

Lakeview Estate Stage 7 Moama

Earthworks Supervision Report for Midland Contracting

Report 18C 0410
May 2018

Lakeview Estate Stage 7 Moama

Earthworks Supervision Report for Midland Contracting

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Site Plan
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1 INTRODUCTION

Midland Contracting commissioned Geotechnical Testing Services (GTS) to undertake Level 1 Supervision and testing (AS3798-2007) for the earthworks at Lakeview Estate Stage 7, Moama.

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 across Lots 140 to 155 and the back fill of tree stump holes on Lot 142. It is noted that from the beginning of the earthworks in 2015 to completion of the lots, the lot numbers were changed. As such, the old lot numbers as recorded on the test reports are included in the table below in brackets. In some instances, GPS coordinates were used to determine the test and lot location.

The depth of fill across the site varied from 300 to 1800mm in tree stump backfill with the approximate locations shown on the attached site plan.

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.

In accordance with Table 8.1 of AS3798-2007, the site would be considered 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 for the fill to raise the lots, not every lot requires testing under the large scale format. For

the tree stump backfill, this is considered a concentrated operation and a minimum of 1 test per 2 layers is required.

3 INSPECTION AND TESTING

Inspection of the excavated base was conducted by a geotechnician and it was observed that the unsuitable material (vegetation, top soil/silt, tree roots) had been removed with the base consisting of a Silty Clay material of good 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 Echuca 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. It is noted that following the testing, the allotments were adjusted, hence the new lot numbers are included in the table below with the original numbers that are on the test reports in brackets.

Project No.	Sample No.	Test Date.	Location.	Reduced Level (mm)	Moisture Variation %O.M.C	Hilf Density Ratio %
1	16E 0365E	11/2/16	Lot 140 (105)	500	2.0 dry	105.5
2	16E 0365F	11/2/16	Lot 141 (104)	500	1.5 dry	103.0
3	17E 0588A	5/5/17	Lot 140/141	300	0.5 dry	97.0
4	E17-409A	17/10/17	Lot 147 (123)	650	0.5 dry	95.5
5	E17-426C	18/10/17	Lot 149 (161)	700	0.5 dry	97.0
6	E18-764A	15/1/18	Lot 146/147	FSL	3.0 dry	100.0
7	E18-767B	15/1/18	Lot 149	500	5.5 dry	110.5
8	E18-767C	15/1/18	Lot 151	500	3.5 dry	99.0
9	E18-770A	16/1/18	Lot 148	300	1.0 dry	97.0
10	E18-770B	16/1/18	Lot 151	300	2.5 dry	96.5
11	E18-770C	16/1/18	Lot 153	300	2.5 dry	98.0

Project No.	Report No.	Test Date.	Location.	Reduced Level (mm)	Moisture Variation %O.M.C	Hilf Density Ratio %
12	E18-785A	18/1/18	Lot 148 (160)	FSL	3.0 dry	97.5
13	E18-785B	18/1/18	Lot 150 (162)	FSL	2.0 dry	98.5
14	E18-785C	18/1/18	Lot 152 (164)	FSL	0.0	97.5
15	E18-785D	18/1/18	Lot 154 (166)	FSL	1.5 dry	97.5
16	E18-801A	23/1/18	Lot 142	1200	2.5 dry	95.5
17	E18-805D	24/1/18	Lot 142	600	0.0	96.0
18	E18-806E	24/1/18	Lot 144	350	0.0	96.0
19	E18-838C	1/2/18	Lot 145	FSL	0.0	102.0
20	E18-838D	1/2/18	Lot 142	FSL	0.5 dry	100.5

5 STATEMENT OF COMPLIANCE

GTS personnel have provided Level 1 inspection and testing services during the placement of material for the filling of Lots 140 to 155. 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.



Shane Hampton (BE (Hons))
Senior Geotechnical Engineer

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APPENDIX

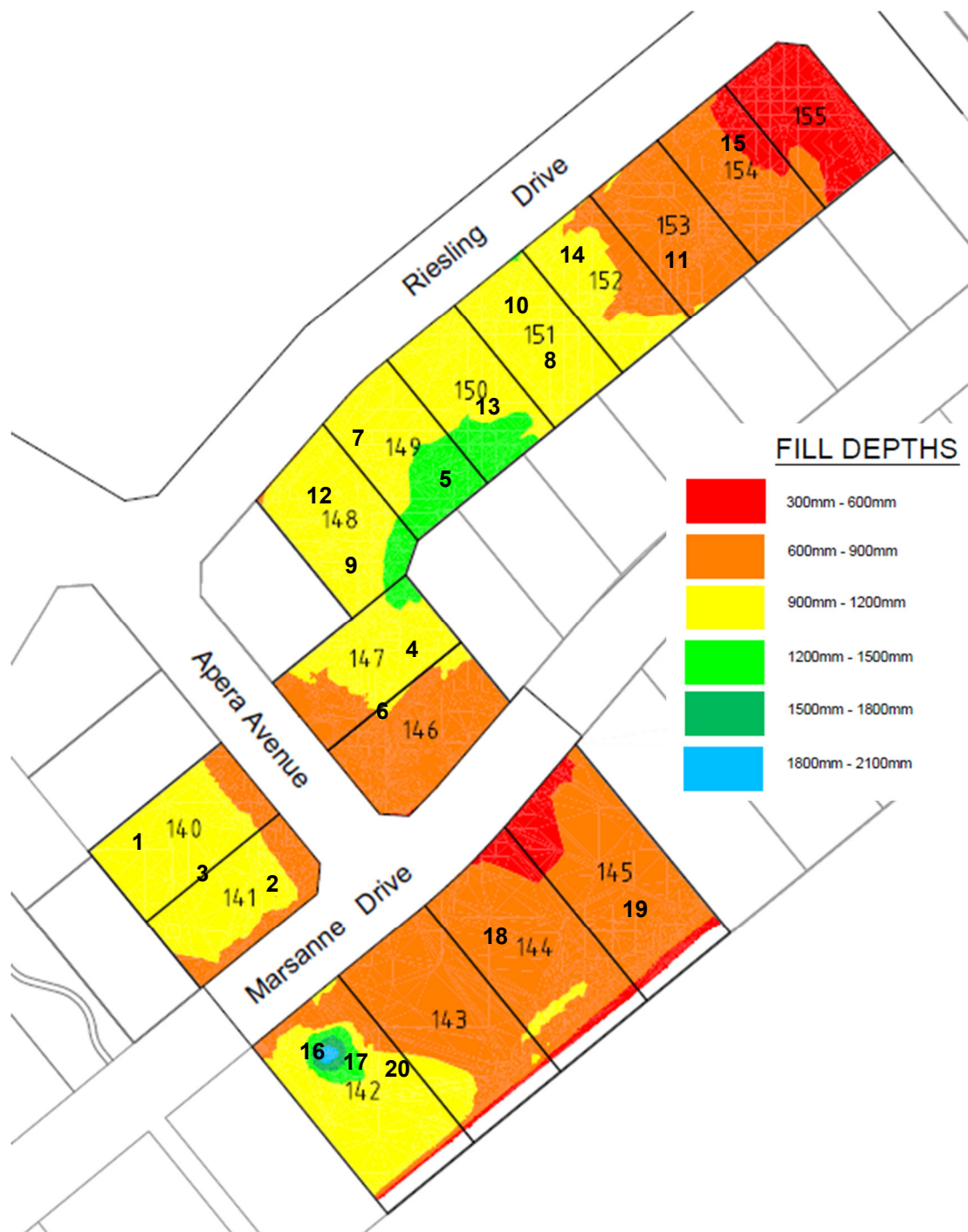


Fig 1: Site Plan

COMPACTION ASSESSMENT

Nuclear Gauge Method Hilf (Wet) Density Ratio

TEST REPORT:
GEOTECHNICAL
 TESTING SERVICES
 SOUTHERN

Client: Midland Contracting P.O. Box 626 BENDIGO VICTORIA 3550	Report N°:	16E/0365
	Revision N°:	REV 0
	Sheet:	1 of 2
	Date of Report:	12/02/2016

Project:	Parkview, Moama					
Location:	Lot Fill					
Test Request No / Lot No:	*					
Layer Thickness: (mm)	200mm					
Depth Below FSL/CSL:	300mm & 500mm					
Compaction Type:	Standard					
Date Sampled:	11/02/2016					
Sampling Method:	AS1289.1.2.1 part 6.4b					
Material Description:	16E/0365	/A	Brown Silty Clay			
	16E/0365	/B	Brown Silty Clay			
	16E/0365	/C	Brown Silty Clay			
	16E/0365	/D	Brown Silty Clay			
	16E/0365	/E	Brown Silty Clay			
	16E/0365	/F	Brown Silty Clay			
Material Stabilised:	No	If Stabilised Time from Stabilisation to Lab Test:				*
Test Number:	16E/0365A	16E/0365B	16E/0365C	16E/0365D	16E/0365E	16E/0365F
Hilf Density Ratio (%):	97.5	100.5	101.5	102.5	105.5	103.0

As Per: AS1289 5.7.1 5.8.1

Approved Signatory:

B.P.Mott

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WORLD RECOGNISED
ACCREDITATION

Echuca: Corporate Site #16874
 Shed 3, 140 Ogilvie Ave, Echuca, 3564
 PO Box 13, Strathdale, 3550 Ph(03) 5441 4881, Fax (03) 5441 5089

Laboratory accreditation number 19506

Offices: Bendigo, Echuca Web: www.geotestsouthern.com.au Email: info@geotestsouthern.com.au ABN: 18 169 924 109 ACN: 169 924 109

- Geotechnical Investigations • Contract Drilling • Land Capability Assessments • Contamination Assessments • Compaction Control Testing • On-site Wastewater Management • Site Classifications • Residential and Industrial • Soil, Concrete and Aggregate Testing Laboratories • Site Laboratory • Construction Material Testing Services

COMPACTION ASSESSMENT

Nuclear Gauge Method Hilf (Wet) Density Ratio

TEST REPORT:
GEOTECHNICAL
 TESTING SERVICES
 SOUTHERN

Client: Midland Contracting P.O. Box 626 BENDIGO VICTORIA 3550	Report N°:	16E/0365
	Revision N°:	REV 0
	Sheet:	2 of 2
	Date of Report:	12/02/2016

Test Number:	16E/0365A	16E/0365B	16E/0365C	16E/0365D	16E/0365E	16E/0365F	
Project Test Number:	*	*	*	*	*	*	
Time of Test:	10:30am	10:35am	10:42am	10:48am	10:55am	10:59am	
Probe Depth: (mm)	175	175	175	175	175	175	
Chainage:	Lot 97	Lot 127	Lot 125	Lot 126	Lot 105	Lot 104	
Reduced Level: (mm)	300.0	300.0	500.0	500.0	500.0	500.0	
Offset / Centre Line:	-	-	-	-	-	-	
#Eastings:	55	296386	296365	296381	296397	296418	269429
#Northings:	60	3029	03065	03097	03086	03073	03055
Percentage Oversize Wet:	0.0	0.0	0.0	0.0	0.0	0.0	
Oversize Sieve Size: (mm)	19	19	19	19	19	19	
Field Wet Density: t/m ³	1.98	2.00	2.04	2.06	2.11	2.05	
Peak Conv. Wet Density: t/m ³	2.04	1.99	2.01	2.00	2.00	1.99	
Adj. Peak Conv. Wet Density: t/m ³	*	*	*	*	*	*	
Moisture Variation: % (Wet/Dry)	0.5Dry	2.5Dry	2.5Dry	2.0Dry	2.0Dry	1.5Dry	
Adj. Moist. Variation: % (Wet/Dry)	*	*	*	*	*	*	
Moisture Content: %	*	*	*	*	*	*	
HILF DENSITY RATIO (%):	97.5	100.5	101.5	102.5	105.5	103.0	

#Map Datum AUS84

As Per: AS1289 5.7.1 5.8.1

Approved Signatory:

B.P.Mott

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Echuca: Corporate Site #16874
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 PO Box 13, Strathdale, 3550 Ph(03) 5441 4881, Fax (03) 5441 5089

Laboratory accreditation number 19506


Offices: Bendigo, Echuca Web: www.geotestsouthern.com.au Email: info@geotestsouthern.com.au ABN: 18 169 924 109 ACN: 169 924 109

• Geotechnical Investigations • Contract Drilling • Land Capability Assessments • Contamination Assessments • Compaction Control Testing • On-site Wastewater Management • Site Classifications • Residential and Industrial • Soil, Concrete and Aggregate Testing Laboratories • Site Laboratory • Construction Material Testing Services

Client: Midland Contracting P.O. Box 626 BENDIGO VICTORIA 3550	Report N ^o :	17E0588
	Revision N ^o :	REV 0
	Sheet:	1 of 2
	Date of Report:	8/05/2017

Project:	Lakeview Earthworks					
Location:	House Lots					
Test Request No / Lot No:	*					
Layer Thickness: (mm)	300mm					
Depth Below FSL/CSL:	300mm					
Compaction Type:	Standard					
Date Sampled:	5/05/2017					
Sampling Method:	AS1289.1.2.1 part 6.4b					
Material Description:	17E0588	/A	Brown Silty Clay			
	17E0588	/B	Brown Silty Clay			
Material Stabilised:	No	If Stabilised Time from Stabilisation to Lab Test:				*
Test Number:	17E0588A	17E0588B	*	*	*	*
Hilf Density Ratio (%):	98.0	97.0	*	*	*	*

As Per: AS1289 5.7.1 5.8.1

Approved Signatory: 

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Client: Midland Contracting P.O. Box 626 BENDIGO VICTORIA 3550	Report N ^o :	17E0588
	Revision N ^o :	REV 0
	Sheet:	2 of 2
	Date of Report:	8/05/2017

Test Number:	17E0588A	17E0588B	*	*	*	*
Project Test Number:	*	*	*	*	*	*
Time of Test:	10.58am	11.02am	*	*	*	*
Probe Depth: (mm)	275	275	*	*	*	*
Chainage:	Refer to GPS	Refer to GPS	*	*	*	*
Reduced Level: (mm)	-300.0	-300.0	*	*	*	*
Offset / Centre Line:	*	*	*	*	*	*
#Eastings:	5529	6416	6380	*	*	*
#Northings:	600	3057	3098	*	*	*
Percentage Oversize Wet:	0.0	0.0	*	*	*	*
Oversize Sieve Size: (mm)	19	19	*	*	*	*
Field Wet Density: t/m ³	1.96	1.98	*	*	*	*
Peak Conv. Wet Density: t/m ³	2.01	2.05	*	*	*	*
Adj. Peak Conv. Wet Density: t/m ³	*	*	*	*	*	*
Moisture Variation: % (Wet/Dry)	0.5Dry	0.5Dry	*	*	*	*
Adj. Moist. Variation: % (Wet/Dry)	*	*	*	*	*	*
Moisture Content: %	*	*	*	*	*	*
HILF DENSITY RATIO (%):	98.0	97.0	*	*	*	*

#Map Datum AUS84

As Per: AS1289 5.7.1 5.8.1

Approved Signatory:



B.P.Mott

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Compaction Control Test Report



Report Number: P17078-1
Issue Number: 2 - This version supercedes all previous issues
Date Issued: 19/10/2017
Client: Midland Contractors

Geotechnical Testing Services (Southern)
 Echuca Soil and Concrete Testing Laboratory
 Shed 3, 140 Ogilvie Avenue Echuca VIC 3564
 Phone: (03) 5480 0601
 Email: bryanm@gts.com.au

Project Number: P17078
Project Name: Lakeview Estate Moama
Work Request: 409
Date Sampled: 17/10/2017
Sampling Method: AS1289 1.2.1 6.4 - Sampling from layers in earthworks or pavement - uncompacted/compacted
Specification: 95% Standard
Material: Brown silty clay

Accredited for compliance with ISO/IEC 17025 - Testing



Bryan Mott

Approved Signatory: Bryan Mott
 NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1		
Sample Number	E17-409A	E17-409B
Date Tested	17/10/2017	17/10/2017
Time Tested	13:15	13:22
Test Request #/Location	Backfill	Backfill
Chainage (m)	House Lot 123	Stump Hole
Location Offset (m)	**	**
Elevation (m)	**	**
Layer / Reduced Level	-650	-1100
Thickness of Layer (mm)	300	300
Soil Description	Brown Silty Clay	Brown Silty Clay
Test Depth (mm)	275	275
Sieve used to determine oversize (mm)	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0
Field Wet Density (FWD) t/m ³	1.97	2.06
Field Dry Density (FDD) t/m ³	**	**
Peak Converted Wet Density t/m ³	2.06	1.98
Adjusted Peak Converted Wet Density t/m ³	**	**
Moisture Variation (Wv) %	0.5	2.0
Adjusted Moisture Variation %	**	**
Hilf Density Ratio (%)	95.5	103.5
Compaction Method	Standard	Standard

Moisture Variation Note:

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

Compaction Control Test Report

Report Number: P17078-2
 Issue Number: 1
 Date Issued: 19/10/2017
 Client: Midland Contractors



Geotechnical Testing Services (Southern)
 Echuca Soil and Concrete Testing Laboratory
 Shed 3, 140 Ogilvie Avenue Echuca VIC 3564

Phone: (03) 5480 0601
 Email: bryanm@gts.com.au

Project Number: P17078
 Project Name: Lakeview Estate Moama
 Work Request: 426
 Date Sampled: 18/10/2017
 Sampling Method: AS1141.3.1 8.4.1 - Sampling aided by power equipment - not backblading
 Specification: 95% Standard
 Material: Brown Silty Clay

Accredited for compliance with ISO/IEC 17025 - Testing



Bryan Mott

Approved Signatory: Bryan Mott
 NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	E17-426A	E17-426B	E17-426C
Date Tested	18/10/2017	18/10/2017	18/10/2017
Time Tested	16:24	16:34	16:44
Test Request #/Location	Backfill	House Block	House Block
Chainage (m)	Stump Hole	Lot 140	Lot 161
Location Offset (m)	**	**	**
Elevation (m)	**	**	**
Layer / Reduced Level	-800	-350	-500
Thickness of Layer (mm)	300	300	300
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty 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	0.0	0.0
Field Wet Density (FWD) t/m ³	2.06	2.14	2.03
Field Dry Density (FDD) t/m ³	**	**	**
Peak Converted Wet Density t/m ³	2.08	2.11	2.09
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Moisture Variation (Wv) %	0.5	0.5	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	99.0	101.5	97.0
Compaction Method	Standard	Standard	Standard

Moisture Variation Note:

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

Compaction Control Test Report



Report Number: P17078-6
Issue Number: 1
Date Issued: 24/01/2018
Client: Midland Contractors

Geotechnical Testing Services (Southern)
 Echuca Soil and Concrete Testing Laboratory
 Shed 3, 140 Ogilvie Avenue Echuca VIC 3564
 Phone: (03) 5480 0601
 Email: chrism@gts.com.au

Contact: Shane Houlahan
Project Number: P17078
Project Name: Lakeview Estate Moama
Work Request: 764
Date Sampled: 15/01/2018 12:00
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Material: Brown Silty Clay

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Chris Milne
 NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	E18-764A	E18-764B	E18-764C	E18-764D	E18-764E
Date Tested	15/01/2018	15/01/2018	15/01/2018	15/01/2018	15/01/2018
Time Tested	12:10	12:20	12:30	12:40	12:50
Test Request #/Location	House Blocks	House Blocks	House Blocks	House Blocks	House Blocks
Chainage (m)	Refer to Map	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Location Offset (m)	**	**	**	**	**
Elevation (m)	**	**	**	**	**
Layer / Reduced Level	FSL	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300	250
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay
Test Depth (mm)	275	275	275	275	225
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.97	2.05	2.11	2.12	2.05
Field Dry Density (FDD) t/m ³	**	**	**	**	**
Peak Converted Wet Density t/m ³	1.97	2.06	2.07	2.07	1.92
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Moisture Variation (Wv) %	3.0	1.5	0.0	-0.5	5.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	100.0	99.5	102.5	102.0	106.5
Compaction Method	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Compaction Control Test Report



Report Number: P17078-7
Issue Number: 1
Date Issued: 24/01/2018
Client: Midland Contractors

Project Number: P17078
Project Name: Lakeview Estate Moama
Work Request: 767
Date Sampled: 15/01/2018 17:20
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Material: Brown silty clay

Geotechnical Testing Services (Southern)
 Echuca Soil and Concrete Testing Laboratory
 Shed 3, 140 Ogilvie Avenue Echuca VIC 3564

Phone: (03) 5480 0601
 Email: chrism@gts.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Chris Milne
 NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1		
Sample Number	E18-767B	E18-767C
Date Tested	15/01/2018	15/01/2018
Time Tested	17:30	17:40
Test Request #/Location	House block	House block
Chainage (m)	Refer to map	Refer to map
Location Offset (m)	**	**
Elevation (m)	**	**
Layer / Reduced Level	Layer 1	Layer 1
Thickness of Layer (mm)	300	300
Soil Description	Brown silty clay	Brown silty clay
Test Depth (mm)	275	275
Sieve used to determine oversize (mm)	19.0	19.0
Percentage of Wet Oversize (%)	**	**
Field Wet Density (FWD) t/m ³	2.10	1.94
Field Dry Density (FDD) t/m ³	**	**
Peak Converted Wet Density t/m ³	1.90	1.96
Adjusted Peak Converted Wet Density t/m ³	**	**
Moisture Variation (Wv) %	5.5	3.5
Adjusted Moisture Variation %	**	**
Hilf Density Ratio (%)	110.5	99.0
Compaction Method	Standard	Standard

Moisture Variation Note:

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

Compaction Control Test Report

Report Number: P17078-8
 Issue Number: 1
 Date Issued: 24/01/2018
 Client: Midland Contractors



Geotechnical Testing Services (Southern)
 Echuca Soil and Concrete Testing Laboratory
 Shed 3, 140 Ogilvie Avenue Echuca VIC 3564

Phone: (03) 5480 0601

Email: chrism@gts.com.au

Project Number: P17078
 Project Name: Lakeview Estate Moama
 Work Request: 770
 Date Sampled: 16/01/2018 16:30
 Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
 Specification: 95% Standard
 Material: Brown silty clay

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Chris Milne

NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	E18-770A	E18-770B	E18-770C
Date Tested	16/01/2018	16/01/2018	16/01/2018
Time Tested	16:40	16:50	17:00
Test Request #/Location	House block	House block	House block
Chainage (m)	Refer to map	Refer to map	Refer to map
Location Offset (m)	**	**	**
Elevation (m)	**	**	**
Layer / Reduced Level	2	2	2
Thickness of Layer (mm)	300	300	300
Soil Description	Brown silty clay	Brown silty clay	Brown silty clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**
Field Wet Density (FWD) t/m ³	1.98	1.96	1.99
Field Dry Density (FDD) t/m ³	**	**	**
Peak Converted Wet Density t/m ³	2.04	2.03	2.03
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Moisture Variation (Wv) %	1.0	2.5	2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	97.0	96.5	98.0
Compaction Method	Standard	Standard	Standard

Moisture Variation Note:

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

Compaction Control Test Report



Report Number: P17078-9
Issue Number: 1
Date Issued: 24/01/2018
Client: Midland Contractors

Project Number: P17078
Project Name: Lakeview Estate Moama
Work Request: 785
Date Sampled: 18/01/2018 13:40
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Material: Brown Silty Clay

Geotechnical Testing Services (Southern)
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 Phone: (03) 5480 0601
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Approved Signatory: Chris Milne
 NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	E18-785A	E18-785B	E18-785C	E18-785D
Date Tested	18/01/2018	18/01/2018	18/01/2018	18/01/2018
Time Tested	13:51	13:57	14:05	14:11
Test Request #/Location	Lot 160	Lot 162	Lot 164	Lot 166
Easting	55296436	55296469	55296507	55298538
Northing	6003145	6003165	6003198	6003230
Elevation (m)	**	**	**	**
Layer / Reduced Level	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown 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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	1.96	2.01	2.10	2.01
Field Moisture Content %	**	**	**	**
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.02	2.04	2.15	2.06
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	3.0	2.0	0.0	1.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	97.5	98.5	97.5	97.5
Compaction Method	Standard	Standard	Standard	Standard

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

Compaction Control Test Report

Report Number: P17078-10
Issue Number: 1
Date Issued: 29/01/2018
Client: Midland Contractors



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Contact: Shane houlahan
Project Number: P17078
Project Name: Lakeview Estate Moama
Work Request: 801
Date Sampled: 23/01/2018 13:15
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Material: Brown Clayey Silt

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Chris Milne
 NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	E18-801A	E18-801B	E18-801C	E18-801D
Date Tested	23/01/2018	23/01/2018	23/01/2018	23/01/2018
Time Tested	13:20	13:30	13:40	13:50
Test Request #/Location	Stump hole backfill	Stump hole backfill	Stump hole backfill	Stump hole backfill
Chainage (m)	Refer to map	Refer to map	Refer to map	Refer to map
Location Offset (m)	**	**	**	**
Elevation (m)	**	**	**	**
Layer / Reduced Level	-1200	-900	-600	-600
Thickness of Layer (mm)	300	300	300	300
Soil Description	Brown clayey silt	Brown clayey silt	Brown clayey silt	Brown clayey silt
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 (%)	**	**	**	**
Field Wet Density (FWD) t/m ³	1.90	1.87	1.90	1.97
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.03	2.03	1.99	2.04
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	2.5	2.0	2.5	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	93.5	92.0	95.0	97.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Compaction Control Test Report



Report Number: P17078-12
Issue Number: 1
Date Issued: 29/01/2018
Client: Midland Contractors

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Project Number: P17078
Project Name: Lakeview Estate Moama
Work Request: 805
Date Sampled: 24/01/2018 10:10
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Material: Brown Silty Clay

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Approved Signatory: Chris Milne
 NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	E18-805A	E18-805B	E18-805C	E18-805D
Date Tested	24/01/2018	24/01/2018	24/01/2018	24/01/2018
Time Tested	10:44	10:54	11:04	11:13
Test Request #/Location	Stump Hole Backfill	Stump Hole Backfill	Stump Hole Backfill	Stump Hole Backfill
Chainage (m)	Refer to Map	Refer to Map	Refer to Map	Refer to map
Location Offset (m)	**	**	**	**
Elevation (m)	**	**	**	**
Layer / Reduced Level	-300	-300	-300	-600
Thickness of Layer (mm)	300	300	300	300
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown 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	0.0	0.0
Field Wet Density (FWD) t/m ³	1.87	1.87	2.01	2.04
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.05	2.05	2.11	2.12
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	2.5	1.5	-0.5	0.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	91.0	91.5	95.5	96.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Compaction Control Test Report



Report Number: P17078-13
Issue Number: 1
Date Issued: 29/01/2018
Client: Midland Contractors

Contact: Shane Houlahan
Project Number: P17078
Project Name: Lakeview Estate Moama
Work Request: 806
Date Sampled: 24/01/2018
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Material: Brown Clayey Silt

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Approved Signatory: Chris Milne
 NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	E18-806A	E18-806B	E18-806C	E18-806D	E18-806E
Date Tested	24/01/2018	24/01/2018	24/01/2018	24/01/2018	24/01/2018
Time Tested	13:55	15:05	14:15	16:30	16:40
Test Request #/Location	Road way	Road way	Road way	House block	House block
Chainage (m)	Refer to map	Refer to map	Refer to map	Refer to map	Refer to map
Location Offset (m)	**	**	**	**	**
Elevation (m)	**	**	**	**	**
Layer / Reduced Level	-400	-400	-400	-350	-350
Thickness of Layer (mm)	200	300	300	300	300
Soil Description	Browns Clayey Silt	Browns Clayey Silt	Browns Clayey Silt	Browns Clayey Silt	Browns Clayey Silt
Test Depth (mm)	175	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.94	2.00	1.91	1.93	2.02
Field Dry Density (FDD) t/m ³	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.01	2.16	2.06	2.07	2.11
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Moisture Variation (Wv) %	2.5	0.0	1.0	2.5	0.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	96.5	92.5	93.0	93.0	96.0
Compaction Method	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

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

Compaction Control Test Report

Report Number: P17078-14
 Issue Number: 1
 Date Issued: 02/02/2018
 Client: Midland Contractors



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Project Number: P17078
 Project Name: Lakeview Estate Moama
 Work Request: 838
 Date Sampled: 01/02/2018 10:50
 Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
 Specification: 95% Standard

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Chris Milne

NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	E18-838A	E18-838B	E18-838C	E18-838D
Date Tested	01/02/2018	01/02/2018	01/02/2018	01/02/2018
Time Tested	11:03	11:09	11:22	11:26
Test Request #/Location	House pads	House pads	House pads	House pads
Easting	55 296579	55 269540	55 296511	55 296480
Northing	6003084	6003074	6003046	6003021
Elevation (m)	FSL	FSL	FSL	FSL
Layer / Reduced Level	FSL	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown 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	0.0	0.0
Field Wet Density (FWD) t/m ³	2.12	2.14	2.14	2.10
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.12	2.13	2.10	2.09
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	-0.5	0.0	0.0	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	100.0	100.5	102.0	100.5
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC