

Gold Coast Office
Job No: GL20/023A
Ref No: 20086
Author: Ian Masman

24^h June 2020

Shadforth's Civil
99 Sandalwood Lane
Forest Glen Qld 4556

ATTENTION: MR LUKE SANDERS
Email: luke.sanders@shadcivil.com.au

Dear Sir,

**RE: LEVEL ONE COMPLIANCE REPORT FOR
BULK EARTHWORKS FILLING OPERATIONS,
EVERLEIGH PRECINCT 1.2B
TEVIOT ROAD, GREENBANK.**

Table of Contents

Table of Contents	1
1.0 INTRODUCTION	2
1.1 General.....	2
1.2 Previous Earthworks.....	3
1.3 The Project.....	4
3.1 Stripped Surface Assessment.....	5
3.1.1 Crushed Rock Operations.....	6
4.0 STATEMENT OF COMPLIANCE	8
5.0 EXCLUSIONS	8
6.0 LIMITATIONS	8
ATTACHMENTS:	9
Appendix A – Site Plans Showing Test Locations.....	9
Appendix B – Laboratory Test Results Reports.....	9

1.0 INTRODUCTION

1.1 General

This report presents results of Level One Earthworks Inspections and associated Compaction Compliance testing carried out on Earthworks Fill constructed at the Everleigh Estate – Precinct 1.2B Teviot Road, Greenbank.

Earthworks operations were constructed by Shadforth’s Civil.

Earthwork filling operations for Precinct 1.2B, Allotments and Roads were carried between 25th March 2020 and 2nd June 2020.

The areas of fill covered by this report are presented as Figure 1 and Figure 2 below.

Figure 1 presents the extent of earthworks as shown on Premise Earthworks Drawings MIR001-05-C701A

Figure 2 presents the as constructed areas and actual areas of fill as shown on Shadforth’s Civil survey plan Drone Flight 200605.12.

Figure 1: Extent of Fill - Premise Earthworks Drawing MIR001-05-C701A – Orange Shade

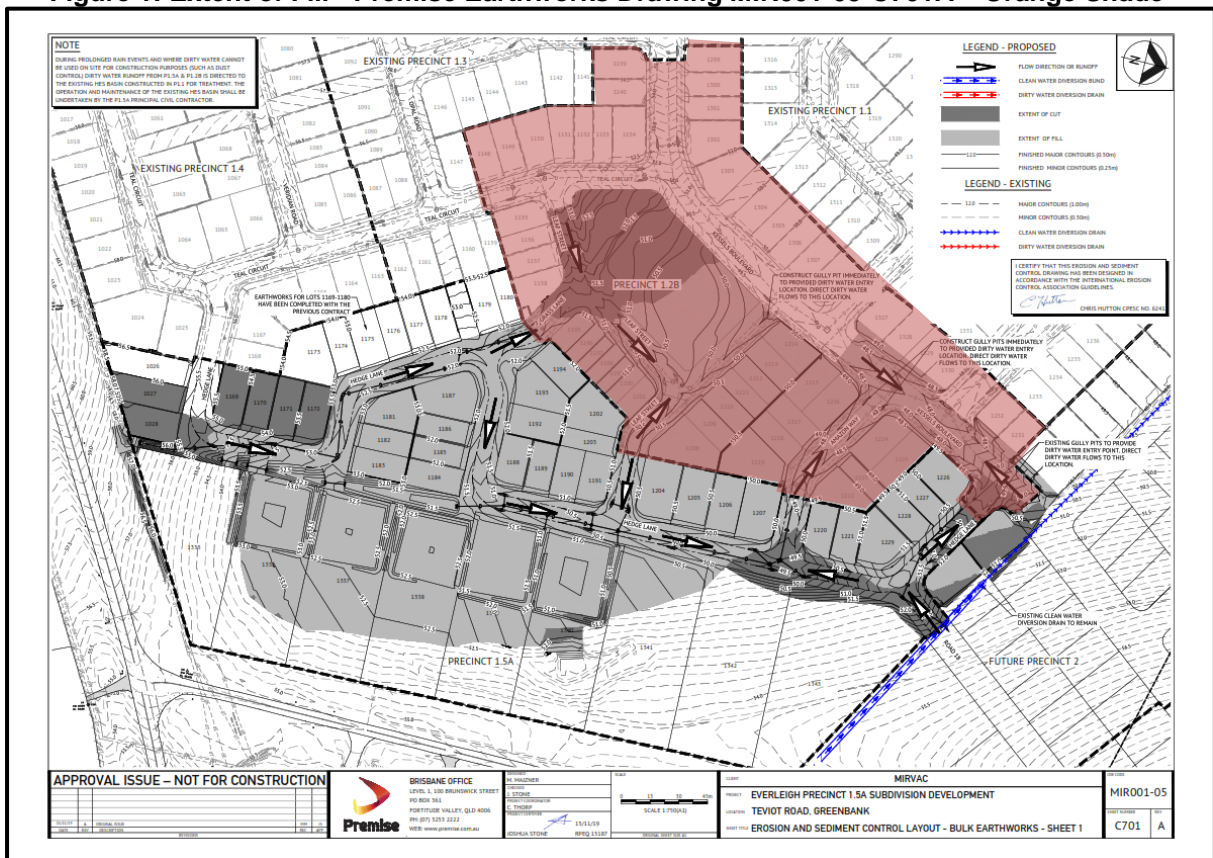
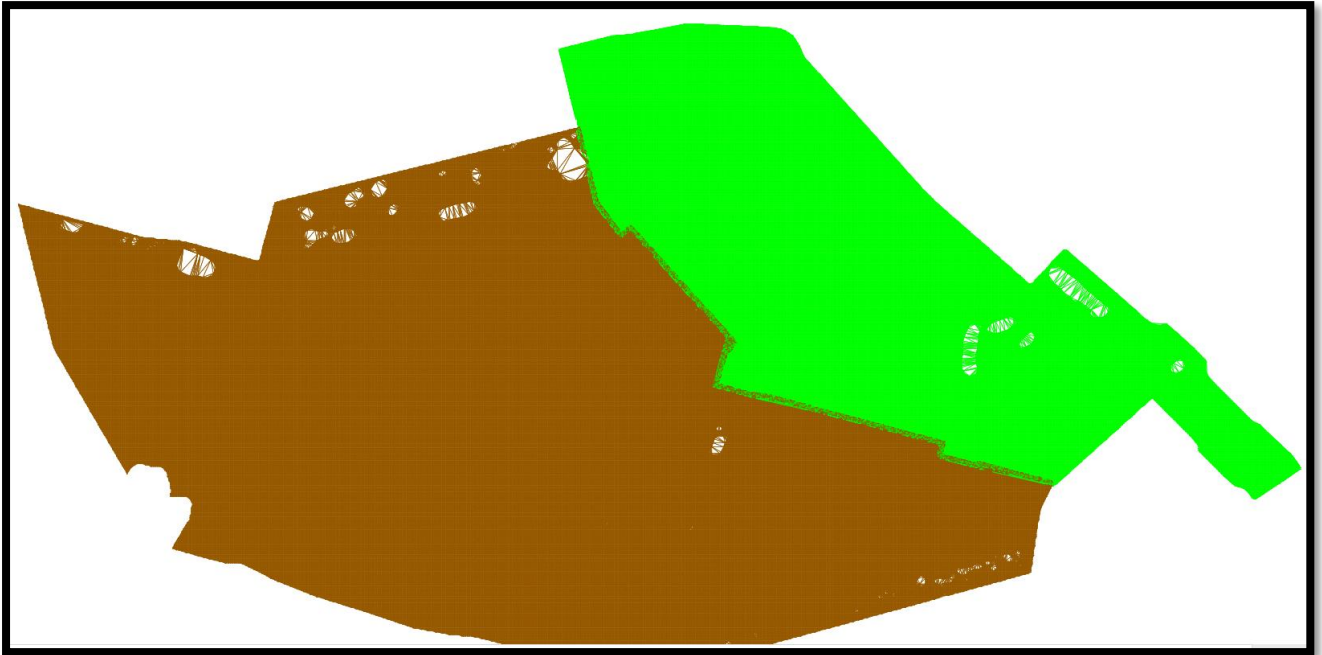


Figure 2: Actual Constructed Area of Fill – Shadforth’s Civil Survey Plan Drone Flight 200605.12.



1.2 Previous Earthworks

Previous Earthworks have been constructed at The Site. Details on previous earthworks are contained in the following reports attached as Appendix C:

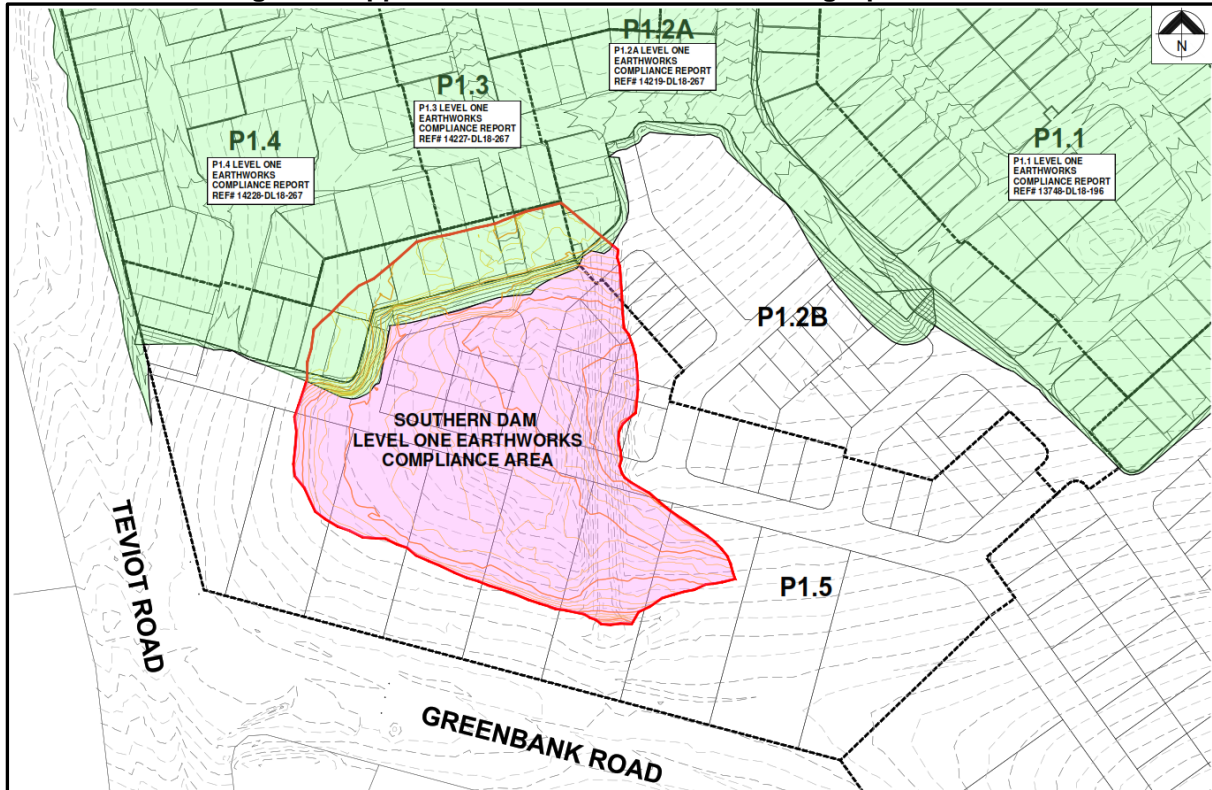
- DL19/454 – Partial Bulk Earthworks Filling Operations Southern Dam Everleigh Precinct 1.5 (Dated 2nd December 2019)
- DL19/447 - Partial Bulk Earthworks Filling Operations Southern Dam Everleigh Precinct 1.5 (Dated 27th March 2020)

The dam wall for the former dam contained existing fill. The fill in the dam wall was removed to depths exposing natural ground and the excavated materials were reused as compacted fill.

Silts from the existing dam were temporarily stored with the Precinct 1.2B area and were removed to expose competent natural ground.

The approximate extent of previous filling operations is shown as Figure 3 below.

Figure 3: Approximate Extent of Previous Filling Operations



1.3 The Project

The project includes filling operations to construct building platforms supporting proposed residences, new pavements and underground services. The Site is bounded by Precinct 1.5 to the south, Precinct 1.1 to the east and 1.2A to the north.

2.0 THE BRIEF

The Brief from the Client was limited to:

- Level One Inspection and Testing of the placement and compaction of fill materials in general accordance with AS3798 2007 – “Guidelines on Earthworks for Commercial and Residential Developments”.
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.1.
- Logan City Council Requirements
- Notes On Premise Project Drawings

3.0 METHODOLOGY

Earthworks Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. .

Field and laboratory testing included a walk over assessments of the existing ground conditions, proof roll testing of the fill foundation, observation of filling and compaction activities and compaction testing.

3.1 Stripped Surface Assessment

The fill areas covered by this report was stripped and cleared of visible loose materials, silts, uncontrolled fill in the existing dam wall, vegetation and topsoil.

Materials exposed after stripping and formed the fill foundation can be broadly summarised as:

- Existing controlled fill - compacted, Gravelly Clayey Sand (SC / GC), fine to coarse sand, fine to coarse gravel with cobbles, low to medium plasticity and moist.
- Natural - Silty Sand (SM) – At least dense, fine to medium grained sands, traces of low plasticity fines, grey – brown and moist.
- Natural – Sandy Clay (CI) – at least Very Stiff, medium plasticity, fine to medium grained sand, pale brown mottled orange and moist.
- Natural – Sandstone (XW-HW) – Extremely to Highly weathered, very low to low strength, orange – yellow brown
- Natural – Sandstone (MW - SW) – Moderately to Slightly weathered, medium, high and very high strength, yellow grey and pale grey

Following the stripped surface assessment of the fill areas, the foundation was approved for filling using the following process:

- Walk over assessments confirming that a competent natural foundation had been exposed.
- Proof roll testing using large sized truck carrying out multiple passes confirming no movement of the exposed natural foundation.
- Heavy compaction of the surface of the existing controlled fill

Picture 1: View of The Site During Stripping Operations



3.1.1 Crushed Rock Operations

Fill materials were sourced onsite and can be broadly summarised as: -

- Import Clayey Sand (SC), fine to coarse sand, medium plasticity fines, with fine to coarse gravel, yellow brown and moist.
 - Blending of silts from the existing dam were carried out at ratios appropriate for the fill profile.
- Onsite Gravelly Sandy Clay (CI), medium plasticity fines, fine to coarse sand, fine to coarse gravel, yellow - brown and moist.
- Ripped Sandstone with engineering properties of Gravelly Clayey Sand (SC), fine to coarse sand, fine to coarse gravel, low to medium plasticity fines with cobbles up to 200mm max.
- Blasted Sandstone with engineering properties of Gravelly Clayey Sand (SC), fine to coarse sand, fine to coarse gravel, low to medium plasticity fines with cobbles up to 200mm max.

Ripping operations were required to loosen high and very high strength sandstone. Ripped rock was then processed using mechanical crushing plant.

Methodology for the rock crushing operations can be broadly summarised as:

- Large rock fragments were broken down by an excavator with hammer attachment to sizes acceptable by the mechanical crushing plant.
- Mechanical Crushing to reduce rock fragments to 200mm size or less.
- Mixing crushed product with onsite materials using a D11 Dozer and placed into stockpiles assessed to be suitable fill and earthwork operations.

Placement and compaction of the fill materials was carried out using the following plant:-

- | | | |
|-------------------|---------------|-----------------------------|
| • Water Carts | • Excavators | • Cat 825 Compactors |
| • Pad Foot Roller | • Grader | • Mechanical Rock Crusher's |
| • Dozers | • Body Trucks | |

The fill materials were moisture conditioned at the fill source and during placement to moisture contents suitable for compaction. Deleterious materials such as organics, sticks, roots and over size particles were sorted and removed during placement or were rejected for use. Occasional oversize particles including cobbles may be present in the deeper fill profile, however, are not considered to affect the fill as a mass.

Placement of the fill materials was carried out in layers appropriate for the above plant and compacted using the above plant carrying out multiple passes.

Our representative observed the filling process as described above and was assessed to be consistent for the entire thickness of fill.

Field density tests and laboratory compactions were carried out on the fill materials in accordance with Table 5.1 and 8.1 of AS3798 2007 (Guidelines on Earthworks for Commercial and Residential Developments) and tested to AS1289 test methods (Testing of Soils for Engineering Purposes).

Testing achieved the required specification of 95% of the Standard Hilf Density at the test locations.

Fill placed and compacted at measured density ratios less than 95% were tyned, moisture conditioned and re-compacted until the required specification was achieved. Retesting was carried out using Random Stratified Location methods.

The Location of the field density tests are shown on the Site Plans contained in Appendix A. These test locations and levels were not obtained by survey and therefore should only be considered as approximate.

Picture 3: View of the Site During Construction



Picture 4: View of the Site during Construction



4.0 STATEMENT OF COMPLIANCE

Our representatives observed the relevant earthworks operations including the stripped surface, fill placement and compaction operations and carried out field density tests and laboratory compaction tests in accordance with the required standard (AS3798, AS1289). Testing achieved the required specification of 98% Standard at the test locations.

It is confirmed that Level One Inspection and Testing has been carried out on the filling operation and limited to the extent shown in in Figure 2. Based on the observations made by our Geotechnicians and the results of the field and laboratory tests, the placed and compacted fill at the above project has, as far as we have been able to assess, been constructed in general accordance with the intent of AS3798.

The fill can be deemed to be “controlled” in accordance with AS2870.

5.0 EXCLUSIONS

This statement does not include any topsoil, which may be placed for use as dressing, trench backfill , areas outside the areas shown in Figure 2 or any other subsequent earthworks after May 2020.

Assessments of material quality such as soaked CBR and site classifications are excluded from this commission.

Our on-site attendance specifically excludes assessments of fill material quality and engineering properties that are outside the requirements of AS3798 – 2007.

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.

6.0 LIMITATIONS

This Report has been prepared by Morrison Geotechnic Pty Ltd (**Morrison Geotechnic**), and may include contributions from Morrison Geotechnic’s officers and employees, sub-contractors, sub-consultants or agents (**Contributors**).

This Report is for the sole benefit and use of Shadforth’s Civil Pty Ltd (**Client**), its designers, clients and relevant statutory authorities for the sole purpose of providing geotechnical advice and recommendations in respect of the Bulk Earthworks Filling Operations, Precinct 1.2B, Everleigh Estate (**Project**). The Report is only intended to address those issues expressly described in the Brief/ Work Instructions in this Report.

This Report should not be used or relied upon for any other purpose without Morrison Geotechnic’s prior written consent. Morrison Geotechnic and the Contributors do not accept any responsibility or liability in any way whatsoever for the use or reliance of this Report by anyone other than Golding Urban Pty Ltd (**Client**), its designers, its clients and relevant statutory authorities or by anyone else for any purpose other than that for which it has been prepared.

Except with Morrison Geotechnic’s prior written consent, this Report may not be:

- (a) released to any other party, whether in whole or in part (other than to the Client’s officers, employees, advisers, designers, clients and relevant statutory authorities);
- (b) used or relied upon by any other party.

Morrison Geotechnic and the Contributors, do not accept any liability or responsibility whatsoever for, or in respect of, any use or reliance upon this Report by any other party. Morrison Geotechnic is not obliged to enter into discussions with any third party in respect of this Report.

The information (including technical information and information obtained through discussions) on which this report is based has been provided by the Client and third parties. Morrison Geotechnic and the Contributors:

- (a) have relied upon and presumed the accuracy of this information;
- (b) have not verified the accuracy or reliability of this information (other than as expressly stated in this Report);
- (c) have not made any independent investigations or enquiries in respect of those matters of which it has no actual knowledge at the time of giving this Report to the Client; and
- (d) make no warranty or guarantee, expressed or implied, as to the accuracy or reliability of this information.

Morrison Geotechnic and the Contributors do not accept responsibility or liability for any incorrect assumptions related to this Report. For the avoidance of doubt, this Report:

- (a) is not an environmental, contamination or hazardous materials assessment; may be invalid, incomplete or inaccurate (including errors in the scope of work, investigation methodology, observations, opinions and advice) where the information provided to Morrison Geotechnic was invalid, incomplete or inaccurate;
- (b) is limited to observations of those parts of the site described in Section 1.0.

No warranty or guarantee, whether express or implied, is made in respect of the geotechnical data, information, advice, opinions and recommendations present in this Report.

If further information becomes available, or additional assumptions need to be made, Morrison Geotechnic reserves its right to amend this Report.

If you have any queries regarding the above, please contact our Brisbane office.

Yours faithfully



Ian Masman

For and on behalf of

MORRISON GEOTECHNIC PTY LIMITED

ATTACHMENTS:



Appendix A – Site Plans Showing Test Locations

Appendix B – Laboratory Test Results Reports

Appendix C – Previous Earthworks Reports.

Appendix A
(Plotted site plan showing
test locations)

LEGEND

-  Test Location - GL20/023A
-  Test Location - GL20/023



Appendix B

(Laboratory Test Reports)

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
 ABN: 51 009 878 899
 Gold Coast Laboratory
 Unit 34A / 53-57 Link Drive Yatala QLD 4207
 Phone: (07) 5596 1599
 Email: ndobson@mgeo.com.au

Report Number: GL20/023A-1
Issue Number: 1
Date Issued: 08/04/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Everleigh Estate
Work Request: 2933
Dates Tested: 30/03/2020 - 02/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nick Dobson
 Senior Technician
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-2933A	G20-2933B	G20-2933C	G20-2933D
Test Number	1	2	3	4
Date Tested	30/03/2020	30/03/2020	30/03/2020	30/03/2020
Time Tested	08:00	08:10	08:20	08:30
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	498773	498812	498749	498762
Northing	6931330	6931314	6931307	6931286
Elevation (m)	50.1	50.2	50.4	50.0
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	1.96	1.96	1.97	1.94
Field Moisture Content %	10.2	9.8	9.3	9.5
Field Dry Density (FDD) t/m ³	1.78	1.79	1.80	1.78
Peak Converted Wet Density t/m ³	2.06	2.05	2.00	2.04
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	1.5	2.0	4.0	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	95.0	95.5	98.5	95.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Gold Coast Laboratory

Unit 34A / 53-57 Link Drive Yatala QLD 4207

Phone: (07) 5596 1599

Email: ndobson@mgeo.com.au

Report Number: GL20/023A-1
Issue Number: 1
Date Issued: 08/04/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Everleigh Estate
Work Request: 2933
Dates Tested: 30/03/2020 - 02/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nick Dobson

Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	G20-2933E	G20-2933F	G20-2933G	G20-2933H
Test Number	5	6	7	8
Date Tested	30/03/2020	30/03/2020	30/03/2020	30/03/2020
Time Tested	08:40	08:50	09:00	09:10
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	498769	498812	498731	498811
Northing	6931310	6931326	6931262	6931279
Elevation (m)	49.8	49.9	50.2	50.3
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	1.96	1.96	1.95	1.97
Field Moisture Content %	8.9	8.1	8.5	6.6
Field Dry Density (FDD) t/m ³	1.80	1.81	1.79	1.84
Peak Converted Wet Density t/m ³	2.03	2.05	1.99	1.99
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	2.5	2.0	4.5	4.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	97.0	95.5	98.0	99.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: GL20/023A-2
Issue Number: 1
Date Issued: 20/04/2020
Client: SHADFORTH'S CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 2986
Dates Tested: 06/04/2020 - 07/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nick Dobson
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-2986A	G20-2986B	G20-2986C	G20-2986D
Test Number	9	10	11	12
Date Tested	06/04/2020	06/04/2020	06/04/2020	06/04/2020
Time Tested	10:00	10:10	10:20	10:30
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	498768	498771	498744	498755
Northing	6931277	6931325	6931258	6931268
Elevation (m)	49.3	49.8	49.5	50.0
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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.22	2.21	2.19	2.20
Field Moisture Content %	6.1	6.4	6.8	6.4
Field Dry Density (FDD) t/m ³	2.09	2.08	2.05	2.07
Peak Converted Wet Density t/m ³	2.04	2.03	2.03	2.05
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	2.5	2.5	2.5	2.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	109.0	109.0	107.5	107.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



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Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

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Unit 34A / 53-57 Link Drive Yatala QLD 4207

Phone: (07) 5596 1599

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Report Number: GL20/023A-2
Issue Number: 1
Date Issued: 20/04/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 2986
Dates Tested: 06/04/2020 - 07/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nick Dobson

Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-2986E	G20-2986F	G20-2986G	G20-2986H
Test Number	13	14	15	16
Date Tested	06/04/2020	06/04/2020	06/04/2020	06/04/2020
Time Tested	10:40	10:50	11:00	11:10
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	498751	498779	498743	498775
Northing	6931278	6931273	6931324	6931262
Elevation (m)	49.9	50.1	50.3	50.5
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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.22	2.20	2.19	2.19
Field Moisture Content %	6.3	6.1	6.5	6.3
Field Dry Density (FDD) t/m ³	2.08	2.07	2.05	2.06
Peak Converted Wet Density t/m ³	2.02	2.05	2.02	2.04
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	2.5	2.5	2.5	2.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	109.5	107.5	108.5	107.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



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 Phone: (07) 5596 1599
 Email: ndobson@mgeo.com.au

Report Number: GL20/023A-3
Issue Number: 1
Date Issued: 20/04/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 2996
Dates Tested: 07/04/2020 - 14/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nick Dobson
 Senior Technician
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-2996A	G20-2996B	G20-2996C	G20-2996D
Test Number	17	18	19	20
Date Tested	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Time Tested	10:00	10:20	10:30	10:40
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	498800	498730	498770	498735
Northing	6931284	6931284	6931259	6931328
Elevation (m)	48.9	49.3	49.5	49.2
Soil Description	Sandy Gravelly Clay. Brown	Sandy Gravelly Clay. Brown	Sandy Gravelly Clay. Brown	Sandy Gravelly 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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.14	2.17	2.15	2.16
Field Moisture Content %	12.6	11.9	12.6	12.5
Field Dry Density (FDD) t/m ³	1.90	1.94	1.91	1.92
Peak Converted Wet Density t/m ³	2.15	2.15	2.14	2.15
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	-0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	100.0	101.0	100.5	100.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Gold Coast Laboratory

Unit 34A / 53-57 Link Drive Yatala QLD 4207

Phone: (07) 5596 1599

Email: ndobson@mgeo.com.au

Report Number: GL20/023A-3
Issue Number: 1
Date Issued: 20/04/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 2996
Dates Tested: 07/04/2020 - 14/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nick Dobson

Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-2996E	G20-2996F	G20-2996G	G20-2996H
Test Number	21	22	23	24
Date Tested	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Time Tested	10:50	12:30	12:40	12:50
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	498741	498808	498778	498811
Northing	6931263	6931284	6931268	6931267
Elevation (m)	49.3	49.5	49.0	49.0
Soil Description	Sandy Gravelly Clay. Brown	Sandy Gravelly Clay. Brown	Sandy Gravelly Clay. Brown	Sandy Gravelly 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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.17	2.14	2.15	2.16
Field Moisture Content %	12.9	12.6	12.0	12.9
Field Dry Density (FDD) t/m ³	1.92	1.90	1.92	1.91
Peak Converted Wet Density t/m ³	2.14	2.16	2.16	2.15
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	101.5	99.0	99.5	100.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



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Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Gold Coast Laboratory

Unit 34A / 53-57 Link Drive Yatala QLD 4207

Phone: (07) 5596 1599

Email: ndobson@mgeo.com.au

Report Number: GL20/023A-4
Issue Number: 1
Date Issued: 20/04/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3013
Dates Tested: 08/04/2020 - 14/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nick Dobson

Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-3013A	G20-3013B	G20-3013C	G20-3013D
Test Number	25	26	27	28
Date Tested	08/04/2020	08/04/2020	08/04/2020	08/04/2020
Time Tested	13:10	13:20	13:30	13:40
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	498748	498747	498777	498805
Northing	6931336	6931304	6931278	6931331
Elevation (m)	49.9	49.6	50.0	49.9
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.10	2.12	2.12	2.12
Field Moisture Content %	9.4	10.2	9.9	10.2
Field Dry Density (FDD) t/m ³	1.92	1.92	1.93	1.92
Peak Converted Wet Density t/m ³	2.13	2.15	2.15	2.14
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	0.0	-0.5	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	98.5	98.5	98.5	99.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Gold Coast Laboratory

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Email: ndobson@mgeo.com.au

Report Number: GL20/023A-5
Issue Number: 1
Date Issued: 20/04/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3041
Dates Tested: 14/04/2020 - 16/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Nick Dobson

Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-3041A	G20-3041B	G20-3041C	G20-3041D
Test Number	29	30	31	32
Date Tested	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Time Tested	10:00	10:05	10:10	10:15
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	498728	498730	498808	498735
Northing	6931313	6931265	6931309	6931278
Elevation (m)	45.9	45.8	46.0	46.1
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.15	2.14	2.14	2.16
Field Moisture Content %	9.3	9.6	9.4	9.0
Field Dry Density (FDD) t/m ³	1.97	1.95	1.96	1.98
Peak Converted Wet Density t/m ³	2.08	2.07	2.08	2.05
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	3.0	2.5	3.0	3.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	103.5	103.0	103.0	105.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Gold Coast Laboratory

Unit 34A / 53-57 Link Drive Yatala QLD 4207

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Report Number: GL20/023A-5
Issue Number: 1
Date Issued: 20/04/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3041
Dates Tested: 14/04/2020 - 16/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nick Dobson

Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-3041E	G20-3041F	G20-3041G	G20-3041H
Test Number	33	34	35	36
Date Tested	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Time Tested	10:20	10:25	10:30	10:35
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	498742	498756	498767	498803
Northing	6931307	6931267	6931258	6931284
Elevation (m)	46.0	46.7	45.9	45.5
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.16	2.16	2.15	2.14
Field Moisture Content %	8.9	9.3	9.7	9.1
Field Dry Density (FDD) t/m ³	1.98	1.98	1.96	1.96
Peak Converted Wet Density t/m ³	2.06	2.04	2.07	2.05
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	2.5	3.0	3.0	3.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	105.0	106.0	104.0	104.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
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 Gold Coast Laboratory
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Report Number: GL20/023A-6
Issue Number: 1
Date Issued: 06/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3081
Dates Tested: 20/04/2020 - 22/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

S Taylor

Approved Signatory: Gary Taylor
 Geotech Field Supervisor
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	G20-3081A	G20-3081B	G20-3081C	G20-3081D	G20-3081E
Test Number	37	38	39	40	41
Date Tested	20/04/2020	20/04/2020	20/04/2020	20/04/2020	20/04/2020
Time Tested	11:00	11:10	11:20	11:30	11:40
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498931	E 498972	498886	E 498881	E 498867
Northing	N 6931296	N 6931266	N 6931272	N 6931330	N 6931269
Elevation (m)	RL 50.1	RL 49.5	RL 49.3	RL 49.1	RL 49.3
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	11.6	13.8	11.4	11.8	9.8
Field Wet Density (FWD) t/m ³	2.13	2.13	2.14	2.13	2.14
Field Moisture Content %	8.8	8.1	8.2	8.8	8.0
Field Dry Density (FDD) t/m ³	1.96	1.97	1.98	1.96	1.98
Peak Converted Wet Density t/m ³	**	**	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.06	2.07	2.05	2.06	2.04
Moisture Variation (Wv) %	**	**	**	**	**
Adjusted Moisture Variation %	4.0	4.0	3.5	2.5	4.0
Hilf Density Ratio (%)	103.0	103.0	104.5	103.5	104.5
Compaction Method	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
 ABN: 51 009 878 899
 Gold Coast Laboratory
 Unit 34A / 53-57 Link Drive Yatala QLD 4207
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Report Number: GL20/023A-7
Issue Number: 1
Date Issued: 06/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Street, Greenbank
Work Request: 3115
Date Sampled: 23/04/2020
Dates Tested: 23/04/2020 - 24/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

S Taylor

Approved Signatory: Gary Taylor
 Geotech Field Supervisor
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-3115A	G20-3115B	G20-3115C	G20-3115D
Test Number	42	43	44	45
Date Tested	23/04/2020	23/04/2020	23/04/2020	23/04/2020
Time Tested	10:10	10:20	10:30	10:40
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498923	E 498903	E 498894	E 498986
Northing	N 6931301	N 6931318	N 6931278	N 6931335
Elevation (m)	RL 50.0	RL 49.8	RL 49.7	RL 50.0
Soil Description	Sandy Gravelly Clay. Brown	Sandy Gravelly Clay. Brown	Sandy Gravelly Clay. Brown	Sandy Gravelly 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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.10	2.09	2.08	2.08
Field Moisture Content %	9.5	10.8	7.2	-9.3
Field Dry Density (FDD) t/m ³	1.92	1.88	1.94	2.29
Peak Converted Wet Density t/m ³	2.02	2.02	2.02	2.02
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	3.0	4.0	4.0	3.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	104.0	103.0	103.0	103.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report

Report Number: GL20/023A-8
Issue Number: 1
Date Issued: 06/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Street, Greenbank
Work Request: 3131
Dates Tested: 24/04/2020 - 05/05/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Gary Taylor
Geotech Field Supervisor
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-3131A	G20-3131B	G20-3131C	G20-3131D
Test Number	46	47	48	49
Date Tested	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Time Tested	11:00	11:10	11:20	11:30
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498867	E 498914	E 498866	E 498912
Northing	N 6931273	N 6931313	N 6931309	N 6931301
Elevation (m)	RL 50.4	RL 50.1	RL 50.5	RL 50.3
Soil Description	Gravelly Sandy Clay. Orange-Brown	Gravelly Sandy Clay. Orange-Brown	Gravelly Sandy Clay. Orange-Brown	Gravelly Sandy Clay. Orange-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	0.0	0.0
Field Wet Density (FWD) t/m ³	2.07	2.06	2.06	2.07
Field Moisture Content %	8.7	9.0	8.5	8.9
Field Dry Density (FDD) t/m ³	1.90	1.89	1.90	1.90
Peak Converted Wet Density t/m ³	2.04	2.03	2.01	2.03
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	4.5	4.5	5.0	4.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	101.5	101.5	102.5	102.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
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Report Number: GL20/023A-8
Issue Number: 1
Date Issued: 06/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Street, Greenbank
Work Request: 3131
Dates Tested: 24/04/2020 - 05/05/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

S Taylor

Approved Signatory: Gary Taylor
 Geotech Field Supervisor
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-3131E	G20-3131F	G20-3131G	G20-3131H
Test Number	50	51	52	53
Date Tested	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Time Tested	11:40	11:50	12:00	12:10
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498925	E 498877	E 498935	E 498907
Northing	N 6931316	N 6931311	N 6931324	N 6931316
Elevation (m)	RL 50.2	RL 50.5	RL 50.2	RL 50.0
Soil Description	Gravelly Sandy Clay. Orange-Brown	Gravelly Sandy Clay. Orange-Brown	Gravelly Sandy Clay. Orange-Brown	Gravelly Sandy Clay. Orange-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	0.0	0.0
Field Wet Density (FWD) t/m ³	2.06	2.07	2.07	2.07
Field Moisture Content %	8.8	9.4	9.2	8.6
Field Dry Density (FDD) t/m ³	1.90	1.89	1.90	1.90
Peak Converted Wet Density t/m ³	2.01	2.04	2.04	2.01
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	5.0	4.0	4.0	5.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	103.0	101.0	102.0	103.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
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Report Number: GL20/023A-9
Issue Number: 1
Date Issued: 06/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Street, Greenbank
Work Request: 3138
Dates Tested: 27/04/2020 - 29/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

S Taylor

Approved Signatory: Gary Taylor
 Geotech Field Supervisor
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-3138A	G20-3138B	G20-3138C	G20-3138D
Test Number	54	55	56	57
Date Tested	27/04/2020	27/04/2020	27/04/2020	27/04/2020
Time Tested	11:00	11:10	11:20	11:30
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498887	E 498964	E 498939	E 498883
Northing	N 6931349	N 6931321	N 6931281	N 6931275
Elevation (m)	RL 48.6	RL 49.2	RL 49.0	RL 48.9
Soil Description	Sandy Gravelly Clay. Orange-Brown	Sandy Gravelly Clay. Orange-Brown	Sandy Gravelly Clay. Orange-Brown	Sandy Gravelly Clay. Orange-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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.06	2.06	2.08	2.08
Field Moisture Content %	7.0	7.4	7.3	7.3
Field Dry Density (FDD) t/m ³	1.92	1.92	1.94	1.94
Peak Converted Wet Density t/m ³	1.96	1.97	1.97	1.99
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	4.0	4.5	4.5	4.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	105.0	104.5	105.5	104.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report

Report Number: GL20/023A-9
Issue Number: 1
Date Issued: 06/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Street, Greenbank
Work Request: 3138
Dates Tested: 27/04/2020 - 29/04/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Gary Taylor
Geotech Field Supervisor
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-3138E	G20-3138F	G20-3138G	G20-3138H
Test Number	58	59	60	61
Date Tested	27/04/2020	27/04/2020	27/04/2020	27/04/2020
Time Tested	11:40	11:50	12:00	12:10
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498973	E 498921	E 498873	E 498921
Northing	N 6931314	N 6931337	N 6931334	N 6931311
Elevation (m)	RL 48.6	RL 48.5	RL 48.7	RL 48.7
Soil Description	Sandy Gravelly Clay. Orange-Brown	Sandy Gravelly Clay. Orange-Brown	Sandy Gravelly Clay. Orange-Brown	Sandy Gravelly Clay. Orange-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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.07	2.07	2.07	2.07
Field Moisture Content %	7.2	8.0	7.8	7.2
Field Dry Density (FDD) t/m ³	1.93	1.92	1.92	1.93
Peak Converted Wet Density t/m ³	1.98	1.99	1.97	1.98
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	4.0	4.5	4.0	4.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	104.5	104.0	105.0	104.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Gold Coast Laboratory

Unit 34A / 53-57 Link Drive Yatala QLD 4207

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Report Number: GL20/023A-10
Issue Number: 1
Date Issued: 12/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3176
Dates Tested: 30/04/2020 - 06/05/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

G Taylor

Approved Signatory: Gary Taylor

Geotech Field Supervisor

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	G20-3176A	G20-3176B	G20-3176C	G20-3176D	G20-3176E	G20-3176F
Test Number	62	63	64	65	66	67
Date Tested	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020
Time Tested	10:00	10:10	10:20	10:30	10:40	10:50
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498942	E 498923	E 498900	E 498882	E 498909	E 498931
Northing	N 6931333	N 6931321	N 6931284	N 6931264	N 6931250	N 6931264
Elevation (m)	RL 48.9	RL 48.9	RL 48.7	RL 48.8	RL 48.9	RL 48.6
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	7.2	5.6	5.0	7.4	**	**
Field Wet Density (FWD) t/m ³	2.10	2.07	2.08	2.08	2.09	2.11
Field Moisture Content %	12.2	12.5	10.5	11.9	10.7	12.2
Field Dry Density (FDD) t/m ³	1.87	1.84	1.89	1.86	1.89	1.88
Peak Converted Wet Density t/m ³	**	**	**	**	2.09	2.13
Adjusted Peak Converted Wet Density t/m ³	2.17	2.18	2.17	2.17	**	**
Moisture Variation (Wv) %	**	**	**	**	1.5	0.0
Adjusted Moisture Variation %	-0.5	-0.5	-0.5	-0.5	**	**
Hilf Density Ratio (%)	97.0	95.0	96.0	96.0	100.5	99.0
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Gold Coast Laboratory

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Phone: (07) 5596 1599

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Report Number: GL20/023A-10
Issue Number: 1
Date Issued: 12/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3176
Dates Tested: 30/04/2020 - 06/05/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Gary Taylor
 Geotech Field Supervisor

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	G20-3176G	G20-3176H	G20-3176I	G20-3176J	G20-3176K	G20-3176L
Test Number	68	69	70	71	72	73
Date Tested	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020
Time Tested	11:00	11:10	11:20	11:30	11:40	11:50
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498952	E 498969	E 498969	E 498942	E 498919	E 498905
Northing	N 6931272	N 6931284	N 6931305	N 6931307	N 6931289	N 6931268
Elevation (m)	RL 48.7	RL 48.6	RL 49.0	RL 49.2	RL 49.1	RL 49.0
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m ³	2.08	2.10	2.07	2.09	2.08	2.09
Field Moisture Content %	11.6	11.9	11.8	15.8	12.2	11.9
Field Dry Density (FDD) t/m ³	1.87	1.87	1.85	1.80	1.86	1.87
Peak Converted Wet Density t/m ³	2.12	2.10	2.11	2.13	2.13	2.12
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.5	0.0	-0.5	0.0	-0.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	98.5	100.0	98.0	98.0	98.0	98.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report

Report Number: GL20/023A-11
Issue Number: 1
Date Issued: 12/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3191
Dates Tested: 01/05/2020 - 06/05/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Gary Taylor
 Geotech Field Supervisor
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	G20-3191A	G20-3191B	G20-3191C	G20-3191D
Test Number	74	75	76	77
Date Tested	01/05/2020	01/05/2020	01/05/2020	01/05/2020
Time Tested	10:00	10:10	10:20	10:30
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498919	E 498986	E 498902	E 498868
Northing	N 6931343	N 6931350	N 6931302	N 6931324
Elevation (m)	RL 49.8	RL 49.7	RL 49.5	RL 49.6
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.08	2.06	2.09	2.09
Field Moisture Content %	8.6	13.7	8.9	9.1
Field Dry Density (FDD) t/m ³	1.92	1.81	1.92	1.92
Peak Converted Wet Density t/m ³	2.11	2.14	2.09	2.08
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	2.5	-2.0	2.0	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	98.5	96.0	100.0	100.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
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 Gold Coast Laboratory
 Unit 34A / 53-57 Link Drive Yatala QLD 4207
 Phone: (07) 5596 1599
 Email: gtaylor@mgeo.com.au

Report Number: GL20/023A-11
Issue Number: 1
Date Issued: 12/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3191
Dates Tested: 01/05/2020 - 06/05/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Gary Taylor
 Geotech Field Supervisor
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	G20-3191E	G20-3191F	G20-3191G
Test Number	78	79	80
Date Tested	01/05/2020	01/05/2020	01/05/2020
Time Tested	10:40	10:50	11:00
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498971	E 498962	E 498891
Northing	N 6931295	N 6931327	N 6931324
Elevation (m)	RL 49.8	RL 49.6	RL 49.7
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	**	**	**
Field Wet Density (FWD) t/m ³	2.06	2.10	2.08
Field Moisture Content %	10.0	11.9	9.1
Field Dry Density (FDD) t/m ³	1.87	1.87	1.91
Peak Converted Wet Density t/m ³	2.10	2.12	2.09
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Moisture Variation (Wv) %	0.5	0.0	2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	98.0	99.0	99.5
Compaction Method	Standard	Standard	Standard

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

Material Test Report

Report Number: GL20/023A-12
Issue Number: 1
Date Issued: 26/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3298
Dates Tested: 18/05/2020 - 19/05/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Gary Taylor
 Geotech Field Supervisor
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	G20-3298A	G20-3298B	
Sample Number			
Test Number	81	82	
Date Tested	18/05/2020	18/05/2020	
Time Tested	14:00	14:30	
Test Request #/Location	GENERAL FILL	GENERAL FILL	
Easting	E 498899	E 498930	
Northing	N 6931266	N 6931299	
Elevation (m)	RL 50.0	RL 50.2	
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 (%)	**	**	
Field Wet Density (FWD) t/m ³	2.12	2.11	
Field Moisture Content %	8.8	9.0	
Field Dry Density (FDD) t/m ³	1.95	1.93	
Peak Converted Wet Density t/m ³	2.07	2.08	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	2.5	2.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	102.5	101.5	
Compaction Method	Standard	Standard	

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
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 Email: gtaylor@mgeo.com.au

Report Number: GL20/023A-13
Issue Number: 1
Date Issued: 28/05/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3318
Dates Tested: 21/05/2020 - 22/05/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Gary Taylor
 Geotech Field Supervisor
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	G20-3318A	G20-3318B	
Test Number	83	84	
Date Tested	21/05/2020	21/05/2020	
Time Tested	11:00	11:10	
Test Request #/Location	GENERAL FILL	GENERAL FILL	
Easting	E 498940	E 498969	
Northing	N 6931303	N 6931309	
Elevation (m)	RL 50.3	RL 50.1	
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	**	**	
Field Wet Density (FWD) t/m ³	2.22	2.22	
Field Moisture Content %	7.5	7.6	
Field Dry Density (FDD) t/m ³	2.06	2.06	
Peak Converted Wet Density t/m ³	2.14	2.14	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	4.5	4.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	103.5	104.0	
Compaction Method	Standard	Standard	

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

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

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Gold Coast Laboratory

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Report Number: GL20/023A-14
Issue Number: 1
Date Issued: 11/06/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3371
Dates Tested: 02/06/2020 - 05/06/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Gary Taylor

Geotech Field Supervisor

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	G20-3371A	G20-3371B	G20-3371C	G20-3371D	G20-3371E	G20-3371F
Test Number	85	86	87	88	89	90
Date Tested	02/06/2020	02/06/2020	02/06/2020	02/06/2020	02/06/2020	02/06/2020
Time Tested	09:40	09:50	10:00	10:10	10:20	10:30
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498814	E 498803	E 498815	E 498827	E 498822	E 498843
Northing	N 6931379	N 6931403	N 6931421	N 6931398	N 6931371	N 6931368
Elevation (m)	RL 51.5	RL 51.2	RL 51.3	RL 51.5	RL 50.9	RL 50.5
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m ³	2.11	2.08	2.12	2.07	2.07	2.09
Field Moisture Content %	6.5	6.0	5.2	4.9	4.9	5.2
Field Dry Density (FDD) t/m ³	1.98	1.96	2.02	1.98	1.98	1.99
Peak Converted Wet Density t/m ³	2.02	2.00	2.03	2.01	2.04	2.04
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Moisture Variation (Wv) %	4.5	4.5	4.0	4.5	4.5	4.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	104.5	104.0	104.5	103.0	101.5	102.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
 ABN: 51 009 878 899
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 Unit 34A / 53-57 Link Drive Yatala QLD 4207
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 Email: gtaylor@mgeo.com.au

Report Number: GL20/023A-14
Issue Number: 1
Date Issued: 11/06/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3371
Dates Tested: 02/06/2020 - 05/06/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

G Taylor

Approved Signatory: Gary Taylor
 Geotech Field Supervisor
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	G20-3371G	G20-3371H	G20-3371I	G20-3371J	G20-3371K	G20-3371L
Test Number	91	92	93	94	95	96
Date Tested	02/06/2020	02/06/2020	02/06/2020	02/06/2020	02/06/2020	02/06/2020
Time Tested	10:40	10:50	11:00	11:10	11:20	11:30
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Easting	E 498853	E 498840	E 498773	E 498789	E 498807	E 498813
Northing	N 6931400	N 6931423	N 6931330	N 6931320	N 6931325	N 6931345
Elevation (m)	RL 51.5	RL 51.5	RL 51.0	RL 51.5	RL 51.4	RL 51.0
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	**	**	10.6	5.0	12.4	8.1
Field Wet Density (FWD) t/m ³	2.07	2.07	2.06	2.06	2.10	2.07
Field Moisture Content %	6.1	6.7	6.7	6.6	6.4	5.9
Field Dry Density (FDD) t/m ³	1.95	1.94	1.94	1.93	1.98	1.96
Peak Converted Wet Density t/m ³	2.02	2.01	**	**	**	**
Adjusted Peak Converted Wet Density t/m ³	**	**	2.12	2.10	2.14	2.10
Moisture Variation (Wv) %	4.5	4.5	**	**	**	**
Adjusted Moisture Variation %	**	**	3.5	3.5	3.5	4.0
Hilf Density Ratio (%)	102.5	103.0	97.5	98.0	98.5	98.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
 ABN: 51 009 878 899
 Gold Coast Laboratory
 Unit 34A / 53-57 Link Drive Yatala QLD 4207
 Phone: (07) 5596 1599
 Email: gtaylor@mgeo.com.au

Report Number: GL20/023A-14
Issue Number: 1
Date Issued: 11/06/2020
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Contact: Luke
Project Number: GL20/023A
Project Name: Everleigh Precinct 1.5 Import - Level 1
Project Location: Teviot Road, Greenbank
Work Request: 3371
Dates Tested: 02/06/2020 - 05/06/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: AS 1289.5.7.1 and 1289.2.1.1 laboratory Testing carried out by Morrison Geotechnic's Darra Laboratory. NATA Accreditation No. 1169, Site No. 1162.
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

G Taylor

Approved Signatory: Gary Taylor
 Geotech Field Supervisor
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	G20-3371M	G20-3371N	G20-3371O	G20-3371P	
Test Number	97	98	99	100	
Date Tested	02/06/2020	02/06/2020	02/06/2020	02/06/2020	
Time Tested	11:40	11:50	12:00	12:10	
Test Request #/Location	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL	
Easting	E 498795	E 498778	E 498730	E 498717	
Northing	N 6931358	N 6931355	N 6931333	N 6931717	
Elevation (m)	RL 50.9	RL 51.5	RL 52.5	RL 52.6	
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly 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 (%)	7.1	**	**	**	
Field Wet Density (FWD) t/m ³	2.11	2.10	2.08	2.08	
Field Moisture Content %	5.7	7.0	6.1	6.2	
Field Dry Density (FDD) t/m ³	2.00	1.97	1.96	1.96	
Peak Converted Wet Density t/m ³	**	2.02	2.01	2.01	
Adjusted Peak Converted Wet Density t/m ³	2.10	**	**	**	
Moisture Variation (Wv) %	**	4.5	4.0	4.5	
Adjusted Moisture Variation %	4.0	**	**	**	
Hilf Density Ratio (%)	100.5	104.0	103.5	103.0	
Compaction Method	Standard	Standard	Standard	Standard	

Moisture Variation Note:

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

Appendix C

(Previous Earthworks Reports)

MORRISON GEOTECHNIC PTY LTD



SOLID THINKING // GROUNDED RESULTS

LEVEL ONE COMPLIANCE REPORT

Prepared for:

Shadforths Civil Pty Ltd

DL19/454 – Partial Bulk Earthworks Filling Operations

Southern Dam Everleigh Precinct 1.5

Teviot Road, Greenbank

*Morrison Geotechnic Pty Ltd
ABN: 51 009 878 899
www.morrisongeo.com.au
a: Unit 1, 35 Limestone Street
Darra, Qld, 4076
Ph: (07) 3279 0900*

2nd December 2019

Brisbane Office
 Job No: DL19-454
 Ref No: 15645
 Author: M. Morrison

2nd December 2019

Shadforths Civil Pty Ltd
 99 Sandalwood Lane
 Forest Glen Qld 4556

ATTENTION: MR DAVID BUGDEN
 Email: david.bugden@shadcivil.com.au
 Cc: leo.copelin@shadcivil.com.au

Dear Sir,

**RE: LEVEL ONE COMPLIANCE REPORT FOR
 PARTIAL BULK EARTHWORKS FILLING OPERATIONS
 SOUTHERN DAM EVERLEIGH PRECINCT 1.5
 TEVIOT ROAD, GREENBANK**

Table of Contents

1.0	INTRODUCTION	2
1.1	General.....	2
1.2	Previous Earthworks.....	3
1.3	The Project.....	3
2.0	THE BRIEF	3
3.1	Stripped Surface Assessment.....	4
3.2	Filling Operations	5
3.2.1	Rock Fill Operations	5
4.0	STATEMENT OF COMPLIANCE	7
5.0	EXCLUSIONS	7
6.0	LIMITATIONS	7
	ATTACHMENTS:	8
	Appendix A – Site Plans Showing Test Locations	8
	Appendix B – Laboratory Test Results Reports	8

1.0 INTRODUCTION

1.1 General

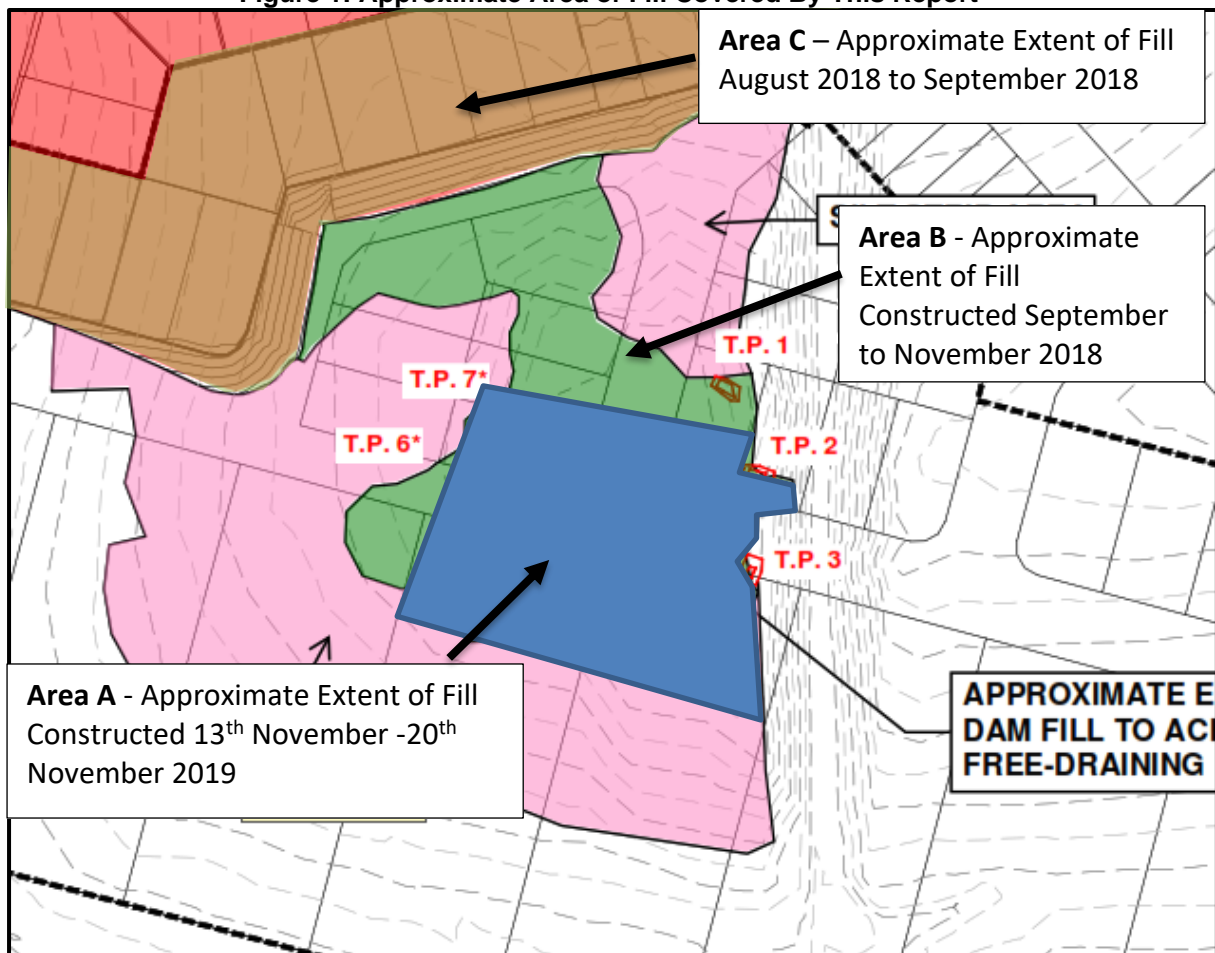
This report presents results of Level One Earthworks Inspections and associated Compaction Compliance testing carried out on Earthworks Fill constructed to partially backfill the southern Dam within Precinct 1.5 at the Everleigh Development.

Earthworks operations were constructed by Shadforths.

Partial earthworks filling operations for Precinct 1.5 were carried between the following dates: -

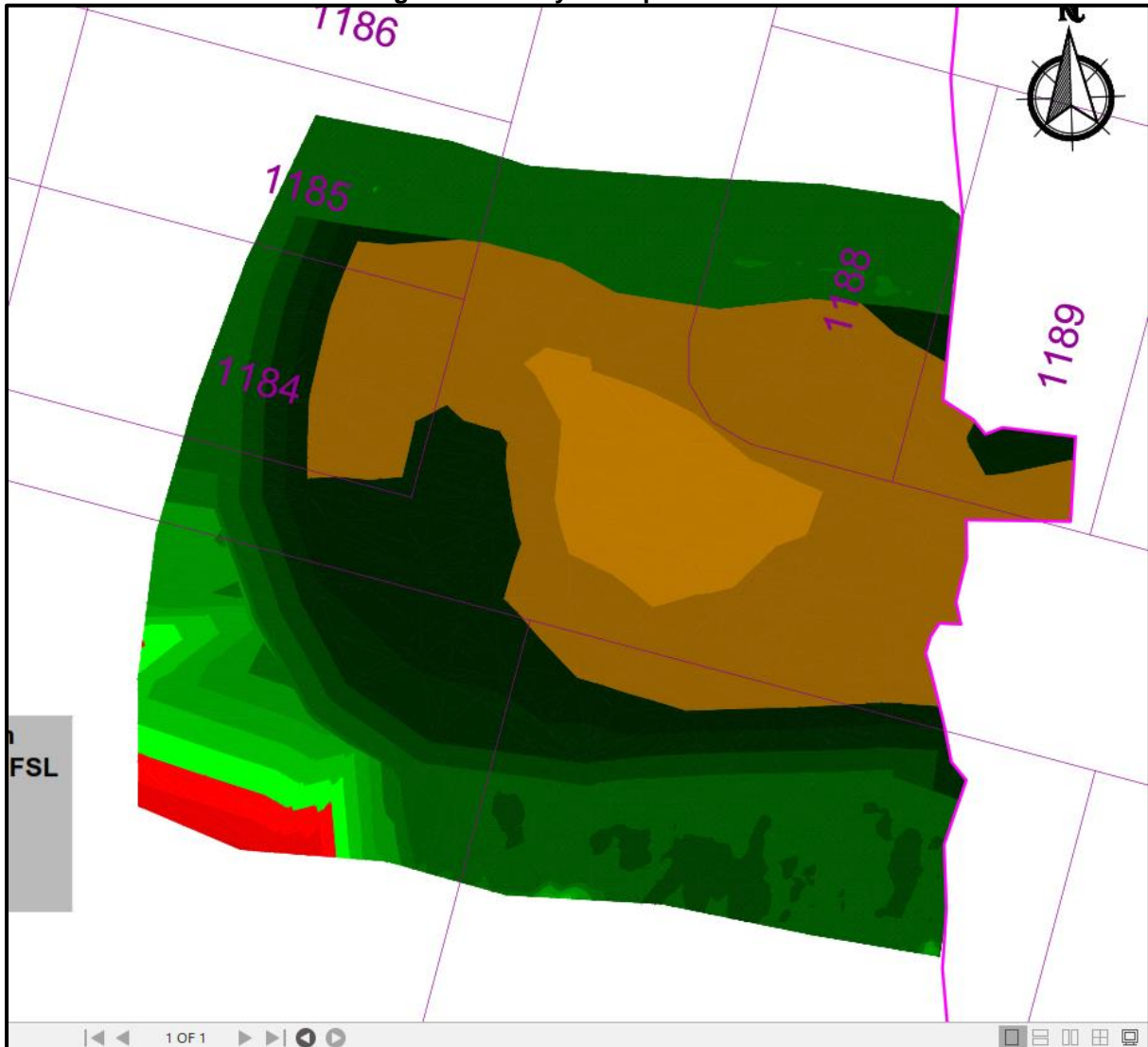
- Area A – Shown as Blue in Figure 1 - 13th November to 20th November 2019.
- Area B – Shown as Green in Figure 1 - Intermittently between September 2018 and November 2018 and
- Area C – Shown as brown in Figure 1 – intermittently between August 2018 and September 2018

Figure 1: Approximate Area of Fill Covered By This Report



A survey pickup of works carried out as a part of Area A is presented below as Figure 2.

Figure 2: Survey Pickup of Area A



1.2 Previous Earthworks

Previous earthworks filling was present at The Site. The existing fill was associated with the former Dam Wall. Fill associated with the Dam Walls is excluded from this report.

The site has also been used to stockpile rock and other materials. Rock and other material stockpiles are excluded from this report. Any fill within the pink areas in Figure 1 is excluded from this report.

1.3 The Project

The purpose for filling at The Site was to remediate and partially backfill the existing dam

2.0 THE BRIEF

The Brief from the Client was limited to:

- Level One Inspection and Testing of the placement and compaction of fill materials in general accordance with AS3798 2007 – “Guidelines on Earthworks for Commercial and Residential Developments”.
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.1.

3.0 METHODOLOGY

Earthworks Inspection and Testing was carried out on the excavated ground surfaces and during the placement and compaction of fill materials.

Field and laboratory testing included a walk over assessments of the existing ground conditions, observation of filling and compaction activities and field density testing using a nuclear soil moisture density gauge and Hilf compactions.

3.1 Stripped Surface Assessment

The area covered by this report was stripped and cleared of visible loose materials, vegetation and topsoil.

Materials exposed after stripping and formed the fill foundation can be broadly summarised as:

- Natural - Silty Sand (SM) – At least dense, fine to medium grained sands, traces of low plasticity clay, grey – brown and moist.
- Natural – Sandy Clay (CI) – Very stiff, medium plasticity, fine to medium grained sand, pale brown mottled orange and moist.
- Natural – Sandstone (XW-DW) – Extremely weathered to slightly weathered, low to medium strength, orange – yellow with red and grey streaks.

Following the stripped surface assessment of the fill areas, the foundation was approved for filling using the following process:

- Walk over assessments confirming that a competent natural foundation had been exposed.
- Proof roll testing using large sized truck carrying out multiple passes confirming no movement of the exposed natural foundation.

Picture 2: View of The Site During Stripping Operations



3.2 Filling Operations

Fill materials were sourced onsite and can be broadly summarised as: -

- Crushed Rock – Limited to some of the fill areas within the old dam greater than 3.0m below the final earthworks levels
- Clayey Sand (SC), fine to coarse sand, medium plasticity fines, with fine to coarse gravel, yellow brown and moist.
- Gravelly Sandy Clay (Cl), medium plasticity fines, fine to coarse sand, fine to coarse gravel, yellow - brown and moist.

Placement and compaction of the fill materials was carried out using the following plant:

- Water Cart
- Pad Foot Roller
- Dozer
- Excavator
- Grader
- Scraper
- 815 Compactor
- Articulated Dump Truck
- Mechanical Rock Crusher

The fill materials were moisture conditioned at the fill source and during placement to moisture contents suitable for compaction. Deleterious materials such as organics, sticks, roots and over size particles were sorted and removed during placement or were rejected for use. Occasional oversize particles including cobbles and boulders may be present in the deeper fill profile, however are not considered to affect the fill as a mass.

Placement of the fill materials was carried out in layers appropriate for the above plant and compacted using the above plant carrying out multiple passes.

Our representative observed the filling process as described above and was assessed to be consistent for the entire thickness of fill.

Field density tests and laboratory compactions were carried out on the fill materials in accordance with Table 5.1 and 8.1 of AS3798 2007 (Guidelines on Earthworks for Commercial and Residential Developments) and tested to AS1289 test methods (Testing of Soils for Engineering Purposes).

Testing achieved the required specification of 95% of the Hilf Density at the test locations.

Fill placed and compacted at measured density ratios less than 95% were tined, moisture conditioned and re-compacted until the required specification was achieved. Retesting was carried out using Random Stratified Location methods.

The Location of the field density tests are shown on the Site Plans contained in Appendix A. These test locations and levels were not obtained by survey and therefore should only be considered as approximate.

3.2.1 Rock Fill Operations

In some fill areas within the dam and below 3.0m from the final earthworks levels, rock fill operations were undertaken.

Methodology for the rock filling operations was in performed in generally accordance with AS3798 - 2007 and can be summarised as: -

- Rock was placed in layers not exceeding 500mm before being moisture conditioned and heavily trafficked and compacted using an 825 Compactor.
- Rock was compacted to ensure it was well bedded and interlocked with no “stand-up” fragments or rock pieces protruding above the surface layer.
- The finished layer was then further trafficked by a pad foot vibrating compactor to provide a finish of well interlocked rock pieces.

Picture 4: View of the Site During Construction



Picture 5: View of the Site During Construction



4.0 STATEMENT OF COMPLIANCE

Our representatives observed the relevant earthworks operations including the stripped surface, fill placement and compaction operations and carried out field density tests and laboratory compaction tests in accordance with the required standard (AS3798, AS1289). Testing achieved the required specification of 95% Standard at the test locations.

It is confirmed that Level One Inspection and Testing has been carried out on the partial backfilling operation and limited to the extent shown in in Figure 1 and Figure 2 . Based on the observations made by our Geotechnicians and the results of the field and laboratory tests, the placed and compacted fill at the above project has, as far as we have been able to assess, been constructed in general accordance with the intent of AS3798.

The fill can be deemed to be “controlled” in accordance with AS2870.

It is understood that additional filling will be required to complete the earthworks to the final earthworks levels.

5.0 EXCLUSIONS

This statement does not include any top soil, which may be placed for use as dressing, trench backfill , areas outside the areas shown in Figure1 and Figure 2 or any other subsequent earthworks after November 2019.

Assessments of material quality such as soaked CBR and site classifications are excluded from this commission.

Our on-site attendance specifically excludes assessments of fill material quality and engineering properties that are outside the requirements of AS3798 – 2007.

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.

6.0 LIMITATIONS

This Report has been prepared by Morrison Geotechnic Pty Ltd (**Morrison Geotechnic**), and may include contributions from Morrison Geotechnic’s officers and employees, sub-contractors, sub-consultants or agents (**Contributors**).

This Report is for the sole benefit and use of Shadforths Civil Pty Ltd (**Client**), its designers, clients and relevant statutory authorities for the sole purpose of providing geotechnical advice and recommendations in respect of the Partial Bulk Earthworks Filling Operations , Southern Dam Everleigh Precinct 1.5 (**Project**). The Report is only intended to address those issues expressly described in the Brief/ Work Instructions in this Report.

This Report should not be used or relied upon for any other purpose without Morrison Geotechnic’s prior written consent. Morrison Geotechnic and the Contributors do not accept any responsibility or liability in any way whatsoever for the use or reliance of this Report by anyone other than Shadforth Civil Pty Ltd (**Client**), its designers, its clients and relevant statutory authorities or by anyone else for any purpose other than that for which it has been prepared.

Except with Morrison Geotechnic’s prior written consent, this Report may not be:

- (a) released to any other party, whether in whole or in part (other than to the Client’s officers, employees, advisers, designers, clients and relevant statutory authorities);
- (b) used or relied upon by any other party.

Morrison Geotechnic and the Contributors, do not accept any liability or responsibility whatsoever for, or in respect of, any use or reliance upon this Report by any other party. Morrison Geotechnic is not obliged to enter into discussions with any third party in respect of this Report.

The information (including technical information and information obtained through discussions) on which this report is based has been provided by the Client and third parties. Morrison Geotechnic and the Contributors:

- (a) have relied upon and presumed the accuracy of this information;
- (b) have not verified the accuracy or reliability of this information (other than as expressly stated in this Report);
- (c) have not made any independent investigations or enquiries in respect of those matters of which it has no actual knowledge at the time of giving this Report to the Client; and
- (d) make no warranty or guarantee, expressed or implied, as to the accuracy or reliability of this information.

Morrison Geotechnic and the Contributors do not accept responsibility or liability for any incorrect assumptions related to this Report. For the avoidance of doubt, this Report:

- (a) is not an environmental, contamination or hazardous materials assessment; may be invalid, incomplete or inaccurate (including errors in the scope of work, investigation methodology, observations, opinions and advice) where the information provided to Morrison Geotechnic was invalid, incomplete or inaccurate;
- (b) is limited to observations of those parts of the site described in Section 1.0.

No warranty or guarantee, whether express or implied, is made in respect of the geotechnical data, information, advice, opinions and recommendations present in this Report.

If further information becomes available, or additional assumptions need to be made, Morrison Geotechnic reserves its right to amend this Report.

If you have any queries regarding the above, please contact our Brisbane office.

Yours faithfully



MICHALE MORRISON

For and on behalf of

MORRISON GEOTECHNIC PTY LIMITED

ATTACHMENTS:

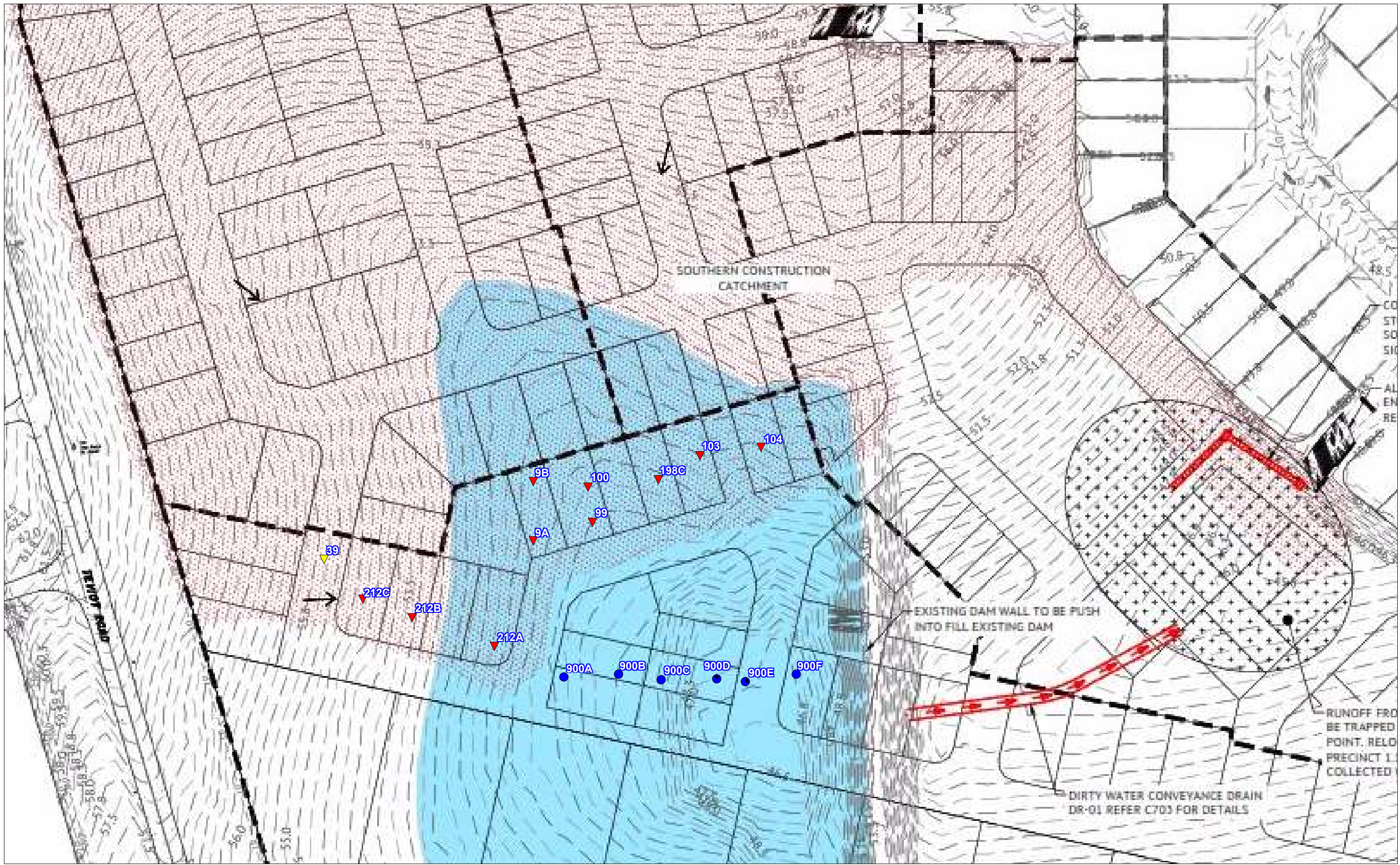
Appendix A – Site Plans Showing Test Locations

Appendix B – Laboratory Test Results Reports

APPENDIX A

SITE PLAN

TEST LOCATIONS



MORRISON GEOTECHNIC PTY LTD

ABN: 51 009 878 899

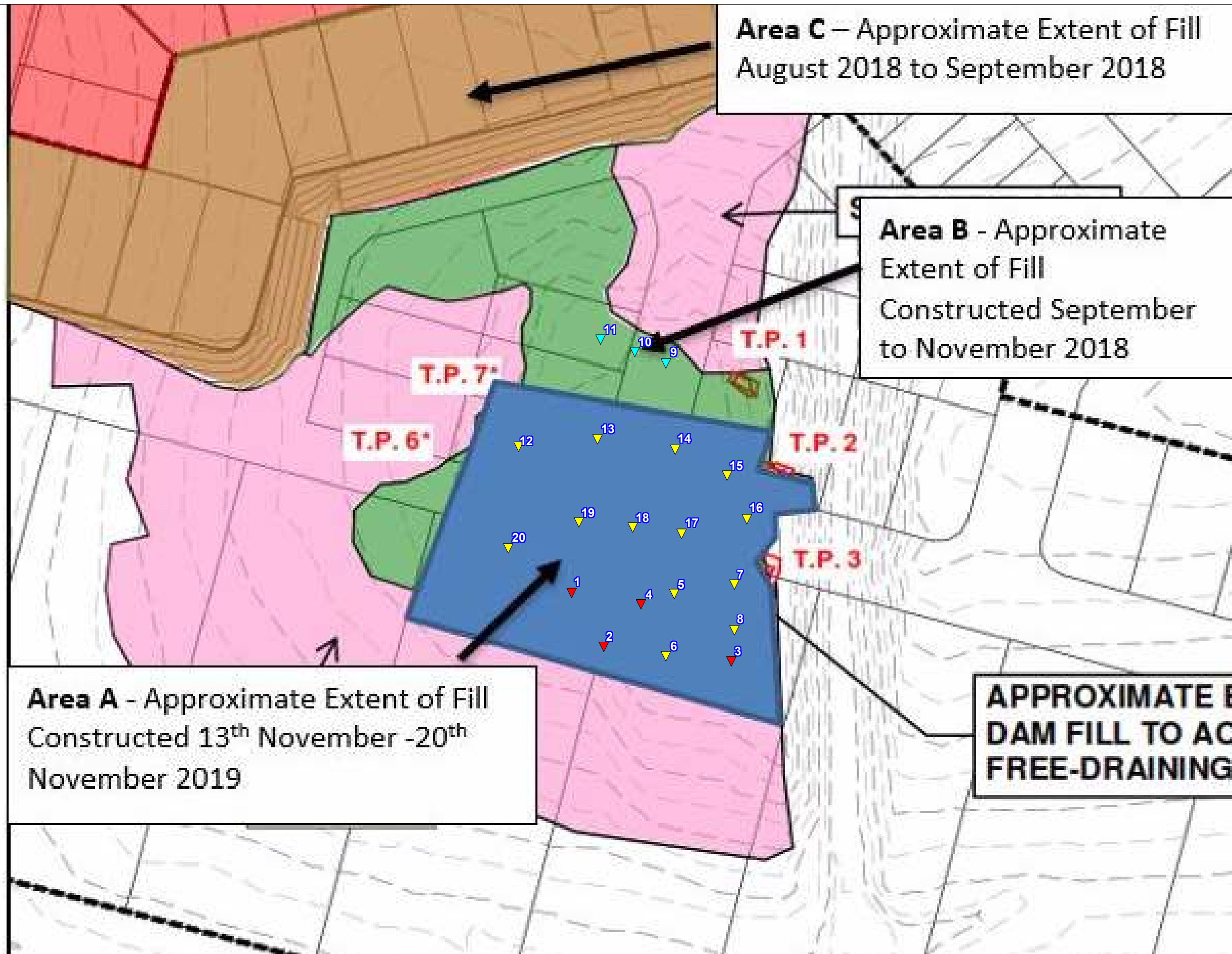
Unit 1/ 35 Limestone St, Darra 4076 Ph: 3279 0900
 Email: brisbanelab@morrisongeo.com.au Fax: 3279 0955

Engineers: J. Daly,
 D.Dragun, & J Greentree
 Geologists: R.Howchin
 Laboratory: M.Morrison

LEGEND

- ▼ 0.0 - 0.99 Below Final Level
- ▼ 1.0 - 1.99 Below Final Level
- ▼ 2.0 - 2.99 Below Final Level
- ▼ 3.0 - 3.99 Below Final Level
- ▼ 4.0 - 4.99 Below Final Level
- Final Level

Map Description :	EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection		
Client :	SHADFORTHS CIVIL PTY LTD		
Project :	EVERLEIGH PRECINCT 1.5 (PARTIAL)		
Project No :	DL18/267	Drawing No :	DL18/267-01
		Scale :	Not to Scale



Area C – Approximate Extent of Fill
August 2018 to September 2018

Area B - Approximate
Extent of Fill
Constructed September
to November 2018

Area A - Approximate Extent of Fill
Constructed 13th November - 20th
November 2019

**APPROXIMATE DAM FILL TO ACHIEVE
FREE-DRAINING**



MORRISON GEOTECHNIC PTY LTD
 ABN: 51 009 878 899

Unit 1/ 35 Limestone St, Darra 4076 Ph: 3279 0900
 Email: brisbanelab@morrisongeo.com.au Fax: 3279 0955

Engineers: J. Daly, D. Dragun, & J. Greentree
 Geologists: R. Howchin
 Laboratory: M. Morrison

LEGEND

- ▼ RL 45.00 - 46.99
- ▼ RL 47.00 - 48.99
- ▼ RL 49.00 - 50.99
-
- ▼ ESL
- Final Level

Map Description :	EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection		
Client :	SHADFORTH CIVIL PTY LTD		
Project :	EVERLEIGH 1.5 (PARTIAL)		
Project No :	DL19/454	Drawing No :	DL19/454-01
		Scale :	Not to Scale

APPENDIX B

Laboratory Test Results Reports

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: darralab@morrisongeo.com.au

Report Number: DL19/454-1
Issue Number: 1
Date Issued: 22/11/2019
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Project Number: DL19/454
Project Name: EARTHWORKS SUPERVISION - BACKFILL TO DAM
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 5805
Date Sampled: 16/11/2019
Dates Tested: 16/11/2019 - 19/11/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Liam Davidson
 Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D19-5805A	D19-5805B	D19-5805C	D19-5805D
Test Number	1	2	3	4
Date Tested	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Time Tested	15:01	15:06	15:12	15:17
Test Request #/Location	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area
Easting	498733	498732	498744	498746
Northing	6931275	6931264	6931265	6931275
Elevation (m)	46.57	46.90	46.34	46.21
Soil Description	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	11.4	7.7	10.7	7.1
Field Wet Density (FWD) t/m ³	2.11	2.16	2.10	2.12
Field Moisture Content %	10.2	8.3	8.2	8.5
Field Dry Density (FDD) t/m ³	1.91	1.99	1.94	1.95
Peak Converted Wet Density t/m ³	**	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.20	2.14	2.16	2.15
Moisture Variation (Wv) %	**	**	**	**
Adjusted Moisture Variation %	0.5	2.0	2.0	2.5
Hilf Density Ratio (%)	95.5	101.0	97.5	98.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
 ABN: 51 009 878 899
 Brisbane Laboratory
 Unit 1, 35 Limestone Darra QLD 4076
 Phone: (07) 3279 0900
 Email: darralab@morrisongeo.com.au

Report Number: DL19/454-2
Issue Number: 1
Date Issued: 22/11/2019
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Project Number: DL19/454
Project Name: EARTHWORKS SUPERVISION - BACKFILL TO DAM
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 5830
Date Sampled: 18/11/2019
Dates Tested: 18/11/2019 - 19/11/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Liam Davidson
 Senior Technician
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D19-5830A	D19-5830B	D19-5830C	D19-5830D
Test Number	5	6	7	8
Date Tested	18/11/2019	18/11/2019	18/11/2019	18/11/2019
Time Tested	11:50	11:58	12:05	12:11
Test Request #/Location	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area
Easting	498749	498744	477757	498731
Northing	6931279	6931262	6931268	6931281
Elevation (m)	47.1	47.4	47.0	47.2
Soil Description	Gravelly Silty Sand.	Gravelly Silty Sand.	Gravelly Silty Sand.	Gravelly Silty Sand.
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	1.6	3.5	2.0	8.7
Field Wet Density (FWD) t/m ³	2.18	2.15	2.06	2.08
Field Moisture Content %	11.9	9.4	10.4	11.6
Field Dry Density (FDD) t/m ³	1.95	1.97	1.87	1.86
Peak Converted Wet Density t/m ³	**	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.21	2.18	2.12	2.18
Moisture Variation (Wv) %	**	**	**	**
Adjusted Moisture Variation %	0.0	0.0	0.5	0.0
Hilf Density Ratio (%)	99.0	98.5	97.5	95.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: swoodley@mgeo.com.au

Report Number: DL19/454-3
Issue Number: 1
Date Issued: 25/11/2019
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Project Number: DL19/454
Project Name: EARTHWORKS SUPERVISION - BACKFILL TO DAM
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 5866
Date Sampled: 20/11/2019
Dates Tested: 20/11/2019 - 22/11/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by Client
Material: Stage 1.5 - Southern Dam Area (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Woodley
 Laboratory Manager
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	D19-5866A	D19-5866B	D19-5866C	D19-5866D	D19-5866E
Test Number	12	13	14	15	16
Date Tested	20/11/2019	20/11/2019	20/11/2019	20/11/2019	20/11/2019
Time Tested	16:20	16:25	16:31	16:36	16:41
Test Request #/Location	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area
Easting	498617	498617	498616	498636	498655
Northing	6931084	6931075	6931063	6931058	6931053
Elevation (m)	48.17	48.42	48.01	48.23	48.12
Soil Description	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand
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 (%)	6.0	6.7	5.2	5.8	6.0
Field Wet Density (FWD) t/m ³	2.07	2.12	2.15	2.09	2.13
Field Moisture Content %	10.2	9.7	9.8	10.4	8.8
Field Dry Density (FDD) t/m ³	1.88	1.94	1.96	1.89	1.95
Peak Converted Wet Density t/m ³	**	**	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.17	2.18	2.17	2.17	2.17
Moisture Variation (Wv) %	**	**	**	**	**
Adjusted Moisture Variation %	-1.0	1.0	0.0	-0.5	2.5
Hilf Density Ratio (%)	95.5	97.5	99.5	96.0	98.0
Compaction Method	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

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Report Number: DL19/454-3
Issue Number: 1
Date Issued: 25/11/2019
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Project Number: DL19/454
Project Name: EARTHWORKS SUPERVISION - BACKFILL TO DAM
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 5866
Date Sampled: 20/11/2019
Dates Tested: 20/11/2019 - 22/11/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by Client
Material: Stage 1.5 - Southern Dam Area (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Woodley

Laboratory Manager

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	D19-5866F	D19-5866G	D19-5866H	D19-5866I	
Test Number	17	18	19	20	
Date Tested	20/11/2019	20/11/2019	20/11/2019	20/11/2019	
Time Tested	16:44	16:49	16:54	17:00	
Test Request #/Location	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area	Stage 1.5 - Southern Dam Area	
Easting	498653	498651	498638	498624	
Northing	6931073	6931086	6931096	6931093	
Elevation (m)	48.00	48.12	48.20	48.10	
Soil Description	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand	
Test Depth (mm)	150	150	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	7.6	6.8	5.4	6.7	
Field Wet Density (FWD) t/m ³	2.14	2.10	2.13	2.07	
Field Moisture Content %	11.5	9.2	10.8	9.6	
Field Dry Density (FDD) t/m ³	1.92	1.93	1.92	1.89	
Peak Converted Wet Density t/m ³	**	**	**	**	
Adjusted Peak Converted Wet Density t/m ³	2.20	2.17	2.20	2.17	
Moisture Variation (Wv) %	**	**	**	**	
Adjusted Moisture Variation %	0.5	1.5	0.0	1.0	
Hilf Density Ratio (%)	97.5	97.0	96.5	95.5	
Compaction Method	Standard	Standard	Standard	Standard	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



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 Email: swoodley@mgeo.com.au

Report Number: DL19/454-4
Issue Number: 1
Date Issued: 23/11/2019
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Project Number: DL19/454
Project Name: EARTHWORKS SUPERVISION - BACKFILL TO DAM
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 5877
Date Sampled: 20/11/2019
Dates Tested: 20/11/2019 - 22/11/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Shadforth's Existing Controlled Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Woodley
 Laboratory Manager
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D19-5877A	D19-5877B	D19-5877C
Test Number	9	10	11
Date Tested	20/11/2019	20/11/2019	20/11/2019
Time Tested	15:45	15:51	15:56
Test Request #/Location	Stage 1.5 - Existing Fill (West of North Bun)	Stage 1.5 - Existing Fill (West of North Bun)	Stage 1.5 - Existing Fill (West of North Bun)
Easting	498642	498639	498637
Northing	6931137	6931137	6931137
Layer / Reduced Level	**	**	**
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	125	100
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	4.4	4.2	4.6
Field Wet Density (FWD) t/m ³	2.20	2.21	2.14
Field Moisture Content %	11.6	11.9	12.3
Field Dry Density (FDD) t/m ³	1.97	1.98	1.91
Peak Converted Wet Density t/m ³	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.21	2.21	2.20
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	-0.5	-0.5	-1.0
Hilf Density Ratio (%)	99.5	100.0	97.5
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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Hilf Density Ratio Report

Client :	SHADFORTH'S CIVIL PTY LTD	Report Number:	DL18/267 - 11
Address :	99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556	Report Date :	13/09/2018
Project Name :	EARTHWORKS SUPERVISION	Order Number :	361299
Project Number :	DL18/267	Test Method :	AS1289.5.8.1 & 5.7.1
Location:	EVERLEIGH PRECINCT 1.2 - 1.4 , GREENBANK	Page 1 of 1	

Sample Number :	251910	251911	251912	251913
Test Number :	38	39	40	41
Sampling Method :	-	-	-	-
Date Sampled :	28/08/2018	28/08/2018	28/08/2018	28/08/2018
Date Tested :	28/08/2018	28/08/2018	28/08/2018	28/08/2018
Material Type :	General Fill	General Fill	General Fill	General Fill
Material Source :	On Site	On Site	On Site	On Site
Lot Number :	-	-	-	-
Sample Location :	E 8601.000 N 31422.000 RL 55.35	E 8600.000 N 31432.000 RL 55.48	E 8599.000 N 31451.000 RL 56.04	E 8603.000 N 31424.000 RL 55.53
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	8	7
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m ³) :	-	-	2.377	2.340
Field Moisture Content (%) :	11.4	13.9	59.1	13.4
Hilf MDR Number :	251910	251911	251912	251913
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	76.5	97	99	91.5
Field Wet Density (t/m ³) :	2.068	2.080	2.116	2.102
Optimum Moisture Content (%) :	14.9	14.3	59.6	14.6
Moisture Variation :	3.5	0.5	0.3	1.2
Peak Converted Wet Density (t/m ³) :	2.038	2.110	2.135*	2.091*
Hilf Density Ratio (%) :	101.5	98.5	99.0	100.5
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

 <p>Accredited for compliance with ISO/IEC 17025 - Testing.</p>	<p>APPROVED SIGNATORY</p> <p><i>Liam A Mcdowall</i></p> <p>Liam Mcdowall (Brisbane) - Branch Manager NATA Accreditation Number 1162 / 1169</p>
	<p>Document Code RF89-11</p>



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Hilf Density Ratio Report

Client :	SHADFORTH'S CIVIL PTY LTD	Report Number:	DL18/267 - 30
Address :	99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556	Report Date :	10/10/2018
Project Name :	EARTHWORKS SUPERVISION	Order Number :	-
Project Number :	DL18/267	Test Method :	AS1289.5.8.1 & 5.7.1
Location:	EVERLEIGH PRECINCT 1.2 - 1.4 , GREENBANK	Page 1 of 1	

Sample Number :	253525	253526	253527	253528
Test Number :	99	100	101	102
Sampling Method :	-	-	-	-
Date Sampled :	05/10/2018	05/10/2018	05/10/2018	05/10/2018
Date Tested :	05/10/2018	05/10/2018	05/10/2018	05/10/2018
Material Type :	General Fill	General Fill	General Fill	General Fill
Material Source :	On Site	On Site	On Site	On Site
Lot Number :	-	-	-	-
Sample Location :	E 8688.000 N 31361.000 RL 51.47	E 8687.000 N 31367.000 RL 51.91	E 8686.000 N 31374.000 RL 52.42	E 8688.000 N 31382.000 RL 52.85
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m ³) :	-	-	-	-
Field Moisture Content (%) :	11.1	12.6	10.3	13.4
Hilf MDR Number :	253525	253526	253527	253528
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	95.5	101.5	98.5	103.5
Field Wet Density (t/m ³) :	2.155	2.109	2.183	2.130
Optimum Moisture Content (%) :	11.6	12.4	10.4	13.0
Moisture Variation :	0.6	-0.1	0.1	-0.5
Peak Converted Wet Density (t/m ³) :	2.182	2.181	2.163	2.188
Hilf Density Ratio (%) :	99.0	96.5	101.0	97.5
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY
Remarks :	-			



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APPROVED SIGNATORY

Liam A Mcdowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

Document Code RF89-11



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Hilf Density Ratio Report

Client :	SHADFORTH'S CIVIL PTY LTD	Report Number:	DL18/267 - 31
Address :	99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556	Report Date :	15/10/2018
Project Name :	EARTHWORKS SUPERVISION	Order Number :	-
Project Number :	DL18/267	Test Method :	AS1289.5.8.1 & 5.7.1
Location:	EVERLEIGH PRECINCT 1.2 - 1.4 , GREENBANK	Page 1 of 1	

Sample Number :	253569	253570	253571	
Test Number :	103	104	105	
Sampling Method :	-	-	-	
Date Sampled :	10/10/2018	10/10/2018	10/10/2018	
Date Tested :	10/10/2018	10/10/2018	10/10/2018	
Material Type :	General Fill	General Fill	General Fill	
Material Source :	On Site	On Site	On Site	
Lot Number :	-	-	-	
Sample Location :	E 8720.000 N 31375.000 RL 52.68	E 8719.000 N 31384.000 RL 53.08	E 8719.000 N 31391.000 RL 53.29	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	7	12	12	
Oversize Dry (%) :	-	-	-	
Oversize Density (t/m ³) :	2.500	2.498	2.507	
Field Moisture Content (%) :	11.8	13.5	13.9	
Hilf MDR Number :	253569	253570	253571	
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	101	102	101	
Field Wet Density (t/m ³) :	2.160	2.182	2.138	
Optimum Moisture Content (%) :	11.7	13.2	13.8	
Moisture Variation :	-0.1	-0.2	-0.1	
Peak Converted Wet Density (t/m ³) :	2.198*	2.199*	2.195*	
Hilf Density Ratio (%) :	98.5	99.0	97.5	
Minimum Specification :	95	95	95	
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	
Site Selection :	-	-	-	
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY	
Remarks :	-			

* - denotes adjusted for oversize

 <p>Accredited for compliance with ISO/IEC 17025 - Testing.</p>	<p>APPROVED SIGNATORY</p> <p><i>Liam A Mcdowall</i></p> <p>Liam Mcdowall (Brisbane) - Branch Manager NATA Accreditation Number 1162 / 1169</p>
	<p>Document Code RF89-11</p>

Material Test Report



Brisbane | Gold Coast | Maroochydore
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Report Number: DL18/267-36
Issue Number: 1
Date Issued: 09/11/2018
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Project Number: DL18/267
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.2 - 1.4, GREENBANK
Work Request: 212
Date Sampled: 06/11/2018
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD +/-2% OMC
Site Selection: Selected by GTA
Material: General Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Liam Davidson
 Senior Technician
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D18-212A	D18-212B	D18-212C
Date Tested	06/11/2018	06/11/2018	06/11/2018
Time Tested	14:00	14:10	14:20
Test Request #/Location	General Fill	General Fill	General Fill
Easting	8655.100	8649.600	8644.900
Northing	31310.600	31311.900	31313.300
Elevation (m)	53.43	53.66	54.00
Thickness of Layer (mm)	-	-	-
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	7.4	0.0
Field Wet Density (FWD) t/m ³	2.08	2.11	2.09
Field Moisture Content %	9.0	9.4	10.2
Field Dry Density (FDD) t/m ³	1.91	1.93	1.90
Peak Converted Wet Density t/m ³	2.18	**	2.16
Adjusted Peak Converted Wet Density t/m ³	**	2.05	**
Moisture Variation (Wv) %	2.0	**	1.0
Adjusted Moisture Variation %	**	1.0	**
Hilf Density Ratio (%)	95.5	103.0	96.5
Compaction Method	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



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Report Number: DL18/267-37
Issue Number: 1
Date Issued: 13/11/2018
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Project Number: DL18/267
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.2 - 1.4, GREENBANK
Work Request: 198
Date Sampled: 05/11/2018
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD +/-2% OMC
Site Selection: Selected by GTA
Material: General Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell
 Senior Technician
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D18-198A	D18-198B	D18-198C
Date Tested	05/11/2018	05/11/2018	05/11/2018
Time Tested	14:00	14:10	14:20
Test Request #/Location	General Fill	General Fill	General Fill
Easting	8720.600	8713.400	8707.300
Northing	31373.600	31370.400	31368.800
Elevation (m)	52.90	52.90	53.00
Thickness of Layer (mm)	-	-	-
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	12.7	0.0
Field Wet Density (FWD) t/m ³	2.18	2.17	2.10
Field Moisture Content %	9.9	6.3	8.0
Field Dry Density (FDD) t/m ³	1.98	2.04	1.95
Peak Converted Wet Density t/m ³	2.17	**	2.10
Adjusted Peak Converted Wet Density t/m ³	**	2.15	**
Moisture Variation (Wv) %	0.5	**	3.0
Adjusted Moisture Variation %	**	2.0	**
Hilf Density Ratio (%)	100.5	101.0	100.5
Compaction Method	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Morrison Geotechnic Pty Ltd

Darra Laboratory

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Report Number: DL18/267-31 GT
Issue Number: 1
Date Issued: 26/10/2018
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Project Number: DL18/267
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.2 - 1.4, GREENBANK
Work Request: 9
Date Sampled: 23/10/2018
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD +/-2% OMC
Site Selection: Selected by Local Authority
Material: General Fill - Everleigh 1.2 - 1.4
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell

Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
	D18-9A	D18-9B	D18-9C
Sample Number			
Date Tested	23/10/2018	23/10/2018	23/10/2018
Time Tested	14:00	14:10	14:20
Test Request #/Location	General Fill	General Fill	General Fill
Easting	8676.800	8674.500	8671.700
Northing	31356.400	31367.400	31378.900
Elevation (m)	53.07	53.53	54.29
Thickness of Layer (mm)	-	-	-
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	**	1.9
Field Wet Density (FWD) t/m ³	2.15	2.13	2.14
Field Moisture Content %	11.8	11.4	9.9
Field Dry Density (FDD) t/m ³	1.92	1.91	1.94
Peak Converted Wet Density t/m ³	2.18	2.15	**
Adjusted Peak Converted Wet Density t/m ³	**	**	2.16
Moisture Variation (Wv) %	0.5	0.0	**
Adjusted Moisture Variation %	**	**	0.0
Hilf Density Ratio (%)	98.5	98.5	99.0
Compaction Method	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
 ABN: 51 009 878 899
 Brisbane Laboratory
 Unit 1, 35 Limestone Darra QLD 4076
 Phone: (07) 3279 0900
 Email: darralab@morrisongeo.com.au

Report Number: DL18/267-42
Issue Number: 1
Date Issued: 16/01/2019
Client: SHADFORTH'S CIVIL PTY LTD
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556
Project Number: DL18/267
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.2 - 1.4, GREENBANK
Work Request: 900
Date Sampled: 11/01/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: General Fill (Capping over Rockfill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Liam A McDowall

Approved Signatory: Liam McDowall
 Branch Manager

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	D19-900A	D19-900B	D19-900C	D19-900D	D19-900E	D19-900F
Date Tested	11/01/2019	11/01/2019	11/01/2019	11/01/2019	11/01/2019	11/01/2019
Time Tested	12:40	12:45	12:50	12:55	13:00	13:05
Test Request #/Location	General Fill	General Fill	General Fill	General Fill	General Fill	General Fill
Easting	8685.2	8704.8	8721.5	8739.5	8748.7	8764.0
Northing	31297.6	31297.8	31291.5	31285.0	31283.3	31282.7
Elevation (m)	49.16	48.17	47.60	47.35	47.38	47.34
Thickness of Layer (mm)	-	-	-	-	-	-
Soil Description	Gravelly Clayey Sand	Gravelly Clayey Sand	Gravelly Clayey Sand	Gravelly Clayey Sand	Gravelly Clayey Sand	Gravelly Clayey Sand
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 (%)	5.2	10.0	6.7	6.8	0.0	8.9
Field Wet Density (FWD) t/m ³	2.08	2.20	2.21	2.10	2.19	2.19
Field Moisture Content %	6.6	6.5	6.5	10.0	8.2	7.7
Field Dry Density (FDD) t/m ³	1.95	2.06	2.08	1.91	2.03	2.03
Peak Converted Wet Density t/m ³	**	**	**	**	2.10	**
Adjusted Peak Converted Wet Density t/m ³	2.00	2.14	2.14	2.16	**	2.13
Moisture Variation (Wv) %	**	**	**	**	2.0	**
Adjusted Moisture Variation %	2.0	1.5	1.5	1.5	**	1.5
Hilf Density Ratio (%)	104.0	102.5	103.5	97.0	104.5	103.0
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

MORRISON GEOTECHNIC PTY LTD



SOLID THINKING // GROUNDED RESULTS

LEVEL ONE COMPLIANCE REPORT

Prepared for:

Golding Urban Pty Ltd

DL19/447 – Partial Bulk Earthworks Filling Operations

Southern Dam Everleigh Precinct 1.5

Teviot Road, Greenbank

REV C

*Morrison Geotechnic Pty Ltd
ABN: 51 009 878 899
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a: Unit 1, 35 Limestone Street
Darra, Qld, 4076*

Ph: (07) 3279 0900

27th March 2020

Brisbane Office
Job No: DL19-447
Ref No: 15719 Rev C
Author: M. Morrison

27th March 2020

Golding Urban
58 Union Circuit
Yatala Qld 4207

ATTENTION: MR CAMERON MCCLURE
Email: Cameron.McClure@golding.com.au
Cc: Derek.Hennessy@golding.com.au

Dear Sir,

**RE: LEVEL ONE COMPLIANCE REPORT FOR
PARTIAL BULK EARTHWORKS FILLING OPERATIONS
SOUTHERN DAM EVERLEIGH PRECINCT 1.5
TEVIOT ROAD, GREENBANK**

Table of Contents

1.0	INTRODUCTION	2
1.1	General.....	2
1.2	Previous Earthworks.....	4
1.3	The Project.....	4
2.0	THE BRIEF	4
3.1	Stripped Surface Assessment.....	4
3.2	Filling Operations	5
4.0	STATEMENT OF COMPLIANCE	7
5.0	EXCLUSIONS	8
6.0	LIMITATIONS	8
	ATTACHMENTS:	9
	Appendix A – Site Plans Showing Test Locations	9
	Appendix B – Laboratory Test Results Reports	9
	Appendix C - Previous Level One Compliance Report.	

1.0 INTRODUCTION

1.1 General

This report presents results of Level One Earthworks Inspections and associated Compaction Compliance testing carried out on Earthworks Fill constructed to partially backfill the southern Dam within Precinct 1.5 at the Everleigh Development.

Earthworks operations were constructed by Golding.

Earthworks covered by this report were carried out between 22nd November 2019 and 6th December 2019.

The extent and completed levels of fill covered by this report are presented as Figure 1 below. Ground surface levels prior to filling are presented as Figure 2 below. The extent of fill covered by this report overlaid on the lot layout plan is presented as Figure 3.

Figure 1: Approximate Area of Fill Covered By This Report – Shade Orange

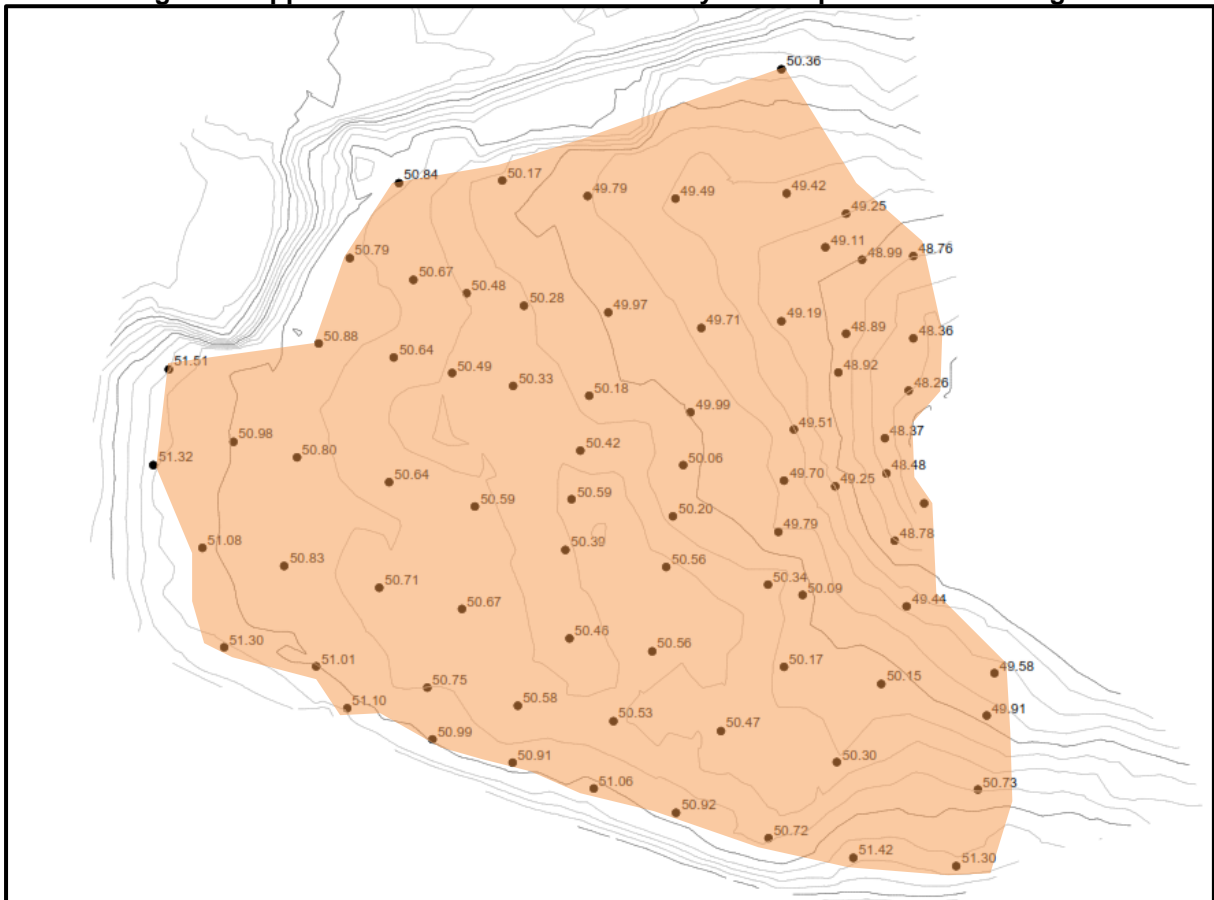


Figure 2: Ground Surface Levels Prior to Earthworks.

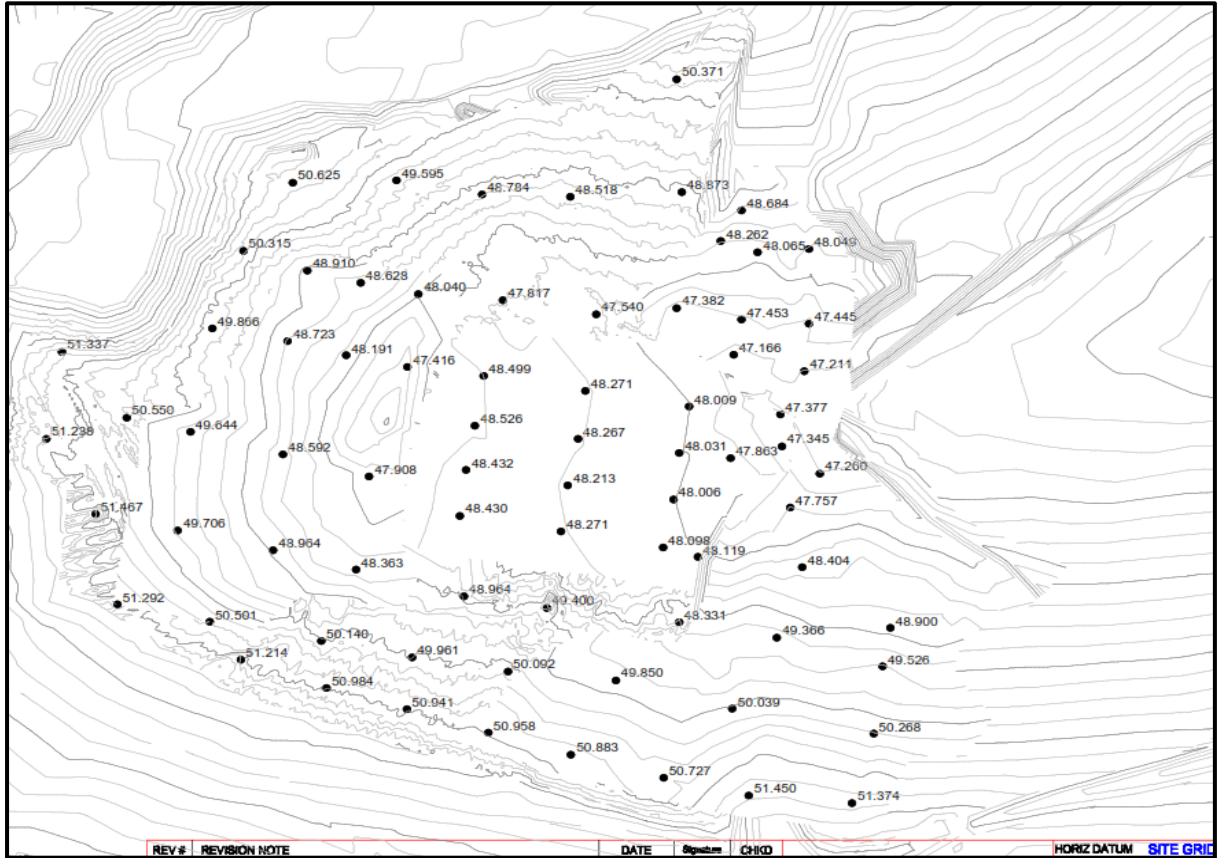
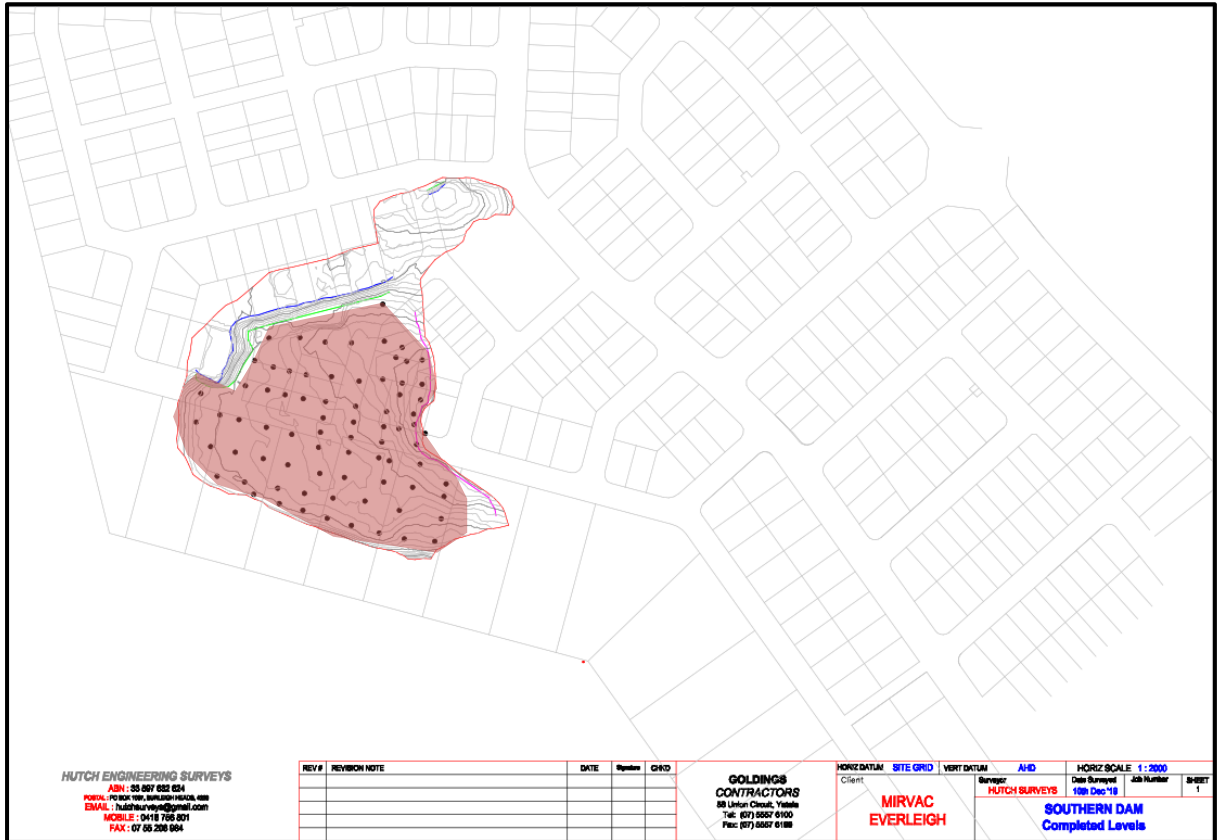


Figure 3: Extent of Earthworks Overlayed on Lot Layout Plan (Shaded Area).



1.2 Previous Earthworks

Previous earthworks filling was present at The Site.

The existing fill included: -

- Existing Uncontrolled Fill associated with former Dam Wall. Fill associated with the Dam Wall.
 - The majority fill in the former dam wall was observed to be removed to depths exposing natural ground and reused as controlled fill.
 - There may be a small portion of the existing uncontrolled fill at the northern extremity of the existing dam wall.
- Existing Controlled Fill
 - Constructed by Shadforths intermittently between August 2018 and November 2019.
 - Details on the previous earthworks are contained in “Level One Compliance Report, Partial Bulk Earthworks Filling Operations, Southern Dam Everleigh” dated 2nd December 2019. This report is attached as Appendix C.

1.3 The Project

The purpose for filling at The Site was to remediate and partially backfill the existing dam. It is understood that additional filling is required to achieve the design earthworks levels.

2.0 THE BRIEF

The Brief from the Client was limited to:

- Level One Inspection and Testing of the placement and compaction of fill materials in general accordance with AS3798 2007 – “Guidelines on Earthworks for Commercial and Residential Developments”.
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.1.

3.0 METHODOLOGY

Earthworks Inspection and Testing was carried out on the excavated ground surfaces and during the placement and compaction of fill materials.

Field and laboratory testing included a walk over assessments of the existing ground conditions, observation of filling and compaction activities and compaction testing.

3.1 Stripped Surface Assessment

The area covered by this report was stripped and cleared of visible loose materials, soil stockpiles, rock stockpiles, uncontrolled fill, vegetation and topsoil.

Materials exposed after stripping and formed the fill foundation can be broadly summarised as:

- Existing Fill – Gravelly Clayey Sand (SC) - Controlled Fill, fine to coarse grained sands, fine to coarse gravel, low to medium plasticity fines, occasional cobbles grey – brown and moist.
- Natural – Sandy Clay (CI - CH) – at least stiff, medium and medium to high plasticity fine to medium grained sand, pale orange brown and moist.

- Natural – Clayey Sand (SC), fine to coarse sand, low plasticity fines, grey and moist.
- Natural – Sandstone (XW-DW) – Extremely weathered to distinctly weathered, very low to medium strength, orange – yellow with red and grey streaks.

Following the stripped surface assessment of the fill areas, the foundation was approved for filling using the following process:

- Walk over assessments confirming that a competent natural foundation had been exposed.
- Proof roll testing using an articulated dump truck carrying out multiple passes confirming no movement of the exposed natural foundation.
- Heavy compaction and compaction testing of the surface of the existing controlled fill.

Picture 2: View of The Site During Stripping Operations



3.2 Filling Operations

Fill materials were sourced onsite and can be broadly summarised as: -

- Gravelly Clayey Sand (SC) Processed rock and general fill, fine to coarse gravel, fine to coarse sand, low plasticity fines with cobbles, grey brown and moist.
- Clayey Sand (SC), fine to coarse sand, medium plasticity fines, with fine to coarse gravel, with cobbles, yellow grey brown and moist.
- Gravelly Sandy Clay (CI), medium plasticity fines, fine to coarse sand, fine to coarse gravel, grey brown and moist.

Placement and compaction of the fill materials was carried out using the following plant:

- Excavator
- Mechanical Rock Crusher
- Excavator with Rock Hammer Attachments.
- Articulated Dump Trucks
- D7, D8 and D10 Dozer
- Pad Foot Roller
- Water Cart
- 825 Compactor
- 815 Compactor

The fill materials were moisture conditioned at the fill source and during placement to moisture contents suitable for compaction. Deleterious materials such as organics, sticks, roots and over size particles were sorted and removed during placement or were rejected for use.

Placement of the fill materials was carried out in layers appropriate for the above plant and compacted using the above plant carrying out multiple passes.

Our representative observed the filling process as described above and was assessed to be consistent for the entire thickness of fill.

Field density tests and laboratory compactions were carried out on the fill materials in accordance with Table 5.1 and 8.1 of AS3798 2007 (Guidelines on Earthworks for Commercial and Residential Developments) and tested to AS1289 test methods (Testing of Soils for Engineering Purposes).

Testing achieved the required specification of 95% of the Hilt Density at the test locations.

Fill placed and compacted at measured density ratios less than 95% were tyned, moisture conditioned and re-compacted until the required specification was achieved. Retesting was carried out using Random Stratified Location methods.

The Location of the field density tests are shown on the Site Plans contained in Appendix A. These test locations and levels were not obtained by survey and therefore should only be considered as approximate.

Picture 4: View of the Site During Construction



Picture 5: View of the Site During Construction



4.0 STATEMENT OF COMPLIANCE

Our representatives observed the relevant earthworks operations including the stripped surface, fill placement and compaction operations and carried out field density tests and laboratory compaction tests in accordance with the required standard (AS3798, AS1289). Testing achieved the required specification of 95% Standard at the test locations.

It is confirmed that Level One Inspection and Testing has been carried out on the partial backfilling operation and limited to the extent shown in in Figure 1 and Figure 2 . Based on the observations made by our Geotechnicians and the results of the field and laboratory tests, the placed and compacted fill at the above project has, as far as we have been able to assess, been constructed in general accordance with the intent of AS3798.

The fill can be deemed to be "controlled" in accordance with AS2870.

It is understood that additional filling will be required to complete the earthworks to the final earthworks levels.

5.0 EXCLUSIONS

This statement does not include any top soil, which may be placed for use as dressing, trench backfill , areas outside the areas shown in Figure 1 and Figure 2 or any other subsequent earthworks after December 2019.

Assessments of material quality such as soaked CBR and site classifications are excluded from this commission.

Our on-site attendance specifically excludes assessments of fill material quality and engineering properties that are outside the requirements of AS3798 – 2007.

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.

6.0 LIMITATIONS

This Report has been prepared by Morrison Geotechnic Pty Ltd (**Morrison Geotechnic**), and may include contributions from Morrison Geotechnic's officers and employees, sub-contractors, sub-consultants or agents (**Contributors**).

This Report is for the sole benefit and use of Golding (**Client**), its designers, clients and relevant statutory authorities for the sole purpose of providing geotechnical advice and recommendations in respect of the Partial Bulk Earthworks Filling Operations , Southern Dam Everleigh Precinct 1.5 (**Project**). The Report is only intended to address those issues expressly described in the Brief/ Work Instructions in this Report.

This Report should not be used or relied upon for any other purpose without Morrison Geotechnic's prior written consent. Morrison Geotechnic and the Contributors do not accept any responsibility or liability in any way whatsoever for the use or reliance of this Report by anyone other than Shadforth Civil Pty Ltd (**Client**), its designers, its clients and relevant statutory authorities or by anyone else for any purpose other than that for which it has been prepared.

Except with Morrison Geotechnic's prior written consent, this Report may not be:

- (a) released to any other party, whether in whole or in part (other than to the Client's officers, employees, advisers, designers, clients and relevant statutory authorities);
- (b) used or relied upon by any other party.

Morrison Geotechnic and the Contributors, do not accept any liability or responsibility whatsoever for, or in respect of, any use or reliance upon this Report by any other party. Morrison Geotechnic is not obliged to enter into discussions with any third party in respect of this Report.

The information (including technical information and information obtained through discussions) on which this report is based has been provided by the Client and third parties. Morrison Geotechnic and the Contributors:

- (a) have relied upon and presumed the accuracy of this information;
- (b) have not verified the accuracy or reliability of this information (other than as expressly stated in this Report);
- (c) have not made any independent investigations or enquiries in respect of those matters of which it has no actual knowledge at the time of giving this Report to the Client; and
- (d) make no warranty or guarantee, expressed or implied, as to the accuracy or reliability of this information.

Morrison Geotechnic and the Contributors do not accept responsibility or liability for any incorrect assumptions related to this Report. For the avoidance of doubt, this Report:

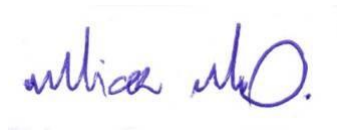
- (a) is not an environmental, contamination or hazardous materials assessment; may be invalid, incomplete or inaccurate (including errors in the scope of work, investigation methodology, observations, opinions and advice) where the information provided to Morrison Geotechnic was invalid, incomplete or inaccurate;
- (b) is limited to observations of those parts of the site described in Section 1.0.

No warranty or guarantee, whether express or implied, is made in respect of the geotechnical data, information, advice, opinions and recommendations present in this Report.

If further information becomes available, or additional assumptions need to be made, Morrison Geotechnic reserves its right to amend this Report.

If you have any queries regarding the above, please contact our Brisbane office.

Yours faithfully



MICHALE MORRISON

For and on behalf of

MORRISON GEOTECHNIC PTY LIMITED

ATTACHMENTS:

Appendix A – Site Plans Showing Test Locations

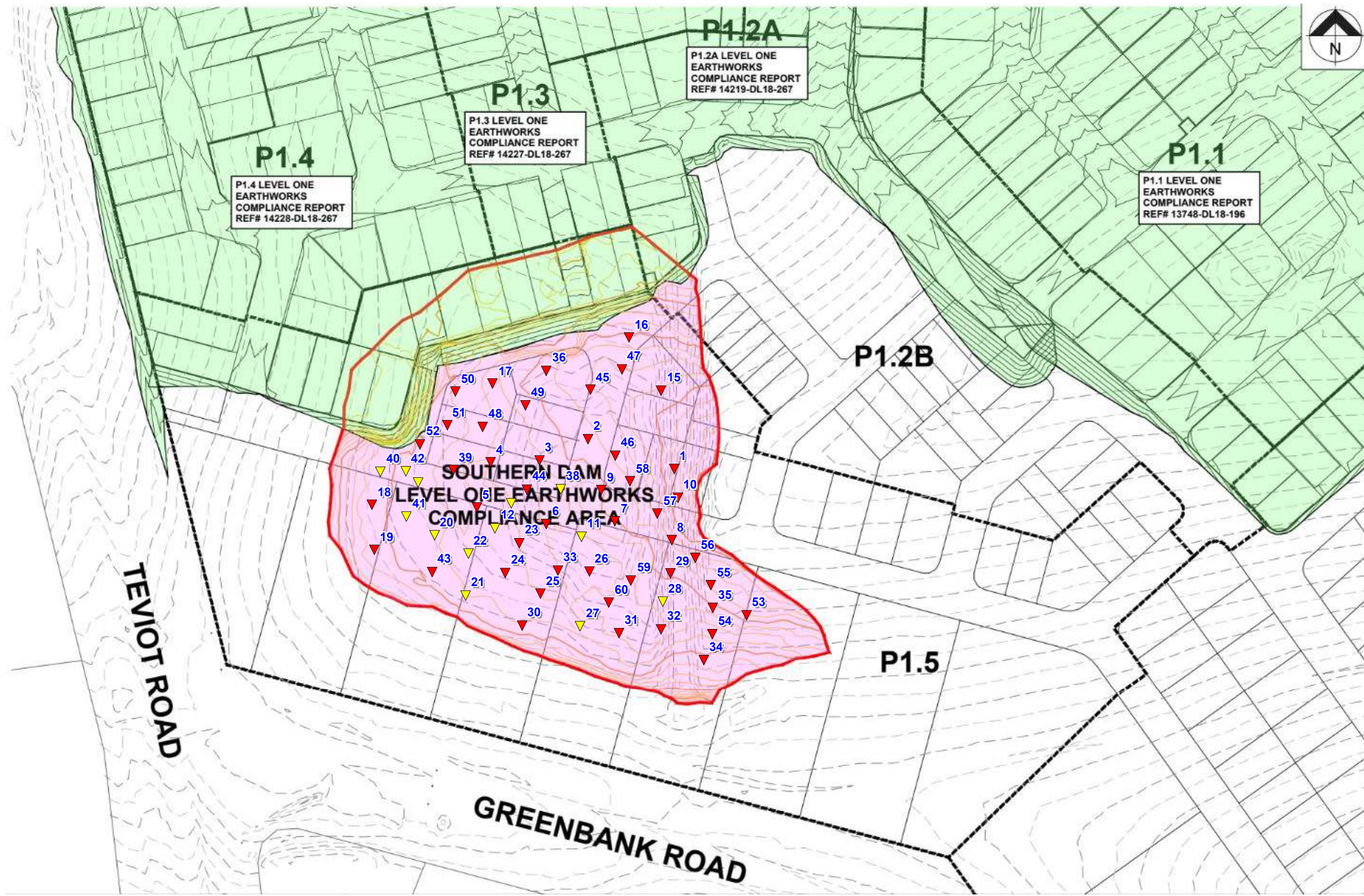
Appendix B – Laboratory Test Results Reports

Appendix C – Previous Level One Report.

APPENDIX A

SITE PLAN

TEST LOCATIONS



MORRISON GEOTECHNIC PTY LTD

ABN: 51 009 878 899

Unit 1/ 35 Limestone St, Darra 4076 Ph: 3279 0900
 Email: brisbanelab@morrisongeo.com.au

Engineers: M. Ballard
 D. Dragun,
 Geologists: R. Howchin
 Laboratory: M. Morrison

LEGEND

- ▼ R.L. 45.00 - 49.99
- ▼ R.L. 50.00 - 54.99

Map Description :	EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection		
Client :	LEND LEASE COMMUNITIES (SPRINGFIELD) PTY LTD		
Project :	LAKES ENTRANCE STAGE 11		
Project No :	DL19/447	Drawing No :	DL19/447 - 01
		Scale :	Not to Scale

APPENDIX B

Laboratory Test Results Reports

Material Test Report



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Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: swoodley@mgeo.com.au

Report Number: DL19/447-9
Issue Number: 1
Date Issued: 18/12/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6117
Date Sampled: 04/12/2019
Dates Tested: 04/12/2019 - 16/12/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Shadforth's Existing Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Woodley

Laboratory Manager

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	D19-6117A	D19-6117B	D19-6117C	D19-6117D	D19-6117E
Test Number	48	49	50	51	52
Date Tested	04/12/2019	04/12/2019	04/12/2019	04/12/2019	04/12/2019
Time Tested	13:03	13:08	13:12	13:17	13:22
Test Request #/Location	Stage 1.5 - Southern Dam (Worked shadforth's Fill Area)	Stage 1.5 - Southern Dam (Worked shadforth's Fill Area)	Stage 1.5 - Southern Dam (Worked shadforth's Fill Area)	Stage 1.5 - Southern Dam (Worked shadforth's Fill Area)	Stage 1.5 - Southern Dam (Worked shadforth's Fill Area)
Easting	8716.465	8720.500	8739.560	8700.050	8743.519
Northing	31318.009	31311.205	31307.713	31322.363	31340.495
Elevation (m)	48.864	48.906	48.847	49.444	49.640
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Crushed Sandstone	Crushed Sandstone	Crushed Sandstone
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	0.8	10.0	10.2	11.5
Field Wet Density (FWD) t/m ³	2.03	2.07	2.18	2.18	2.26
Field Moisture Content %	10.8	8.1	10.0	11.0	9.8
Field Dry Density (FDD) t/m ³	1.83	1.91	1.99	1.96	2.06
Peak Converted Wet Density t/m ³	2.13	**	**	**	**
Adjusted Peak Converted Wet Density t/m ³	**	2.18	2.18	2.21	2.22
Moisture Variation (Wv) %	0.5	**	**	**	**
Adjusted Moisture Variation %	**	2.0	2.0	0.5	0.5
Hilf Density Ratio (%)	95.5	95.0	100.0	98.5	102.0
Compaction Method	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



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Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: swoodley@mgeo.com.au

Report Number: DL19/447-10
Issue Number: 1
Date Issued: 18/12/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6075
Date Sampled: 03/12/2019
Dates Tested: 03/12/2019 - 17/12/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Woodley
 Laboratory Manager
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	D19-6075A	D19-6075B	D19-6075C	D19-6075D	D19-6075E	D19-6075F
Test Number	37	38	39	40	41	42
Date Tested	03/12/2019	03/12/2019	03/12/2019	03/12/2019	03/12/2019	03/12/2019
Time Tested	09:32	09:36	09:41	13:05	13:12	13:18
Test Request #/Location	Stage 1.5 Southern Dam	Stage 1.5 Southern Dam	Stage 1.5 Southern Dam	Stage 1.5 Southern Dam	Stage 1.5 Southern Dam	Stage 1.5 Southern Dam
Easting	31258.675	31267.507	31280.176	31280.737	31293.546	31295.997
Northing	8714.233	8717.934	8725.491	8669.240	8676.692	8688.065
Elevation (m)	50.609	50.213	49.950	50.446	50.441	50.112
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Crushed Sandstone	Crushed Sandstone	Crushed Sandstone
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	12.5	8.7	14.4
Field Wet Density (FWD) t/m ³	2.14	2.11	2.16	2.17	2.15	2.15
Field Moisture Content %	10.2	10.0	9.8	10.5	10.5	11.0
Field Dry Density (FDD) t/m ³	1.94	1.92	1.97	1.96	1.95	1.94
Peak Converted Wet Density t/m ³	2.18	2.20	2.19	**	**	**
Adjusted Peak Converted Wet Density t/m ³	**	**	**	2.23	2.21	2.26
Moisture Variation (Wv) %	1.0	0.5	0.5	**	**	**
Adjusted Moisture Variation %	**	**	**	0.5	1.0	0.5
Hilf Density Ratio (%)	98.0	95.5	98.5	97.5	97.5	95.0
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



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Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: darralab@morrisongeo.com.au

Report Number: DL19/447-8
Issue Number: 1
Date Issued: 10/12/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6098
Date Sampled: 04/12/2019
Dates Tested: 04/12/2019 - 06/12/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - East of Temporary Buns (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell
 Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	D19-6098A	D19-6098B	D19-6098C	D19-6098D	D19-6098E
Test Number	43	44	45	46	47
Date Tested	04/12/2019	04/12/2019	04/12/2019	04/12/2019	04/12/2019
Time Tested	07:10	07:15	07:21	07:25	07:30
Test Request #/Location	Stage 1.5	Stage 1.5	Stage 1.5	Stage 1.5	Stage 1.5
Easting	31248.92	31244.67	31243.15	31236.23	31234.87
Northing	8775.02	8789.30	8774.61	8788.07	8799.36
Elevation (m)	48.86	48.87	49.13	49.45	49.43
Soil Description	Silty Sandy Clay trace Gravel	Silty Sandy Clay trace Gravel	Silty Sandy Clay trace Gravel	Silty Sandy Clay trace Gravel	Silty Sandy Clay trace Gravel
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	12.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m ³	2.14	2.10	2.14	2.13	2.09
Field Moisture Content %	13.2	11.8	10.6	10.8	11.3
Field Dry Density (FDD) t/m ³	1.89	1.88	1.94	1.92	1.88
Peak Converted Wet Density t/m ³	2.15	**	2.19	2.15	2.17
Adjusted Peak Converted Wet Density t/m ³	**	2.20	**	**	**
Moisture Variation (Wv) %	0.5	**	0.0	0.0	0.5
Adjusted Moisture Variation %	**	0.0	**	**	**
Hilf Density Ratio (%)	99.5	95.0	97.5	99.0	96.0
Compaction Method	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
 Brisbane Laboratory
 Unit 1, 35 Limestone Darra QLD 4076
 Phone: (07) 3279 0900
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Report Number: DL19/447-2
Issue Number: 1
Date Issued: 28/11/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 5964
Date Sampled: 26/11/2019
Dates Tested: 26/11/2019 - 27/11/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Liam Davidson
 Senior Technician
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D19-5964A	D19-5964B	D19-5964C	D19-5964D
Test Number	8	9	10	11
Date Tested	26/11/2019	26/11/2019	26/11/2019	26/11/2019
Time Tested	11:02	11:08	11:13	13:03
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam
Easting	8751.57	8749.85	8760.62	8741.33
Northing	31274.69	31258.09	31267.16	31226.02
Elevation (m)	49.60	49.52	49.43	50.6
Soil Description	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	16.3	0.0	3.6	0.0
Field Wet Density (FWD) t/m ³	2.10	2.06	2.08	2.11
Field Moisture Content %	9.5	7.7	9.8	10.4
Field Dry Density (FDD) t/m ³	1.92	1.91	1.89	1.92
Peak Converted Wet Density t/m ³	**	2.14	**	2.16
Adjusted Peak Converted Wet Density t/m ³	2.19	**	2.18	**
Moisture Variation (Wv) %	**	2.0	**	1.0
Adjusted Moisture Variation %	0.5	**	0.0	**
Hilf Density Ratio (%)	96.0	96.0	95.0	98.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
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Report Number: DL19/447-2
Issue Number: 1
Date Issued: 28/11/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 5964
Date Sampled: 26/11/2019
Dates Tested: 26/11/2019 - 27/11/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Liam Davidson
 Senior Technician
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D19-5964E	D19-5964F	D19-5964G
Test Number	12	13	14
Date Tested	26/11/2019	26/11/2019	26/11/2019
Time Tested	13:09	13:14	13:19
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam
Easting	8740.15	8729.05	8725.97
Northing	31236.03	31235.36	31244.47
Elevation (m)	50.10	50.20	50.17
Soil Description	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0
Field Wet Density (FWD) t/m ³	2.15	2.11	2.11
Field Moisture Content %	10.4	9.1	9.8
Field Dry Density (FDD) t/m ³	1.95	1.94	1.92
Peak Converted Wet Density t/m ³	2.14	2.10	2.16
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Moisture Variation (Wv) %	1.5	1.0	1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	100.5	100.5	97.5
Compaction Method	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report

Report Number: DL19/447-1
Issue Number: 1
Date Issued: 28/11/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 5948
Date Sampled: 25/11/2019
Dates Tested: 25/11/2019 - 27/11/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Liam Davidson
 Senior Technician
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D19-5948A	D19-5948B	D19-5948C	D19-5948D
Test Number	1	2	3	4
Date Tested	25/11/2019	25/11/2019	25/11/2019	25/11/2019
Time Tested	12:25	12:31	15:20	15:26
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam
Easting	8736.98	8723.84	8744.20	8731.80
Northing	31234.89	31240.17	31248.91	31254.35
Elevation (m)	49.22	49.18	49.25	49.22
Soil Description	Gravelly Sand	Gravelly Sand	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	17.0	10.5	0.0	0.0
Field Wet Density (FWD) t/m ³	2.07	2.11	2.09	2.08
Field Moisture Content %	9.4	8.4	11.3	11.4
Field Dry Density (FDD) t/m ³	1.89	1.95	1.88	1.87
Peak Converted Wet Density t/m ³	**	**	2.14	2.14
Adjusted Peak Converted Wet Density t/m ³	2.18	2.14	**	**
Moisture Variation (Wv) %	**	**	0.0	0.0
Adjusted Moisture Variation %	0.5	2.5	**	**
Hilf Density Ratio (%)	95.0	98.5	98.0	97.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
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Report Number: DL19/447-1
Issue Number: 1
Date Issued: 28/11/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 5948
Date Sampled: 25/11/2019
Dates Tested: 25/11/2019 - 27/11/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Liam Davidson
 Senior Technician
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D19-5948E	D19-5948F	D19-5948G
Test Number	5	6	7
Date Tested	25/11/2019	25/11/2019	25/11/2019
Time Tested	**	**	**
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam
Easting	8761.74	8752.43	8743.85
Northing	31260.37	31257.36	31268.50
Elevation (m)	48.92	49.10	49.16
Soil Description	Silty Clay	Silty Clay	Silty Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.1	0.0	0.0
Field Wet Density (FWD) t/m ³	2.04	2.10	2.02
Field Moisture Content %	7.7	10.2	7.0
Field Dry Density (FDD) t/m ³	1.89	1.90	1.89
Peak Converted Wet Density t/m ³	**	2.17	2.08
Adjusted Peak Converted Wet Density t/m ³	2.12	**	**
Moisture Variation (Wv) %	**	-0.5	3.0
Adjusted Moisture Variation %	1.5	**	**
Hilf Density Ratio (%)	96.0	97.0	97.0
Compaction Method	Standard	Standard	Standard

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

Material Test Report



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Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

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Report Number: DL19/447-3
Issue Number: 1
Date Issued: 30/11/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6013
Date Sampled: 28/11/2019
Dates Tested: 28/11/2019 - 29/11/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell
 Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D19-6013A	D19-6013B	D19-6013C
Test Number	15	16	17
Date Tested	28/11/2019	28/11/2019	28/11/2019
Time Tested	11:02	11:07	11:12
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam
Easting	31254.870	31264.508	31252.652
Northing	8708.191	8696.720	8683.702
Elevation (m)	48.520	48.304	48.502
Soil Description	Silty Sandy Clay Trace Gravel	Silty Sandy Clay Trace Gravel	Silty Sandy Clay Trace Gravel
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	37.5	19.0
Percentage of Wet Oversize (%)	**	5.2	**
Field Wet Density (FWD) t/m ³	2.15	2.14	2.11
Field Moisture Content %	10.0	9.6	10.4
Field Dry Density (FDD) t/m ³	1.96	1.96	1.91
Peak Converted Wet Density t/m ³	2.15	**	2.18
Adjusted Peak Converted Wet Density t/m ³	**	2.18	**
Moisture Variation (Wv) %	0.5	**	0.5
Adjusted Moisture Variation %	**	1.0	**
Hilf Density Ratio (%)	100.0	98.5	97.0
Compaction Method	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: swoodley@mgeo.com.au

Report Number: DL19/447-4
Issue Number: 1
Date Issued: 04/12/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6029
Date Sampled: 29/11/2019
Dates Tested: 29/11/2019 - 04/12/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Woodley
 Laboratory Manager
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	D19-6029A	D19-6029B	D19-6029C	D19-6029D	D19-6029E
Test Number	18	19	20	21	22
Date Tested	29/11/2019	29/11/2019	29/11/2019	29/11/2019	29/11/2019
Time Tested	07:10	07:16	13:00	13:05	13:11
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam
Easting	31246.58	31257.36	31249.24	31254.10	31261.01
Northing	8700.30	8703.23	8660.87	8673.86	8687.25
Elevation (m)	49.20	49.09	50.24	50.03	50.00
Soil Description	Crushed Sandstone	Crushed Sandstone	Silty Sandy Clay	Silty Sandy Clay	Silty 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 (%)	18.8	19.6	0.0	0.0	3.6
Field Wet Density (FWD) t/m ³	2.14	2.18	2.14	2.11	2.14
Field Moisture Content %	9.9	10.1	11.1	11.3	10.2
Field Dry Density (FDD) t/m ³	1.95	1.98	1.93	1.90	1.94
Peak Converted Wet Density t/m ³	**	**	2.21	2.16	**
Adjusted Peak Converted Wet Density t/m ³	2.22	2.23	**	**	2.16
Moisture Variation (Wv) %	**	**	0.5	0.0	**
Adjusted Moisture Variation %	1.0	0.5	**	**	1.0
Hilf Density Ratio (%)	96.5	97.5	96.5	98.0	98.5
Compaction Method	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

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Brisbane Laboratory

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Report Number: DL19/447-4
Issue Number: 1
Date Issued: 04/12/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6029
Date Sampled: 29/11/2019
Dates Tested: 29/11/2019 - 04/12/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Woodley

Laboratory Manager

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	D19-6029F	D19-6029G	D19-6029H	D19-6029I	
Test Number	23	24	25	26	
Date Tested	29/11/2019	29/11/2019	29/11/2019	29/11/2019	
Time Tested	13:16	13:20	13:26	13:32	
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	
Easting	31247.69	31238.52	31235.43	31266.48	
Northing	8680.18	8691.32	8705.35	8686.71	
Elevation (m)	49.88	49.87	49.83	49.76	
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	
Test Depth (mm)	150	150	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	0.0	0.0	0.0	0.0	
Field Wet Density (FWD) t/m ³	2.12	2.08	2.10	2.09	
Field Moisture Content %	11.9	9.4	9.7	11.1	
Field Dry Density (FDD) t/m ³	1.89	1.90	1.92	1.88	
Peak Converted Wet Density t/m ³	2.17	2.19	2.18	2.08	
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	
Moisture Variation (Wv) %	0.0	1.0	1.0	1.0	
Adjusted Moisture Variation %	**	**	**	**	
Hilf Density Ratio (%)	97.5	95.0	96.5	100.0	
Compaction Method	Standard	Standard	Standard	Standard	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



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Morrison Geotechnic Pty Ltd

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Brisbane Laboratory

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Report Number: DL19/447-5
Issue Number: 1
Date Issued: 04/12/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6047
Date Sampled: 30/11/2019
Dates Tested: 30/11/2019 - 04/12/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Liam Davidson
 Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D19-6047A	D19-6047B	
Test Number	27	28	
Date Tested	30/11/2019	30/11/2019	
Time Tested	07:00	07:08	
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	
Easting	31257.07	31268.05	
Northing	8711.39	8768.47	
Elevation (m)	50.21	50.18	
Soil Description	Crushed Sandstone	Crushed Sandstone	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	2.0	10.0	
Field Wet Density (FWD) t/m ³	2.08	2.09	
Field Moisture Content %	8.7	8.8	
Field Dry Density (FDD) t/m ³	1.92	1.92	
Peak Converted Wet Density t/m ³	**	**	
Adjusted Peak Converted Wet Density t/m ³	2.14	2.16	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	2.0	2.0	
Hilf Density Ratio (%)	97.5	97.0	
Compaction Method	Standard	Standard	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Brisbane | Gold Coast | Maroochydore
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 Brisbane Laboratory
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Report Number: DL19/447-7
Issue Number: 1
Date Issued: 09/12/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6094
Date Sampled: 03/12/2019
Dates Tested: 03/12/2019 - 06/12/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Existing Shadforth's Fill
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Woodley
 Laboratory Manager
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D19-6094A		
Test Number	36		
Date Tested	03/12/2019		
Time Tested	16:02		
Test Request #/Location	Stage 1.5 - Northern Southern Dam		
Easting	31310.375		
Northing	8734.474		
Elevation (m)	47.402		
Soil Description	Crushed Sandstone		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	7.1		
Field Wet Density (FWD) t/m ³	2.15		
Field Moisture Content %	10.0		
Field Dry Density (FDD) t/m ³	1.95		
Peak Converted Wet Density t/m ³	**		
Adjusted Peak Converted Wet Density t/m ³	2.19		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	1.0		
Hilf Density Ratio (%)	98.0		
Compaction Method	Standard		

Moisture Variation Note:

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

Material Test Report



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Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

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Report Number: DL19/447-6
Issue Number: 1
Date Issued: 06/12/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6048
Date Sampled: 02/12/2019
Dates Tested: 02/12/2019 - 04/12/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Woodley

Laboratory Manager

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D19-6048A	D19-6048B	D19-6048C	D19-6048D
Test Number	29	30	31	32
Date Tested	02/12/2019	02/12/2019	02/12/2019	02/12/2019
Time Tested	11:35	11:41	11:47	11:53
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam
Easting	31279.99	31271.58	31289.16	31284.23
Northing	8676.68	8689.76	8683.76	8701.48
Elevation (m)	49.43	48.92	49.02	48.90
Soil Description	Crushed Sandstone	Crushed Sandstone	Crushed Sandstone	Crushed Sandstone
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 (%)	19.6	19.5	5.3	19.5
Field Wet Density (FWD) t/m ³	2.14	2.14	2.16	2.13
Field Moisture Content %	10.1	8.9	13.4	9.3
Field Dry Density (FDD) t/m ³	1.95	1.97	1.90	1.95
Peak Converted Wet Density t/m ³	**	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.22	2.20	2.16	2.20
Moisture Variation (Wv) %	**	**	**	**
Adjusted Moisture Variation %	1.0	2.0	-0.5	1.5
Hilf Density Ratio (%)	96.5	97.5	100.0	96.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
 ABN: 51 009 878 899
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 Phone: (07) 3279 0900
 Email: swoodley@mgeo.com.au

Report Number: DL19/447-6
Issue Number: 1
Date Issued: 06/12/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6048
Date Sampled: 02/12/2019
Dates Tested: 02/12/2019 - 04/12/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam (General Fill)
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Sam Woodley
 Laboratory Manager
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D19-6048E	D19-6048F	D19-6048G
Test Number	33	34	35
Date Tested	02/12/2019	02/12/2019	02/12/2019
Time Tested	11:58	12:03	12:07
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam
Easting	31271.53	31298.07	31299.00
Northing	8714.95	8689.07	8703.33
Elevation (m)	48.82	49.49	48.80
Soil Description	Crushed Sandstone	Crushed Sandstone	Crushed Sandstone
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	15.2	12.8	19.2
Field Wet Density (FWD) t/m ³	2.16	2.16	2.16
Field Moisture Content %	11.6	12.2	10.9
Field Dry Density (FDD) t/m ³	1.93	1.92	1.94
Peak Converted Wet Density t/m ³	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.22	2.22	2.22
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	0.0	0.0	0.0
Hilf Density Ratio (%)	97.5	97.0	97.0
Compaction Method	Standard	Standard	Standard

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
 Morrison Geotechnic Pty Ltd
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Report Number: DL19/447-11
Issue Number: 1
Date Issued: 19/12/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6171
Date Sampled: 06/12/2019
Dates Tested: 06/12/2019 - 18/12/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell
 Senior Technician
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D19-6171A	D19-6171B	D19-6171C	D19-6171D
Test Number	53	54	55	56
Date Tested	06/12/2019	06/12/2019	06/12/2019	06/12/2019
Time Tested	09:15	09:21	09:26	14:31
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam
Easting	8744.027	8741.951	8757.590	8757.087
Northing	31301.010	31321.424	31324.799	31297.208
Elevation (m)	49.509	49.191	49.356	49.186
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	4.8	0.0	0.0	4.8
Field Wet Density (FWD) t/m ³	2.24	2.03	2.05	2.15
Field Moisture Content %	9.9	8.5	14.1	9.6
Field Dry Density (FDD) t/m ³	2.04	1.87	1.79	1.96
Peak Converted Wet Density t/m ³	**	2.13	2.08	**
Adjusted Peak Converted Wet Density t/m ³	2.18	**	**	2.19
Moisture Variation (Wv) %	**	2.0	-0.5	**
Adjusted Moisture Variation %	0.0	**	**	-0.5
Hilf Density Ratio (%)	102.5	95.5	98.5	98.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Material Test Report



Brisbane | Gold Coast | Maroochydore
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Report Number: DL19/447-11
Issue Number: 1
Date Issued: 19/12/2019
Client: GOLDING CONTRACTORS PTY LTD
 P O BOX 1643, MILTON QLD 4064
Project Number: DL19/447
Project Name: EARTHWORKS SUPERVISION
Project Location: EVERLEIGH PRECINCT 1.5
Work Request: 6171
Date Sampled: 06/12/2019
Dates Tested: 06/12/2019 - 18/12/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: Selected by GTA
Material: Stage 1.5 - Southern Dam
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell
 Senior Technician
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D19-6171E	D19-6171F	D19-6171G	D19-6171H
Test Number	57	58	59	60
Date Tested	06/12/2019	06/12/2019	06/12/2019	06/12/2019
Time Tested	14:36	14:42	14:50	14:55
Test Request #/Location	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam	Stage 1.5 - Southern Dam
Easting	8784.419	8770.419	8768.281	8766.853
Northing	31311.009	31307.305	31267.255	31279.943
Elevation (m)	49.611	48.989	49.383	49.250
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m ³	2.03	2.15	2.11	2.14
Field Moisture Content %	7.2	8.3	7.0	7.4
Field Dry Density (FDD) t/m ³	1.90	1.98	1.97	1.99
Peak Converted Wet Density t/m ³	2.13	2.19	2.15	2.19
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	2.0	2.5	2.0	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	95.5	98.0	98.0	97.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

APPENDIX C

Previous Level

One Report