

## Octave Estate Stage 2

# GITA Inspection Verification Report

---

<b>Prepared For:</b>	Street Works Pty Ltd
----------------------	----------------------

---

<b>Report Number</b>	P20441A V1
----------------------	------------

---

<b>Version Release Date</b>	23 Feb 2021
-----------------------------	-------------

---

<b>Report Released By</b>	Chris Caulfield
---------------------------	-----------------

---

<b>Title</b>	Project Manager
--------------	-----------------

---

**Signature**



## **Table of Contents**

1	Introduction .....	3
2	Scope of Work .....	3
2.1	Area of Work .....	3
2.2	Specification .....	3
2.3	Limitations.....	4
3	Construction Method .....	5
3.1	Subgrade Preparation .....	5
3.2	Fill Placement .....	5
4	Construction Verification.....	6
5	Statement of Compliance .....	6

## **Appendices**

Appendix 1	Test Location Plan
Appendix 2	Compaction Test Register and Test Certificates

## 1 Introduction

*Terra Firma Laboratories* was engaged by Street Works Pty Ltd as the Geotechnical Inspection and Testing Authority (GITA) to provide Level 1 supervision and testing works on the earthworks component for Octave Estate Stage 2. This work was conducted over the period of 15/12/2020 to 10/02/2021.

This report presents that the allotment earthworks was carried out in accordance with AS3798-2007 *Guidelines for Earthworks for Commercial and Residential Development* and in compliance with the compaction control specifications established by the contractor.

## 2 Scope of Work

### 2.1 Area of Work

The areas of work included lots 201-211, 220-223, 226-235, 237-241, bounded by streets Staley Street, Largo Circuit, and Contata Grove. The site will be a Residential development.

The area on which fill was placed is shown on site plan (Appendix 1: *Test Location Plan*) based on drawings prepared by GPR Consulting (Drawing Reference: 0329-02-R02, R03) and provided by Street Works Pty Ltd.

The supervision work by the GITA involved both inspection of sub grade preparation work and full time inspection and testing of fill placement.

### 2.2 Specification

The technical specification (Reference from Drawings) for compaction control requirements was provided by Street Works Pty Ltd and established that:

Test Rolling is required for all layers of structural fill and materials within 150mm of permanent subgrade level so as to withstand test rolling without visible deformation or springing. Corrective action is required where unstable areas exceed 20% of the area being considered by test rolling.

Section 5.2 of AS3798-2007 (Section 5.2) establishes a specification requirement for a minimum density ratio of not less than 95% noting that soils containing more than 20% of particles coarser than 37.5mm cannot be tested for relative compaction using the procedures of AS1289 5.1.1 and AS1289 5.2.1.

In accordance with Table 8.1 (AS3798), for large scale operations, (greater than 1500m<sup>2</sup>), the minimum testing frequency is 1 test per layer per material type per 2500m<sup>2</sup> or 1 test per 500m<sup>3</sup> distributed reasonable evenly throughout full depth and area or 3 tests per lot. AS3798 defines a lot as “an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work”. All three of these test frequencies must be achieved and this is typically confirmed to have been achieved when 3 tests per visit (day) have been completed.

### 2.3 Limitations

Terra Firma Laboratories cannot verify any works completed by others outside of the time period specified in the introduction. Uncontrolled works may include, but are not limited to trenching for services, cut and fill works for slab preparation or subsequent removal of vegetation and back fill of holes unless specified in section 2.1 of this report.

Terra Firma Laboratories cannot verify that the material used as a filling medium is free from chemical or other contamination. The scope and the period of Terra Firma Laboratories as described in the introduction are subject to restrictions and limitations. Terra Firma Laboratories did not perform a complete assessment of all possible conditions and circumstances that may exist at the site. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Terra Firma Laboratories.

Verification of finished surface level to design levels is outside of the scope of the GITA report.

Any drawings or marked locations presented in this report should be considered only as pictorial evidence of our work. Therefore, unless otherwise stated, any dimensions should not be used for accurate calculations or dimensioning.

Where data has been supplied by the client or a third party, it is assumed that the information is correct unless otherwise stated. No responsibility is accepted by Terra Firma Laboratories for incomplete or inaccurate data supplied by others.

This document is COPYRIGHT, all rights reserved to Terra Firma Laboratories and therefore no part of this document may be reproduced or copied in any form or by means without the written permission of Terra Firma Laboratories. This submission is for the use only of the party to whom it is addressed and for no other purpose. No responsibility is accepted to any third party who may use or rely on the whole or any part of the content of this submission. No responsibility will be taken for this report if it is altered in any way, or not reproduced in full.

### 3 Construction Method

#### 3.1 Subgrade Preparation

At the time of subgrade inspection the following was observed:

- Subgrade preparation involved stripping the site of topsoil, vegetation and organic matter to a depth of approximately 200mm below existing levels.
- The site was cleared of all trees and stumps to the extent necessary for the fill placement to proceed
- The roots of all trees and any debris was removed from site prior to any fill placement

A small dam that was located on lots 230, 231 and a small section in stage 3 was cleaned out, a suitable subgrade was found and then backfilled under level 1 supervision.

The sub-grade area was then proof-rolled to confirm it was capable of withstanding test rolling without visible deformation or springing and any areas observed to be soft or otherwise unsuitable were rectified. The sub-grade was watered and scarified prior to fill placement to aid layer bonding.

#### 3.2 Fill Placement

The contractor was observed to have suitable construction equipment and plant available on-site during the construction period for use in the fill placement.

All fill was placed in layers of thicknesses not exceeding 300mm. At the completion of a placed layer, compaction testing was performed to confirm appropriate compaction had been achieved and supported the observations made. It should be noted that the compaction tests are representative samples of the fill placed and support the visual assessment of the works completed. Each house lot does not necessarily require a compaction test to have been conducted within the house allotment but may have been verified by testing conducted within up to a 2500m<sup>2</sup> area of the house lot.

Final fill placement levels were verified against design level by others. For the purposes of this report, it was observed that finished levels were in accordance with levels marked on site by survey markers.

The final 300mm of material placed across the site was placed as a topsoil layer or growing medium and should be considered as non-structural, as it was placed in an uncontrolled manner, as allowed by specifications and placement of the final 300mm of material was not observed by the GITA.

## 4 Construction Verification

Compaction Verification testing is summarized in a detailed test register with test certificates attached provided in Appendix 2: *Compaction Test Register and Test Certificates*. A test location plan (P20441 D1 and D2, Appendix 1) providing a schematic of test locations across the extent of scope of works for every placed layer of fill is also documented.

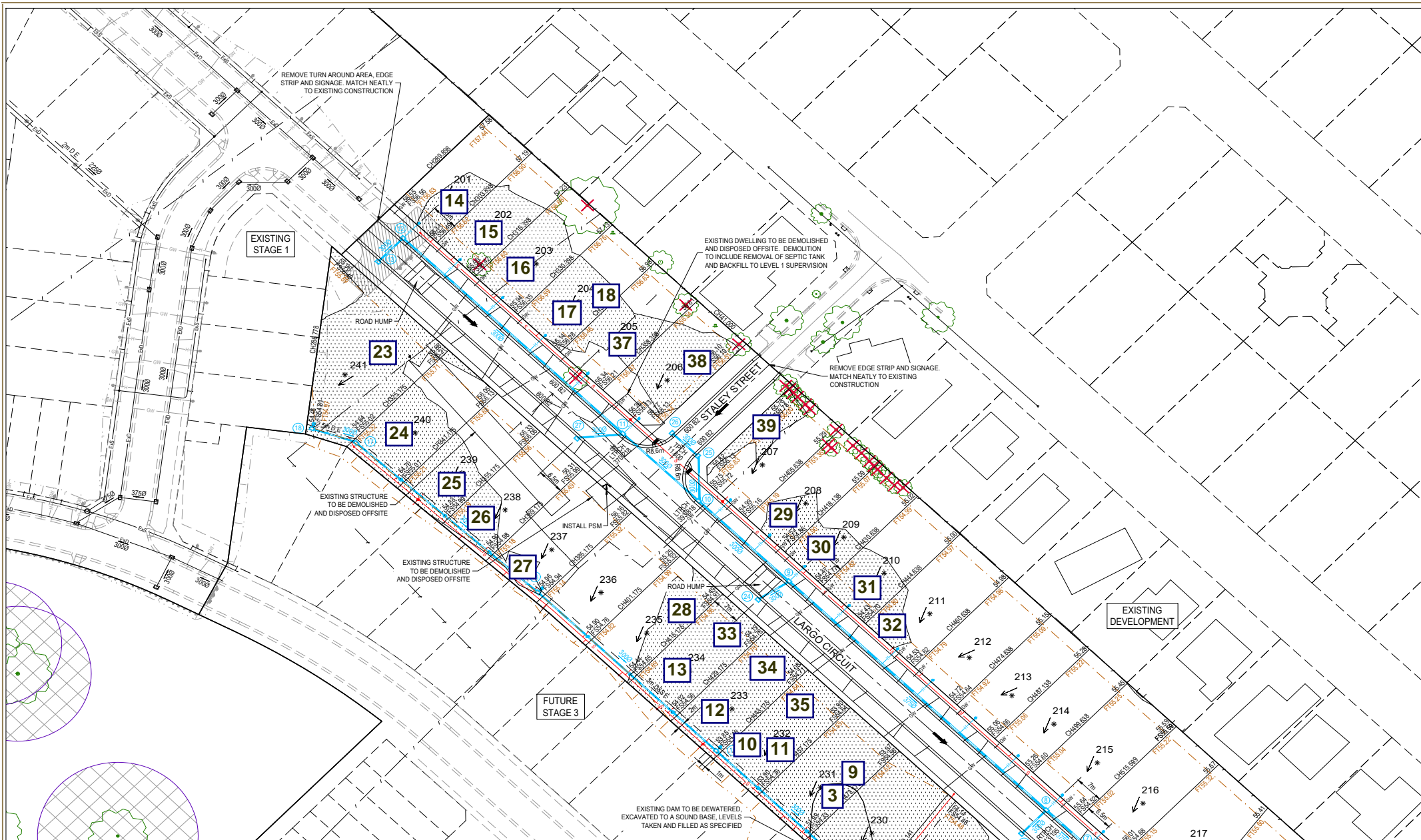
A total of 44 density tests (Hilf method in accordance with 1289 5.7.1) were undertaken with 1 failed results. The contractor was notified of any failed tests and the failed areas were ripped, watered, compacted and then re-tested to confirm compliance with the specification. The results summarised in the compaction test register (Appendix 2) confirm that for every layer of fill placed in a specific work area, satisfactory testing was completed.

## 5 Statement of Compliance

The intention of this report is to provide a description of the earthworks construction for Stage 2 at Octave Estate. For completed fill areas of greater than 300mm, and for works completed between 15/12/2020 and 10/02/2021, earthworks construction activities were conducted under the full time supervision of the Geotechnical Inspection and Testing Authority. Inspections and testing of the fill areas at this site indicate that both sub grade preparation and fill placement have been conducted in accordance with the specification. The earthworks construction for Stage 2 of Octave Estate was observed to be constructed in compliance with the requirements of the Technical Specification.

---

## **Appendix 1: Test Location Plan**



Our Head Office  
47 National Ave  
Pakenham, VIC 3810

Our Laboratories  
Pakenham 03 9769 5799  
Deer Park 03 8348 5596  
Bibra Lake 08 9395 7220

## Test Location Plan

not to scale

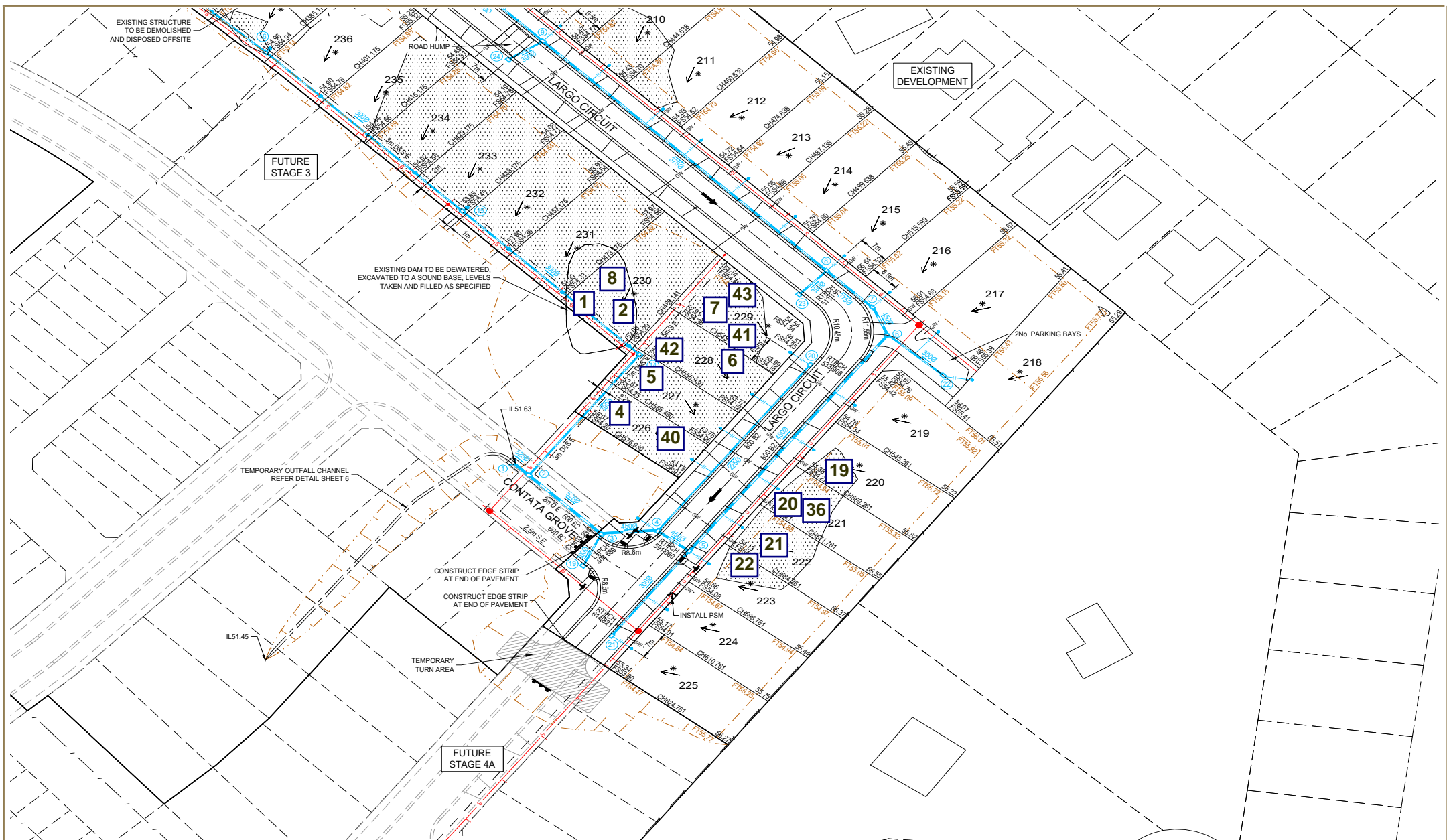
Client: Streetworks Pty Ltd

Project: Octave Estate, Stage 2

Reference: R20441 D1

TERRAFIRMA.COM.AU  
TERRAFIRMA.PDF.004





Our Head Office  
47 National Ave  
Pakenham, VIC 3810

Our Laboratories  
Pakenham 03 9769 5799  
Deer Park 03 8348 5596  
Bibra Lake 08 9395 7220

## Test Location Plan

*not to scale*

Client: Streetworks Pty Ltd

Project: Octave Estae, Stage 2

Reference: P20441 D2

## **Appendix 2: Compaction Test Register and Test Certificates**



## Compaction Test Register

**Client:** Street Works Pty Ltd  
**Project:** Octave Estate Stage 2

**Project No:** P20441  
**Specification:** 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
15/12/2020	1	Layer 2		103.0%	Pass	Lot 230	P20441-1
15/12/2020	2	Layer 2		100.5%	Pass	Lot 230	P20441-1
15/12/2020	3	Layer 1		98.5%	Pass	Lot 231	P20441-1
17/12/2020	4	Layer 2		104.5%	Pass	Lot 226	P20441-2
17/12/2020	5	Layer 2		104.0%	Pass	Lot 227	P20441-2
17/12/2020	6	Layer 1		100.0%	Pass	Lot 228	P20441-2
17/12/2020	7	Layer 2		100.0%	Pass	Lot 229	P20441-2
14/01/2021	8	Layer 2		105.5%	Pass	Lot 230	P20441-3
14/01/2021	9	Layer 2		100.5%	Pass	Lot 231	P20441-3
14/01/2021	10	Layer 2		102.5%	Pass	Lot 232	P20441-3
18/01/2021	11	Layer 4		97.0%	Pass	Lot 232	P20441-4
18/01/2021	12	Layer 2		97.5%	Pass	Lot 233	P20441-4
18/01/2021	13	Layer 1		99.0%	Pass	Lot 234	P20441-4
20/01/2021	14	Layer 1		96.0%	Pass	Lot 201	P20441-5
20/01/2021	15	Layer 1		96.0%	Pass	Lot 202	P20441-5
20/01/2021	16	Layer 1		97.5%	Pass	Lot 203	P20441-5
20/01/2021	17	Layer 1		95.5%	Pass	Lot 204	P20441-5
20/01/2021	18	Layer 1		97.5%	Pass	Lot 205	P20441-5
28/01/2021	19	Layer 1		97.5%	Pass	Lot 220	P20441-6
28/01/2021	20	Layer 1		93.5%	Fail	Lot 221	P20441-6
28/01/2021	21	Layer 1		96.5%	Pass	Lot 222	P20441-6
28/01/2021	22	Layer 1		100.5%	Pass	Lot 223	P20441-6
28/01/2021	22	Layer 1		99.0%	Pass	Lot 223	P20441-6
1/02/2021	23	Layer 1		100.0%	Pass	Lot 241	P20441-7
1/02/2021	24	Layer 1		102.5%	Pass	Lot 240	P20441-7
1/02/2021	25	Layer 2		100.5%	Pass	Lot 239	P20441-7
1/02/2021	26	Layer 2		98.5%	Pass	Lot 238	P20441-7
1/02/2021	27	Layer 2		99.0%	Pass	Lot 237	P20441-7
1/02/2021	28	Layer 2		98.5%	Pass	Lot 235	P20441-7
1/02/2021	29	Layer 1		98.5%	Pass	Lot 208	P20441-7
1/02/2021	30	Layer 1		99.5%	Pass	Lot 209	P20441-7
1/02/2021	31	Layer 1		98.0%	Pass	Lot 210	P20441-7
1/02/2021	32	Layer 1		97.5%	Pass	Lot 211	P20441-7
9/02/2021	33	Layer 2		100.0%	Pass	Lot 234	P20441-8
9/02/2021	34	Layer 2		98.0%	Pass	Lot 233	P20441-8
9/02/2021	35	Layer 1		101.5%	Pass	Lot 232	P20441-8
9/02/2021	36	Layer 1	Test #20	99.5%	Pass	Lot 221	P20441-8
9/02/2021	37	Layer 2		101.5%	Pass	Lot 205	P20441-8
9/02/2021	38	Layer 2		103.0%	Pass	Lot 206	P20441-8
9/02/2021	39	Layer 2		97.0%	Pass	Lot 207	P20441-8
10/02/2021	40	Layer 1		101.0%	Pass	Lot 226	P20441-9



## Compaction Test Register

**Client:** Street Works Pty Ltd  
**Project:** Octave Estate Stage 2

**Project No:** P20441  
**Specification:** 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
10/02/2021	41	Layer 2		98.0%	Pass	Lot 227	P20441-9
10/02/2021	42	Layer 3		95.5%	Pass	Lot 228	P20441-9
10/02/2021	43	Layer 4		96.5%	Pass	Lot 229	P20441-9

# Material Test Report

**Report Number:** P20441-1  
**Issue Number:** 1  
**Date Issued:** 21/12/2020  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Work Request:** 5085  
**Date Sampled:** 15/12/2020  
**Dates Tested:** 16/12/2020 - 17/12/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95%  
**Material:** sandy CLAY  
**Material Source:** Onsite



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: ccaulfield@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield  
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P20-5085A	P20-5085B	P20-5085C
Test Number	1	2	3
Date Tested	15/12/2020	15/12/2020	15/12/2020
Time Tested	15:00	15:20	15:30
Test Request #/Location	Lot 230	Lot 230	Lot 231
Layer / Reduced Level	Layer 2	Layer 2	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	sandy CLAY	sandy CLAY	sandy CLAY
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	2.04	2.03	2.04
Field Moisture Content %	5.4	9.5	7.2
Field Dry Density (FDD) t/m <sup>3</sup>	1.93	1.86	1.90
Peak Converted Wet Density t/m <sup>3</sup>	1.98	2.02	2.07
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	5.4	9.5	7.2
Moisture Ratio % (AS1289.5.4.1)	74.0	97.0	96.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	2.0	0.5	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	103.0	100.5	98.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

## Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P20441-2  
**Issue Number:** 1  
**Date Issued:** 21/12/2020  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Client Reference:** 06086  
**Work Request:** 5096  
**Date Sampled:** 17/12/2020 11:00  
**Dates Tested:** 17/12/2020 - 17/12/2020  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98%



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: ccaulfield@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield  
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	P20-5096A	P20-5096B	P20-5096C	P20-5096D
Test Number	4	5	6	7
Date Tested	17/12/2020	17/12/2020	17/12/2020	17/12/2020
Time Tested	11:00	11:00	11:00	11:00
Test Request #/Location	Lot 226	Lot 227	Lot 228	Lot 229
Layer / Reduced Level	Layer 2	Layer 2	Layer 1	Layer 2
Thickness of Layer (mm)	300	300	300	300
Soil Description	Sand	Sand	Sand	Sand
Test Depth (mm)	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	9	10	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	2.10	2.08	1.94	1.92
Field Moisture Content %	5.9	5.4	5.8	5.1
Field Dry Density (FDD) t/m <sup>3</sup>	1.99	1.98	1.84	1.83
Peak Converted Wet Density t/m <sup>3</sup>	**	**	1.94	1.92
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.01	2.00	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	7.3	6.4	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	5.4	4.9	5.8	5.1
Moisture Ratio % (AS1289.5.4.1)	**	**	75.5	73.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	74.5	76.5	**	**
Moisture Variation (Wv) %	**	**	2.0	2.0
Adjusted Moisture Variation %	2.0	1.5	**	**
Hilf Density Ratio (%)	104.5	104.0	100.0	100.0
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

## Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P20441-3  
**Issue Number:** 1  
**Date Issued:** 01/02/2021  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Client Reference:** 05922  
**Work Request:** 5157  
**Date Sampled:** 14/01/2021 16:05  
**Dates Tested:** 14/01/2021 - 18/01/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95%  
**Material:** Sand  
**Material Source:** Onsite



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: jsomararatne@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Janaka Somaratne  
 Lab Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P21-5157A	P21-5157B	P21-5157C
Test Number	8	9	10
Date Tested	14/01/2021	14/01/2021	14/01/2021
Time Tested	15:00	15:00	15:00
Test Request #/Location	Lot 230	Lot 231	Lot 232
Layer / Reduced Level	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300
Soil Description	Sand	Sand	Sand
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	8	4	2
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	2.14	2.06	2.09
Field Moisture Content %	9.5	9.6	10.0
Field Dry Density (FDD) t/m <sup>3</sup>	1.97	1.88	1.90
Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.03	2.05	2.04
Adj. Optimum Moisture Content % (AS1289.5.4.1)	9.8	9.6	9.7
Adj. Field Moisture Content % (AS1289.5.4.1)	8.8	9.3	9.8
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	90.0	96.5	101.5
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	1.0	0.5	-0.5
Hilf Density Ratio (%)	105.5	100.5	102.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

## Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P20441-4  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Test # Added  
**Date Issued:** 23/02/2021  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Client Reference:** 05924  
**Work Request:** 5183  
**Date Sampled:** 18/01/2021 15:30  
**Dates Tested:** 18/01/2021 - 19/01/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95%  
**Material:** Sand  
**Material Source:** Onsite



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: ccaulfield@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield  
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P21-5183A	P21-5183B	P21-5183C
Test Number	11	12	13
Date Tested	18/01/2021	18/01/2021	18/01/2021
Time Tested	15:30	15:30	15:30
Test Request #/Location	Lot 232	Lot 233	Lot 234
Layer / Reduced Level	Layer 4	Layer 2	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Sand	Sand	Sand
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	2.02	1.99	2.00
Field Moisture Content %	8.5	6.0	7.0
Field Dry Density (FDD) t/m <sup>3</sup>	1.86	1.88	1.87
Peak Converted Wet Density t/m <sup>3</sup>	2.09	2.04	2.03
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	11.0	8.1	11.0
Adj. Field Moisture Content % (AS1289.5.4.1)	8.5	6.0	7.0
Moisture Ratio % (AS1289.5.4.1)	77.5	74.0	63.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	2.5	2.5	4.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	97.0	97.5	99.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

## Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC



# Material Test Report

**Report Number:** P20441-5  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Test # Added  
**Date Issued:** 23/02/2021  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Client Reference:** 05926  
**Work Request:** 5206  
**Date Sampled:** 20/01/2021 15:30  
**Dates Tested:** 20/01/2021 - 21/01/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95%  
**Material:** sandy CLAY  
**Material Source:** Onsite



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: ccaulfield@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield  
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	P21-5206A	P21-5206B	P21-5206C	P21-5206D	P21-5206E
Test Number	14	15	16	17	18
Date Tested	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
Time Tested	15:00	15:00	15:00	15:00	15:00
Test Request #/Location	Lot 201	Lot 202	Lot 203	Lot 204	Lot 205
Layer / Reduced Level	Layer 1	Layer 1	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	sandy CLAY	sandy CLAY	sandy CLAY	sandy CLAY	sandy CLAY
Test Depth (mm)	275	275	275	275	275
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
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.91	1.95	1.98	1.93	2.00
Field Moisture Content %	8.0	7.0	6.8	6.6	7.4
Field Dry Density (FDD) t/m <sup>3</sup>	1.77	1.82	1.85	1.81	1.87
Peak Converted Wet Density t/m <sup>3</sup>	1.98	2.04	2.03	2.02	2.06
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	10.8	9.9	9.2	9.2	9.6
Adj. Field Moisture Content % (AS1289.5.4.1)	8.0	7.0	6.8	6.6	7.4
Moisture Ratio % (AS1289.5.4.1)	74.0	70.5	74.0	71.5	77.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**
Moisture Variation (Wv) %	3.0	3.0	2.5	3.0	2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	96.0	96.0	97.5	95.5	97.5
Compaction Method	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**

## Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P20441-6  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Test # Added  
**Date Issued:** 23/02/2021  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Client Reference:** 05932  
**Work Request:** 5260  
**Date Sampled:** 28/01/2021 15:00  
**Dates Tested:** 28/01/2021 - 29/01/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95%  
**Material:** Sand  
**Material Source:** Onsite



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: ccaulfield@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield  
 Project Manager

NATA Accredited Laboratory Number: 15357

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	P21-5260A	P21-5260B	P21-5260C	P21-5260D
Test Number	19	20	21	22
Date Tested	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Time Tested	15:00	15:00	15:00	15:00
Test Request #/Location	Lot 220	Lot 221	Lot 222	Lot 223
Layer / Reduced Level	Layer 1	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300	300
Soil Description	Sand	Sand	Sand	Sand
Test Depth (mm)	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	1.86	1.84	1.92	1.92
Field Moisture Content %	4.6	8.5	9.3	5.6
Field Dry Density (FDD) t/m <sup>3</sup>	1.78	1.70	1.75	1.82
Peak Converted Wet Density t/m <sup>3</sup>	1.91	1.97	1.99	1.91
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	4.6	8.5	9.3	5.6
Moisture Ratio % (AS1289.5.4.1)	78.0	88.5	83.0	47.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**
Moisture Variation (Wv) %	1.5	1.0	2.0	6.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	97.5	93.5	96.5	100.5
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P20441-6  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Test # Added  
**Date Issued:** 23/02/2021  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Client Reference:** 05932  
**Work Request:** 5260  
**Date Sampled:** 28/01/2021 15:00  
**Dates Tested:** 28/01/2021 - 29/01/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95%  
**Material:** Sand  
**Material Source:** Onsite



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: ccaulfield@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield  
 Project Manager

NATA Accredited Laboratory Number: 15357

## Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	P21-5260D		
Test Number	22		
Date Tested	28/01/2021		
Time Tested	15:00		
Test Request #/Location	Lot 223		
Layer / Reduced Level	Layer 1		
Thickness of Layer (mm)	300		
Soil Description	Sand		
Test Depth (mm)	275		
Fraction Tested (mm)	19.0		
Oversize (wet basis) %	0		
Oversize (dry basis) %	0		
Curing Hours	**		
Method used to Determine Plasticity	Visual Assessment		
Field Wet Density t/m <sup>3</sup>	1.92		
Field Moisture Content %	5.6		
Field Dry Density t/m <sup>3</sup>	1.82		
Maximum Dry Density t/m <sup>3</sup>	1.84		
Adjusted Maximum Dry Density t/m <sup>3</sup>	**		
Optimum Moisture Content (OMC) %	10.0		
Adjusted Optimum Moisture Content (OMC) %	**		
Moisture Variation %	4.0		
Moisture Ratio %	57.0		
Density Ratio %	99.0		
Compaction Method	Standard		

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P20441-7  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Test # Added  
**Date Issued:** 23/02/2021  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Work Request:** 5282  
**Date Sampled:** 01/02/2021 15:00  
**Dates Tested:** 02/02/2021 - 02/02/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95%  
**Material:** Sand  
**Material Source:** Onsite



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: ccaulfield@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield  
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	P21-5282A	P21-5282B	P21-5282C	P21-5282D	P21-5282E
Test Number	23	24	25	26	27
Date Tested	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
Time Tested	15:00	15:00	15:00	15:00	15:00
Test Request #/Location	Lot No 241	Lot No 240	Lot No 239	Lot No 238	Lot No 237
Chainage (m)	**	**	**	**	**
Location Offset (m)	**	**	**	**	**
Layer / Reduced Level	Layer 1	Layer 1	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	Sand	Sand	Sand	Sand	Sand
Test Depth (mm)	275	275	275	275	275
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
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	1.93	1.87	1.94	1.88	1.88
Field Moisture Content %	7.5	6.2	6.2	6.9	5.1
Field Dry Density (FDD) t/m <sup>3</sup>	1.79	1.76	1.82	1.76	1.79
Peak Converted Wet Density t/m <sup>3</sup>	1.93	1.83	1.93	1.90	1.89
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	7.5	6.2	6.2	6.9	5.1
Moisture Ratio % (AS1289.5.4.1)	76.0	100.0	61.0	96.0	69.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**
Moisture Variation (Wv) %	2.5	0.0	4.5	0.5	2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	100.0	102.5	100.5	98.5	99.0
Compaction Method	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**

## Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P20441-7  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Test # Added  
**Date Issued:** 23/02/2021  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Work Request:** 5282  
**Date Sampled:** 01/02/2021 15:00  
**Dates Tested:** 02/02/2021 - 02/02/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95%  
**Material:** Sand  
**Material Source:** Onsite



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: ccaulfield@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield  
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	P21-5282F	P21-5282G	P21-5282H	P21-5282I	P21-5282J
Test Number	28	29	30	31	32
Date Tested	01/02/2021	01/02/2021	01/02/2021	01/02/2021	01/02/2021
Time Tested	15:00	15:00	15:00	15:00	15:00
Test Request #/Location	Lot No 235	Lot No 208	Lot No 209	Lot No 210	Lot No 211
Chainage (m)	**	**	**	**	**
Location Offset (m)	**	**	**	**	**
Layer / Reduced Level	Layer 2	Layer 1	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	Sand	Sand	Sand	Sand	Sand
Test Depth (mm)	275	275	275	275	275
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
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	1.88	1.95	1.91	1.89	1.87
Field Moisture Content %	5.9	12.7	8.7	6.9	6.4
Field Dry Density (FDD) t/m <sup>3</sup>	1.77	1.73	1.75	1.77	1.76
Peak Converted Wet Density t/m <sup>3</sup>	1.91	1.98	1.92	1.93	1.92
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	5.9	12.7	8.7	6.9	6.4
Moisture Ratio % (AS1289.5.4.1)	79.5	96.0	96.5	97.0	97.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**
Moisture Variation (Wv) %	1.5	0.5	0.5	0.5	0.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	98.5	98.5	99.5	98.0	97.5
Compaction Method	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**

## Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P20441-8  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Test # Added  
**Date Issued:** 23/02/2021  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Client Reference:** 06087  
**Work Request:** 5337  
**Date Sampled:** 08/02/2021 14:30  
**Dates Tested:** 09/02/2021 - 09/02/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95%  
**Material:** Sand  
**Material Source:** Onsite



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: ccaulfield@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield  
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	P21-5337A	P21-5337B	P21-5337C	P21-5337D
Test Number	33	34	35	36
Date Tested	09/02/2021	09/02/2021	09/02/2021	09/02/2021
Time Tested	14:30	14:30	14:30	14:30
Test Request #/Location	Lot 234	Lot 233	Lot 232	RT 20 Lot 221
Layer / Reduced Level	Layer 2	Layer 2	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300	300
Soil Description	Sand	Sand	Sand	Sand
Test Depth (mm)	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	2.02	1.90	1.98	2.02
Field Moisture Content %	8.7	8.5	6.7	8.5
Field Dry Density (FDD) t/m <sup>3</sup>	1.86	1.75	1.86	1.86
Peak Converted Wet Density t/m <sup>3</sup>	2.02	1.94	1.95	2.02
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	9.5	8.6	**	9.1
Adj. Field Moisture Content % (AS1289.5.4.1)	8.7	8.5	6.7	8.5
Moisture Ratio % (AS1289.5.4.1)	91.5	99.0	94.5	93.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**
Moisture Variation (Wv) %	1.0	0.0	0.5	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	100.0	98.0	101.5	99.5
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

## Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P20441-8  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Test # Added  
**Date Issued:** 23/02/2021  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Client Reference:** 06087  
**Work Request:** 5337  
**Date Sampled:** 08/02/2021 14:30  
**Dates Tested:** 09/02/2021 - 09/02/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95%  
**Material:** Sand  
**Material Source:** Onsite



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: ccaulfield@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield  
 Project Manager

NATA Accredited Laboratory Number: 15357

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	P21-5337E	P21-5337F	P21-5337G	
Test Number	37	38	39	
Date Tested	09/02/2021	09/02/2021	09/02/2021	
Time Tested	14:30	14:30	14:30	
Test Request #/Location	Lot 205	Lot 206	Lot 207	
Layer / Reduced Level	Layer 2	Layer 2	Layer 2	
Thickness of Layer (mm)	300	300	300	
Soil Description	Sand	Sand	Sand	
Test Depth (mm)	275	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	0	7	**	
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	
Field Wet Density (FWD) t/m <sup>3</sup>	2.04	2.08	1.97	
Field Moisture Content %	7.4	7.8	9.8	
Field Dry Density (FDD) t/m <sup>3</sup>	1.90	1.94	1.79	
Peak Converted Wet Density t/m <sup>3</sup>	2.01	**	2.03	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	2.02	**	
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	7.6	**	
Adj. Field Moisture Content % (AS1289.5.4.1)	7.4	7.2	**	
Moisture Ratio % (AS1289.5.4.1)	97.5	**	103.0	
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	95.0	**	
Moisture Variation (Wv) %	0.5	**	-0.5	
Adjusted Moisture Variation %	**	0.5	**	
Hilf Density Ratio (%)	101.5	103.0	97.0	
Compaction Method	Standard	Standard	Standard	
Report Remarks	**	**	**	

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC



# Material Test Report

**Report Number:** P20441-9  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Test # Added  
**Date Issued:** 23/02/2021  
**Client:** Street Works Pty Ltd  
 45 Commercial Drive, Pakenham Vic 3810  
**Project Number:** P20441  
**Project Name:** Octave Stage 2 Dam  
**Project Location:** Cranbourne  
**Client Reference:** 06089  
**Work Request:** 5356  
**Date Sampled:** 10/02/2021 15:00  
**Dates Tested:** 10/02/2021 - 11/02/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95%  
**Material:** Sand  
**Material Source:** Onsite



Pakenham Laboratory  
 47 National Avenue Pakenham VIC 3810  
 Phone: (03) 9769 5799  
 Email: ccaulfield@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield  
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	P21-5356A	P21-5356B	P21-5356C	P21-5356D
Test Number	40	41	42	43
Date Tested	10/02/2021	10/02/2021	10/02/2021	10/02/2021
Time Tested	15:00	15:00	15:00	15:00
Test Request #/Location	Lot 226	Lot 227	Lot 228	Lot 229
Layer / Reduced Level	Layer 1	Layer 2	Layer 3	Layer 4
Thickness of Layer (mm)	300	300	300	300
Soil Description	Sand	Sand	Sand	Sand
Test Depth (mm)	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	2.00	1.98	1.96	1.96
Field Moisture Content %	5.0	5.6	7.6	6.3
Field Dry Density (FDD) t/m <sup>3</sup>	1.90	1.87	1.82	1.85
Peak Converted Wet Density t/m <sup>3</sup>	1.97	2.02	2.06	2.03
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	5.0	5.6	7.6	6.3
Moisture Ratio % (AS1289.5.4.1)	86.0	66.0	83.5	75.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**
Moisture Variation (Wv) %	1.0	3.0	1.5	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	101.0	98.0	95.5	96.5
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

## Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC