in general accordance with the following: -

- AS3798-2007 - Guidelines on Earthwork for Commercial and Residential Development
- Colliers Engineers Consulting Drawings and Notes
- Logan City Council Requirements

This report does not cover underground services, trench backfill, pavements, retaining walls, filling outside areas shown on Figure 1 or any other works after 13th February 2025.

1.2 Previous Earthworks

Existing fill was present at The Site. Previous fill was constructed by Shadforth Civil Pty Ltd under Level One Inspections and Testing by Qualtest Laboratory between 17th March and 18th August 2023.

For information regarding the existing fill, refer to the Qualtest Laboratory report – "Level One Earthworks Report, Proposed Residential Development, Willow Stage 2, Future Stage 3 and 4, Loganview Road North, Logan Reserve" dated 26th September 2023.

This report has been reviewed by Qualtest Laboratory and is assessed to be appropriate for the existing fill.

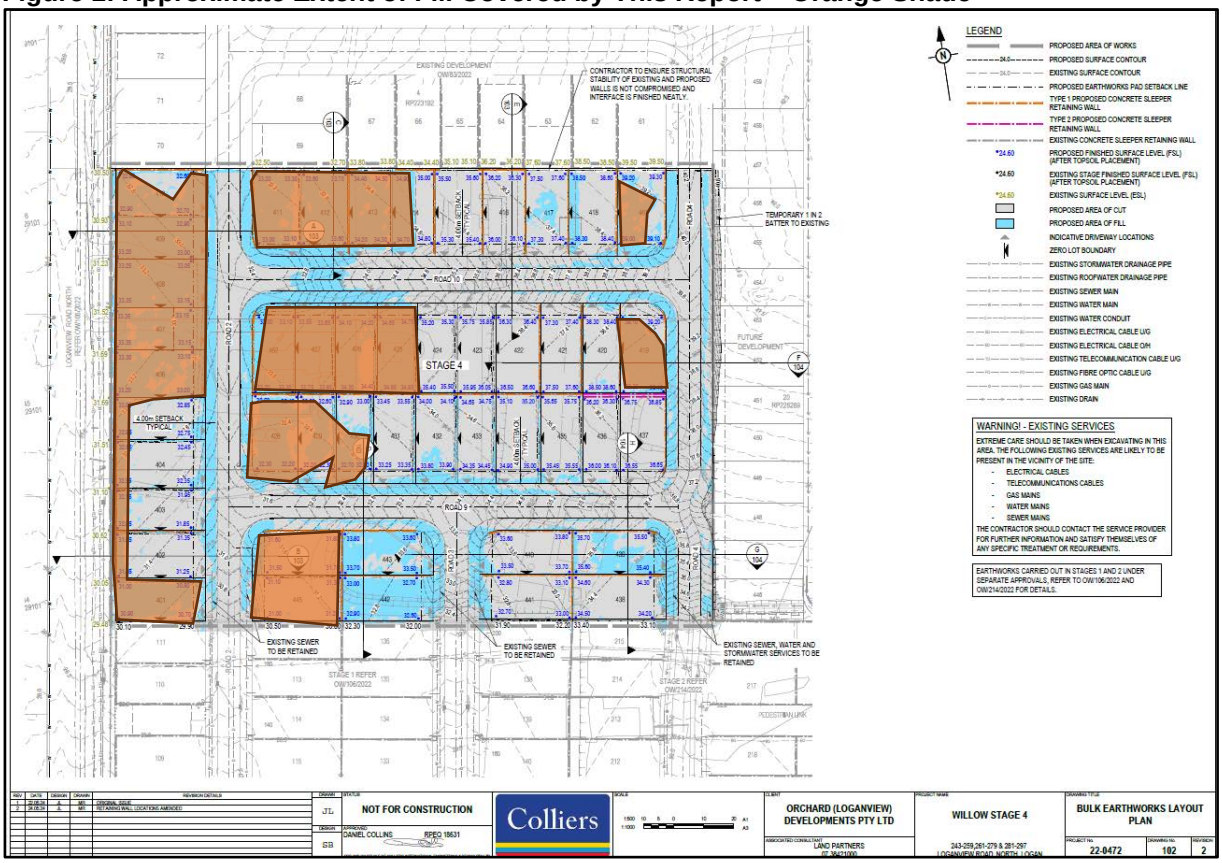
1.3 The Development

The development comprises of a 47 Lot subdivision with associated infrastructure and underground services.

Earthworks to be constructed at the site is presented on Collier's drawings, Bulk Earthworks Layout Plan, Project No. 22-0472, Drawing No. 100, Revision 1 reproduced below as Figure 1 below. These plans are considered to be reasonable indication of the actual fill constructed during our involvement with the following exception: -

- A majority of the filling shown on the drawings were completed as part of the previous earthworks package.
- Topping up of the following lots was carried out and is covered by this report:
    - Lots 401, 402, 403, 404, 405, 406, 407, 408, 409, 410,425,426,427,462,428,429,430, 340.
    - These areas have been marked up on Figure 1 as orange shade. .

Figure 1: Approximate Extent of Fill Covered by This Report – Orange Shade



2.0 WORKS AND SPECIFICATIONS

All filling operations at the Site are to be placed and compacted in accordance with the following: -

- AS3798 – Type 1 Earthworks Operations.
- Logan City Council Specifications.
- Density Ratio – 95% Standard

3.0 FILL FOUNDATION

Areas to be filled at the site were observed to be stripped of vegetation, grass, redundant services, water affected ground, uncontrolled fill and topsoil to depths exposing competent natural ground or the surface of existing fill.

Compliance of the fill foundation and approval to commence filling was on the basis of: -

- Complete removal of any uncontrolled fill.
- Adequate removal of topsoil and organics to expose natural ground or existing controlled fill.
- Adequate removal of redundant service trenches.
- Compliant proof roll testing of the stripped surface using onsite heavy earthworks plant.
- Heavy compaction of the surface of existing fill.

Pictures of the stripped and prepared fill foundation prior to the placement of fill are presented below.

Fill Foundation

Fill Foundation

4.0 FILLING OPERATIONS

Fill at the site was sourced from onsite and included: -

- Onsite Cuts, Stockpiles and Trench Spoil.

Materials used as fill can be broadly summarised as: -

- Onsite – Sandy Clay (CI), medium plasticity fines, fine to medium sand, orange brown, red brown and moist.
- Onsite – Silty Gravelly Clay (CL-CI) low to medium plasticity fines, fine to coarse gravels, traces of sand, brown and moist.

Fill was constructed using the following plant: -

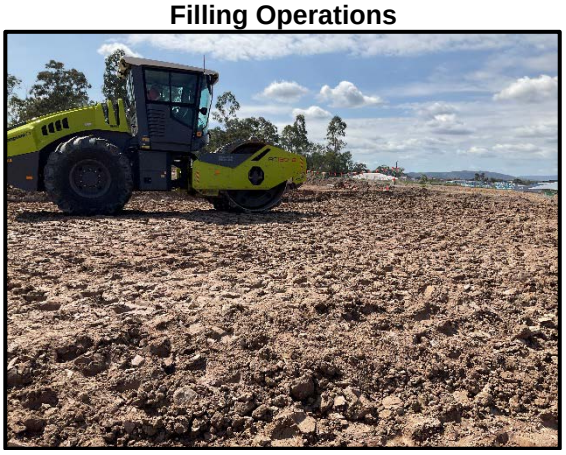
- Grader
- Water Truck
- Body Trucks
- Pad Foot Roller
- Excavators
- Cat D6 Dozer

Fill was observed to be placed in layers within the capacity of the above plant, appropriately moisture conditioned and compacted using several passes.

To the extent that was reasonably practicable, fill materials visibly containing excessive amounts of silts or deleterious materials such as sticks, oversize particles were sorted to remove the contaminants prior to placement, or rejected for use. Some cobble sized particles may remain in the body of the fill, however, are unlikely to be in sufficient quantities to adversely affect the performance of the new fill. Sloping areas requiring filling were benched and continually keyed into the slope prior to and during fill placement.

Pictures of the filling operations are presented below.

Filling Operations



Filling Operations.

5.0 COMPACTION TESTING

Compaction testing was carried out on the compacted fill materials in accordance with Table 5.1 and 8.1 of AS3798 2007 and tested to AS1289 test methods. All test locations were selected by Qualtest at random and staggered over the fill area and depth. Test locations were not obtained by survey and on this basis, the locations should be considered as approximate only.

Compaction testing achieved the minimum required compaction specification of 95% Standard at the test locations. Areas where the compaction specification was not achieved were reworked and re-tested using random stratified location processes.

The location of the compaction tests and area of fill covered under this report are shown on the Site Plan contained in Appendix A. Compaction test reports are contained in Appendix B.

6.0 STATEMENT OF COMPLIANCE

Our representatives observed the relevant earthworks operations during our engagement including the stripped surface, new fill placement and compaction operations, and compaction testing.

As far as Qualtest could assess, the fill at The Site has been observed to be placed and compacted in accordance with the requirements outlined in Section 2.0.

The fill at The Site can be considered to be “Controlled” as defined in AS2870.

7.0 EXCLUSIONS

The compliance statement specifically excludes any topsoil, which may be placed for use as Lot dressing or any other subsequent earthworks after 13th February 2025. All trench backfill, landscaping fill, fill outside the area shown as Figure 2 and other fill placed without our knowledge is also excluded.

Assessments of batter stability, global stability, and material quality such as soaked CBR and site classifications are excluded from this commission. The stability of any fill batters in the long term must take account of the variable materials used for the construction of the fill platforms and all surface loads including traffic loads near the crest of all batters.

Our on-site attendance specifically excludes assessments of fill material quality and engineering properties that are outside the requirements of AS3798 - 2007, including soil or fill reactivity and soaked CBR values. We note that the fill materials comprise clay soils, which may result in unfavourable site classifications for individual lots and low subgrade design strengths for pavements.

Footings and ground slabs for any structures constructed over natural soils or controlled fill should be designed to accommodate the characteristic ground surface movements and settlement potential. Assessments of these design parameters are beyond the scope of this Report.

Controlled fill (Level 1 Fill) provides an overview that the Earthwork Specification has been met. There are instances where significant long-term settlements of controlled fill can occur. Large total and differential settlements can be expected where fill has been placed over soft and compressible soils and where the thickness of controlled fill varies significantly across a lot.

Should you require further information regarding the above please do not hesitate to contact this office.

Yours faithfully,

MICHAEL MORRISON
For and on behalf of
QUALTEST LABORATORY PTY LTD.

Appendix A *– Site Plan and Compaction Test Locations*

Appendix B *– Compaction Test Reports*

Appendix C *– Existing Level One Report*

APPENDIX A

Site Plan and Compaction Test Locations

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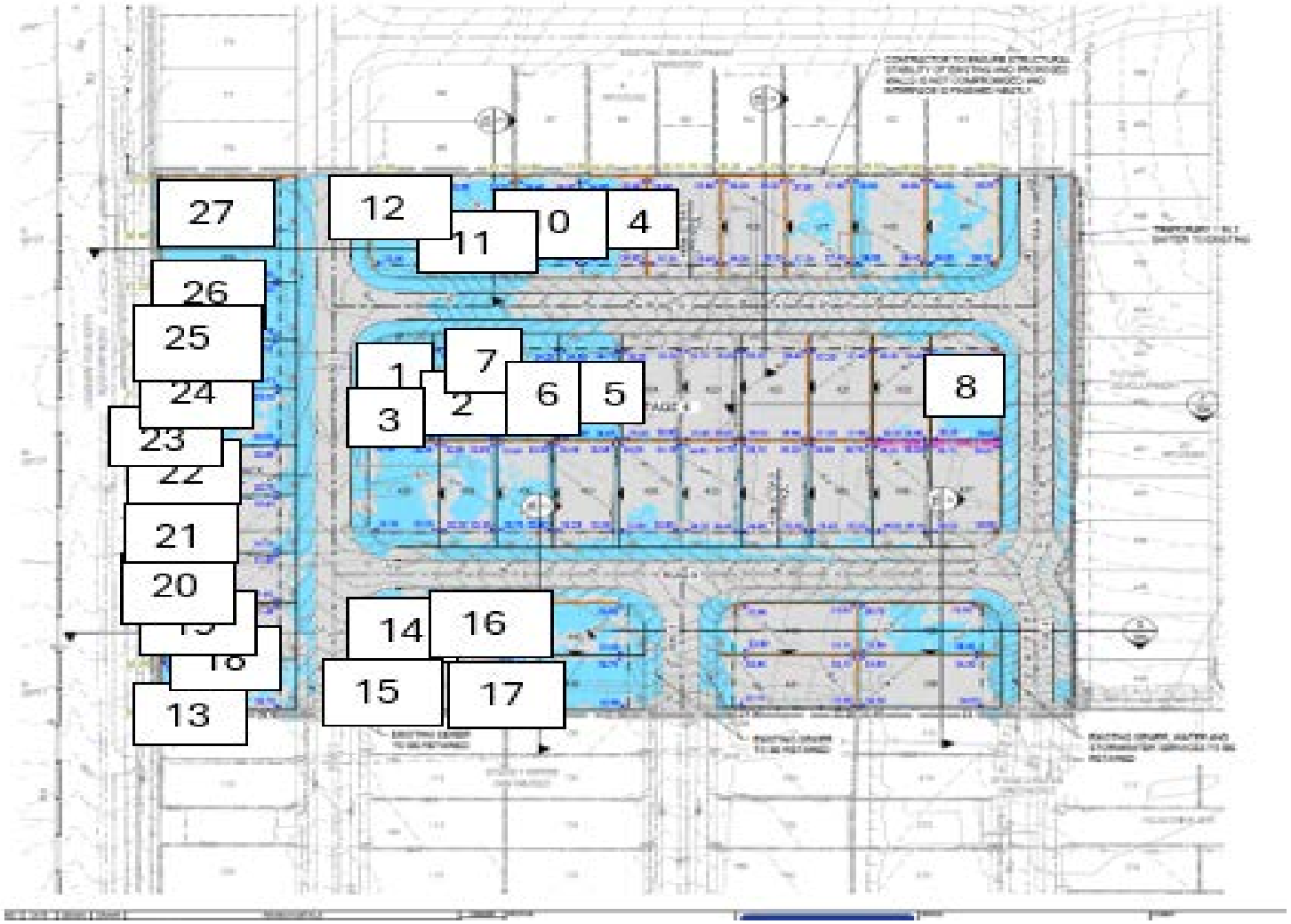

LEGEND:

Test Locations

CLIENT: Shadforth Civil	**TITLE:** Compaction Test Locations	**DRAWING NO: 24-404-01**
		DATE: 24th April 2025
LOCATION: Willow Stage 4		**PROJECT NO: 24-404**
		CHECKED BY: GG

APPENDIX B

COMPACTION TEST REPORTS

Qualtest Laboratory
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Material Test Report

Report Number: **24-404_a-2**
Issue Number: 1
Date Issued: 16/10/2024
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 24-404_a
Project Name: LEVEL ONE SUPERVISION
Project Location: WILLOW STAGE 4 - LOGAN RESERVE
Client Reference: 676873
Work Request: 12602
Date Sampled: 04/10/2024 10:00
Dates Tested: 04/10/2024 - 15/10/2024
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow - Stage 4 - Logan Reserve
Material: Allotment Fill
Material Source: on-site

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2 / 40 Boyland Ave Cooper Plains QLD 4108
Phone: 0417 011 515
Email: rhys@qualtestgeo.com

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S12602A		
Test Number	1		
Date Tested	04/10/2024		
Time Tested	12:00		
Test Request #/Location	Lot 462		
Chainage (m)	15m from North boundary		
Location Offset (m)	3m from West boundary		
Layer / Reduced Level	0.4m below final level		
Thickness of Layer (mm)	175		
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	1.95		
Field Moisture Content %	24.1		
Field Dry Density (FDD) t/m^3	1.58		
Peak Converted Wet Density t/m^3	1.94		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	-1.0		
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

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Results relate only to the items tested/sampled.

Material Test Report

Report Number: **24-404_a-3**
Issue Number: 1
Date Issued: 23/10/2024
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 24-404_a
Project Name: LEVEL ONE SUPERVISION
Project Location: WILLOW STAGE 4 - LOGAN RESERVE
Client Reference: 676873
Work Request: 12699
Date Sampled: 15/10/2024 13:00
Dates Tested: 15/10/2024 - 22/10/2024
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: 95% Standard
Site Selection: AS 1289.1.4.1
Test Area Bounds: Start: End: Left: Right:
Location: Willow - Stage 4 - Logan Reserve
Material: Allotment Fill
Material Source: On-site

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S12699A	S12699B	
Test Number	2	3	
Date Tested	15/10/2024	15/10/2024	
Time Tested	13:05	13:10	
Test Request #/Location	Lot 427	Lot 462	
Chainage (m)	6m from South boundary	5m from South boundary	
Location Offset (m)	3m from West boundary	4m from West boundary	
Layer / Reduced Level	0.5m below final level	0.3m below final level	
Thickness of Layer (mm)	175	175	
Soil Description	Sandy CLAY	Sandy CLAY	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.04	1.96	
Field Moisture Content %	14.4	22.4	
Field Dry Density (FDD) t/m^3	1.78	1.60	
Peak Converted Wet Density t/m^3	1.95	2.06	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	3.0	0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**104.5**	**95.0**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

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

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Material Test Report

Report Number: 24-404_a-4
Issue Number: 1
Date Issued: 06/11/2024
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 24-404_a
Project Name: LEVEL ONE SUPERVISION
Project Location: WILLOW STAGE 4 - LOGAN RESERVE
Client Reference: 676873
Work Request: 12880
Date Sampled: 23/10/2024
Dates Tested: 23/10/2024 - 30/10/2024
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: 95% Standard
Site Selection: Selected by GTA
Location: Stage 4 Earthworks
Material: Allotment Fill
Material Source: Onsite

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S12880A	S12880B	
Test Number	4	5	
Date Tested	23/10/2024	23/10/2024	
Time Tested	14:02	14:07	
Test Request #/Location	Lot 414	Lot 425	
Easting	3m from West Boundary	3m from West Boundary	
Northing	7m from South Boundary	8m from North Boundary	
Layer / Reduced Level	Finish Level	Finish Level	
Thickness of Layer (mm)	175	175	
Soil Description	Silty CLAY. Maroon	Silty CLAY. Maroon	
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	2.00	1.92	
Field Moisture Content %	22.1	22.5	
Field Dry Density (FDD) t/m^3	1.64	1.57	
Peak Converted Wet Density t/m^3	1.89	1.93	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.5	1.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**106.0**	**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

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Material Test Report

Report Number: **24-404_a-5**
Issue Number: 1
Date Issued: 12/11/2024
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 24-404_a
Project Name: LEVEL ONE SUPERVISION
Project Location: WILLOW STAGE 4 - LOGAN RESERVE
Client Reference: 676873
Work Request: 12991
Date Sampled: 30/10/2024
Dates Tested: 30/10/2024 - 12/11/2024
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: 95% Standard
Site Selection: Selected by GTA
Material: Allotment Fill
Material Source: Onsite

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S12991A	S12991B	S12991C	S12991D	S12991E	S12991F
Test Number	8	9	10	11	12	13
Date Tested	30/10/2024	30/10/2024	30/10/2024	30/10/2024	30/10/2024	30/10/2024
Time Tested	08:00	08:05	08:10	08:15	08:20	08:25
Test Request #/Location	Lot 419	Lot 414	Lot 413	Lot 412	Lot 411	Lot 401
Easting	4m from East Boundary	1m from West Boundary	2m from West Boundary	2m from West Boundary	3m from West Boundary	6m from West Boundary
Northing	3m from South Boundary	6m from North Boundary	6m from South Boundary	8m from North Boundary	6m from South Boundary	4m from South Boundary
Layer / Reduced Level	Final Level	Final Level	Final Level	Final Level	Final Level	Final Level
Thickness of Layer (mm)	175	175	175	175	175	175
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Field Wet Density (FWD) t/m^3	1.96	2.15	2.12	1.98	2.02	2.02
Field Moisture Content %	10.8	18.4	9.9	16.9	18.3	13.0
Field Dry Density (FDD) t/m^3	1.76	1.82	1.93	1.70	1.71	1.78
Peak Converted Wet Density t/m^3	1.90	2.03	2.09	1.94	2.02	2.04
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	5.0	0.5	4.5	2.5	0.0	-1.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**103.0**	**106.0**	**101.5**	**102.5**	**100.0**	**99.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**	**

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

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Material Test Report

Report Number: **24-404_a-6**
Issue Number: 1
Date Issued: 18/11/2024
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 24-404_a
Project Name: LEVEL ONE SUPERVISION
Project Location: WILLOW STAGE 4 - LOGAN RESERVE
Client Reference: 676873
Work Request: 12933
Date Sampled: 25/10/2024
Dates Tested: 25/10/2024 - 15/11/2024
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: 95% Standard
Site Selection: Selected by GTA
Location: Stage 4
Material: Allotment Fill
Material Source: Onsite

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S12933A	S12933B	
Test Number	6	7	
Date Tested	25/10/2024	25/10/2024	
Time Tested	12:15	12:26	
Test Request #/Location	Allotment 426	Allotment 427	
Easting	2m from West Boundary	2m from West Boundary	
Northing	4m from South Boundary	7m from South Boundary	
Elevation (m)	Finish Level	Finish Level	
Thickness of Layer (mm)	200	200	
Soil Description	Gravelly silty Clay. Pink grey	Gravelly silty Clay. Pink grey	
Test Depth (mm)	175	175	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.04	2.02	
Field Moisture Content %	10.0	15.3	
Field Dry Density (FDD) t/m^3	1.85	1.76	
Peak Converted Wet Density t/m^3	2.01	1.91	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	1.5	4.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**101.5**	**106.0**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

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Material Test Report

Report Number: **24-404_a-7**
Issue Number: 1
Date Issued: 04/02/2025
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 24-404_a
Project Name: LEVEL ONE SUPERVISION
Project Location: WILLOW STAGE 4 - LOGAN RESERVE
Client Reference: 676873
Work Request: 13976
Date Sampled: 24/01/2025 12:30
Dates Tested: 24/01/2025 - 31/01/2025
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow - Stage 4 - Logan Reserve
Material: Allotment Fill
Material Source: on-site

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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S13976A	S13976B	
Test Number	16	17	
Date Tested	25/01/2025	25/01/2025	
Time Tested	13:15	13:25	
Test Request #/Location	Lot 444	Lot 445	
Chainage (m)	4m from South boundary	6m from South boundary	
Location Offset (m)	12m from West boundary	6m from West boundary	
Layer / Reduced Level	Final level	Final level	
Thickness of Layer (mm)	175	175	
Soil Description	Gravelly CLAY	Gravelly CLAY	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	3	0	
Field Wet Density (FWD) t/m^3	2.06	2.06	
Field Moisture Content %	15.0	16.3	
Field Dry Density (FDD) t/m^3	1.79	1.77	
Peak Converted Wet Density t/m^3	**	2.08	
Adjusted Peak Converted Wet Density t/m^3	2.13	**	
Moisture Variation (Wv) %	**	0.5	
Adjusted Moisture Variation %	1.0	**	
Hilf Density Ratio (%)	**96.5**	**99.0**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
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Material Test Report

Report Number: **24-404_a-8**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Incorrect lot numbers changed.*
Date Issued: 24/04/2025
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 24-404_a
Project Name: LEVEL ONE SUPERVISION
Project Location: WILLOW STAGE 4 - LOGAN RESERVE
Client Reference: 676873
Work Request: 14206
Date Sampled: 13/02/2025 12:00
Dates Tested: 10/02/2025 - 10/02/2025
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow- Stage 4 - Logan Reserve
Material: Allotment Fill
Material Source: On-site

Qualtest Laboratory Pty Ltd
Brisbane Laboratory
2 / 40 Boyland Ave Cooper Plains QLD 4108
Phone: 0417 011 515
Email: mark@qualtestgeo.com
Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Mark Bauer
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S14206A	S14206B	
Test Number	26	27	
Date Tested	06/02/2025	06/02/2025	
Time Tested	12:14	12:30	
Test Request #/Location	Lot 409	Lot 410	
Chainage (m)	2m from North boundary	4m from North boundary	
Location Offset (m)	2m from West boundary	2m from West boundary	
Layer / Reduced Level	Final Level	Final Level	
Thickness of Layer (mm)	175	175	
Soil Description	Clayey GRAVEL	Clayey GRAVEL	
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	2.04	
Field Moisture Content %	17.2	15.0	
Field Dry Density (FDD) t/m^3	1.75	1.78	
Peak Converted Wet Density t/m^3	2.11	2.09	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.5	0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**97.0**	**97.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

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

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Results relate only to the items tested/sampled.

Material Test Report

Report Number: **24-404_a-9**
Issue Number: 1
Date Issued: 11/02/2025
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 24-404_a
Project Name: LEVEL ONE SUPERVISION
Project Location: WILLOW STAGE 4 - LOGAN RESERVE
Client Reference: 676873
Work Request: 14182
Date Sampled: 05/02/2025 12:00
Dates Tested: 05/02/2025 - 10/02/2025
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow - Stage 4 - Logan Reserve
Material: Allotment Fill
Material Source: On-site

Qualtest Laboratory Pty Ltd
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Email: mark@qualtestgeo.com

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Mark Bauer
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	S14182A	S14182B	S14182C	S14182D
Test Number	18	19	20	21
Date Tested	05/02/2025	05/02/2025	05/02/2025	05/02/2025
Time Tested	12:05	12:10	12:16	12:20
Test Request #/Location	Lot 401	Lot 402	Lot 403	Lot 404
Chainage (m)	2m from North boundary	4m from North boundary	2m from North boundary	3m from North boundary
Location Offset (m)	2m from West boundary	2m from West boundary	3m from West boundary	2m from. West boundary
Layer / Reduced Level	Final level	Final level	Final level	Final level
Thickness of Layer (mm)	175	175	175	175
Soil Description	Gravelly CLAY	Gravelly CLAY	Gravelly CLAY	Gravelly CLAY
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	6	0
Field Wet Density (FWD) t/m^3	1.94	2.03	2.05	2.06
Field Moisture Content %	17.6	15.5	15.9	16.7
Field Dry Density (FDD) t/m^3	1.65	1.76	1.77	1.76
Peak Converted Wet Density t/m^3	2.02	2.03	**	2.09
Adjusted Peak Converted Wet Density t/m^3	**	**	2.11	**
Moisture Variation (Wv) %	-1.0	0.5	**	0.5
Adjusted Moisture Variation %	**	**	0.5	**
Hilf Density Ratio (%)	**96.0**	**100.0**	**97.0**	**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

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Material Test Report

Report Number: **24-404_a-9**
Issue Number: 1
Date Issued: 11/02/2025
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 24-404_a
Project Name: LEVEL ONE SUPERVISION
Project Location: WILLOW STAGE 4 - LOGAN RESERVE
Client Reference: 676873
Work Request: 14182
Date Sampled: 05/02/2025 12:00
Dates Tested: 05/02/2025 - 10/02/2025
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow - Stage 4 - Logan Reserve
Material: Allotment Fill
Material Source: On-site

Qualtest Laboratory Pty Ltd
Brisbane Laboratory
2 / 40 Boyland Ave Cooper Plains QLD 4108
Phone: 0417 011 515
Email: mark@qualtestgeo.com

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Mark Bauer
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	S14182E	S14182F	S14182G	S14182H
Test Number	22	23	24	25
Date Tested	05/02/2025	05/02/2025	05/02/2025	05/02/2025
Time Tested	12:25	12:40	12:45	12:50
Test Request #/Location	Lot 405	Lot 406	Lot 407	Lot 408
Chainage (m)	2m from North boundary	6m from North boundary	4m from North boundary	2m from North boundary
Location Offset (m)	2.5m from West boundary	1.5m from West boundary	2m from West boundary	1.8m from West boundary
Layer / Reduced Level	Final level	Final levelWest	Final level	Final level
Thickness of Layer (mm)	175	175	175	175
Soil Description	Gravelly CLAY	Gravelly CLAY	Gravelly CLAY	Gravelly CLAY
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	1.98	2.09	1.94	2.04
Field Moisture Content %	18.3	14.9	16.8	20.0
Field Dry Density (FDD) t/m^3	1.67	1.82	1.66	1.70
Peak Converted Wet Density t/m^3	2.05	2.02	2.04	2.02
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	0.0	1.0	0.5	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**96.5**	**103.5**	**95.0**	**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

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Results relate only to the items tested/sampled.

Material Test Report

Report Number: **24-404_a-10**
Issue Number: 1
Date Issued: 13/02/2025
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 24-404_a
Project Name: LEVEL ONE SUPERVISION
Project Location: WILLOW STAGE 4 - LOGAN RESERVE
Client Reference: 676873
Work Request: 13945
Date Sampled: 23/01/2025 11:00
Dates Tested: 23/01/2025 - 12/02/2025
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow - Stage 4 - Logan reserve
Material: Allotment Fill
Material Source: on-site

Qualtest Laboratory Pty Ltd
Brisbane Laboratory
2 / 40 Boyland Ave Cooper Plains QLD 4108
Phone: 0417 011 515
Email: mark@qualtestgeo.com

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Mark Bauer
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S13945A	S13945B	
Test Number	14	15	
Date Tested	23/01/2025	23/01/2025	
Time Tested	09:00	12:00	
Test Request #/Location	Lot 445	Lot 446	
Chainage (m)	4m from North boundary	5m from North boundary	
Location Offset (m)	6m from West boundary	8m from West boundary	
Layer / Reduced Level	0.5m of fill	1.0m of fill	
Thickness of Layer (mm)	175	175	
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	2.06	2.02	
Field Moisture Content %	16.9	17.2	
Field Dry Density (FDD) t/m^3	1.76	1.73	
Peak Converted Wet Density t/m^3	2.12	2.12	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	-2.5	-2.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**97.0**	**95.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

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

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APPENDIX C

Previous Level One Report

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LEVEL ONE EARTHWORKS REPORT

Proposed Residential Development, Willow Stage 2, Future Stage 3 & 4, Loganview Road North, Logan Reserve

SEPTEMBER 26 2023

Shadforth Civil Pty Ltd
Authored by: QUALTEST LABORATORY PTY LTD
REF: 4403

Qualtest Laboratory
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Qualtest Laboratory
Est. 1987

Ref: 4403
Job: 23-067
Author: R. Mitchell

26th September 2023

Shadforth Civil
99 Sandalwood Lane
Forest Glen Qld 4556

ATTENTION: **MR MITCH TRONC**
Email: mitch.tronc@shadcivil.com.au

Dear Sir,

RE: **LEVEL ONE EARTHWORKS REPORT**

PROJECT: **PROPOSED RESIDENTIAL DEVELOPMENT**
WILLOW STAGE 2, FUTURE STAGE 3 AND 4
LOGANVIEW ROAD NORTH, LOGAN RESERVE

CLIENT: **SHADFORTH CIVIL**

CONSULTANT: **PEAKURBAN**

CONTRACTOR: **SHADFORTH CIVIL**

Revision	Date	Author	Reviewer	Description
0	26/09/23	R. Mitchel	M. Morrison	Issued for Comments
A	26/09/23	R. Mitchell	M. Morrison	Issue to Client

Qualtest Laboratory Pty Ltd
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qualtest@qualtestgeo.com
www.qualtestgeo.com
ABN 74 010 752 815

1.0 INTRODUCTION

1.1 General

This report presents results and documentation for the Level One Inspection and Testing of earthworks filling operations for the Proposed Residential Development, Willow Stage 2, Future Stage 3 and Future Stage 4 Loganview Road North, Logan Reserve (The Site).

Qualtest Laboratory Pty Ltd was commissioned by Shadforth Civil (The Client) to provide Level 1 Earthworks Inspection and Testing services as defined in Section 8 of AS3798.

Filling operations covered by this report were constructed between 17th March 2023 and 18th August 2023.

The purpose of Level 1 commission and this report is to provide an opinion that the earthworks operations carried out by the Client have been carried out in accordance with AS3798, relevant project specifications and Local Authority requirements as appropriate.

This report has been carried out in general accordance with the following: -

- AS3798-2007 - Guidelines on Earthwork for Commercial and Residential Development
- Colliers Engineers Consulting Drawings and Notes
- Logan City Council Requirements

This report does not cover underground services, trench backfill, pavements, retaining walls, filling outside areas shown on Figure 2 or any other works after 18th August 2023.

1.2 The Development

The development comprises of a 60-lot subdivision with associated infrastructure and underground services.

Earthworks to be constructed at the site is presented on Colliers drawings, Bulk Earthworks Layout Plan Sheet 1 and 2, Drawing 102 and 103 respectively reproduced below as Figure 1 and 2 below. These plans are considered to be reasonable indication of the actual fill constructed during our involvement with the following exception: -

- Filling of old dam which consisted parts of Lot 303, 304 and Road 7 / Road 1 intersection road embankment and surrounding verge.

Figure 1: Bulk Earthworks Layout Sheet 1 of 2

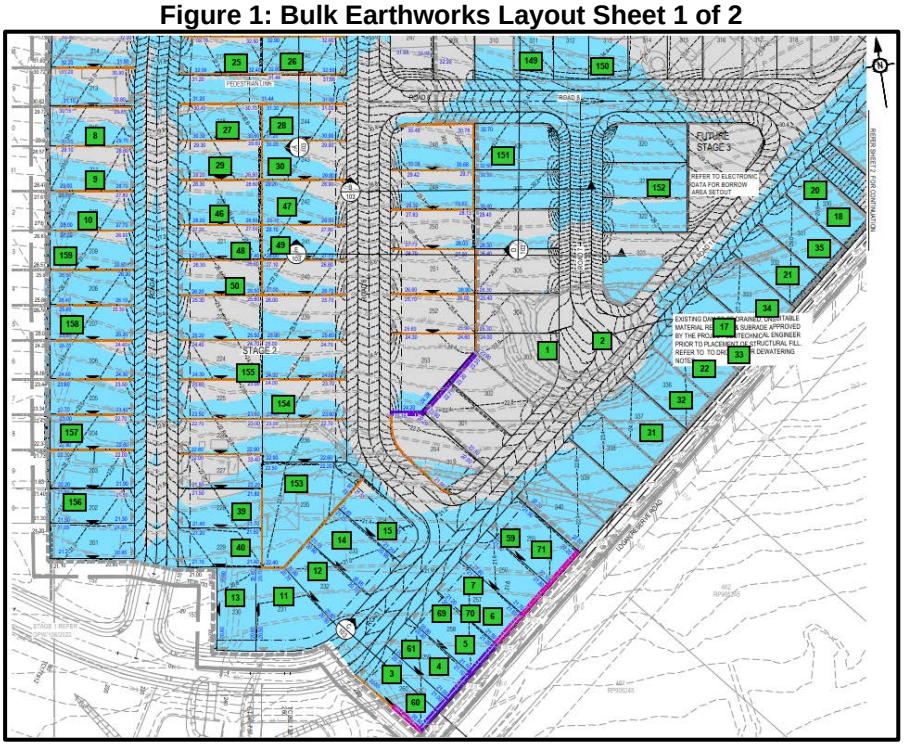
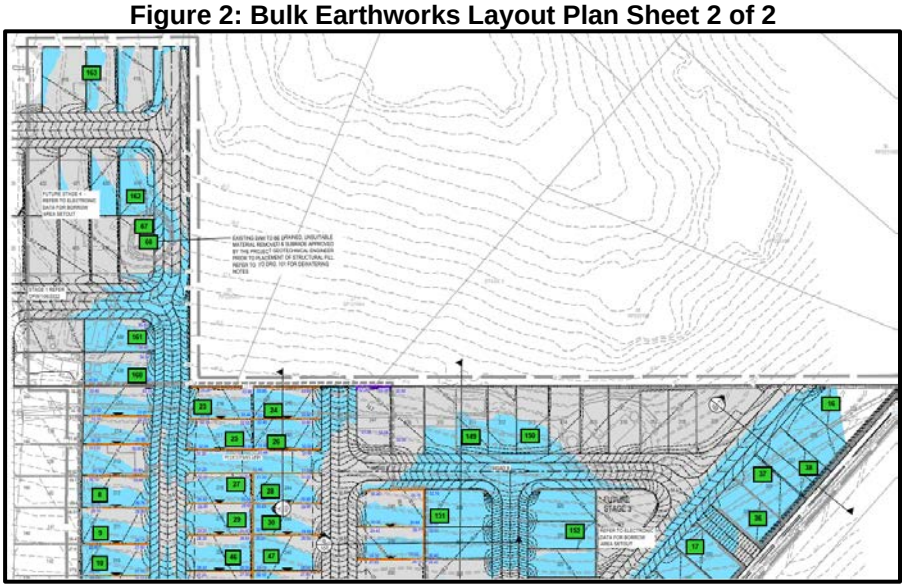


Figure 2: Bulk Earthworks Layout Plan Sheet 2 of 2



2.0 WORKS AND SPECIFICATIONS

All filling operations at the Site are to be placed and compacted in accordance with the following: -

- AS3798 – Type 1 Earthworks Operations.
- Logan City Council Specifications.
- Density Ratio – 95% Standard

3.0 FILL FOUNDATION

Areas to be filled at the site were observed to be stripped of existing fill, vegetation, grass, redundant services, water affected ground, uncontrolled fill and topsoil to depths exposing competent natural ground.

Compliance of the fill foundation and approval to commence filling was on the basis of: -

- Complete removal of existing fill.
- Adequate removal of topsoil and organics.
- Adequate removal of redundant service trenches.
- Compliant proof roll testing of the stripped surface using onsite heavy earthworks plant.

A picture of the stripped natural surface prior to filling is presented below.

Picture 1: View of the Stripping Operations

4.0 FILLING OPERATIONS

Fill at the site was sourced from onsite and included: -

- Onsite Cuts and Trench Spoil.

Materials used as fill can be broadly summarised as: -

- Onsite – Sandy Clay (CI), medium plasticity fines, fine to medium sand, orange brown, red brown and moist.
- Onsite – Silty Gravelly Clay (CL-CI) low to medium plasticity fines, fine to coarse gravels, traces of sand, brown and moist.

Fill was constructed using the following plant: -

- Dozer
- Grader
- Water Truck
- Pad Foot Roller
- Excavator
- Moxi Dump Trucks

Fill was observed to be placed in layers within the capacity of the above plant, appropriately moisture conditioned and compacted using several passes.

To the extent that was reasonably practicable, fill materials visibly containing excessive amounts of silts or deleterious materials such as sticks, oversize particles were sorted to remove the contaminants prior to placement, or rejected for use. Some cobble sized particles may remain in the body of the fill, however, are unlikely to be in sufficient quantities to adversely affect the performance of the new fill. Sloping areas requiring filling were benched and continually keyed into the slope prior to and during fill placement.

A Picture of the filling operations is presented below.

Picture 2: View of Filling Operations

5.0 COMPACTION TESTING

Compaction testing was carried out on the compacted fill materials in accordance with Table 5.1 and 8.1 of AS3798 2007 and tested to AS1289 test methods. All test locations were selected by Qualtest at random and staggered over the fill area and depth. Test locations were not obtained by survey and on this basis, the locations should be considered as approximate only.

Compaction testing achieved the minimum required compaction specification of 95% Standard at the test locations. Areas where the compaction specification was not achieved were reworked and re-tested using random stratified location processes.

The location of the compaction tests and area of fill covered under this report are shown on the Site Plan contained in Appendix A. Compaction test reports are contained in Appendix B.

6.0 STATEMENT OF COMPLIANCE

Our representatives observed the relevant earthworks operations during our engagement including the stripped surface, new fill placement and compaction operations, and compaction testing.

As far as Qualtest could assess, the fill at The Site has been observed to be placed and compacted in accordance with the requirements outlined in Section 2.0.

The fill at The Site can be considered to be "Controlled" as defined in AS2870.

7.0 EXCLUSIONS

The compliance statement specifically excludes any topsoil, which may be placed for use as Lot dressing or any other subsequent earthworks after 18th August 2023. All trench backfill, landscaping fill, fill outside the area shown as Figure 2 and other fill placed without our knowledge is also excluded.

Assessments of batter stability, global stability, and material quality such as soaked CBR and site classifications are excluded from this commission. The stability of any fill batters in the long term must take account of the variable materials used for the construction of the fill platforms and all surface loads including traffic loads near the crest of all batters.

Our on-site attendance specifically excludes assessments of fill material quality and engineering properties that are outside the requirements of AS3798 - 2007, including soil or fill reactivity and soaked CBR values. We note that the fill materials comprise clay soils, which may result in unfavourable site classifications for individual lots and low subgrade design strengths for pavements.

Footings and ground slabs for any structures constructed over natural soils or controlled fill should be designed to accommodate the characteristic ground surface movements and settlement potential. Assessments of these design parameters are beyond the scope of this Report.

Controlled fill (Level 1 Fill) provides an overview that the Earthwork Specification has been met. There are instances where significant long-term settlements of controlled fill can occur. Large total and differential settlements can be expected where fill has been placed over soft and compressible soils and where the thickness of controlled fill varies significantly across a lot.

Should you require further information regarding the above please do not hesitate to contact this office.

Yours faithfully,

MICHAEL MORRISON
For and on behalf of
QUALTEST LABORATORY PTY LTD.
Appendix A *– Site Plan and Compaction Test Locations*
Appendix B *– Compaction Test Reports*

APPENDIX A

Site Plan and Compaction Test Locations

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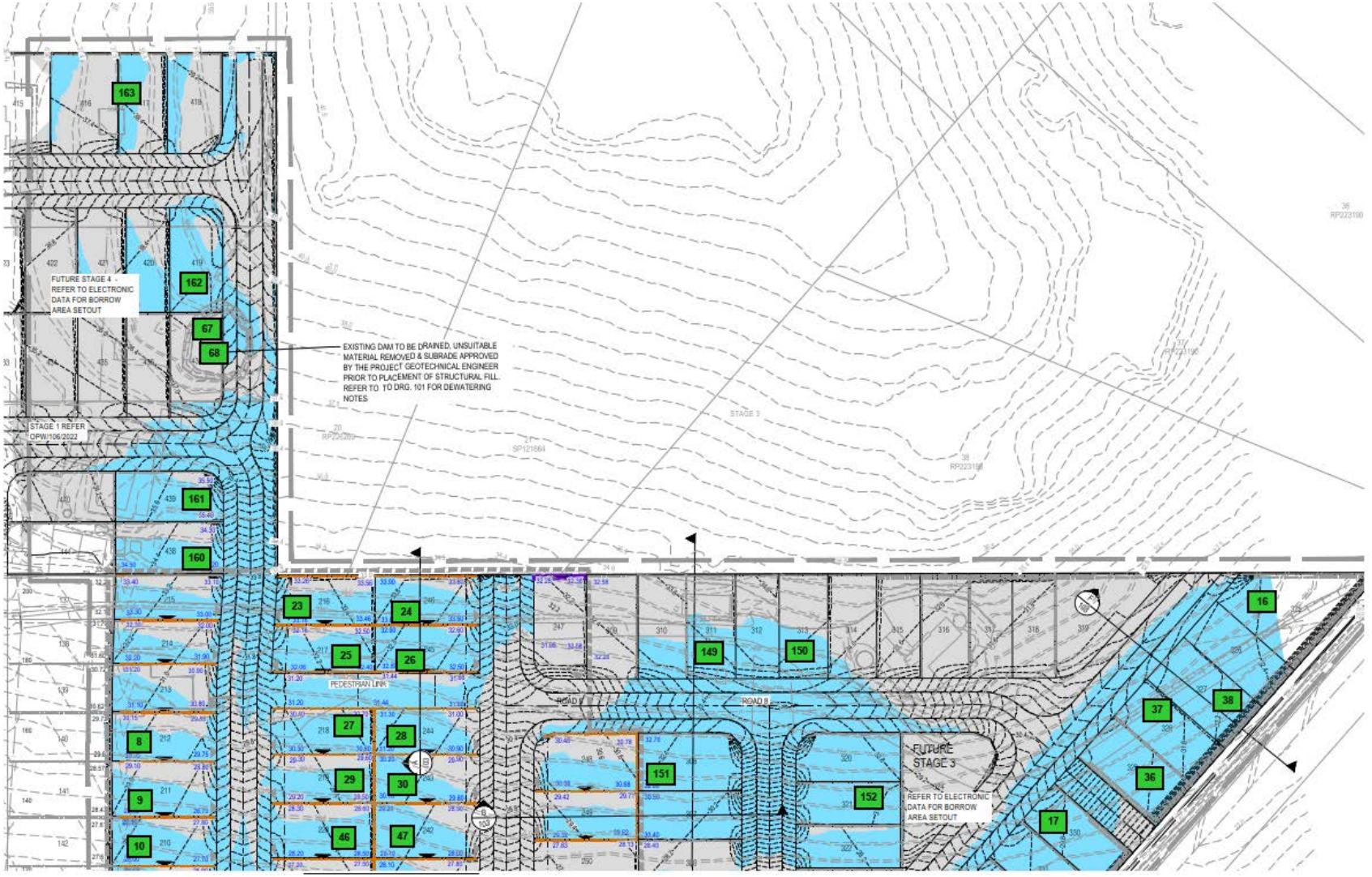
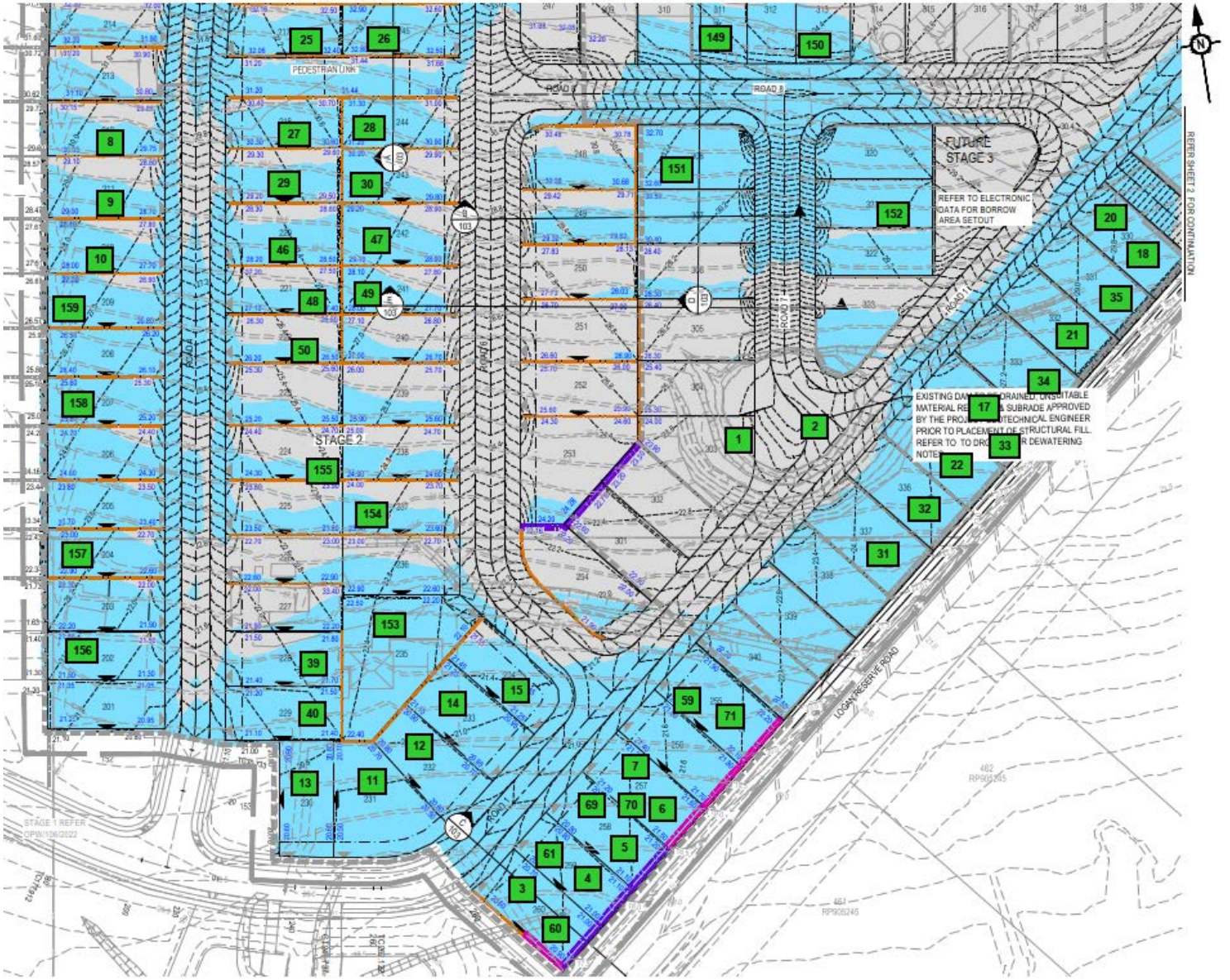


LEGEND:

Test Locations

CLIENT: SHADFORTH CIVIL	**TITLE: APPROXIMATE FIELD DENSITY TEST LOCATIONS**
LOCATION: WILLOW STAGE 2	**SHEET 1 OF 2**

DRAWING NO: 23-067-01
DATE: 26th September 2023
PROJECT NO: 23-067
CHECKED BY: GG



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LEGEND:

Test Locations

CLIENT: SHADFORTH CIVIL

LOCATION: WILLOW STAGE 2

TITLE: APPROXIMATE FIELD DENSITY TEST LOCATIONS

SHEET 2 OF 2

DRAWING NO: 23-067-02

DATE: 26th September 2023

PROJECT NO: 23-067

CHECKED BY: GG

APPENDIX B

COMPACTION TEST REPORTS

Qualtest Laboratory
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Material Test Report

Report Number: **23-067-1**
Issue Number: 1
Date Issued: 15/03/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Work Request: 4761
Dates Tested: 03/03/2023 - 04/03/2023
Location: Willow, stage 2

Qualtest Laboratory Pty Ltd
Qualtest Laboratory Pty Limited
2 / 40 Boyland Ave Cooper Plains QLD 4108
Phone: 0417 011 515
Email: greg@qualtestgeo.com

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S4761A	S4761B	
Test Number	1	2	
Date Tested	03/03/2023	03/03/2023	
Time Tested	10:10	10:20	
Test Request #/Location	Lot 303	Road 7	
Chainage (m)	O/S NE CNR	O/S Lot 303 NE CNR	
Location Offset (m)	3m West, 3m South	7m East, 4m North	
Layer / Reduced Level	2m Below FSL	2m Below FSL	
Soil Description	Silty Sandy clay, brown	Silty Sandy clay, brown	
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	1.99	1.99	
Field Moisture Content %	18.0	18.4	
Field Dry Density (FDD) t/m^3	1.68	1.68	
Peak Converted Wet Density t/m^3	2.02	2.01	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.0	0.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**98.5**	**99.0**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

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

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Results relate only to the items tested/sampled.

Material Test Report

Report Number: **23-067-2**
Issue Number: 1
Date Issued: 20/03/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Work Request: 4816
Date Sampled: 08/03/2023 12:00
Dates Tested: 08/03/2023 - 13/03/2023
Sampling Method: AS 1141.3.1 10.1 - Sampling from a placed layer of pavement
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Willow, stage 2
Material: General Fill
Material Source: Onsite

Qualtest Laboratory
Est. 1987

Qualtest Laboratory Pty Ltd
Qualtest Laboratory Pty Limited
2 / 40 Boyland Ave Cooper Plains QLD 4108
Phone: 0417 011 515
Email: greg@qualtestgeo.com

Accredited for compliance with ISO/IEC 17025 - Testing

NATA
WORLD RECOGNISED ACCREDITATION

Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S4816A		
Test Number	7		
Date Tested	08/03/2023		
Time Tested	11:20		
Test Request #/Location	Lot 257		
Line / Offset	O/S SW CNR		
Offset	4m North, 1m South		
Elevation (m)	RL 18.70		
Layer / Reduced Level	Allotment Fill		
Soil Description	Sandy CLAY, Brown		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	2.06		
Field Moisture Content %	12.4		
Field Dry Density (FDD) t/m^3	1.83		
Peak Converted Wet Density t/m^3	2.05		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	2.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**100.5**		
Compaction Method	**Standard**		
Report Remarks	**		

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

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Results relate only to the items tested/sampled.

Material Test Report

Report Number: 23-067-3
Issue Number: 1
Date Issued: 20/03/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Work Request: 4910
Date Sampled: 14/03/2023 10:00
Dates Tested: 14/03/2023 - 15/03/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: General Fill
Material Source: Onsite

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Email: greg@qualtestgeo.com

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S4910A	S4910B	
Test Number	11	12	
Date Tested	14/03/2023	14/03/2023	
Time Tested	10:00	10:09	
Test Request #/Location	Lot 231	Lot 232	
Line / Offset	O/S NE CNR	O/S NE CNR	
Offset	8m South, 6m East	7m South, 4m East	
Elevation (m)	RL: 20.20	RL: 20:30	
Layer / Reduced Level	Allotment Fill	Allotment Fill	
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	
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	1.99	1.98	
Field Moisture Content %	18.1	18.3	
Field Dry Density (FDD) t/m^3	1.68	1.67	
Peak Converted Wet Density t/m^3	1.98	1.97	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.5	0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**100.5**	**100.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

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

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Results relate only to the items tested/sampled.

Material Test Report

Report Number: 23-067-4
Issue Number: 1
Date Issued: 21/03/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Work Request: 4791
Date Sampled: 07/03/2023 8:00
Dates Tested: 07/03/2023 - 13/03/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: General Fill
Material Source: Onsite

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	S4791A	S4791B	S4791C	S4791D
Test Number	3	4	5	6
Date Tested	07/03/2023	07/03/2023	07/03/2023	07/03/2023
Time Tested	12:00	12:10	12:07	12:15
Test Request #/Location	Lot 260	Lot 259	Lot 258	Lot 257
Line / Offset	O/S SE CNR	O/S SE CNR	O/S SE CNR	O/S SE CNR
Offset	12m North, 5m West	10m North, 4m West	9m North, 5m West	10m North, 4m West
Elevation (m)	RL: 18.00	RL: 18.21	RL: 18.12	RL: 18.30
Layer / Reduced Level	Allotment Fill	Allotment Fill	Allotment Fill	Allotment Fill
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
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	1.99	2.06	2.05
Field Moisture Content %	18.7	18.6	13.4	14.2
Field Dry Density (FDD) t/m^3	1.67	1.68	1.82	1.80
Peak Converted Wet Density t/m^3	1.99	2.00	2.07	2.07
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	0.5	0.0	2.0	2.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**99.5**	**99.5**	**99.5**	**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

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Material Test Report

Report Number: 23-067-5
Issue Number: 1
Date Issued: 22/03/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Work Request: 4872
Date Sampled: 10/03/2023
Dates Tested: 10/03/2023 - 13/03/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: General Fill
Material Source: Onsite

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S4872A	S4872B	S4872C
Test Number	8	9	10
Date Tested	10/03/2023	10/03/2023	10/03/2023
Time Tested	13:00	13:10	13:20
Test Request #/Location	Lot 212	Lot 211	Lot 210
Line / Offset	O/S SW CNR	O/S SW CNR	O/S SW CNR
Offset	3m North, 10m East	5m North, 12m East	5m North, 10m East
Layer / Reduced Level	Final Level	Final Level	Final Level
Soil Description	Sandy Clay, Brown	Sandy Clay, Brown	Sandy Clay, Brown
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	1.94	1.92	2.04
Field Moisture Content %	18.7	19.4	19.1
Field Dry Density (FDD) t/m^3	1.64	1.61	1.71
Peak Converted Wet Density t/m^3	1.94	1.92	2.04
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	1.0	0.5	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.0**	**100.0**	**100.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

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Material Test Report

Report Number: **23-067-6**
Issue Number: 1
Date Issued: 23/03/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Work Request: 4922
Date Sampled: 15/03/2023 12:00
Dates Tested: 15/03/2023 - 22/03/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: General Fill
Material Source: Onsite

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S4922A	S4922B	S4922C
Test Number	13	14	15
Date Tested	15/03/2023	15/03/2023	15/03/2023
Time Tested	12:00	12:10	12:20
Test Request #/Location	Lot 230	Lot 233	Lot 234
Line / Offset	O/S SW CNR	O/S SW CNR	O/S SW CNR
Offset	5m East, 10m North	5m East, 6m North	5m East, 7m North
Elevation (m)	RL: 20.45	RL: 20.50	RL: 20.80
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
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	2.06	2.04
Field Moisture Content %	18.1	17.3	15.8
Field Dry Density (FDD) t/m^3	1.72	1.76	1.76
Peak Converted Wet Density t/m^3	2.02	2.06	2.07
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	1.0	0.0	3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.5**	**100.0**	**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

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Material Test Report

Report Number: **23-067-7**
Issue Number: 1
Date Issued: 23/03/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-002
Work Request: 4973
Date Sampled: 16/03/2023 11:00
Dates Tested: 16/03/2023 - 22/03/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: General Fill
Material Source: Onsite

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S4973A		
Test Number	16		
Date Tested	16/03/2023		
Time Tested	11:00		
Test Request #/Location	Lot 325		
Line / Offset	O/S NW CNR		
Offset	10m East, 10m South		
Layer / Reduced Level	FSL		
Soil Description	Sandy CLAY, Brown		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	2.04		
Field Moisture Content %	11.7		
Field Dry Density (FDD) t/m^3	1.83		
Peak Converted Wet Density t/m^3	2.09		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	2.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**97.5**		
Compaction Method	**Standard**		
Report Remarks	**		

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

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Material Test Report

Report Number: **23-067-10**
Issue Number: 1
Date Issued: 04/04/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 5003
Date Sampled: 20/03/2023
Dates Tested: 20/03/2023 - 29/03/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Earthworks - Willow STG 2 -
Material: Allotment Fill
Material Source: Onsite

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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S5003A	S5003B	S5003C
Test Number	17	18	19
Date Tested	20/03/2023	20/03/2023	20/03/2023
Time Tested	14:05	14:15	14:30
Test Request #/Location	Earthworks - STG 2 - WILLOW - LOT=330	Earthworks - STG 2 - WILLOW - LOT=332	Earthworks - STG 2 - WILLOW - LOT=334
Easting	7m From South Boundary	5m From North Boundary	8m From South Boundary
Northing	5m From East Boundary	7m From West Boundary	4m From East Boundary
Layer / Reduced Level	0.7m Below F/L	0.7m Below F/L	0.7m Below F/L
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	2.04	2.02	2.03
Field Moisture Content %	19.6	17.5	21.8
Field Dry Density (FDD) t/m^3	1.71	1.72	1.67
Peak Converted Wet Density t/m^3	2.05	2.02	1.98
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	2.0	2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.0**	**99.5**	**102.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

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Material Test Report

Report Number: **23-067-11**
Issue Number: 1
Date Issued: 04/04/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 5057
Date Sampled: 22/03/2023
Dates Tested: 22/03/2023 - 31/03/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Earthworks - STG 2/FUTURE 3 - WILLOW
Material: Allotment Fill
Material Source: Onsite

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S5057A	S5057B	S5057C
Test Number	20	21	22
Date Tested	22/03/2023	22/03/2023	22/03/2023
Time Tested	14:02	14:05	14:09
Test Request #/Location	Earthworks - STG - Lot=330	Earthworks - STG - Lot=332	Earthworks - STG - Lot=335
Easting	3m From East Boundary	5m From East Boundary	7m From East Boundary
Northing	5m From South Boundary	7m From North Boundary	4m From North Boundary
Layer / Reduced Level	F/L	0.3m Below F/L	F/L
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	1.98	1.99	1.92
Field Moisture Content %	14.4	16.0	15.1
Field Dry Density (FDD) t/m^3	1.73	1.71	1.67
Peak Converted Wet Density t/m^3	2.00	2.02	2.02
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	1.5	1.5	1.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**99.0**	**98.5**	**95.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

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Material Test Report

Report Number: 23-067-12
Issue Number: 1
Date Issued: 04/04/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 5075
Date Sampled: 23/03/2023 10:00
Dates Tested: 23/03/2023 - 24/03/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow Stage 2
Material: General Fill
Material Source: Onsite

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	S5075A	S5075B	S5075C	S5075D
Test Number	23	24	25	26
Date Tested	23/03/2023	23/03/2023	23/03/2023	23/03/2023
Time Tested	10:00	10:10	10:20	10:30
Test Request #/Location	Lot 216	Lot 246	Lot 217	Lot 245
Line / Offset	O/S NE CNR	O/S NE CNR	O/S NE CNR	O/S NE CNR
Offset	5m West, 3m North	5m West, 4m North	5m West, 4m North	10mWest, 4m North
Layer / Reduced Level	FSL	FSL	FSL	FSL
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
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	1.93	1.99	2.02
Field Moisture Content %	11.5	11.5	12.3	11.5
Field Dry Density (FDD) t/m^3	1.74	1.73	1.77	1.81
Peak Converted Wet Density t/m^3	2.05	2.03	2.04	2.04
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	2.5	2.5	2.5	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**95.0**	**95.5**	**97.5**	**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

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Results relate only to the items tested/sampled.

Material Test Report

Report Number: 23-067-12
Issue Number: 1
Date Issued: 04/04/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 5075
Date Sampled: 23/03/2023 10:00
Dates Tested: 23/03/2023 - 24/03/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow Stage 2
Material: General Fill
Material Source: Onsite

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	S5075E	S5075F	S5075G	S5075H
Test Number	27	28	29	30
Date Tested	23/03/2023	23/03/2023	23/03/2023	23/03/2023
Time Tested	10:40	10:50	11:00	11:10
Test Request #/Location	Lot 218	Lot 244	Lot 219	Lot 243
Line / Offset	O/S SW CNR	O/S SW CNR	O/S SW CNR	O/S SW CNR
Offset	4m North, 8m East	5m North, 8m East	4m North, 10 East	4m North, 8m East
Layer / Reduced Level	FSL	FSL	0.3m Below FSL	0.3m Below FSL
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
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	1.99	2.01	2.03
Field Moisture Content %	10.4	14.5	10.3	12.0
Field Dry Density (FDD) t/m^3	1.81	1.73	1.82	1.81
Peak Converted Wet Density t/m^3	2.03	2.03	2.01	1.99
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	3.5	4.0	4.0	4.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**98.5**	**98.0**	**100.0**	**102.0**
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

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Material Test Report

Report Number: **23-067-13**
Issue Number: 1
Date Issued: 19/04/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 5088
Date Sampled: 24/03/2023 13:00
Dates Tested: 24/03/2023 - 18/04/2023
Sampling Method: AS 1289.1.3.1 3.1.4 (b) - Open-drive samplers - piston samplers - floating type
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: General Fill
Material Source: Onsite

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	S5088A	S5088B	S5088C	S5088D	S5088E
Test Number	31	32	33	34	35
Date Tested	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
Time Tested	09:00	09:10	09:20	09:30	09:40
Test Request #/Location	Lot 337	Lot 336	Lot 334	Lot 333	Lot 331
Line / Offset	O/S NW CNR	O/S SW CNR	O/S NW CNR	O/S NW CNR	O/S NW CNR
Offset	8m East, 3m South	8m North, 2m West	8m East, 3m South	9m East, 3m South	8m East, 3m South
Layer / Reduced Level	FSL	FSL	FSL	FSL	FSL
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
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	1.97	1.95	2.15	2.06	2.07
Field Moisture Content %	10.7	11.2	17.2	14.7	14.6
Field Dry Density (FDD) t/m^3	1.78	1.75	1.83	1.80	1.81
Peak Converted Wet Density t/m^3	2.01	1.99	2.06	2.04	2.05
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	5.0	4.5	2.0	5.0	3.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**98.0**	**98.0**	**104.0**	**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

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Material Test Report

Report Number: 23-067-14
Issue Number: 1
Date Issued: 19/04/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 5123
Date Sampled: 28/03/2023
Dates Tested: 28/03/2023 - 18/04/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: General Fill
Material Source: Onsite

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	S5123A	S5123B	S5123C	S5123D	S5123E
Test Number	36	37	38	39	40
Date Tested	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023
Time Tested	09:30	09:40	09:50	10:00	10:07
Test Request #/Location	Lot 329	Lot 328	Lot 327	Lot 228	Lot 229
Line / Offset	O/S SE CNR	O/S SE CNR	O/S SE CNR	O/S SE CNR	O/S SE CNR
Offset	10m West, 5 m North	12m West, 6 m North	10m West, 5 m North	12m West, 4m North	15m West, 5m North
Layer / Reduced Level	Final Level	Final Level	Final Level	Final Level	Final Level
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
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	2.00	2.00	2.01	2.07	2.06
Field Moisture Content %	10.1	9.7	9.4	17.5	17.5
Field Dry Density (FDD) t/m^3	1.82	1.82	1.84	1.76	1.76
Peak Converted Wet Density t/m^3	1.93	1.94	1.94	2.08	2.06
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	4.5	4.5	4.5	2.5	2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**103.5**	**103.0**	**104.0**	**99.5**	**100.0**
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

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Material Test Report

Report Number: **23-067-14**
Issue Number: 1
Date Issued: 19/04/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 5123
Date Sampled: 28/03/2023
Dates Tested: 28/03/2023 - 18/04/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: General Fill
Material Source: Onsite

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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	S5123F	S5123G	S5123H	S5123I	S5123J
Test Number	41	42	43	44	45
Date Tested	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023
Time Tested	10:15	10:25	10:35	10:43	10:54
Test Request #/Location	Lot 209	Lot 208	Lot 207	Lot 206	Lot 205
Line / Offset	O/S SW CNR	O/S SW CNR	O/S SW CNR	O/S SW CNR	O/S SW CNR
Offset	10m East, 5m North	10m East, 5m North	10m East, 6m North	15m East, 5m North	20m East, 5m North
Layer / Reduced Level	Final Level	Final Level	Final Level	Final Level	Final Level
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
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	1.96	1.97	1.95	1.96	1.97
Field Moisture Content %	16.2	15.9	16.0	15.9	15.8
Field Dry Density (FDD) t/m^3	1.69	1.70	1.68	1.69	1.70
Peak Converted Wet Density t/m^3	1.98	2.06	2.04	2.02	2.03
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	3.0	3.0	3.0	3.0	3.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**99.0**	**95.5**	**95.5**	**97.0**	**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

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Material Test Report

Report Number: **23-067-16**
Issue Number: 1
Date Issued: 20/04/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 5147
Date Sampled: 29/03/2023 10:30
Dates Tested: 29/03/2023 - 18/04/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: General Fill
Material Source: Onsite

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Approved Signatory: Greg Gibson
ql-greg

NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	S5147A	S5147B	S5147C	S5147D	S5147E
Test Number	46	47	48	49	50
Date Tested	29/03/2023	29/03/2023	29/03/2023	29/03/2023	29/03/2023
Time Tested	10:30	10:40	10:50	11:00	11:10
Test Request #/Location	Lot 220	Lot 242	Lot 221	Lot 241	Lot 222
Line / Offset	O/S SW CNR	O/S SW CNR	O/S SW CNR	O/S SW CNR	O/S SW CNR
Offset	12m East, 4m North	8m East, 4m North	12m East, 2m North	7m East, 4m North	10m East, 2m North
Layer / Reduced Level	Final Level	Final Level	Final Level	Final Level	Final Level
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
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
Field Wet Density (FWD) t/m^3	2.02	2.03	2.02	2.15	2.14
Field Moisture Content %	12.2	12.1	11.9	17.1	12.0
Field Dry Density (FDD) t/m^3	1.80	1.81	1.81	1.84	1.91
Peak Converted Wet Density t/m^3	2.02	2.00	2.04	2.11	2.08
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	3.5	3.5	3.5	2.0	2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**100.5**	**101.0**	**99.0**	**101.5**	**102.5**
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

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Material Test Report

Report Number: 23-067-17
Issue Number: 1
Date Issued: 22/06/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 5960
Date Sampled: 30/05/2023
Dates Tested: 30/05/2023 - 21/06/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: Sewer Trench Backfill
Material Source: Onsite

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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	S5960A	S5960B	S5960C	S5960D
Test Number	51	52	53	54
Date Tested	30/05/2023	30/05/2023	30/05/2023	30/05/2023
Time Tested	08:00	08:10	08:20	08:27
Test Request #/Location	Sewer Trench Backfill	Sewer Trench Backfill	Sewer Trench Backfill	Sewer Trench Backfill
Line / Offset	7/8 - 6/8	6/8 - 5/8	5/8 - 4/8	5/8 - 4/8
Offset	0.3m From 7/8	8m From 6/8	10m From 5/8	20m From 5/8
Layer / Reduced Level	Final Level	Final Level	Final Level	Final Level
Thickness of Layer (mm)	175	175	175	175
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
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	1.87	1.90	1.84	2.12
Field Moisture Content %	16.8	15.9	15.6	13.3
Field Dry Density (FDD) t/m^3	1.60	1.64	1.59	1.87
Peak Converted Wet Density t/m^3	1.96	1.98	1.84	2.11
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	3.0	2.0	3.5	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**95.5**	**96.5**	**100.0**	**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

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Material Test Report

Report Number: **23-067-17**
Issue Number: 1
Date Issued: 22/06/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 5960
Date Sampled: 30/05/2023
Dates Tested: 30/05/2023 - 21/06/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: Sewer Trench Backfill
Material Source: Onsite

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	S5960E	S5960F	S5960G	S5960H
Test Number	55	56	57	58
Date Tested	30/05/2023	30/05/2023	30/05/2023	30/05/2023
Time Tested	08:35	08:40	08:50	09:00
Test Request #/Location	Sewer Trench Backfill	Sewer Trench Backfill	Sewer Trench Backfill	Sewer Trench Backfill
Line / Offset	9/3 - 2/9	2/9 - 1/9	1/9 - 3/8	1/9 - 3/8
Offset	0.3m From 9/3	10m From 2/9	7m From 1/9	20m From 1/9
Layer / Reduced Level	Final Level	Final Level	Final Level	Final Level
Thickness of Layer (mm)	175	175	175	175
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
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	1.90	1.87	2.03	2.01
Field Moisture Content %	14.2	15.2	12.5	14.5
Field Dry Density (FDD) t/m^3	1.67	1.63	1.80	1.76
Peak Converted Wet Density t/m^3	1.97	1.92	2.11	2.03
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	2.5	4.5	4.5	1.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**96.5**	**97.5**	**96.0**	**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

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Material Test Report

Report Number: **23-067-18**
Issue Number: 1
Date Issued: 26/07/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6666
Date Sampled: 19/07/2023
Dates Tested: 19/07/2023 - 25/07/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Sewer TBF - STG 2 - WILLOW
Material: Sewer Trench Backfill
Material Source: Onsite

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	S6666A	S6666B	S6666C	S6666D	S6666E
Test Number	72	73	74	75	76
Date Tested	19/07/2023	19/07/2023	19/07/2023	19/07/2023	19/07/2023
Time Tested	10:45	10:53	11:01	11:10	11:21
Test Request #/Location	Sewer TBF - STG 2	Sewer TBF - STG 2	Sewer TBF - STG 2	Sewer TBF - STG 2	Sewer TBF - STG 2
Line / Offset	4/12 - 5/12	4/12 - 5/12	1/13 - 2/13	1/13 - 2/13	1/13 - 2/13
Offset	10m From 4/12	5m From 5/12	12m From 1/13	50m from 1/13	1m From 2/13
Layer / Reduced Level	0.9m Below F/L	F/L	0.9m Below F/L	F/L	F/L
Thickness of Layer (mm)	175	175	175	175	175
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	1.90	1.94	2.00	2.04	2.01
Field Moisture Content %	18.2	17.9	17.5	16.3	15.2
Field Dry Density (FDD) t/m^3	1.61	1.65	1.70	1.76	1.75
Peak Converted Wet Density t/m^3	1.96	1.98	2.02	1.95	1.94
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	3.0	2.5	1.5	3.0	3.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**97.0**	**98.5**	**99.0**	**104.5**	**103.5**
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

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Results relate only to the items tested/sampled.

Material Test Report

Report Number: **23-067-19**
Issue Number: 1
Date Issued: 26/07/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6665
Date Sampled: 19/07/2023
Dates Tested: 19/07/2023 - 25/07/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Earthworks - STG 2 - WILLOW
Material: Allotment Fill
Material Source: On-site

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S6665A	S6665B	S6665C
Test Number	69	70	71
Date Tested	19/07/2023	19/07/2023	19/07/2023
Time Tested	10:05	10:10	10:15
Test Request #/Location	Earthworks - STG 2 - LOT=258	Earthworks - STG 2 - LOT=257	Earthworks - STG 2 - LOT=255
Easting	7m From North Boundary	5m From North Boundary	6m From North Boundary
Northing	5m From East Boundary	8m From East Boundary	7m From West Boundary
Layer / Reduced Level	F/L	F/L	F/L
Thickness of Layer (mm)	175	175	175
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	2.00	1.98	2.03
Field Moisture Content %	15.7	15.9	15.7
Field Dry Density (FDD) t/m^3	1.73	1.70	1.76
Peak Converted Wet Density t/m^3	2.03	2.01	2.01
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	3.0	3.0	3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**99.0**	**98.5**	**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

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Material Test Report

Report Number: **23-067-20**
Issue Number: 1
Date Issued: 27/07/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6634
Date Sampled: 17/07/2023
Dates Tested: 17/07/2023 - 19/07/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow Stage 2, Logan Reserve
Material: General Fill
Material Source: Onsite

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S6634A	S6634B	S6634C
Test Number	59	60	61
Date Tested	17/07/2023	17/07/2023	17/07/2023
Time Tested	09:00	09:10	09:20
Test Request #/Location	Lot 255	Lot 260	Lot 259
Line / Offset	O/S NW CNR	O/S NW CNR	O/S NW CNR
Offset	8m East, 4m South	8m East, 3m South	8m East, 4m South
Layer / Reduced Level	1.5m Below FSL	0.3m Below FSL	0.3m Below FSL
Thickness of Layer (mm)	175	175	175
Soil Description	Clay, Brown	Clay, Brown	Clay, Brown
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	1.91	1.92
Field Moisture Content %	20.2	18.7	20.3
Field Dry Density (FDD) t/m^3	1.66	1.61	1.60
Peak Converted Wet Density t/m^3	1.98	1.96	2.01
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**101.0**	**97.5**	**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

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Material Test Report

Report Number: **23-067-21**
Issue Number: 1
Date Issued: 08/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6635
Date Sampled: 17/07/2023 10:00
Dates Tested: 17/07/2023 - 18/07/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow Stage 2, Logan Reserve
Material: Sewer Trench Backfill
Material Source: Onsite

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	S6635A	S6635B	S6635C	S6635D	S6635E
Test Number	62	63	64	65	66
Date Tested	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023
Time Tested	10:00	10:10	10:20	10:30	10:40
Test Request #/Location	Sewer Trench Backfill	Sewer Trench Backfill	Sewer Trench Backfill	Sewer Trench Backfill	Sewer Trench Backfill
Line / Offset	MH2/11 - MH3	MH2/11 - MH3	MH3/12 - MH4/12	MH2/11 - Future connection	MH2/11 - Future connection
Offset	0.3m From MH2/11	0.3m From MH2/11	0.3m From MH3/12	0.3m From MH2/11	0.3m From MH2/11
Layer / Reduced Level	1m Below FSL	Final Level	Final Level	1m Below FSL	Final Level
Thickness of Layer (mm)	175	175	175	175	175
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
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	1.91	1.92	1.92	1.99	2.00
Field Moisture Content %	11.4	11.5	11.0	15.1	16.4
Field Dry Density (FDD) t/m^3	1.71	1.72	1.73	1.73	1.71
Peak Converted Wet Density t/m^3	1.93	1.91	1.93	1.99	1.99
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	3.0	2.5	2.5	2.5	2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**99.0**	**100.0**	**99.5**	**100.0**	**100.0**
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

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Material Test Report

Report Number: **23-067-22**
Issue Number: 1
Date Issued: 08/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6733
Date Sampled: 25/07/2023
Dates Tested: 25/07/2023 - 31/07/2023
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: 100% Standard
Site Selection: Selected by GTA
Location: Sewer TBF Road Crossing - STG 2 - WILLOW
Material: Sewer Trench Backfill
Material Source: Onsite

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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	S6733A	S6733B	S6733C	S6733D
Test Number	77	78	79	80
Date Tested	25/07/2023	25/07/2023	25/07/2023	25/07/2023
Time Tested	09:28	09:35	09:45	09:55
Test Request #/Location	STG 2 - WILLOW - SEWER ROAD CROSSINGS	STG 2 - WILLOW - SEWER ROAD CROSSINGS	STG 2 - WILLOW - SEWER ROAD CROSSINGS	STG 2 - WILLOW - SEWER ROAD CROSSINGS
Line / Offset	5/12 - 1/16	5/12 - 1/16	5/12 - 1/16	5/12 - 1/16
Offset	2m From 5/12	3m From 5/12	4m From 5/12	5m From 5/12
Layer / Reduced Level	0.9m Below F/L	0.6m Below F/L	0.3m Below F/L	F/L
Thickness of Layer (mm)	175	175	175	175
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	1.99	1.96	1.98	1.97
Field Moisture Content %	17.9	17.7	16.7	16.5
Field Dry Density (FDD) t/m^3	1.68	1.67	1.70	1.69
Peak Converted Wet Density t/m^3	1.96	1.96	1.90	1.97
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	2.5	2.5	3.0	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**101.5**	**100.0**	**104.0**	**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

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Material Test Report

Report Number: **23-067-22**
Issue Number: 1
Date Issued: 08/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6733
Date Sampled: 25/07/2023
Dates Tested: 25/07/2023 - 31/07/2023
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: 100% Standard
Site Selection: Selected by GTA
Location: Sewer TBF Road Crossing - STG 2 - WILLOW
Material: Sewer Trench Backfill
Material Source: Onsite

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	S6733E	S6733F	S6733G	S6733H
Test Number	81	82	83	84
Date Tested	25/07/2023	25/07/2023	25/07/2023	25/07/2023
Time Tested	10:00	10:10	10:20	10:30
Test Request #/Location	STG 2 - WILLOW - SEWER ROAD CROSSINGS	STG 2 - WILLOW - SEWER ROAD CROSSINGS	STG 2 - WILLOW - SEWER ROAD CROSSINGS	STG 2 - WILLOW - SEWER ROAD CROSSINGS
Line / Offset	3/12 - 1/13	3/12 - 1/13	3/12 - 1/13	3/12 - 1/13
Offset	3m From 3/12	3.5m From 3/12	4m From 3/12	4.5m From 3/12
Layer / Reduced Level	0.9m Below F/L	0.6m Below F/L	0.3m Below F/L	F/L
Thickness of Layer (mm)	175	175	175	175
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	2.02	2.02	2.04	2.03
Field Moisture Content %	14.8	15.2	14.7	14.5
Field Dry Density (FDD) t/m^3	1.76	1.76	1.78	1.77
Peak Converted Wet Density t/m^3	2.00	2.03	2.04	1.98
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	1.5	1.0	1.5	1.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**100.5**	**100.0**	**100.5**	**102.5**
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

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Material Test Report

Report Number: **23-067-23**
Issue Number: 1
Date Issued: 09/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6652
Date Sampled: 18/07/2023 11:00
Dates Tested: 18/07/2023 - 25/07/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2, Logan Reserve
Material: General Fill
Material Source: Onsite

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S6652A	S6652B	
Test Number	67	68	
Date Tested	18/07/2023	18/07/2023	
Time Tested	11:10	11:20	
Test Request #/Location	Lot 437	Lot 437	
Line / Offset	O/S NE CNR	O/S NE CNR	
Offset	7m South, 4m West	9m South, 6m West	
Layer / Reduced Level	0.5m Below Final Level	Final Level	
Thickness of Layer (mm)	175	175	
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	
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	1.93	1.95	
Field Moisture Content %	13.7	13.1	
Field Dry Density (FDD) t/m^3	1.70	1.72	
Peak Converted Wet Density t/m^3	1.97	1.98	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	2.5	2.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**98.0**	**98.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

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

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Material Test Report

Report Number: 23-067-24
Issue Number: 1
Date Issued: 10/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6911
Date Sampled: 04/08/2023 14:00
Dates Tested: 04/08/2023 - 05/08/2023
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: 95% Modified
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: Lower Subbase
Material Source: Type 2.5 Karremans Mount Cotton

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1			
Sample Number	S6911A	S6911B	S6911C
Test Number	96	97	98
Date Tested	04/08/2023	04/08/2023	04/08/2023
Time Tested	14:00	14:10	14:20
Test Request #/Location	Road 4	Road 4	Road 4
Chainage (m)	210	140	70
Location Offset (m)	1m Right of CL	1m Right of CL	2m Left of CL
Layer / Reduced Level	Lower Subbase	Lower Subbase	Lower Subbase
Thickness of Layer (mm)	200	200	200
Soil Description	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey
Test Depth (mm)	175	175	175
Fraction Tested (mm)	19.0	19.0	19.0
Oversize (wet basis) %	6	12	12
Oversize (dry basis) %	6	12	12
Curing Hours	**	**	**
Method used to Determine Plasticity	Visual	Visual	Visual
Field Wet Density t/m^3	2.29	2.28	2.28
Field Moisture Content %	3.2	4.2	4.1
Field Dry Density t/m^3	2.22	2.18	2.19
Maximum Dry Density t/m^3	2.30	2.30	2.30
Adjusted Maximum Dry Density t/m^3	**	**	**
Optimum Moisture Content (OMC) %	5.5	5.5	5.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**
Date Values Assigned	04/08/2023	04/08/2023	04/08/2023
Assigned Value Report #	P22005-75	P22005-75	P22005-75
Moisture Variation %	2.5	1.5	1.5
Moisture Ratio %	58.5	75.5	74.5
Density Ratio %	**96.5**	**95.0**	**95.0**
Compaction Method	**Modified**	**Modified**	**Modified**

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

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Material Test Report

Report Number: 23-067-25
Issue Number: 1
Date Issued: 10/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6913
Date Sampled: 04/08/2023
Dates Tested: 04/08/2023 - 05/08/2023
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: 95% Modified
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: Stormwater Trench Backfill
Material Source: Type 2.5 Karremans Mount Cotton

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1					
Sample Number	S6913A	S6913B	S6913C	S6913D	S6913E
Test Number	99	100	101	102	103
Date Tested	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Time Tested	02:30	02:35	02:40	02:45	02:50
Test Request #/Location	Stormwater	Stormwater	Stormwater	Stormwater	Stormwater
Line / Offset	5/3 - Southern existing pipe	5/3 - 1/33	5/3 - 1/32	5/3 - 4/3	4/3 - 1/34
Offset	7m From 5/3	2m From 5/3	1m From 5/3	10m From 5/3	2m From 4/3
Layer / Reduced Level	Final Level	Final Level	Final Level	Final Level	Final Level
Thickness of Layer (mm)	200	200	200	200	200
Soil Description	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey
Test Depth (mm)	175	175	175	175	175
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	8	0	9	0	11
Oversize (dry basis) %	8	0	8	0	11
Curing Hours	**	**	**	**	**
Method used to Determine Plasticity	Visual	Visual	**	Visual	Visual
Field Wet Density t/m^3	2.29	2.27	2.28	2.30	2.30
Field Moisture Content %	4.3	3.6	4.3	4.0	4.3
Field Dry Density t/m^3	2.20	2.19	2.18	2.22	2.20
Maximum Dry Density t/m^3	2.30	2.30	2.30	2.30	2.30
Adjusted Maximum Dry Density t/m^3	**	**	**	**	**
Optimum Moisture Content (OMC) %	5.5	5.5	5.5	5.5	5.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**
Date Values Assigned	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Assigned Value Report #	P22005-75	P22005-75	P22005-75	P22005-75	P22005-75
Moisture Variation %	1.0	2.0	1.0	1.5	1.0
Moisture Ratio %	78.0	64.5	77.5	72.0	78.5
Density Ratio %	**95.5**	**95.5**	**95.0**	**96.5**	**95.5**
Compaction Method	**Modified**	**Modified**	**Modified**	**Modified**	**Modified**

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

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Material Test Report

Report Number: **23-067-25**
Issue Number: 1
Date Issued: 10/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6913
Date Sampled: 04/08/2023
Dates Tested: 04/08/2023 - 05/08/2023
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: 95% Modified
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: Stormwater Trench Backfill
Material Source: Type 2.5 Karremans Mount Cotton

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1					
Sample Number	S6913F	S6913G	S6913H	S6913I	S6913J
Test Number	104	105	106	107	108
Date Tested	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Time Tested	02:55	03:00	03:05	03:10	03:15
Test Request #/Location	Stormwater	Stormwater	Stormwater	Stormwater	Stormwater
Line / Offset	4/3 - 1/35	4/3 - 3/3	3/3 - 1/37	3/3 - 1/36	3/3 - Northern Future stub
Offset	0.5m From 4/3	10m From 4/3	3m From 3/3	0.5m From 3/3	3m From 3/3
Layer / Reduced Level	Final Level	Final Level	Final Level	Final Level	Final Level
Thickness of Layer (mm)	200	200	200	200	200
Soil Description	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey
Test Depth (mm)	175	175	175	175	175
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	9	0	11	0
Oversize (dry basis) %	0	9	0	11	0
Curing Hours	**	**	**	**	**
Method used to Determine Plasticity	Visual	Visual	Visual	Visual	Visual
Field Wet Density t/m^3	2.30	2.33	2.31	2.33	2.27
Field Moisture Content %	4.2	4.2	4.4	4.4	3.6
Field Dry Density t/m^3	2.20	2.24	2.21	2.23	2.19
Maximum Dry Density t/m^3	2.30	2.30	2.30	2.30	2.30
Adjusted Maximum Dry Density t/m^3	**	**	**	**	**
Optimum Moisture Content (OMC) %	5.5	5.5	5.5	5.5	5.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**
Date Values Assigned	04/08/2023	04/08/2023	04/08/2023	04/08/2023	04/08/2023
Assigned Value Report #	P22005-75	P22005-75	P22005-75	P22005-75	P22005-75
Moisture Variation %	1.5	1.5	1.0	1.0	2.0
Moisture Ratio %	76.0	77.0	80.5	79.5	66.0
Density Ratio %	**96.0**	**97.0**	**96.0**	**97.0**	**95.0**
Compaction Method	**Modified**	**Modified**	**Modified**	**Modified**	**Modified**

Moisture Variation Note:

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

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Material Test Report

Report Number: **23-067-26**
Issue Number: 1
Date Issued: 16/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6787
Date Sampled: 28/07/2023
Dates Tested: 28/07/2023 - 01/08/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Sewer TBF - STG 2 - WILLOW
Material: Sewer Trench Backfill
Material Source: Onsite

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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	S6787A	S6787B	S6787C	S6787D
Test Number	85	86	87	88
Date Tested	28/07/2023	28/07/2023	28/07/2023	28/07/2023
Time Tested	09:04	09:15	09:25	09:49
Test Request #/Location	STG 2 - Sewer TBF	STG 2 - Sewer TBF	STG 2 - Sewer TBF	STG 2 - Sewer TBF
Line / Offset	1/11 - 2/11	1/11 - 2/11	1/11 - 2/11	1/10 - 2/10
Offset	5m From 1/11	10m From 1/11	5m From 2/11	17m From 1/10
Layer / Reduced Level	1.8m Below F/L	0.9m Below F/L	F/L	1.8m Below F/L
Thickness of Layer (mm)	175	175	175	175
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	2.00	1.97	2.05	2.18
Field Moisture Content %	15.1	13.9	15.1	13.8
Field Dry Density (FDD) t/m^3	1.74	1.73	1.78	1.92
Peak Converted Wet Density t/m^3	2.10	2.06	2.09	2.12
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 (%)	**95.5**	**95.5**	**98.0**	**103.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

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

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Material Test Report

Report Number: **23-067-26**
Issue Number: 1
Date Issued: 16/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6787
Date Sampled: 28/07/2023
Dates Tested: 28/07/2023 - 01/08/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Sewer TBF - STG 2 - WILLOW
Material: Sewer Trench Backfill
Material Source: Onsite

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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	S6787E	S6787F	S6787G	S6787H
Test Number	89	90	91	92
Date Tested	28/07/2023	28/07/2023	28/07/2023	28/07/2023
Time Tested	09:57	10:09	10:33	10:49
Test Request #/Location	STG 2 - Sewer TBF	STG 2 - Sewer TBF	STG 2 - Sewer TBF	STG 2 - Sewer TBF
Line / Offset	1/10 - 2/10	1/10 - 2/10	5/12 - 6/12	5/12 - 6/12
Offset	28m From 1/10	10m From 2/10	7m From 5/12	3m From 6/12
Layer / Reduced Level	0.9m Below F/L	F/L	0.9m Below F/L	F/L
Thickness of Layer (mm)	175	175	175	175
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	2.10	2.13	2.08	2.15
Field Moisture Content %	16.2	15.0	15.6	14.3
Field Dry Density (FDD) t/m^3	1.81	1.85	1.80	1.88
Peak Converted Wet Density t/m^3	2.00	2.11	2.14	2.08
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	1.5	0.0	2.0	0.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**105.0**	**101.0**	**97.0**	**103.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

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

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Material Test Report

Report Number: **23-067-27**
Issue Number: 1
Date Issued: 24/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7015
Date Sampled: 16/08/2023
Dates Tested: 16/08/2023 - 22/08/2023
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: 95% Modified
Site Selection: Selected by GTA
Location: Lower Subbase - STG 2 WILLOW
Material: Lower Subbase
Material Source: Karramans 2.5

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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1			
Sample Number	S7015A	S7015B	S7015C
Test Number	112	113	114
Date Tested	16/08/2023	16/08/2023	16/08/2023
Time Tested	08:27	08:33	08:45
Test Request #/Location	Road 6	Road 6	Road 1
Chainage (m)	60m	125m	340m
Location Offset (m)	1.3m Left from CL	1.5m Right from CL	0.8m Left from CL
Layer / Reduced Level	Lower Subbase	Lower Subbase	Lower Subbase
Thickness of Layer (mm)	100	100	150
Soil Description	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL
Test Depth (mm)	75	75	125
Fraction Tested (mm)	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0
Oversize (dry basis) %	0	0	0
Curing Hours	**	**	**
Method used to Determine Plasticity	**	**	**
Field Wet Density t/m^3	2.43	2.42	2.42
Field Moisture Content %	4.6	4.5	4.6
Field Dry Density t/m^3	2.32	2.32	2.31
Maximum Dry Density t/m^3	2.30	2.30	2.30
Adjusted Maximum Dry Density t/m^3	**	**	**
Optimum Moisture Content (OMC) %	5.5	5.5	5.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**
Date Values Assigned	4/8/2023	4/8/2023	4/8/2023
Assigned Value Report #	P22005-75	P22005-75	P22005-75
Moisture Variation %	1.0	1.0	1.0
Moisture Ratio %	84.5	81.0	84.0
Density Ratio %	**101.0**	**100.5**	**100.5**
Compaction Method	**Modified**	**Modified**	**Modified**

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

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Material Test Report

Report Number: **23-067-28**
Issue Number: 1
Date Issued: 24/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7016
Date Sampled: 16/08/2023
Dates Tested: 16/08/2023 - 22/08/2023
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: 95% Modified
Site Selection: Selected by GTA
Location: Stormwater TBF - STG 2 - WILLOW
Material: Stormwater Trench Backfill
Material Source: Karramans 2.5

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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1						
Sample Number	S7016A	S7016B	S7016C	S7016D	S7016E	S7016F
Test Number	115	116	117	118	119	120
Date Tested	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023
Time Tested	09:08	09:21	09:30	09:36	09:42	09:50
Test Request #/Location	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF
Line / Offset	1/5 - 2/5	2/5 - 1/51	2/5 - 1/50	2/5 - 3/5	3/5 - 4/5	4/5 - 1/48
Offset	10m From 1/5	2m From 1/51	2m From 1/50	9m From 3/5	20m From 3/5	3m From 1/48
Layer / Reduced Level	Final Level	Final Level	Final Level	Final Level	Final Level	Final Level
Thickness of Layer (mm)	100	100	100	100	100	100
Soil Description	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL
Test Depth (mm)	75	75	75	75	75	75
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0	0
Curing Hours	**	**	**	**	**	**
Method used to Determine Plasticity	**	**	**	**	**	**
Field Wet Density t/m^3	2.39	2.40	2.39	2.45	2.41	2.44
Field Moisture Content %	5.5	5.2	4.7	5.4	4.9	4.6
Field Dry Density t/m^3	2.26	2.28	2.28	2.32	2.29	2.33
Maximum Dry Density t/m^3	2.30	2.30	2.30	2.30	2.30	2.30
Adjusted Maximum Dry Density t/m^3	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	5.5	5.5	5.5	5.5	5.5	5.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Date Values Assigned	4/8/2023	4/8/2023	4/8/2023	4/8/2023	4/8/2023	4/8/2023
Assigned Value Report #	P22005-75	P22005-75	P22005-75	P22005-75	P22005-75	P22005-75
Moisture Variation %	0.0	0.5	1.0	0.0	0.5	1.0
Moisture Ratio %	101.0	95.0	85.5	97.5	89.0	83.0
Density Ratio %	**98.5**	**99.0**	**99.0**	**101.0**	**99.5**	**101.5**
Compaction Method	**Modified**	**Modified**	**Modified**	**Modified**	**Modified**	**Modified**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

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Material Test Report

Report Number: **23-067-28**
Issue Number: 1
Date Issued: 24/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7016
Date Sampled: 16/08/2023
Dates Tested: 16/08/2023 - 22/08/2023
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: 95% Modified
Site Selection: Selected by GTA
Location: Stormwater TBF - STG 2 - WILLOW
Material: Stormwater Trench Backfill
Material Source: Karramans 2.5

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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1						
Sample Number	S7016G	S7016H	S7016I	S7016J	S7016K	S7016L
Test Number	121	122	123	124	125	126
Date Tested	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023
Time Tested	09:57	10:04	10:12	10:21	10:28	10:34
Test Request #/Location	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF
Line / Offset	4/5 - 1/47	4/5 - 5/5	5/5 - 1/46	5/5 - 1/45	5/5 - 6/6	6/5 - 7/5
Offset	1m From 1/47	23m From 4/5	2.5m From 1/46	1m From 1/45	11m From 5/5	15m From 6/5
Layer / Reduced Level	Final Level	Final Level	Final Level	Final Level	Final Level	Final Level
Thickness of Layer (mm)	100	100	100	100	100	100
Soil Description	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL
Test Depth (mm)	75	75	75	75	75	75
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0	0
Curing Hours	**	**	**	**	**	**
Method used to Determine Plasticity	**	**	**	**	**	**
Field Wet Density t/m^3	2.45	2.41	2.44	2.41	2.43	2.43
Field Moisture Content %	5.0	4.6	5.1	5.6	4.5	5.0
Field Dry Density t/m^3	2.33	2.31	2.32	2.28	2.32	2.32
Maximum Dry Density t/m^3	2.30	2.30	2.30	2.30	2.30	2.30
Adjusted Maximum Dry Density t/m^3	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	5.5	5.5	5.5	5.5	5.5	5.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Date Values Assigned	4/8/2023	4/8/2023	4/8/2023	4/8/2023	4/8/2023	4/8/2023
Assigned Value Report #	P22005-75	P22005-75	P22005-75	P22005-75	P22005-75	P22005-75
Moisture Variation %	0.5	1.0	0.5	0.0	1.0	0.5
Moisture Ratio %	91.0	84.0	92.0	101.5	82.5	90.0
Density Ratio %	**101.5**	**100.5**	**101.0**	**99.0**	**101.0**	**101.0**
Compaction Method	**Modified**	**Modified**	**Modified**	**Modified**	**Modified**	**Modified**

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

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Material Test Report

Report Number: **23-067-28**
Issue Number: 1
Date Issued: 24/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7016
Date Sampled: 16/08/2023
Dates Tested: 16/08/2023 - 22/08/2023
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: 95% Modified
Site Selection: Selected by GTA
Location: Stormwater TBF - STG 2 - WILLOW
Material: Stormwater Trench Backfill
Material Source: Karramans 2.5

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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1						
Sample Number	S7016M	S7016N	S7016O	S7016P	S7016Q	S7016R
Test Number	127	128	129	130	131	132
Date Tested	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023
Time Tested	10:40	10:52	11:02	11:11	11:20	11:24
Test Request #/Location	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF
Line / Offset	7/5 -1/62	7/5 - 1/44	7/5 - 8/4	8/4 - 9/4	8/4 - 1/43	8/4 - 7/4
Offset	2m From 1/62	2m From 1/44	8m From 7/5	21m From 9/4	3m From 8/4	8m From 7/4
Layer / Reduced Level	Final Level	Final Level	Final Level	Final Level	Final Level	Final Level
Thickness of Layer (mm)	100	100	100	100	100	100
Soil Description	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL	Sandy GRAVEL
Test Depth (mm)	75	75	75	75	75	75
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0	0
Curing Hours	**	**	**	**	**	**
Method used to Determine Plasticity	**	**	**	**	**	**
Field Wet Density t/m^3	2.41	2.41	2.43	2.41	2.40	2.43
Field Moisture Content %	4.7	5.4	3.9	4.5	6.0	4.8
Field Dry Density t/m^3	2.31	2.29	2.34	2.30	2.27	2.32
Maximum Dry Density t/m^3	2.30	2.30	2.30	2.30	2.30	2.30
Adjusted Maximum Dry Density t/m^3	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	5.5	5.5	5.5	5.5	5.5	5.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Date Values Assigned	4/8/2023	4/8/2023	4/8/2023	4/8/2023	4/8/2023	4/8/2023
Assigned Value Report #	P22005-75	P22005-75	P22005-75	P22005-75	P22005-75	P22005-75
Moisture Variation %	1.0	0.0	1.5	1.0	-0.5	0.5
Moisture Ratio %	84.5	98.0	71.0	82.0	108.5	88.0
Density Ratio %	**100.0**	**99.5**	**101.5**	**100.0**	**98.5**	**101.0**
Compaction Method	**Modified**	**Modified**	**Modified**	**Modified**	**Modified**	**Modified**

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

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Material Test Report

Report Number: **23-067-28**
Issue Number: 1
Date Issued: 24/08/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7016
Date Sampled: 16/08/2023
Dates Tested: 16/08/2023 - 22/08/2023
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: 95% Modified
Site Selection: Selected by GTA
Location: Stormwater TBF - STG 2 - WILLOW
Material: Stormwater Trench Backfill
Material Source: Karramans 2.5

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Approved Signatory: Greg Gibson
ql-greg
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1						
Sample Number	S7016S	S7016T				
Test Number	133	134				
Date Tested	16/08/2023	16/08/2023				
Time Tested	11:29	11:37				
Test Request #/Location	STG 2 - STORMWATER TBF	STG 2 - STORMWATER TBF				
Line / Offset	7/4 - 1/52	3/5 - 2/49				
Offset	1m From 1/52	3m From 2/49				
Layer / Reduced Level	Final Level	Final Level				
Thickness of Layer (mm)	100	100				
Soil Description	Sandy GRAVEL	Sandy GRAVEL				
Test Depth (mm)	75	75				
Fraction Tested (mm)	19.0	19.0				
Oversize (wet basis) %	0	0				
Oversize (dry basis) %	0	0				
Curing Hours	**	**				
Method used to Determine Plasticity	**	**				
Field Wet Density t/m^3	2.40	2.42				
Field Moisture Content %	6.4	5.3				
Field Dry Density t/m^3	2.26	2.30				
Maximum Dry Density t/m^3	2.30	2.30				
Adjusted Maximum Dry Density t/m^3	**	**				
Optimum Moisture Content (OMC) %	5.5	5.5				
Adjusted Optimum Moisture Content (OMC) %	**	**				
Date Values Assigned	4/8/2023	4/8/2023				
Assigned Value Report #	P22005-75	P22005-75				
Moisture Variation %	-1.0	0.0				
Moisture Ratio %	116.0	96.5				
Density Ratio %	**98.0**	**100.0**				
Compaction Method	**Modified**	**Modified**				

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

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Material Test Report

Report Number: **23-067-29**
Issue Number: 1
Date Issued: 06/09/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6870
Date Sampled: 03/08/2023
Dates Tested: 03/08/2023 - 01/09/2023
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: 100% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: Subgrade
Material Source: Onsite

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1			
Sample Number	S6870A	S6870B	S6870C
Test Number	93	94	95
Date Tested	03/08/2023	03/08/2023	03/08/2023
Time Tested	06:20	06:30	06:40
Test Request #/Location	Road 4	Road 4	Road 4
Chainage (m)	210	140	70
Location Offset (m)	1m Left of CL	1m Left of CL	1m Right of CL
Layer / Reduced Level	Subgrade	Subgrade	Subgrade
Soil Description	Clay, Brown	Clay, Brown	Clay, Brown
Test Depth (mm)	150	150	150
Fraction Tested (mm)	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0
Oversize (dry basis) %	0	0	0
Curing Hours	2.0	2.0	2.0
Method used to Determine Plasticity	Visual	Visual	Visual
Field Wet Density t/m^3	1.96	1.94	1.91
Field Moisture Content %	15.0	13.4	15.7
Field Dry Density t/m^3	1.70	1.71	1.65
Maximum Dry Density t/m^3	1.63	1.62	1.56
Adjusted Maximum Dry Density t/m^3	**	**	**
Optimum Moisture Content (OMC) %	21.5	19.0	23.0
Adjusted Optimum Moisture Content (OMC) %	**	**	**
Moisture Variation %	6.5	5.5	7.0
Moisture Ratio %	70.5	70.0	69.0
Density Ratio %	**104.5**	**105.5**	**105.5**
Compaction Method	**Standard**	**Standard**	**Standard**

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

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Material Test Report

Report Number: 23-067-30
Issue Number: 1
Date Issued: 06/09/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 6973
Date Sampled: 10/08/2023 10:00
Dates Tested: 10/08/2023 - 05/09/2023
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: 100% Standard
Site Selection: Selected by GTA
Location: Willow, Stage 2
Material: Subgrade
Material Source: Onsite

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1			
Sample Number	S6973A	S6973B	S6973C
Test Number	109	110	111
Date Tested	10/08/2023	10/08/2023	10/08/2023
Time Tested	10:10	10:20	10:35
Test Request #/Location	Road 1	Road 6	Road 6
Chainage (m)	340	60	160
Location Offset (m)	2m Left of CL	1m Left of CL	1m Left of CL
Layer / Reduced Level	Subgrade	Subgrade	Subgrade
Thickness of Layer (mm)	175	175	175
Soil Description	Sandy CLAY, Brown	Sandy CLAY, Brown	Sandy CLAY, Brown
Test Depth (mm)	150	150	150
Fraction Tested (mm)	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0
Oversize (dry basis) %	0	0	0
Curing Hours	2.0	2.0	2.0
Method used to Determine Plasticity	Visual	Visual	Visual
Field Wet Density t/m^3	2.04	1.99	2.01
Field Moisture Content %	14.8	15.2	21.0
Field Dry Density t/m^3	1.78	1.73	1.66
Maximum Dry Density t/m^3	1.70	1.67	1.56
Adjusted Maximum Dry Density t/m^3	**	**	**
Optimum Moisture Content (OMC) %	19.5	20.0	25.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**
Moisture Variation %	4.5	5.0	4.5
Moisture Ratio %	76.5	75.5	82.0
Density Ratio %	**104.5**	**103.5**	**106.5**
Compaction Method	**Standard**	**Standard**	**Standard**

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

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Material Test Report

Report Number: **23-067-31**
Issue Number: 1
Date Issued: 06/09/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7063
Date Sampled: 18/08/2023
Dates Tested: 18/08/2023 - 06/09/2023
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: 95% Standard
Site Selection: Selected by GTA
Location: Watermain TBF - STG 2 - WILLOW
Material: Watermain Trench Backfill
Material Source: Onsite

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S7063A	S7063B	S7063C	S7063D	S7063E	S7063F
Test Number	135	136	137	138	139	140
Date Tested	18/08/2023	18/08/2023	18/08/2023	18/08/2023	18/08/2023	18/08/2023
Time Tested	08:10	08:20	08:40	08:50	09:04	09:17
Test Request #/Location	Watermain TBF - STG 2 - Road =4	Watermain TBF - STG 2 - Road =4	Watermain TBF - STG 2 - Road =4	Watermain TBF - STG 2 - Road =6	Watermain TBF - STG 2 - Road =6	Watermain TBF - STG 2 - Road =1
Line / Offset	Front of Lot 203	Front of Lot 210	Front of Lot 215	Front of Lot 254	Front of Lot 248	Front of Lot 257
Offset	C/L OF TRENCH	C/L OF TRENCH	C/L OF TRENCH	C/L OF TRENCH	C/L OF TRENCH	C/L OF TRENCH
Layer / Reduced Level	F/L	F/L	F/L	F/L	F/L	F/L
Thickness of Layer (mm)	175	175	175	175	175	175
Soil Description	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Field Wet Density (FWD) t/m^3	2.04	2.03	2.09	1.96	2.04	2.00
Field Moisture Content %	10.7	11.2	11.5	17.1	17.3	17.9
Field Dry Density (FDD) t/m^3	1.84	1.82	1.87	1.68	1.74	1.69
Peak Converted Wet Density t/m^3	2.01	2.05	2.05	1.90	1.93	1.92
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	4.0	2.5	2.5	3.5	2.5	3.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**101.5**	**98.5**	**101.5**	**103.5**	**105.5**	**104.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**	**

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

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Material Test Report

Report Number: 23-067-32
Issue Number: 1
Date Issued: 11/09/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7177
Date Sampled: 28/08/2023
Dates Tested: 28/08/2023 - 28/08/2023
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: 95% Modified
Site Selection: Selected by GTA
Location: Willow, Stage 2, Logan Reserve
Material: Subbase
Material Source: Type 2.3 Fulton Hogan Bluerock

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1						
Sample Number	S7177A	S7177B	S7177C	S7177D	S7177E	S7177F
Test Number	141	142	143	144	145	146
Date Tested	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023
Time Tested	08:00	08:10	08:20	08:30	08:40	08:50
Test Request #/Location	Road 4	Road 4	Road 4	Road 1	Road 6	Road 6
Chainage (m)	70	140	210	340	80	160
Location Offset (m)	1m Left of CL	2m Left of CL	CL	1m Right of CL	CL	2m Left of CL
Layer / Reduced Level	Subbase	Subbase	Subbase	Subbase	Subbase	Subbase
Thickness of Layer (mm)	100	100	100	100	100	100
Soil Description	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey
Test Depth (mm)	75	75	75	75	75	75
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	3	4	0	4	0	4
Oversize (dry basis) %	3	4	0	4	0	4
Curing Hours	**	**	**	**	**	**
Method used to Determine Plasticity	Visual	Visual	Visual	Visual	Visual	Visual
Field Wet Density t/m^3	2.46	2.39	2.42	2.43	2.44	2.46
Field Moisture Content %	3.7	3.8	3.8	3.3	3.5	3.1
Field Dry Density t/m^3	2.37	2.30	2.33	2.36	2.36	2.38
Maximum Dry Density t/m^3	2.35	2.35	2.35	2.35	2.35	2.35
Adjusted Maximum Dry Density t/m^3	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	5.5	5.5	5.5	5.5	5.5	5.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Date Values Assigned	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Assigned Value Report #	P22005-82-1	P22005-82-1	P22005-82-1	P22005-82-1	P22005-82-1	P22005-82-1
Moisture Variation %	2.0	1.5	1.5	2.0	2.0	2.5
Moisture Ratio %	66.5	69.0	68.5	59.5	63.5	57.0
Density Ratio %	**101.0**	**98.0**	**99.0**	**100.5**	**100.5**	**101.5**
Compaction Method	**Modified**	**Modified**	**Modified**	**Modified**	**Modified**	**Modified**

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

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Material Test Report

Report Number: **23-067-33**
Issue Number: 1
Date Issued: 11/09/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7211
Date Sampled: 30/08/2023
Dates Tested: 30/08/2023 - 30/08/2023
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: 95% Modified
Site Selection: Selected by GTA
Location: Willow, Stage 2, Logan Reserve
Material: Watermain Trench Backfill
Material Source: Type 2.3 Fulton Hogan Blue Rock

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1			
Sample Number	S7211A	S7211B	
Test Number	147	148	
Date Tested	30/08/2023	30/08/2023	
Time Tested	13:00	13:15	
Test Request #/Location	Watermain Road Crossing	Watermain Road Crossing	
Chainage (m)	350	160	
Location Offset (m)	CL	4m Right of CL	
Layer / Reduced Level	Subbase	Subbase	
Thickness of Layer (mm)	175	175	
Soil Description	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	
Test Depth (mm)	150	150	
Fraction Tested (mm)	19.0	19.0	
Oversize (wet basis) %	0	0	
Oversize (dry basis) %	0	0	
Curing Hours	**	**	
Method used to Determine Plasticity	Visual	Visual	
Field Wet Density t/m^3	2.45	2.46	
Field Moisture Content %	3.7	3.8	
Field Dry Density t/m^3	2.36	2.37	
Maximum Dry Density t/m^3	2.35	2.35	
Adjusted Maximum Dry Density t/m^3	**	**	
Optimum Moisture Content (OMC) %	5.5	5.5	
Adjusted Optimum Moisture Content (OMC) %	**	**	
Date Values Assigned	23/08/2023	23/08/2023	
Assigned Value Report #	P22005-82-1	P22005-82-1	
Moisture Variation %	2.0	1.5	
Moisture Ratio %	66.5	68.5	
Density Ratio %	**100.5**	**101.0**	
Compaction Method	**Modified**	**Modified**	

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

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Material Test Report

Report Number: **23-067-34**
Issue Number: 1
Date Issued: 25/09/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7483
Date Sampled: 22/09/2023
Dates Tested: 22/09/2023 - 25/09/2023
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: 98% Modified
Site Selection: Selected by GTA
Location: Willow Stage 2, Logan Reserve
Material: Base
Material Source: Type 2.3 Fulton Hogan Blue Rock

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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1			
Sample Number	S7483A	S7483B	S7483C
Test Number	164	165	166
Date Tested	22/09/2023	22/09/2023	22/09/2023
Time Tested	11:20	11:30	11:37
Test Request #/Location	Road 4	Road 4	Road 4
Chainage (m)	210	140	70
Location Offset (m)	1m Left from CL	On Centre Line	1m Right from CL
Layer / Reduced Level	Base	Base	Base
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey	Sandy GRAVEL, Grey
Test Depth (mm)	125	125	125
Fraction Tested (mm)	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0
Oversize (dry basis) %	0	0	0
Curing Hours	**	**	**
Method used to Determine Plasticity	**	**	**
Field Wet Density t/m^3	2.58	2.59	2.58
Field Moisture Content %	5.3	5.4	5.3
Field Dry Density t/m^3	2.45	2.46	2.45
Maximum Dry Density t/m^3	2.47	2.47	2.47
Adjusted Maximum Dry Density t/m^3	**	**	**
Optimum Moisture Content (OMC) %	5.0	5.0	5.0
Adjusted Optimum Moisture Content (OMC) %	**	**	**
Date Values Assigned	8/7/2022	8/7/2022	8/7/2022
Assigned Value Report #	P22005-31	P22005-31	P22005-31
Moisture Variation %	-0.5	-0.5	-0.5
Moisture Ratio %	106.5	108.5	106.5
Density Ratio %	**99.0**	**99.5**	**99.5**
Compaction Method	**Modified**	**Modified**	**Modified**

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

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Material Test Report

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Report Number: **23-067-35**
Issue Number: 1
Date Issued: 26/09/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7469
Date Sampled: 21/09/2023
Dates Tested: 21/09/2023 - 25/09/2023
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
Remarks: Testing conducted a long period after fill placement. Moisture variation not reflective of moisture contents during placement.
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Willow Stage 2, Logan Reserve
Material: General Fill
Material Source: Onsite

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S7469A	S7469B	S7469C	S7469D	S7469E	S7469F
Test Number	149	150	151	152	153	154
Date Tested	21/09/2023	21/09/2023	21/09/2023	21/09/2023	21/09/2023	21/09/2023
Time Tested	12:30	12:35	12:40	12:45	12:50	13:00
Test Request #/Location	Lot 311	Lot 313	Lot 308	Lot 321	Lot 235	Lot 237
Line / Offset	O/S SW CNR	O/S SW CNR	O/S NE CNR	O/S NW CNR	O/S NE CNR	O/S SW CNR
Offset	3m North, 5m East	3m North, 5m East	2m South, 6m West	4m East, 3m South	6m West, 6m South	3m North, 4m East
Layer / Reduced Level	FSL	FSL	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	175	175	175	175	175	175
Soil Description	Sandy Clay, Brown	Sandy Clay, Brown	Sandy Clay, Brown	Sandy Clay, Brown	Sandy Clay, Brown	Sandy Clay, Brown
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Field Wet Density (FWD) t/m^3	1.88	1.87	1.75	1.76	1.92	1.92
Field Moisture Content %	11.8	7.9	10.9	6.0	15.5	14.7
Field Dry Density (FDD) t/m^3	1.68	1.73	1.58	1.66	1.66	1.67
Peak Converted Wet Density t/m^3	1.91	1.83	1.79	1.85	1.93	1.92
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	3.0	4.5	5.0	5.0	1.5	2.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**98.5**	**102.0**	**97.5**	**95.5**	**99.0**	**100.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**	**

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

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Material Test Report

Report Number: **23-067-35**
Issue Number: 1
Date Issued: 26/09/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7469
Date Sampled: 21/09/2023
Dates Tested: 21/09/2023 - 25/09/2023
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
Remarks: Testing conducted a long period after fill placement. Moisture variation not reflective of moisture contents during placement.
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Willow Stage 2, Logan Reserve
Material: General Fill
Material Source: Onsite

Qualtest Laboratory Pty Ltd
Brisbane Laboratory
2 / 40 Boyland Ave Cooper Plains QLD 4108
Phone: 0417 011 515
Email: rhys@qualtestgeo.com

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S7469G	S7469H	S7469I	S7469J	S7469K	S7469L
Test Number	155	156	157	158	159	160
Date Tested	21/09/2023	21/09/2023	21/09/2023	21/09/2023	21/09/2023	21/09/2023
Time Tested	13:06	13:15	13:20	13:25	13:30	13:35
Test Request #/Location	Lot 224	Lot 202	Lot 204	Lot 207	Lot 209	Lot 438
Line / Offset	O/S SW CNR	O/S SE CNR	O/S SE CNR	O/S SE CNR	O/S SE CNR	O/S SE CNR
Offset	2m North, 3m East	3m North, 3m West	3m North, 3m West	3m North, 3m West	3m North, 3m West	5m West, 3m North
Layer / Reduced Level	FSL	FSL	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	175	175	175	175	175	175
Soil Description	Sandy Clay, Brown	Sandy Clay, Brown	Sandy Clay, Brown	Sandy Clay, Brown	Sandy Clay, Brown	Sandy Clay, Brown
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Field Wet Density (FWD) t/m^3	1.91	1.95	1.78	1.92	1.96	1.90
Field Moisture Content %	15.3	14.3	11.5	10.4	11.5	12.0
Field Dry Density (FDD) t/m^3	1.66	1.71	1.60	1.74	1.76	1.69
Peak Converted Wet Density t/m^3	1.93	1.97	1.83	1.95	1.99	1.96
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	1.5	2.5	3.0	5.0	2.5	2.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**99.0**	**99.0**	**97.5**	**98.0**	**98.5**	**97.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:
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Material Test Report

Report Number: **23-067-35**
Issue Number: 1
Date Issued: 26/09/2023
Client: SHADFORTH CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: MITCH TRONC
Project Number: 23-067
Project Name: LEVEL ONE AND LEVEL TWO TESTING
Project Location: WILLOW - STAGE 2
Client Reference: 2472-2002
Work Request: 7469
Date Sampled: 21/09/2023
Dates Tested: 21/09/2023 - 25/09/2023
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
Remarks: Testing conducted a long period after fill placement. Moisture variation not reflective of moisture contents during placement.
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Willow Stage 2, Logan Reserve
Material: General Fill
Material Source: Onsite

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Approved Signatory: Rhys Mitchell
Field Technician
NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S7469M	S7469N	S7469O			
Test Number	161	162	163			
Date Tested	21/09/2023	21/09/2023	21/09/2023			
Time Tested	13:40	13:45	13:50			
Test Request #/Location	Lot 439	Lot 419	Lot 417			
Line / Offset	O/S SE CNR	O/S SE CNR	O/S NW CNR			
Offset	5m West, 3m North	4m West, 4m North	9m South, 3m East			
Layer / Reduced Level	FSL	FSL	FSL			
Thickness of Layer (mm)	175	175	175			
Soil Description	Sandy Clay, Brown	Sandy Clay, Brown	Sandy Clay, Brown			
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	1.83	1.84	1.83			
Field Moisture Content %	6.1	6.5	6.3			
Field Dry Density (FDD) t/m^3	1.72	1.73	1.72			
Peak Converted Wet Density t/m^3	1.88	1.87	1.86			
Adjusted Peak Converted Wet Density t/m^3	**	**	**			
Moisture Variation (Wv) %	6.0	5.0	5.0			
Adjusted Moisture Variation %	**	**	**			
Hilf Density Ratio (%)	**97.5**	**98.5**	**98.0**			
Compaction Method	**Standard**	**Standard**	**Standard**			
Report Remarks	**	**	**			

Moisture Variation Note:
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