

# Dungala Estate Stages 2-4, Moama

## Earthworks Supervision Report for Girdwood Contracting

Report 18C 0999  
December 2018

# Dungala Estate Stages 2-4 Moama

## Earthworks Supervision Report for Girdwood Contracting

### Revision

Revision	Date	Authorised
18C 0999	10/12/18	SEH

### Distribution (this revision only)

Recipient	Format	Date
GTSS	On file	10/12/18
Girdwood Contracting Attn: Simon Woodhouse	Email PDF <a href="mailto:simon@girdwood.com.au">simon@girdwood.com.au</a>	10/12/18
North East Survey Design	<a href="mailto:nick@nesd.com.au">nick@nesd.com.au</a>	

## **TABLE OF CONTENTS**

<b>1</b>	<b>INTRODUCTION .....</b>	<b>4</b>
<b>2</b>	<b>SCOPE OF WORKS.....</b>	<b>4</b>
<b>2.1</b>	<b>AREA OF WORK.....</b>	<b>4</b>
<b>2.2</b>	<b>PLACEMENT SPECIFICATION .....</b>	<b>4</b>
<b>3</b>	<b>INSPECTION AND TESTING.....</b>	<b>5</b>
<b>4</b>	<b>SUMMARY OF TEST RESULTS.....</b>	<b>5</b>
<b>5</b>	<b>STATEMENT OF COMPLIANCE .....</b>	<b>7</b>

## **APPENDIX**

**Site Plan**  
**Test Reports**

## **1 INTRODUCTION**

Girdwood Contracting commissioned Geotechnical Testing Services (GTS) to undertake Level 1 Supervision and testing (AS3798-2007) for the earthworks at Dungala Estate Stages 2-4, 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 to back fill the dam and raise the lots of 77, 85, 89, 90, 99 to 101, 108, 109, 113, 114, 119 to 122 and 130 to 135.

The depth of fill across the site varied from none to around 1.5m in the dams and low spots. A site plan showing the lots and approximate test locations is included in the Appendix

### **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 1500m<sup>2</sup>) and therefore a minimum of 1 test per layer 2500m<sup>2</sup> or 3 tests per visit are required. The testing was conducted at 1 test per residential lot per layer which exceeds the minimum requirement.

### 3 INSPECTION AND TESTING

Inspection of the excavated base was conducted by a Geotechnical Engineer and it was observed that the top soil and vegetative material 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 plan.

Laboratory compaction testing was undertaken on a one to one basis at our NATA accredited 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 lots 89 and 90 were recorded as 92 and 91 on the reports.

Project No.	Sample No.	Test Date.	Location.	Reduced Level (mm)	Moisture Variation %O.M.C	Hilf Density Ratio %
1	E18-2212A	1/8/18	Lot 90 (91)	1000	3.5 dry	99.0
2	E18-2212B	1/8/18	Lot 89 (92)	1200	0.5 dry	96.5
3	E18-2256A	3/8/18	Lot 135	200	0.0	101.0
4	E18-2256B	3/8/18	Lot 134	200	0.0	97.0
5	E18-2256C	3/8/18	Lot 133	200	2.0 dry	99.5
6	E18-2256D	3/8/18	Lot 132	200	0.0	97.0
7	E18-2256E	3/8/18	Lot 131	200	0.0	96.0
8	E18-2256F	3/8/18	Lot 130	200	0.0	97.0
9	E18-2272A	8/8/18	Lot 122	200	3.5 dry	106.5
10	E18-2272B	8/8/18	Lot 121	200	3.0 dry	102.0
11	E18-2272C	8/8/18	Lot 90 (91)	600	2.0 dry	102.5
12	E18-2272D	8/8/18	Lot 89 (92)	600	3.0 dry	102.5
13	E18-2358A	15/8/18	Lot 90 (91)	300	3.0 dry	99.5
14	E18-2358B	15/8/18	Lot 89 (92)	300	1.5 dry	101.0
15	E18-2358C	15/8/18	Lot 133	FSL	3.0 dry	100.0
16	E18-2358D	15/8/18	Lot 134	FSL	0.5 wet	99.0
17	E18-2358E	15/8/18	Lot 135	FSL	1.0 dry	100.0
18	E18-2394A	17/8/18	Lot 90 (91)	FSL	4.0 dry	107.0
19	E18-2394B	17/8/18	Lot 89 (92)	FSL	4.0 dry	105.5
20	E18-2394C	17/8/18	Lot 119	FSL	4.5 dry	110.5

Project No.	Sample No.	Test Date.	Location.	Reduced Level (mm)	Moisture Variation %O.M.C	Hilf Density Ratio %
21	E18-2394D	17/8/18	Lot 120	FSL	4.0 dry	108.5
22	E18-2437A	23/8/18	Lot 99	1000	2.0 dry	93.0
23	E18-2437B	23/8/18	Lot 100	1000	0.0	94.5
24	E18-2437C	23/8/18	Lot 101	1000	0.5 wet	94.5
25	E18-2437D	23/8/18	Lot 108	1000	0.5 wet	95.0
26	E18-2437E	23/8/18	Lot 109	800	0.5 wet	96.5
27	E18-2437F	23/8/18	Lot 113	300	0.5 wet	91.5
28	E18-2437G	23/8/18	Lot 114	300	0.5 dry	96.0
RT22	E18-2445A	24/8/18	Lot 99	1000	1.0 wet	95.5
RT23	E18-2445B	24/8/18	Lot 100	1000	1.0 dry	98.0
RT24	E18-2445C	24/8/18	Lot 101	1000	0.5 dry	99.5
29	E18-2474A	28/8/18	Lot 99	800	2.5 dry	103.0
30	E18-2474B	28/8/18	Lot 100	800	1.5 dry	101.5
31	E18-2474C	28/8/18	Lot 101	700	0.5 dry	100.5
32	E18-2474D	28/8/18	Lot 108	700	0.0	101.5
33	E18-2474E	28/8/18	Lot 109	600	0.5 dry	99.0
34	E18-2521A	4/9/18	Dam/Road		0.0	98.5
35	E18-2521B	4/9/18	Dam/Road		2.0 dry	102.5
36	E18-2521C	4/9/18	Dam/Road		2.0 dry	101.5
37	E18-2521D	4/9/18	Lot 99	500	2.5 dry	98.0
38	E18-2521E	4/9/18	Lot 100	500	0.5 dry	92.5
39	E18-2521F	4/9/18	Lot 101	400	1.5 dry	97.5
40	E18-2521G	4/9/18	Lot 108	300	0.5 dry	96.0
41	E18-2521H	4/9/18	Lot 109	300	2.0 dry	99.5
RT38	E18-2547A	6/9/18	Lot 100	500	2.5 dry	103.0
42	E18-2548A	6/9/18	Lot 99	200	0.5 dry	98.5
43	E18-2548B	6/9/18	Lot 100	200	1.0 dry	101.0
44	E18-2548C	6/9/18	Lot 101	100	2.0 dry	103.0
45	E18-2548D	6/9/18	Lot 108	100	0.5 dry	103.5
46	E18-2548E	6/9/18	Lot 109	FSL	0.5 dry	100.5
47	E18-2571A	11/9/18	Dam/85	1200	1.5 dry	104.5
48	E18-2571B	11/9/18	Dam/77	1200	2.5 dry	102.5
49	E18-2624D	18/9/18	Lot 77/85	900	0.5 dry	96.0
50	E18-2634A	18/9/18	Lot 77/85	600	0.5 dry	101.5
51	E18-2649A	20/9/18	Lot 85	FSL	2.5 dry	105.5
52	E18-2636A	19/9/18	Dam/77	300	0.5 wet	100.5
53	E18-2636B	19/9/18	Dam/85	300	0.0	103.0
RT27	E18-2797A	16/10/18	Lot 113	300	1.0 dry	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 77, 85, 89, 90, 99 to 101, 108, 109, 113, 114, 119 to 122 and 130 to 135. 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. It is noted that fill from the above noted lots may encroach onto the adjacent lot and in these instances the fill on the adjacent lot is also considered to be controlled fill. On completion, a top soil layer may be placed across the lots to bring them up to finished surface levels and this layer only does not constitute 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**

Telephone: (03) 5441 4881  
Mobile: 0437 496 215  
Email: [shaneh@gts.com.au](mailto:shaneh@gts.com.au)

# APPENDIX



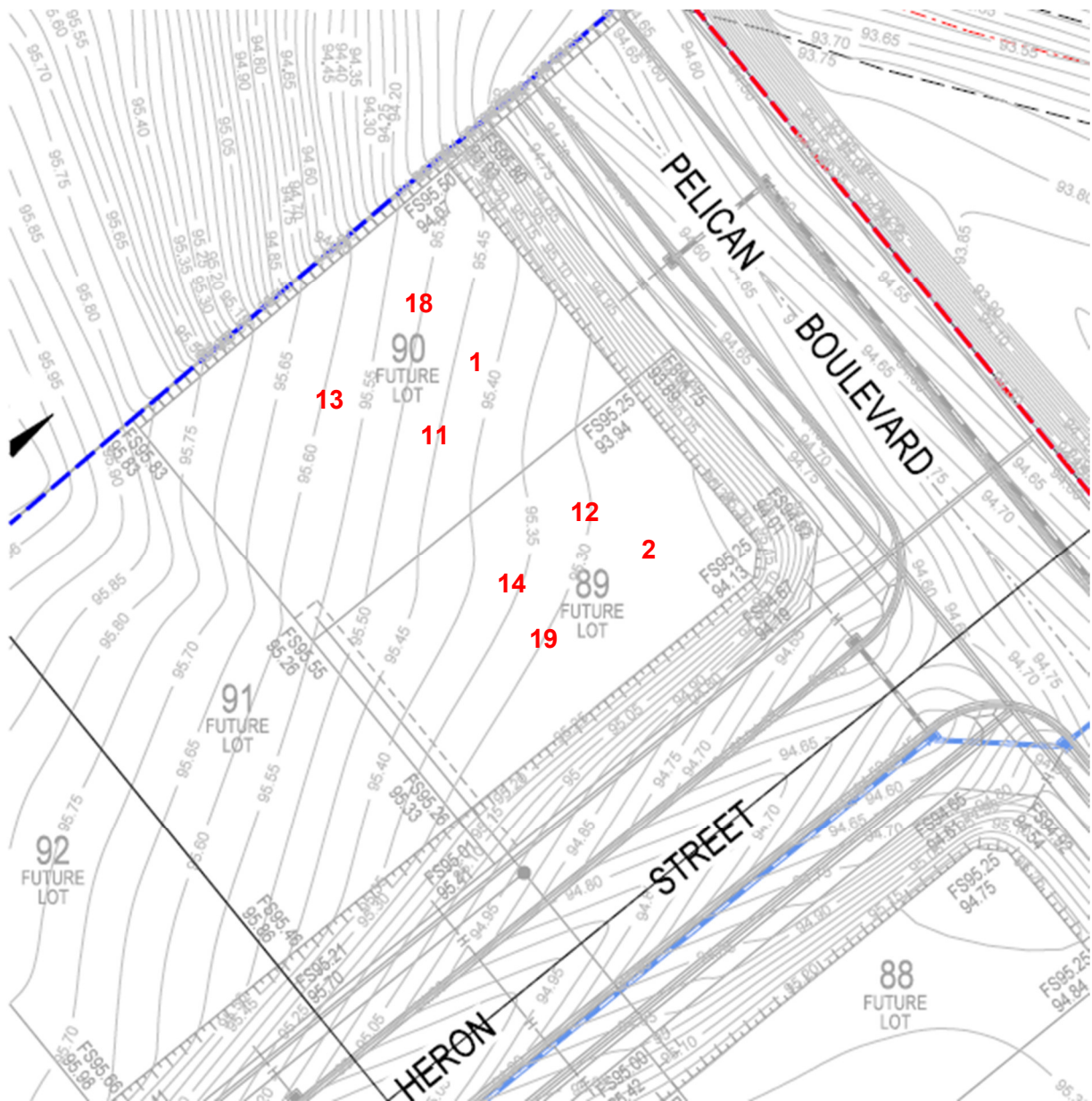


Fig 1: Site Plan – Lots 89/90

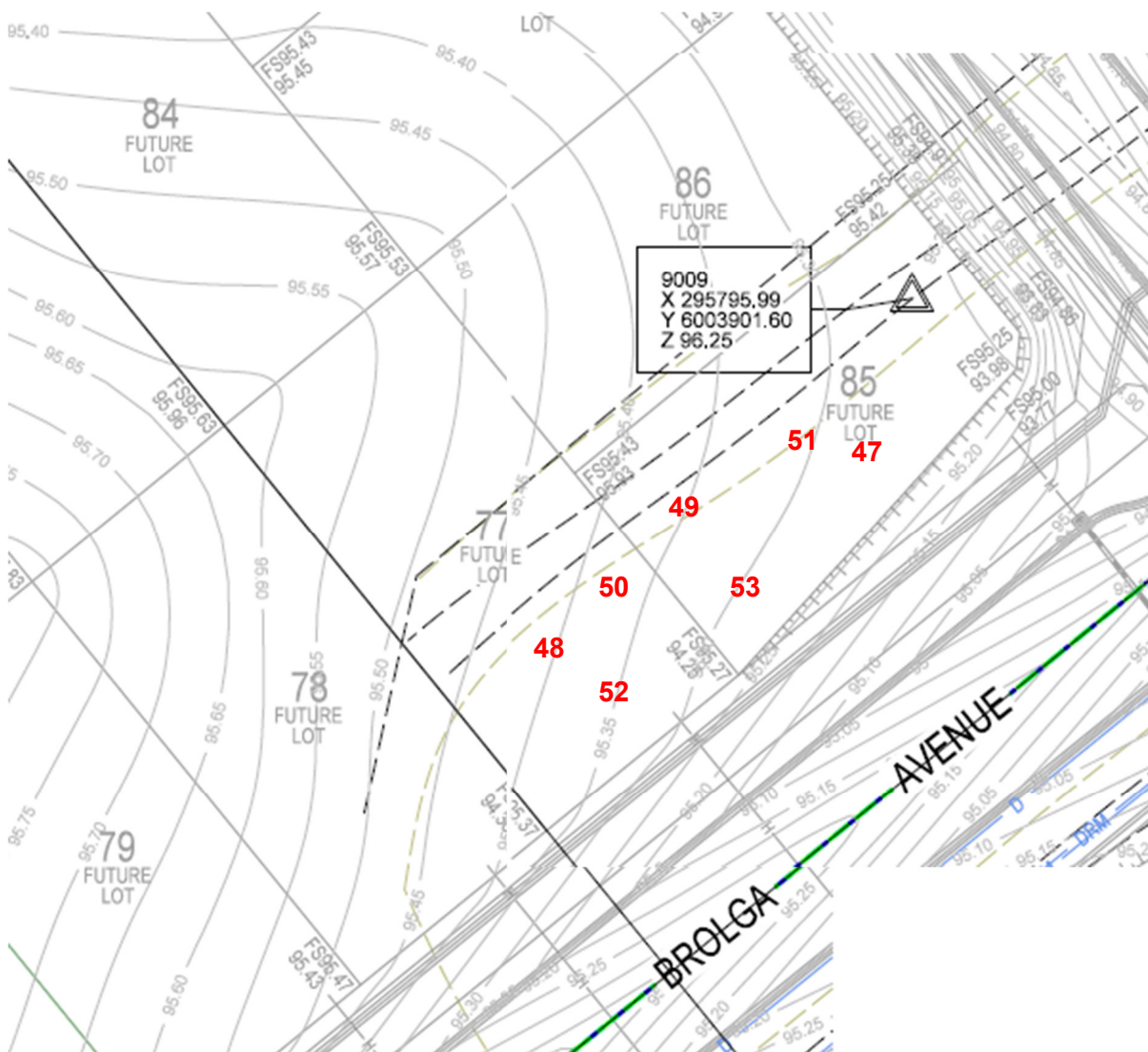


Fig 2: Site Plan – Lots 77/85

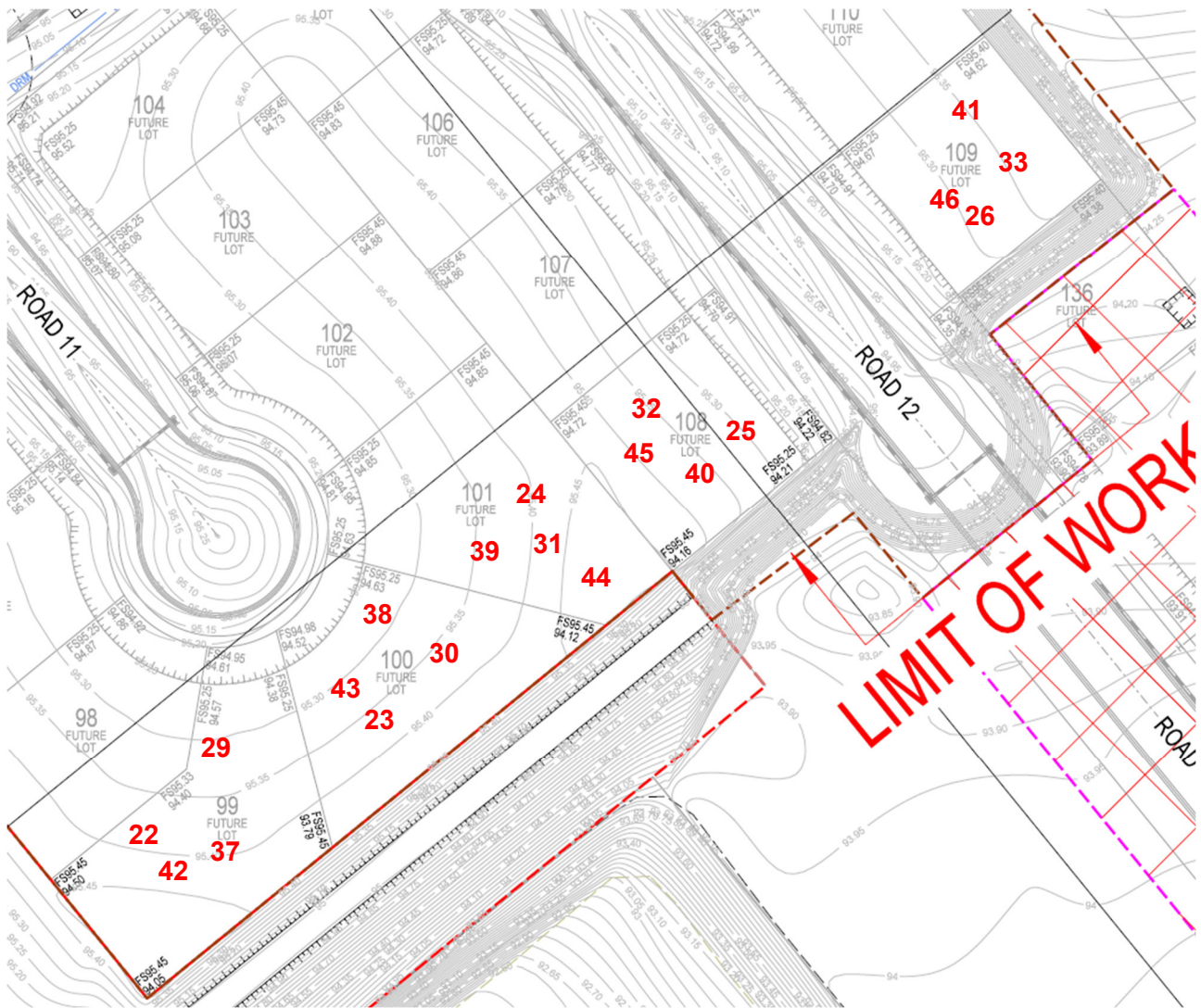


Fig 3: Site Plan – Lots 99 to 101 and 108 to 109

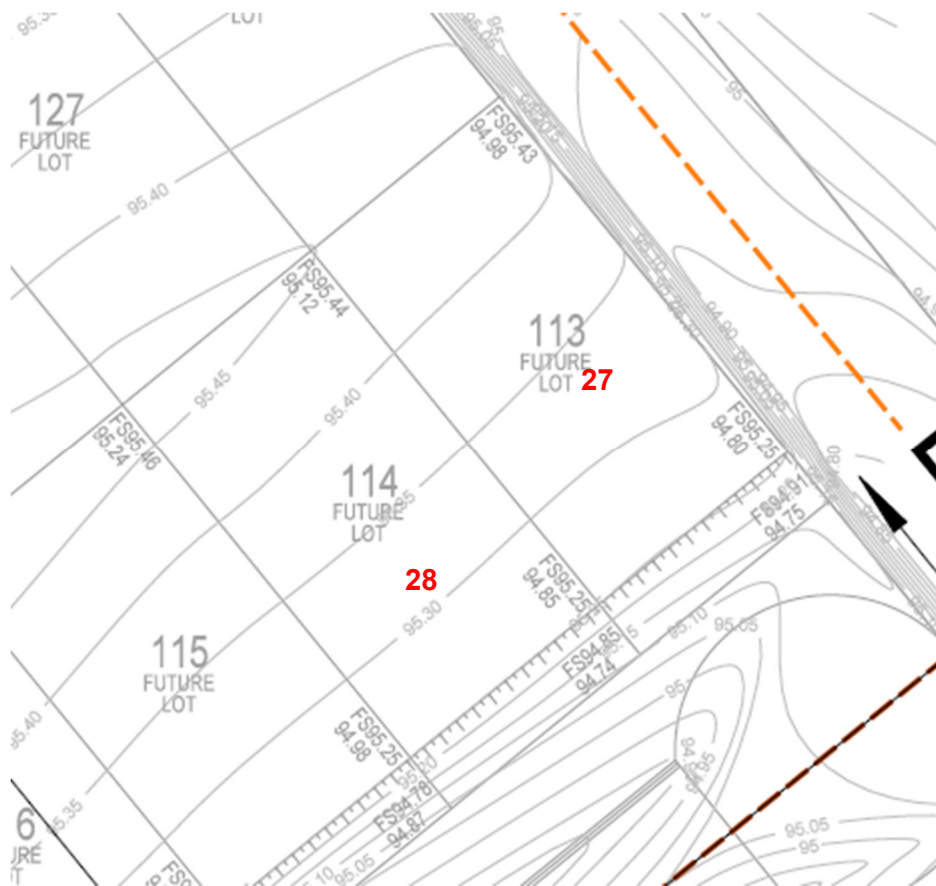


Fig 4: Site Plan – Lots 113-114



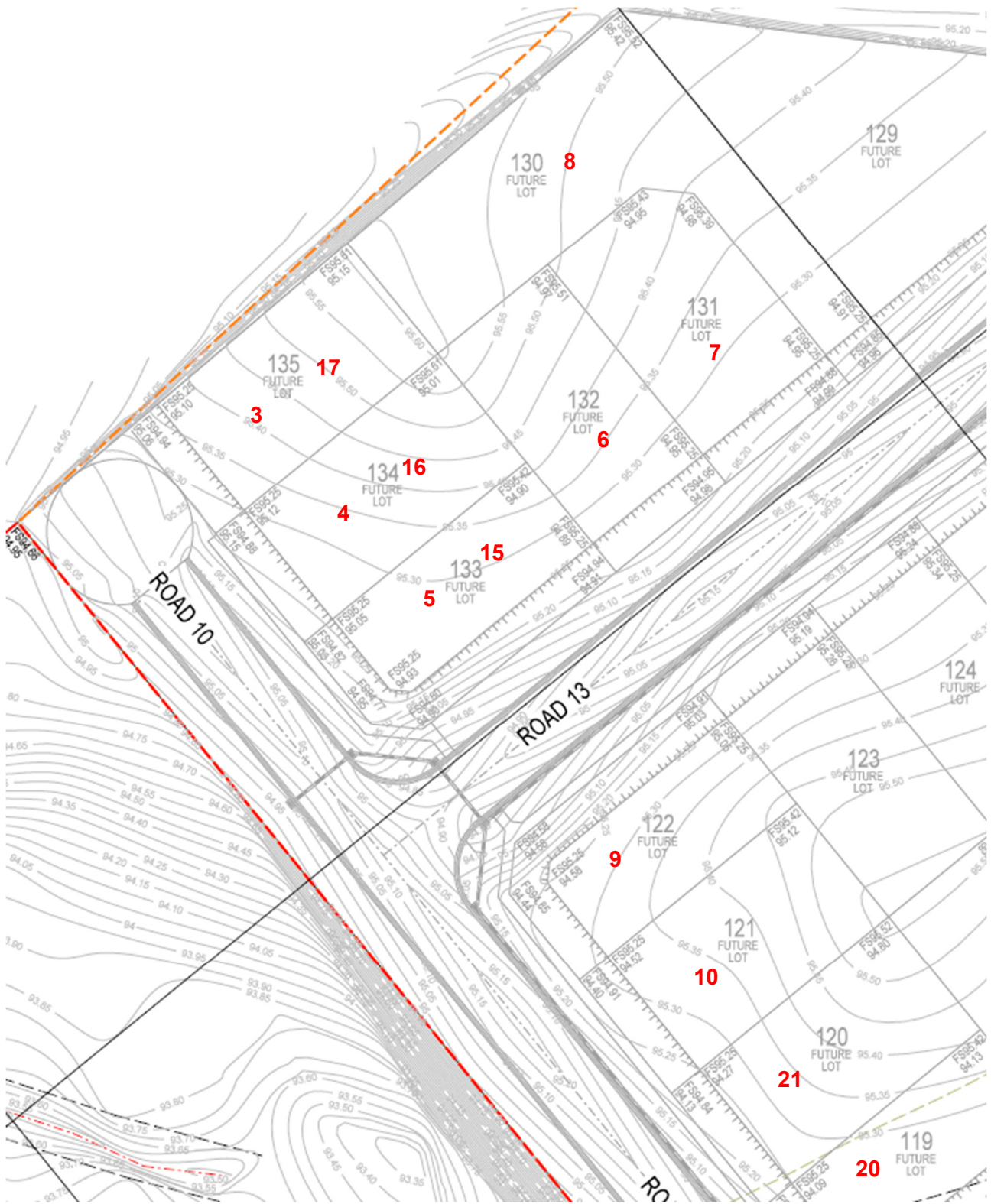


Fig 5: Site Plan – Lots 119-122 and 130-135

# Compaction Control Test Report

**Report Number:** P17057-7  
**Issue Number:** 1  
**Date Issued:** 03/08/2018  
**Client:** Girdwood Contracting

**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2212  
**Date Sampled:** 01/08/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard



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

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	E18-2212A	E18-2212B
Date Tested	01/08/2018	01/08/2018
Time Tested	13:01	13:07
Test Request #/Location	House Lot Backfill	House Lot Backfill
Chainage (m)	Lot 91	Lot 92
Location Offset (m)	**	**
Elevation (m)	**	**
Layer / Reduced Level	-1000	-1200
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 <sup>3</sup>	1.97	1.98
Field Dry Density (FDD) t/m <sup>3</sup>	**	**
Peak Converted Wet Density t/m <sup>3</sup>	1.99	2.05
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**
Moisture Variation (Wv) %	3.5	0.5
Adjusted Moisture Variation %	**	**
Hilf Density Ratio (%)	99.0	96.5
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:** P17057-8  
**Issue Number:** 1  
**Date Issued:** 08/08/2018  
**Client:** Girdwood Contracting



**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2272  
**Date Sampled:** 07/08/2018  
**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: bryanm@gts.com.au



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	E18-2272A	E18-2272B	E18-2272C	E18-2272D
Date Tested	07/08/2018	07/08/2018	07/08/2018	07/08/2018
Time Tested	08:38	08:40	08:52	08:55
Test Request #/Location	House Lot	House Lot	House Lot	House Lot
Chainage (m)	Lot 122	Lot 121	Lot 91	Lot 92
Location Offset (m)	**	**	**	**
Elevation (m)	**	**	**	**
Layer / Reduced Level	-200	-200	-600	-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 <sup>3</sup>	2.08	2.00	2.03	2.01
Field Dry Density (FDD) t/m <sup>3</sup>	**	**	**	**
Peak Converted Wet Density t/m <sup>3</sup>	1.96	1.97	1.98	1.97
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Moisture Variation (Wv) %	3.5	3.0	2.0	3.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	106.5	102.0	102.5	102.5
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:** P17057-9  
**Issue Number:** 1  
**Date Issued:** 08/08/2018  
**Client:** Girdwood Contracting



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:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2256  
**Date Sampled:** 03/08/2018  
**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

*Bryan Mott*

Approved Signatory: Bryan Mott

NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	E18-2256A	E18-2256B	E18-2256C	E18-2256D	E18-2256E	E18-2256F
Date Tested	03/08/2018	03/08/2018	03/08/2018	03/08/2018	03/08/2018	03/08/2018
Time Tested	14:01	14:07	14:09	14:19	14:23	14:25
Test Request #/Location	House Lot	House Lot	House Lot	House Lot	House Lot	House Lot
Chainage (m)	Lot 135	Lot 134	Lot 133	Lot 132	Lot 131	Lot 130
Location Offset (m)	**	**	**	**	**	**
Elevation (m)	**	**	**	**	**	**
Layer / Reduced Level	-200	-200	-200	-200	-200	-200
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty 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
Field Wet Density (FWD) t/m <sup>3</sup>	2.10	2.02	1.99	1.98	1.99	2.01
Field Dry Density (FDD) t/m <sup>3</sup>	**	**	**	**	**	**
Peak Converted Wet Density t/m <sup>3</sup>	2.08	2.09	2.00	2.04	2.07	2.08
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	2.0	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	101.0	97.0	99.5	97.0	96.0	97.0
Compaction Method	Standard	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:** P17057-10  
**Issue Number:** 1  
**Date Issued:** 17/08/2018  
**Client:** Girdwood Contracting



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:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2358  
**Date Sampled:** 15/08/2018  
**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

*Bryan Mott*

Approved Signatory: Bryan Mott  
 NATA Accredited Laboratory Number: 19506

## Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	E18-2358A	E18-2358B	E18-2358C	E18-2358D	E18-2358E
Date Tested	15/08/2018	15/08/2018	15/08/2018	15/08/2018	15/08/2018
Time Tested	13:52	13:54	14:06	14:09	14:15
Test Request #/Location	House Block	House Block	House Block	House Block	House Block
Chainage (m)	Lot 91	Lot 92	Lot 133	Lot 134	Lot 135
Location Offset (m)	**	**	**	**	**
Elevation (m)	**	**	**	**	**
Layer / Reduced Level	-600	-600	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown 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	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	1.96	2.03	2.00	2.05	2.04
Field Dry Density (FDD) t/m <sup>3</sup>	**	**	**	**	**
Peak Converted Wet Density t/m <sup>3</sup>	1.97	2.00	2.00	2.07	2.04
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**
Moisture Variation (Wv) %	3.0	1.5	3.0	-0.5	1.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	99.5	101.0	100.0	99.0	100.0
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:** P17057-11  
**Issue Number:** 1  
**Date Issued:** 20/08/2018  
**Client:** Girdwood Contracting



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:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2394  
**Date Sampled:** 17/08/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Remarks:** Stage 2-4  
**Specification:** 95% Standard



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	E18-2394A	E18-2394B	E18-2394C	E18-2394D
Date Tested	17/08/2018	17/08/2018	17/08/2018	17/08/2018
Time Tested	13:55	13:58	14:08	14:12
Test Request #/Location	House Lot	House Lot	House Lot	House Lot
Chainage (m)	Lot 91	Lot 92	Lot 119	Lot 120
Location Offset (m)	**	**	**	**
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 (%)	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.00	2.00	2.09	2.07
Field Dry Density (FDD) t/m <sup>3</sup>	**	**	**	**
Peak Converted Wet Density t/m <sup>3</sup>	1.87	1.90	1.89	1.91
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Moisture Variation (Wv) %	4.0	4.0	4.5	4.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	107.0	105.5	110.5	108.5
Compaction Method	Standard	Standard	Standard	Standard

## Moisture Variation Note:

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

# Material Test Report

**Report Number:** P17057-12  
**Issue Number:** 1  
**Date Issued:** 27/08/2018  
**Client:** Girdwood Contracting



**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2437  
**Date Sampled:** 23/08/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard

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



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	E18-2437A	E18-2437B	E18-2437C	E18-2437D	E18-2437E	E18-2437F
Date Tested	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018
Time Tested	14:02	14:09	14:19	14:27	14:47	15:11
Test Request #/Location	House Lot 99	House Lot 100	House Lot 101	House Lot 108	House Lot 109	House Lot 113
Easting	55295989	55296012	55296032	55296062	55296100	55296005
Northing	6003902	6003910	6003924	6003938	6003974	6004085
Elevation (m)	**	**	**	**	**	**
Layer / Reduced Level	-1000	-1000	-1000	-1000	-800	-300
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty 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	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	1.88	1.95	1.87	1.95	2.00	1.91
Field Dry Density (FDD) t/m <sup>3</sup>	**	**	**	**	**	**
Peak Converted Wet Density t/m <sup>3</sup>	2.02	2.07	1.97	2.06	2.07	2.09
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**	**
Moisture Variation (Wv) %	2.0	0.0	-0.5	-0.5	-0.5	-0.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	93.0	94.5	94.5	95.0	96.5	91.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard

## Moisture Variation Note:

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

# Material Test Report

**Report Number:** P17057-12  
**Issue Number:** 1  
**Date Issued:** 27/08/2018  
**Client:** Girdwood Contracting

**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2437  
**Date Sampled:** 23/08/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard



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

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	E18-2437G
Date Tested	23/08/2018
Time Tested	15:22
Test Request #/Location	House Lot 114
Easting	55296018
Northing	6004074
Elevation (m)	**
Layer / Reduced Level	-300
Thickness of Layer (mm)	300
Soil Description	Brown Silty Clay
Test Depth (mm)	275
Sieve used to determine oversize (mm)	19.0
Percentage of Wet Oversize (%)	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	1.94
Field Dry Density (FDD) t/m <sup>3</sup>	**
Peak Converted Wet Density t/m <sup>3</sup>	2.02
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**
Moisture Variation (Wv) %	0.5
Adjusted Moisture Variation %	**
Hilf Density Ratio (%)	96.0
Compaction Method	Standard

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P17057-13  
**Issue Number:** 1  
**Date Issued:** 29/08/2018  
**Client:** Girdwood Contracting

**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2445  
**Date Sampled:** 24/08/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard



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

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	E18-2445A	E18-2445B	E18-2445C
Date Tested	24/08/2018	24/08/2018	24/08/2018
Time Tested	07:40	07:53	08:00
Test Request #/Location	House Lot 99	House Lot 100	House Lot 101
Easting	6003890	6003908	6003921
Northing	0295993	0296021	0296040
Elevation (m)	**	**	**
Layer / Reduced Level	1m below FSL	1m below FSL	1m below FSL
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay Brown	Silty Clay Brown	Silty Clay Brown
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 <sup>3</sup>	1.97	2.02	2.04
Field Dry Density (FDD) t/m <sup>3</sup>	**	**	**
Peak Converted Wet Density t/m <sup>3</sup>	2.06	2.06	2.04
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Moisture Variation (Wv) %	-1.0	1.0	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	95.5	98.0	99.5
Compaction Method	Standard	Standard	Standard

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P17057-14  
**Issue Number:** 1  
**Date Issued:** 30/08/2018  
**Client:** Girdwood Contracting



**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2474  
**Date Sampled:** 28/08/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard  
**Material:**

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



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	E18-2474A	E18-2474B	E18-2474C	E18-2474D	E18-2474E
Date Tested	28/08/2018	28/08/2018	28/08/2018	28/08/2018	28/08/2018
Time Tested	08:46	08:53	09:00	09:05	09:10
Test Request #/Location	House Lot 99	House Lot 100	House Lot 101	House Lot 108	House Lot 109
Easting	55 295995	55 296009	55 296027	55 296045	55 296061
Northing	6003889	6003900	6003012	6003924	6003940
Elevation (m)	**	**	**	**	**
Layer / Reduced Level	-800	-800	-700	-700	-600
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown 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 (%)	**	**	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	2.06	2.06	2.08	2.13	1.98
Field Dry Density (FDD) t/m <sup>3</sup>	**	**	**	**	**
Peak Converted Wet Density t/m <sup>3</sup>	1.99	2.02	2.08	2.10	2.00
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**
Moisture Variation (Wv) %	2.5	1.5	0.5	0.0	0.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	103.0	101.5	100.5	101.5	99.0
Compaction Method	Standard	Standard	Standard	Standard	Standard

### Moisture Variation Note:

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

# Material Test Report

**Report Number:** P17057-15  
**Issue Number:** 1  
**Date Issued:** 05/09/2018  
**Client:** Girdwood Contracting



**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2521  
**Date Sampled:** 04/09/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard

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



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	E18-2521A	E18-2521B	E18-2521C	E18-2521D	E18-2521E	E18-2521F
Date Tested	04/09/2018	04/09/2018	04/09/2018	04/09/2018	04/09/2018	04/09/2018
Time Tested	07:36	07:40	07:44	07:53	07:58	08:03
Test Request #/Location	Dam Backfill	Dam Backfill	Dam Backfill	House Lot 99	House Lot 100	House Lot 101
Easting	55 295845	55 295888	55 295924	55 295983	55 296013	55 296026
Northing	6003907	6003941	6003971	6003892	6003900	6003914
Elevation (m)	**	**	**	**	**	**
Layer / Reduced Level	N/A	N/A	N/A	-500	-500	-400
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay	Brown Silty 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	0.1	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.05	2.07	2.10	2.02	1.94	2.04
Field Dry Density (FDD) t/m <sup>3</sup>	**	**	**	**	**	**
Peak Converted Wet Density t/m <sup>3</sup>	2.07	**	2.07	2.06	2.10	2.09
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	2.01	**	**	**	**
Moisture Variation (Wv) %	0.0	**	2.0	2.5	0.5	1.5
Adjusted Moisture Variation %	**	2.0	**	**	**	**
Hilf Density Ratio (%)	98.5	102.5	101.5	98.0	92.5	97.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard

## Moisture Variation Note:

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

# Material Test Report

**Report Number:** P17057-15  
**Issue Number:** 1  
**Date Issued:** 05/09/2018  
**Client:** Girdwood Contracting

**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2521  
**Date Sampled:** 04/09/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard



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

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Bryan Mott  
NATA Accredited Laboratory Number: 19506

## Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	E18-2521G	E18-2521H
Date Tested	04/09/2018	04/09/2018
Time Tested	08:09	08:14
Test Request #/Location	House Lot 108	House Lot 109
Easting	55 296051	55 296070
Northing	6003930	6003943
Elevation (m)	**	**
Layer / Reduced Level	-300	-300
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 <sup>3</sup>	2.02	2.03
Field Dry Density (FDD) t/m <sup>3</sup>	**	**
Peak Converted Wet Density t/m <sup>3</sup>	2.10	2.04
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**
Moisture Variation (Wv) %	0.5	2.0
Adjusted Moisture Variation %	**	**
Hilf Density Ratio (%)	96.0	99.5
Compaction Method	Standard	Standard

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC



# Material Test Report

**Report Number:** P17057-16  
**Issue Number:** 1  
**Date Issued:** 12/09/2018  
**Client:** Girdwood Contracting

**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2547  
**Date Sampled:** 06/09/2018 9:10  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard  
**Material:** Silty Clay Brown



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	E18-2547A
Date Tested	06/09/2018
Time Tested	09:30
Test Request #/Location	Retest Lot 100
Easting	6003904
Northing	0296013
Elevation (m)	**
Layer / Reduced Level	**
Thickness of Layer (mm)	300
Soil Description	Silty Clay Brown
Test Depth (mm)	275
Sieve used to determine oversize (mm)	19.0
Percentage of Wet Oversize (%)	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.06
Field Dry Density (FDD) t/m <sup>3</sup>	**
Peak Converted Wet Density t/m <sup>3</sup>	2.00
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**
Moisture Variation (Wv) %	2.5
Adjusted Moisture Variation %	**
Hilf Density Ratio (%)	103.0
Compaction Method	Standard

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P17057-17  
**Issue Number:** 1  
**Date Issued:** 12/09/2018  
**Client:** Girdwood Contracting



**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2548  
**Date Sampled:** 06/09/2018 9:40  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard  
**Material:** Silty Clay Brown

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	E18-2548A	E18-2548B	E18-2548C	E18-2548D	E18-2548E
Date Tested	06/09/2018	06/09/2018	06/09/2018	06/09/2018	06/09/2018
Time Tested	09:45	09:55	10:05	10:15	10:25
Test Request #/Location	House Lot Fill. LOT 99	House Lot Fill. LOT 100	House Lot Fill. LOT 101	House Lot Fill. LOT 108	House Lot Fill. LOT 109
Easting	6003884	6003898	6003909	6003922	6003937
Northing	0295989	0296008	0296031	0296046	0296061
Elevation (m)	**	**	**	**	**
Layer / Reduced Level	200 below	200 below	100 below	100 below	FL
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	Silty Clay Brown	Silty Clay Brown	Silty Clay Brown	Silty Clay Brown	Silty Clay Brown
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	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.03	2.05	2.08	2.11	2.07
Field Dry Density (FDD) t/m <sup>3</sup>	**	**	**	**	**
Peak Converted Wet Density t/m <sup>3</sup>	2.07	2.03	2.02	2.04	2.05
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**
Moisture Variation (Wv) %	0.5	1.0	2.0	0.5	0.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	98.5	101.0	103.0	103.5	100.5
Compaction Method	Standard	Standard	Standard	Standard	Standard

## Moisture Variation Note:

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

# Material Test Report

**Report Number:** P17057-18  
**Issue Number:** 1  
**Date Issued:** 14/09/2018  
**Client:** Girdwood Contracting

**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2571  
**Date Sampled:** 11/09/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard



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

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	E18-2571A	E18-2571B
Date Tested	11/09/2018	11/09/2018
Time Tested	11:47	11:52
Test Request #/Location	Dam Backfill 1	Dam Backfill 2
Easting	6003888	6003875
Northing	0295798	0295780
Elevation (m)	**	**
Layer / Reduced Level	-1200mm BFSL	-1200mm BFSL
Thickness of Layer (mm)	300	300
Soil Description	Silty Clay Brown	Silty Clay Brown
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 <sup>3</sup>	2.14	2.03
Field Dry Density (FDD) t/m <sup>3</sup>	**	**
Peak Converted Wet Density t/m <sup>3</sup>	2.05	1.98
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**
Moisture Variation (Wv) %	1.5	2.5
Adjusted Moisture Variation %	**	**
Hilf Density Ratio (%)	104.5	102.5
Compaction Method	Standard	Standard

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P17057-19  
**Issue Number:** 1  
**Date Issued:** 20/09/2018  
**Client:** Girdwood Contracting



**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2624  
**Date Sampled:** 18/09/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard

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



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Bryan Mott  
 NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	E18-2624A	E18-2624B	E18-2624C	E18-2624D
Date Tested	18/09/2018	18/09/2018	18/09/2018	18/09/2018
Time Tested	07:59	08:05	08:12	08:17
Test Request #/Location	Road	Road	Road	House Lot 77 & 76
Easting	55 295932	55 295875	55 295824	55 295796
Northing	6003972	6003927	6003894	6003896
Elevation (m)	**	**	**	**
Layer / Reduced Level	500mm below Subgrade	500mm below Subgrade	500mm below Subgrade	-900mm
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 <sup>3</sup>	2.09	2.09	2.12	1.99
Field Dry Density (FDD) t/m <sup>3</sup>	**	**	**	**
Peak Converted Wet Density t/m <sup>3</sup>	2.02	2.01	1.99	2.07
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Moisture Variation (Wv) %	0.5	0.5	1.0	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	103.5	103.5	106.5	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

# Material Test Report

**Report Number:** P17057-20  
**Issue Number:** 1  
**Date Issued:** 20/09/2018  
**Client:** Girdwood Contracting

**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2634  
**Date Sampled:** 18/09/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard



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

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Bryan Mott  
NATA Accredited Laboratory Number: 19506

## Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	E18-2634A
Date Tested	18/09/2018
Time Tested	14:01
Test Request #/Location	House Lot 77 & 76
Easting	55 295784
Northing	6003888
Elevation (m)	**
Layer / Reduced Level	-600
Thickness of Layer (mm)	300
Soil Description	Brown Silty Clay
Test Depth (mm)	275
Sieve used to determine oversize (mm)	19.0
Percentage of Wet Oversize (%)	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.03
Field Dry Density (FDD) t/m <sup>3</sup>	**
Peak Converted Wet Density t/m <sup>3</sup>	2.01
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**
Moisture Variation (Wv) %	0.5
Adjusted Moisture Variation %	**
Hilf Density Ratio (%)	101.5
Compaction Method	Standard

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P17057-21  
**Issue Number:** 1  
**Date Issued:** 21/09/2018  
**Client:** Girdwood Contracting

**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2649  
**Date Sampled:** 20/09/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard



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

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	E18-2649A
Date Tested	20/09/2018
Time Tested	11:30
Test Request #/Location	House Lot Fill
Easting	6003892
Northing	0295798
Elevation (m)	**
Layer / Reduced Level	FSL
Thickness of Layer (mm)	300
Soil Description	Silty Clay Brown
Test Depth (mm)	275
Sieve used to determine oversize (mm)	19.0
Percentage of Wet Oversize (%)	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.04
Field Dry Density (FDD) t/m <sup>3</sup>	**
Peak Converted Wet Density t/m <sup>3</sup>	1.93
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**
Moisture Variation (Wv) %	2.5
Adjusted Moisture Variation %	**
Hilf Density Ratio (%)	105.5
Compaction Method	Standard

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P17057-22  
**Issue Number:** 1  
**Date Issued:** 09/10/2018  
**Client:** Girdwood Contracting

**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2636  
**Date Sampled:** 19/09/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard  
**Material:** Silty Clay Brown



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

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	E18-2636A	E18-2636B
Date Tested	19/09/2018	19/09/2018
Time Tested	08:20	08:30
Test Request #/Location	Lot Fill	Lot Fill
Easting	6003877	6003895
Northing	0295781	0295805
Elevation (m)	**	**
Layer / Reduced Level	300mm BFSL	300mm BFSL
Thickness of Layer (mm)	300	300
Soil Description	Silty Clay Brown	Silty Clay Brown
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 <sup>3</sup>	2.02	2.08
Field Dry Density (FDD) t/m <sup>3</sup>	**	**
Peak Converted Wet Density t/m <sup>3</sup>	2.01	2.02
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**
Moisture Variation (Wv) %	-0.5	0.0
Adjusted Moisture Variation %	**	**
Hilf Density Ratio (%)	100.5	103.0
Compaction Method	Standard	Standard

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** P17057-23  
**Issue Number:** 1  
**Date Issued:** 22/10/2018  
**Client:** Girdwood Contracting

**Project Number:** P17057  
**Project Name:** Dungala Estate Moama  
**Work Request:** 2797  
**Date Sampled:** 16/10/2018  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% Standard



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

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 & 2.1.1

Sample Number	E18-2797A
Date Tested	16/10/2018
Time Tested	14:44
Test Request #/Location	House Lot
Chainage (m)	Lot 113 - Retest
Location Offset (m)	Centre of Lot
Elevation (m)	**
Layer / Reduced Level	300mm below FSL
Thickness of Layer (mm)	300
Soil Description	Silty Clay Brown
Test Depth (mm)	275
Sieve used to determine oversize (mm)	19.0
Percentage of Wet Oversize (%)	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.07
Field Moisture Content %	**
Field Dry Density (FDD) t/m <sup>3</sup>	**
Peak Converted Wet Density t/m <sup>3</sup>	2.04
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**
Moisture Variation (Wv) %	1.0
Adjusted Moisture Variation %	**
Hilf Density Ratio (%)	101.5
Compaction Method	Standard

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC