Viewpoint Estate Stage G3
Huntly

Earthworks Supervision Report for
DPJ Civil

Report 24C 0536
June, 2024

GTS
GEOTECHNICAL TESTING SERVICES

Viewpoint Estate Stage G2
Huntly

Earthworks Supervision Report

for
DPJ Civil

Revision

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24C 0536	21/06/2024	SEH

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APPENDIX

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 G3, 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 739 to 747, 750 to 753, 762 to 764 and 767 to 768.

The depth of fill across the site varied from none to around 600mm 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 1500m^2) and therefore a minimum of 1 test per 2500m^2 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	B24-15367A	17/04/2024	Lot 740	FSL	2.5	105.0
2	B24-15367B	17/04/2024	Lot 739	FSL	2.5	104.0
3	B24-15367C	17/04/2024	Lot 741	FSL	2.5	104.5
4	B24-15367D	17/04/2024	Lot 742	FSL	2.5	104.5
5	B24-15367E	17/04/2024	Lot 743	FSL	2.5	104.5
6	B24-15367F	17/04/2024	Lot 744	FSL	4.0	103.5
7	B24-15367G	17/04/2024	Lot 745	FSL	3.0	94.5
8	B24-15367H	17/04/2024	Lot 746	FSL	2.5	97.5
9	B24-15367I	17/04/2024	Lot 747	FSL	3.0	100.5
10	B24-15378A	18/04/2024	Lot 745	FSL	4.5	98.0
11	B24-15408A	23/04/2024	Lot 762	-300	3.0	100.0
12	B24-15408B	23/04/2024	Lot 753	FSL	3.5	102.5
13	B24-15408C	23/04/2024	Lot 752	FSL	3.5	95.5
14	B24-15408D	23/04/2024	Lot 751	FSL	4.0	98.5
15	B24-15435A	30/04/2024	Lot 767	FSL	2.0	101.0
16	B24-15435B	30/04/2024	Lot 764	FSL	4.0	110.0

Project No.	Sample No.	Test Date	Location	Reduced Level (mm)	Moisture Variation %O.M.C	Density Ratio %
17	B24-15435C	30/04/2024	Lot 763	FSL	3.0	102.0
18	B24-15435D	30/04/2024	Lot 762	FSL	1.5	101.5

5 STATEMENT OF COMPLIANCE

GTS personnel have provided Level 1 inspection and testing services during the placement of material for the filling of Lots 739 to 747, 750 to 753, 762 to 764 and 767 to 768. 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

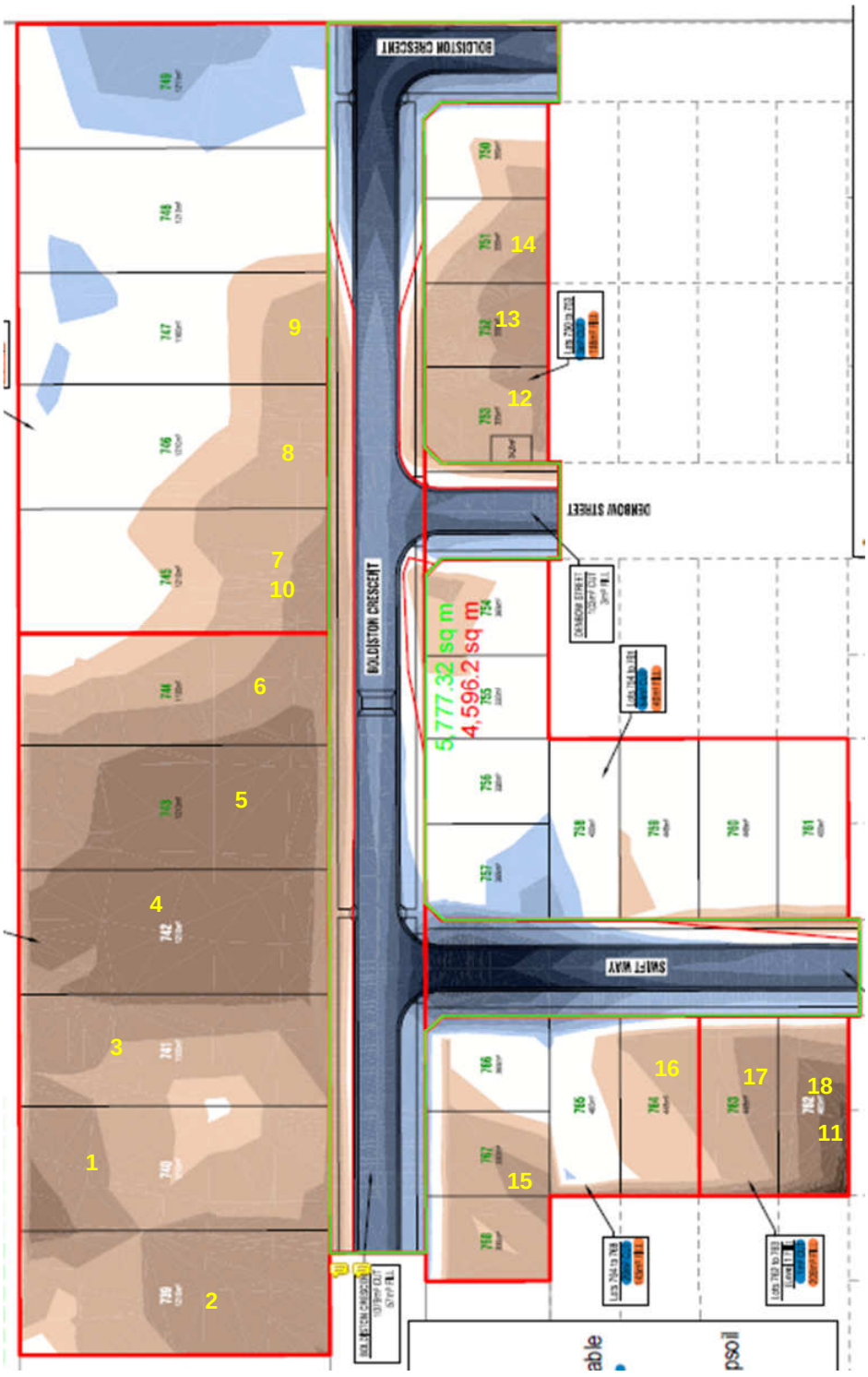

Fig 1 Site Plan

Material Test Report

Report Number: **P18615-131**
Issue Number: 1
Date Issued: 18/04/2024
Client: DPJ Civil Pty Ltd
24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Huntly - Stage G3
Work Request: 15367
Date Sampled: 17/04/2024
Dates Tested: 17/04/2024 - 18/04/2024
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: (03) 5441 4881
Email: tylerw@gts.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

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

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	B24-15367A	B24-15367B	B24-15367C	B24-15367D	B24-15367E
Date Tested	17/04/2024	17/04/2024	17/04/2024	17/04/2024	17/04/2024
Time Tested	14:07	14:10	14:13	14:15	14:17
Test Request #/Location	Stage G3 House Blocks	Stage G3 House Blocks	Stage G3 House Blocks	Stage G3 House Blocks	Stage G3 House Blocks
Chainage (m)	Lot 740	Lot 739	Lot 741	Lot 742	Lot 743
Location Offset (m)	Centre	Centre	Centre	Centre	Centre
Layer / Reduced Level	FSL	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	Gravelly Silty Clay	Gravelly Silty Clay	Gravelly Silty Clay	Gravelly Silty Clay	Gravelly Silty Clay
Test Depth (mm)	275	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Field Wet Density (FWD) t/m^3	2.22	2.23	2.20	2.19	2.22
Field Dry Density (FDD) t/m^3	**	**	**	**	**
Peak Converted Wet Density t/m^3	2.11	2.14	2.11	2.10	2.12
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	2.5	2.5	2.5	2.5	2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**105.0**	**104.0**	**104.5**	**104.5**	**104.5**
Compaction Method	**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: **P18615-131**
Issue Number: 1
Date Issued: 18/04/2024
Client: DPJ Civil Pty Ltd
24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Huntly - Stage G3
Work Request: 15367
Date Sampled: 17/04/2024
Dates Tested: 17/04/2024 - 18/04/2024
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: (03) 5441 4881
Email: tylerw@gts.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

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

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	B24-15367F	B24-15367G	B24-15367H	B24-15367I	
Date Tested	17/04/2024	17/04/2024	17/04/2024	17/04/2024	
Time Tested	14:19	14:26	14:27	14:30	
Test Request #/Location	Stage G3 House Blocks	Stage G3 House Blocks	Stage G3 House Blocks	Stage G3 House Blocks	
Chainage (m)	Lot 744	Lot 745	Lot 746	Lot 747	
Location Offset (m)	Centre	Front Centre	Front Centre	Front Centre	
Layer / Reduced Level	FSL	FSL	FSL	FSL	
Thickness of Layer (mm)	300	300	300	300	
Soil Description	Gravelly Silty Clay	Gravelly Silty Clay	Gravelly Silty Clay	Gravelly 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	0	
Field Wet Density (FWD) t/m^3	2.15	1.98	2.08	2.08	
Field Dry Density (FDD) t/m^3	**	**	**	**	
Peak Converted Wet Density t/m^3	2.08	2.09	2.14	2.07	
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	
Moisture Variation (Wv) %	4.0	3.0	2.5	3.0	
Adjusted Moisture Variation %	**	**	**	**	
Hilf Density Ratio (%)	**103.5**	**94.5**	**97.5**	**100.5**	
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: **P18615-132**
Issue Number: 1
Date Issued: 19/04/2024
Client: DPJ Civil Pty Ltd
24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Huntly - Stage G3
Work Request: 15378
Date Sampled: 18/04/2024
Dates Tested: 18/04/2024 - 19/04/2024
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: (03) 5441 4881
Email: tylerw@gts.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

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

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	B24-15378A		
Date Tested	18/04/2024		
Time Tested	12:37		
Test Request #/Location	Retest for B24-15367G House Block / Stage G3		
Chainage (m)	Lot 745		
Location Offset (m)	Front Centre		
Layer / Reduced Level	FSL		
Thickness of Layer (mm)	300		
Soil Description	Gravelly 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	2.04		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.08		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	4.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**98.0**		
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: **P18615-133**
Issue Number: 1
Date Issued: 24/04/2024
Client: DPJ Civil Pty Ltd
24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Huntly Stage G3
Work Request: 15408
Date Sampled: 23/04/2024
Dates Tested: 23/04/2024 - 24/04/2024
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: (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	B24-15408A	B24-15408B	B24-15408C	B24-15408D
Date Tested	23/04/2024	23/04/2024	23/04/2024	23/04/2024
Time Tested	14:12	14:24	14:26	14:30
Test Request #/Location	House blocks Lot 762	House blocks Lot 753	House blocks Lot 752	House blocks Lot 751
Chainage (m)	Rear	Rear	Rear	Rear
Location Offset (m)	Left	Centre	Centre	Centre
Layer / Reduced Level	-300	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300
Soil Description	Sandy Gravelly Clay	Sandy Gravelly Clay	Sandy Gravelly Clay	Sandy Gravelly 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	2.16	2.14	2.01	2.07
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.16	2.09	2.10	2.10
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	3.0	3.5	3.5	4.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**100.0**	**102.5**	**95.5**	**98.5**
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: **P18615-134**
Issue Number: 1
Date Issued: 30/04/2024
Client: DPJ Civil Pty Ltd
24 Jewell Court , Bendigo VIC 3550
Project Number: P18615
Project Name: View Point Estate
Project Location: Huntly Stage G3
Work Request: 15435
Date Sampled: 30/04/2024
Dates Tested: 30/04/2024 - 30/04/2024
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)
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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	B24-15435A	B24-15435B	B24-15435C	B24-15435D
Date Tested	30/04/2024	30/04/2024	30/04/2024	30/04/2024
Time Tested	10:19	10:23	10:25	10:27
Test Request #/Location	House blocks Lot 767	House blocks Lot 764	House blocks Lot 763	House blocks Lot 762
Chainage (m)	Rear RHS	Rear Centre	Rear Centre	Rear Centre
Location Offset (m)	**	**	**	**
Layer / Reduced Level	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300
Soil Description	Gravelly Silty Clay	Gravelly Silty Clay	Gravelly Silty Clay	Gravelly 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	2.20	2.33	2.18	2.22
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.17	2.12	2.14	2.19
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	2.0	4.0	3.0	1.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**101.0**	**110.0**	**102.0**	**101.5**
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