Cobble Springs Stage 1

GITA Inspection Verification Report

Prepared For:	Lojac Civil Pty Ltd
Report Number	D231082A V1
Version Release Date	14 Mar 2024
Report Released By	Eranda Hippola
Title	Laboratory Manager
Signature	

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Bibra Lake 08 9395 7220

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Appendices

1 Introduction

Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical Inspection and Testing Authority (GITA) to provide Level 1 supervision and testing works on the earthworks component for Cobble Springs Stage 1. This work was conducted over the period of 31/08/2023 to 07/02/2024.

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

2 Scope of Work

2.1 Area of Work

The areas of work included LOT 185 To LOT 221, bounded by streets Stonecrop Drive and Sieberi Circuit. The site will be a Residential development.

The area on which fill was placed is shown on site plan (Appendix 1: *Test Location Plan*) based on drawings prepared by Colliers (Drawing Reference: 22-0097-01RD01) and provided by Lojac Civil Pty Ltd.

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

2.2 Specification

The technical specification for compaction control requirements was provided by Lojac Civil Pty Ltd and established that:

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

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

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

2.3 Limitations

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

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

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

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

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

3 Construction Method

3.1 Subgrade Preparation

At the time of subgrade inspection the following was observed:

- Subgrade preparation involved stripping the site of topsoil, vegetation and organic matter to a depth of approximately 150mm below existing levels.
- The site was cleared of all trees and stumps to the extent necessary for the fill placement to proceed
- The roots of all trees and any debris was removed from site prior to any fill placement

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

3.2 Fill Placement

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

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

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

The final 200mm of material placed across the site was placed as a topsoil layer or growing medium and should be considered as non-structural, as it was placed in an uncontrolled manner, as allowed by specifications and placement of the final 200mm of material was not observed by the GITA.

4 Construction Verification

Compaction Verification testing is summarized in a detailed test register with test certificates attached provided in Appendix 2: *Compaction Test Register and Test Certificates*. A test location plan (D231082D1, Appendix 1) providing a schematic of test locations across the extent of scope of works for every placed layer of fill is also documented.

A total of 54 density tests (Hilf method in accordance with 1289 5.7.1) were undertaken with 0 failed results. The contractor was notified of any failed tests and the failed areas were ripped, watered, compacted and then re-tested to confirm compliance with the specification. The results summarised in the compaction test register (Appendix 2) confirm that for every layer of fill placed in a specific work area, satisfactory testing was completed.

5 Statement of Compliance

The intention of this report is to provide a description of the earthworks construction for Stage 1 at Cobble Springs. For completed fill areas of greater than 300mm, and for works completed between 31/08/2023 and 07/02/2024, earthworks construction activities were conducted under the full time supervision of the Geotechnical Inspection and Testing Authority. Inspections and testing of the fill areas at this site indicate that both sub grade preparation and fill placement have been conducted in accordance with the specification. The earthworks construction for Stage 1 of Cobble Springs was observed to be constructed in compliance with the requirements of the Technical Specification.

Appendix 1: Test Location Plan

Our Head Office
47 National Ave
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Our Laboratories
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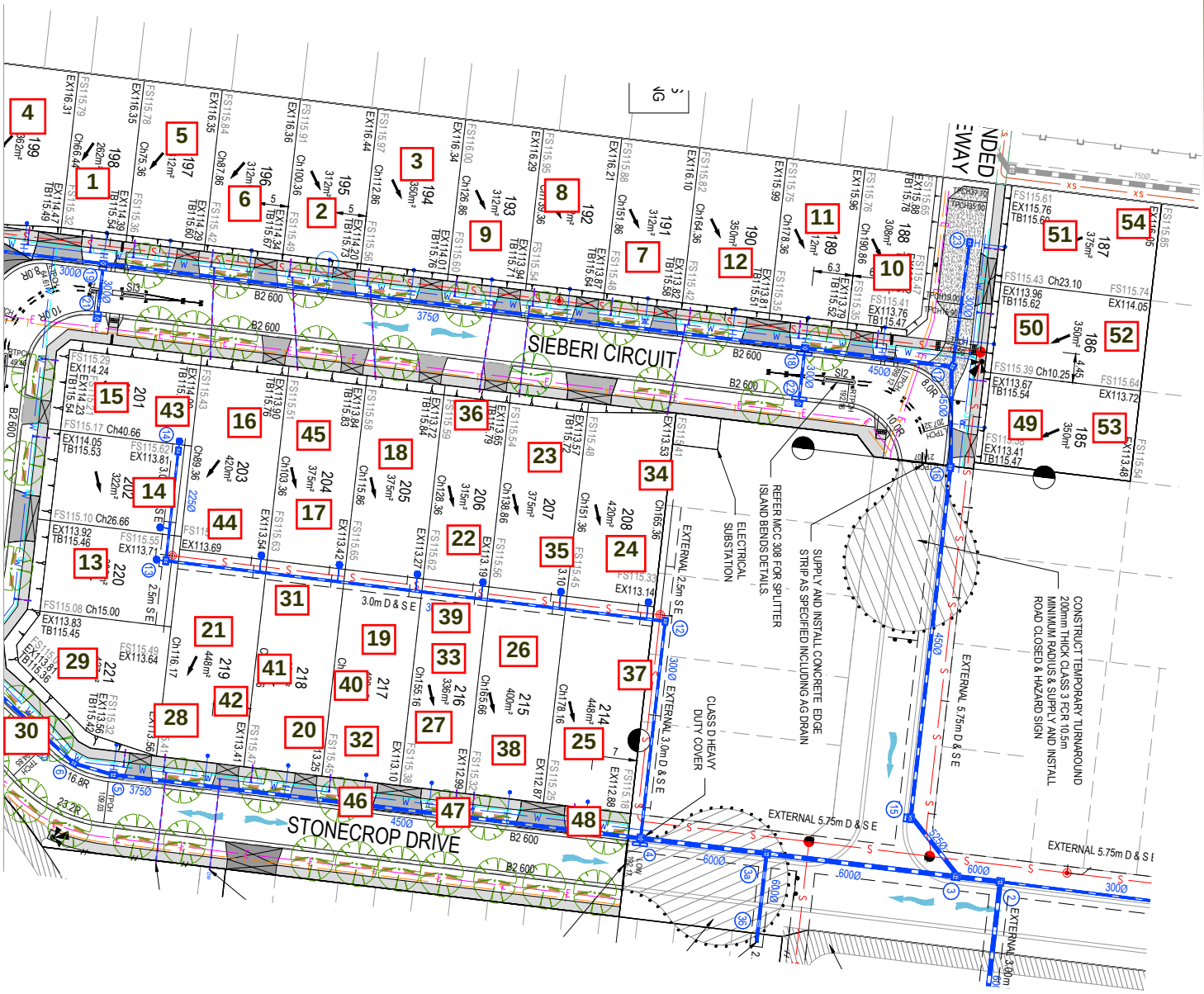
Deer Park 03 8348 5596
Bibra Lake 08 9395 7220



terra firma laboratories

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47 National Ave
Pakenham, VIC 3810

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

Test Location Plan

not to scale

Client:	LOJAC CIVIL Pty Ltd
Project:	Cobble Springs Estate, Stage 1
Reference:	D231082 D1

Appendix 2: Compaction Test Register and Test Certificates

Compaction Test Register

Client: Lojac Civil Pty Ltd
Project: Cobble Springs Stage 1
Project No: D231082
Specification: 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
31/08/2023	1	Layer 1		96.5%	Pass	Lot 198	D231082-1
31/08/2023	2	Layer 1		97.5%	Pass	Lot 195	D231082-1
31/08/2023	3	Layer 1		97.0%	Pass	Lot 194	D231082-1
01/09/2023	4	Layer 2		97.5%	Pass	Lot 199	D231082-2
01/09/2023	5	Layer 2		97.5%	Pass	Lot 197	D231082-2
01/09/2023	6	Layer 2		99.5%	Pass	Lot 196	D231082-2
04/09/2023	7	Layer 3		103.0%	Pass	Lot 191	D231082-3
04/09/2023	8	Layer 3		102.5%	Pass	Lot 192	D231082-3
04/09/2023	9	Layer 3		102.0%	Pass	Lot 193	D231082-3
05/09/2023	10	Layer 4		99.0%	Pass	Lot 188	D231082-4
05/09/2023	11	Layer 4		101.5%	Pass	Lot 189	D231082-4
05/09/2023	12	Layer 4		102.0%	Pass	Lot 190	D231082-4
06/09/2023	13	Layer 1		102.0%	Pass	Lot 220	D231082-5
06/09/2023	14	Layer 1		102.0%	Pass	Lot 202	D231082-5
06/09/2023	15	Layer 1		101.5%	Pass	Lot 201	D231082-5
07/09/2023	16	Layer 2		101.5%	Pass	Lot 203	D231082-6
07/09/2023	17	Layer 2		101.5%	Pass	Lot 204	D231082-6
07/09/2023	18	Layer 2		101.5%	Pass	Lot 205	D231082-6
11/09/2023	19	Layer 3		100.0%	Pass	Lot 217	D231082-7
11/09/2023	20	Layer 3		100.5%	Pass	Lot 218	D231082-7
11/09/2023	21	Layer 3		101.0%	Pass	Lot 219	D231082-7
12/09/2023	22	Layer 3		103.0%	Pass	Lot 206	D231082-8
12/09/2023	23	Layer 3		102.5%	Pass	Lot 207	D231082-8
12/09/2023	24	Layer 3		101.0%	Pass	Lot 208	D231082-8
13/09/2023	25	Layer 3		101.0%	Pass	Lot 214	D231082-9
13/09/2023	26	Layer 3		100.5%	Pass	Lot 215	D231082-9
13/09/2023	27	Layer 3		103.5%	Pass	Lot 216	D231082-9
14/09/2023	28	Layer 1		104.0%	Pass	Lot 219	D231082-10
14/09/2023	29	Layer 1		105.5%	Pass	Lot 221	D231082-10
14/09/2023	30	Layer 1		103.0%	Pass	RI CIRCUIT" F	D231082-10
15/09/2023	31	Layer 1		101.5%	Pass	Lot 218	D231082-11
15/09/2023	32	Layer 1		101.5%	Pass	Lot 217	D231082-11
15/09/2023	33	Layer 1		101.0%	Pass	Lot 216	D231082-11
18/09/2023	34	Layer 1		98.5%	Pass	Lot 208	D231082-12
18/09/2023	35	Layer 1		98.5%	Pass	Lot 207	D231082-12
18/09/2023	36	Layer 1		98.5%	Pass	Lot 206	D231082-12
19/09/2023	37	Layer 2		103.5%	Pass	Lot 214	D231082-13
19/09/2023	38	Layer 2		104.5%	Pass	Lot 215	D231082-13
19/09/2023	39	Layer 2		104.5%	Pass	Lot 216	D231082-13
21/09/2023	40	Layer 3		99.5%	Pass	Lot 217	D231082-14
21/09/2023	41	Layer 3		99.5%	Pass	Lot 218	D231082-14

Compaction Test Register

Client: Lojac Civil Pty Ltd
Project No: D231082
Project: Cobble Springs Stage 1
Specification: 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
21/09/2023	42	Layer 3		99.5%	Pass	Lot 219	D231082-14
09/10/2023	43	Layer 3		100.5%	Pass	Lot 201	D231082-15
09/10/2023	44	Layer 3		101.5%	Pass	Lot 203	D231082-15
09/10/2023	45	Layer 3		100.0%	Pass	Lot 204	D231082-15
30/01/2024	46	Layer 3		100.0%	Pass	ECROP DRIVE	D231082-16
30/01/2024	47	Layer 3		99.5%	Pass	ECROP DRIVE	D231082-16
30/01/2024	48	Layer 3		100.5%	Pass	ECROP DRIVE	D231082-16
07/02/2024	49	Layer 2		102.0%	Pass	Lot 185	D231082-17
07/02/2024	50	Layer 2		101.0%	Pass	Lot 186	D231082-17
07/02/2024	51	Layer 2		101.0%	Pass	Lot 187	D231082-17
07/02/2024	52	Layer 3		101.5%	Pass	Lot 186	D231082-17
07/02/2024	53	Layer 3		101.0%	Pass	Lot 185	D231082-17
07/02/2024	54	Layer 3		101.0%	Pass	Lot 187	D231082-17

Material Test Report

Report Number: D231082-1
Issue Number: 1
Date Issued: 04/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Client Reference: shannon
Work Request: 6385
Date Sampled: 31/08/2023 14:45
Dates Tested: 31/08/2023 - 04/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
Laboratory Manager
NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6385A	D23-6385B	D23-6385C
Test Number	1	2	3
Date Tested	31/08/2023	31/08/2023	31/08/2023
Time Tested	**	**	**
Test Request #/Location	Lot 198	Lot 195	Lot 194
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	5	6	3
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m^3	1.90	1.90	1.89
Field Moisture Content %	18.8	19.5	19.3
Field Dry Density (FDD) t/m^3	1.61	1.61	1.59
Peak Converted Wet Density t/m^3	**	**	**
Adjusted Peak Converted Wet Density t/m^3	1.96	1.95	1.95
Adj. Optimum Moisture Content % (AS1289.5.4.1)	20.7	19.6	21.4
Adj. Field Moisture Content % (AS1289.5.4.1)	17.9	18.4	18.7
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	86.5	94.0	87.5
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	2.5	1.0	2.5
Hilf Density Ratio (%)	**96.5**	**97.5**	**97.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-2
Issue Number: 1
Date Issued: 06/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Client Reference: Shannon
Work Request: 6402
Date Sampled: 01/09/2023
Dates Tested: 01/09/2023 - 05/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
Laboratory Manager
NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6402A	D23-6402B	D23-6402C
Test Number	4	5	6
Date Tested	01/09/2023	01/09/2023	01/09/2023
Time Tested	12:30	12:45	12:55
Test Request #/Location	Lot 199	Lot 197	Lot 196
Layer / Reduced Level	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	4	5	7
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m^3	1.90	1.89	1.95
Field Moisture Content %	17.6	17.8	17.9
Field Dry Density (FDD) t/m^3	1.62	1.62	1.67
Peak Converted Wet Density t/m^3	**	**	**
Adjusted Peak Converted Wet Density t/m^3	1.94	1.93	1.96
Adj. Optimum Moisture Content % (AS1289.5.4.1)	19.2	19.0	17.9
Adj. Field Moisture Content % (AS1289.5.4.1)	16.9	17.0	16.7
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	88.5	89.5	93.5
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	2.0	2.0	1.0
Hilf Density Ratio (%)	**97.5**	**97.5**	**99.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-3
Issue Number: 1
Date Issued: 06/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Client Reference: Shannon
Work Request: 6406
Date Sampled: 04/09/2023
Dates Tested: 04/09/2023 - 05/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Gravelly Clay
Material Source: Imported

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
Laboratory Manager
NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6406A	D23-6406B	D23-6406C
Test Number	7	8	9
Date Tested	04/09/2023	04/09/2023	04/09/2023
Time Tested	12:45	12:55	13:10
Test Request #/Location	Lot 191	Lot 192	Lot 193
Layer / Reduced Level	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Gravelly Clay	Gravelly Clay	Gravelly Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	11	0	6
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	0	**
Field Wet Density (FWD) t/m^3	2.00	1.94	1.96
Field Moisture Content %	15.4	15.0	15.1
Field Dry Density (FDD) t/m^3	1.75	1.69	1.71
Peak Converted Wet Density t/m^3	**	1.89	**
Adjusted Peak Converted Wet Density t/m^3	1.94	**	1.92
Adj. Optimum Moisture Content % (AS1289.5.4.1)	17.5	19.3	18.1
Adj. Field Moisture Content % (AS1289.5.4.1)	13.8	15.0	14.2
Moisture Ratio % (AS1289.5.4.1)	**	78.0	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	79.0	**	78.5
Moisture Variation (Wv) %	**	4.0	**
Adjusted Moisture Variation %	3.5	**	4.0
Hilf Density Ratio (%)	**103.0**	**102.5**	**102.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-4
Issue Number: 1
Date Issued: 08/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Client Reference: Shannon
Work Request: 6424
Date Sampled: 06/09/2023
Dates Tested: 06/09/2023 - 07/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level one
Material: Gravelly Clay
Material Source: Imported

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Approved Signatory: Eranda Hippola
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NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6424A	D23-6424B	D23-6424C
Test Number	13	14	15
Date Tested	06/09/2023	06/09/2023	06/09/2023
Time Tested	15:00	15:15	15:25
Test Request #/Location	13 Lot 220	14 Lot 202	15 Lot 201
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m^3	1.91	1.90	1.91
Field Moisture Content %	20.4	21.2	17.7
Field Dry Density (FDD) t/m^3	1.59	1.57	1.62
Peak Converted Wet Density t/m^3	1.87	1.87	1.88
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	25.2	26.3	22.9
Adj. Field Moisture Content % (AS1289.5.4.1)	20.4	21.2	17.7
Moisture Ratio % (AS1289.5.4.1)	81.0	81.0	77.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	4.5	5.0	5.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**102.0**	**102.0**	**101.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-5
Issue Number: 1
Date Issued: 11/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Client Reference: Shannon
Work Request: 6416
Date Sampled: 05/09/2023
Dates Tested: 05/09/2023 - 08/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Gravelly Clay
Material Source: Imported

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NATA WORLD RECOGNISED ACCREDITATION
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Approved Signatory: Eranda Hippola
Laboratory Manager
NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6416A	D23-6416B	D23-6416C
Test Number	10	11	12
Date Tested	05/09/2023	05/09/2023	05/09/2023
Time Tested	13:30	13:45	13:55
Test Request #/Location	Lot 188	Lot 189	Lot 190
Layer / Reduced Level	Layer 4	Layer 4	Layer 4
Thickness of Layer (mm)	300	300	300
Soil Description	Gravelly Clay	Gravelly Clay	Gravelly Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m^3	1.90	1.93	1.95
Field Moisture Content %	17.0	15.9	19.5
Field Dry Density (FDD) t/m^3	1.63	1.67	1.63
Peak Converted Wet Density t/m^3	1.92	1.90	1.91
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	20.7	20.5	24.3
Adj. Field Moisture Content % (AS1289.5.4.1)	17.0	15.9	19.5
Moisture Ratio % (AS1289.5.4.1)	82.0	77.5	80.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	3.5	4.5	4.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**99.0**	**101.5**	**102.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-6
Issue Number: 1
Date Issued: 11/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Contact: Shannon
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Work Request: 6433
Date Sampled: 07/09/2023
Dates Tested: 07/09/2023 - 08/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Laboratory Manager
NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6433A	D23-6433B	D23-6433C
Test Number	16	17	18
Date Tested	07/09/2023	07/09/2023	07/09/2023
Time Tested	14:45	14:55	15:00
Test Request #/Location	16 Lot 203	17 Lot 204	18 Lot 205
Layer / Reduced Level	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	5	7	7
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m^3	1.96	1.97	1.98
Field Moisture Content %	17.8	18.4	18.2
Field Dry Density (FDD) t/m^3	1.67	1.68	1.69
Peak Converted Wet Density t/m^3	**	**	**
Adjusted Peak Converted Wet Density t/m^3	1.93	1.95	1.95
Adj. Optimum Moisture Content % (AS1289.5.4.1)	20.7	21.0	20.8
Adj. Field Moisture Content % (AS1289.5.4.1)	16.9	17.2	16.9
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	82.0	82.0	81.5
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	3.5	3.5	4.0
Hilf Density Ratio (%)	**101.5**	**101.5**	**101.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-7
Issue Number: 1
Date Issued: 14/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Contact: Shannon
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Work Request: 6449
Date Sampled: 11/09/2023
Dates Tested: 11/09/2023 - 13/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6449A	D23-6449B	D23-6449C
Test Number	19	20	21
Date Tested	11/09/2023	11/09/2023	11/09/2023
Time Tested	14:00	14:10	14:20
Test Request #/Location	19 Lot 217	20 Lot 218	21 Lot 219
Layer / Reduced Level	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m^3	1.93	1.94	1.93
Field Moisture Content %	17.8	17.6	18.1
Field Dry Density (FDD) t/m^3	1.64	1.65	1.63
Peak Converted Wet Density t/m^3	1.93	1.93	1.91
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	21.2	20.2	20.7
Adj. Field Moisture Content % (AS1289.5.4.1)	17.8	17.6	18.1
Moisture Ratio % (AS1289.5.4.1)	84.0	87.0	87.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	3.5	2.5	2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.0**	**100.5**	**101.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-8
Issue Number: 1
Date Issued: 14/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Contact: Shannon
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Work Request: 6463
Date Sampled: 12/09/2023
Dates Tested: 12/09/2023 - 14/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6463A	D23-6463B	D23-6463C
Test Number	22	23	24
Date Tested	12/09/2023	12/09/2023	12/09/2023
Time Tested	15:30	15:40	15:50
Test Request #/Location	22 Lot 206	23 Lot 207	24 Lot 208
Layer / Reduced Level	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	9	8
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	**	**
Field Wet Density (FWD) t/m^3	2.13	2.16	2.14
Field Moisture Content %	17.8	17.7	18.4
Field Dry Density (FDD) t/m^3	1.81	1.86	1.83
Peak Converted Wet Density t/m^3	2.07	**	**
Adjusted Peak Converted Wet Density t/m^3	**	2.10	2.12
Adj. Optimum Moisture Content % (AS1289.5.4.1)	18.7	16.5	17.7
Adj. Field Moisture Content % (AS1289.5.4.1)	17.8	16.1	16.8
Moisture Ratio % (AS1289.5.4.1)	95.5	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	97.5	95.0
Moisture Variation (Wv) %	1.0	**	**
Adjusted Moisture Variation %	**	0.5	1.0
Hilf Density Ratio (%)	**103.0**	**102.5**	**101.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-9
Issue Number: 1
Date Issued: 18/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Contact: Shannon
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Work Request: 6475
Date Sampled: 13/09/2023
Dates Tested: 13/09/2023 - 15/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6475A	D23-6475B	D23-6475C
Test Number	25	26	27
Date Tested	13/09/2023	13/09/2023	13/09/2023
Time Tested	15:20	15:30	15:40
Test Request #/Location	25 Lot 214	26 Lot 215	27 Lot 216
Layer / Reduced Level	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	18	16	11
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m^3	2.07	2.04	2.08
Field Moisture Content %	18.2	18.5	15.8
Field Dry Density (FDD) t/m^3	1.80	1.76	1.82
Peak Converted Wet Density t/m^3	**	**	**
Adjusted Peak Converted Wet Density t/m^3	2.05	2.03	2.01
Adj. Optimum Moisture Content % (AS1289.5.4.1)	17.5	18.2	16.5
Adj. Field Moisture Content % (AS1289.5.4.1)	15.0	15.6	14.1
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	85.5	85.5	85.5
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	2.5	2.5	2.5
Hilf Density Ratio (%)	**101.0**	**100.5**	**103.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-10
Issue Number: 1
Date Issued: 18/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Contact: Shannon
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Work Request: 6483
Date Sampled: 14/09/2023
Dates Tested: 14/09/2023 - 15/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6483A	D23-6483B	D23-6483C
Test Number	28	29	30
Date Tested	14/09/2023	14/09/2023	14/09/2023
Time Tested	15:15	15:25	15:30
Test Request #/Location	28 Lot 219	29 Lot 221	30 "SIEBERI CIRCUIT" Road
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m^3	2.08	2.08	2.00
Field Moisture Content %	21.8	20.7	21.6
Field Dry Density (FDD) t/m^3	1.71	1.72	1.64
Peak Converted Wet Density t/m^3	2.00	1.97	1.94
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	25.0	22.5	24.5
Adj. Field Moisture Content % (AS1289.5.4.1)	21.8	20.7	21.6
Moisture Ratio % (AS1289.5.4.1)	87.0	92.0	88.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	3.0	1.5	3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**104.0**	**105.5**	**103.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: **D231082-11**
Issue Number: 1
Date Issued: 19/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Contact: Shannon
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Work Request: 6496
Date Sampled: 15/09/2023
Dates Tested: 15/09/2023 - 18/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6496A	D23-6496B	D23-6496C
Test Number	31	32	33
Date Tested	15/09/2023	15/09/2023	15/09/2023
Time Tested	14:30	14:40	14:53
Test Request #/Location	Lot 218	Lot 217	Lot 216
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m^3	1.93	1.91	1.92
Field Moisture Content %	20.8	21.3	22.1
Field Dry Density (FDD) t/m^3	1.60	1.58	1.57
Peak Converted Wet Density t/m^3	1.90	1.88	1.90
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	24.0	24.2	25.3
Adj. Field Moisture Content % (AS1289.5.4.1)	20.8	21.3	22.1
Moisture Ratio % (AS1289.5.4.1)	87.0	88.0	87.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	3.0	3.0	3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**101.5**	**101.5**	**101.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-12
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason:
Date Issued: 12/03/2024
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Contact: Shannon
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Work Request: 6510
Date Sampled: 18/09/2023
Dates Tested: 18/09/2023 - 21/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Approved Signatory: Eranda Hippola
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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6510A	D23-6510B	D23-6510C
Test Number	34	35	36
Date Tested	18/09/2023	18/09/2023	18/09/2023
Time Tested	**	**	**
Test Request #/Location	LOT 208	LOT 207	LOT 206
Layer / Reduced Level	LAYER 1	LAYER 1	LAYER 1
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	6	5	4
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m^3	1.98	1.95	1.95
Field Moisture Content %	19.2	19.4	19.8
Field Dry Density (FDD) t/m^3	1.68	1.64	1.63
Peak Converted Wet Density t/m^3	**	**	**
Adjusted Peak Converted Wet Density t/m^3	2.01	1.98	1.98
Adj. Optimum Moisture Content % (AS1289.5.4.1)	20.8	20.2	21.6
Adj. Field Moisture Content % (AS1289.5.4.1)	18.0	18.5	19.1
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	86.5	91.5	88.5
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	2.5	1.5	2.5
Hilf Density Ratio (%)	**98.5**	**98.5**	**98.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-13
Issue Number: 1
Date Issued: 21/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Contact: Shannon
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Work Request: 6526
Date Sampled: 19/09/2023
Dates Tested: 19/09/2023 - 21/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6526A	D23-6526B	D23-6526C
Test Number	37	38	39
Date Tested	19/09/2023	19/09/2023	19/09/2023
Time Tested	12:00	12:10	12:20
Test Request #/Location	Lot 214	Lot 215	Lot 216
Layer / Reduced Level	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	8	6	8
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m^3	2.05	2.02	2.05
Field Moisture Content %	21.7	18.0	15.5
Field Dry Density (FDD) t/m^3	1.71	1.72	1.79
Peak Converted Wet Density t/m^3	**	**	**
Adjusted Peak Converted Wet Density t/m^3	1.98	1.93	1.96
Adj. Optimum Moisture Content % (AS1289.5.4.1)	21.7	20.8	16.3
Adj. Field Moisture Content % (AS1289.5.4.1)	20.0	17.0	14.3
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	92.0	81.5	88.0
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	1.5	3.5	2.0
Hilf Density Ratio (%)	**103.5**	**104.5**	**104.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-14
Issue Number: 1
Date Issued: 26/09/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Contact: Shannon
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Work Request: 6550
Date Sampled: 21/09/2023
Dates Tested: 21/09/2023 - 25/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Approved Signatory: Eranda Hippola
Laboratory Manager
NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6550A	D23-6550B	D23-6550C
Test Number	40	41	42
Date Tested	21/09/2023	21/09/2023	21/09/2023
Time Tested	15:00	15:13	15:23
Test Request #/Location	40 Lot 217	41 Lot 218	42 Lot 219
Layer / Reduced Level	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	5	5	6
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m^3	1.97	1.97	1.98
Field Moisture Content %	15.8	17.6	17.7
Field Dry Density (FDD) t/m^3	1.71	1.69	1.70
Peak Converted Wet Density t/m^3	**	**	**
Adjusted Peak Converted Wet Density t/m^3	1.98	1.97	2.00
Adj. Optimum Moisture Content % (AS1289.5.4.1)	17.1	19.8	18.3
Adj. Field Moisture Content % (AS1289.5.4.1)	15.1	16.7	16.6
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	88.0	84.0	91.0
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	2.0	3.0	1.5
Hilf Density Ratio (%)	**99.5**	**99.5**	**99.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-16
Issue Number: 1
Date Issued: 02/02/2024
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Contact: Shannon
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Work Request: 7117
Date Sampled: 30/01/2024 8:30
Dates Tested: 30/01/2024 - 01/02/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Estate Stage 1 - Level One
Material: Clay
Material Source: Imported

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Deer Park Laboratory
17 Walhalla Way Ravenhall VIC 3023
Phone: 0435 751 756
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WORLD RECOGNISED ACCREDITATION

Approved Signatory: Eranda Hippola
Laboratory Manager
NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D24-7117A	D24-7117B	D24-7117C
Test Number	46	47	48
Date Tested	30/01/2024	30/01/2024	30/01/2024
Time Tested	14:00	14:21	14:33
Test Request #/Location	STONECROP DRIVE Road	STONECROP DRIVE Road	STONECROP DRIVE Road
Layer / Reduced Level	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	5	6	6
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m^3	1.91	1.90	1.91
Field Moisture Content %	17.8	17.0	16.1
Field Dry Density (FDD) t/m^3	1.63	1.64	1.66
Peak Converted Wet Density t/m^3	**	**	**
Adjusted Peak Converted Wet Density t/m^3	1.91	1.91	1.90
Adj. Optimum Moisture Content % (AS1289.5.4.1)	21.1	20.3	19.5
Adj. Field Moisture Content % (AS1289.5.4.1)	16.9	16.0	15.2
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	80.0	78.5	78.0
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	4.0	4.0	4.0
Hilf Density Ratio (%)	**100.0**	**99.5**	**100.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231082-17
Issue Number: 1
Date Issued: 14/02/2024
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: D231082
Project Name: Cobble Springs Estate Stage 1 - Level One
Project Location: Cobble Bank
Work Request: 7151
Date Sampled: 07/02/2024
Dates Tested: 07/02/2024 - 13/02/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Cobble Springs Stage 1- Level One
Material: Clay
Material Source: Imported

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	D24-7151A	D24-7151B	D24-7151C	D24-7151D	D24-7151E	D24-7151F
Test Number	49	50	51	52	53	54
Date Tested	07/02/2024	07/02/2024	07/02/2024	07/02/2024	07/02/2024	07/02/2024
Time Tested	**	**	**	**	**	**
Test Request #/Location	Lot 185	Lot 186	Lot 187	Lot 186	Lot 185	Lot 187
Layer / Reduced Level	Layer 2	Layer 2	Layer 2	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Clay	Clay	Clay	Clay	Clay	Clay
Test Depth (mm)	275	275	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	6	8	6	7	6	7
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	1.92	1.91	1.89	1.93	1.91	1.92
Field Moisture Content %	10.6	11.4	11.3	11.1	11.2	10.8
Field Dry Density (FDD) t/m^3	1.75	1.73	1.71	1.75	1.73	1.74
Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Adjusted Peak Converted Wet Density t/m^3	1.89	1.89	1.87	1.91	1.89	1.90
Adj. Optimum Moisture Content % (AS1289.5.4.1)	14.9	15.4	15.8	15.3	15.5	15.1
Adj. Field Moisture Content % (AS1289.5.4.1)	9.9	10.5	10.6	10.3	10.5	10.1
Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	66.5	68.0	67.5	67.5	67.5	67.0
Moisture Variation (Wv) %	**	**	**	**	**	**
Adjusted Moisture Variation %	5.0	5.0	5.5	5.0	5.0	5.0
Hilf Density Ratio (%)	**102.0**	**101.0**	**101.0**	**101.5**	**101.0**	**101.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**	**

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