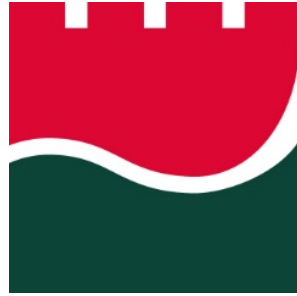


# MORRISON GEOTECHNIC PTY LTD



*SOLID THINKING // GROUNDED RESULTS*

## LEVEL ONE COMPLIANCE REPORT

*Prepared for:*

**Shadforths Civil Pty Ltd**

*DL20/126 – Bulk Earthworks filling Operations*

*Eden's Crossing Estate – Stage 24  
Mt Juillerat Drive, Redbank Plains*

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

*2<sup>nd</sup> July 2020*

*Brisbane Office*  
Job No: DL20/126  
Ref No: 16533  
Author: R. Mitchell

2<sup>nd</sup> July 2020

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen Qld 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LEVEL ONE COMPLIANCE REPORT FOR  
BULK EARTHWORKS FILLING OPERATIONS  
EDEN'S CROSSING ESTATE, STAGE 24  
MT JULLERAT DRIVE, REDBANK PLAINS**

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## 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 form Residential Lots and embankments below subgrade at Eden's Crossing Stage 24, Mount Juillerat Drive, Redbank Plains (The Site).

The work was commissioned by Mr. Michael Pritchard representing Shadforth Civil Pty Ltd (The Client), using Purchase Order 431010.

Earthworks operations were constructed by Shadforths Civil intermittently between 3<sup>rd</sup> April 2020 and 16<sup>th</sup> April 2020.

**Picture 1: Aerial View of the Site** (Image Source: Nearmap.com 16<sup>th</sup> April 2020)



### 1.2 Previous Earthworks

As far as could be determined onsite, no previous earthworks have been carried out at The Site.

### 1.3 The Project

The purpose for filling at The Site is to construct a Residential Subdivision which includes new pavements, residential building platforms and associated underground services.

KN Group Pty Ltd, Bulk Earthworks Layout Plan, Drawing No. 18-154-BE02, Sheet No. 02 of 06 Revision A, August 2019, indicates the extents and thickness of fill to be constructed at The Site.

The plan is considered a reasonable representation of the fill covered by this report with the following exceptions:-

- All lots were excavated to approximately 1.2m below final earthworks level
- Excavated materials were replaced using low-reactive capping material

The actual thickness of fill constructed on an individual Lot can be obtained from the Developer as a Lot Disclosure Plan.

The Site is located within the Eden's Crossing Development and is bounded by future residential stages to the South, East and West, and existing residential developments to the North.

The area of works completed by CCA Winslow between May 2017 and March 2018 is presented below.

## **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 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.
- Ipswich City Council Project Specifications
- Notes on KN Group Pty Ltd Earthworks Drawings.

Low reactive fill materials the was used as 1.2m thick capping over potentially reactive soils was to generally conform to the following criteria: -

- Shrink Swell Index (Iss) – 1% Max.
- California Bearing Ratio –  $\geq 15\%$
- Particle Size Distribution:
  - Max Particle Size – 26.5mm
  - % Passing 0.075mm -  $\geq 15\%$
- Plasticity:
  - Liquid Limit –  $\leq 35\%$
  - Plasticity Index –  $> 6\% < 12\%$
- Permeability -  $5 \times 10^{-7}$  m/s Max.

## **3.0 METHODOLOGY**

Earthworks Inspection and Testing was carried out on the stripped and exposed 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.

All work was carried out in accordance with AS 3798 (Guidelines on Earthworks for Commercial and Residential Developments) and AS1289 (Testing of Soils for Engineering Purposes).

Samples of the fill materials were collected and tested for conformance with the criteria presented in Section 2.

### **3.1 Stripped Surface Assessment**

The fill areas at The Site were observed to be stripped and cleared of visible organic matter, deleterious, loose and unsuitable materials to depths exposing suitable natural ground.

Materials exposed after stripping and clearing the site which formed the natural foundation can be broadly summarised as:

- Natural - Silty Clay (CI - CH) – At least very stiff, medium to high and high plasticity, dark brown, traces of fine to medium grained sands, moist.
- Natural – Basalt Rock (XW) – Extremely weathered, very low strength or better, red – brown – grey.
- Natural Siltstone – (XW) – Extremely weathered, very low strength, orange grey

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

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

### **3.2 Filling Operations**

Fill materials were sourced from onsite cuts, road box excavations and trench excavations. Materials used as fill can be broadly summarized as: -

- Lower Fill Materials – Below 1.2m from the finished earthworks levels
  - Silty Clay, (CI), medium to high plasticity, dark brown, traces of fine to medium sand and moist.
  - Sandy Clay (CI), medium plasticity fines, red – brown, fine to coarse sand, traces of fine to medium gravel and moist.
- Capping Materials – Upper 1.2m of the fill profile imported from Select Sources Onsite and WMI.
  - Clayey Sand (SC), fine to coarse sand, yellow – orange – brown, medium plasticity fines, traces of fine to medium gravel, and moist.
  - Ripped Sandstone – Gravelly Clayey Sand (SC), fine to coarse sands, low plasticity, fine to coarse gravels, grey orange brown.
  - Ripped Basalt – Gravelly Sandy Clay (CI), medium plasticity fines, fine to coarse sands, fine to coarse gravels – brown, dark brown.

Samples of the capping materials were collected and testing generally conformed with the criteria presented in Section 2 and are summarised below in Table 1. Test reports are attached.

**Table 1 – Summary of Capping Materials Test Results.**

Lab #	Particle Size Passing %		Plasticity Index			Shrink/Swell Index (ISS)	California Bearing Ratio
	26.5mm	0.075mm	LL	PI	LS		
D20-6667A	100	16	32	17	6.5	0.4	35
D20-6667B	100	20	25	7	0.5	0.2	18
D20-7175A	99	19	32	16	6.0	0.1	35
D20-7187A	100	24	29	12	5.5	0.7	19
D20-7211A	92	19	29	13	5.0	0.4	18
D20-7186A	100	21	32	16	6.5	0.1	11
D20-7236A	100	19	31	14	6.5	0.2	14
D20-7236B	100	21	30	14	5.5	0.7	10
D20-7236C	100	22	30	14	5.0	0.2	17
D20-7236D	100	21	32	16	5.5	0.3	8
D20-7236E	100	21	32	16	5.5	0.1	11

The tested materials generally conform with the specification with outliers in Plasticity Index (PI) testing and % passing 26.5mm sieve being above specification. However, this is not considered to affect the performance of the fill as the Shrink Swell Index testing meets the Specification.

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

- Dozer
- Excavators
- Pad foot Roller
- Scrapers
- Water Truck
- Body Trucks
- 815 Compactor
- Grader
- Side Tippers
- 825 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

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) and Specification. 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 earthworks fill to form the residential Lots and embankments below subgrade. 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 and the Specifications.

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 or any other subsequent earthworks after 16<sup>th</sup> April 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 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 Eden’s Crossing Estate, Stage 24, Mount Juillerat Drive, Redbank Plains (**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 (**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



**RHYS MITCHELL**

For and on behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

**ATTACHMENTS:**

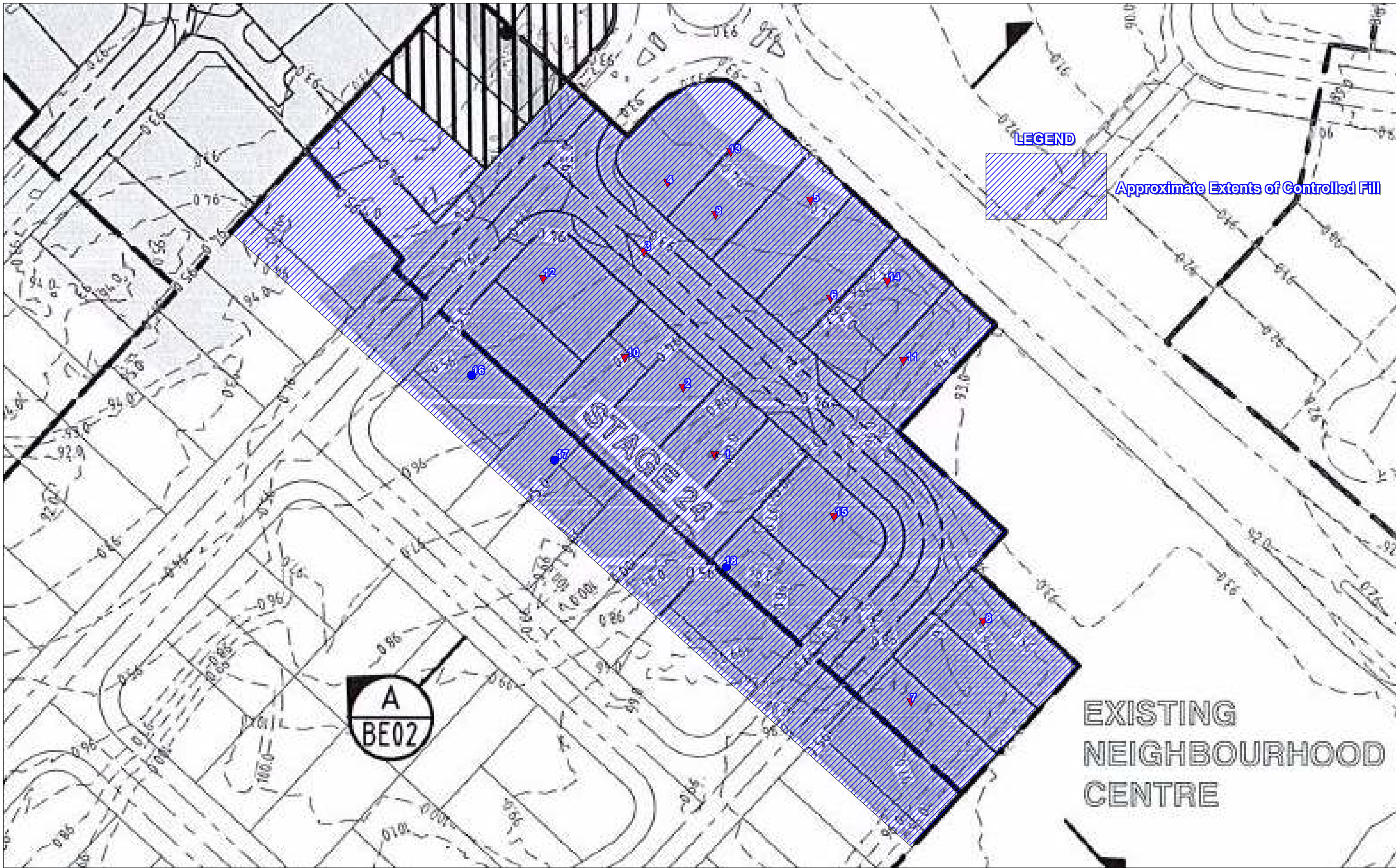
Appendix A – Site Plan Showing Test Locations

Appendix B – Laboratory Test Reports

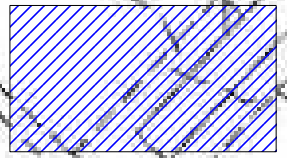
# APPENDIX A

SITE PLAN

TEST LOCATIONS



**LEGEND**



Approximate Extents of Controlled Fill



EXISTING  
NEIGHBOURHOOD  
CENTRE

**LEGEND**

- ▼ RL 92.00 - 98.00
- Final Level



**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 & N.O'Haire

Map Description :	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>		
Client :	SHADFORTHS CIVIL		
Project :	<b>EDENS CROSSING STAGE 24</b>		
Project No :	DL20/126	Drawing No :	DL20/126-01
		Scale :	Not to Scale

# APPENDIX B

Laboratory Test Results Reports

# Material Test Report



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

**Report Number:** DL20/126-1  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** "For Use As" Amended  
**Date Issued:** 16/04/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/126  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 24  
**Work Request:** 7631  
**Date Sampled:** 06/04/2020  
**Dates Tested:** 06/04/2020 - 09/04/2020  
**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 ( Capping Material )  
**Material Source:** Onsite Cut - Other Shadforth's Site



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	D20-7631A	D20-7631B	D20-7631C	D20-7631D	D20-7631E	D20-7631F
Test Number	1	2	3	4	5	6
Date Tested	06/04/2020	06/04/2020	06/04/2020	06/04/2020	06/04/2020	06/04/2020
Time Tested	10:35	10:45	10:50	10:55	11:05	11:10
Test Request #/Location	Stage 24	Stage 24	Stage 24	Stage 24	Stage 24	Stage 24
Easting	484355.1	484344.9	484334.5	484338.0	484364.1	484368.7
Northing	6939558.7	6939594.4	6939605.4	6939621	6939620.1	6939599.
Elevation (m)	95.2	95.2	95.6	95.8	95.6	95.6
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.00	2.09	2.13	2.01	2.08	2.01
Field Moisture Content %	10.9	8.7	9.8	7.9	10.2	7.4
Field Dry Density (FDD) t/m <sup>3</sup>	1.80	1.93	1.94	1.86	1.88	1.87
Peak Converted Wet Density t/m <sup>3</sup>	2.04	2.09	2.11	2.01	2.13	2.06
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**	**
Moisture Variation (Wv) %	3.0	0.5	1.5	2.5	0.5	2.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	<b>98.0</b>	<b>100.5</b>	<b>101.0</b>	<b>100.0</b>	<b>97.5</b>	<b>97.5</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>

**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:** DL20/126-2  
**Issue Number:** 1  
**Date Issued:** 17/04/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/126  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 24  
**Work Request:** 7655  
**Date Sampled:** 07/04/2020  
**Dates Tested:** 07/04/2020 - 17/04/2020  
**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:** Allotment Fill  
**Material Source:** White Rock



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	D20-7655A	D20-7655B	D20-7655C	D20-7655D	D20-7655E
Test Number	7	8	9	10	11
Date Tested	07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Time Tested	10:35	10:40	10:45	10:50	10:55
Test Request #/Location	Stage 24	Stage 24	Stage 24	Stage 24	Stage 24
Easting	484375.8	484377.6	484347.1	484348.9	484382.6
Northing	6939519.2	6939543.7	6939615.5	6939615.5	6939586.9
Elevation (m)	97.4	97.1	95.8	96.4	97.7
Soil Description	Gravelly Sandy Clay. Pale Brown	Gravelly Sandy Clay. Pale Brown	Gravelly Sandy Clay. Pale Brown	Gravelly Sandy Clay. Pale Brown	Gravelly Sandy Clay. Pale Brown
Test Depth (mm)	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.01	2.03	1.98	2.04	2.00
Field Moisture Content %	8.6	7.5	6.3	8.5	7.4
Field Dry Density (FDD) t/m <sup>3</sup>	1.85	1.89	1.87	1.88	1.86
Peak Converted Wet Density t/m <sup>3</sup>	2.03	2.01	2.03	2.02	1.99
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**
Moisture Variation (Wv) %	4.0	4.0	4.5	4.0	2.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	<b>99.0</b>	<b>101.0</b>	<b>98.0</b>	<b>101.0</b>	<b>100.5</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>

**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: nathaniel@mgeo.com.au

**Report Number:** DL20/126-3  
**Issue Number:** 1  
**Date Issued:** 20/04/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/126  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 24  
**Work Request:** 7666  
**Date Sampled:** 08/04/2020  
**Dates Tested:** 08/04/2020 - 18/04/2020  
**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:** Allotment Fill  
**Material Source:** White Rock



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D20-7666A	D20-7666B	D20-7666C	D20-7666D
Test Number	12	13	14	15
Date Tested	08/04/2020	08/04/2020	08/04/2020	08/04/2020
Time Tested	07:20	07:30	07:40	07:50
Test Request #/Location	Stage 24	Stage 24	Stage 24	Stage 24
Easting	484309.6	484349.0	484378.8	484371.9
Northing	6939603.1	6939629.2	6939603.9	6939551.4
Elevation (m)	96.8	92.9	92.7	93.5
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 (%)	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.00	2.06	2.02	2.03
Field Moisture Content %	5.7	7.7	8.8	8.3
Field Dry Density (FDD) t/m <sup>3</sup>	1.89	1.91	1.86	1.88
Peak Converted Wet Density t/m <sup>3</sup>	2.02	2.08	2.08	2.08
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Moisture Variation (Wv) %	5.5	2.5	3.0	3.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	<b>98.5</b>	<b>99.0</b>	<b>97.0</b>	<b>97.5</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>

**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: nathaniel@mgeo.com.au

**Report Number:** DL20/126-4  
**Issue Number:** 1  
**Date Issued:** 28/04/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/126  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 24  
**Work Request:** 7756  
**Date Sampled:** 16/04/2020  
**Dates Tested:** 16/04/2020 - 23/04/2020  
**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:** Allotment Fill  
**Material Source:** White Rock



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Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D20-7756A	D20-7756B	D20-7756C
Test Number	16	17	18
Date Tested	16/04/2020	16/04/2020	16/04/2020
Time Tested	07:15	07:25	07:35
Test Request #/Location	Stage 24	Stage 24	Stage 24
Easting	484303.2	484322.0	484353.0
Northing	6939580.1	6939564.6	6939538.4
Layer / Reduced Level	Finish Level	Finish Level	Finish Level
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.04	1.97	2.07
Field Moisture Content %	6.7	11.8	6.1
Field Dry Density (FDD) t/m <sup>3</sup>	1.91	1.77	1.95
Peak Converted Wet Density t/m <sup>3</sup>	1.99	2.06	2.00
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Moisture Variation (Wv) %	5.0	4.0	5.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	<b>102.5</b>	<b>96.0</b>	<b>103.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>

**Moisture Variation Note:**

Positive values = test is dry of OMC

Negative values = test is wet of OMC



# Material Test Report

**Report Number:** DL20/027-6A  
**Issue Number:** 1  
**Date Issued:** 13/02/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 6667  
**Sample Number:** D20-6667A  
**Date Sampled:** 28/01/2020  
**Dates Tested:** 28/01/2020 - 01/02/2020  
**Sample Location:** E: 484309, N: 6938481  
**Material:** Capping Material  
**Material Source:** White Rock Quarry / Sandstone



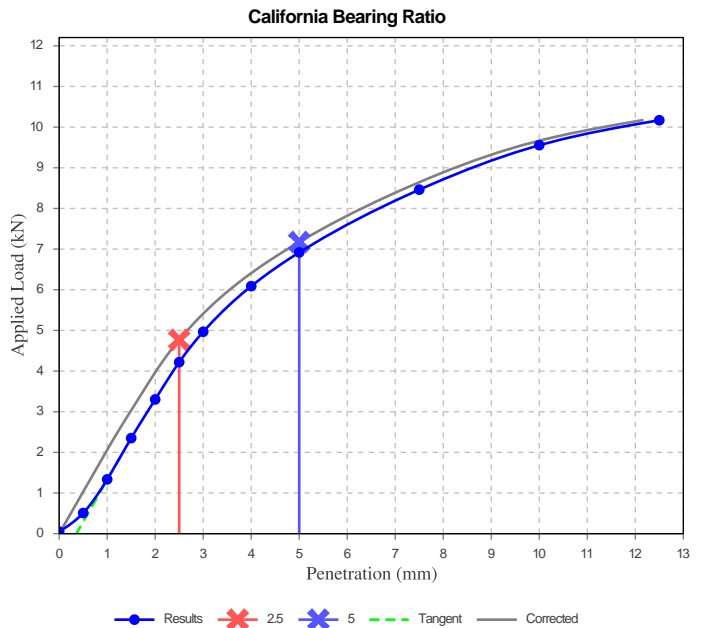
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Approved Signatory: Rhys Mitchell  
 Senior Technician

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	35		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density (t/m <sup>3</sup> )	1.84		
Optimum Moisture Content (%)	13.0		
Laboratory Density Ratio (%)	100.0		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m <sup>3</sup> )	1.84		
Field Moisture Content (%)	8.0		
Moisture Content at Placement (%)	13.0		
Moisture Content Top 30mm (%)	13.2		
Moisture Content Rest of Sample (%)	13.2		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	2		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0		



Dry Density - Moisture Relationship (AS 1289 5.1.1 & 2.1.1)	
Mould Type	1 LITRE MOULD A
Compaction	Standard
Maximum Dry Density (t/m <sup>3</sup> )	1.84
Optimum Moisture Content (%)	13.0
Oversize Sieve (mm)	19
Oversize Material Wet (%)	0
Method used to Determine Plasticity	VISUAL
Curing Hours	2

Moisture Content (AS 1289 2.1.1)	
Moisture Content (%)	8.2

# Material Test Report

**Report Number:** DL20/027-6B  
**Issue Number:** 1  
**Date Issued:** 13/02/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 6667  
**Sample Number:** D20-6667B  
**Date Sampled:** 28/01/2020  
**Dates Tested:** 28/01/2020 - 01/02/2020  
**Sample Location:** E: 484322, N: 6938458  
**Material:** Capping Material  
**Material Source:** White Rock Quarry / Sandstone



**MORRISON  
GEOTECHNIC**

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

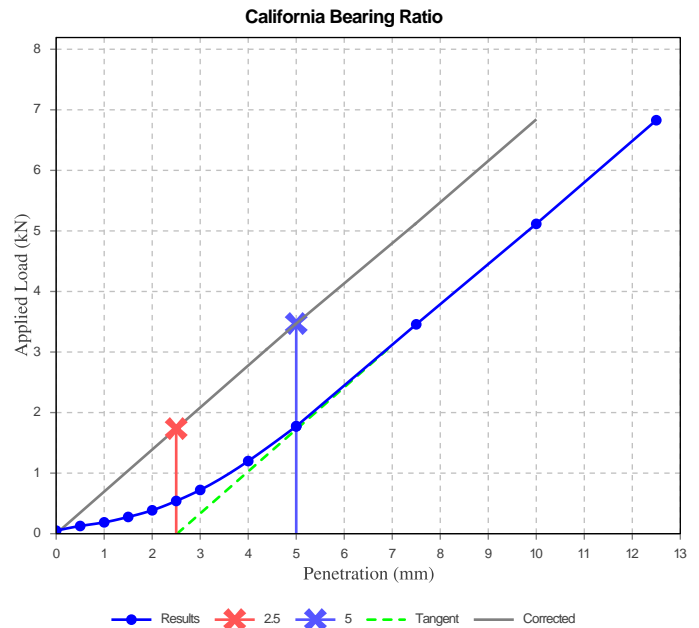


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Approved Signatory: Rhys Mitchell  
 Senior Technician

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	18		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density (t/m <sup>3</sup> )	1.92		
Optimum Moisture Content (%)	12.5		
Laboratory Density Ratio (%)	100.0		
Laboratory Moisture Ratio (%)	102.5		
Dry Density after Soaking (t/m <sup>3</sup> )	1.92		
Field Moisture Content (%)	7.3		
Moisture Content at Placement (%)	12.6		
Moisture Content Top 30mm (%)	13.4		
Moisture Content Rest of Sample (%)	12.8		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	2		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0		



Dry Density - Moisture Relationship (AS 1289 5.1.1 & 2.1.1)	
Mould Type	1 LITRE MOULD A
Compaction	Standard
Maximum Dry Density (t/m <sup>3</sup> )	1.92
Optimum Moisture Content (%)	12.5
Oversize Sieve (mm)	19
Oversize Material Wet (%)	0
Method used to Determine Plasticity	VISUAL
Curing Hours	2

Moisture Content (AS 1289 2.1.1)	
Moisture Content (%)	7.8

# Material Test Report



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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:** DL20/027-6C  
**Issue Number:** 1  
**Date Issued:** 13/02/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 6667  
**Sample Number:** D20-6667A  
**Date Sampled:** 28/01/2020  
**Dates Tested:** 28/01/2020 - 12/02/2020  
**Sample Location:** E: 484309, N: 6938481  
**Material:** Capping Material  
**Material Source:** White Rock Quarry / Sandstone



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*K. Pitama*

Approved Signatory: Kiri Pitama

Laboratory Technician

NATA Accredited Laboratory Number: 1169

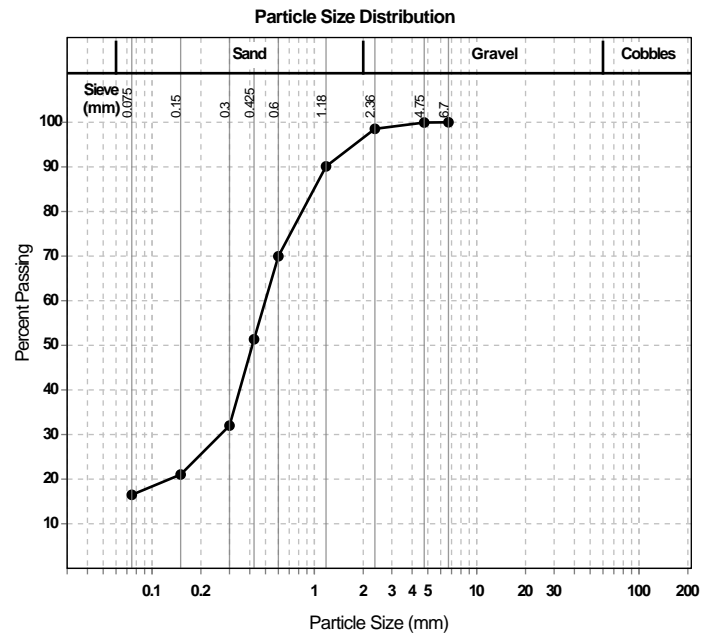
Particle Size Distribution (AS1289 3.6.1)				
Sieve	Passed %	Passing Limits	Retained %	Retained Limits
6.7 mm	100		0	
4.75 mm	100		0	
2.36 mm	99		1	
1.18 mm	90		8	
0.6 mm	70		20	
0.425 mm	51		19	
0.3 mm	32		19	
0.15 mm	21		11	
0.075 mm	16		5	

Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1)			Min	Max
Sample History	Oven Dried			
Preparation Method	Dry Sieve			
Liquid Limit (%)	32			
Plastic Limit (%)	15			
<b>Plasticity Index (%)</b>	<b>17</b>			
Weighted Plasticity Index (%)	873			

Linear Shrinkage (AS1289 3.4.1)			Min	Max
Linear Shrinkage (%)	6.5			
Cracking Crumbling Curling	Curling			



# Material Test Report



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 Brisbane Laboratory  
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 ABN: 51 009 878 899  
 Phone: (07) 3279 0900  
 Email: darralab@morrisongeo.com.au

**Report Number:** DL20/027-6D  
**Issue Number:** 1  
**Date Issued:** 13/02/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 6667  
**Sample Number:** D20-6667B  
**Date Sampled:** 28/01/2020  
**Dates Tested:** 28/01/2020 - 12/02/2020  
**Sample Location:** E: 484322, N: 6938458  
**Material:** Capping Material  
**Material Source:** White Rock Quarry / Sandstone



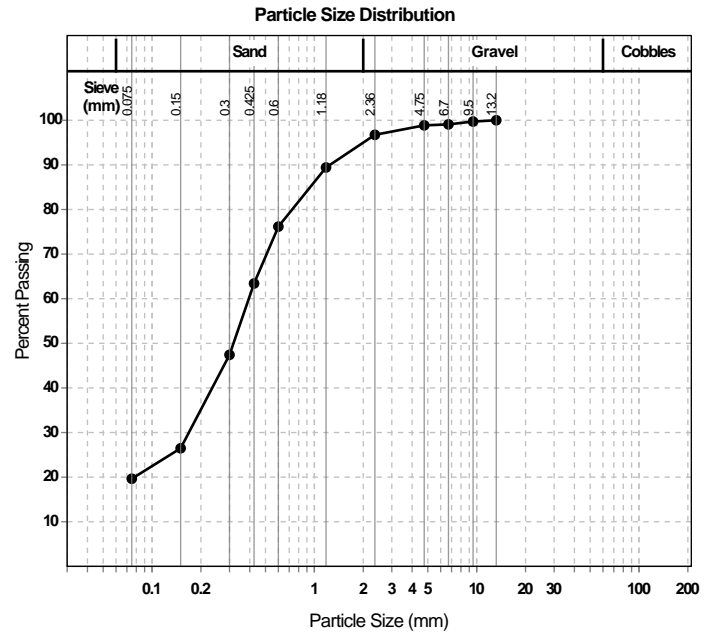
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Approved Signatory: Kiri Pitama  
 Laboratory Technician  
 NATA Accredited Laboratory Number: 1169

Particle Size Distribution (AS1289 3.6.1)				
Sieve	Passed %	Passing Limits	Retained %	Retained Limits
13.2 mm	100		0	
9.5 mm	100		0	
6.7 mm	99		1	
4.75 mm	99		0	
2.36 mm	97		2	
1.18 mm	89		7	
0.6 mm	76		13	
0.425 mm	63		13	
0.3 mm	47		16	
0.15 mm	26		21	
0.075 mm	20		7	

Atterberg Limit (AS1289 3.9.1 & 3.2.1 & 3.3.2)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	25		
Plastic Limit (%)	18		
<b>Plasticity Index (%)</b>	<b>7</b>		
Weighted Plasticity Index (%)	444		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Linear Shrinkage (%)	0.5		
Cracking Crumbling Curling	None		



# Material Test Report

**Report Number:** DL20/027-6E  
**Issue Number:** 1  
**Date Issued:** 13/02/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 6667  
**Dates Tested:** 28/01/2020 - 05/02/2020

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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



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Kiri Pitama  
Laboratory Technician  
NATA Accredited Laboratory Number: 1169

Shrink Swell Index AS 1289 7.1.1 & 2.1.1					
Sample Number	D20-6667A	D20-6667B			
Date Sampled	28/01/2020	28/01/2020			
Date Tested	05/02/2020	05/02/2020			
Material Source	Remoulded	Remoulded			
Sample Location	E: 484309, N: 6938481	E: 484322, N: 6938458			
Inert Material Estimate (%)	**	**			
Pocket Penetrometer before (kPa)	-	-			
Pocket Penetrometer after (kPa)	190	360			
Shrinkage Moisture Content (%)	10.7	13.4			
Shrinkage (%)	<b>0.8</b>	<b>0.4</b>			
Swell Moisture Content Before (%)	10.6	13.3			
Swell Moisture Content After (%)	18.0	14.7			
Swell (%)	<b>0.0</b>	<b>0.0</b>			
Shrink Swell Index I <sub>ss</sub> (%)	<b>0.4</b>	<b>0.2</b>			
Visual Description	Sandy Clay	Sandy Clay			
Cracking	SC	SC			
Crumbling	Yes	Yes			
Remarks	**	**			

Shrink Swell Index (I<sub>ss</sub>) reported as the percentage vertical strain per pF change in suction.  
NATA Accreditation does not cover the performance of pocket penetrometer readings.

# 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: jwieland@mgeo.com.au

**Report Number:** DL20/027-18A  
**Issue Number:** 1  
**Date Issued:** 24/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7175  
**Sample Number:** D20-7175A  
**Date Sampled:** 12/03/2020  
**Dates Tested:** 12/03/2020 - 19/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484063, N: 6939524, Depth: 0.3m below FL  
**Lot No:** Capping Material  
**Material:** Sandstone - Sandy Clay / Clayey Sand  
**Material Source:** Onsite Burrow Area



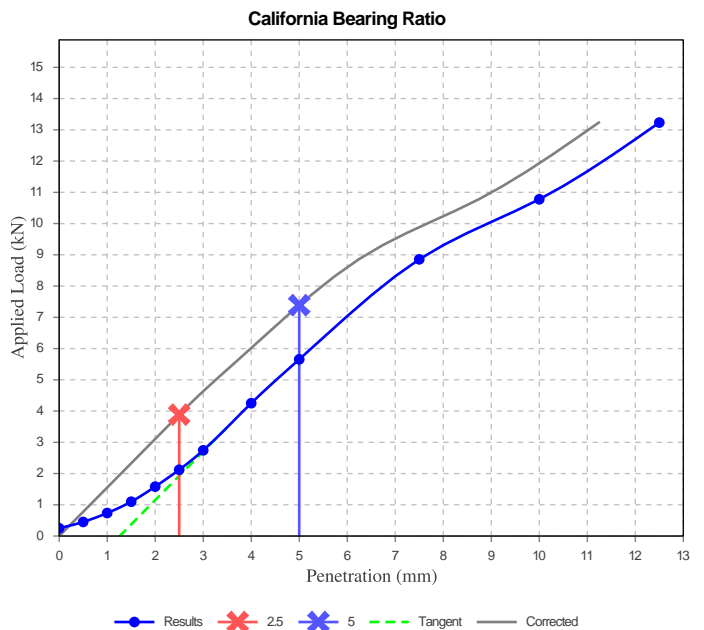
Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: John Wieland

Senior Soil Technician

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	35		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density (t/m <sup>3</sup> )	1.88		
Optimum Moisture Content (%)	12.5		
Laboratory Density Ratio (%)	100.5		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m <sup>3</sup> )	1.88		
Field Moisture Content (%)	7.6		
Moisture Content at Placement (%)	12.7		
Moisture Content Top 30mm (%)	12.5		
Moisture Content Rest of Sample (%)	13.2		
Mass Surcharge (kg)	4.5		
Soaking Period (days)			
Curing Hours	48		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	15.3		
A correction of 1.3mm was applied to the penetration curve			



# 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:** DL20/027-18B  
**Issue Number:** 1  
**Date Issued:** 25/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7175  
**Sample Number:** D20-7175A  
**Date Sampled:** 12/03/2020  
**Dates Tested:** 12/03/2020 - 20/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484063, N: 6939524, Depth: 0.3m below FL  
**Lot No:** Capping Material  
**Material:** Sandstone - Sandy Clay / Clayey Sand  
**Material Source:** Onsite Burrow Area



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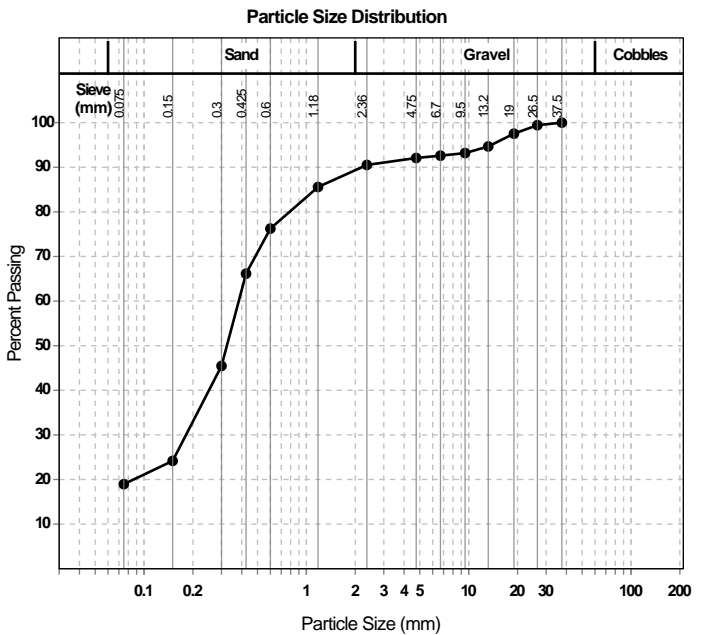
*K Pitama*

Approved Signatory: Kiri Pitama

Laboratory Technician

NATA Accredited Laboratory Number: 1169

Particle Size Distribution (AS1289 3.6.1)				
Sieve	Passed %	Passing Limits	Retained %	Retained Limits
37.5 mm	100		0	
26.5 mm	99		1	
19 mm	98		2	
13.2 mm	95		3	
9.5 mm	93		1	
6.7 mm	93		1	
4.75 mm	92		1	
2.36 mm	91		2	
1.18 mm	86		5	
0.6 mm	76		9	
0.425 mm	66		10	
0.3 mm	45		21	
0.15 mm	24		21	
0.075 mm	19		5	



Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	32		
Plastic Limit (%)	16		
<b>Plasticity Index (%)</b>	<b>16</b>		
Weighted Plasticity Index (%)	1058		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Linear Shrinkage (%)	6.0		
Cracking Crumbling Curling	Curling		

# Material Test Report

**Report Number:** DL20/027-18C  
**Issue Number:** 1  
**Date Issued:** 25/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7175  
**Sample Number:** D20-7175A  
**Date Sampled:** 12/03/2020  
**Dates Tested:** 12/03/2020 - 18/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484063, N: 6939524, Depth: 0.3m below FL  
**Lot No:** **Capping Material**  
**Material:** Sandstone - Sandy Clay / Clayey Sand  
**Material Source:** Onsite Burrow Area

**MORRISON  
GEOTECHNIC**  
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



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Kiri Pitama  
Laboratory Technician  
NATA Accredited Laboratory Number: 1169

Shrink Swell Index (AS 1289 7.1.1 & 2.1.1)	
<b>Iss (%)</b>	<b>0.1</b>
Visual Description	Clayey Sand
* Shrink Swell Index (Iss) reported as the percentage vertical strain per pF change in suction.	

Core Shrinkage Test	
<b>Shrinkage Strain - Oven Dried (%)</b>	<b>0.1</b>
Estimated % by volume of significant inert inclusions	
Cracking	Uncracked
Crumbling	Yes
Moisture Content (%)	12.0

Swell Test	
Initial Pocket Penetrometer (kPa)	>600
Final Pocket Penetrometer (kPa)	570
Initial Moisture Content (%)	12.5
Final Moisture Content (%)	15.6
<b>Swell (%)</b>	<b>0.0</b>
* NATA Accreditation does not cover the performance of pocket penetrometer readings.	



# Material Test Report

**Report Number:** DL20/027-19A  
**Issue Number:** 1  
**Date Issued:** 24/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7187  
**Sample Number:** D20-7187A  
**Date Sampled:** 13/03/2020  
**Dates Tested:** 13/03/2020 - 19/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484154, N: 6939727, Depth: RL87.1  
**Lot No:** Capping Material  
**Material:** (SC) Clayey Sand Brown  
**Material Source:** Onsite Borrow Pit



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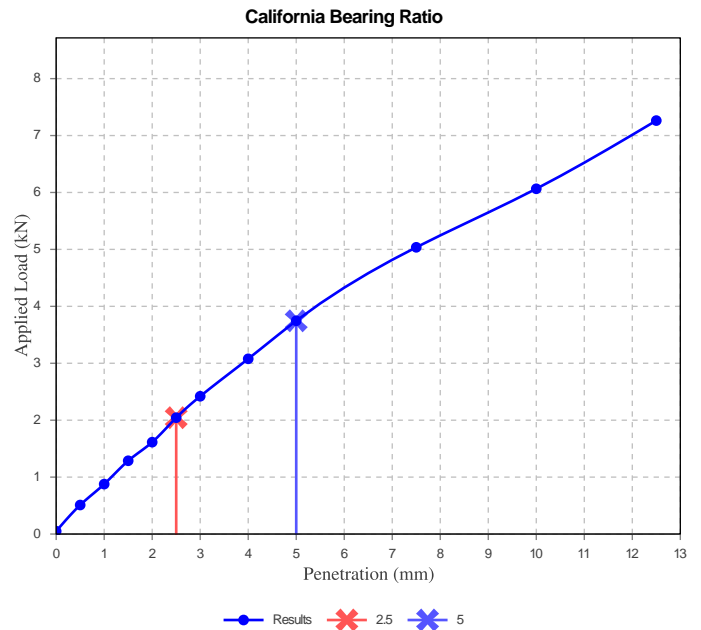
**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 ABN: 51 009 878 899  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: jwieland@mgeo.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: John Wieland  
 Senior Soil Technician  
 NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	19		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density (t/m <sup>3</sup> )	1.82		
Optimum Moisture Content (%)	12.5		
Laboratory Density Ratio (%)	100.0		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m <sup>3</sup> )	1.82		
Field Moisture Content (%)	10.2		
Moisture Content at Placement (%)	12.6		
Moisture Content Top 30mm (%)	13.1		
Moisture Content Rest of Sample (%)	14.5		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	24		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)			



# 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:** DL20/027-19B  
**Issue Number:** 1  
**Date Issued:** 27/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7187  
**Sample Number:** D20-7187A  
**Date Sampled:** 13/03/2020  
**Dates Tested:** 13/03/2020 - 20/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484154, N: 6939727, Depth: RL87.1  
**Lot No:** Capping Material  
**Material:** (SC) Clayey Sand Brown  
**Material Source:** Onsite Borrow Pit



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Approved Signatory: Kiri Pitama  
 Laboratory Technician  
 NATA Accredited Laboratory Number: 1169

Particle Size Distribution (AS1289 3.6.1)					
Sieve	Passed %	Passing Limits	Retained %	Retained Limits	
26.5 mm	100		0		
19 mm	100		0		
13.2 mm	99		1		
9.5 mm	98		1		
6.7 mm	97		1		
4.75 mm	97		1		
2.36 mm	96		1		
1.18 mm	92		4		
0.6 mm	84		8		
0.425 mm	74		10		
0.3 mm	52		22		
0.15 mm	29		23		
0.075 mm	24		6		

Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	29		
Plastic Limit (%)	17		
<b>Plasticity Index (%)</b>	<b>12</b>		
Weighted Plasticity Index (%)	890		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Linear Shrinkage (%)	5.5		
Cracking Crumbling Curling	Curling		

# Material Test Report

**Report Number:** DL20/027-19C  
**Issue Number:** 1  
**Date Issued:** 27/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7187  
**Sample Number:** D20-7187A  
**Date Sampled:** 13/03/2020  
**Dates Tested:** 13/03/2020 - 24/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484154, N: 6939727, Depth: RL87.1  
**Lot No:** **Capping Material**  
**Material:** (SC) Clayey Sand Brown  
**Material Source:** Onsite Borrow Pit

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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



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Approved Signatory: Kiri Pitama  
Laboratory Technician  
NATA Accredited Laboratory Number: 1169

Shrink Swell Index (AS 1289 7.1.1 & 2.1.1)	
<b>Iss (%)</b>	<b>0.7</b>
Visual Description	Clayey Sand
* Shrink Swell Index (Iss) reported as the percentage vertical strain per pF change in suction.	

Core Shrinkage Test	
<b>Shrinkage Strain - Oven Dried (%)</b>	<b>1.3</b>
Estimated % by volume of significant inert inclusions	
Cracking	Uncracked
Crumbling	Yes
Moisture Content (%)	14.0

Swell Test	
Initial Pocket Penetrometer (kPa)	>600
Final Pocket Penetrometer (kPa)	270
Initial Moisture Content (%)	13.5
Final Moisture Content (%)	17.1
<b>Swell (%)</b>	<b>0.0</b>
* NATA Accreditation does not cover the performance of pocket penetrometer readings.	

# Material Test Report



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Phone: (07) 3279 0900

Email: darralab@morrisongeo.com.au

**Report Number:** DL20/027-22A  
**Issue Number:** 1  
**Date Issued:** 26/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7211  
**Sample Number:** D20-7211A  
**Date Sampled:** 16/03/2020  
**Dates Tested:** 16/03/2020 - 25/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484242.9, N: 6939682.4, Depth: 91.6  
**Lot No:** Capping Layer - Select Fill  
**Material:** Clayey Sand  
**Material Source:** Imported



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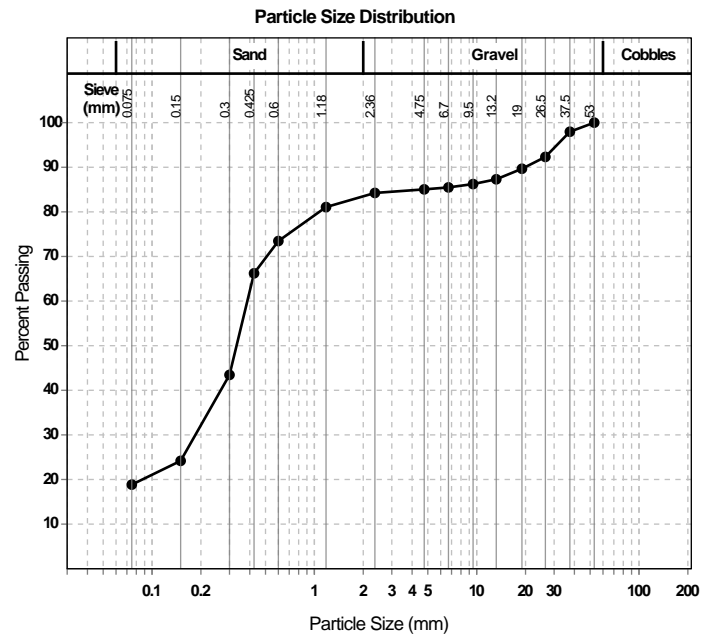
*K Pitama*

Approved Signatory: Kiri Pitama

Laboratory Technician

NATA Accredited Laboratory Number: 1169

Particle Size Distribution (AS1289 3.6.1)				
Sieve	Passed %	Passing Limits	Retained %	Retained Limits
53 mm	100		0	
37.5 mm	98		2	
26.5 mm	92		6	
19 mm	90		3	
13.2 mm	87		2	
9.5 mm	86		1	
6.7 mm	85		1	
4.75 mm	85		0	
2.36 mm	84		1	
1.18 mm	81		3	
0.6 mm	73		8	
0.425 mm	66		7	
0.3 mm	43		23	
0.15 mm	24		19	
0.075 mm	19		5	



Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	29		
Plastic Limit (%)	16		
<b>Plasticity Index (%)</b>	<b>13</b>		
Weighted Plasticity Index (%)	861		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Linear Shrinkage (%)	5.0		
Cracking Crumbling Curling	Curling		

# Material Test Report

**Report Number:** DL20/027-22B  
**Issue Number:** 1  
**Date Issued:** 26/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7211  
**Sample Number:** D20-7211A  
**Date Sampled:** 16/03/2020  
**Dates Tested:** 16/03/2020 - 23/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484242.9, N: 6939682.4, Depth: 91.6  
**Lot No:** Capping Layer - Select Fill  
**Material:** Clayey Sand  
**Material Source:** Imported



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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



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Approved Signatory: Kiri Pitama  
Laboratory Technician  
NATA Accredited Laboratory Number: 1169

Shrink Swell Index (AS 1289 7.1.1 & 2.1.1)	
<b>Iss (%)</b>	<b>0.4</b>
Visual Description	Clayey Sand
* Shrink Swell Index (Iss) reported as the percentage vertical strain per pF change in suction.	

Core Shrinkage Test	
<b>Shrinkage Strain - Oven Dried (%)</b>	<b>0.8</b>
Estimated % by volume of significant inert inclusions	
Cracking	Uncracked
Crumbling	Yes
Moisture Content (%)	12.6

Swell Test	
Initial Pocket Penetrometer (kPa)	>600
Final Pocket Penetrometer (kPa)	170
Initial Moisture Content (%)	12.1
Final Moisture Content (%)	18.5
<b>Swell (%)</b>	<b>0.0</b>
* NATA Accreditation does not cover the performance of pocket penetrometer readings.	

# Material Test Report



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 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 ABN: 51 009 878 899  
 Phone: (07) 3279 0900  
 Email: darralab@morrisongeo.com.au

**Report Number:** DL20/027-22C  
**Issue Number:** 1  
**Date Issued:** 30/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7211  
**Sample Number:** D20-7211A  
**Date Sampled:** 16/03/2020  
**Dates Tested:** 16/03/2020 - 23/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484242.9, N: 6939682.4, Depth: 91.6  
**Lot No:** Capping Layer - Select Fill  
**Material:** Clayey Sand  
**Material Source:** Imported

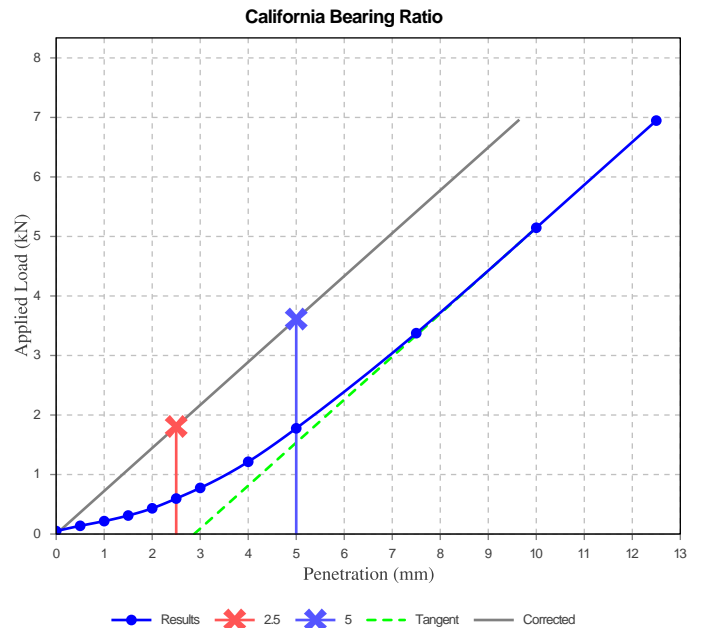


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Approved Signatory: Rhys Mitchell  
 Senior Technician

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	18		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Visual		
Maximum Dry Density (t/m <sup>3</sup> )	1.87		
Optimum Moisture Content (%)	13.0		
Laboratory Density Ratio (%)	100.5		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m <sup>3</sup> )	1.88		
Field Moisture Content (%)	9.1		
Moisture Content at Placement (%)	12.9		
Moisture Content Top 30mm (%)	13.3		
Moisture Content Rest of Sample (%)	13.7		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	24		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)			



# Material Test Report



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Brisbane Laboratory

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Phone: (07) 3279 0900

Email: darralab@morrisongeo.com.au

**Report Number:** DL20/027-23A  
**Issue Number:** 1  
**Date Issued:** 27/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7186  
**Sample Number:** D20-7186A  
**Date Sampled:** 13/03/2020  
**Dates Tested:** 13/03/2020 - 24/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484086, N: 6939737, Depth: RL 85.7  
**Lot No:** Capping Material  
**Material:** (SC) Clayey Sand Brown  
**Material Source:** Onsite Burrow Area



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*K Pitama*

Approved Signatory: Kiri Pitama

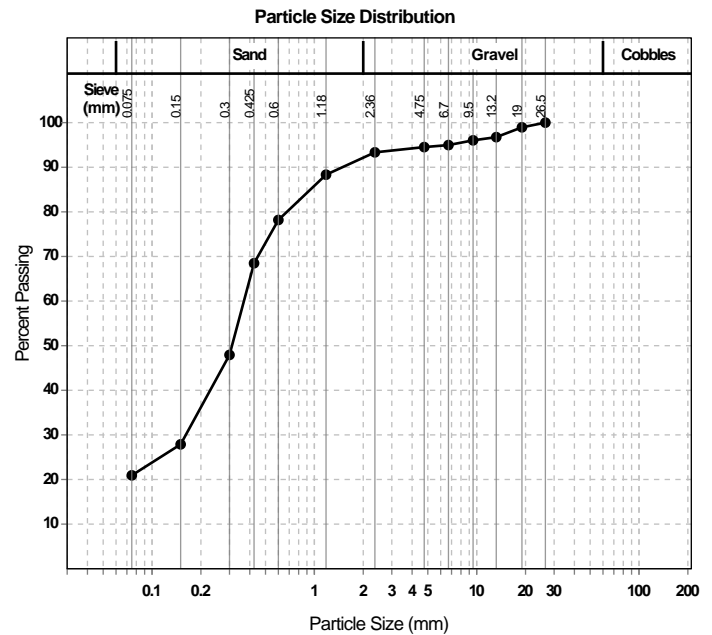
Laboratory Technician

NATA Accredited Laboratory Number: 1169

Particle Size Distribution (AS1289 3.6.1)				
Sieve	Passed %	Passing Limits	Retained %	Retained Limits
26.5 mm	100		0	
19 mm	99		1	
13.2 mm	97		2	
9.5 mm	96		1	
6.7 mm	95		1	
4.75 mm	95		0	
2.36 mm	93		1	
1.18 mm	88		5	
0.6 mm	78		10	
0.425 mm	68		10	
0.3 mm	48		21	
0.15 mm	28		20	
0.075 mm	21		7	

Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	32		
Plastic Limit (%)	16		
<b>Plasticity Index (%)</b>	<b>16</b>		
Weighted Plasticity Index (%)	1096		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Linear Shrinkage (%)	6.5		
Cracking Crumbling Curling	Curling		



# Material Test Report

**Report Number:** DL20/027-23B  
**Issue Number:** 1  
**Date Issued:** 27/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7186  
**Sample Number:** D20-7186A  
**Date Sampled:** 13/03/2020  
**Dates Tested:** 13/03/2020 - 25/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484086, N: 6939737, Depth: RL 85.7  
**Lot No:** **Capping Material**  
**Material:** (SC) Clayey Sand Brown  
**Material Source:** Onsite Burrow Area

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ABN: 51 009 878 899  
Brisbane Laboratory  
Unit 1, 35 Limestone Darra QLD 4076  
Phone: (07) 3279 0900  
Email: darralab@morrisongeo.com.au



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Approved Signatory: Kiri Pitama  
Laboratory Technician  
NATA Accredited Laboratory Number: 1169

Shrink Swell Index (AS 1289 7.1.1 & 2.1.1)	
<b>Iss (%)</b>	<b>0.1</b>
Visual Description	Clayey Sand
* Shrink Swell Index (Iss) reported as the percentage vertical strain per pF change in suction.	

Core Shrinkage Test	
<b>Shrinkage Strain - Oven Dried (%)</b>	<b>0.2</b>
Estimated % by volume of significant inert inclusions	
Cracking	Uncracked
Crumbling	Yes
Moisture Content (%)	13.1

Swell Test	
Initial Pocket Penetrometer (kPa)	>600
Final Pocket Penetrometer (kPa)	300
Initial Moisture Content (%)	13.5
Final Moisture Content (%)	17.4
<b>Swell (%)</b>	<b>0.0</b>
* NATA Accreditation does not cover the performance of pocket penetrometer readings.	



# 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: jwieland@mgeo.com.au

**Report Number:** DL20/027-23C  
**Issue Number:** 1  
**Date Issued:** 27/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7186  
**Sample Number:** D20-7186A  
**Date Sampled:** 13/03/2020  
**Dates Tested:** 13/03/2020 - 20/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** E: 484086, N: 6939737, Depth: RL 85.7  
**Lot No:** Capping Material  
**Material:** (SC) Clayey Sand Brown  
**Material Source:** Onsite Burrow Area



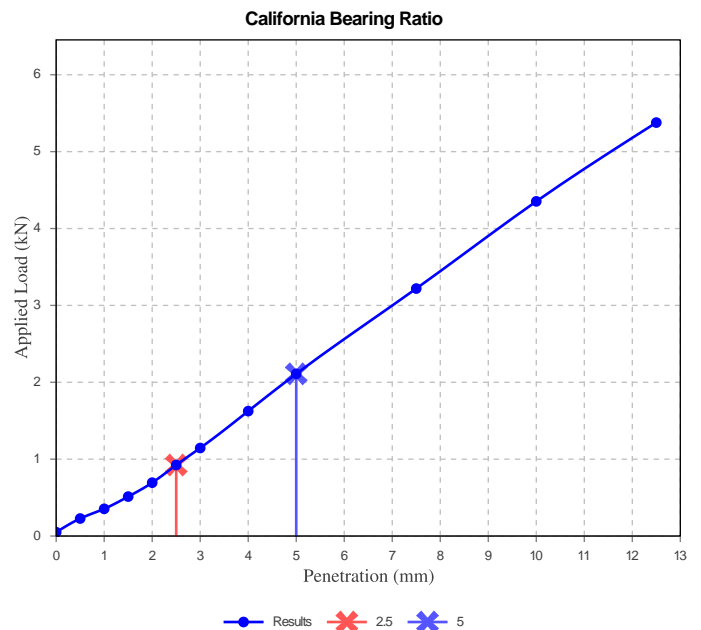
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Approved Signatory: John Wieland

Senior Soil Technician

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	11		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density (t/m <sup>3</sup> )	1.82		
Optimum Moisture Content (%)	13.0		
Laboratory Density Ratio (%)	100.5		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m <sup>3</sup> )	1.83		
Field Moisture Content (%)	7.1		
Moisture Content at Placement (%)	13.2		
Moisture Content Top 30mm (%)	13.3		
Moisture Content Rest of Sample (%)	13.7		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	48		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)			



# Material Test Report



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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:** DL20/027-24A  
**Issue Number:** 1  
**Date Issued:** 31/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7236  
**Sample Number:** D20-7236A  
**Date Sampled:** 17/03/2020  
**Dates Tested:** 17/03/2020 - 24/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** Lot 1084, 8m From North Boundary, 6m From West Boundary (0.8m Below FL)  
**Lot No:** Capping Material  
**Material:** Clayey Sand / Sandy Clay  
**Material Source:** Imported from Burrow Area



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*K Pitama*

Approved Signatory: Kiri Pitama

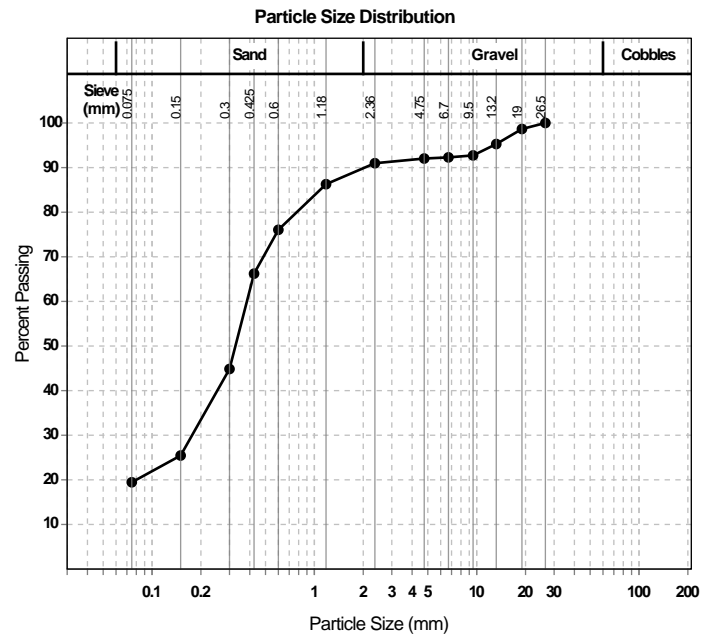
Laboratory Technician

NATA Accredited Laboratory Number: 1169

Particle Size Distribution (AS1289 3.6.1)				
Sieve	Passed %	Passing Limits	Retained %	Retained Limits
26.5 mm	100		0	
19 mm	99		1	
13.2 mm	95		3	
9.5 mm	93		3	
6.7 mm	92		0	
4.75 mm	92		0	
2.36 mm	91		1	
1.18 mm	86		5	
0.6 mm	76		10	
0.425 mm	66		10	
0.3 mm	45		21	
0.15 mm	25		19	
0.075 mm	19		6	

Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	31		
Plastic Limit (%)	17		
<b>Plasticity Index (%)</b>	<b>14</b>		
Weighted Plasticity Index (%)	927		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Linear Shrinkage (%)	6.5		
Cracking Crumbling Curling	Cracking & Curling		



# Material Test Report



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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:** DL20/027-24B  
**Issue Number:** 1  
**Date Issued:** 31/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7236  
**Sample Number:** D20-7236B  
**Date Sampled:** 17/03/2020  
**Dates Tested:** 17/03/2020 - 25/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** Lot 1079, 6m from West Boundary, 6m from South Boundary (FL)  
**Lot No:** Capping Material  
**Material:** Clayey Sand / Sandy Clay  
**Material Source:** Imported from Burrow Area



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Approved Signatory: Kiri Pitama

Laboratory Technician

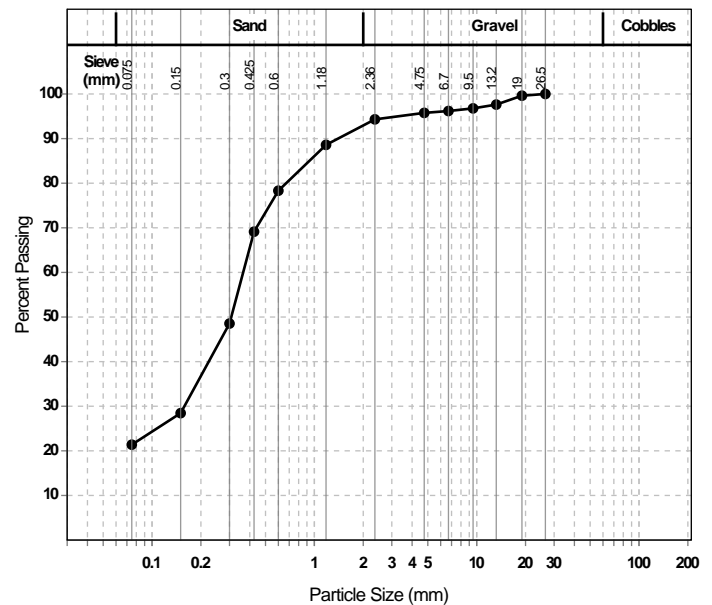
NATA Accredited Laboratory Number: 1169

Particle Size Distribution (AS1289 3.6.1)				
Sieve	Passed %	Passing Limits	Retained %	Retained Limits
26.5 mm	100		0	
19 mm	100		0	
13.2 mm	98		2	
9.5 mm	97		1	
6.7 mm	96		1	
4.75 mm	96		0	
2.36 mm	94		1	
1.18 mm	89		6	
0.6 mm	78		10	
0.425 mm	69		9	
0.3 mm	49		21	
0.15 mm	28		20	
0.075 mm	21		7	

Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	30		
Plastic Limit (%)	16		
<b>Plasticity Index (%)</b>	<b>14</b>		
Weighted Plasticity Index (%)	968		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Linear Shrinkage (%)	5.5		
Cracking Crumpling Curling	Cracking & Curling		

Particle Size Distribution



# Material Test Report



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 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:** DL20/027-24C  
**Issue Number:** 1  
**Date Issued:** 31/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7236  
**Sample Number:** D20-7236C  
**Date Sampled:** 17/03/2020  
**Dates Tested:** 17/03/2020 - 26/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** Lot 1096, 6m From North Boundary, 4m from East Boundary (FL)  
**Lot No:** Capping Material  
**Material:** Clayey Sand / Sandy Clay  
**Material Source:** Imported from Burrow Area



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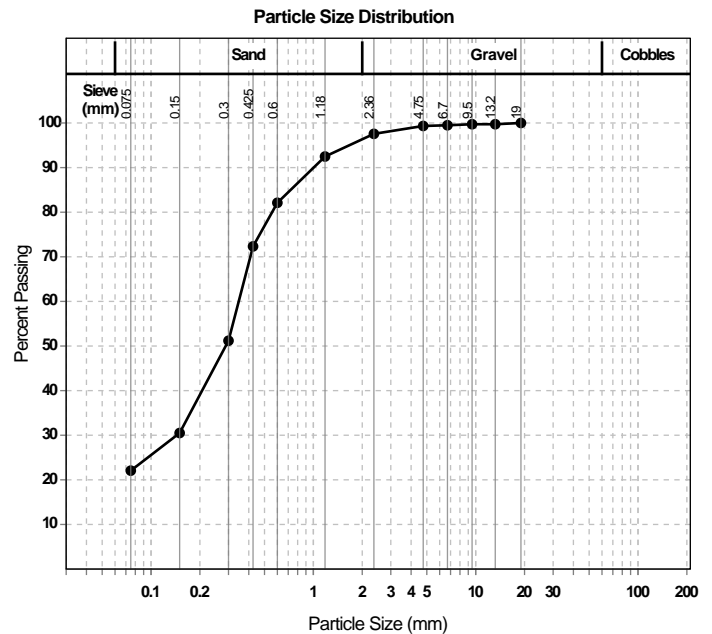
*K Pitama*

Approved Signatory: Kiri Pitama  
 Laboratory Technician  
 NATA Accredited Laboratory Number: 1169

Particle Size Distribution (AS1289 3.6.1)				
Sieve	Passed %	Passing Limits	Retained %	Retained Limits
19 mm	100		0	
13.2 mm	100		0	
9.5 mm	100		0	
6.7 mm	99		0	
4.75 mm	99		0	
2.36 mm	98		2	
1.18 mm	92		5	
0.6 mm	82		10	
0.425 mm	72		10	
0.3 mm	51		21	
0.15 mm	30		21	
0.075 mm	22		8	

Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	30		
Plastic Limit (%)	16		
<b>Plasticity Index (%)</b>	<b>14</b>		
Weighted Plasticity Index (%)	1013		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Linear Shrinkage (%)	5.0		
Cracking Crumbling Curling	Cracking & Curling		



# 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:** DL20/027-24D  
**Issue Number:** 1  
**Date Issued:** 31/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7236  
**Sample Number:** D20-7236D  
**Date Sampled:** 17/03/2020  
**Dates Tested:** 17/03/2020 - 26/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** Lot 1053, 7m From South Boundary, 5m from West Boundary (FL)  
**Lot No:** Capping Material  
**Material:** Clayey Sand / Sandy Clay  
**Material Source:** Imported from Burrow Area



Accredited for compliance with ISO/IEC 17025 - Testing

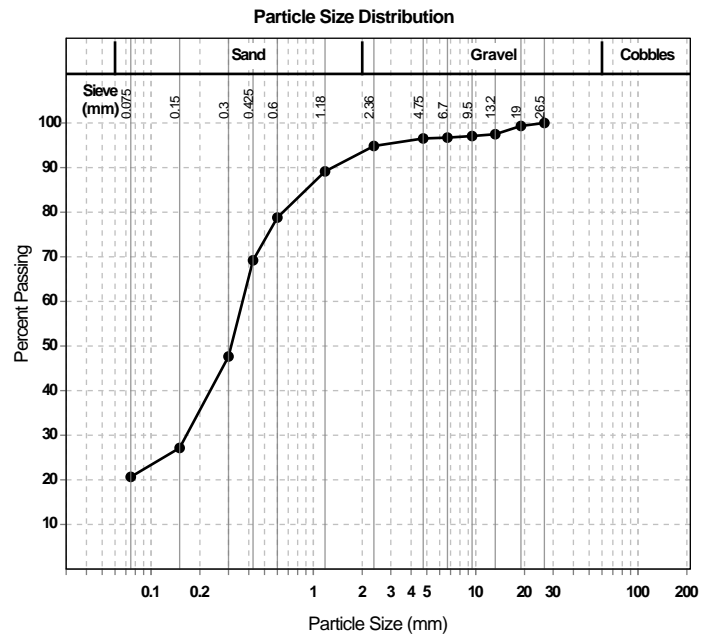
*K Pitama*

Approved Signatory: Kiri Pitama  
 Laboratory Technician  
 NATA Accredited Laboratory Number: 1169

Particle Size Distribution (AS1289 3.6.1)				
Sieve	Passed %	Passing Limits	Retained %	Retained Limits
26.5 mm	100		0	
19 mm	99		1	
13.2 mm	97		2	
9.5 mm	97		0	
6.7 mm	97		0	
4.75 mm	97		0	
2.36 mm	95		2	
1.18 mm	89		6	
0.6 mm	79		10	
0.425 mm	69		10	
0.3 mm	48		22	
0.15 mm	27		20	
0.075 mm	21		6	

Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	32		
Plastic Limit (%)	16		
<b>Plasticity Index (%)</b>	<b>16</b>		
Weighted Plasticity Index (%)	1107		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Linear Shrinkage (%)	5.5		
Cracking Crumbling Curling	Cracking & Curling		



# Material Test Report



**MORRISON  
GEOTECHNIC**

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:** DL20/027-24E  
**Issue Number:** 1  
**Date Issued:** 31/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7236  
**Sample Number:** D20-7236E  
**Date Sampled:** 17/03/2020  
**Dates Tested:** 17/03/2020 - 23/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** Lot 1049, 4m from South Boundary, 8m from West Boundary (FL)  
**Lot No:** Capping Material  
**Material:** Clayey Sand / Sandy Clay  
**Material Source:** Imported from Burrow Area



Accredited for compliance with ISO/IEC 17025 - Testing

*K Pitama*

Approved Signatory: Kiri Pitama

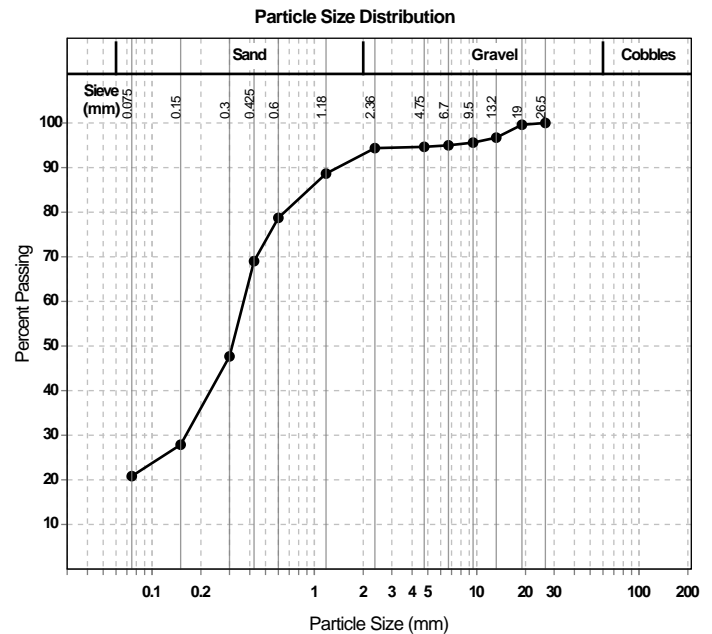
Laboratory Technician

NATA Accredited Laboratory Number: 1169

Particle Size Distribution (AS1289 3.6.1)				
Sieve	Passed %	Passing Limits	Retained %	Retained Limits
26.5 mm	100		0	
19 mm	100		0	
13.2 mm	97		3	
9.5 mm	96		1	
6.7 mm	95		1	
4.75 mm	95		0	
2.36 mm	94		0	
1.18 mm	89		6	
0.6 mm	79		10	
0.425 mm	69		10	
0.3 mm	48		21	
0.15 mm	28		20	
0.075 mm	21		7	

Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	32		
Plastic Limit (%)	16		
<b>Plasticity Index (%)</b>	<b>16</b>		
Weighted Plasticity Index (%)	1104		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Linear Shrinkage (%)	5.5		
Cracking Crumbling Curling	Cracking & Curling		



# 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:** DL20/027-24F  
**Issue Number:** 1  
**Date Issued:** 31/03/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7236  
**Dates Tested:** 17/03/2020 - 25/03/2020



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Kiri Pitama  
 Laboratory Technician  
 NATA Accredited Laboratory Number: 1169

Shrink Swell Index AS 1289 7.1.1 & 2.1.1					
Sample Number	D20-7236A	D20-7236B	D20-7236C	D20-7236D	D20-7236E
Date Sampled	17/03/2020	17/03/2020	17/03/2020	17/03/2020	17/03/2020
Date Tested	25/03/2020	25/03/2020	25/03/2020	25/03/2020	25/03/2020
Material Source	Remoulded	Remoulded	Remoulded	Remoulded	Remoulded
Sample Location	Lot 1084, 8m From North Boundary, 6m From West Boundary (0.8m Below FL)	Lot 1079, 6m from West Boundary, 6m from South Boundary (FL)	Lot 1096, 6m From North Boundary, 4m from East Boundary (FL)	Lot 1053, 7m From South Boundary, 5m from West Boundary (FL)	Lot 1049, 4m from South Boundary, 8m from West Boundary (FL)
Inert Material Estimate (%)	**	**	**	**	**
Pocket Penetrometer before (kPa)	>600	>600	>600	>600	>600
Pocket Penetrometer after (kPa)	580	380	580	270	340
Shrinkage Moisture Content (%)	12.3	13.9	13.3	12.6	11.8
Shrinkage (%)	<b>0.4</b>	<b>1.3</b>	<b>0.3</b>	<b>0.6</b>	<b>0.1</b>
Swell Moisture Content Before (%)	12.3	13.6	12.7	12.0	11.2
Swell Moisture Content After (%)	15.0	15.9	15.2	17.8	16.2
Swell (%)	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Shrink Swell Index I <sub>ss</sub> (%)	<b>0.2</b>	<b>0.7</b>	<b>0.2</b>	<b>0.3</b>	<b>0.1</b>
Visual Description	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand
Cracking	UC	UC	UC	UC	UC
Crumbling	Yes	Yes	Yes	Yes	Yes
Remarks	**	**	**	**	**

Shrink Swell Index (I<sub>ss</sub>) reported as the percentage vertical strain per pF change in suction.

Cracking Terminology: UC Uncracked, SC Slightly Cracked, MC Moderately Cracked, HC Highly Cracked, FR Fragmented.

NATA Accreditation does not cover the performance of pocket penetrometer readings.

# 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: nathaniel@mgeo.com.au

**Report Number:** DL20/027-24H  
**Issue Number:** 1  
**Date Issued:** 07/04/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7236  
**Sample Number:** D20-7236A  
**Date Sampled:** 17/03/2020  
**Dates Tested:** 17/03/2020 - 27/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** Lot 1084, 8m From North Boundary, 6m From West Boundary (0.8m Below FL)  
**Lot No:** Capping Material  
**Material:** Clayey Sand / Sandy Clay  
**Material Source:** Imported from Burrow Area

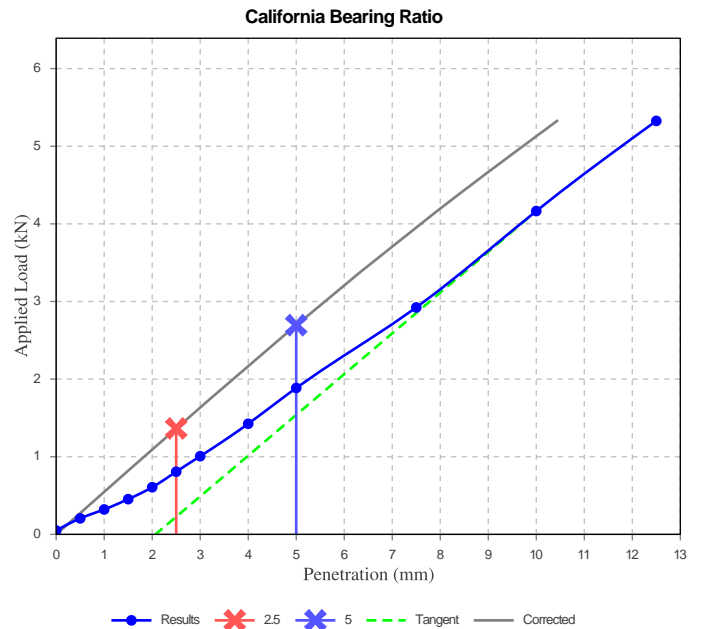


Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	14		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density (t/m <sup>3</sup> )	1.84		
Optimum Moisture Content (%)	12.5		
Laboratory Density Ratio (%)	100.5		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m <sup>3</sup> )	1.85		
Field Moisture Content (%)	5.9		
Moisture Content at Placement (%)	12.4		
Moisture Content Top 30mm (%)	13.1		
Moisture Content Rest of Sample (%)	14.1		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	48		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0		





# 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: nathaniel@mgeo.com.au

**Report Number:** DL20/027-24I  
**Issue Number:** 1  
**Date Issued:** 07/04/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7236  
**Sample Number:** D20-7236B  
**Date Sampled:** 17/03/2020  
**Dates Tested:** 17/03/2020 - 27/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** Lot 1079, 6m from West Boundary, 6m from South Boundary (FL)  
**Lot No:** Capping Material  
**Material:** Clayey Sand / Sandy Clay  
**Material Source:** Imported from Burrow Area

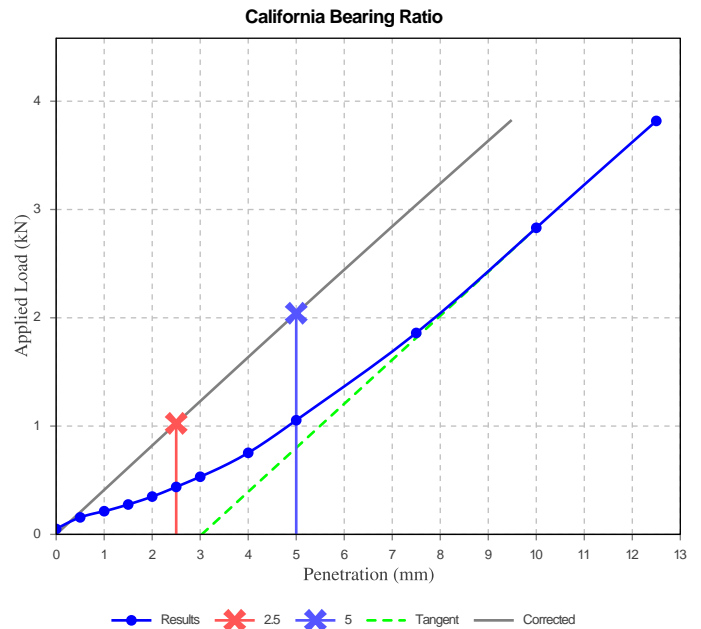


Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	10		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density (t/m <sup>3</sup> )	1.86		
Optimum Moisture Content (%)	14.0		
Laboratory Density Ratio (%)	100.5		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m <sup>3</sup> )	1.87		
Field Moisture Content (%)	7.4		
Moisture Content at Placement (%)	13.9		
Moisture Content Top 30mm (%)	14.8		
Moisture Content Rest of Sample (%)	13.6		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	120		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0		



# Material Test Report

**Report Number:** DL20/027-24J  
**Issue Number:** 1  
**Date Issued:** 07/04/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7236  
**Sample Number:** D20-7236C  
**Date Sampled:** 17/03/2020  
**Dates Tested:** 17/03/2020 - 27/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** Lot 1096, 6m From North Boundary, 4m from East Boundary (FL)  
**Lot No:** Capping Material  
**Material:** Clayey Sand / Sandy Clay  
**Material Source:** Imported from Burrow Area

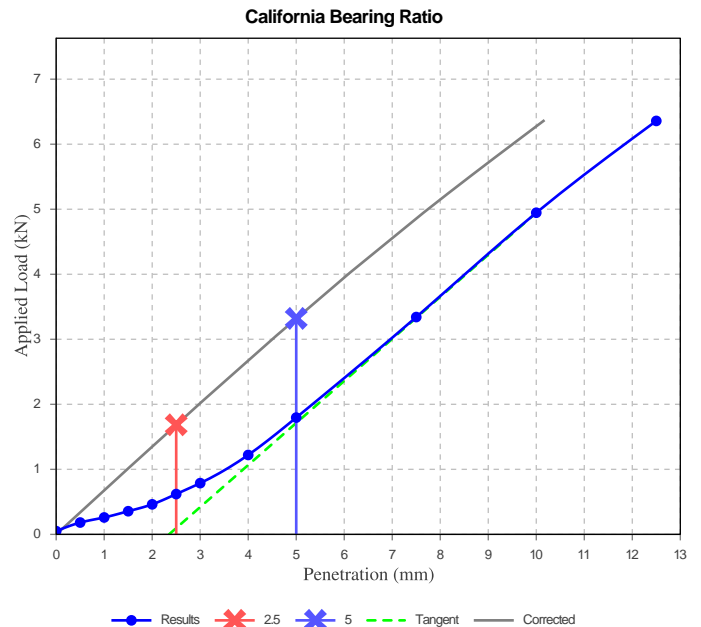


Accredited for compliance with ISO/IEC 17025 - Testing

 Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	17		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density (t/m <sup>3</sup> )	1.85		
Optimum Moisture Content (%)	13.0		
Laboratory Density Ratio (%)	100.5		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m <sup>3</sup> )	1.86		
Field Moisture Content (%)	7.1		
Moisture Content at Placement (%)	12.8		
Moisture Content Top 30mm (%)	13.8		
Moisture Content Rest of Sample (%)	13.8		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	48		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0		



# 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: nathaniel@mgeo.com.au

**Report Number:** DL20/027-24K  
**Issue Number:** 1  
**Date Issued:** 07/04/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7236  
**Sample Number:** D20-7236D  
**Date Sampled:** 17/03/2020  
**Dates Tested:** 17/03/2020 - 27/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** Lot 1053, 7m From South Boundary, 5m from West Boundary (FL)  
**Lot No:** Capping Material  
**Material:** Clayey Sand / Sandy Clay  
**Material Source:** Imported from Burrow Area

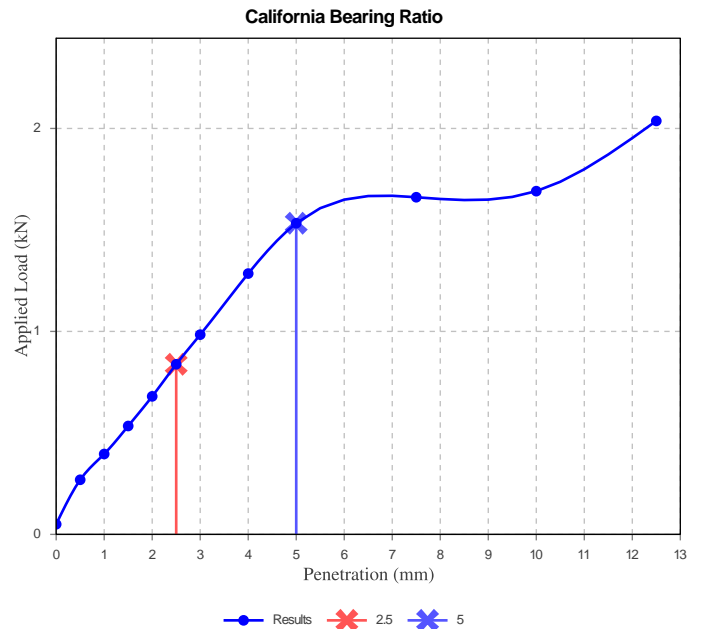


Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	8		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density (t/m <sup>3</sup> )	1.85		
Optimum Moisture Content (%)	12.5		
Laboratory Density Ratio (%)	100.5		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m <sup>3</sup> )	1.86		
Field Moisture Content (%)	5.4		
Moisture Content at Placement (%)	12.3		
Moisture Content Top 30mm (%)	12.8		
Moisture Content Rest of Sample (%)	14.6		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	48		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0		



# 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: nathaniel@mgeo.com.au

**Report Number:** DL20/027-24L  
**Issue Number:** 1  
**Date Issued:** 07/04/2020  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL20/027  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 21  
**Work Request:** 7236  
**Sample Number:** D20-7236E  
**Date Sampled:** 17/03/2020  
**Dates Tested:** 17/03/2020 - 27/03/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Sample Location:** Lot 1049, 4m from South Boundary, 8m from West Boundary (FL)  
**Lot No:** Capping Material  
**Material:** Clayey Sand / Sandy Clay  
**Material Source:** Imported from Burrow Area

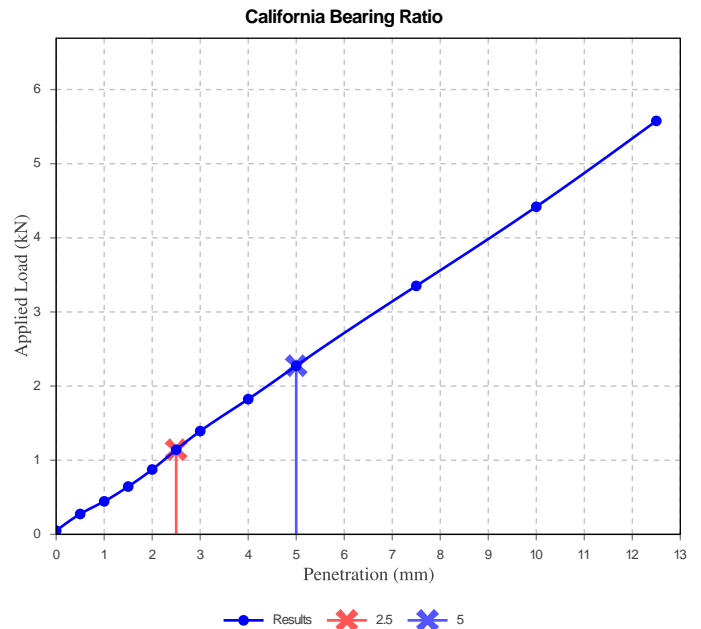
Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	11		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density (t/m <sup>3</sup> )	1.86		
Optimum Moisture Content (%)	12.0		
Laboratory Density Ratio (%)	101.0		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m <sup>3</sup> )	1.87		
Field Moisture Content (%)	5.4		
Moisture Content at Placement (%)	11.8		
Moisture Content Top 30mm (%)	12.8		
Moisture Content Rest of Sample (%)	14.2		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	48		
Swell (%)	0.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0		



*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18072*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1111  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1111 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1111 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1111 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18073*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1112  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1112 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1112 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1112 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.



Brisbane Office  
Job Number: DL20/126  
Ref No: 18074  
Author: R. Mitchell

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1113  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1113 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1113 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1113 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18075*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1114  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1114 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1114 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1114 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18076*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1115  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1115 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1115 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1115 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18077*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1116  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1116 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1116 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1116 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.



*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18078*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1117  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1117 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1117 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1117 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18079*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1118  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1118 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1118 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1118 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18080*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1119  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1119 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1119 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1119 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

Brisbane Office  
Job Number: DL20/126  
Ref No: 18081  
Author: R. Mitchell

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1120  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1120 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1120 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1120 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.



*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18082*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1121  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1121 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1121 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1121 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18083*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1122**  
**LEVEL ONE COMPLIANCE REPORT FOR**  
**EARTHWORKS FILL CONSTRUCTION**  
**EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1122 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1122 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1122 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18084*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1123  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1123 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1123 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1123 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18085*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1124**  
**LEVEL ONE COMPLIANCE REPORT FOR**  
**EARTHWORKS FILL CONSTRUCTION**  
**EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1124 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1124 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1124 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.



*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18086*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1125  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1125 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1125 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1125 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal stroke extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18087*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1126  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1126 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1126 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1126 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18088*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1127  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1127 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1127 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1127 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18089*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1136  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1127 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1136 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1136 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.



Brisbane Office  
Job Number: DL20/126  
Ref No: 18090  
Author: R. Mitchell

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1137  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1137 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1137 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1137 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal stroke extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.

*Brisbane Office*  
*Job Number: DL20/126*  
*Ref No: 18091*  
*Author: R. Mitchell*

3<sup>rd</sup> November 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR RILEY BROOKS**  
Email: [Riley.Brooks@shadcivil.com.au](mailto:Riley.Brooks@shadcivil.com.au)

Dear Sir,

**RE: LOT 1138  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDEN'S CROSSING STAGE 24**

Earthworks filling operations were carried out on Lot 1138 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between April 3<sup>rd</sup> 2020 and April 16<sup>th</sup> 2020.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in 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.
- Ipswich City Council Specifications.
- Notes on KN Group Pty Ltd Civil Drawings.

Level One 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 proof roll testing of the stripped surface and compaction testing.

Compaction testing at the Eden’s Crossing Stage 24 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1138 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1138 can be termed as “Controlled Fill” in accordance with AS 2870-2011 “Residential Slabs and Footings”.

This statement does not include any topsoil, which may have been placed for use as Lot dressing or any other subsequent earthworks after April 2020.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@mgeo.com.au](mailto:rmitchell@mgeo.com.au).

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Rhys Mitchell', with a long horizontal flourish extending to the right.

**RHYS MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Report Ref 16533 – Shadforths – Edens Crossing Stage 24 Level One Compliance Report dated 2<sup>nd</sup> July 2020.