

Viewpoint Estate Stage G2 Huntly

Earthworks Supervision Report for DPJ Civil

Report 23C 0120 G2
October, 2023

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Earthworks Supervision Report for DPJ Civil

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1 INTRODUCTION

DPJ Civil commissioned Geotechnical Testing Services (GTS) to undertake Level 1 Supervision and testing (AS3798-2007) for the earthworks for the residential subdivision Viewpoint Estate Stage G2, Huntly.

Level 1 Testing was generally performed in line with AS3798-2007 “Guidelines on Earthworks for Commercial and Residential Development” and provides inspection of the construction of controlled fill and compaction testing in accordance with AS1289 “Methods of Testing Soils for Engineering Purposes”. The Level 1 testing was undertaken by Geotechnicians with supervision provided by a Geotechnical Engineer from GTS.

2 SCOPE OF WORKS

2.1 AREA OF WORK

Geotechnical Testing Services provided Level 1 inspection and testing of the engineered fill placed in Lots 690 to 703.

The depth of fill across the site varied from none to around 500mm at its deepest with the approximate locations shown on the attached site plan. It is noted that sites with 300mm or less were not included in the controlled fill operations.

2.2 PLACEMENT SPECIFICATION

Whilst there was no earthworks specification compiled for this project, the placement of the fill and associated works generally followed the recommendations outlined in AS3798-2007 “Guidelines for Earthworks for Commercial and Residential Developments” and the construction specification.

In summary, the earthworks comply with the following:

- The layers for residential lots are to be compacted to at least 95% of the density ratio in accordance with AS1289 5.1.1 (or 5.7.1), based on Standard compaction.

Therefore, in accordance with Table 8.1 of AS3798-2007, the filling may be considered a large scale (greater than 1500m²) and therefore a minimum of 1 test per 2500m² or 3 tests per visit are required. It is noted that under this scale, not every lot required testing, however was conducted at 1 test per layer per lot which exceeds the minimum requirement.

3 INSPECTION AND TESTING

Inspection of the excavated base was conducted by a Senior Geotechnical Engineer and it was observed that the unsuitable material (vegetation, topsoil/silt) had been removed with the base consisting of a Silty Clay material of suitable strength.

Level 1 inspection and testing was undertaken by a geotechnician from GTS who nominated the timing and location of the in-situ density tests. The approximate location of each test is recorded on the test reports and attached fill plan.

Laboratory compaction testing was undertaken on a one to one basis at our Bendigo laboratory. A summary of the results of the compaction control testing is presented in a table below with the full NATA endorsed test reports included in the Appendix.

4 SUMMARY OF TEST RESULTS

A summary of the test results is included in the following table with full NATA accredited reports included in the Appendix.

Project No.	Sample No.	Test Date	Location	Reduced Level (mm)	Moisture Variation %O.M.C	Density Ratio %
1	B23-12591C	17/02/2023	Lot 702	FSL	4.5	100.5
2	B23-12591D	17/02/2023	Lot 701	FSL	4.5	102.0
3	B23-12591E	17/02/2023	Lot 700	FSL	2.5	101.5
4	B23-12591F	17/02/2023	Lot 699	FSL	5.0	103.0
5	B23-12591G	17/02/2023	Lot 698	FSL	4.0	107.0
6	B23-12591H	17/02/2023	Lot 697	FSL	4.0	99.5
7	B23-12591I	17/02/2023	Lot 696	FSL	5.0	110.5
8	B23-12591J	17/02/2023	Lot 695	FSL	4.5	100.0
9	B23-12591K	17/02/2023	Lot 694	FSL	3.5	101.5
10	B23-13364C	21/06/2023	Lot 692	FSL	0.5	102.0
11	B23-13364D	21/06/2023	Lot 693	FSL	0.0	99.5
12	B23-13364A	21/06/2023	Lot 690	FSL	1.5	97.0
13	B23-13364B	21/06/2023	Lot 691	FSL	0.5	101.0
14	B23-13379A	22/06/2023	Lot 703	FSL	0.5	103.5
15	B23-13516A	17/07/2023	Lot 694	FSL	0.0	101.5
16	B23-13516B	17/07/2023	Lot 695	FSL	0.5	99.0

Project No.	Sample No.	Test Date	Location	Reduced Level (mm)	Moisture Variation %O.M.C	Density Ratio %
17	B23-13516C	17/07/2023	Lot 696	FSL	0.0	101.5
18	B23-13516D	17/07/2023	Lot 697	FSL	1.0	111.0
19	B23-13516E	17/07/2023	Lot 698	FSL	0.5	104.5
20	B23-13516F	17/07/2023	Lot 699	FSL	0.5	102.5
21	B23-13516G	17/07/2023	Lot 700	FSL	0.5	99.0
22	B23-13516H	17/07/2023	Lot 701	FSL	0.5	102.0

5 STATEMENT OF COMPLIANCE

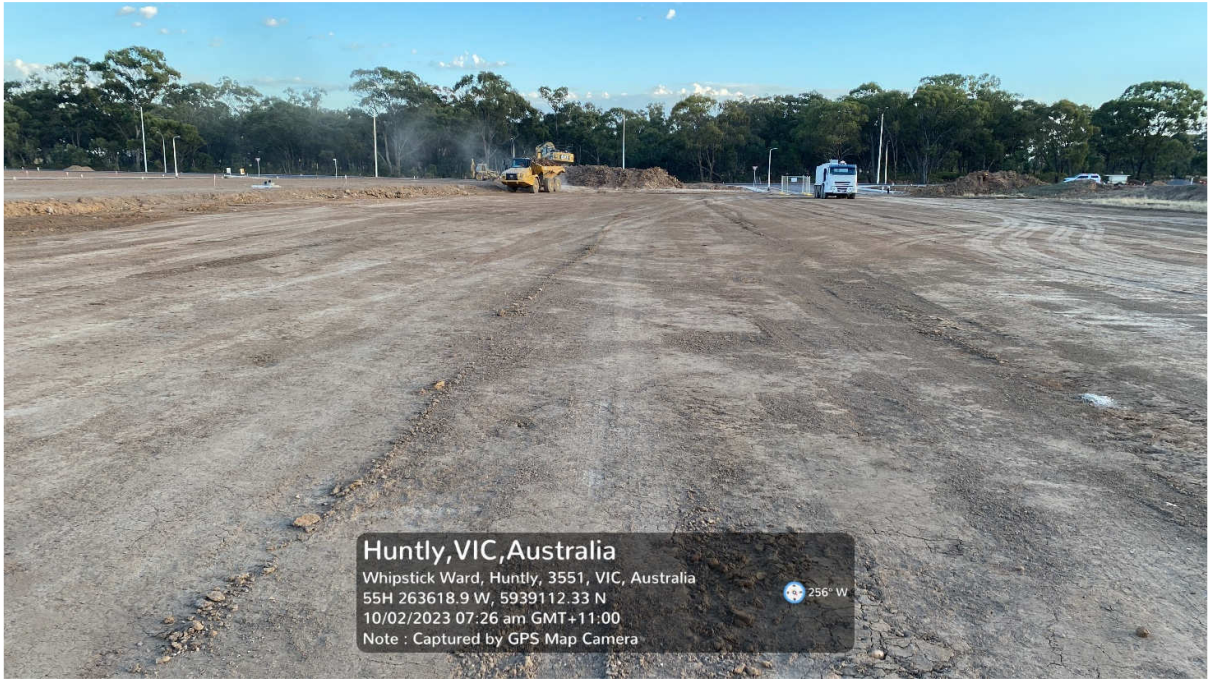
GTS personnel have provided Level 1 inspection and testing services during the placement of material for the filling of Lots 690 to 703. The placement of fill and construction techniques adopted was observed throughout the project.

Based on observations made by GTS personnel and the results of field and laboratory tests, we consider that the fill has been placed and compacted and is considered to be engineered or controlled fill. Therefore, subject to residential site classifications, the controlled fill material is deemed a suitable founding medium for future residential buildings. It is noted that topsoil material may be spread across the sites following completion of these earthworks and that this topsoil material is not considered controlled fill.



Shane Hampton BE (Hons), MIEAust
Principal Geotechnical Engineer

APPENDIX



P1: General view of Stage G2

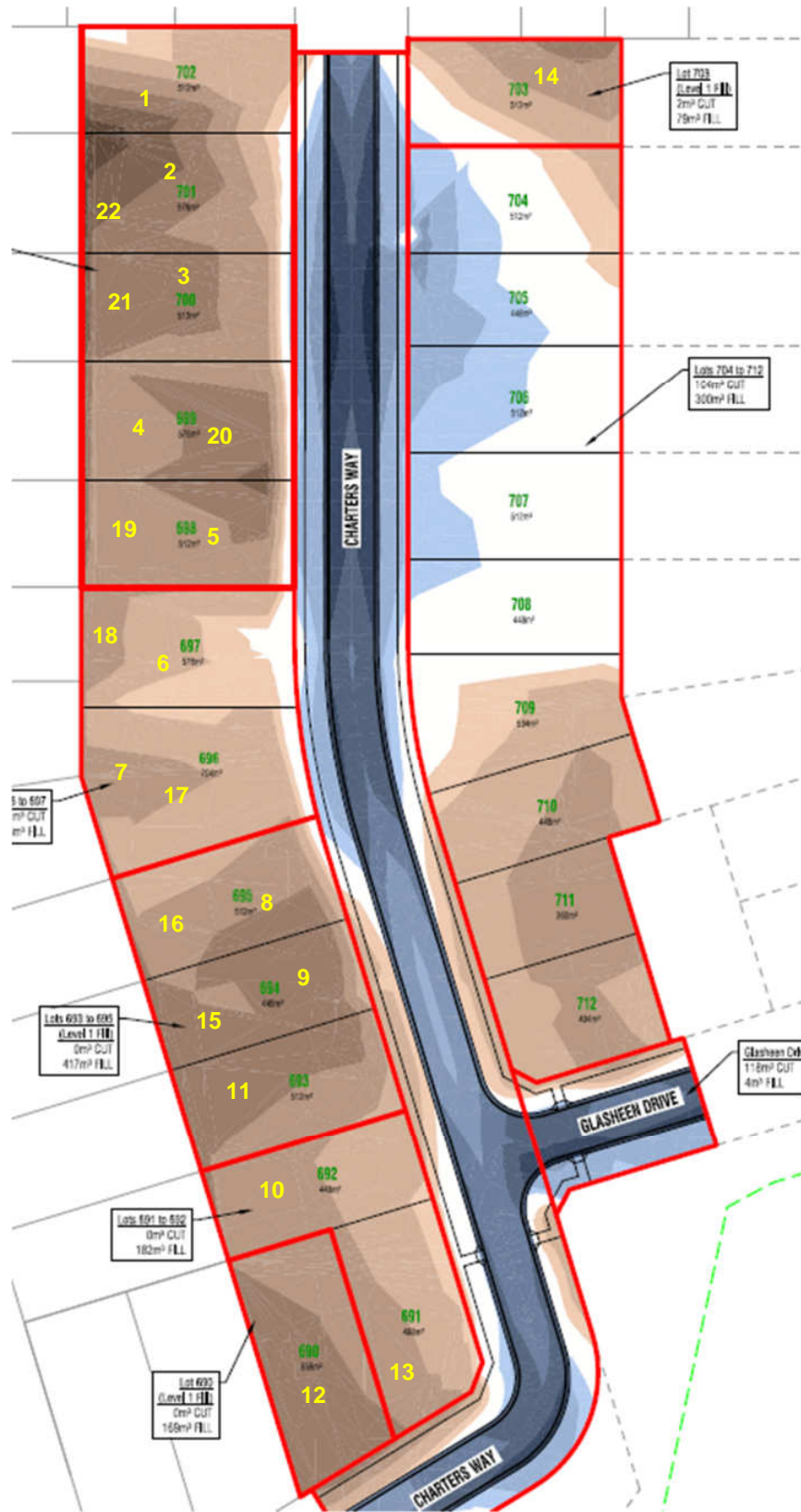


Fig 1 Site Plan

Material Test Report

Report Number: P18615-98
Issue Number: 1
Date Issued: 21/02/2023
Client: DPJ Civil Pty Ltd
 24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Stage G1 / G2 / F2
Work Request: 12591
Date Sampled: 17/02/2023
Dates Tested: 17/02/2023 - 21/02/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Site Selection: Selected by Client
Material Source: Test Location



Geotechnical Testing Services (Southern)
 Bendigo Soil and Concrete Testing Laboratory
 13 Alstonvale Court East Bendigo VIC 3550
 Phone: (03) 5441 4881
 Email: joshl@gts.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Josh Lagodzki
 CMT Manager

NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	B23-12591A	B23-12591B	B23-12591C	B23-12591D	B23-12591E	B23-12591F
Date Tested	17/02/2023	17/02/2023	17/02/2023	17/02/2023	17/02/2023	17/02/2023
Time Tested	11:19	11:23	11:38	11:41	11:49	11:55
Test Request #/Location	House blocks Block 623 F2	House blocks Block 624 F2	House blocks Block 702 G2	House blocks Block 701 G2	House blocks Block 700 G2	House blocks Block 699 G2
Chainage (m)	Middle	Middle	Back	Back	Back	Back
Location Offset (m)	**	**	**	**	**	**
Layer / Reduced Level	FSL	FSL	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Clayey Sandy Gravel	Clayey Sandy Gravel	Clayey Sandy Gravel	Clayey Sandy Gravel	Clayey Sandy Gravel	Clayey Sandy Gravel
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 (%)	0	0	0	0	5	2
Field Wet Density (FWD) t/m ³	2.10	2.01	2.03	2.07	2.14	2.08
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.04	2.05	2.02	2.03	**	**
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	2.11	2.03
Moisture Variation (Wv) %	4.0	2.0	4.5	4.5	**	**
Adjusted Moisture Variation %	**	**	**	**	2.5	5.0
Hilf Density Ratio (%)	103.0	98.0	100.5	102.0	101.5	103.0
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

Material Test Report

Report Number: P18615-98
Issue Number: 1
Date Issued: 21/02/2023
Client: DPJ Civil Pty Ltd
 24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Stage G1 / G2 / F2
Work Request: 12591
Date Sampled: 17/02/2023
Dates Tested: 17/02/2023 - 21/02/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Site Selection: Selected by Client
Material Source: Test Location



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Approved Signatory: Josh Lagodzki
 CMT Manager

NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	B23-12591G	B23-12591H	B23-12591I	B23-12591J	B23-12591K	B23-12591L
Date Tested	17/02/2023	17/02/2023	17/02/2023	17/02/2023	17/02/2023	17/02/2023
Time Tested	12:01	12:07	12:13	12:19	12:24	12:34
Test Request #/Location	House blocks Block 698 G2	House blocks Block 697 G2	House blocks Block 696 G2	House blocks Block 695 G2	House blocks Block 694 G2	House blocks Block 630 G1
Chainage (m)	Back	Back	Back	Back	Back	Middle
Location Offset (m)	**	**	**	**	**	**
Layer / Reduced Level	FSL	FSL	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Clayey Sandy Gravel	Clayey Sandy Gravel	Clayey Sandy Gravel	Clayey Sandy Gravel	Clayey Sandy Gravel	Clayey Sandy Gravel
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 (%)	2	1	2	0	4	4
Field Wet Density (FWD) t/m ³	2.22	2.07	2.24	2.04	2.11	2.22
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	**	**	**	2.04	**	**
Adjusted Peak Converted Wet Density t/m ³	2.07	2.08	2.03	**	2.08	2.13
Moisture Variation (Wv) %	**	**	**	4.5	**	**
Adjusted Moisture Variation %	4.0	4.0	5.0	**	3.5	2.5
Hilf Density Ratio (%)	107.0	99.5	110.5	100.0	101.5	104.5
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

Material Test Report

Report Number: P18615-98
Issue Number: 1
Date Issued: 21/02/2023
Client: DPJ Civil Pty Ltd
 24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Stage G1 / G2 / F2
Work Request: 12591
Date Sampled: 17/02/2023
Dates Tested: 17/02/2023 - 21/02/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Site Selection: Selected by Client
Material Source: Test Location



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Approved Signatory: Josh Lagodzki
 CMT Manager

NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	B23-12591M					
Date Tested	17/02/2023					
Time Tested	12:38					
Test Request #/Location	House blocks Block 631 G1					
Chainage (m)	Middle					
Location Offset (m)	**					
Layer / Reduced Level	FSL					
Thickness of Layer (mm)	300					
Soil Description	Clayey Sandy Gravel					
Test Depth (mm)	275					
Sieve used to determine oversize (mm)	19.0					
Percentage of Wet Oversize (%)	1					
Field Wet Density (FWD) t/m ³	2.04					
Field Dry Density (FDD) t/m ³	**					
Peak Converted Wet Density t/m ³	**					
Adjusted Peak Converted Wet Density t/m ³	2.04					
Moisture Variation (Wv) %	**					
Adjusted Moisture Variation %	5.0					
Hilf Density Ratio (%)	100.5					
Compaction Method	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: P18615-118
Issue Number: 1
Date Issued: 22/06/2023
Client: DPJ Civil Pty Ltd
 24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Stage G2
Work Request: 13364
Date Sampled: 21/06/2023
Dates Tested: 21/06/2023 - 22/06/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Site Selection: Selected by Client
Material Source: Test Location

Geotechnical Testing Services (Southern)
 Bendigo Soil and Concrete Testing Laboratory
 13 Alstonvale Court East Bendigo VIC 3550
 Phone: (03) 5441 4881
 Email: joshl@gts.com.au

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Approved Signatory: Josh Lagodzki
 CMT Manager

NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	B23-13364A	B23-13364B	B23-13364C	B23-13364D
Date Tested	21/06/2023	21/06/2023	21/06/2023	21/06/2023
Time Tested	14:35	14:38	14:23	14:29
Test Request #/Location	House blocks Lot 690 G2	House blocks Lot 691 G2	House blocks Lot 692 G2	House blocks Lot 693 G2
Chainage (m)	Middle	Middle	Middle	Middle
Location Offset (m)	Right	Left	Centre	Centre
Layer / Reduced Level	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay
Test Depth (mm)	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	**	0
Field Wet Density (FWD) t/m ³	2.04	2.10	2.12	2.10
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.10	2.08	2.07	2.11
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	1.5	0.5	0.5	0.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	97.0	101.0	102.0	99.5
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



Report Number: P18615-119
Issue Number: 1
Date Issued: 22/06/2023
Client: DPJ Civil Pty Ltd
 24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Stage G2
Work Request: 13379
Date Sampled: 22/06/2023
Dates Tested: 22/06/2023 - 22/06/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Site Selection: Selected by Client
Material Source: Test Location

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Approved Signatory: Josh Lagodzki
 CMT Manager

NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	B23-13379A		
Date Tested	22/06/2023		
Time Tested	14:09		
Test Request #/Location	House Block Lot 703		
Chainage (m)	Rear		
Location Offset (m)	Centre		
Layer / Reduced Level	FSL		
Thickness of Layer (mm)	300		
Soil Description	Sandy Silty Clay		
Test Depth (mm)	275		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.28		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	2.20		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	0.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	103.5		
Compaction Method	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: P18615-120
Issue Number: 1
Date Issued: 18/07/2023
Client: DPJ Civil Pty Ltd
 24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Huntly - Stage G2
Work Request: 13516
Date Sampled: 17/07/2023
Dates Tested: 17/07/2023 - 18/07/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Site Selection: Selected by Client
Material Source: Test Location

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 13 Alstonvale Court East Bendigo VIC 3550
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 Email: joshl@gts.com.au

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Approved Signatory: Josh Lagodzki
 CMT Manager

NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	B23-13516A	B23-13516B	B23-13516C	B23-13516D
Date Tested	17/07/2023	17/07/2023	17/07/2023	17/07/2023
Time Tested	10:37	10:43	10:47	10:52
Test Request #/Location	Stage G2 House Blocks	Stage G2 House Blocks	Stage G2 House Blocks	Stage G2 House Blocks
Chainage (m)	Lot 694	Lot 695	Lot 696	Lot 697
Location Offset (m)	Front Centre of the block	Front Centre of the block	Front Centre of the block	Front Centre of the block
Layer / Reduced Level	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	250	250	250	250
Soil Description	Gravelly Silty Clay	Gravelly Silty Clay	Gravelly Silty Clay	Gravelly Silty Clay
Test Depth (mm)	225	225	225	225
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m ³	2.20	2.17	2.20	2.43
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.17	2.20	2.17	2.19
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	0.0	0.5	0.0	1.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	101.5	99.0	101.5	111.0
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



Report Number: P18615-120
Issue Number: 1
Date Issued: 18/07/2023
Client: DPJ Civil Pty Ltd
 24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Huntly - Stage G2
Work Request: 13516
Date Sampled: 17/07/2023
Dates Tested: 17/07/2023 - 18/07/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Site Selection: Selected by Client
Material Source: Test Location

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Approved Signatory: Josh Lagodzki
 CMT Manager

NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	B23-13516E	B23-13516F	B23-13516G	B23-13516H
Date Tested	17/07/2023	17/07/2023	17/07/2023	17/07/2023
Time Tested	10:59	11:05	11:10	11:17
Test Request #/Location	Stage G2 House Blocks	Stage G2 House Blocks	Stage G2 House Blocks	Stage G2 House Blocks
Chainage (m)	Lot 698	Lot 699	Lot 700	Lot 701
Location Offset (m)	Front Centre of the block	Front Centre of the block	Front Centre of the block	Front Centre of the block
Layer / Reduced Level	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	250	250	250	250
Soil Description	Gravelly Silty Clay	Gravelly Silty Clay	Gravelly Silty Clay	Gravelly Silty Clay
Test Depth (mm)	225	225	225	225
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	1	0	0
Field Wet Density (FWD) t/m ³	2.22	2.21	2.12	2.24
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.13	**	2.15	**
Adjusted Peak Converted Wet Density t/m ³	**	2.16	**	2.20
Moisture Variation (Wv) %	0.5	**	0.5	**
Adjusted Moisture Variation %	**	0.5	**	0.5
Hilf Density Ratio (%)	104.5	102.5	99.0	102.0
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC