CHADWICK GEOTECHNICS

REPORT

Level 1 Geotechnical Inspection and Testing Authority Services

Riverfield Square Estate Stage 24
Lots 2401 to 2447

Prepared for:

Greenridge Properties Pty Ltd

20 March 2025

Our Ref: 1091938.024.R1.v1

25 Metcalf Street, Dandenong South, Vic 3175, Melbourne, Australia
www.chadwickgeotechnics.com.au

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Document Control

Title:	Level One Inspection and testing Services.				
Date	**Version**	**Description**	**Prepared by:**	**Reviewed by:**	**Authorised by**
20 March 2025	V1	Final	STPA and RHB	RWMc	MCDM

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 24 of the Riverfield Square Estate in Clyde North between 3 June 2024 and 29 October 2024.

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 24 is located to the East of Tuckers Road and North of Ballarto Rd. Stages 22 and 23 are within the same development area. Lots are around Citron Way.

The included works are shown on the Site Plan in Appendix A and 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 2024	3, 18, 20, 21, 24, 25
September 2024	6, 7, 9, 10, 30,
October 2024	1, 2, 9, 10, 11, 14, 15, 16, 17, 22, 23, 24, 25, 28, 29

2.4 Included Areas

This report is applicable to material placed by the contractor on the residential lots within Riverfield Square Estate Stage 24, as shown on **Figure 2.1** and on the Site Plan in **Appendix A,** and 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:

- Lots 2401 to 2447

2.5 Excluded Areas

This report does not include fill outside the general boundary of the filled areas 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 Specifications

Project specifications were prepared by Beveridge Williams Pty Ltd for the project and presented on the drawing titled Stage 24 DWG 001 Rev A, under reference 2101578, May 2023.

The works were to be conducted in general accordance with the 'Guidelines on earthworks for commercial and residential developments' of AS 3798-2007.

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 AS 3798-2007 "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.
- Geotechnical compliance testing of the soils used for fill.
- Placement and compaction of engineered fill.

4.2 Fill material

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

Samples taken from the site stockpiles comprising local material used for fill were taken for geotechnical compliance testing during the works. The material compliance test results are summarised in **Table 4.1 below.** The laboratory test certificates are 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			
S24DS-07117	100	100	97	93	86	50	45	15	30
S24DS-07346	100	100	97	94	85	48	47	15	32
S24DS-07656	100	100	96	88	80	64	58	21	37

The laboratory test results indicated material is clay of medium to 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: Silty 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 AS 3798–2007 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 loaded dump truck

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 for moisture conditioning of the materials.

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 Pad Foot Roller
Water cart	Volvo 25 T
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: Dozer used during fill construction

Photograph 6: Water cart used during fill construction

Photograph 7: Compactor used during fill construction

Photograph 8: Moxy trucks used 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 AS 1289.5.8.1. The HILF rapid compaction test was used for peak converted wet density determinations in accordance with AS 1289.5.7.1. 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 AS 3798-2007;

Sixty-one (61) tests were performed during the filling process. Two (2) of the tests did not achieve the required density and or moisture ratio initially. The failed areas were reworked and retested accordingly. The retests returned passing density and moisture test results.

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 AS 3798-2007- 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, 29 October 2024. 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 3 June 2024 and 29 October 2024. 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:

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Robert Barden

Project Manager

Authorised for Chadwick Geotechnics Pty Ltd by:

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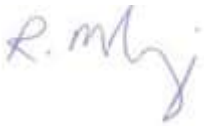
Michael DiMeglio

Project Director

Report reviewed by:



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Robert McKenzie

Principal Geotechnical Engineer

PE0005222

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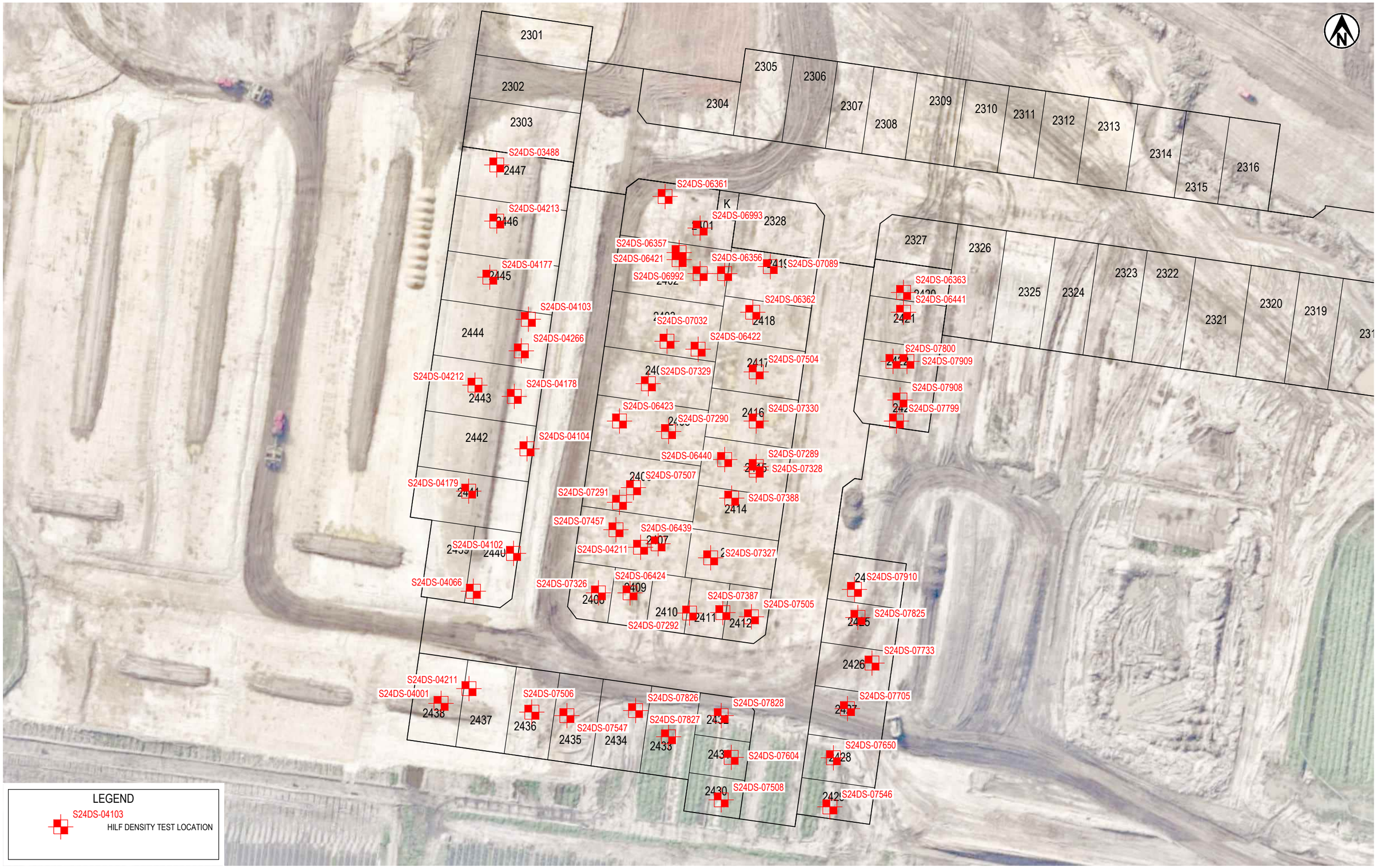
Appendix A Test Location Plan

T:\Dandenong\Geo Projects\1091938\WorkingMaterial\1091938.024 Riverfield Square stage 24\CAD\FIG\1091938.024-F01.dwg 2025-Mar-21 2:15:45 PM Plotted By: KATHRYN JACKSON



LEGEND

S24DS-04103 HILF DENSITY TEST LOCATION

CHADWICK GEOTECHNICS

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NOTES:
1. AERIAL IMAGE SOURCED FROM NEARMAP. COPYRIGHT NEARMAP PTY LTD IMAGERY DATE: 04/08/2024.

A3 SCALE 1:1000

0 5 10 15 20 30 40 50 (m)

ORIGINAL IN COLOUR

PROJECT No.	1091938.024		
DESIGNED	STPA	Mar.25	
DRAWN	KMJA	Mar.25	
CHECKED	RHB	Mar.25	
	R. BARDEN	20/03/2025	
	APPROVED	DATE	

CLIENT **GREENRIDGE PROPERTIES PTY LTD**

PROJECT **RIVERFIELD SQUARE ESTATE - STAGE 24**

TITLE LEVEL ONE HILF DENSITY TESTING
HILF DENSITY TEST LOCATION PLAN

SCALE (A3) 1:1000 FIG No. 1091938.024-F01 REV 1

Appendix B Hilf Density Test Summary

CHADWICK GEOTECHNICS

Riverfield Square Estate, 1091938.024 Stage 24

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:W24DS00859	S24DS-03488	3/06/2024	1	2447 / 1	355038	5778473	21.533	96	0.5 wet	Pass	
HDR:W24DS00953	S24DS-04001	18/06/2024	1	2439 / 2	355021	5778320	22.669	97	1 wet	Pass	
HDR:W24DS00975	S24DS-04066	20/06/2024	1	2437 / 3	355031	5778317	22.55	99	0.5 wet	Pass	
HDR:W24DS00984	S24DS-04102	21/06/2024	1	2440 / 1	355036	5778364	22.152	99.5	0 wet	Pass	
HDR:W24DS00984	S24DS-04103	21/06/2024	2	2444 / 1	355047	5778429	21.915	98.5	0.5 wet	Pass	
HDR:W24DS00984	S24DS-04104	21/06/2024	3	2442 / 1	355047	5778398	21.885	99	0.5 wet	Pass	
HDR:W24DS00993	S24DS-04177	24/06/2024	1	2445 / 2	355036	5778441	22.386	102	0.5 wet	Pass	
HDR:W24DS00993	S24DS-04178	24/06/2024	2	2443 / 2	355043	5778407	22.465	100	0 wet	Pass	
HDR:W24DS00993	S24DS-04179	24/06/2024	3	2441 / 2	355030	5778380	22.495	98.5	0 dry	Pass	
HDR:W24DS01001	S24DS-04211	25/06/2024	1	2438 / 3	355030	5778324	22.604	100	0.5 wet	Pass	
HDR:W24DS01001	S24DS-04212	25/06/2024	2	2443 / 3	355034	5778418	22.793	97.5	0.5 wet	Pass	
HDR:W24DS01001	S24DS-04213	25/06/2024	3	2446 / 3	355038	5778457	22.384	98	0.5 wet	Pass	
HDR:W24DS01015	S24DS-04266	26/06/2024	1	2444 / 5	355045	5778420	22.473	97	0.5 wet	Pass	
HDR:W24DS01518	S24DS-06356	6/09/2024	1	2419 / -	355103	5778442	21.046	96.5	3 wet	Pass	
HDR:W24DS01518	S24DS-06357	6/09/2024	2	2402 / -	355090	5778448	20.866	93.5	3 wet	Fail	See Retest S24DS-6421
HDR:W24DS01520	S24DS-06361	7/09/2024	1	2401 / 2	355086	5778464	21.064	97	2 wet	Pass	
HDR:W24DS01520	S24DS-06362	7/09/2024	2	2418 / 1	355111	5778431	20.493	97	1 wet	Pass	
HDR:W24DS01520	S24DS-06363	7/09/2024	3	2420 / 1	355154	5778445	19.657	99	2 wet	Pass	
HDR:W24DS01536	S24DS-06421	9/09/2024	1	2401 / 1	355090	5778446	20.888	99.5	1 wet	Pass	Retest of S24DS-06357
HDR:W24DS01536	S24DS-06422	9/09/2024	2	2403 / 3	355074	5478429	21.377	95	0 wet	Pass	
HDR:W24DS01536	S24DS-06423	9/09/2024	3	2405 / 1	355073	5778400	21.155	102	0.5 dry	Pass	

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Riverfield Square Estate, 1091938.024 Stage 24

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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:W24DS01536	S24DS-06424	9/09/2024	4	2409 / 1	355076	5778351	21.198	97	0.5 wet	Pass	
HDR:W24DS01543	S24DS-06439	10/09/2024	1	2407 / 1	355084	5778365	20.622	99.5	1 wet	Pass	
HDR:W24DS01543	S24DS-06440	10/09/2024	2	2415 / 1	355103	5778389	21.016	98	1.5 wet	Pass	
HDR:W24DS01543	S24DS-06441	10/09/2024	3	2421 / 3	355154	5778431	19.81	100.5	0.5 dry	Pass	
HDR:W24DS01691	S24DS-06992	30/09/2024	1	2402 / -	355096	5778442	21.31	101	0.5 dry	Pass	
HDR:W24DS01691	S24DS-06993	30/09/2024	2	2401 / -	355096	5778455	21.406	96.5	2.5 wet	Pass	
HDR:W24DS01695	S24DS-07032	1/10/2024	1	2403 / 6	355128	5778457	20.466	100	1 wet	Pass	
HDR:W24DS01706	S24DS-07089	2/10/2024	1	2419 / 5	355116	5778444	20.842	99.5	2.5 wet	Pass	
HDR:W24DS01762	S24DS-07289	9/10/2024	1	2415 / 2	355112	5778387	20.463	93	0 wet	Fail	See Retest S24DS-07328
HDR:W24DS01762	S24DS-07290	9/10/2024	2	2405 / 3	355087	5778397	21.064	98	1 dry	Pass	
HDR:W24DS01762	S24DS-07291	9/10/2024	3	2406 / 4	355067	5778383	21.326	98.5	1.5 dry	Pass	
HDR:W24DS01762	S24DS-07292	9/10/2024	4	2410 / 3	355085	5778345	21.195	97	0.5 dry	Pass	
HDR:W24DS01775	S24DS-07326	10/10/2024	1	2408 / 4	355067	5778351	21.916	95	2.5 dry	Pass	
HDR:W24DS01775	S24DS-07327	10/10/2024	2	2413 / 3	355099	5778361	20.093	98	0 dry	Pass	
HDR:W24DS01775	S24DS-07328	10/10/2024	3	2415 / 2	355112	5778386	20.45	100	2 dry	Pass	Retest of S24DS-07289
HDR:W24DS01775	S24DS-07329	10/10/2024	4	2404 / 5	355086	5778471	21.513	100	1 wet	Pass	
HDR:W24DS01775	S24DS-07330	10/10/2024	5	2416 / 4	355112	5778400	20.836	96	0 wet	Pass	
HDR:W24DS01788	S24DS-07387	11/10/2024	1	2411 / -	355098	5778346	21.16	100	2 dry	Pass	
HDR:W24DS01788	S24DS-07388	11/10/2024	2	2414 / -	355105	5778378	21.037	101	0.5 dry	Pass	
HDR:W24DS01802	S24DS-07457	14/10/2024	1	2407 / 6	355072	5778369	22.001	102.5	2 dry	Pass	
HDR:W24DS01814	S24DS-07504	15/10/2024	1	2417 / 5	355112	5778414	21.093	100.5	2 dry	Pass	

CHADWICK GEOTECHNICS

Riverfield Square Estate, 1091938.024 Stage 24

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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:W24DS01814	S24DS-07505	15/10/2024	2	2412 / 5	355110	5778345	21.214	101	1 dry	Pass	
HDR:W24DS01814	S24DS-07506	15/10/2024	3	2436 / 1	355048	5778317	21.896	106.5	2 dry	Pass	
HDR:W24DS01814	S24DS-07507	15/10/2024	4	2406 / 7	355077	5778381	22.199	96.5	2 wet	Pass	
HDR:W24DS01814	S24DS-07508	15/10/2024	5	2430 / 1	355102	5778292	21.066	99.5	0 dry	Pass	
HDR:W24DS01823	S24DS-07546	16/10/2024	1	2429 / 1	355133	5778290	20.375	100	2.5 dry	Pass	
HDR:W24DS01823	S24DS-07547	16/10/2024	2	2435 / 2	355058	5778316	21.887	106	0 dry	Pass	
HDR:W24DS01837	S24DS-07604	17/10/2024	1	2431 / 2	355098	5778301	21.276	101	1.5 dry	Pass	
HDR:W24DS01853	S24DS-07650	22/10/2024	1	2428 / 3	355134	5778304	20.373	103	0.5 wet	Pass	
HDR:W24DS01869	S24DS-07705	23/10/2024	1	2427 / 4	355138	5778318	20.543	102.5	0.5 dry	Pass	
HDR:W24DS01881	S24DS-07733	24/10/2024	1	2426 / 5	355145	5778331	20.714	101	2.5 dry	Pass	
HDR:W24DS01894	S24DS-07799	25/10/2024	1	2423 / 4	355152	5778400	19.93	98.5	0 dry	Pass	
HDR:W24DS01894	S24DS-07800	25/10/2024	2	2422 / 5	355151	5778417	20.072	97.5	0 wet	Pass	
HDR:W24DS01903	S24DS-07825	28/10/2024	1	2425 / 5	355141	5778344	20.77	102.5	3 dry	Pass	
HDR:W24DS01903	S24DS-07826	28/10/2024	2	2434 / 4	355072	5778317	21.976	100	0 wet	Pass	
HDR:W24DS01903	S24DS-07827	28/10/2024	3	2433 / 4	355087	5778310	21.673	100.5	0 wet	Pass	
HDR:W24DS01903	S24DS-07828	28/10/2024	4	2432 / 4	355102	5778316	21.354	100.5	0.5 dry	Pass	
HDR:W24DS01915	S24DS-07908	29/10/2024	1	2423 / FSL	355153	5778406	20.462	100	0 wet	Pass	
HDR:W24DS01915	S24DS-07909	29/10/2024	2	2422 / FSL	355155	5778417	20.385	101	0.5 dry	Pass	
HDR:W24DS01915	S24DS-07910	29/10/2024	3	2424 / FSL	355140	5778352	20.67	102.5	0 wet	Pass	

Appendix C NATA endorsed reports

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:W24DS00859
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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 (Discipline Manager - CMT)
Date of Issue: 7/06/2024

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: Silty Clay

Sample Data

Sample ID	S24DS-03488					
Field Sample ID	1					
Date Tested	3/06/2024					
Time Tested	13:45					
E:	355038					
N:	5778473					
EL:	21.533					
Lot / Layer:	2447 / 1					

Field and Laboratory Data

Depth of Test (mm)	125					
Depth of Layer (mm)	150					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	23.6					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	1.93					
Field Dry Density (t/m³)	1.56					
Peak Converted Wet Density (t/m³)	2.02					
Optimum Moisture Content (%)	23.5					
Compactive Effort	Standard					
Moisture Ratio (%)	101.5					
Moisture Variation (%)	0.5 wet					
Hilf Density Ratio (%)	**96.0**					

Comments

CHADWICK GEOTECHNICS

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

Report No: HDR:W24DS00953
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: B. Taseski (Ravenhall Laboratory Manager)
Date of Issue: 12/07/2024

Sample Details

Location:	Clyde
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	S24DS-04001					
Field Sample ID	1					
Date Tested	18/06/2024					
Time Tested	16:35					
E:	355021					
N:	5778320					
EL:	22.669					
Lot / Lift:	2438 / 2					

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 (%)	21.0					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.02					
Field Dry Density (t/m³)	1.67					
Peak Converted Wet Density (t/m³)	2.08					
Optimum Moisture Content (%)	20.0					
Compactive Effort	Standard					
Moisture Ratio (%)	105.0					
Moisture Variation (%)	1.0 wet					
Hilf Density Ratio (%)	**97.0**					

Comments

CHADWICK GEOTECHNICS

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25 Metcalf Street
DANDENONG SOUTH, VIC 3175

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Fax: +61 3 9706 9431

Report No: HDR:W24DS00975
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: B. Taseski (Ravenhall Laboratory Manager)
Date of Issue: 12/07/2024

Sample Details

Location:	Clyde
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	S24DS-04066					
Field Sample ID	1					
Date Tested	20/06/2024					
Time Tested	10:16					
E:	355031					
N:	5778317					
RL:	22.55					
Lot / Lift:	2437 / 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 (%)	18.3					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.09					
Field Dry Density (t/m³)	1.77					
Peak Converted Wet Density (t/m³)	2.12					
Optimum Moisture Content (%)	18.0					
Compactive Effort	Standard					
Moisture Ratio (%)	103.0					
Moisture Variation (%)	0.5 wet					
Hilf Density Ratio (%)	**99.0**					

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS00984
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: B. Taseski (Ravenhall Laboratory Manager)
Date of Issue: 12/07/2024

Sample Details

Location:	Clyde
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	S24DS-04102	S24DS-04103	S24DS-04104			
Field Sample ID	1	2	3			
Date Tested	21/06/2024	21/06/2024	21/06/2024			
Time Tested	09:40	10:05	10:15			
E:	355036	355047	355047			
N:	5778364	5778429	5778398			
EL:	22.152	21.915	21.885			
Lot / Layer:	2440 / 1	2444 / 1	2442 / 1			
Field and Laboratory Data						
Depth of Test (mm)	175	175	175			
Depth of Layer (mm)	200	200	200			
AS Sieve Size (mm)	19.0	19.0	19.0			
Oversize Wet (%)	0	0	0			
Field Moisture Content (%)	15.2	15.7	18.3			
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1			
Field Wet Density (t/m³)	2.11	2.07	2.05			
Field Dry Density (t/m³)	1.83	1.79	1.74			
Peak Converted Wet Density (t/m³)	2.12	2.10	2.07			
Optimum Moisture Content (%)	15.0	15.5	18.0			
Compactive Effort	Standard	Standard	Standard			
Moisture Ratio (%)	100.5	102.0	102.5			
Moisture Variation (%)	0.0	0.5 wet	0.5 wet			
Hilf Density Ratio (%)	**99.5**	**98.5**	**99.0**			

Comments

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Report No: HDR:W24DS00993
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: B. Taseski (Ravenhall Laboratory Manager)
Date of Issue: 12/07/2024

Sample Details

Location:	Clyde
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:	Sandy Clay

Sample Data

Sample ID	S24DS-04177	S24DS-04178	S24DS-04179			
Field Sample ID	1	2	3			
Date Tested	24/06/2024	24/06/2024	24/06/2024			
Time Tested	08:29	08:37	08:44			
E:	355036	355043	355030			
N:	5778441	5778407	5778380			
RL:	22.386	22.465	22.495			
Lot / Layer:	2445 / 2	2443 / 2	2441 / 2			
Field and Laboratory Data						
Depth of Test (mm)	175	175	175			
Depth of Layer (mm)	200	200	200			
AS Sieve Size (mm)	19.0	19.0	19.0			
Oversize Wet (%)	0	0	0			
Field Moisture Content (%)	18.1	18.0	13.4			
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1			
Field Wet Density (t/m³)	2.12	2.07	2.07			
Field Dry Density (t/m³)	1.79	1.75	1.83			
Peak Converted Wet Density (t/m³)	2.08	2.07	2.10			
Optimum Moisture Content (%)	18.0	18.0	13.5			
Compactive Effort	Standard	Standard	Standard			
Moisture Ratio (%)	102.0	101.0	98.0			
Moisture Variation (%)	0.5 wet	0.0	0.0			
Hilf Density Ratio (%)	**102.0**	**100.0**	**98.5**			

Comments

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Report No: HDR:W24DS01001
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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 (Discipline Manager - CMT)
Date of Issue: 26/11/2024

Sample Details

Location:	Clyde
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	S24DS-04211	S24DS-04212	S24DS-04213			
Field Sample ID	1	2	3			
Date Tested	25/06/2024	25/06/2024	25/06/2024			
Time Tested	12:08	12:15	12:26			
E:	355030	355034	355038			
N:	5778324	5778418	5778457			
EL:	22.604	22.793	22.384			
Lot / Layer:	2438 / 3	2443 / 3	2446 / 3			
Field and Laboratory Data						
Depth of Test (mm)	175	175	175			
Depth of Layer (mm)	200	200	200			
AS Sieve Size (mm)	19.0	19.0	19.0			
Oversize Wet (%)	0	0	0			
Field Moisture Content (%)	15.2	130	15.7			
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1			
Field Wet Density (t/m³)	2.09	1.98	2.07			
Field Dry Density (t/m³)	1.81	0.86	1.79			
Peak Converted Wet Density (t/m³)	2.09	2.03	2.11			
Optimum Moisture Content (%)	14.5	129.5	15.0			
Compactive Effort	Standard	Standard	Standard			
Moisture Ratio (%)	104.0	100.5	104.0			
Moisture Variation (%)	0.5 wet	0.5 wet	0.5 wet			
Hilf Density Ratio (%)	**100.0**	**97.5**	**98.0**			

Comments

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Report No: HDR:W24DS01015
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: B. Taseski (Ravenhall Laboratory Manager)
Date of Issue: 12/07/2024

Sample Details

Location:	Clyde
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	S24DS-04266					
Field Sample ID	1					
Date Tested	26/06/2024					
Time Tested	11:15					
E:	355045					
N:	5778420					
EL:	22.473					
Lot / Lift:	2444 / 5					

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 (%)	17.4					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	1.99					
Field Dry Density (t/m³)	1.70					
Peak Converted Wet Density (t/m³)	2.05					
Optimum Moisture Content (%)	17.0					
Compactive Effort	Standard					
Moisture Ratio (%)	102.5					
Moisture Variation (%)	0.5 wet					
Hilf Density Ratio (%)	**97.0**					

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01518
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 11/09/2024

Sample Details

Location:	Clyde North
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	S24DS-06356	S24DS-06357	
Field Sample ID	1	2	
Date Tested	6/09/2024	6/09/2024	
Time Tested	12:30	15:00	
E:	355103	355090	
N:	5778442	5778448	
EL:	21.046	20.866	
Lot / Layer:	2419 / -	2402 / 1	

Field and Laboratory Data

Depth of Test (mm)	175	175	
Depth of Layer (mm)	200	200	
AS Sieve Size (mm)	19.0	19.0	
Oversize Wet (%)	0	0	
Field Moisture Content (%)	17.1	19.6	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	2.03	2.02	
Field Dry Density (t/m³)	1.73	1.69	
Peak Converted Wet Density (t/m³)	2.11	2.16	
Optimum Moisture Content (%)	14.5	16.5	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	119.5	117.5	
Moisture Variation (%)	3.0 wet	3.0 wet	
Hilf Density Ratio (%)	**96.5**	**93.5**	

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01520
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 11/09/2024

Sample Details

Location:	Clyde North
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	S24DS-06361	S24DS-06362	S24DS-06363
Field Sample ID	1	2	3
Date Tested	7/09/2024	7/09/2024	7/09/2024
Time Tested	11:00	12:00	12:15
E:	355086	355111	355154
N:	5778464	5778431	5778445
EL:	21.064	20.493	19.657
Lot / Layer:	2401 / 2	2418 / 1	2420 / 1

Field and Laboratory Data

Depth of Test (mm)	175	175	175
Depth of Layer (mm)	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0
Oversize Wet (%)	0	0	0
Field Moisture Content (%)	17.6	15.2	10.8
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	2.03	2.06	2.06
Field Dry Density (t/m³)	1.73	1.79	1.86
Peak Converted Wet Density (t/m³)	2.10	2.12	2.08
Optimum Moisture Content (%)	15.5	14.0	9.0
Compactive Effort	Standard	Standard	Standard
Moisture Ratio (%)	113.0	106.5	119.0
Moisture Variation (%)	2.0 wet	1.0 wet	2.0 wet
Hilf Density Ratio (%)	**97.0**	**97.0**	**99.0**

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01536
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 17/09/2024

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	S24DS-06421	S24DS-06422	S24DS-06423	S24DS-06424
Field Sample ID	1	2	3	4
Date Tested	9/09/2024	9/09/2024	9/09/2024	9/09/2024
Time Tested	10:50	11:10	15:15	15:30
E:	355090	355074	355073	355076
N:	5778446	54778429	5778400	5778351
EL:	20.888	21.377	21.155	21.198
Lot / Layer:	2401 / 1	2403 / 3	2405 / 1	2409 / 1
	Retest of S24DS-06357			
Field and Laboratory Data				
Depth of Test (mm)	175	175	175	175
Depth of Layer (mm)	200	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0
Field Moisture Content (%)	17.7	17.9	23.7	16.8
Field Moisture Content Method	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	1.97	2.04	2.04
Field Dry Density (t/m³)	1.76	1.67	1.65	1.75
Peak Converted Wet Density (t/m³)	2.08	2.07	2.00	2.11
Optimum Moisture Content (%)	17.0	18.0	24.5	16.5
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Ratio (%)	105.0	101.0	97.5	102.5
Moisture Variation (%)	1.0 wet	0.0	0.5 dry	0.5 wet
Hilf Density Ratio (%)	**99.5**	**95.0**	**102.0**	**97.0**

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01543
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 17/09/2024

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	S24DS-06439	S24DS-06440	S24DS-06441
Field Sample ID	1	2	3
Date Tested	10/09/2024	10/09/2024	10/09/2024
Time Tested	09:30	09:45	12:30
E:	355084	355103	355154
N:	5778365	5778389	5778431
EL:	20.622	21.016	19.810
Lot / Layer:	2407 / 1	2415 / 1	2421 / 3

Field and Laboratory Data

Depth of Test (mm)	125	125	125
Depth of Layer (mm)	150	150	150
AS Sieve Size (mm)	19.0	19.0	19.0
Oversize Wet (%)	0	0	0
Field Moisture Content (%)	18.6	15.8	19.6
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	2.04	2.07	2.00
Field Dry Density (t/m³)	1.72	1.79	1.67
Peak Converted Wet Density (t/m³)	2.05	2.11	1.99
Optimum Moisture Content (%)	17.5	14.5	20.0
Compactive Effort	Standard	Standard	Standard
Moisture Ratio (%)	105.5	110.5	97.5
Moisture Variation (%)	1.0 wet	1.5 wet	0.5 dry
Hilf Density Ratio (%)	**99.5**	**98.0**	**100.5**

Comments

CHADWICK GEOTECHNICS

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

Report No: HDR:W24DS01691
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 2/10/2024

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	S24DS-06992	S24DS-06993	
Field Sample ID	1	2	
Date Tested	30/09/2024	30/09/2024	
Time Tested	10:40	14:00	
E:	355096	355096	
N:	5778442	5778455	
EL:	21.310	21.406	
Lot / Layer:	2402 / -	2401 / -	

Field and Laboratory Data

Depth of Test (mm)	175	175	
Depth of Layer (mm)	200	200	
AS Sieve Size (mm)	19.0	0.0	
Oversize Wet (%)	0	0	
Field Moisture Content (%)	16.0	19.0	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	2.08	2.02	
Field Dry Density (t/m³)	1.79	1.70	
Peak Converted Wet Density (t/m³)	2.06	2.09	
Optimum Moisture Content (%)	16.5	16.5	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	97.0	114.5	
Moisture Variation (%)	0.5 dry	2.5 wet	
Hilf Density Ratio (%)	**101.0**	**96.5**	

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01695
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 3/10/2024

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	S24DS-07032		
Field Sample ID	1		
Date Tested	1/10/2024		
Time Tested	14:40		
E:	355128		
N:	5778457		
EL:	20.466		
Lot / Layer:	2403 / 4		

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 (%)	18.1		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.06		
Field Dry Density (t/m³)	1.74		
Peak Converted Wet Density (t/m³)	2.07		
Optimum Moisture Content (%)	17.5		
Compactive Effort	Standard		
Moisture Ratio (%)	105.0		
Moisture Variation (%)	1.0 wet		
Hilf Density Ratio (%)	**100.0**		

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01706
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 8/10/2024

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	S24DS-07089		
Field Sample ID	1		
Date Tested	2/10/2024		
Time Tested	09:25		
E:	355116		
N:	5778444		
EL:	20.842		
Lot / Layer:	2419 / 5		

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 (%)	19.5		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.02		
Field Dry Density (t/m³)	1.69		
Peak Converted Wet Density (t/m³)	2.03		
Optimum Moisture Content (%)	17.0		
Compactive Effort	Standard		
Moisture Ratio (%)	114.0		
Moisture Variation (%)	2.5 wet		
Hilf Density Ratio (%)	**99.5**		

Comments

CHADWICK GEOTECHNICS

Think Act Safe Be

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Report No: HDR:W24DS01762
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 14/10/2024

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	S24DS-07289	S24DS-07290	S24DS-07291	S24DS-07292
Field Sample ID	1	2	3	4
Date Tested	9/10/2024	9/10/2024	9/10/2024	9/10/2024
Time Tested	11:15	11:30	15:30	15:45
E:	355112	355087	355067	355085
N:	5778387	5778397	5778383	5778345
EL:	20.463	21.064	21.326	21.195
Lot / Layer:	2415 / 2	2405 / 3	2406 / 4	2410 / 3

Field and Laboratory Data

Depth of Test (mm)	175	175	175	175
Depth of Layer (mm)	200	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0
Field Moisture Content (%)	13.7	15.8	14.3	15.8
Field Moisture Content Method	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	2.03	2.04
Field Dry Density (t/m³)	1.73	1.72	1.78	1.77
Peak Converted Wet Density (t/m³)	2.12	2.03	2.07	2.11
Optimum Moisture Content (%)	13.5	16.5	16.0	16.0
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Ratio (%)	101.5	94.5	89.5	97.5
Moisture Variation (%)	0.0	1.0 dry	1.5 dry	0.5 dry
Hilf Density Ratio (%)	**93.0**	**98.0**	**98.5**	**97.0**

Comments

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Report No: HDR:W24DS01775
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 17/10/2024

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	S24DS-07326	S24DS-07327	S24DS-07328	S24DS-07329	S24DS-07330
Field Sample ID	1	2	3	4	5
Date Tested	10/10/2024	10/10/2024	10/10/2024	10/10/2024	10/10/2024
Time Tested	08:15	11:15	14:00	15:00	15:40
E:	355067	355099	355112	355086	355112
N:	5778351	5778361	5778386	5778471	5778400
EL:	21.916	20.093	20.450	21.513	20.836
Lot / Layer:	2408 / 4	2413 / 3	2415 / 2	2404 / 5	2416 / 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	0
Field Moisture Content (%)	12.1	17.5	12.9	19.0	13.3
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)	1.98	2.05	2.05	2.07	2.06
Field Dry Density (t/m³)	1.76	1.74	1.82	1.74	1.82
Peak Converted Wet Density (t/m³)	2.08	2.09	2.05	2.06	2.15
Optimum Moisture Content (%)	14.5	17.5	15.0	18.0	13.0
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	84.0	99.5	87.5	104.5	100.0
Moisture Variation (%)	2.5 dry	0.0	2.0 dry	1.0 wet	0.0
Hilf Density Ratio (%)	**95.0**	**98.0**	**100.0**	**100.0**	**96.0**

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01788
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 17/10/2024

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	S24DS-07387	S24DS-07388	
Field Sample ID	1	2	
Date Tested	11/10/2024	11/10/2024	
Time Tested	15:00	15:15	
E:	355098	355105	
N:	5778346	5778378	
EL:	21.160	21.037	
Lot / Layer:	2411 / -	2414 / -	

Field and Laboratory Data

Depth of Test (mm)	175	175	
Depth of Layer (mm)	200	200	
AS Sieve Size (mm)	19.0	19.0	
Oversize Wet (%)	0	0	
Field Moisture Content (%)	14.6	14.5	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	2.04	2.14	
Field Dry Density (t/m³)	1.78	1.87	
Peak Converted Wet Density (t/m³)	2.04	2.12	
Optimum Moisture Content (%)	17.0	15.0	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	86.5	97.5	
Moisture Variation (%)	2.0 dry	0.5 dry	
Hilf Density Ratio (%)	**100.0**	**101.0**	

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01802
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 17/10/2024

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 98%
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	S24DS-07457		
Field Sample ID	1		
Date Tested	14/10/2024		
Time Tested	12:30		
E:	355072		
N:	5778369		
EL:	22.001		
Lot / Layer:	2407 / 6		

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 (%)	14.9		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.07		
Field Dry Density (t/m³)	1.80		
Peak Converted Wet Density (t/m³)	2.02		
Optimum Moisture Content (%)	16.5		
Compactive Effort	Standard		
Moisture Ratio (%)	89.0		
Moisture Variation (%)	2.0 dry		
Hilf Density Ratio (%)	**102.5**		

Comments

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Report No: HDR:W24DS01814
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 18/10/2024

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	S24DS-07504	S24DS-07505	S24DS-07506	S24DS-07507	S24DS-07508
Field Sample ID	1	2	3	4	5
Date Tested	15/10/2024	15/10/2024	15/10/2024	15/10/2024	15/10/2024
Time Tested	08:00	08:20	11:30	11:45	15:30
E:	355112	355110	355048	355077	355102
N:	5778414	5778345	5778317	5778381	5778292
EL:	21.093	21.214	21.896	22.199	21.066
Lot / Layer:	2417 / 5	2412 / 5	2436 / 1	2406 / 7	2430 / 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 (%)	12.2	16.3	18.4	19.0	20.7
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)	2.09	2.07	2.04	2.02	2.00
Field Dry Density (t/m³)	1.86	1.78	1.73	1.70	1.66
Peak Converted Wet Density (t/m³)	2.08	2.05	1.92	2.09	2.01
Optimum Moisture Content (%)	14.0	17.0	20.5	17.0	21.0
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	86.5	95.0	90.0	113.0	99.5
Moisture Variation (%)	2.0 dry	1.0 dry	2.0 dry	2.0 wet	0.0
Hilf Density Ratio (%)	**100.5**	**101.0**	**106.5**	**96.5**	**99.5**

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01823
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 18/10/2024

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 - Meridian Green
Material: Clay

Sample Data

Sample ID	S24DS-07546	S24DS-07547	
Field Sample ID	1	2	
Date Tested	16/10/2024	16/10/2024	
Time Tested	13:45	14:30	
E:	355133	355058	
N:	5778290	5778316	
EL:	20.375	21.887	
Lot / Layer:	2429 / 1	2435 / 2	

Field and Laboratory Data

Depth of Test (mm)	175	175	
Depth of Layer (mm)	200	200	
AS Sieve Size (mm)	19.0	19.0	
Oversize Wet (%)	0	0	
Field Moisture Content (%)	21.8	14.8	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	1.92	2.07	
Field Dry Density (t/m³)	1.58	1.80	
Peak Converted Wet Density (t/m³)	1.92	1.95	
Optimum Moisture Content (%)	24.5	15.0	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	89.0	99.5	
Moisture Variation (%)	2.5 dry	0.0	
Hilf Density Ratio (%)	**100.0**	**106.0**	

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01837
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 24/10/2024

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 - Merdian Green
Material: Clay

Sample Data

Sample ID	S24DS-07604		
Field Sample ID	1		
Date Tested	17/10/2024		
Time Tested	14:15		
E:	355098		
N:	5778301		
EL:	21.276		
Lot / Layer:	2431 / 2		

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 (%)	18.7		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.00		
Field Dry Density (t/m³)	1.68		
Peak Converted Wet Density (t/m³)	1.98		
Optimum Moisture Content (%)	20.5		
Compactive Effort	Standard		
Moisture Ratio (%)	92.0		
Moisture Variation (%)	1.5 dry		
Hilf Density Ratio (%)	**101.0**		

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01853
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 29/10/2024

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	S24DS-07650		
Field Sample ID	1		
Date Tested	22/10/2024		
Time Tested	12:15		
E:	355134		
N:	5778304		
EL:	20.373		
Lot / Layer:	2428 / 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 (%)	20.1		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.04		
Field Dry Density (t/m³)	1.70		
Peak Converted Wet Density (t/m³)	1.98		
Optimum Moisture Content (%)	20.0		
Compactive Effort	Standard		
Moisture Ratio (%)	101.5		
Moisture Variation (%)	0.5 wet		
Hilf Density Ratio (%)	**103.0**		

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01869
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 29/10/2024

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 - Meridian Green
Material: Clay

Sample Data

Sample ID	S24DS-07705		
Field Sample ID	1		
Date Tested	23/10/2024		
Time Tested	10:15		
E:	355138		
N:	5778318		
EL:	20.543		
Lot / Layer:	2427 / 4		

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 (%)	17.0		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.08		
Field Dry Density (t/m³)	1.78		
Peak Converted Wet Density (t/m³)	2.03		
Optimum Moisture Content (%)	17.5		
Compactive Effort	Standard		
Moisture Ratio (%)	96.0		
Moisture Variation (%)	0.5 dry		
Hilf Density Ratio (%)	**102.5**		

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01881
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 29/10/2024

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 - Meridian Green
Material: Clay

Sample Data

Sample ID	S24DS-07733		
Field Sample ID	1		
Date Tested	24/10/2024		
Time Tested	15:15		
E:	355145		
N:	5778331		
EL:	20.714		
Lot / Layer:	2426 / 5		

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 (%)	18.5		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	1.98		
Field Dry Density (t/m³)	1.67		
Peak Converted Wet Density (t/m³)	1.95		
Optimum Moisture Content (%)	21.0		
Compactive Effort	Standard		
Moisture Ratio (%)	88.0		
Moisture Variation (%)	2.5 dry		
Hilf Density Ratio (%)	**101.0**		

Comments

CHADWICK GEOTECHNICS

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Ph: + 61 3 8796 7900
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Report No: HDR:W24DS01894
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 29/10/2024

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	S24DS-07799	S24DS-07800	
Field Sample ID	1	2	
Date Tested	25/10/2024	25/10/2024	
Time Tested	11:15	14:00	
E:	355152	355151	
N:	5778400	5778417	
EL:	19.930	20.072	
Lot / Layer:	2423 / 4	2422 / 5	

Field and Laboratory Data

Depth of Test (mm)	175	175	
Depth of Layer (mm)	200	200	
AS Sieve Size (mm)	19.0	19.0	
Oversize Wet (%)	0	0	
Field Moisture Content (%)	12.3	12.0	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	2.08	2.05	
Field Dry Density (t/m³)	1.85	1.83	
Peak Converted Wet Density (t/m³)	2.12	2.11	
Optimum Moisture Content (%)	12.5	12.0	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	99.5	100.0	
Moisture Variation (%)	0.0	0.0	
Hilf Density Ratio (%)	**98.5**	**97.5**	

Comments

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Report No: HDR:W24DS01903
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 29/10/2024

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	S24DS-07825	S24DS-07826	S24DS-07827	S24DS-07828
Field Sample ID	1	2	3	4
Date Tested	28/10/2024	28/10/2024	28/10/2024	28/10/2024
Time Tested	09:15	09:30	09:45	10:00
E:	355141	355072	355087	355102
N:	5778344	5778317	5778310	5778316
EL:	20.770	21.976	21.673	21.354
Lot / Layer:	2425 / 5	2434 / 4	2433 / 4	2432 / 4
Field and Laboratory Data				
Depth of Test (mm)	175	175	175	175
Depth of Layer (mm)	200	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0
Field Moisture Content (%)	16.4	14.3	14.6	12.1
Field Moisture Content Method	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)	1.99	2.08	2.10	2.13
Field Dry Density (t/m³)	1.71	1.82	1.84	1.90
Peak Converted Wet Density (t/m³)	1.95	2.09	2.10	2.11
Optimum Moisture Content (%)	19.5	14.5	14.5	12.5
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Ratio (%)	84.5	100.0	100.0	97.0
Moisture Variation (%)	3.0 dry	0.0	0.0	0.5 dry
Hilf Density Ratio (%)	**102.5**	**100.0**	**100.5**	**100.5**

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W24DS01915
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 8/11/2024

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: Sandy Clay

Sample Data

Sample ID	S24DS-07908	S24DS-07909	S24DS-07910
Field Sample ID	1	2	3
Date Tested	29/10/2024	29/10/2024	29/10/2024
Time Tested	09:21	09:36	10:37
E:	355153	355155	355140
N:	5778406	5778417	5778352
EL:	20.462	20.385	20.67
Lot / Layer:	2423 / FSL	2422 / FSL	2424 / FSL

Field and Laboratory Data

Depth of Test (mm)	175	175	175
Depth of Layer (mm)	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0
Oversize Wet (%)	0	0	0
Field Moisture Content (%)	21.2	22.6	18.1
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	2.02	2.02	2.03
Field Dry Density (t/m³)	1.67	1.65	1.72
Peak Converted Wet Density (t/m³)	2.02	2.01	1.98
Optimum Moisture Content (%)	21.0	23.0	18.0
Compactive Effort	Standard	Standard	Standard
Moisture Ratio (%)	100.5	98.5	100.5
Moisture Variation (%)	0.0	0.5 dry	0.0
Hilf Density Ratio (%)	**100.0**	**101.0**	**102.5**

Comments

CHADWICK GEOTECHNICS

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Report No: MAT:S24DS-07117/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
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: 15/10/2024

Sample Details

Sample Location	E: 355159, N: 5778485, EL: 19.928, Lot: 23278, Lift: 6
Field Sample ID	1
Date Sampled	3/10/2024
Time Sampled	14:30
Source	Onsite
Material	Sandy CLAY
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S24DS-07117

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	17.1	
Date Tested		8/10/2024	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	14.0	
Mould Length (mm)		250	
Crumbling		No	
Curling		Yes	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	45	
Plastic Limit (%)	AS 1289.3.2.1	15	
Plasticity Index (%)	AS 1289.3.3.1	30	
Date Tested		11/10/2024	

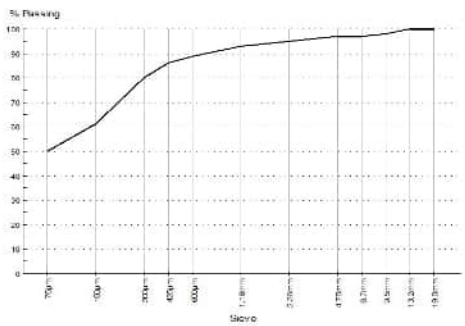
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 11/10/2024

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	100	
9.5mm	98	
6.7mm	97	
4.75mm	97	
2.36mm	95	
1.18mm	93	
600µm	89	
425µm	86	
300µm	80	
150µm	61	
75µm	50	

Chart



Comments

N/A

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Report No: MAT:S24DS-07346/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 29/10/2024

Sample Details

Sample Location	E: 355086, N: 5778471, EL: 21.513, Lot: 2415, Lift: 5
Field Sample ID	1
Date Sampled	10/10/2024
Time Sampled	15:00
Source	Onsite
Material	Clay
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S24DS-07346

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	15.7	
Date Tested		14/10/2024	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	13.5	
Mould Length (mm)		250	
Crumbling		No	
Curling		Yes	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	47	
Plastic Limit (%)	AS 1289.3.2.1	15	
Plasticity Index (%)	AS 1289.3.3.1	32	
Date Tested		17/10/2024	

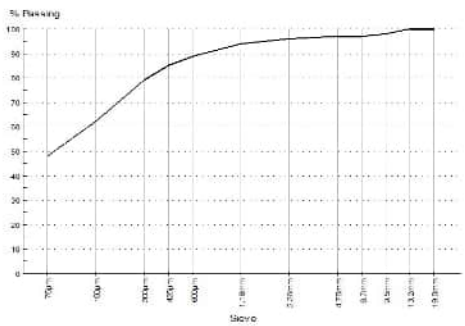
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 16/10/2024

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	100	
9.5mm	98	
6.7mm	97	
4.75mm	97	
2.36mm	96	
1.18mm	94	
600µm	89	
425µm	85	
300µm	79	
150µm	62	
75µm	48	

Chart



Comments

N/A

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Report No: MAT:S24DS-07656/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 24
Project No.: 1091938.024
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: 11/11/2024

Sample Details

Sample Location	E: 355134, N: 5778304, EL: 20.373, Lot: 2428, Layer: 3
Field Sample ID	1
Date Sampled	22/10/2024
Time Sampled	12:15
Source	Imported
Material	Clay
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S24DS-07656

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	20.5	
Date Tested		24/10/2024	
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		Yes	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	58	
Plastic Limit (%)	AS 1289.3.2.1	21	
Plasticity Index (%)	AS 1289.3.3.1	37	
Date Tested		30/10/2024	

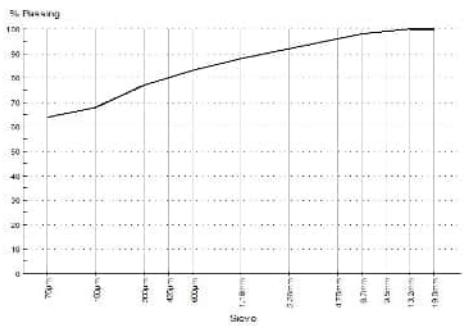
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 28/10/2024

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	100	
9.5mm	99	
6.7mm	98	
4.75mm	96	
2.36mm	92	
1.18mm	88	
600µm	83	
425µm	80	
300µm	77	
150µm	68	
75µm	64	

Chart



Comments

N/A

Appendix D Controlled Fill Certificate

CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

PROJECT : Riverfield Square Estate Stage 24
Lots 2401 to 2447

Chadwick Geotechnics REF:
1091938.024.R1.v1

DATE: 20 March 2025

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

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 area mentioned above. 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, specifically for Level 1 Inspection and Testing of the structural fill (excluding topsoil).

This report is based on the conditions present and factors affecting the soil at the time of inspection (3 June 2024 and was completed on 29 October 2024). No responsibility or liability will be accepted and Chadwick Geotechnics Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions since the site testing.

CHADWICK GEOTECHNICS PTY LTD

Robert Barden
Project Manager

Michael DiMeglio
Project Director

CHADWICK
GEOTECHNICS