Viewpoint Estate Stage G4 Huntly

Earthworks Supervision Report for DPJ Civil

Report 24C 0793 December, 2024





Viewpoint Estate Stage G4 Huntly

Earthworks Supervision Report

for **DPJ** Civil

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GEOTECHNICAL | ENVIRONMENTAL | CONSTRUCTION MATERIALS TESTING

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TABLE OF CONTENTS

1	ΙΝΤΙ	RODUCTION	4
2	sco	DPE OF WORKS	4
	2.1	AREA OF WORK	4
	2.2	PLACEMENT SPECIFICATION	4
3	INS	PECTION AND TESTING	5
4	SUN	IMARY OF TEST RESULTS	5
5	STA	TEMENT OF COMPLIANCE	6

APPENDIX

Site Plan Test Reports

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 G4, 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 788 to 799 and 808 to 821.

The depth of fill across the site varied from none to around 900mm 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 generally 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	B24-16225A	12/09/2024	Lot 795	-600	1.5	102.0
2	B24-16225B	12/09/2024	Lot 792	-300	2.5	103.5
3	B24-16225C	12/09/2024	Lot 793	-300	1.0	99.0
4	B24-16230A	13/09/2024	Lot 795	-300	2.5	96.5
5	B24-16230B	13/09/2024	Lot 794	FSL	1.0	104.5
6	B24-16230C	13/09/2024	Lot 793	FSL	2.0	104.0
7	B24-16230D	13/09/2024	Lot 792	FSL	2.5	102.0
8	B24-16230E	13/09/2024	Lot 791	FSL	2.5	101.0
9	B24-16230F	13/09/2024	Lot 790	FSL	3.0	101.5
10	B24-16240A	16/09/2024	Lot 795	FSL	2.0	102.5
11	B24-16240B	16/09/2024	Lot 796	FSL	1.5	102.5
12	B24-16240C	16/09/2024	Lot 797	FSL	1.5	101.0
13	B24-16249A	18/09/2024	Lot 798	FSL	1.0	102.5
14	B24-16249B	18/09/2024	Lot 799	FSL	1.5	102.0
15	B24-16249C	18/09/2024	Lot 789	FSL	1.5	104.0
16	B24-16249D	18/09/2024	Lot 788	FSL	1.5	101.0

Project No.	Sample No.	Test Date	Location	Reduced Level (mm)	Moisture Variation %O.M.C	Density Ratio %
17	B24-16249E	18/09/2024	Lot 812	-300	1.5	99.5
18	B24-16249F	18/09/2024	Lot 810	-300	1.5	103.0
19	B24-16249G	18/09/2024	Lot 809	-300	2.0	108.0
20	B24-16252A	19/09/2024	Lot 810	FSL	2.5	102.5
21	B24-16252B	19/09/2024	Lot 809	FSL	2.0	103.5
22	B24-16252C	19/09/2024	Lot 808	FSL	2.5	101.0
23	B24-16252D	19/09/2024	Lot 811	FSL	2.5	103.0
24	B24-16252E	19/09/2024	Lot 812	FSL	3.0	106.0
25	B24-16252F	19/09/2024	Lot 813	FSL	2.5	106.5
26	B24-16285A	24/09/2024	Lot 821	FSL	4.0	99.5
27	B24-16285B	24/09/2024	Lot 820	FSL	4.5	105.0
28	B24-16285C	24/09/2024	Lot 819	FSL	4.5	104.0
29	B24-16285D	24/09/2024	Lot 817	FSL	4.0	106.0

5 STATEMENT OF COMPLIANCE

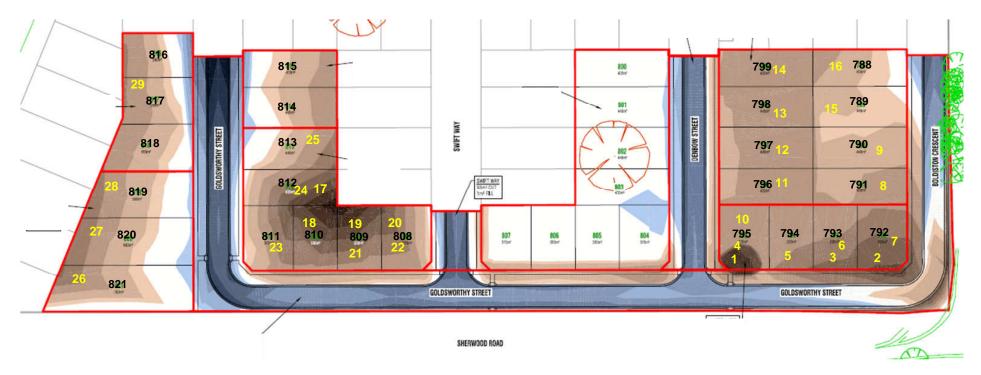
GTS personnel have provided Level 1 inspection and testing services during the placement of material for the filling of Lots 788 to 799 and 808 to 821. Whilst there is no direct testing on Lots 814, 815, 816 and 818 where the fill is only around 300mm deep, this fill was placed and compacted with the surrounding lots and considered to be controlled fill. 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.

Hampton

Shane Hampton BE (Hons), MIEAust Principal Geotechnical Engineer

APPENDIX







Page 9

Fig 1 Site Plan

Report Number:	P18615-142
Report Number.	1 10013-142

Report Number:	P18615-142
Issue Number:	2 - This version supersedes all previous issues
Reissue Reason:	added stage to location in report
Date Issued:	13/09/2024
Client:	DPJ Civil Pty Ltd
	24 Jewell Court, Bendigo VIC 3550
Project Number:	P18615
Project Name:	View Point Estate
Project Location:	Stage G4
Work Request:	16225
Date Sampled:	12/09/2024
Dates Tested:	12/09/2024 - 13/09/2024
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: Email: joshl@gts.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

WORLD RECOGNISED

Approved Signatory: Josh Lagodzki CMT Manager NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.	1		
Sample Number	B24-16225A	B24-16225B	B24-16225C
Date Tested	12/09/2024	12/09/2024	12/09/2024
Time Tested	14:22	14:29	14:38
Test Request #/Location	Stage G4 Lot 795	Stage G4 Lot 792	Stage G4 Lot 793
Chainage (m)	Front	Front	Front
Location Offset (m)	Left	Centre	Centre
Layer / Reduced Level	-600	-300	-300
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m ³	2.14	2.16	2.08
Field Dry Density (FDD) t/m ³	**	**	**
Peak Converted Wet Density t/m ³	2.10	2.09	2.10
Adjusted Peak Converted Wet Density	**	**	**
Moisture Variation (Wv) %	1.5	2.5	1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	102.0	103.5	99.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Report Number:	P18615-143
Issue Number:	1
Date Issued:	16/09/2024
Client:	DPJ Civil Pty Ltd
	24 Jewell Court, Bendigo VIC 3550
Project Number:	P18615
Project Name:	View Point Estate
Project Location:	Huntly Stage G4
Work Request:	16230
Date Sampled:	13/09/2024
Dates Tested:	13/09/2024 - 16/09/2024
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:

Email: joshl@gts.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

WORLD RECOGNISED ACCREDITATION

Approved Signatory: Josh Lagodzki CMT Manager NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8	3.1					
Sample Number	B24-16230A	B24-16230B	B24-16230C	B24-16230D	B24-16230E	B24-16230F
Date Tested	13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024	13/09/2024
Time Tested	14:11	14:17	14:23	14:28	14:37	14:43
Test Request #/Location	Stage G4 Lot 795	Stage G4 Lot 794	Stage G4 Lot 793	Stage G4 Lot 792	Stage G4 Lot 791	Stage G4 Lot 790
Chainage (m)	Front	Front	Front	Front	Front	Front
Location Offset (m)	Centre	Centre	Centre	Centre	Centre	Centre
Layer / Reduced Level	-300	FSL	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Silty Sandy 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 (%)	0	0	0	0	5	3
Field Wet Density (FWD) t/m ³	2.00	2.20	2.17	2.10	2.16	2.11
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.08	2.11	2.08	2.06	**	**
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	2.14	2.08
Moisture Variation (Wv) %	2.5	1.0	2.0	2.5	**	**
Adjusted Moisture Variation %	**	**	**	**	2.5	3.0
Hilf Density Ratio (%)	96.5	104.5	104.0	102.0	101.0	101.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Report Number:	P18615-144
Issue Number:	1
Date Issued:	16/09/2024
Client:	DPJ Civil Pty Ltd
	24 Jewell Court, Bendigo VIC 3550
Project Number:	P18615
Project Name:	View Point Estate
Project Location:	Huntly - Stage G4
Work Request:	16240
Date Sampled:	16/09/2024
Dates Tested:	16/09/2024 - 16/09/2024
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:

Email: joshl@gts.com.au

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WORLD RECOGNISED ACCREDITATION

Approved Signatory: Josh Lagodzki CMT Manager NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1	1		
Sample Number	B24-16240A	B24-16240B	B24-16240C
Date Tested	16/09/2024	16/09/2024	16/09/2024
Time Tested	14:03	14:10	14:12
Test Request #/Location	Stage G4 House Blocks	Stage G4 House Blocks	Stage G4 House Blocks
Chainage (m)	Lot 795	Lot 796	Lot 797
Location Offset (m)	Front Centre	Rear Centre	Rear Centre
Layer / Reduced Level	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Gravelly Clay	Silty Gravelly Clay	Silty 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
Field Wet Density (FWD) t/m ³	2.14	2.17	2.08
Field Dry Density (FDD) t/m ³	**	**	**
Peak Converted Wet Density t/m ³	2.09	2.12	2.06
Adjusted Peak Converted Wet Density t/m3	**	**	**
Moisture Variation (Wv) %	2.0	1.5	1.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	102.5	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

Report Number:	P18615-145
Issue Number:	1
Date Issued:	18/09/2024
Client:	DPJ Civil Pty Ltd
	24 Jewell Court, Bendigo VIC 3550
Project Number:	P18615
Project Name:	View Point Estate
Project Location:	Stage G4
Work Request:	16249
Date Sampled:	18/09/2024
Dates Tested:	18/09/2024 - 18/09/2024
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:

Email: tylerw@gts.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

NATA WORLD RECOGNISED

Approved Signatory: Tyler Webb Laboratory Technician NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.	1			
Sample Number	B24-16249A	B24-16249B	B24-16249B B24-16249C	
Date Tested	18/09/2024	18/09/2024	18/09/2024	18/09/2024
Time Tested	08:19	08:23	08:33	08:40
Test Request #/Location	Stage G4 Lot 798	Stage G4 Lot 799	Stage G4 Lot 789	Stage G4 Lot 788
Chainage (m)	Centre	Centre	Centre	Centre
Location Offset (m)	Centre	Centre	Rear	Rear
Layer / Reduced Level	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy 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	0
Field Wet Density (FWD) t/m ³	2.14	2.13	2.17	2.12
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.09	2.09	2.09	2.10
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	1.0	1.5	1.5	1.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	102.5	102.0	104.0	101.0
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Report Number:	P18615-145
Issue Number:	1
Date Issued:	18/09/2024
Client:	DPJ Civil Pty Ltd
	24 Jewell Court, Bendigo VIC 3550
Project Number:	P18615
Project Name:	View Point Estate
Project Location:	Stage G4
Work Request:	16249
Date Sampled:	18/09/2024
Dates Tested:	18/09/2024 - 18/09/2024
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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Email: tylerw@gts.com.au

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WORLD RECOGNISED

NATA

Approved Signatory: Tyler Webb Laboratory Technician NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8	.1			
Sample Number	B24-16249E	B24-16249F	B24-16249G	
Date Tested	18/09/2024	18/09/2024	18/09/2024	
Time Tested	08:55	09:00	09:02	
Test Request #/Location	Stage G4 Lot 812	Stage G4 Lot 810	Stage G4 Lot 809	
Chainage (m)	Rear	Rear	Rear	
Location Offset (m)	Right	Right	Left	
Layer / Reduced Level	-300	-300	-300	
Thickness of Layer (mm)	300	300	300	
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	
Test Depth (mm)	275	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	5	9	1	
Field Wet Density (FWD) t/m ³	2.11	2.20	2.28	
Field Dry Density (FDD) t/m ³	**	**	**	
Peak Converted Wet Density t/m ³	**	**	**	
Adjusted Peak Converted Wet Density	2.11	2.14	2.12	
Moisture Variation (Wv) %	**	**	**	
Adjusted Moisture Variation %	1.5	1.5	2.0	
Hilf Density Ratio (%)	99.5	103.0	108.0	
Compaction Method	Standard	Standard	Standard	
Report Remarks	**	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Report Number:	P18615-146
Issue Number:	1
Date Issued:	19/09/2024
Client:	DPJ Civil Pty Ltd
	24 Jewell Court, Bendigo VIC 3550
Project Number:	P18615
Project Name:	View Point Estate
Project Location:	Stage G4
Work Request:	16252
Date Sampled:	19/09/2024
Dates Tested:	19/09/2024 - 19/09/2024
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:

Email: tylerw@gts.com.au

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WORLD RECOGNISED

NATA

Approved Signatory: Tyler Webb Laboratory Technician NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8	Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	B24-16252A	B24-16252B	B24-16252C	B24-16252D	B24-16252E	B24-16252F
Date Tested	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024	19/09/2024
Time Tested	07:55	07:57	07:59	08:05	08:07	08:09
Test Request #/Location	Stage G4 House Blocks	Stage G4 House Blocks	Stage G4 House Blocks	Stage G4 House Blocks	Stage G4 House Blocks	Stage G4 House Blocks
Chainage (m)	Lot 810	Lot 809	Lot 808	Lot 811	Lot 812	Lot 813
Location Offset (m)	Rear Right	Rear Left	Rear Left	Rear Right	Rear Right	Rear Right
Layer / Reduced Level	FSL	FSL	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly 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	0	10	0	0	0
Field Wet Density (FWD) t/m ³	2.16	2.18	2.11	2.14	2.18	2.22
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	**	2.10	**	2.08	2.05	2.08
Adjusted Peak Converted Wet Density	2.10	**	2.09	**	**	**
Moisture Variation (Wv) %	**	2.0	**	2.5	3.0	2.5
Adjusted Moisture Variation %	2.5	**	2.5	**	**	**
Hilf Density Ratio (%)	102.5	103.5	101.0	103.0	106.0	106.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Report Number:	P18615-147
Issue Number:	1
Date Issued:	24/09/2024
Client:	DPJ Civil Pty Ltd
	24 Jewell Court, Bendigo VIC 3550
Project Number:	P18615
Project Name:	View Point Estate
Project Location:	Hunty - Stage G4
Work Request:	16285
Date Sampled:	24/09/2024
Dates Tested:	24/09/2024 - 24/09/2024
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:

Email: tylerw@gts.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

NATA WORLD RECOGNISED

Approved Signatory: Tyler Webb Laboratory Technician NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8	.1			
Sample Number	B24-16285A	B24-16285B B24-16285C		B24-16285D
Date Tested	24/09/2024	24/09/2024	24/09/2024	24/09/2024
Time Tested	14:04	14:10	14:14	14:20
Test Request #/Location	Stage G4 Lot 821	Stage G4 Lot 820	Stage G4 Lot 819	Stage G4 Lot 817
Chainage (m)	Rear	Rear	Rear	Centre
Location Offset (m)	Right	Centre	Centre	**
Layer / Reduced Level	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy 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	0
Field Wet Density (FWD) t/m ³	2.06	2.16	2.16	2.38
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.07	2.06	2.08	2.25
Adjusted Peak Converted Wet Density t/m3	**	**	**	**
Moisture Variation (Wv) %	4.0	4.5	4.5	4.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	99.5	105.0	104.0	106.0
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC