CHADWICK GEOTECHNICS

REPORT

Level 1 Geotechnical Inspection and Testing Authority Services

Riverfield Square Estate Stage 33
Lots 3301, 3315, 3316 and 3323 to Lot 3329

Prepared for:

Greenridge Properties Pty Ltd

06.01.2026

Our Ref: 1091938.033.v2

25 Metcalf Street, Dandenong South, Vic 3175, Melbourne, Australia
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Document Control

Title:	Level One Inspection and Testing Services.				
Date	**Version**	**Description**	**Prepared by:**	**Reviewed by:**	**Authorised by**
06 January 2026	2	Final	S. Park / R Barden	R. McKenzie	M. Di Meglio

Distribution:

Greenridge Properties Pty Ltd	1 PDF copy
Chadwick Geotechnics Pty Ltd (File)	1 PDF copy

1 Introduction

Chadwick Geotechnics Pty Ltd (Chadwick Geotechnics), was engaged by Greenridge Properties Pty Ltd, to provide Level 1 Geotechnical Inspection and Testing Authority (GITA) services for the earthworks conducted within Stage 33 of the Riverfield Square Estate in Clyde North between 6 June 2025 and 8 August 2025.

Level 1 GITA services as defined in AS3798-2007 “Guidelines on Earthworks for Commercial and Residential Development,” requires full time inspection and field and laboratory testing of earthworks in accordance with AS1289 “Methods of Testing Soils for Engineering Purposes.”

2 Project details

2.1 Location

Stage 33 is located to the North of Ballarto Road and runs off Poppy Sage Way and Honeyeater Avenue.

The included works area is shown on the Site Plan in Appendix A and within Figure 2.1 below is an extract from Nearmap.

Figure 2.1: Extract from Nearmap

2.2 Roles

The organisations and their roles are presented in Table 2.1

Table 2.1: Roles on the Project

Role	Organisation
Developer	Greenridge Properties Pty Ltd
Geotechnical Inspection and Testing Authority (GITA)	Chadwick Geotechnics Pty Ltd
Designer / Superintendent	Beveridge Williams Pty Ltd
Earthworks Contractor	Brown Property Group Pty Ltd

Chadwick Geotechnics undertook the field density testing, and the compaction control laboratory testing was conducted in our NATA accredited laboratories.

2.3 Dates on Site

Geotechnical technical and engineering staff from Chadwick Geotechnics were onsite for the duration of the earthworks program on the days shown in Table 2.2 below.

Table 2.2: Level 1 GITA – Onsite Presence

Month	Dates on site
June 2025	6, 24,
July 2025	1, 8, 21, 24
August 2025	4, 6, 8,
December 2025	10

2.4 Included Areas

This report is applicable to material placed by the contractor on the residential lots within Riverfield Square Estate Stage 33, as shown on Figure 2.1 and on the Site Plan in Appendix A, with reference to Section 2.5 (Excluded Areas) of this report.

The following Lots were filled (or partially filled) during the Level 1 GITA supervision:

- Lot's 3301, 3315, 3316, 3323 to Lot 3329

2.5 Excluded Areas

This report does not include fill outside the general boundary of the filled lots as shown in Figure 2.1. No fill was placed on the lots not mentioned in Section 2.4 of this report.

Backfill of trenches for the underground services, fill on footpaths, driveways and roads, or placement of topsoil, were not part of the scope for the works supervised by Chadwick Geotechnics.

3 Specification

The works were to be conducted in general accordance with the 'Guidelines on earthworks for commercial and residential developments' of AS3798-2007.

The following items were adopted as part of the project earthworks specifications:

- All Filling, in excess, of 200mm depth within the residential lots shall be undertaken to specifications satisfying the requirements of AS3798-2007 "Guidelines on Earthworks for Commercial and Residential Development".
- The fill soils to comply with the 'Suitable Material' in accordance with Section 4.4 of the AS3798-2007, and the following:
    - Maximum particle size of 150mm.
    - Particles over 37.5mm diameter not to exceed 20% of the material.
- Organic soils, topsoil, silts, or soils containing organic matter, wood, plastics, metal, or other deleterious materials are not acceptable.
- Subgrade to be proof rolled prior to placement of an engineered fill.
- Fill to be compacted in near horizontal layers not exceeding 250mm loose thickness.
- Compaction to achieve a ratio of at least 95% Standard Maximum Dry Density (SMDD).
- Moisture content of the fill material is to be within ±3% of the soils Standard Optimum Moisture Content (SOMC).
- Frequency of testing to be in accordance with Table 8.1 of AS3798-2007.

4 Inspection and Testing

The inspection and testing of earthworks have been carried out in accordance with AS3798-2007, 'Guidelines on earthworks for commercial and residential developments', with a frequency of field density tests as per Table 8.1 (explained in Section 4.5 of this report). Compaction control laboratory testing was performed in a Chadwick Geotechnics NATA accredited laboratory in accordance with AS1289 'Methods of Testing Soils for Engineering Purposes'.

4.1 Earthworks

The earthworks for the project comprised of the following phases:

- Stripping of topsoil from the proposed fill areas.
- Assessment, remediation, and proof rolling of subgrade.
- Placement and compaction of engineered fill.

4.2 Fill material

Fill material used for the construction of the fill comprised of local gravelly and sandy clays won from the road boxing and trench excavations on this and the surrounding sites.

A bulk sample was taken from the stage 32 site during earthwork construction, stage 32 and 33 were constructed at the same time and the same fill materials were used at both sites. The sample was taken for geotechnical compliance testing. The material compliance test results are summarised in **Table 4.1 below.** The laboratory test certificate is attached in **Appendix C.**

Table 4.1: Compliance test Result Summary

Sample #	Particle Size Distribution (PSD)						Liquid Limit %	Plastic Limit %	Plasticity Index %
	37.5 mm	13.2 mm	4.75 mm	1.18 mm	425 µm	0.75 µm			
S25DS-04914/1	100	100	99	97	96	91	62	20	42

The laboratory test results indicated the fill material is clay of high plasticity and satisfied the requirements of the specification.

The material was deemed as being derived from natural soils. The soil is considered as 'Suitable Material' in accordance with Section 4.4 of the AS3798-2007.

The material imported and placed at the site by Brown Property Group was assessed by the Superintendent as being derived from natural soils and meeting the classification of 'Fill Material' as defined in EPA publication 1828.2-2021 "Waste disposal categories – characteristics and thresholds". Environmental testing of the material was not within Chadwick Geotechnics' scope.

Any observed organic or deleterious matter including any oversize cobbles or boulders were removed from the tested areas during the fill placement.

Photographs of typical materials used during construction are shown below.

Photograph 4.1: Photographs of the material used on site

Photograph 1: Typical clay material used on site

Photograph 2: Sandy Clay used

4.3 Subgrade Assessment / Proof Roll

The Subgrade of the site was progressively assessed during the period Chadwick Geotechnics personnel were on site.

Subgrade assessments were conducted following the removal of natural grasses and topsoil that was present on site.

The subgrade inspection was performed in accordance with the Level 1 guidelines presented in AS3798–2007 Section 5.5. No soft spots or deflections were encountered during the inspections, and the area was found to be firm and free of vegetation and other deleterious material.

Two photographs of the subgrade assessment phase at the project are shown below.

Photograph 4.2: Subgrade assessment photographs

Photograph 3: Subgrade assessed with dump truck

Photograph 4: Subgrade assessment using smooth drum roller

4.4 Engineered Fill Construction

All fill material was brought by dump trucks from the local stockpiles, spread with a bulldozer and compacted with a pad foot roller. A water cart was present onsite during the works.

All fill material was placed in lift sequences comprising horizontal layers. Chadwick Geotechnics verified that the surface of the stripped area, and that of additional lifts, was thoroughly scarified and moisture conditioned prior to placement of additional layers to prevent delamination at the layer interface. Once the placed fill was approved, the layer was compacted accordingly. Chadwick Geotechnics personnel were on site on a fulltime basis during the placement, moisture conditioning, compaction, and testing of the fill on the dates noted in Table 2.2 of this report.

The following machinery was on site during earthworks.

Table 4.2: Earthworks plant on site

Equipment type	Model
Dozer	CAT D6
Pad foot roller	BPG 15 T, Vibrating Pad Foot Roller
Water cart	Volvo 25 T and road going truck
Dump Trucks	Volvo A256
Excavator	CAT 25 T

Photographs of typical machinery on site used during construction are shown below.

Photograph 4.3: General Earthwork machinery and fill construction photographs

Photograph 5: Pad foot used during fill construction

Photograph 6: Import of materials used during fill construction

Photograph 7: Moxy placing clay during fill construction

Photograph 8: Dozer spreading material during fill construction

4.5 Density and Moisture testing

Field density and moisture content testing was undertaken progressively during the construction on the compacted fill using a calibrated portable density and moisture gauge in accordance with AS1289.5.8.1. The HILF rapid compaction test was used for peak converted wet density determinations in accordance with AS1289.5.7.1. Test locations were recorded using a handheld GPS unit. A site plan showing the field density test locations is provided in **Appendix A**.

Testing was undertaken under the frequencies listed below, subject to the area and volume worked on the day of testing:

- 1 test per material type per layer per 2500m² or 1 test per 500m³ distributed reasonably evenly or 3 tests per lot – whichever requires the most tests in accordance with Type 1 Earthworks (large scale operations) as defined in Table 8.1 of the AS3798-2007.

Twelve (12) tests were performed during the filling process. All, of the tests achieved the required density and or moisture ratio.

A summary table of HILF density tests is provided in **Appendix B** and the laboratory test reports are provided in **Appendix C**. Two photographs of field density testing conducted on site are shown below.

Photograph 4.4: Field Density/Moisture Testing photographs

Photo 9: Field density/moisture test

Photo 10: Field density/moisture test

5 Conclusion

On the basis, of our inspections and after considering all test results relating to the project, it is our opinion, so far as it is to be determined, that:

- The materials, used by the earth-works contractor met the geotechnical property requirements of the specification.
- The sourced fill was, considered to be natural, clean, and suitable for use at the site.
- The fill material placed was tested at a suitable frequency in accordance with AS3798-2007- Table 8.1 and the results indicate the compacted clay achieved the density requirement of the specification.
- Given the consistent construction practices followed by the earthworks contractor and as witnessed by the Chadwick Geotechnics, combined with the satisfactory verification of test results achieved, it is inferred that areas of the site between test locations were performed to the same standard as those areas that have been tested.
- Based on observations made by Chadwick Geotechnics Level 1 personal and the results of field and laboratory tests, we consider that the engineered fill within the site (noted in Section 2.5), as far as we have been able to reasonably determine, have been placed in general accordance with the intent of the specification.
- It is our opinion that the earthworks undertaken have been performed in accordance with the requirements of Section 8.2 – Level 1 Inspection and Testing - AS3798-2007 Guidelines on Earthworks for Commercial and Residential Developments.
- Chadwick Geotechnics completed its Inspection and testing services on, 8 August 2025. After this date, the maintenance of the fill is the sole responsibility of the Contractor. If the fill is not well maintained or protected with a sacrificial layer of topsoil or other fill, the uppermost layers and the exposed faces of the engineered fill may deteriorate, as, a result of exposure to varying weather conditions which can cause cracking or heaving of the fill.
- Any deterioration will need to be remediated prior to further construction on the site. Chadwick Geotechnics has not provided supervision since the above date and is not responsible for any subsequent deterioration that may have occurred or may occur since that date.

6 Applicability

This report has been prepared for the exclusive use of our client Greenridge Properties Pty Ltd in good faith and in accordance with the Chadwick Geotechnics quality system for the earthworks filling at the site.

This report is based on the nature of the project and the prevailing conditions between 6 June 2025 and 10 December 2025. No responsibility or liability will be accepted, and Chadwick Geotechnics is indemnified to the full extent permitted by law in respect of the use of this report where there has been a change in the nature of the project or the conditions on site that may alter or affect the conclusions of this report.

Should you require any further information regarding this report, please do not hesitate to contact the undersigned on (03) 8796 7900.

Chadwick Geotechnics Pty Ltd

Report prepared by:

.....

Robert Barden

Project Manager

Authorised for Chadwick Geotechnics Pty Ltd by:

.....

Michael Di Meglio

Project Director

Report reviewed by:

.....

Robert McKenzie

Principal Geotechnical Engineer

PE0005222

p:\1091938\workingmaterial\1091938.033 riverfield square stage 33\level 1 report\level one with aditional\riverfield sq stage 33 l1 report .docx

Appendix A Test location plan

T:\Dandenong\Geo Projects\1091938\WorkingMaterial\1091938.033 Riverfield Square Stage 33\CAD\FIG\1091938.033-F01.dwg 2026-Jan-06 11:36:13 AM Plotted By: KATHRYN JACKSON

CHADWICK GEOTECHNICS
www.chadwickgeotechnics.com.au

NOTES:
1. AERIAL IMAGE SOURCED FROM NEARMAP. COPYRIGHT NEARMAP PTY LTD IMAGERY DATE: 04/03/2025.
2. BASE PLAN PROVIDED BY BEVERIDGE WILLIAMS. DRAWING REFERENCE: 2101578-33-CAD_dated20250318. DATE RECEIVED: 30/09/2025.

A3 SCALE 1:750
0 5 10 15 20 25 30 35 40 (m)

ORIGINAL IN COLOUR

PROJECT No.	1091938.033	
DESIGNED	STPA	Oct.25
DRAWN	KMJA	Oct.25
CHECKED		
APPROVED	DATE	

CLIENT **GREENRIDGE PROPERTIES PTY LTD**
PROJECT **RIVERFIELD SQUARE ESTATE - STAGE 33**
TITLE LEVEL ONE HILF DENSITY TESTING
HILF DENSITY TEST LOCATION PLAN
SCALE (A3) 1:750 FIG No. 1091938.033-F01 REV 1

Appendix B Density and moisture test summary

CHADWICK GEOTECHNICS

Riverfield Square Estate, 1091938.033 Stage 33

HILF Density Testing - Field Summary

Chadwick Geotechnics
25 Metcalf Street
Dandenong South VIC 3175
Tel : (03) 8796 7900
Fax: (03) 9706 9431

Think Act Be Safe

Report No	Sample No	Date	Test Number	Lot No	Easting	Northing	Layer/RL	Density Ratio (≥95 %)	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W25DS01205	S25DS-04698	6/06/2025	3	3228 / 1	355347.16	5777981.96	19.68	107	3 dry	Pass	
HDR:W25DS01206	S25DS-04700	6/06/2025	1	3301 / -	355344	5777969	19.38	109.5	3 dry	Pass	
HDR:W25DS01323	S25DS-05135	24/06/2025	1	3227 / 1	355463	5777922	17.949	97	0.5 wet	Pass	
HDR:W25DS01366	S25DS-05342	1/07/2025	1	3325 / 1	355449	5777898	17.768	95.5	3 dry	Pass	
HDR:W25DS01396	S25DS-05424	8/07/2025	1	3327 / 1	355463	5777922	18.319	96.5	2.5 wet	Pass	
HDR:W25DS01482	S25DS-05825	21/07/2025	1	3326 / 3	355447	5777913	18.297	98.5	0 wet	Pass	
HDR:W25DS01482	S25DS-05826	21/07/2025	2	3328 / 4	355454	5777937	18.978	98	0.5 wet	Pass	
HDR:W25DS01575	S25DS-06215	24/07/2025	1	3222 / 3	355395	5777970	19.324	100	0 dry	Pass	
HDR:W25DS01696	S25DS-06728	4/08/2025	1	3329 / 5	355445	5777951	19.012	98.5	0 dry	Pass	
HDR:W25DS01730	S25DS-06818	6/08/2025	1	3324 / 3	355444	5777883	17.649	101.5	0.5 dry	Pass	
HDR:W25DS01802	S25DS-07170	8/08/2025	1	3323 / Final	355446	5777865	17.582	97	3 dry	Pass	
HDR:W25DS02711	S25DS-10863	10/12/2025	1	3316 / Final	355410	5777765	19.277	103	2.5 dry	Pass	

Appendix C NATA compaction laboratory reports

CHADWICK GEOTECHNICS

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Report No: HDR:W25DS01205
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 32
Project No.: 1091938.032
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 17/06/2025

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-04695	S25DS-04696	S25DS-04697	S25DS-04698	S25DS-04699
Field Sample ID	1	2	3	4	5
Date Tested	6/06/2025	6/06/2025	6/06/2025	6/06/2025	6/06/2025
Time Tested	11:10	11:20	14:30	14:40	14:50
E:	355303.33	355296.96	355327.13	355347.16	355326.86
N:	5778039.10	5778005.52	5777971.16	5777981.96	5777984.36
EL:	20.41	19.88	19.32	19.68	-
Lot / Layer:	3205 / 1	3204 / 1	3234 / 1	3228 / 1	3233 / 1

Field and Laboratory Data

Depth of Test (mm)	175	175	175	175	175
Depth of Layer (mm)	200	200	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0
Field Moisture Content (%)	26.2	21.3	27.9	25.5	25.2
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	1.97	2.00	1.97	1.97	1.97
Field Dry Density (t/m³)	1.56	1.65	1.54	1.57	1.57
Peak Converted Wet Density (t/m³)	1.90	1.96	1.78	1.84	1.90
Optimum Moisture Content (%)	26.5	25.0	32.5	28.5	26.0
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	98.0	85.5	85.0	89.5	97.0
Moisture Variation (%)	0.5 dry	3.5 dry	4.5 dry	3.0 dry	0.5 dry
Hilf Density Ratio (%)	**103.5**	**102.0**	**110.5**	**107.0**	**103.5**

Comments

Results relate only to the items tested/sampled.

CHADWICK GEOTECHNICS

Think Act Safe Be

Dandenong South
ACN 143 009 330
25 Metcalf Street
DANDENONG SOUTH, VIC 3175

Ph: + 61 3 8796 7900
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Report No: HDR:W25DS01206
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 33
Project No.: 1091938.033
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 17/06/2025

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-04700		
Field Sample ID	1		
Date Tested	6/06/2025		
Time Tested	15:00		
E:	355344.23		
N:	5777969.27		
RL:	19.38		
Lot / Layer:	3301 / -		

Field and Laboratory Data

Depth of Test (mm)	175		
Depth of Layer (mm)	200		
AS Sieve Size (mm)	19.0		
Oversize Wet (%)	0		
Field Moisture Content (%)	24.7		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	1.96		
Field Dry Density (t/m³)	1.57		
Peak Converted Wet Density (t/m³)	1.79		
Optimum Moisture Content (%)	28.0		
Compactive Effort	Standard		
Moisture Ratio (%)	89.0		
Moisture Variation (%)	3.0 dry		
Hilf Density Ratio (%)	**109.5**		

Comments

Results relate only to the items tested/sampled.

CHADWICK GEOTECHNICS

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Report No: HDR:W25DS01323
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 33
Project No.: 1091938.033
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: M. Di Meglio
(Practice Lead - Technical Services)
Date of Issue: 30/07/2025

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Imported
Material: Clay

Sample Data

Sample ID	S25DS-05135					
Field Sample ID	1					
Date Tested	24/06/2025					
Time Tested	14:40					
E:	355463 (5461.296)					
N:	5777922 (77918.333)					
EL:	17.949					
Lot / Layer:	3227 / 1					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	25.1					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	1.93					
Field Dry Density (t/m³)	1.54					
Peak Converted Wet Density (t/m³)	1.98					
Optimum Moisture Content (%)	24.5					
Compactive Effort	Standard					
Moisture Ratio (%)	102.5					
Moisture Variation (%)	0.5 wet					
Hilf Density Ratio (%)	**97.0**					

Comments

Results relate only to the items tested/sampled.

CHADWICK GEOTECHNICS

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Report No: HDR:W25DS01366
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 33
Project No.: 1091938.033
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: J. Lamont
(Base Laboratory Manager -
Date of Issue: 18/08/2025

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: CLAY

Sample Data

Sample ID	S25DS-05342					
Field Sample ID	1					
Date Tested	1/07/2025					
Time Tested	15:00					
E:	5447.626					
N:	77893.634					
El:	17.768					
Lot / Layer:	3325 / 1					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	19.3					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	1.82					
Field Dry Density (t/m³)	1.53					
Peak Converted Wet Density (t/m³)	1.90					
Optimum Moisture Content (%)	22.5					
Compactive Effort	Standard					
Moisture Ratio (%)	85.5					
Moisture Variation (%)	3.0 dry					
Hilf Density Ratio (%)	**95.5**					

Comments

Results relate only to the items tested/sampled.

CHADWICK GEOTECHNICS

Dandenong South
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Report No: HDR:W25DS01396
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 33
Project No.: 1091938.033
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: M. Di Meglio
(Practice Lead - Technical Services)
Date of Issue: 30/07/2025

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Imported
Material: CLAY

Sample Data

Sample ID	S25DS-05424					
Field Sample ID	1					
Date Tested	8/07/2025					
Time Tested	12:00					
E:	355463 (5460.855)					
N:	5777463 (77918.792)					
EI:	18.319					
Lot / Layer:	3327 / 1					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
Field Moisture Content (%)	25.7					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	1.93					
Field Dry Density (t/m³)	1.54					
Peak Converted Wet Density (t/m³)	2.01					
Optimum Moisture Content (%)	23.0					
Compactive Effort	Standard					
Moisture Ratio (%)	111.0					
Moisture Variation (%)	2.5 wet					
Hilf Density Ratio (%)	**96.5**					

Comments

Results relate only to the items tested/sampled.

CHADWICK GEOTECHNICS

Dandenong South
ACN 143 009 330
25 Metcalf Street
DANDENONG SOUTH, VIC 3175

Ph: + 61 3 8796 7900
Fax: +61 3 9706 9431

Report No: HDR:W25DS01482
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 33
Project No.: 1091938.033
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: M. Di Meglio
(Practice Lead - Technical Services)
Date of Issue: 30/07/2025

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Imported
Material: Clay

Sample Data

Sample ID	S25DS-05825	S25DS-05826				
Field Sample ID	1	2				
Date Tested	21/07/2025	21/07/2025				
Time Tested	09:30	15:15				
E:	355447 (5445.873)	355454 (5468.816)				
N:	5777913 (77909.537)	5777937 (77933.180)				
EL:	18.297	18.978				
Lot / Layer:	3326 / 3	3328 / 4				

Field and Laboratory Data

Depth of Test (mm)	175	175				
Depth of Layer (mm)	200	200				
AS Sieve Size (mm)	37.5	37.5				
Oversize Wet (%)	0	3				
Field Moisture Content (%)	27.7	19.1				
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1				
Field Wet Density (t/m³)	1.97	2.06				
Field Dry Density (t/m³)	1.54	1.73				
Peak Converted Wet Density (t/m³)	2.01	2.10				
Optimum Moisture Content (%)	27.5	18.5				
Compactive Effort	Standard	Standard				
Moisture Ratio (%)	100.5	103.5				
Moisture Variation (%)	0.0	0.5 wet				
Hilf Density Ratio (%)	**98.5**	**98.0**				

Comments

Results relate only to the items tested/sampled.

CHADWICK GEOTECHNICS

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Report No: HDR:W25DS01575
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 32
Project No.: 1091938.032
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: J. Lamont
(Base Laboratory Manager -
Date of Issue: 26/11/2025

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Import
Material: Clay

Sample Data

Sample ID	S25DS-06215	S25DS-06216	S25DS-06217	S25DS-06218	S25DS-06219
Field Sample ID	1	2	3	4	5
Date Tested	24/07/2025	24/07/2025	24/07/2025	24/07/2025	24/07/2025
Time Tested	09:30	10:45	11:10	11:30	14:30
E:	355395	355464 (5462.420)	355382 (5381.663)	355465 (5465.463)	355394
N:	5777970	5777960 (77955.293)	5778032 (78026.140)	5777986 (77982.434)	5777991
EL:	19.324	19.020	20.416	19.052	19.879
Lot / Layer:	3227 / 3	3221 / 4	3211 / 3	3219 / 3	3226 / 4

Field and Laboratory Data

Depth of Test (mm)	175	175	175	175	175
Depth of Layer (mm)	200	200	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	4
Field Moisture Content (%)	18.1	8.1	19.1	8.4	24.0
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	2.07	2.06	1.91	2.06	2.03
Field Dry Density (t/m³)	1.75	1.91	1.61	1.90	1.64
Peak Converted Wet Density (t/m³)	2.07	2.17	1.97	2.13	2.03
Optimum Moisture Content (%)	18.0	10.5	20.5	11.0	24.0
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	99.5	79.0	92.0	77.5	101.0
Moisture Variation (%)	0.0	2.0 dry	1.5 dry	2.5 dry	0.0
Hilf Density Ratio (%)	**100.0**	**95.0**	**97.0**	**96.5**	**100.0**

Comments

Results relate only to the items tested/sampled.

CHADWICK GEOTECHNICS

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DANDENONG SOUTH, VIC 3175

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Report No: HDR:W25DS01696
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 33
Project No.: 1091938.033
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: M. Di Meglio
(Practice Lead - Technical Services)
Date of Issue: 14/08/2025

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Imported
Material: Clay

Sample Data

Sample ID	S25DS-06728					
Field Sample ID	1					
Date Tested	4/08/2025					
Time Tested	14:30					
E:	355445 (5447.652)					
N:	5777451 (77948.041)					
EL:	19.012					
Lot / Layer:	3329 / 5					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	190.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	12.7					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.14					
Field Dry Density (t/m³)	1.90					
Peak Converted Wet Density (t/m³)	2.17					
Optimum Moisture Content (%)	12.5					
Compactive Effort	Standard					
Moisture Ratio (%)	99.5					
Moisture Variation (%)	0.0					
Hilf Density Ratio (%)	**98.5**					

Comments

Results relate only to the items tested/sampled.

CHADWICK GEOTECHNICS

Dandenong South
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Report No: HDR:W25DS01730
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 33
Project No.: 1091938.033
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: M. Di Meglio
(Practice Lead - Technical Services)
Date of Issue: 14/08/2025

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Imported
Material: Clay

Sample Data

Sample ID	S25DS-06818					
Field Sample ID	1					
Date Tested	6/08/2025					
Time Tested	14:30					
E:	355444 (5443.116)					
N:	5777883 (77879.943)					
EL:	17.649					
Lot / Layer:	3324 / 3					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	10.9					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.18					
Field Dry Density (t/m³)	1.96					
Peak Converted Wet Density (t/m³)	2.15					
Optimum Moisture Content (%)	11.5					
Compactive Effort	Standard					
Moisture Ratio (%)	96.0					
Moisture Variation (%)	0.5 dry					
Hilf Density Ratio (%)	**101.5**					

Comments

Results relate only to the items tested/sampled.

CHADWICK GEOTECHNICS

Dandenong South
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Report No: HDR:W25DS01802
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 33
Project No.: 1091938.033
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: M. Di Meglio
(Practice Lead - Technical Services)
Date of Issue: 14/08/2025

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-07170					
Field Sample ID	1					
Date Tested	8/08/2025					
Time Tested	09:45					
E:	355446 (5445.876)					
N:	5777865 (77864.345)					
EL:	17.582					
Lot / Layer:	3323 / Final					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	19.9					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	1.86					
Field Dry Density (t/m³)	1.55					
Peak Converted Wet Density (t/m³)	1.91					
Optimum Moisture Content (%)	23.0					
Compactive Effort	Standard					
Moisture Ratio (%)	86.5					
Moisture Variation (%)	3.0 dry					
Hilf Density Ratio (%)	**97.0**					

Comments

Results relate only to the items tested/sampled.

CHADWICK GEOTECHNICS

Dandenong South
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Report No: HDR:W25DS02711
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 33
Project No.: 1091938.033
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: P. Semmel (Quality Co-Ordinator)
Date of Issue: 6/01/2026

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-10863					
Field Sample ID	1					
Date Tested	10/12/2025					
Time Tested	10:15					
E:	355410 (5415.842)					
N:	5777965 (77955.905)					
EL:	19.277					
Lot / Layer:	3316 / Final					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	15.4					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.08					
Field Dry Density (t/m³)	1.81					
Peak Converted Wet Density (t/m³)	2.02					
Optimum Moisture Content (%)	18.0					
Compactive Effort	Standard					
Moisture Ratio (%)	85.5					
Moisture Variation (%)	2.5 dry					
Hilf Density Ratio (%)	**103.0**					

Comments

Results relate only to the items tested/sampled.

Appendix D NATA compliance laboratory report

CHADWICK GEOTECHNICS

Dandenong South
ACN 143 009 330
25 Metcalf Street
DANDENONG SOUTH, VIC 3175

Ph: + 61 3 8796 7900
Fax: +61 3 9706 9431

Report No: MAT:S25DS-04914/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Estate, Stage 32
Project No.: 1091938.032
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: J. Lamont
(Base Laboratory Manager -
Date of Issue: 17/07/2025

Sample Details

Sample Location	E: 355457 (5458.788), N: 5778027 (78023.045), EL: 18.454, Lot: 3217 / Layer: 1
Field Sample ID	1
Date Sampled	18/06/2025
Time Sampled	11:45
Source	Imported - Boronia
Material	CH: CLAY trace gravel & sand, brown, high plasticity.
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S25DS-04914

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	26.9	
Date Tested		20/06/2025	
Sample History	AS 1289.1.1	Oven-Dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	9.5	
Mould Length (mm)		250	
Crumbling		No	
Curling		No	
Cracking		Yes	
Liquid Limit (%)	AS 1289.3.1.2	62	
Plastic Limit (%)	AS 1289.3.2.1	20	
Plasticity Index (%)	AS 1289.3.3.1	42	
Date Tested		26/05/2025	

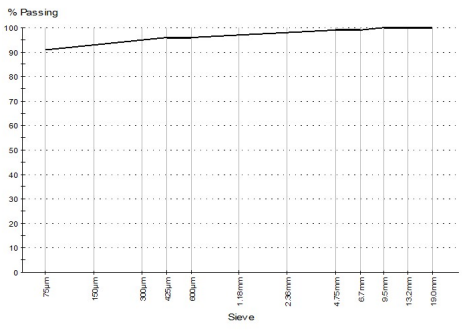
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 24/06/2025

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	100	
9.5mm	100	
6.7mm	99	
4.75mm	99	
2.36mm	98	
1.18mm	97	
600µm	96	
425µm	96	
300µm	95	
150µm	93	
75µm	91	

Chart



Comments

Results relate only to the items tested/sampled.

Appendix E Controlled fill certificate

CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

PROJECT : Riverfield Square Stage 33,
Lots 3301, 3315, 3316 and 3323 to 3329.

Chadwick Geotechnics REF: 1091938.033v2

CLIENT : Greenridge Properties Pty Ltd
P.O Box 4136
Dandenong South VIC 3164

DATE: 6 January 2026

SUMMARY

Chadwick Geotechnics Pty Ltd conducted, Level 1 inspection and testing, in accordance with Section 8.2 Level 1 inspection and Testing *AS3798-2007, Guidelines on earthworks for commercial and residential developments,* during the filling of the site.

So far as can be determined, the fill was placed in accordance with the specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved.

LIMITATIONS

This Certificate has been commissioned for the filling of the lots mentioned above and is based on the site conditions present at the time of the inspections (6 June 2025 to 10 December 2025). No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Chadwick Geotechnics Pty Ltd was engaged, or where there has been a change in the nature of the project or the site conditions since the site testing.

Chadwick Geotechnics Pty Ltd

Robert Barden
Project Coordinator

Michael Di Meglio
Project Director

CHADWICK
GEOTECHNICS