

## MORRISON GEOTECHNIC PTY LTD

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Gold Coast Office  
Job No: GL13/006  
30<sup>th</sup> October, 2013

Mirvac Pty Ltd  
Po Box 10047 Adelaide Street  
Brisbane, Qld 4000

### **ATTENTION: RICHARD LAWS**

Richard,

**RE: LEVEL ONE SUPERVISION AND TESTING  
GAINSBOROUGH GREENS  
PRECINCTS 6.3, 6.4 & 6.5  
YAWALPAH ROAD, PIMPAMA**

Level One Supervision was carried out on the bulk fill earthworks constructed by Mirvac Pty Ltd to form the allotments and road embankments at Gainsborough Greens, Precincts 6.3, 6.4 & 6.5, Yawalpah Road, Pimpama between January 2013 & October 2013.

The fill placed by Civil Contractors under our supervision ranges up to a maximum of approximately 3.5m in depth.

Our representative observed all the relevant earthworks operations carried out by Mirvac including the stripped ground surface and carried out proof rolling and field density tests in accordance with the required standard (AS 3798). The required specification of 95% of the Standard Maximum Dry Density ratio was achieved.

We confirm that Level One Supervision and testing has been carried out on the bulk fill earthworks completed by Civil Contractors, described in this report for this project. The fill placed by Civil Contractors is controlled fill (AS 2870.1.7.13) and was observed to be placed and compacted in accordance with AS3798.

This statement excludes any topsoil which may be placed as lot dressing, slope stability assessment, trench backfill or any subsequent work after our engagement.

Attached is a copy of the Earthworks Level One Report for the above project dated 30<sup>th</sup> October 2013.

If there are any queries concerning the above please do not hesitate to contact Ian Masman at this office, or alternatively by email at [imasman@morrisongeo.com.au](mailto:imasman@morrisongeo.com.au)

Yours faithfully,

Ian Masman

For and on behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

*MIRVAC PTY LTD*

*GAINSBOROUGH GREENS  
PRECINCTS 6.3, 6.4 & 6.5  
YAWALPAH ROAD  
PIMPAMA*

*LEVEL ONE REPORT*

GL13/006



Work Performed By  
Morrison Geotechnic Pty Limited

30<sup>th</sup> October, 2013

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## 1.0 Introduction

This report summarises results of the Level 1 Supervision and Quality Control Testing performed by Morrison Geotechnic Pty Ltd for the bulk fill earthworks carried out to form the allotments and road embankments by Mirvac at Gainsborough Greens, Precincts 6.3, 6.4 & 6.5 Yawalpah Road, Pimpama.

Our involvement for this work was carried out between January and October 2013.

The work was commissioned by Mr Richard Laws, and the earthworks were carried out by Civil Contractors.

Our brief from the Client was limited to: -

- Level One Supervision of the placement and compaction of fill materials in accordance with AS3798 1996 – “Guidelines on Earthworks for Commercial and Residential Developments” and Gold Coast City Council Project Specifications.
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.1.

Any other requirements of the earthworks specifications such as, Slope Stability Assessment, Quality of Materials, and trench backfill testing are not included in this report.

Additionally, assessments of the reactivity of the fill materials and the natural soils below the fill and the effects of this potential reactivity on a performance of all surface structures is beyond the scope of the Level 1 Supervision which we have completed at this site. This potential site reactivity must be assessed and accounted for by the geotechnical and structural engineers.

Our on site representatives for this project was Mr. George Tait and based at our Gold Coast office.

### Picture 1



## 2.0 Existing Surface Assessment

The site had been cleared of all debris, trees and topsoil. Any organic matter, uncompacted or loose soil, silty soil, and any over wet areas were removed to a natural surface.

The stripped surface was proof rolled, and any movement observed beneath the wheels of the plant was removed to a suitable base or tined, air dried to approximate optimum moisture content and re – compacted. After the above treatments were carried out, the proof rolling process was repeated.

When no movement or vertical deflection was achieved, the stripped surface was assessed to be suitable for the placement of fill.

Picture 2



### **3.0 Fill Placement and Testing**

The site was filled with onsite cut material typically comprising: -

- (CL) SANDY CLAY, GREY, BROWN
- (CL) GRAVELY SAND CLAY, YELLOW, BROWN

Placement of fill was carried out using the following plant

- 1 x 825 Compactor
- 4 x Scrapers & Dump Trucks
- 1 x Water Cart
- 1 x D6 Dozer

All fill placed by Civil Contractors and supervised by Morrison Geotechnic was compacted in thin layers and moisture conditioned, mixed to achieve moisture contents suitable for compaction. Excessively wet materials were excluded from use. Materials containing excessive amounts of silts or deleterious materials such as sticks, rocks greater than 200mm or construction debris were then sorted to remove contaminants prior to placement, or rejected for use on site.

The depth of fill ranged up to approximately 3.5m and this method of placement and compaction was consistent for the entire depth of fill.

Field density tests and laboratory compactions were carried out on the fill materials in accordance with Table 5.1 of AS3798 1996 (Guidelines on Earthworks for Commercial and Residential Developments) and tested to AS1289 test methods (Testing of Soils for Engineering Purposes). Testing achieved the required specification of 95% of the Standard Maximum Dry Density (SMDD).

Refer to attached Appendix 'A' for the Field Density Summary sheet and reports.

Refer to attached Appendix 'B' for the Photo Gallery.

Refer to attached Appendix 'C' for the Site Plan.

#### **4.0 General Statement of Compliance**

Our representative observed all the relevant earthworks operations and field density tests in accordance with the required standard (AS3798).

It is confirmed that Level 1 Supervision has been carried out on the bulk fill earthworks placed by Civil Contractors as described in this report for this project.

The placed and compacted fill described herein for this project is deemed to be "controlled fill" in accordance with AS2870 – 1996 "Residential slabs and footings" which has been observed to be placed and compacted in accordance with AS3798.

The reactivity of this site to moisture content changes has not been assessed by this commission. This aspect of the geotechnical characterisation of the site should be checked by the design consultants of future projects

This statement excludes batter slope stability assessment, any top soil which may be placed for use as lot dressing, trench backfill, or any other subsequent earthworks after October, 2013.

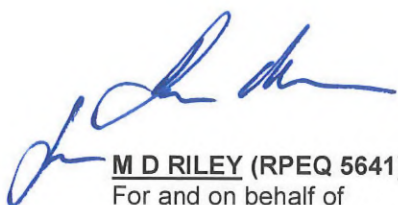
#### **5.0 Limit of Liability**

This report has been produced for, and is the property of our Client, Mirvac Pty Ltd.

Morrison Geotechnic Pty Limited accepts no liability to any third party, and will not enter into any communication with a third party regarding this report.

Morrison Geotechnic Pty Limited will not release this report to any third party without the written permission of our Client.

If you have any queries regarding the above, please contact Ian Masman at our Gold Coast office.



**M D RILEY (RPEQ 5641)**

For and on behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Job No: GL13/006

# **APPENDIX 'A'**

**(Field Density Test Reports)**



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79492/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>27/03/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	185966		
ID No :	1		
Lot No :	557		
Item No :	-		
Date Sampled :	21/3/2013		
Date Tested :	21/3/2013		
Material Source :	ONSITE		
For Use As :	L1		
Sample Location :	LOT 557 O/S NE CNR 8m S, 15m W 1m BELOW FL		
Test Depth (mm) :	<b>150</b>		
Max Size (mm) :	<b>19</b>		
Oversize Wet (%) :	<b>0</b>		
Field Wet Density (t/m <sup>3</sup> ):	<b>2.10</b>		
Field Moisture Cont (%) :	<b>14.9</b>		
PCWD (t/m <sup>3</sup> ) :	<b>2.14</b>		
Moisture Variation (%) :	<b>-1.5</b>		
Compactive Effort :	<b>Standard</b>		
Hilf Density Ratio (%) :	<b>98.0</b>		
Min Hilf Dens Ratio (%) :	<b>95</b>		
Remarks:			

Lab Number:	Soil Description
<b>185966</b>	



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APPROVED SIGNATORY

IAN MASMAN (Gold Coast)  
NATA Accred No:1169

FORM NUMBER

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**MORRISON**  
**GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79491/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>27/03/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	186006	186007	186008	186009
ID No :	2	3	4	5
Lot No :	556	557	558	559
Item No :	-	-	-	-
Date Sampled :	25/3/2013	25/3/2013	25/3/2013	25/3/2013
Date Tested :	25/3/2013	25/3/2013	25/3/2013	25/3/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	L1	L1	L1	L1
Sample Location :	LOT 556 O/S NE CNR 8m S, 10m W 1.5m BELOW FL	LOT 557 O/S NE CNR 10m S, 7m W 1.5m BELOW FL	LOT 558 O/S NE CNR 5m S, 12m W 1.5m BELOW FL	LOT 559 O/S NE CNR 11m S, 11m W 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.16</b>	<b>2.18</b>	<b>2.17</b>	<b>2.12</b>
Field Moisture Cont (%) :	<b>16.5</b>	<b>18.1</b>	<b>18.2</b>	<b>13.8</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.11</b>	<b>2.11</b>	<b>2.09</b>	<b>2.12</b>
Moisture Variation (%) :	<b>-0.2</b>	<b>-0.8</b>	<b>-0.1</b>	<b>-0.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>102.5</b>	<b>103.0</b>	<b>104.0</b>	<b>100.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>186006</b>	
<b>186007</b>	
<b>186008</b>	
<b>186009</b>	



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IAN MASMAN (Gold Coast)  
NATA Accred No:1169

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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79554/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>03/04/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	186107	186108	186109	186110
ID No :	6	7	8	9
Lot No :	557	556	555	554
Item No :	-	-	-	-
Date Sampled :	26/3/2013	26/3/2013	26/3/2013	26/3/2013
Date Tested :	26/3/2013	26/3/2013	26/3/2013	26/3/2013
Material Source :	-	-	-	-
For Use As :	L1	L1	L1	L1
Sample Location :	LOT 557 O/S NE CNR 11m S, 13m W 1.5m BELOW FL	LOT 556 O/S NE CNR 12m S, 7m W 1.5m BELOW FL	LOT 555 O/S NE CNR 9m S, 7m W 1.5m BELOW FL	LOT 554 O/S NE CNR 3m S, 10m W 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>1</b>	<b>0</b>	<b>1.9</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.05</b>	<b>2.08</b>	<b>2.05</b>	<b>2.09</b>
Field Moisture Cont (%) :	<b>13.1</b>	<b>15.1</b>	<b>14.2</b>	<b>14.6</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.12</b>	<b>2.07*</b>	<b>2.08</b>	<b>2.10*</b>
Moisture Variation (%) :	<b>-0.1</b>	<b>0.2*</b>	<b>0.1</b>	<b>0.0*</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>96.5</b>	<b>100.5</b>	<b>98.5</b>	<b>99.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>186107</b>	
<b>186108</b>	
<b>186109</b>	
<b>186110</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79555/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>03/04/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	186111	186112	
ID No :	10	11	
Lot No :	553	1008	
Item No :	-	-	
Date Sampled :	26/3/2013	26/3/2013	
Date Tested :	26/3/2013	26/3/2013	
Material Source :	-	-	
For Use As :	L1	L1	
Sample Location :	LOT 553 O/S NE CNR 5m S, 17m W 1.5m BELOW FL	LOT 1008 O/S NE CNR 7m S, 20m W 1.5m BELOW FL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>1.99</b>	<b>2.02</b>	
Field Moisture Cont (%) :	<b>16.2</b>	<b>16.0</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.04</b>	<b>2.11</b>	
Moisture Variation (%) :	<b>1.1</b>	<b>-0.2</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>97.5</b>	<b>95.5</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	

Remarks:

Lab Number:	Soil Description
<b>186111</b>	
<b>186112</b>	



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ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79564/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/04/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	186113	186114	186115	186116
ID No :	12	13	14	15
Lot No :	1008	552	551	550
Item No :	-	-	-	-
Date Sampled :	27/3/2013	27/3/2013	27/3/2013	27/3/2013
Date Tested :	27/3/2013	27/3/2013	27/3/2013	27/3/2013
Material Source :	-	-	-	-
For Use As :	L1	L1	L1	L1
Sample Location :	LOT 1008 O/S NE CNR 5m S, 15m W 1m BELOW FL	LOT 552 O/S NE CNR 7m S, 12m W 1m BELOW FL	LOT 551 O/S NE CNR 9m S, 10m W 1m BELOW FL	LOT 550 O/S NE CNR 5m S, 9m W 1m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.04</b>	<b>1.97</b>	<b>2.01</b>	<b>2.00</b>
Field Moisture Cont (%) :	<b>16.7</b>	<b>16.8</b>	<b>17.6</b>	<b>16.8</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.07</b>	<b>2.08</b>	<b>2.07</b>	<b>2.07</b>
Moisture Variation (%) :	<b>-0.5</b>	<b>-0.6</b>	<b>-0.3</b>	<b>-0.5</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>98.5</b>	<b>95.0</b>	<b>97.5</b>	<b>96.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>186113</b>	
<b>186114</b>	
<b>186115</b>	
<b>186116</b>	



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**REP AHNUC-1-2**

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**MORRISON**

**GEOTECHNIC**

ABN 51 009 878 899

RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79641/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>09/04/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	186150	186151	186152	186153
ID No :	16	17	18	19
Lot No :	525	526	527	528
Item No :	-	-	-	-
Date Sampled :	2/4/2013	2/4/2013	2/4/2013	2/4/2013
Date Tested :	2/4/2013	2/4/2013	2/4/2013	2/4/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	FILL	FILL	FILL	FILL
Sample Location :	LOT 525 O/S SE CNR 6m W, 2m N 0.6m BELOW FL	LOT 526 O/S SE CNR 5m W, 2m S 0.6m BELOW FL	LOT 527 O/S SE CNR 4m W, 1m N 0.6m BELOW FL	LOT 528 O/S SE CNR 7m W, 5m N 0.6m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.02</b>	<b>2.03</b>	<b>1.99</b>	<b>2.00</b>
Field Moisture Cont (%) :	<b>19.5</b>	<b>19.0</b>	<b>19.5</b>	<b>19.7</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.09</b>	<b>2.08</b>	<b>2.09</b>	<b>2.07</b>
Moisture Variation (%) :	<b>-2.8</b>	<b>-2.7</b>	<b>-3.2</b>	<b>-2.7</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>96.5</b>	<b>97.5</b>	<b>95.0</b>	<b>96.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>186150</b>	
<b>186151</b>	
<b>186152</b>	
<b>186153</b>	



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**MORRISON**  
**GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79642/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>09/04/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	186154	186155	
ID No :	20	21	
Lot No :	529	529	
Item No :	-	-	
Date Sampled :	2/4/2013	2/4/2013	
Date Tested :	2/4/2013	2/4/2013	
Material Source :	ONSITE	ONSITE	
For Use As :	FILL	FILL	
Sample Location :	LOT 529 O/S SE CNR 3m W, 2m N 0.8m BELOW FL	LOT 529 O/S NE CNR 3m N, 5m W 0.8m BELOW FL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.99</b>	
Field Moisture Cont (%) :	<b>20.7</b>	<b>20.0</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.06</b>	<b>2.09</b>	
Moisture Variation (%) :	<b>-2.9</b>	<b>-2.5</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>96.0</b>	<b>95.0</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	
Remarks:			

Lab Number:	Soil Description
<b>186154</b>	
<b>186155</b>	



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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79590/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>08/04/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	186231	186232	186233	186234
ID No :	22	23	24	25
Lot No :	522	523	524	525
Item No :	-	-	-	-
Date Sampled :	3/4/2013	3/4/2013	3/4/2013	3/4/2013
Date Tested :	3/4/2013	3/4/2013	3/4/2013	3/4/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	FILL	FILL	FILL	FILL
Sample Location :	LOT 522 O/S NE CNR 5m S, 7m W 1.2m BELOW FL	LOT 523 O/S NE CNR 4m S, 8m W 1.2m BELOW FL	LOT 524 O/S NE CNR 4m S, 2m W 1m BELOW FL	LOT 525 O/S NE CNR 8m S, 8m W 1m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.99</b>	<b>1.99</b>	<b>2.04</b>	<b>2.11</b>
Field Moisture Cont (%):	<b>18.6</b>	<b>18.2</b>	<b>20.9</b>	<b>20.3</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.05</b>	<b>2.04</b>	<b>2.07</b>	<b>2.04</b>
Moisture Variation (%):	<b>-0.8</b>	<b>-0.7</b>	<b>-3.1</b>	<b>-1.1</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.0</b>	<b>97.0</b>	<b>98.5</b>	<b>103.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>186231</b>	
<b>186232</b>	
<b>186233</b>	
<b>186234</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79591/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>08/04/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	186235	186236	
ID No :	26	27	
Lot No :	526	527	
Item No :	-	-	
Date Sampled :	3/4/2013	3/4/2013	
Date Tested :	3/4/2013	3/4/2013	
Material Source :	ONSITE	ONSITE	
For Use As :	FILL	FILL	
Sample Location :	LOT 526 O/S NE CNR 8m S, 4m W 1m BELOW FL	LOT 527 O/S NE CNR 5m S, 3m W 1m BELOW FL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>2.00</b>	
Field Moisture Cont (%) :	<b>18.0</b>	<b>4.1</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.06</b>	<b>2.06</b>	
Moisture Variation (%) :	<b>-1.1</b>	<b>-1.2</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>96.0</b>	<b>97.0</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	
Remarks:			

Lab Number:	Soil Description
<b>186235</b>	
<b>186236</b>	



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RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79573/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>05/04/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

Page 1 of 1

Lab No :	186314	186315	186316	186317
ID No :	28	29	30	31
Lot No :	557	556	555	554
Item No :	-	-	-	-
Date Sampled :	2/4/2013	2/4/2013	2/4/2013	2/4/2013
Date Tested :	2/4/2013	2/4/2013	2/4/2013	2/4/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 557 O/S NE CNR 7m W, 3m S 0.5m BELOW FL	LOT 556 O/S NE CNR 8m W, 3m S 0.5m BELOW FL	LOT 555 O/S NE CNR 6m W, 4m S 0.5m BELOW FL	LOT 554 O/S NE CNR 9m W, 6m S 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.00</b>	<b>1.98</b>	<b>1.99</b>	<b>1.97</b>
Field Moisture Cont (%):	<b>16.7</b>	<b>17.2</b>	<b>16.5</b>	<b>18.0</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.09</b>	<b>2.08</b>	<b>2.09</b>	<b>2.05</b>
Moisture Variation (%):	<b>-0.5</b>	<b>-0.3</b>	<b>-0.8</b>	<b>-0.1</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>95.5</b>	<b>95.5</b>	<b>95.5</b>	<b>96.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>186314</b>	
<b>186315</b>	
<b>186316</b>	
<b>186317</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79914/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	186703	186704	186705	186706
ID No :	28	29	30	31
Lot No :	523	524	525	526
Item No :	-	-	-	-
Date Sampled :	23/4/2013	23/4/2013	23/4/2013	23/4/2013
Date Tested :	23/4/2013	23/4/2013	23/4/2013	23/4/2013
Material Source :	ON SITE	ON SITE	ON SITE	ON SITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 523 O/S NW CNR 7m E, 4m S 1.5m BELOW FL	LOT 524 O/S NW CNR 8m E, 9m S 1.3m BELOW FL	LOT 525 O/S NW CNR 8m E, 12m S 1m BELOW FL	LOT 526 O/S NW CNR 6m E, 5m S 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.02</b>	<b>2.00</b>	<b>2.00</b>	<b>2.01</b>
Field Moisture Cont (%):	<b>15.1</b>	<b>14.0</b>	<b>13.9</b>	<b>15.9</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.96</b>	<b>1.96</b>	<b>1.96</b>	<b>1.97</b>
Moisture Variation (%):	<b>1.8</b>	<b>2.2</b>	<b>2.4</b>	<b>1.3</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>103.0</b>	<b>102.0</b>	<b>102.0</b>	<b>102.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>186703</b>	
<b>186704</b>	
<b>186705</b>	
<b>186706</b>	

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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79574/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>05/04/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	186318	186319	
ID No :	32	33	
Lot No :	553	1008	
Item No :	-	-	
Date Sampled :	2/4/2013	2/4/2013	
Date Tested :	2/4/2013	2/4/2013	
Material Source :	ONSITE	ONSITE	
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	
Sample Location :	LOT 553 O/S NE CNR 6m W, 2m S 1m BELOW FL	LOT 1008 O/S NE CNR 7m W, 2m S 1m BELOW FL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>1.99</b>	<b>2.08</b>	
Field Moisture Cont (%) :	<b>15.7</b>	<b>14.2</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.09</b>	<b>2.11</b>	
Moisture Variation (%) :	<b>-0.6</b>	<b>-0.3</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>95.0</b>	<b>98.5</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	
Remarks:			

Lab Number:	Soil Description
<b>186318</b>	
<b>186319</b>	



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RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79915/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	186707	186708	186709	186710
ID No :	32	33	34	35
Lot No :	527	528	529	529
Item No :	-	-	-	-
Date Sampled :	23/4/2013	23/4/2013	23/4/2013	23/4/2013
Date Tested :	23/4/2013	23/4/2013	23/4/2013	23/4/2013
Material Source :	ON SITE	ON SITE	ON SITE	ON SITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 527 O/S NW CNR 2m E, 4m S 2m BELOW FL	LOT 528 O/S NW CNR 3m E, 5m S 2m BELOW FL	LOT 529 O/S NW CNR 2m E, 6m S 2m BELOW FL	LOT 529 O/S NW CNR 11m N, 4m E 2m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.03</b>	<b>2.00</b>	<b>2.00</b>	<b>2.02</b>
Field Moisture Cont (%):	<b>14.6</b>	<b>14.6</b>	<b>14.8</b>	<b>13.6</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.96</b>	<b>1.96</b>	<b>1.98</b>	<b>1.94</b>
Moisture Variation (%):	<b>1.4</b>	<b>0.7</b>	<b>2.3</b>	<b>2.8</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>103.5</b>	<b>102.0</b>	<b>101.5</b>	<b>104.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>186707</b>	
<b>186708</b>	
<b>186709</b>	
<b>186710</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79916/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	186711	186712	
ID No :	36	37	
Lot No :	530	530	
Item No :	-	-	
Date Sampled :	23/4/2013	23/4/2013	
Date Tested :	23/4/2013	23/4/2013	
Material Source :	ON SITE	ON SITE	
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	
Sample Location :	LOT 530 O/S NW CNR 2m E, 7m S 2m BELOW FL	LOT 530 O/S NW CNR 21m E, 6m S 1.5m BELOW FL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>2.01</b>	<b>2.02</b>	
Field Moisture Cont (%) :	<b>15.3</b>	<b>17.0</b>	
PCWD (t/m <sup>3</sup> ) :	<b>1.98</b>	<b>2.00</b>	
Moisture Variation (%) :	<b>1.9</b>	<b>-1.2</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>101.5</b>	<b>101.5</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	
Remarks:			

Lab Number:	Soil Description
<b>186711</b>	
<b>186712</b>	



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RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79917/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	186713	186714	186715	
ID No :	38	39	40	
Lot No :	911	549	531	
Item No :	-	-	-	
Date Sampled :	23/4/2013	23/4/2013	23/4/2013	
Date Tested :	23/4/2013	23/4/2013	23/4/2013	
Material Source :	ON SITE	ON SITE	ON SITE	
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	
Sample Location :	LOT 911 O/S NW CNR 5m E, 4m S 1.5m BELOW FL	LOT 549 O/S NW CNR 5m E, 8m S 1.5m BELOW FL	LOT 531 O/S NW CNR 12m E, 6m S 1.5m BELOW FL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>2.00</b>	<b>1.95</b>	<b>1.96</b>	
Field Moisture Cont (%) :	<b>17.6</b>	<b>18.5</b>	<b>20.2</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.04</b>	<b>1.95</b>	<b>1.96</b>	
Moisture Variation (%) :	<b>-1.4</b>	<b>1.6</b>	<b>1.6</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>98.0</b>	<b>99.5</b>	<b>100.5</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	

Remarks:

Lab Number:	Soil Description
<b>186713</b>	
<b>186714</b>	
<b>186715</b>	



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RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79942/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>06/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	186780	186781	186782	186783
ID No :	41	42	43	44
Lot No :	911	549	548	531
Item No :	-	-	-	-
Date Sampled :	26/4/2013	26/4/2013	26/4/2013	26/4/2013
Date Tested :	26/4/2013	26/4/2013	26/4/2013	26/4/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Sample Location :	LOT 911 O/S SW CNR 11m E, 5m N 1m BELOW FL	LOT 549 O/S NE CNR 9m W, 6m S 1m BELOW FL	LOT 548 O/S NW CNR 5m E, 6m S 1m BELOW FL	LOT 531 O/S NE CNR 6m W, 4m S 1m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.00</b>	<b>1.99</b>	<b>2.00</b>	<b>1.97</b>
Field Moisture Cont (%) :	<b>19.7</b>	<b>17.5</b>	<b>17.4</b>	<b>17.1</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.01</b>	<b>2.01</b>	<b>2.01</b>	<b>2.04</b>
Moisture Variation (%) :	<b>-0.7</b>	<b>-0.9</b>	<b>-0.6</b>	<b>-2.3</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>99.0</b>	<b>99.0</b>	<b>99.0</b>	<b>96.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>186780</b>	
<b>186781</b>	
<b>186782</b>	
<b>186783</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>79943/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>06/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	186784	186785	186786	186787
ID No :	45	46	47	48
Lot No :	530	529	529	528
Item No :	-	-	-	-
Date Sampled :	26/4/2013	26/4/2013	26/4/2013	26/4/2013
Date Tested :	26/4/2013	26/4/2013	26/4/2013	26/4/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Sample Location :	LOT 530 O/S NE CNR 16m W, 4m S 0.5m BELOW FL	LOT 529 O/S NE CNR 13m W, 5m S 0.5m BELOW FL	LOT 529 O/S NE CNR 7m W, 15m S 0.5m BELOW FL	LOT 528 O/S NE CNR 16m W, 4m S 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.97</b>	<b>1.99</b>	<b>1.99</b>
Field Moisture Cont (%) :	<b>18.1</b>	<b>18.9</b>	<b>19.0</b>	<b>21.0</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.02</b>	<b>2.00</b>	<b>2.02</b>	<b>2.01</b>
Moisture Variation (%) :	<b>-2.2</b>	<b>-2.9</b>	<b>-1.1</b>	<b>-2.3</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>98.0</b>	<b>98.5</b>	<b>98.0</b>	<b>99.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks :				

Lab Number:	Soil Description
<b>186784</b>	
<b>186785</b>	
<b>186786</b>	
<b>186787</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80004/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>08/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	186831	186832	186833	186834
ID No :	49	50	51	52
Lot No :	583	582	537	536
Item No :	-	-	-	-
Date Sampled :	29/4/2013	29/4/2013	29/4/2013	29/4/2013
Date Tested :	29/4/2013	29/4/2013	29/4/2013	29/4/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 583 O/S NE CNR 6m W, 7m S 1m BELOW FL	LOT 582 O/S NE CNR 3m W, 3m S 1m BELOW FL	LOT 537 O/S NE CNR 9m W, 5m S 1m BELOW FL	LOT 536 O/S NE CNR 7m W, 6m S 1m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.79</b>	<b>1.88</b>	<b>1.93</b>	<b>1.93</b>
Field Moisture Cont (%) :	<b>11.5</b>	<b>18.7</b>	<b>41.3</b>	<b>21.3</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.99</b>	<b>1.98</b>	<b>1.99</b>	<b>1.98</b>
Moisture Variation (%) :	<b>0.0</b>	<b>-2.4</b>	<b>-2.2</b>	<b>-1.0</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>90.0</b>	<b>95.0</b>	<b>97.0</b>	<b>97.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>186831</b>	
<b>186832</b>	
<b>186833</b>	
<b>186834</b>	

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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80005/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>08/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	186835	186836	186837	186838
ID No :	53	54	55	56
Lot No :	535	534	533	532
Item No :	-	-	-	-
Date Sampled :	29/4/2013	29/4/2013	29/4/2013	29/4/2013
Date Tested :	29/4/2013	29/4/2013	29/4/2013	29/4/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 535 O/S NE CNR 2m W, 7m S 1.5m BELOW FL	LOT 534 O/S NE CNR 12m W, 4m S 1.5m BELOW FL	LOT 533 O/S NE CNR 8m W, 6m S 1.5m BELOW FL	LOT 532 O/S NE CNR 6m W, 6m S 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.99</b>	<b>2.00</b>	<b>1.97</b>	<b>1.98</b>
Field Moisture Cont (%) :	<b>16.4</b>	<b>16.3</b>	<b>20.0</b>	<b>19.2</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.00</b>	<b>2.01</b>	<b>2.03</b>	<b>1.99</b>
Moisture Variation (%) :	<b>-0.2</b>	<b>-2.0</b>	<b>0.1</b>	<b>0.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>99.5</b>	<b>99.5</b>	<b>97.0</b>	<b>99.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks :				

Lab Number:	Soil Description
<b>186835</b>	
<b>186836</b>	
<b>186837</b>	
<b>186838</b>	



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NATA Accred No:1169

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**MORRISON**  
**GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80006/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>08/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	186839	186840	186841	186842
ID No :	57	58	59	60
Lot No :	583	582	581	580
Item No :	-	-	-	-
Date Sampled :	29/4/2013	29/4/2013	29/4/2013	29/4/2013
Date Tested :	29/4/2013	29/4/2013	29/4/2013	29/4/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 583 O/S SW CNR 6m N, 6m E 1.5m BELOW FL	LOT 582 O/S SW CNR 5m N, 8m E 1.5m BELOW FL	LOT 581 O/S NE CNR 4m S, 6m W 1.5m BELOW FL	LOT 580 O/S NE CNR 6m S, 13m W 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.00</b>	<b>2.00</b>	<b>2.08</b>	<b>2.03</b>
Field Moisture Cont (%) :	<b>17.1</b>	<b>18.5</b>	<b>12.2</b>	<b>12.2</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.04</b>	<b>2.06</b>	<b>1.99</b>	<b>2.00</b>
Moisture Variation (%) :	<b>-0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.5</b>	<b>97.0</b>	<b>104.5</b>	<b>101.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>186839</b>	
<b>186840</b>	
<b>186841</b>	
<b>186842</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80007/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>08/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	186843	186844	
ID No :	61	62	
Lot No :	579	578	
Item No :	-	-	
Date Sampled :	29/4/2013	29/4/2013	
Date Tested :	29/4/2013	29/4/2013	
Material Source :	ONSITE	ONSITE	
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	
Sample Location :	LOT 579 O/S NE CNR 7m S, 12m W 1.5m BELOW FL	LOT 578 O/S NE CNR 5m S, 5.5m W 1.5m BELOW FL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>2.00</b>	<b>1.99</b>	
Field Moisture Cont (%) :	<b>17.3</b>	<b>26.3</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.05</b>	<b>2.03</b>	
Moisture Variation (%) :	<b>0.1</b>	<b>-0.2</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>97.5</b>	<b>98.5</b>	
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	
Remarks:			

Lab Number:	Soil Description
<b>186843</b>	
<b>186844</b>	



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**MORRISON  
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ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80069/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>13/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	186898	186899	186900	186901
ID No :	63	64	64	65
Lot No :	-	-	581	580
Item No :	-	-	-	-
Date Sampled :	30/4/2013	30/4/2013	30/4/2013	30/4/2013
Date Tested :	30/4/2013	30/4/2013	30/4/2013	30/4/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Sample Location :	NINGALOO DRIVE CH 860 2m LEFT OF CL 0.5m BELOW SG	NINGALOO DRIVE CH 800 1m LEFT OF CL 0.5m BELOW SG	LOT 581 O/S NW CNR 4m STH, 3m EAST 0.5m BELOW FL	LOT 580 O/S NW CNR 5m STH, 2m EAST 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.02</b>	<b>2.00</b>	<b>1.98</b>	<b>1.99</b>
Field Moisture Cont (%) :	<b>15.4</b>	<b>15.7</b>	<b>14.8</b>	<b>-40.2</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.03</b>	<b>2.02</b>	<b>1.94</b>	<b>1.97</b>
Moisture Variation (%) :	<b>0.7</b>	<b>0.2</b>	<b>-0.8</b>	<b>2.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>99.5</b>	<b>99.0</b>	<b>102.0</b>	<b>101.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>186898</b>	
<b>186899</b>	
<b>186900</b>	
<b>186901</b>	



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## Hilf Density Ratio Report

Client :	MIRVAC	Report Number:	80070/1
Job Number :	GL13/006	Report Date:	13/05/2013
Project :	GAINSBOROUGH GREENS - PRECINCT 6.3	Order Number:	
Location :	YAWALPAH ROAD , PIMPAMA	Test Method:	AS1289.5.8.1 & 5.7.1

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Lab No :	186902	186903	186904	186905
ID No :	66	67	68	69
Lot No :	579	578	569	570
Item No :	-	-	-	-
Date Sampled :	30/4/2013	30/4/2013	30/4/2013	30/4/2013
Date Tested :	30/4/2013	30/4/2013	30/4/2013	30/4/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Sample Location :	LOT 579 O/S NW CNR 8m STH, 4m EAST 0.5m BELOW FL	LOT 578 O/S NW CNR 3m STH, 4m EAST 0.5m BELOW FL	LOT 569 O/S NE CNR 1m WEST, 1m STH 1m BELOW FL	LOT 570 O/S SE CNR 1m NTH, 3m WEST 1m BELOW FL
Test Depth (mm) :	150	150	150	150
Max Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Field Wet Density (t/m <sup>3</sup> ):	1.96	1.96	1.98	2.00
Field Moisture Cont (%) :	13.4	14.4	13.8	11.8
PCWD (t/m <sup>3</sup> ) :	2.04	2.00	1.99	2.01
Moisture Variation (%) :	1.7	-0.5	1.6	2.0
Compactive Effort :	Standard	Standard	Standard	Standard
Hilf Density Ratio (%) :	96.0	98.0	99.5	99.5
Min Hilf Dens Ratio (%)	95	95	95	95
Remarks:				

Lab Number:	Soil Description
186902	
186903	
186904	
186905	



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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80163/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>16/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	187002	187003	187004	187005
ID No :	70	71	72	73
Lot No :	512	513	514	620
Item No :	-	-	-	-
Date Sampled :	1/5/2013	1/5/2013	1/5/2013	1/5/2013
Date Tested :	1/5/2013	1/5/2013	1/5/2013	1/5/2013
Material Source :	ON SITE	ON SITE	ON SITE	ON SITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 512 O/S NE CNR 6m W, 6m S 1.5m BELOW FL	LOT 513 O/S NE CNR 5m W, 12m S 1.5m BELOW FL	LOT 514 O/S NW CNR 5m E, 4m S 1.5m BELOW FL	LOT 620 O/S SE CNR 6m N, 3m W 1.5m BELOW FL
Test Depth (mm) :	-	150	150	150
Max Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Field Wet Density (t/m <sup>3</sup> ):	1.96	1.96	1.99	1.93
Field Moisture Cont (%):	14.8	16.3	15.6	15.9
PCWD (t/m <sup>3</sup> ) :	1.99	1.98	1.99	2.02
Moisture Variation (%):	0.6	1.4	0.9	-1.7
Compactive Effort :	Standard	Standard	Standard	Standard
Hilf Density Ratio (%) :	98.5	99.0	99.5	95.5
Min Hilf Dens Ratio (%)	95	95	95	95
Remarks:				

Lab Number:	Soil Description
<b>187002</b>	
<b>187003</b>	
<b>187004</b>	
<b>187005</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80164/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>16/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	187006	187007	187008	187009
ID No :	74	75	76	77
Lot No :	621	622	623	624
Item No :	-	-	-	-
Date Sampled :	1/5/2013	1/5/2013	1/5/2013	1/5/2013
Date Tested :	1/5/2013	1/5/2013	1/5/2013	1/5/2013
Material Source :	ON SITE	ON SITE	ON SITE	ON SITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 621 O/S NW CNR 3m E, 5m S 1.5m BELOW FL	LOT 622 O/S NW CNR 4m E, 8m S 1.5m BELOW FL	LOT 623 O/S SW CNR 2m E, 2m N 1.5m BELOW FL	LOT 624 O/S SW CNR 2m E, 6m N 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.96</b>	<b>1.96</b>	<b>1.96</b>
Field Moisture Cont (%) :	<b>15.3</b>	<b>17.0</b>	<b>14.6</b>	<b>16.4</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.00</b>	<b>2.01</b>	<b>1.96</b>	<b>2.01</b>
Moisture Variation (%) :	<b>0.2</b>	<b>-0.6</b>	<b>1.3</b>	<b>-0.1</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>99.0</b>	<b>97.5</b>	<b>100.0</b>	<b>97.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>187006</b>	
<b>187007</b>	
<b>187008</b>	
<b>187009</b>	



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**MORRISON**

**GEOTECHNIC**

ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80008/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>08/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	187035	187036	187037	187038
ID No :	78	79	80	81
Lot No :	621	622	623	624
Item No :	-	-	-	-
Date Sampled :	2/5/2013	2/5/2013	2/5/2013	2/5/2013
Date Tested :	2/5/2013	2/5/2013	2/5/2013	2/5/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 621 O/S SE CNR 5m W, 8m N 1m BELOW FL	LOT 622 O/S SE CNR 6m W, 7m N 1m BELOW FL	LOT 623 O/S NE CNR 9m S, 6m W 1m BELOW FL	LOT 624 O/S NE CNR 5m S, 6m W 1m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.99</b>	<b>1.98</b>	<b>1.96</b>	<b>1.98</b>
Field Moisture Cont (%):	<b>22.3</b>	<b>19.4</b>	<b>22.3</b>	<b>20.5</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.98</b>	<b>1.95</b>	<b>1.95</b>	<b>1.98</b>
Moisture Variation (%):	<b>-2.3</b>	<b>1.6</b>	<b>1.4</b>	<b>0.1</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>100.5</b>	<b>101.5</b>	<b>100.5</b>	<b>100.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>187035</b>	
<b>187036</b>	
<b>187037</b>	
<b>187038</b>	



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**MORRISON  
GEOTECHNIC**

ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80161/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>16/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	187092	187093	187094	187095
ID No :	82	83	84	85
Lot No :	560	561	562	563
Item No :	-	-	-	-
Date Sampled :	6/5/2013	6/5/2013	6/5/2013	6/5/2013
Date Tested :	6/5/2013	6/5/2013	6/5/2013	6/5/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 560 O/S NE CNR 4m S, 2m W 2.5m BELOW FL	LOT 561 O/S NE CNR 4m S, 4m W 2.5m BELOW FL	LOT 562 O/S NW CNR 5m S, 10m E 2.5m BELOW FL	LOT 563 O/S NW CNR 3m S, 7m E 2m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.97</b>	<b>1.95</b>	<b>1.97</b>
Field Moisture Cont (%) :	<b>18.3</b>	<b>19.6</b>	<b>20.3</b>	<b>20.7</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.03</b>	<b>2.02</b>	<b>2.02</b>	<b>2.03</b>
Moisture Variation (%) :	<b>-0.8</b>	<b>-0.8</b>	<b>-0.9</b>	<b>-1.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.5</b>	<b>97.5</b>	<b>96.5</b>	<b>97.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>187092</b>	
<b>187093</b>	
<b>187094</b>	
<b>187095</b>	



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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80162/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>16/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	187096	187097	187098	187099
ID No :	86	87	88	89
Lot No :	564	565	566	567
Item No :	-	-	-	-
Date Sampled :	6/5/2013	6/5/2013	6/5/2013	6/5/2013
Date Tested :	6/5/2013	6/5/2013	6/5/2013	6/5/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 564 O/S SE CNR 3m N, 6m W 2m BELOW FL	LOT 565 O/S SE CNR 5m N, 6m W 2m BELOW FL	LOT 566 O/S SE CNR 3m N, 4m W 2m BELOW FL	LOT 567 O/S SE CNR 2m N, 2m W 2m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.98</b>	<b>1.96</b>	<b>1.97</b>
Field Moisture Cont (%) :	<b>20.2</b>	<b>20.5</b>	<b>20.1</b>	<b>21.4</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.03</b>	<b>2.03</b>	<b>2.03</b>	<b>2.04</b>
Moisture Variation (%) :	<b>-1.1</b>	<b>-0.6</b>	<b>-0.7</b>	<b>-0.8</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.5</b>	<b>97.5</b>	<b>96.5</b>	<b>97.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>187096</b>	
<b>187097</b>	
<b>187098</b>	
<b>187099</b>	



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RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80019/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>10/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	187136	187137	187138	187139
ID No :	90	91	92	93
Lot No :	563	564	565	566
Item No :	-	-	-	-
Date Sampled :	7/5/2013	7/5/2013	7/5/2013	7/5/2013
Date Tested :	7/5/2013	7/5/2013	7/5/2013	7/5/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL	ALLOTMENT FILL
Sample Location :	LOT 563 O/S NE CNR 10m S, 3m W 2m BELOW FL	LOT 564 O/S NW CNR 9m E, 8m S 2m BELOW FL	LOT 565 O/S NW CNR 10m E, 9m S 2m BELOW FL	LOT 566 O/S NW CNR 8m E, 10m S 2m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.01</b>	<b>1.99</b>	<b>1.98</b>	<b>1.97</b>
Field Moisture Cont (%) :	<b>18.8</b>	<b>20.2</b>	<b>20.9</b>	<b>22.0</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.95</b>	<b>1.92</b>	<b>1.91</b>	<b>1.91</b>
Moisture Variation (%) :	<b>1.6</b>	<b>0.2</b>	<b>0.7</b>	<b>1.7</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>103.5</b>	<b>104.0</b>	<b>103.5</b>	<b>103.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>187136</b>	
<b>187137</b>	
<b>187138</b>	
<b>187139</b>	



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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80186/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>20/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	187179	187180	187181	187182
ID No :	94	95	96	97
Lot No :	572	574	575	578
Item No :	-	-	-	-
Date Sampled :	8/5/2013	8/5/2013	8/5/2013	8/5/2013
Date Tested :	8/5/2013	8/5/2013	8/5/2013	8/5/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	L1	L1	L1	L1
Sample Location :	LOT 572 O/S NE CNR 3m W, 2m S 1.5m BELOW FL	LOT 574 O/S NE CNR 7m W, 3m S 1.5m BELOW FL	LOT 575 O/S NE CNR 7m W, 5m S 1.5m BELOW FL	LOT 578 O/S NE CNR 6m W, 7m S 2m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.96</b>	<b>1.96</b>	<b>1.97</b>	<b>2.02</b>
Field Moisture Cont (%) :	<b>32.1</b>	<b>20.7</b>	<b>22.9</b>	<b>23.4</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.02</b>	<b>2.00</b>	<b>1.99</b>	<b>1.98</b>
Moisture Variation (%) :	<b>0.2</b>	<b>-0.7</b>	<b>1.5</b>	<b>0.5</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.0</b>	<b>98.0</b>	<b>99.0</b>	<b>102.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>187179</b>	
<b>187180</b>	
<b>187181</b>	
<b>187182</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80187/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>20/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	187250		
ID No :	98		
Lot No :	583		
Item No :	-		
Date Sampled :	9/5/2013		
Date Tested :	9/5/2013		
Material Source :	ONSITE		
For Use As :	GENERAL FILL		
Sample Location :	RETEST OF 186831 LOT 583 1m BELOW FL		
Test Depth (mm) :	<b>150</b>		
Max Size (mm) :	<b>19</b>		
Oversize Wet (%) :	<b>0</b>		
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>		
Field Moisture Cont (%) :	<b>16.9</b>		
PCWD (t/m <sup>3</sup> ) :	<b>1.97</b>		
Moisture Variation (%) :	<b>0.8</b>		
Compactive Effort :	<b>Standard</b>		
Hilf Density Ratio (%) :	<b>100.5</b>		
Min Hilf Dens Ratio (%) :	<b>95</b>		
Remarks:			

Lab Number:	Soil Description
<b>187250</b>	

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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80185/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>20/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	187261	187262	187263	187264
ID No :	99	100	101	102
Lot No :	568	567	573	571
Item No :	-	-	-	-
Date Sampled :	9/5/2013	9/5/2013	9/5/2013	9/5/2013
Date Tested :	9/5/2013	9/5/2013	9/5/2013	9/5/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Sample Location :	LOT 568 O/S NE CNR 4m W, 6m S 1.5m BELOW FL	LOT 567 O/S NW CNR 9m E, 7m S 1m BELOW FL	LOT 573 O/S NE CNR 8m S, 3m W 1.5m BELOW FL	LOT 571 O/S NE CNR 3m S, 3m W 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.96</b>	<b>1.96</b>	<b>1.98</b>	<b>1.98</b>
Field Moisture Cont (%) :	<b>17.9</b>	<b>17.3</b>	<b>17.6</b>	<b>18.5</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.99</b>	<b>1.95</b>	<b>1.94</b>	<b>1.97</b>
Moisture Variation (%) :	<b>0.1</b>	<b>2.1</b>	<b>1.6</b>	<b>-0.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>99.0</b>	<b>100.5</b>	<b>102.0</b>	<b>100.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>187261</b>	
<b>187262</b>	
<b>187263</b>	
<b>187264</b>	



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IAN MASMAN (Gold Coast)  
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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80438/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>30/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	187420	187421	187422	
ID No :	103	104	105	
Lot No :	571	570	569	
Item No :	-	-	-	
Date Sampled :	20/5/2013	20/5/2013	20/5/2013	
Date Tested :	20/5/2013	20/5/2013	20/5/2013	
Material Source :	ONSITE	ONSITE	ONSITE	
For Use As :	LOT FILL	LOT FILL	LOT FILL	
Sample Location :	LOT 571 O/S NE CNR 3m STH, 14m W 1m BELOW FL	LOT 570 O/S NE CNR 12m STH, 2m W 1m BELOW FL	LOT 569 O/S SE CNR 3m NTH, 12m W 1m BELOW FL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>1.2</b>	<b>4</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>2.01</b>	<b>1.93</b>	<b>1.95</b>	
Field Moisture Cont (%) :	<b>24.0</b>	<b>23.9</b>	<b>22.8</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.00</b>	<b>1.98*</b>	<b>2.00*</b>	
Moisture Variation (%) :	<b>-0.6</b>	<b>0.2*</b>	<b>0.1*</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>100.5</b>	<b>97.5</b>	<b>97.5</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	
Remarks:				

Lab Number:	Soil Description
<b>187420</b>	
<b>187421</b>	
<b>187422</b>	



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*Gary Taylor*

GARY TAYLOR (Gold Coast)  
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## Hilf Density Ratio Report

Client :	MIRVAC	Report Number:	80373/1
Job Number :	GL13/006	Report Date:	28/05/2013
Project :	GAINSBOROUGH GREENS - PRECINCT 6.3	Order Number:	
Location :	YAWALPAH ROAD , PIMPAMA	Test Method:	AS1289.5.8.1

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Lab No :	187460	187461	187462	
ID No :	106	107	108	
Lot No :	569	570	572	
Item No :	-	-	-	
Date Sampled :	21/5/2013	21/5/2013	21/5/2013	
Date Tested :	21/5/2013	21/5/2013	21/5/2013	
Material Source :	ONSITE	ONSITE	ONSITE	
For Use As :	LOT FILL	LOT FILL	LOT FILL	
Sample Location :	LOT 569 O/S SE CNR 2m NTH, 3m W 0.5m BELOW FL	LOT 570 O/S NE CNR 3m STH, 4m W 0.5m BELOW FL	LOT 572 O/S NE CNR 9m STH, 4m W 0.5m BELOW FL	
Test Depth (mm) :	150	150	150	
Max Size (mm) :	19	19	19	
Oversize Wet (%) :	1.6	0	0	
Field Wet Density (t/m <sup>3</sup> ):	1.97	1.96	1.95	
Field Moisture Cont (%) :	24.2	22.5	23.3	
PCWD (t/m <sup>3</sup> ) :	2.05*	2.05	2.03	
Moisture Variation (%) :	1.3*	-0.6	-1.1	
Compactive Effort :	Standard	Standard	Standard	
Hilf Density Ratio (%) :	96.0	95.5	96.0	
Min Hilf Dens Ratio (%) :	95	95	95	
Remarks:				

\* - Denotes adjusted for oversize

Lab Number:	Soil Description
187460	
187461	
187462	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80408/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>29/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	187498	187499	187500	187501
ID No :	109	110	111	112
Lot No :	577	573	574	575
Item No :	-	-	-	-
Date Sampled :	22/5/2013	22/5/2013	22/5/2013	22/5/2013
Date Tested :	22/5/2013	22/5/2013	22/5/2013	22/5/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	LOT FILL	LOT FILL	LOT FILL	LOT FILL
Sample Location :	LOT 577 O/S NE CNR 5m STH, 6m W 1m BELOW FL	LOT 573 O/S SE CNR 2m W, 6m NTH 0.5m BELOW FL	LOT 574 O/S SE CNR 3m W, 5m NTH 0.5m BELOW FL	LOT 575 O/S SE CNR 6m W, 4m NTH 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>14.7</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.13</b>	<b>1.98</b>	<b>1.93</b>	<b>1.94</b>
Field Moisture Cont (%) :	<b>17.8</b>	<b>19.9</b>	<b>20.0</b>	<b>20.3</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.16*</b>	<b>2.01</b>	<b>2.02</b>	<b>2.05</b>
Moisture Variation (%) :	<b>-0.4*</b>	<b>-0.1</b>	<b>-0.7</b>	<b>0.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>99.0</b>	<b>98.5</b>	<b>95.5</b>	<b>95.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

\* - Denotes adjusted for oversize

Lab Number:	Soil Description
<b>187498</b>	
<b>187499</b>	
<b>187500</b>	
<b>187501</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80465/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>31/05/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	187579	187580	187581	187582
ID No :	113	114	115	116
Lot No :	542	543	1007	544
Item No :	-	-	-	-
Date Sampled :	27/5/2013	27/5/2013	27/5/2013	27/5/2013
Date Tested :	27/5/2013	27/5/2013	27/5/2013	27/5/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	LOT FILL	LOT FILL	LOT FILL	LOT FILL
Sample Location :	LOT 542 O/S NE CNR 2m STH, 6m W 2m BELOW FL	LOT 543 O/S NE CNR 11m STH, 3m W 1.5m BELOW FL	LOT 1007 O/S NW CNR 5m STH, 6m E 2m BELOW FL	LOT 544 O/S NW CNR 9m STH, 8m E 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>4.1</b>	<b>1.8</b>	<b>8.3</b>	<b>6.6</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.95</b>	<b>1.95</b>	<b>1.97</b>	<b>1.98</b>
Field Moisture Cont (%) :	<b>19.4</b>	<b>20.7</b>	<b>20.4</b>	<b>18.9</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.05*</b>	<b>2.02*</b>	<b>1.99*</b>	<b>1.99*</b>
Moisture Variation (%) :	<b>0.6*</b>	<b>0.0*</b>	<b>0.4*</b>	<b>1.7*</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>95.0</b>	<b>96.5</b>	<b>99.0</b>	<b>99.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

\* - Denotes adjusted for oversize

Lab Number:	Soil Description
<b>187579</b>	
<b>187580</b>	
<b>187581</b>	
<b>187582</b>	



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## Hilf Density Ratio Report

Client :	MIRVAC	Report Number:	80814/1
Job Number :	GL13/006	Report Date:	04/07/2013
Project :	GAINSBOROUGH GREENS - PRECINCT 6.3	Order Number:	
Location :	YAWALPAH ROAD , PIMPAMA	Test Method:	AS1289.5.8.1 & 5.7.1

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Lab No :	188257	188258	188259	188260
ID No :	117	118	119	120
Lot No :	534	533	532	575
Item No :	-	-	-	-
Date Sampled :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Date Tested :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Material Source :	-	-	-	-
For Use As :	-	-	-	-
Sample Location :	LOT 534 O/S NE CNR 9m S, 11m W 0.5m BELOW FL	LOT 533 O/S NE CNR 6m S, 9m W 0.5m BELOW FL	LOT 532 O/S NE CNR 13m S, 11m W 0.5m BELOW FL	LOT 575 O/S NE CNR 12m S, 9m W FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Max Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Field Wet Density (t/m <sup>3</sup> ):	2.01	1.99	2.02	2.01
Field Moisture Cont (%) :	20.4	17.6	20.9	20.7
PCWD (t/m <sup>3</sup> ) :	2.07	2.04	2.06	2.06
Moisture Variation (%) :	-0.5	-1.8	-0.6	-0.3
Compactive Effort :	Standard	Standard	Standard	Standard
Hilf Density Ratio (%) :	97.0	97.5	98.0	97.5
Min Hilf Dens Ratio (%)	95	95	95	95
Remarks:				

Lab Number:	Soil Description
188257	
188258	
188259	
188260	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80815/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/07/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

Page 1 of 1

Lab No :	188261	188262	188263	188264
ID No :	121	122	123	124
Lot No :	573	574	568	567
Item No :	-	-	-	-
Date Sampled :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Date Tested :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Material Source :	-	-	-	-
For Use As :	-	-	-	-
Sample Location :	LOT 573 O/S NE CNR 5m S, 13m W FINISHED LEVEL	LOT 574 O/S NE CNR 7m S, 10m W FINISHED LEVEL	LOT 568 O/S NE CNR 10m S, 10m W 0.5m BELOW FL	LOT 567 O/S NE CNR 3m S, 2m W 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.03</b>	<b>2.00</b>	<b>2.03</b>	<b>2.03</b>
Field Moisture Cont (%) :	<b>21.5</b>	<b>21.4</b>	<b>21.5</b>	<b>22.5</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.06</b>	<b>1.96</b>	<b>2.10</b>	<b>2.06</b>
Moisture Variation (%) :	<b>-0.3</b>	<b>0.9</b>	<b>2.5</b>	<b>-0.3</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>98.5</b>	<b>102.0</b>	<b>96.5</b>	<b>98.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks :				

Lab Number:	Soil Description
<b>188261</b>	
<b>188262</b>	
<b>188263</b>	
<b>188264</b>	



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**MORRISON  
GEOTECHNIC**

ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80816/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/07/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

Page 1 of 1

Lab No :	188265	188266	188267	188268
ID No :	125	126	127	128
Lot No :	571	577	572	578
Item No :	-	-	-	-
Date Sampled :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Date Tested :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Material Source :	-	-	-	-
For Use As :	-	-	-	-
Sample Location :	LOT 571 O/S NE CNR 11m S, 3m W FINISHED LEVEL	LOT 577 O/S NE CNR 6m S, 6m W 0.5m BELOW FL	LOT 572 O/S NE CNR 5m S, 15m W FINISHED LEVEL	LOT 578 O/S NE CNR 5m S, 15m W 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.03</b>	<b>2.01</b>	<b>1.99</b>	<b>1.99</b>
Field Moisture Cont (%):	<b>15.9</b>	<b>21.5</b>	<b>20.4</b>	<b>19.2</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.06</b>	<b>2.06</b>	<b>2.09</b>	<b>2.06</b>
Moisture Variation (%):	<b>0.0</b>	<b>0.0</b>	<b>-1.2</b>	<b>-1.1</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>98.5</b>	<b>97.5</b>	<b>95.0</b>	<b>97.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>188265</b>	
<b>188266</b>	
<b>188267</b>	
<b>188268</b>	



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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80817/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/07/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	188269	188270	188271	188272
ID No :	129	130	131	132
Lot No :	583	582	581	580
Item No :	-	-	-	-
Date Sampled :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Date Tested :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Material Source :	-	-	-	-
For Use As :	-	-	-	-
Sample Location :	LOT 583 O/S NE CNR 13m S, 10m W FINISHED LEVEL	LOT 582 O/S NE CNR 11m S, 9m W FINISHED LEVEL	LOT 581 O/S NE CNR 5m S, 6m W FINISHED LEVEL	LOT 580 O/S NE CNR 8m S, 9m W FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.01</b>	<b>1.98</b>	<b>2.02</b>	<b>2.01</b>
Field Moisture Cont (%) :	<b>20.2</b>	<b>20.3</b>	<b>21.0</b>	<b>19.8</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.07</b>	<b>2.07</b>	<b>2.06</b>	<b>2.08</b>
Moisture Variation (%) :	<b>-0.2</b>	<b>0.0</b>	<b>-0.2</b>	<b>-1.6</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.5</b>	<b>95.5</b>	<b>97.5</b>	<b>96.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>188269</b>	
<b>188270</b>	
<b>188271</b>	
<b>188272</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80818/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/07/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	188273	188274	188275	188276
ID No :	133	134	135	136
Lot No :	579	578	569	570
Item No :	-	-	-	-
Date Sampled :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Date Tested :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Material Source :	-	-	-	-
For Use As :	-	-	-	-
Sample Location :	LOT 579 O/S NE CNR 7m S, 9m W FINISHED LEVEL	LOT 578 O/S NE CNR 13m S, 8m W FINISHED LEVEL	LOT 569 O/S NE CNR 7m S, 7m W FINISHED LEVEL	LOT 570 O/S NE CNR 16m S, 9m W FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.99</b>	<b>2.02</b>	<b>2.01</b>	<b>2.03</b>
Field Moisture Cont (%) :	<b>20.7</b>	<b>21.0</b>	<b>20.3</b>	<b>17.3</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.06</b>	<b>2.06</b>	<b>2.09</b>	<b>2.06</b>
Moisture Variation (%) :	<b>0.1</b>	<b>-1.8</b>	<b>-0.1</b>	<b>-1.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.0</b>	<b>98.5</b>	<b>96.0</b>	<b>98.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>188273</b>	
<b>188274</b>	
<b>188275</b>	
<b>188276</b>	



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## Hilf Density Ratio Report

Client :	MIRVAC	Report Number:	80819/1
Job Number :	GL13/006	Report Date:	04/07/2013
Project :	GAINSBOROUGH GREENS - PRECINCT 6.3	Order Number:	
Location :	YAWALPAH ROAD , PIMPAMA	Test Method:	AS1289.5.8.1 & 5.7.1

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Lab No :	188277	188278	188279	188280
ID No :	137	138	139	140
Lot No :	571	520	519	562
Item No :	-	-	-	-
Date Sampled :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Date Tested :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Material Source :	-	-	-	-
For Use As :	-	-	-	-
Sample Location :	LOT 571 O/S NE CNR 9m S, 1m W 1.0m BELOW FL	LOT 520 O/S NE CNR 2m S, 11m W 1.0m BELOW FL	LOT 519 O/S NE CNR 7m S, 2m W 1.0m BELOW FL	LOT 562 O/S NE CNR 11m S, 9m W 0.5m BELOW FL
Test Depth (mm) :	150	150	150	150
Max Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Field Wet Density (t/m <sup>3</sup> ):	1.99	2.00	2.02	2.03
Field Moisture Cont (%) :	19.3	20.3	20.0	20.2
PCWD (t/m <sup>3</sup> ) :	2.06	2.06	2.07	2.06
Moisture Variation (%) :	-0.1	-0.5	-0.3	-1.4
Compactive Effort :	Standard	Standard	Standard	Standard
Hilf Density Ratio (%) :	96.5	97.0	97.5	98.5
Min Hilf Dens Ratio (%)	95	95	95	95
Remarks:				

Lab Number:	Soil Description
188277	
188278	
188279	
188280	



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**MORRISON  
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ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80820/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/07/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	188281	188282	188283	188284
ID No :	141	142	143	144
Lot No :	525	524	523	522
Item No :	-	-	-	-
Date Sampled :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Date Tested :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Material Source :	-	-	-	-
For Use As :	-	-	-	-
Sample Location :	LOT 525 O/S NE CNR 10m S, 5m W FINISHED LEVEL	LOT 524 O/S NE CNR 11m S, 7m W FINISHED LEVEL	LOT 523 O/S NE CNR 13m S, 11m W FINISHED LEVEL	LOT 522 O/S NE CNR 12m S, 12m W 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.99</b>	<b>2.04</b>	<b>2.03</b>	<b>2.01</b>
Field Moisture Cont (%):	<b>17.4</b>	<b>20.0</b>	<b>19.6</b>	<b>20.7</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.07</b>	<b>2.00</b>	<b>2.07</b>	<b>2.07</b>
Moisture Variation (%):	<b>-0.3</b>	<b>0.1</b>	<b>0.0</b>	<b>-1.9</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>96.0</b>	<b>102.0</b>	<b>97.5</b>	<b>97.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>188281</b>	
<b>188282</b>	
<b>188283</b>	
<b>188284</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80821/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/07/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	188285	188286	188287	188288
ID No :	145	146	147	148
Lot No :	529	528	527	526
Item No :	-	-	-	-
Date Sampled :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Date Tested :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Material Source :	-	-	-	-
For Use As :	-	-	-	-
Sample Location :	LOT 529 O/S NE CNR 5m S, 9m W FINISHED LEVEL	LOT 528 O/S NE CNR 8m S, 6m W FINISHED LEVEL	LOT 527 O/S NE CNR 10m S, 11m W FINISHED LEVEL	LOT 526 O/S NE CNR 13m S, 16m W FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.03</b>	<b>2.03</b>	<b>1.99</b>	<b>2.01</b>
Field Moisture Cont (%) :	<b>20.3</b>	<b>19.6</b>	<b>19.0</b>	<b>20.8</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.08</b>	<b>2.08</b>	<b>2.06</b>	<b>2.08</b>
Moisture Variation (%) :	<b>-0.3</b>	<b>-0.1</b>	<b>-1.2</b>	<b>-0.1</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.5</b>	<b>98.0</b>	<b>97.0</b>	<b>97.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>188285</b>	
<b>188286</b>	
<b>188287</b>	
<b>188288</b>	

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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80822/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/07/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	188289	188290	188291	188292
ID No :	149	150	151	152
Lot No :	566	565	564	563
Item No :	-	-	-	-
Date Sampled :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Date Tested :	27/6/2013	27/6/2013	27/6/2013	27/6/2013
Material Source :	-	-	-	-
For Use As :	-	-	-	-
Sample Location :	LOT 566 O/S NE CNR 7m S, 3m W FINISHED LEVEL	LOT 565 O/S NE CNR 9m S, 10m W FINISHED LEVEL	LOT 564 O/S NE CNR 10m S, 10m W FINISHED LEVEL	LOT 563 O/S NE CNR 7m S, 5m W FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.02</b>	<b>2.01</b>	<b>2.03</b>	<b>2.00</b>
Field Moisture Cont (%) :	<b>19.5</b>	<b>20.7</b>	<b>20.2</b>	<b>21.3</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.07</b>	<b>2.07</b>	<b>2.06</b>	<b>2.06</b>
Moisture Variation (%) :	<b>-0.3</b>	<b>-0.5</b>	<b>0.0</b>	<b>-0.3</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.5</b>	<b>97.0</b>	<b>98.5</b>	<b>97.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>188289</b>	
<b>188290</b>	
<b>188291</b>	
<b>188292</b>	



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ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>80823/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/07/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	188293		
ID No :	153		
Lot No :	911		
Item No :	-		
Date Sampled :	27/6/2013		
Date Tested :	27/6/2013		
Material Source :	-		
For Use As :	-		
Sample Location :	LOT 911 O/S NE CNR 10m S, 10m W FINISHED LEVEL		
Test Depth (mm) :	<b>150</b>		
Max Size (mm) :	<b>19</b>		
Oversize Wet (%) :	<b>0</b>		
Field Wet Density (t/m <sup>3</sup> ):	<b>2.02</b>		
Field Moisture Cont (%) :	<b>21.1</b>		
PCWD (t/m <sup>3</sup> ) :	<b>2.06</b>		
Moisture Variation (%) :	<b>-0.1</b>		
Compactive Effort :	<b>Standard</b>		
Hilf Density Ratio (%) :	<b>98.0</b>		
Min Hilf Dens Ratio (%) :	<b>95</b>		
Remarks:			

Lab Number:	Soil Description
<b>188293</b>	



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RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81239/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>26/07/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

Page 1 of 1

Lab No :	188837	188838	188839	188840
ID No :	154	155	156	157
Lot No :	518	518	519	519
Item No :	-	-	-	-
Date Sampled :	19/7/2013	19/7/2013	19/7/2013	19/7/2013
Date Tested :	19/7/2013	19/7/2013	19/7/2013	19/7/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	LOT FILL	LOT FILL	LOT FILL	LOT FILL
Sample Location :	LOT 518 O/S NE CNR 9m S, 2m W 1m BELOW FL	LOT 518 O/S NE CNR 4m S, 4m W 0.5m BELOW FL	LOT 519 O/S NE CNR 6m S, 1m W FINISHED LEVEL	LOT 519 O/S NE CNR 10m S, 6m W 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.02</b>	<b>2.02</b>	<b>2.01</b>	<b>2.00</b>
Field Moisture Cont (%) :	<b>28.1</b>	<b>5.1</b>	<b>24.8</b>	<b>22.5</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.08</b>	<b>2.09</b>	<b>2.09</b>	<b>2.09</b>
Moisture Variation (%) :	<b>-4.9</b>	<b>-4.5</b>	<b>-4.0</b>	<b>-4.1</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.5</b>	<b>97.0</b>	<b>96.5</b>	<b>95.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>188837</b>	
<b>188838</b>	
<b>188839</b>	
<b>188840</b>	



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RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81243/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>26/07/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	188900	188901	188902	
ID No :	158	159	160	
Lot No :	547	911	550	
Item No :	-	-	-	
Date Sampled :	23/7/2013	23/7/2013	23/7/2013	
Date Tested :	23/7/2013	23/7/2013	23/7/2013	
Material Source :	ONSITE	ONSITE	ONSITE	
For Use As :	LOT FILL	LOT FILL	LOT FILL	
Sample Location :	LOT 547 O/S NE CNR 3m W, 2m S 1.5m BELOW FL	LOT 911 O/S NE CNR 4m W, 2m S 1m BELOW FL	LOT 550 O/S NW CNR 4m E, 4m S 0.5m BELOW FL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>1.97</b>	<b>1.97</b>	<b>1.97</b>	
Field Moisture Cont (%) :	<b>21.3</b>	<b>21.7</b>	<b>22.3</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.00</b>	<b>2.01</b>	<b>2.04</b>	
Moisture Variation (%) :	<b>0.3</b>	<b>-0.5</b>	<b>-0.6</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>98.5</b>	<b>98.0</b>	<b>96.5</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	
Remarks:				

Lab Number:	Soil Description
<b>188900</b>	
<b>188901</b>	
<b>188902</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81348/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>01/08/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	188931	188932	188933	188934
ID No :	161	162	163	164
Lot No :	507	508	546	545
Item No :	-	-	-	-
Date Sampled :	25/7/2013	25/7/2013	25/7/2013	25/7/2013
Date Tested :	25/7/2013	25/7/2013	25/7/2013	25/7/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	LOT FILL	LOT FILL	LOT FILL	LOT FILL
Sample Location :	LOT 507 O/S NE CNR 4m W, 3m STH 0.5m BELOW FL	LOT 508 O/S NW CNR 4m E, 6m STH 1m BELOW FL	LOT 546 O/S NE CNR 9m W, 4m STH 1.5m BELOW FL	LOT 545 O/S NE CNR 10m W, 5m STH 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.95</b>	<b>1.96</b>	<b>1.94</b>	<b>2.00</b>
Field Moisture Cont (%) :	<b>21.1</b>	<b>21.3</b>	<b>23.3</b>	<b>23.3</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.95</b>	<b>1.95</b>	<b>1.89</b>	<b>1.94</b>
Moisture Variation (%) :	<b>0.4</b>	<b>-0.1</b>	<b>0.6</b>	<b>-1.5</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>100.0</b>	<b>101.0</b>	<b>102.5</b>	<b>103.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>188931</b>	
<b>188932</b>	
<b>188933</b>	
<b>188934</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81349/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>01/08/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

Page 1 of 1

Lab No :	188935	188936	
ID No :	165	166	
Lot No :	509	1005	
Item No :	-	-	
Date Sampled :	25/7/2013	25/7/2013	
Date Tested :	25/7/2013	25/7/2013	
Material Source :	ONSITE	ONSITE	
For Use As :	LOT FILL	LOT FILL	
Sample Location :	LOT 509 O/S NE CNR 18m W, 3m STH 1m BELOW FL	LOT 1005 O/S NW CNR 6m E, 3m STH 1m BELOW FL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.98</b>	
Field Moisture Cont (%) :	<b>20.7</b>	<b>20.1</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.02</b>	<b>2.03</b>	
Moisture Variation (%) :	<b>-0.8</b>	<b>-1.4</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>98.0</b>	<b>97.5</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	
Remarks:			

Lab Number:	Soil Description
<b>188935</b>	
<b>188936</b>	



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ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81468/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>12/08/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

Page 1 of 1

Lab No :	189135	189136	189137	189138
ID No :	167	168	169	170
Lot No :	511	510	541	541
Item No :	-	-	-	-
Date Sampled :	30/7/2013	30/7/2013	30/7/2013	30/7/2013
Date Tested :	30/7/2013	30/7/2013	30/7/2013	30/7/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 511 O/S NE CNR 2m S, 3m W 0.5m BELOW FL	LOT 510 O/S NW CNR 3m E, 2m S 1m BELOW FL	LOT 541 O/S SW CNR 3m N, 4m E 2m BELOW FL	LOT 541 O/S SE CNR 6m N, 3m W 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>13.1</b>	<b>13.4</b>	<b>5.9</b>	<b>3</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.97</b>	<b>2.08</b>	<b>1.99</b>	<b>1.98</b>
Field Moisture Cont (%):	<b>17.2</b>	<b>5.4</b>	<b>18.6</b>	<b>9.3</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.06*</b>	<b>2.14*</b>	<b>2.04*</b>	<b>1.96*</b>
Moisture Variation (%):	<b>0.5*</b>	<b>-1.3*</b>	<b>0.3*</b>	<b>1.6*</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>95.5</b>	<b>97.5</b>	<b>98.0</b>	<b>101.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

\* - Denotes adjusted for oversize

Lab Number:	Soil Description
<b>189135</b>	
<b>189136</b>	
<b>189137</b>	
<b>189138</b>	



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**REP AHNUC-1-2**

# MORRISON GEOTECHNIC PTY LTD

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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81469/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>12/08/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189139	189140	189141	189142
ID No :	171	172	173	174
Lot No :	520	521	515	516
Item No :	-	-	-	-
Date Sampled :	30/7/2013	30/7/2013	30/7/2013	30/7/2013
Date Tested :	30/7/2013	30/7/2013	30/7/2013	30/7/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 520 O/S SE CNR 7m N, 2m W 1m BELOW FL	LOT 521 O/S SE CNR 6m N, 3m W 0.5m BELOW FL	LOT 515 O/S NW CNR 7m E, 2m S 0.5m BELOW FL	LOT 516 O/S NW CNR 2m E, 3m S FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>10.4</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.00</b>	<b>1.99</b>	<b>1.98</b>	<b>1.99</b>
Field Moisture Cont (%) :	<b>19.9</b>	<b>24.6</b>	<b>20.8</b>	<b>24.6</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.10*</b>	<b>2.06</b>	<b>2.00</b>	<b>1.98</b>
Moisture Variation (%) :	<b>-0.5*</b>	<b>-0.8</b>	<b>-0.4</b>	<b>-0.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>95.0</b>	<b>96.5</b>	<b>99.0</b>	<b>101.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

\* - Denotes adjusted for oversize

Lab Number:	Soil Description
<b>189139</b>	
<b>189140</b>	
<b>189141</b>	
<b>189142</b>	



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NATA Accred No: 1169

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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81470/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>12/08/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189143	189144	
ID No :	175	176	
Lot No :	543	542	
Item No :	-	-	
Date Sampled :	30/7/2013	30/7/2013	
Date Tested :	30/7/2013	30/7/2013	
Material Source :	ONSITE	ONSITE	
For Use As :	-	-	
Sample Location :	LOT 543 O/S SW CNR 3m N, 7m E 1m BELOW FL	LOT 542 O/S SW CNR 3m N, 5m E 1.5m BELOW FL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>1.97</b>	<b>1.98</b>	
Field Moisture Cont (%) :	<b>23.5</b>	<b>22.9</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.03</b>	<b>1.97</b>	
Moisture Variation (%) :	<b>-0.4</b>	<b>-0.5</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>97.0</b>	<b>100.5</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	
Remarks:			

Lab Number:	Soil Description
<b>189143</b>	
<b>189144</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81465/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>12/08/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189246	189247	189248	189249
ID No :	177	178	179	180
Lot No :	540	619	619	511
Item No :	-	-	-	-
Date Sampled :	6/8/2013	6/8/2013	6/8/2013	6/8/2013
Date Tested :	6/8/2013	6/8/2013	6/8/2013	6/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 540 O/S NE CNR 4m S, 2m W 1.5m BELOW FL	LOT 619 O/S NE CNR 3m S, 1m W 1m BELOW FL	LOT 619 O/S SW CNR 2m E, 2m N 1.5m BELOW FL	LOT 511 O/S NW CNR 3m S, 4m E 1m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.95</b>	<b>1.96</b>	<b>1.97</b>	<b>1.96</b>
Field Moisture Cont (%) :	<b>9.1</b>	<b>11.7</b>	<b>11.1</b>	<b>14.7</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.96</b>	<b>2.00</b>	<b>1.92</b>	<b>1.94</b>
Moisture Variation (%) :	<b>0.1</b>	<b>-0.2</b>	<b>0.6</b>	<b>0.5</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>99.5</b>	<b>98.5</b>	<b>103.0</b>	<b>101.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>189246</b>	
<b>189247</b>	
<b>189248</b>	
<b>189249</b>	



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ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81466/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>12/08/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189250	189251	189252	189253
ID No :	181	182	183	184
Lot No :	539	538	537	536
Item No :	-	-	-	-
Date Sampled :	6/8/2013	6/8/2013	6/8/2013	6/8/2013
Date Tested :	6/8/2013	6/8/2013	6/8/2013	6/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 539 O/S NE CNR 2m S, 3m W 1m BELOW FL	LOT 538 O/S NE CNR 4m S, 3m W 0.5m BELOW FL	LOT 537 O/S SE CNR 2m N, 2m W 0.5m BELOW FL	LOT 536 O/S NW CNR 3m E, 5m S 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.97</b>	<b>1.98</b>	<b>1.98</b>	<b>1.99</b>
Field Moisture Cont (%) :	<b>9.5</b>	<b>11.3</b>	<b>11.1</b>	<b>13.0</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.94</b>	<b>1.96</b>	<b>2.00</b>	<b>1.99</b>
Moisture Variation (%) :	<b>0.2</b>	<b>0.0</b>	<b>-1.3</b>	<b>-1.0</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>101.5</b>	<b>101.0</b>	<b>98.5</b>	<b>100.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>189250</b>	
<b>189251</b>	
<b>189252</b>	
<b>189253</b>	



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## Hilf Density Ratio Report

Client :	MIRVAC	Report Number:	81467/1
Job Number :	GL13/006	Report Date:	12/08/2013
Project :	GAINSBOROUGH GREENS - PRECINCT 6.3	Order Number:	
Location :	YAWALPAH ROAD , PIMPAMA	Test Method:	AS1289.5.8.1 & 5.7.1

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Lab No :	189254	189255	
ID No :	185	186	
Lot No :	535	1007	
Item No :	-	-	
Date Sampled :	6/8/2013	6/8/2013	
Date Tested :	6/8/2013	6/8/2013	
Material Source :	ONSITE	ONSITE	
For Use As :	-	-	
Sample Location :	LOT 535 O/S NW CNR 2m E, 6m S 1m BELOW FL	LOT 1007 O/S NE CNR 4m S, 3m W 1m BELOW FL	
Test Depth (mm) :	150	150	
Max Size (mm) :	19	19	
Oversize Wet (%) :	0	0	
Field Wet Density (t/m <sup>3</sup> ):	1.98	1.98	
Field Moisture Cont (%) :	12.6	16.2	
PCWD (t/m <sup>3</sup> ) :	1.92	1.97	
Moisture Variation (%) :	0.2	-0.2	
Compactive Effort :	Standard	Standard	
Hilf Density Ratio (%) :	103.0	100.5	
Min Hilf Dens Ratio (%) :	95	95	
Remarks :			

Lab Number:	Soil Description
189254	
189255	



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ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81723/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>22/08/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189689	189690	189691	189692
ID No :	187	188	189	190
Lot No :	618	618	513	512
Item No :	-	-	-	-
Date Sampled :	16/8/2013	16/8/2013	16/8/2013	16/8/2013
Date Tested :	16/8/2013	16/8/2013	16/8/2013	16/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 618 O/S NE CNR 2m S, 2m W 0.6m BELOW FL	LOT 618 O/S SE CNR 7m N, 2m W FINISHED LEVEL	LOT 513 O/S NE CNR 4m S, 3m W FINISHED LEVEL	LOT 512 O/S SE CNR 2m N, 2m W FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.94</b>	<b>1.99</b>	<b>1.95</b>	<b>1.99</b>
Field Moisture Cont (%) :	<b>18.3</b>	<b>16.4</b>	<b>19.3</b>	<b>16.7</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.02</b>	<b>2.06</b>	<b>2.03</b>	<b>2.04</b>
Moisture Variation (%) :	<b>0.5</b>	<b>-0.2</b>	<b>0.2</b>	<b>-0.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>96.0</b>	<b>97.0</b>	<b>96.0</b>	<b>97.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>189689</b>	
<b>189690</b>	
<b>189691</b>	
<b>189692</b>	



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**MORRISON**  
**GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	MIRVAC	Report Number:	81724/1
Job Number :	GL13/006	Report Date:	22/08/2013
Project :	GAINSBOROUGH GREENS - PRECINCT 6.3	Order Number:	
Location :	YAWALPAH ROAD , PIMPAMA	Test Method:	AS1289.5.8.1 & 5.7.1

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Lab No :	189693	189694	189695	189696
ID No :	191	192	193	194
Lot No :	543	541	542	537
Item No :	-	-	-	-
Date Sampled :	16/8/2013	16/8/2013	16/8/2013	16/8/2013
Date Tested :	16/8/2013	16/8/2013	16/8/2013	16/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 543 O/S NE CNR 4m S, 5m W FINISHED LEVEL	LOT 541 O/S NE CNR 4m S, 4m W FINISHED LEVEL	LOT 542 O/S NE CNR 2m S, 2m W FINISHED LEVEL	LOT 537 O/S NW CNR 6m E, 5m S FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Max Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Field Wet Density (t/m <sup>3</sup> ):	1.95	1.95	1.98	1.98
Field Moisture Cont (%) :	16.8	15.6	19.8	19.2
PCWD (t/m <sup>3</sup> ) :	2.05	2.03	2.04	2.01
Moisture Variation (%) :	0.2	0.6	0.5	-1.4
Compactive Effort :	Standard	Standard	Standard	Standard
Hilf Density Ratio (%) :	95.0	96.0	97.0	98.5
Min Hilf Dens Ratio (%)	95	95	95	95
Remarks:				

Lab Number:	Soil Description
189693	
189694	
189695	
189696	



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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81725/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>22/08/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189697	189698	189699	189700
ID No :	195	196	197	198
Lot No :	538	539	539	540
Item No :	-	-	-	-
Date Sampled :	16/8/2013	16/8/2013	16/8/2013	16/8/2013
Date Tested :	16/8/2013	16/8/2013	16/8/2013	16/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 538 O/S SW CNR 2m N, 10m E FINISHED LEVEL	LOT 539 O/S NW CNR 3m S, 4m E FINISHED LEVEL	LOT 539 O/S SW CNR 2m E, 2m N 0.5m BELOW FL	LOT 540 O/S SW CNR 4m E, 6m N FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.96</b>	<b>1.98</b>	<b>1.97</b>
Field Moisture Cont (%) :	<b>19.1</b>	<b>18.9</b>	<b>15.8</b>	<b>17.6</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.97</b>	<b>2.00</b>	<b>2.03</b>	<b>2.00</b>
Moisture Variation (%) :	<b>1.5</b>	<b>0.3</b>	<b>-1.1</b>	<b>1.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>100.5</b>	<b>98.0</b>	<b>97.5</b>	<b>98.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks :				

Lab Number:	Soil Description
<b>189697</b>	
<b>189698</b>	
<b>189699</b>	
<b>189700</b>	



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## Hilf Density Ratio Report

Client :	MIRVAC	Report Number:	81904/1
Job Number :	GL13/006	Report Date:	02/09/2013
Project :	GAINSBOROUGH GREENS - PRECINCT 6.3	Order Number:	
Location :	YAWALPAH ROAD , PIMPAMA	Test Method:	AS1289.5.8.1 & 5.7.1

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Lab No :	189761	189762	189763	189764
ID No :	199	200	201	202
Lot No :	507	506	546	545
Item No :	-	-	-	-
Date Sampled :	22/8/2013	22/8/2013	22/8/2013	22/8/2013
Date Tested :	22/8/2013	22/8/2013	22/8/2013	22/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 507 O/S SW CNR 4m N, 3m E FINISHED LEVEL	LOT 506 O/S SW CNR 6m N, 3m E FINISHED LEVEL	LOT 546 O/S NW CNR 4m S, 3m E 1m BELOW FL	LOT 545 O/S NW CNR 4m S, 4m E 0.5m BELOW FL
Test Depth (mm) :	150	150	150	150
Max Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Field Wet Density (t/m <sup>3</sup> ):	1.96	1.98	1.97	1.95
Field Moisture Cont (%) :	14.6	20.5	15.2	19.6
PCWD (t/m <sup>3</sup> ) :	1.95	1.98	1.96	2.00
Moisture Variation (%) :	1.9	1.8	2.3	1.8
Compactive Effort :	Standard	Standard	Standard	Standard
Hilf Density Ratio (%) :	100.5	100.0	101.0	97.5
Min Hilf Dens Ratio (%)	95	95	95	95
Remarks:				

Lab Number:	Soil Description
189761	
189762	
189763	
189764	



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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81905/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189765	189766	189767	189768
ID No :	203	204	205	206
Lot No :	534	533	547	547
Item No :	-	-	-	-
Date Sampled :	22/8/2013	22/8/2013	22/8/2013	22/8/2013
Date Tested :	22/8/2013	22/8/2013	22/8/2013	22/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 534 O/S NE CNR 2m S, 3m W FINISHED LEVEL	LOT 533 O/S NE CNR 2m S, 3m W FINISHED LEVEL	LOT 547 O/S NW CNR 7m E, 2m S 0.8m BELOW FL	LOT 547 O/S SW CNR 2m N, 3m E 0.4m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.96</b>	<b>1.96</b>	<b>1.96</b>
Field Moisture Cont (%) :	<b>19.1</b>	<b>18.0</b>	<b>20.3</b>	<b>18.1</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.97</b>	<b>2.03</b>	<b>1.98</b>	<b>1.98</b>
Moisture Variation (%) :	<b>1.6</b>	<b>0.5</b>	<b>2.2</b>	<b>1.8</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>100.0</b>	<b>97.0</b>	<b>99.5</b>	<b>98.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>189765</b>	
<b>189766</b>	
<b>189767</b>	
<b>189768</b>	



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**MORRISON**  
**GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81906/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189769	189770	189771	189772
ID No :	207	208	209	210
Lot No :	548	549	546	545
Item No :	-	-	-	-
Date Sampled :	22/8/2013	22/8/2013	22/8/2013	22/8/2013
Date Tested :	22/8/2013	22/8/2013	22/8/2013	22/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 548 O/S NE CNR 2m S, 3m W 0.5m BELOW FL	LOT 549 O/S NE CNR 4m S, 3m W FINISHED LEVEL	LOT 546 O/S SE CNR 2m N, 2m W FINISHED LEVEL	LOT 545 O/S SE CNR 2m N, 3m W FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.97</b>	<b>1.96</b>	<b>1.94</b>	<b>1.96</b>
Field Moisture Cont (%) :	<b>13.8</b>	<b>13.2</b>	<b>12.6</b>	<b>12.7</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.94</b>	<b>1.91</b>	<b>1.90</b>	<b>1.93</b>
Moisture Variation (%) :	<b>3.4</b>	<b>4.0</b>	<b>2.8</b>	<b>4.8</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>101.5</b>	<b>102.5</b>	<b>102.0</b>	<b>101.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>189769</b>	
<b>189770</b>	
<b>189771</b>	
<b>189772</b>	



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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81907/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189773	189774	189775	189776
ID No :	211	212	213	214
Lot No :	594	593	593	593
Item No :	-	-	-	-
Date Sampled :	22/8/2013	22/8/2013	22/8/2013	22/8/2013
Date Tested :	22/8/2013	22/8/2013	22/8/2013	22/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 594 O/S SE CNR 5m N, 6m W 1m BELOW FL	LOT 593 O/S NE CNR 3m S, 4m W 1m BELOW FL	LOT 593 O/S SE CNR 3m N, 8m W 0.5m BELOW FL	LOT 593 O/S NW CNR 6m S, 5m E FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.94</b>	<b>1.97</b>	<b>1.95</b>	<b>1.96</b>
Field Moisture Cont (%) :	<b>10.1</b>	<b>11.0</b>	<b>14.3</b>	<b>13.0</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.93</b>	<b>1.94</b>	<b>1.94</b>	<b>1.95</b>
Moisture Variation (%) :	<b>4.1</b>	<b>3.8</b>	<b>3.7</b>	<b>4.0</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>100.5</b>	<b>101.5</b>	<b>100.0</b>	<b>100.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>189773</b>	
<b>189774</b>	
<b>189775</b>	
<b>189776</b>	



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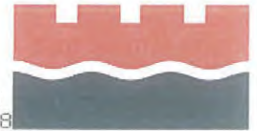
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**MORRISON**  
**GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81777/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>27/08/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189792	189793	189794	189795
ID No :	215	216	217	218
Lot No :	614	619	620	622
Item No :	-	-	-	-
Date Sampled :	20/8/2013	20/8/2013	20/8/2013	20/8/2013
Date Tested :	20/8/2013	20/8/2013	20/8/2013	20/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	LOT FILL	LOT FILL	LOT FILL	LOT FILL
Sample Location :	LOT 614 O/S NE CNR 8m W, 3m STH FINISHED LEVEL	LOT 619 O/S NE CNR 2m W, 4m STH FINISHED LEVEL	LOT 620 O/S NE CNR 12m W, 3m STH FINISHED LEVEL	LOT 622 O/S NW CNR 3m E, 3m STH FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.95</b>	<b>1.96</b>	<b>1.97</b>	<b>1.96</b>
Field Moisture Cont (%) :	<b>19.1</b>	<b>19.6</b>	<b>20.8</b>	<b>16.6</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.02</b>	<b>2.00</b>	<b>2.01</b>	<b>1.99</b>
Moisture Variation (%) :	<b>0.5</b>	<b>0.3</b>	<b>1.0</b>	<b>1.0</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.0</b>	<b>98.0</b>	<b>98.0</b>	<b>98.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>189792</b>	
<b>189793</b>	
<b>189794</b>	
<b>189795</b>	



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*G. Taylor*

GARY TAYLOR (Gold Coast)  
NATA Accred No:1169

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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81909/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189862	189863	189864	189865
ID No :	215	216	217	218
Lot No :	592	592	593	1007
Item No :	-	-	-	-
Date Sampled :	23/8/2013	23/8/2013	23/8/2013	23/8/2013
Date Tested :	23/8/2013	23/8/2013	23/8/2013	23/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 592 O/S SW CNR 2m N, 2m E 1m BELOW FL	LOT 592 O/S SE CNR 3m N, 3m W 0.5m BELOW FL	LOT 593 O/S NE CNR 3m S, 3m W FINISHED LEVEL	LOT 1007 O/S SW CNR 2m N, 2m E FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.94</b>	<b>1.95</b>	<b>1.93</b>	<b>1.97</b>
Field Moisture Cont (%) :	<b>22.0</b>	<b>20.1</b>	<b>19.1</b>	<b>19.3</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.98</b>	<b>1.99</b>	<b>1.99</b>	<b>1.98</b>
Moisture Variation (%) :	<b>0.2</b>	<b>-0.6</b>	<b>1.5</b>	<b>-0.4</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.5</b>	<b>98.0</b>	<b>97.0</b>	<b>99.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>189862</b>	
<b>189863</b>	
<b>189864</b>	
<b>189865</b>	



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IAN MASMAN (Gold Coast)  
NATA Accred No:1169

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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81778/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>27/08/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189796	189797	189798	189799
ID No :	219	220	221	222
Lot No :	624	623	625	625
Item No :	-	-	-	-
Date Sampled :	20/8/2013	20/8/2013	20/8/2013	20/8/2013
Date Tested :	20/8/2013	20/8/2013	20/8/2013	20/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	LOT FILL	LOT FILL	LOT FILL	LOT FILL
Sample Location :	LOT 624 O/S NE CNR 2m W, 7m STH FINISHED LEVEL	LOT 623 O/S NE CNR 5m W, 4m STH FINISHED LEVEL	LOT 625 O/S SE CNR 3m W, 4m NTH 0.5m BELOW FL	LOT 625 O/S NW CNR 4m E, 4m STH FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.97</b>	<b>1.96</b>	<b>1.97</b>	<b>1.98</b>
Field Moisture Cont (%) :	<b>18.8</b>	<b>18.3</b>	<b>18.7</b>	<b>15.5</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.99</b>	<b>2.00</b>	<b>2.00</b>	<b>1.99</b>
Moisture Variation (%) :	<b>0.7</b>	<b>0.6</b>	<b>1.6</b>	<b>1.4</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>99.0</b>	<b>98.0</b>	<b>98.5</b>	<b>99.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks :				

Lab Number:	Soil Description
<b>189796</b>	
<b>189797</b>	
<b>189798</b>	
<b>189799</b>	



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GARY TAYLOR (Gold Coast)  
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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81910/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189866	189867	189868	189869
ID No :	219	220	221	222
Lot No :	544	536	535	531
Item No :	-	-	-	-
Date Sampled :	23/8/2013	23/8/2013	23/8/2013	23/8/2013
Date Tested :	23/8/2013	23/8/2013	23/8/2013	23/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 544 O/S NW CNR 2m S, 2m E FINISHED LEVEL	LOT 536 O/S SE CNR 2m N, 3m W FINISHED LEVEL	LOT 535 O/S SE CNR 2m N, 3m W FINISHED LEVEL	LOT 531 O/S SE CNR 2m N, 1m W FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.95</b>	<b>1.96</b>	<b>1.96</b>
Field Moisture Cont (%) :	<b>17.7</b>	<b>19.7</b>	<b>18.5</b>	<b>20.3</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.98</b>	<b>1.96</b>	<b>1.99</b>	<b>1.98</b>
Moisture Variation (%) :	<b>1.6</b>	<b>0.0</b>	<b>-0.6</b>	<b>1.7</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>100.0</b>	<b>99.5</b>	<b>99.0</b>	<b>99.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>189866</b>	
<b>189867</b>	
<b>189868</b>	
<b>189869</b>	



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**MORRISON  
GEOTECHNIC**

ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81975/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189890	189891	189892	189893
ID No :	223	224	225	226
Lot No :	594	595	593	593
Item No :	-	-	-	-
Date Sampled :	26/8/2013	26/8/2013	26/8/2013	26/8/2013
Date Tested :	26/8/2013	26/8/2013	26/8/2013	26/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 594 O/S SE CNR 5m W, 4m N 0.5m BELOW FL	LOT 595 O/S SW CNR 2m N, 3m E FINISHED LEVEL	LOT 593 O/S SE CNR 11m W, 4m N 0.5m BELOW FL	LOT 593 O/S NW CNR 5m E, 6m S 1m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.95</b>	<b>1.94</b>	<b>1.93</b>	<b>1.98</b>
Field Moisture Cont (%) :	<b>17.4</b>	<b>14.4</b>	<b>16.4</b>	<b>21.2</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.98</b>	<b>1.97</b>	<b>1.96</b>	<b>1.94</b>
Moisture Variation (%) :	<b>-0.4</b>	<b>0.5</b>	<b>1.7</b>	<b>-0.5</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>102.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>189890</b>	
<b>189891</b>	
<b>189892</b>	
<b>189893</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81922/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

Page 1 of 1

Lab No :	189800	189801	189802	189803
ID No :	223	224	225	226
Lot No :	614	615	615	616
Item No :	-	-	-	-
Date Sampled :	21/8/2013	21/8/2013	21/8/2013	21/8/2013
Date Tested :	21/8/2013	21/8/2013	21/8/2013	21/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 614 O/S SW CNR 4m N, 2m E 0.4m BELOW FL	LOT 615 O/S NE CNR 7m S, 3m W 0.5m BELOW FL	LOT 615 O/S SW CNR 2m E, 2m N FINISHED LEVEL	LOT 616 O/S SW CNR 2m E, 3m N 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.99</b>	<b>1.97</b>	<b>1.95</b>	<b>1.96</b>
Field Moisture Cont (%) :	<b>17.8</b>	<b>18.3</b>	<b>17.5</b>	<b>16.7</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.02</b>	<b>2.02</b>	<b>1.99</b>	<b>2.02</b>
Moisture Variation (%) :	<b>-0.1</b>	<b>-0.2</b>	<b>2.4</b>	<b>-0.5</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>98.5</b>	<b>97.5</b>	<b>98.0</b>	<b>97.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>189800</b>	
<b>189801</b>	
<b>189802</b>	
<b>189803</b>	



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**MORRISON  
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RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81976/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189894	189895	189896	189897
ID No :	227	228	229	230
Lot No :	590	590	591	591
Item No :	-	-	-	-
Date Sampled :	26/8/2013	26/8/2013	26/8/2013	26/8/2013
Date Tested :	26/8/2013	26/8/2013	26/8/2013	26/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 590 O/S NE CNR 2m S, 9m W 0.5m BELOW FL	LOT 590 O/S SW CNR 2m N, 4m E FINISHED LEVEL	LOT 591 O/S NE CNR 4m S, 6m W 0.5m BELOW FL	LOT 591 O/S NW CNR 6m S, 3m E FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.97</b>	<b>1.98</b>	<b>1.95</b>	<b>1.94</b>
Field Moisture Cont (%) :	<b>17.3</b>	<b>15.0</b>	<b>17.9</b>	<b>27.0</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.96</b>	<b>1.93</b>	<b>1.97</b>	<b>1.93</b>
Moisture Variation (%) :	<b>-1.2</b>	<b>0.1</b>	<b>0.4</b>	<b>-2.0</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>100.0</b>	<b>102.5</b>	<b>99.0</b>	<b>100.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks :				

Lab Number:	Soil Description
<b>189894</b>	
<b>189895</b>	
<b>189896</b>	
<b>189897</b>	



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IAN MASMAN (Gold Coast)  
NATA Accred No: 1169

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**MORRISON  
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ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81923/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189804	189805	189806	189807
ID No :	227	228	229	230
Lot No :	508	521	521	520
Item No :	-	-	-	-
Date Sampled :	21/8/2013	21/8/2013	21/8/2013	21/8/2013
Date Tested :	21/8/2013	21/8/2013	21/8/2013	21/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 508 O/S SW CNR 5m E, 7m N FINISHED LEVEL	LOT 521 O/S SE CNR 9m W, 10m N 1m BELOW FL	LOT 521 O/S SE CNR 2m W, 4m N 0.5m BELOW FL	LOT 520 O/S SE CNR 3m W, 7m N 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.96</b>	<b>1.94</b>	<b>1.95</b>	<b>1.97</b>
Field Moisture Cont (%) :	<b>16.5</b>	<b>18.2</b>	<b>14.2</b>	<b>14.3</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.02</b>	<b>1.99</b>	<b>1.98</b>	<b>1.98</b>
Moisture Variation (%) :	<b>-0.2</b>	<b>0.0</b>	<b>2.6</b>	<b>0.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.0</b>	<b>97.5</b>	<b>98.5</b>	<b>99.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>189804</b>	
<b>189805</b>	
<b>189806</b>	
<b>189807</b>	



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**MORRISON  
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ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81924/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189808	189809	189810	189811
ID No :	231	232	233	234
Lot No :	540	544	510	1005
Item No :	-	-	-	-
Date Sampled :	21/8/2013	21/8/2013	21/8/2013	21/8/2013
Date Tested :	21/8/2013	21/8/2013	21/8/2013	21/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 540 O/S NE CNR 3m S, 3m W 0.5m BELOW FL	LOT 544 O/S NE CNR 3m S, 5m W 0.5m BELOW FL	LOT 510 O/S NE CNR 2m S, 3m W FINISHED LEVEL	LOT 1005 O/S NE CNR 3m S, 1m W FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.99</b>	<b>1.99</b>	<b>1.99</b>
Field Moisture Cont (%) :	<b>14.3</b>	<b>14.4</b>	<b>15.1</b>	<b>16.0</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.97</b>	<b>2.00</b>	<b>1.97</b>	<b>1.99</b>
Moisture Variation (%) :	<b>0.2</b>	<b>1.8</b>	<b>0.6</b>	<b>0.1</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>101.0</b>	<b>99.5</b>	<b>101.0</b>	<b>100.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>189808</b>	
<b>189809</b>	
<b>189810</b>	
<b>189811</b>	



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**MORRISON  
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RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81972/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189907	189908	189909	189910
ID No :	233	234	235	236
Lot No :	553	1008	552	551
Item No :	-	-	-	-
Date Sampled :	27/8/2013	27/8/2013	27/8/2013	27/8/2013
Date Tested :	27/8/2013	27/8/2013	27/8/2013	27/8/2013
Material Source :	ON SITE	ON SITE	ON SITE	ON SITE
For Use As :	-	-	-	-
Sample Location :	LOT 553 O/S NW CNR 3m E, 3m S FINISHED LEVEL	LOT 1008 O/S NW CNR 4m E, 3m S FINISHED LEVEL	LOT 552 O/S NW CNR 3m E, 2m S FINISHED LEVEL	LOT 551 O/S NW CNR 4m E, 2m S FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.86</b>	<b>1.89</b>	<b>1.88</b>	<b>1.88</b>
Field Moisture Cont (%) :	<b>24.7</b>	<b>22.8</b>	<b>23.9</b>	<b>24.2</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.90</b>	<b>1.95</b>	<b>1.92</b>	<b>1.88</b>
Moisture Variation (%) :	<b>2.7</b>	<b>-0.6</b>	<b>2.8</b>	<b>2.4</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.5</b>	<b>96.5</b>	<b>98.0</b>	<b>100.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>189907</b>	
<b>189908</b>	
<b>189909</b>	
<b>189910</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81925/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189812	189813	189814	189815
ID No :	235	236	237	238
Lot No :	509	1006	516	515
Item No :	-	-	-	-
Date Sampled :	21/8/2013	21/8/2013	21/8/2013	21/8/2013
Date Tested :	21/8/2013	21/8/2013	21/8/2013	21/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 509 O/S NE CNR 3m S, 4m W FINISHED LEVEL	LOT 1006 O/S NW CNR 3m E, 1m S FINISHED LEVEL	LOT 516 O/S SW CNR 6m E, 2m N FINISHED LEVEL	LOT 515 O/S SW CNR 4m E, 1m N FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.95</b>	<b>1.98</b>	<b>1.99</b>	<b>1.99</b>
Field Moisture Cont (%):	<b>16.0</b>	<b>17.1</b>	<b>16.8</b>	<b>17.5</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.00</b>	<b>2.01</b>	<b>2.00</b>	<b>2.01</b>
Moisture Variation (%):	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.5</b>	<b>98.5</b>	<b>99.5</b>	<b>99.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>189812</b>	
<b>189813</b>	
<b>189814</b>	
<b>189815</b>	



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**MORRISON  
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RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81926/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>02/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189816	189817	189818	189819
ID No :	239	240	241	242
Lot No :	617	617	617	616
Item No :	-	-	-	-
Date Sampled :	21/8/2013	21/8/2013	21/8/2013	21/8/2013
Date Tested :	21/8/2013	21/8/2013	21/8/2013	21/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	LOT 617 O/S NE CNR 2m S, 2m W 1m BELOW FL	LOT 617 O/S SE CNR 6m N, 2m W 0.5m BELOW FL	LOT 617 O/S NW CNR 8m S, 4m E FINISHED LEVEL	LOT 616 O/S NW CNR 4m S, 2m E FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.99</b>	<b>1.97</b>	<b>1.97</b>	<b>1.97</b>
Field Moisture Cont (%) :	<b>16.5</b>	<b>16.8</b>	<b>15.6</b>	<b>16.2</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.02</b>	<b>2.01</b>	<b>2.01</b>	<b>2.02</b>
Moisture Variation (%) :	<b>-0.1</b>	<b>-0.4</b>	<b>0.1</b>	<b>0.1</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>98.5</b>	<b>98.0</b>	<b>98.0</b>	<b>97.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks :				

Lab Number:	Soil Description
<b>189816</b>	
<b>189817</b>	
<b>189818</b>	
<b>189819</b>	



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RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81977/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189898	189899	
ID No :	231	232	
Lot No :	589	594	
Item No :	-	-	
Date Sampled :	26/8/2013	26/8/2013	
Date Tested :	26/8/2013	26/8/2013	
Material Source :	ONSITE	ONSITE	
For Use As :	-	-	
Sample Location :	LOT 589 O/S SW CNR 2m N, 2m E FINISHED LEVEL	LOT 594 O/S NE CNR 4m S, 4m W FINISHED LEVEL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>1.95</b>	<b>1.95</b>	
Field Moisture Cont (%) :	<b>25.4</b>	<b>20.6</b>	
PCWD (t/m <sup>3</sup> ) :	<b>1.93</b>	<b>1.96</b>	
Moisture Variation (%) :	<b>-0.4</b>	<b>-0.4</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>101.0</b>	<b>99.0</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	
Remarks:			

Lab Number:	Soil Description
<b>189898</b>	
<b>189899</b>	



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**MORRISON**  
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ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81973/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

Page 1 of 1

Lab No :	189911	189912	189913	189914
ID No :	237	238	239	240
Lot No :	520	548	531	532
Item No :	-	-	-	-
Date Sampled :	27/8/2013	27/8/2013	27/8/2013	27/8/2013
Date Tested :	27/8/2013	27/8/2013	27/8/2013	27/8/2013
Material Source :	ON SITE	ON SITE	ON SITE	ON SITE
For Use As :	-	-	-	-
Sample Location :	LOT 520 O/S NE CNR 7m S, 2m W FINISHED LEVEL	LOT 548 O/S NE CNR 6m S, 3m W FINISHED LEVEL	LOT 531 O/S NE CNR 8m S, 1m W FINISHED LEVEL	LOT 532 O/S NE CNR 2m S, 2m W FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.87</b>	<b>1.87</b>	<b>1.86</b>	<b>1.88</b>
Field Moisture Cont (%) :	<b>24.0</b>	<b>25.0</b>	<b>21.2</b>	<b>23.0</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.96</b>	<b>1.94</b>	<b>1.93</b>	<b>1.95</b>
Moisture Variation (%) :	<b>2.1</b>	<b>0.9</b>	<b>2.7</b>	<b>1.9</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>95.5</b>	<b>96.5</b>	<b>96.0</b>	<b>96.5</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>189911</b>	
<b>189912</b>	
<b>189913</b>	
<b>189914</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81974/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189915	189916	189917	189918
ID No :	241	242	243	244
Lot No :	576	577	578	579
Item No :	-	-	-	-
Date Sampled :	27/8/2013	27/8/2013	27/8/2013	27/8/2013
Date Tested :	27/8/2013	27/8/2013	27/8/2013	27/8/2013
Material Source :	ON SITE	ON SITE	ON SITE	ON SITE
For Use As :	-	-	-	-
Sample Location :	LOT 576 O/S NE CNR 2m S, 3m W FINISHED LEVEL	LOT 577 O/S NE CNR 7m S, 2m W FINISHED LEVEL	LOT 578 O/S NW CNR 6m E, 4m S FINISHED LEVEL	LOT 579 O/S NW CNR 7m E, 2m S FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.85</b>	<b>1.85</b>	<b>1.83</b>	<b>1.85</b>
Field Moisture Cont (%) :	<b>25.5</b>	<b>24.4</b>	<b>23.6</b>	<b>21.2</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.92</b>	<b>1.92</b>	<b>1.89</b>	<b>1.89</b>
Moisture Variation (%) :	<b>1.6</b>	<b>2.0</b>	<b>1.4</b>	<b>2.5</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>96.0</b>	<b>96.0</b>	<b>97.0</b>	<b>98.0</b>
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>189915</b>	
<b>189916</b>	
<b>189917</b>	
<b>189918</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81980/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189986	189987	189988	189989
ID No :	245	246	247	248
Lot No :	-	-	-	-
Item No :	-	-	-	-
Date Sampled :	28/8/2013	28/8/2013	28/8/2013	28/8/2013
Date Tested :	28/8/2013	28/8/2013	28/8/2013	28/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	NINGALOO DRIVE CH 520 1m RIGHT OF CL 1.0m BELOW FL	NINGALOO DRIVE CH 540 ON CENTRELINE 1.2m BELOW FL	NINGALOO DRIVE CH 580 1m RIGHT OF CL 1.5m BELOW FL	NINGALOO DRIVE CH 620 ON CENTRELINE 1.7m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.99</b>	<b>1.98</b>	<b>1.99</b>	<b>1.98</b>
Field Moisture Cont (%) :	<b>14.4</b>	<b>16.2</b>	<b>15.3</b>	<b>16.2</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.00</b>	<b>2.05</b>	<b>2.04</b>	<b>2.01</b>
Moisture Variation (%) :	<b>0.5</b>	<b>-0.3</b>	<b>-0.9</b>	<b>1.8</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>99.5</b>	<b>96.5</b>	<b>97.5</b>	<b>98.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>189986</b>	
<b>189987</b>	
<b>189988</b>	
<b>189989</b>	



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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81985/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>05/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	189990	189991	189992	189993
ID No :	249	250	251	252
Lot No :	-	-	561	522
Item No :	-	-	-	-
Date Sampled :	28/8/2013	28/8/2013	28/8/2013	28/8/2013
Date Tested :	28/8/2013	28/8/2013	28/8/2013	28/8/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	-	-	-	-
Sample Location :	NINGALOO DRIVE CH 660 1m LEFT OF CL 2m BELOW FL	NINGALOO DRIVE CH 685 2m RIGHT OF CL 1.5m BELOW FL	LOT 561 O/S NE CNR 2m S, 4m E FINISHED LEVEL	LOT 522 O/S NE CNR 8m S, 2m E FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.96</b>	<b>1.99</b>	<b>2.00</b>
Field Moisture Cont (%) :	<b>14.6</b>	<b>15.3</b>	<b>15.2</b>	<b>17.3</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.08</b>	<b>2.02</b>	<b>2.08</b>	<b>2.09</b>
Moisture Variation (%) :	<b>-0.1</b>	<b>1.7</b>	<b>-1.0</b>	<b>-1.3</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>95.0</b>	<b>97.5</b>	<b>95.5</b>	<b>95.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>189990</b>	
<b>189991</b>	
<b>189992</b>	
<b>189993</b>	



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**MORRISON  
GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81978/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	190017	190018	190019	190020
ID No :	253	254	255	256
Lot No :	-	-	-	-
Item No :	-	-	-	-
Date Sampled :	2/9/2013	2/9/2013	2/9/2013	2/9/2013
Date Tested :	2/9/2013	2/9/2013	2/9/2013	2/9/2013
Material Source :	SITE	SITE	SITE	SITE
For Use As :	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL
Sample Location :	NINGALOO DRIVE CH 1020 ON CENTRELINE 1m BELOW FL	NINGALOO DRIVE CH 980 2m RIGHT OF CL 1.5m BELOW FL	NINGALOO DRIVE CH 960 2m RIGHT OF CL 2m BELOW FL	NINGALOO DRIVE CH 900 3m RIGHT OF CL 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.88</b>	<b>1.89</b>	<b>1.88</b>	<b>1.86</b>
Field Moisture Cont (%) :	<b>13.8</b>	<b>15.4</b>	<b>12.6</b>	<b>14.5</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.88</b>	<b>1.87</b>	<b>1.81</b>	<b>1.85</b>
Moisture Variation (%) :	<b>4.8</b>	<b>4.8</b>	<b>5.3</b>	<b>4.0</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>100.0</b>	<b>101.0</b>	<b>104.0</b>	<b>100.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>190017</b>	
<b>190018</b>	
<b>190019</b>	
<b>190020</b>	



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**MORRISON  
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ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>81979/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>04/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

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Lab No :	190021	190022	190023	190024
ID No :	257	258	259	260
Lot No :	-	-	-	-
Item No :	-	-	-	-
Date Sampled :	2/9/2013	2/9/2013	2/9/2013	2/9/2013
Date Tested :	2/9/2013	2/9/2013	2/9/2013	2/9/2013
Material Source :	SITE	SITE	SITE	SITE
For Use As :	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL
Sample Location :	NINGALOO DRIVE CH 840 1m LEFT OF CL 2m BELOW FL	NINGALOO DRIVE CH 790 2m RIGHT OF CL 1.8m BELOW FL	NINGALOO DRIVE CH 760 2m LEFT OF CL 2m BELOW FL	NINGALOO DRIVE CH 725 2m RIGHT OF CL 1.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.88</b>	<b>1.89</b>	<b>1.90</b>	<b>2.01</b>
Field Moisture Cont (%) :	<b>14.3</b>	<b>17.3</b>	<b>18.3</b>	<b>15.5</b>
PCWD (t/m <sup>3</sup> ) :	<b>1.86</b>	<b>1.92</b>	<b>1.92</b>	<b>1.92</b>
Moisture Variation (%) :	<b>4.2</b>	<b>3.5</b>	<b>3.5</b>	<b>3.5</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>101.0</b>	<b>98.5</b>	<b>99.0</b>	<b>104.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>190021</b>	
<b>190022</b>	
<b>190023</b>	
<b>190024</b>	



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**GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>82130/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>12/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

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Lab No :	190154	190155	190156	190157
ID No :	261	262	263	264
Lot No :	-	-	-	-
Item No :	-	-	-	-
Date Sampled :	6/9/2013	6/9/2013	6/9/2013	6/9/2013
Date Tested :	6/9/2013	6/9/2013	6/9/2013	6/9/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL
Sample Location :	FORTECUE ST CH 20 ON CENTRELINE 0.5m BELOW FL	NINGALOO DRIVE CH 1080 1m LEFT OF CL 0.5m BELOW FL	NINGALOO DRIVE CH 1040 1m RIGHT OF CL 0.5m BELOW FL	NINGALOO DRIVE CH 1000 1m RIGHT OF CL 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>2.00</b>	<b>2.00</b>	<b>2.01</b>
Field Moisture Cont (%):	<b>17.0</b>	<b>19.2</b>	<b>18.8</b>	<b>18.0</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.03</b>	<b>2.04</b>	<b>2.02</b>	<b>2.02</b>
Moisture Variation (%):	<b>-1.2</b>	<b>-1.3</b>	<b>-2.3</b>	<b>-2.0</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.5</b>	<b>98.5</b>	<b>99.0</b>	<b>99.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>190154</b>	
<b>190155</b>	
<b>190156</b>	
<b>190157</b>	



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**MORRISON**  
**GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>82131/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>12/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	190158	190159	190160	190161
ID No :	265	266	267	268
Lot No :	-	-	-	-
Item No :	-	-	-	-
Date Sampled :	6/9/2013	6/9/2013	6/9/2013	6/9/2013
Date Tested :	6/9/2013	6/9/2013	6/9/2013	6/9/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL
Sample Location :	NINGALOO DRIVE CH 940 1m LEFT OF CL 1m BELOW FL	NINGALOO DRIVE CH 900 2m LEFT OF CL 1m BELOW FL	NINGALOO DRIVE CH 880 2m RIGHT OF CL 1m BELOW FL	NINGALOO DRIVE CH 780 2m RIGHT OF CL 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.03</b>	<b>2.04</b>	<b>2.03</b>	<b>2.04</b>
Field Moisture Cont (%) :	<b>19.2</b>	<b>18.5</b>	<b>19.7</b>	<b>19.2</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.01</b>	<b>1.98</b>	<b>2.00</b>	<b>2.03</b>
Moisture Variation (%) :	<b>-0.6</b>	<b>-0.7</b>	<b>-1.1</b>	<b>-1.2</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>101.0</b>	<b>103.0</b>	<b>101.5</b>	<b>100.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
Remarks:				

Lab Number:	Soil Description
<b>190158</b>	
<b>190159</b>	
<b>190160</b>	
<b>190161</b>	



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NATA Accred No:1169

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## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>82132/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>12/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	190162	190163	190164	190165
ID No :	269	270	271	272
Lot No :	-	-	-	-
Item No :	-	-	-	-
Date Sampled :	6/9/2013	6/9/2013	6/9/2013	6/9/2013
Date Tested :	6/9/2013	6/9/2013	6/9/2013	6/9/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL
Sample Location :	NINGALOO DRIVE CH 750 2m RIGHT OF CL 1m BELOW FL	NINGALOO DRIVE CH 640 ON CENTRELINE 1m BELOW FL	NINGALOO DRIVE CH 600 ON CENTRELINE 1m BELOW FL	NINGALOO DRIVE CH 850 2m RIGHT OF CL 0.5m BELOW FL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>2.03</b>	<b>2.02</b>	<b>2.03</b>	<b>2.02</b>
Field Moisture Cont (%) :	<b>19.7</b>	<b>18.0</b>	<b>20.1</b>	<b>19.8</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.03</b>	<b>2.03</b>	<b>2.05</b>	<b>2.04</b>
Moisture Variation (%) :	<b>-0.5</b>	<b>-0.9</b>	<b>-0.8</b>	<b>-0.8</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>100.0</b>	<b>99.5</b>	<b>99.0</b>	<b>99.0</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>190162</b>	
<b>190163</b>	
<b>190164</b>	
<b>190165</b>	



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## Hilf Density Ratio Report



Client :	<b>MIRVAC</b>	Report Number:	<b>82133/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>12/09/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1</b>

Page 1 of 1

Lab No :	190166	190167	190168	190169
ID No :	273	274	275	276
Lot No :	-	-	502	503
Item No :	-	-	-	-
Date Sampled :	6/9/2013	6/9/2013	6/9/2013	6/9/2013
Date Tested :	6/9/2013	6/9/2013	6/9/2013	6/9/2013
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL	EMBANKMENT FILL
Sample Location :	WARRABAH CLOSE CH 20 1.5m BELOW FL	WARRABAH CLOSE CH 50 1m BELOW FL	LOT 502 O/S SW CNR 4m N, 4m E FINISHED LEVEL	LOT 503 O/S SW CNR 5m N, 5m E FINISHED LEVEL
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.94</b>	<b>2.00</b>	<b>2.02</b>
Field Moisture Cont (%) :	<b>20.0</b>	<b>17.5</b>	<b>21.8</b>	<b>17.9</b>
PCWD (t/m <sup>3</sup> ) :	<b>2.04</b>	<b>2.02</b>	<b>2.04</b>	<b>2.02</b>
Moisture Variation (%) :	<b>-1.2</b>	<b>-0.2</b>	<b>-1.1</b>	<b>-1.5</b>
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Hilf Density Ratio (%) :	<b>97.0</b>	<b>96.0</b>	<b>98.0</b>	<b>100.5</b>
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>

Remarks:

Lab Number:	Soil Description
<b>190166</b>	
<b>190167</b>	
<b>190168</b>	
<b>190169</b>	

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**MORRISON**  
**GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>83078/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>01/11/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

Page 1 of 1

Lab No :	191575	191576	191577	
ID No :	277	278	279	
Lot No :	612	613	611	
Item No :	-	-	-	
Date Sampled :	22/10/2013	22/10/2013	22/10/2013	
Date Tested :	22/10/2013	22/10/2013	22/10/2013	
Material Source :	ONSITE	ONSITE	ONSITE	
For Use As :	LOT FILL	LOT FILL	LOT FILL	
Sample Location :	LOT 612 O/S NE CNR 3m STH, 4m W FINISHED LEVEL	LOT 613 O/S NE CNR 3m STH, 2m W FINISHED LEVEL	LOT 611 O/S NE CNR 3m STH, 3m W FINISHED LEVEL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>2.00</b>	<b>2.00</b>	<b>1.99</b>	
Field Moisture Cont (%) :	<b>18.8</b>	<b>18.0</b>	<b>0.6</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.08</b>	<b>2.10</b>	<b>2.09</b>	
Moisture Variation (%) :	<b>-2.2</b>	<b>-0.8</b>	<b>-2.7</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>96.0</b>	<b>95.0</b>	<b>95.0</b>	
Min Hilf Dens Ratio (%) :	<b>95</b>	<b>95</b>	<b>95</b>	
Remarks:				

Lab Number:	Soil Description
<b>191575</b>	
<b>191576</b>	
<b>191577</b>	



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**MORRISON**  
**GEOTECHNIC**  
ABN 51 009 878 899  
RPEUQ 2241

## Hilf Density Ratio Report

Client :	<b>MIRVAC</b>	Report Number:	<b>83079/1</b>
Job Number :	<b>GL13/006</b>	Report Date:	<b>01/11/2013</b>
Project :	<b>GAINSBOROUGH GREENS - PRECINCT 6.3</b>	Order Number:	
Location :	<b>YAWALPAH ROAD , PIMPAMA</b>	Test Method:	<b>AS1289.5.8.1 &amp; 5.7.1</b>

Page 1 of 1

Lab No :	191615	191616	191617	
ID No :	280	281	282	
Lot No :	587	588	596	
Item No :	-	-	-	
Date Sampled :	23/10/2013	23/10/2013	23/10/2013	
Date Tested :	23/10/2013	23/10/2013	23/10/2013	
Material Source :	ONSITE	ONSITE	ONSITE	
For Use As :	LOT FILL	LOT FILL	LOT FILL	
Sample Location :	LOT 587 O/S NE CNR 4m STH, 5m W FINISHED LEVEL	LOT 588 O/S NE CNR 3m STH, 5m W FINISHED LEVEL	LOT 596 O/S NE CNR 4m STH, 3m W FINISHED LEVEL	
Test Depth (mm) :	<b>150</b>	<b>150</b>	<b>150</b>	
Max Size (mm) :	<b>19</b>	<b>19</b>	<b>19</b>	
Oversize Wet (%) :	<b>0</b>	<b>0</b>	<b>0</b>	
Field Wet Density (t/m <sup>3</sup> ):	<b>1.98</b>	<b>1.99</b>	<b>1.97</b>	
Field Moisture Cont (%) :	<b>19.5</b>	<b>18.7</b>	<b>18.4</b>	
PCWD (t/m <sup>3</sup> ) :	<b>2.06</b>	<b>2.10</b>	<b>2.06</b>	
Moisture Variation (%) :	<b>0.0</b>	<b>-0.5</b>	<b>0.0</b>	
Compactive Effort :	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	
Hilf Density Ratio (%) :	<b>96.0</b>	<b>95.0</b>	<b>96.0</b>	
Min Hilf Dens Ratio (%)	<b>95</b>	<b>95</b>	<b>95</b>	
Remarks:				

Lab Number:	Soil Description
<b>191615</b>	
<b>191616</b>	
<b>191617</b>	



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Job No: GL13/006

# **APPENDIX 'B'**

**(Photo Gallery)**





Job No: GL13/006

# **APPENDIX 'C'**

**(Site Plan)**

DO NOT SCALE THIS DRAWING  
IF IN DOUBT - ASK

REVISIONS

No.	Description	Date	By
A	COUNCIL APPROVAL	15/08/11	GM
B	LOT BOUNDARY AND ROAD WIDENING	28/01/11	GM
C	PROPOSED AND PROPOSED	28/01/11	GM
D	PROPOSED AND PROPOSED	28/01/11	GM



PRECINCT 6.3  
GAINSBOROUGH GREENS  
YAWALPAH ROAD  
PIMPAMA



LEVEL 2-71 GREY STREET  
SOUTH BRISBANE  
QUEENSLAND 4101  
PHONE 07 3871 9100  
FAX 07 3871 9100  
EMAIL [info@kn.com.au](mailto:info@kn.com.au)  
ABN 35 112093 611

APPROVED BY: *[Signature]* 15/08/11

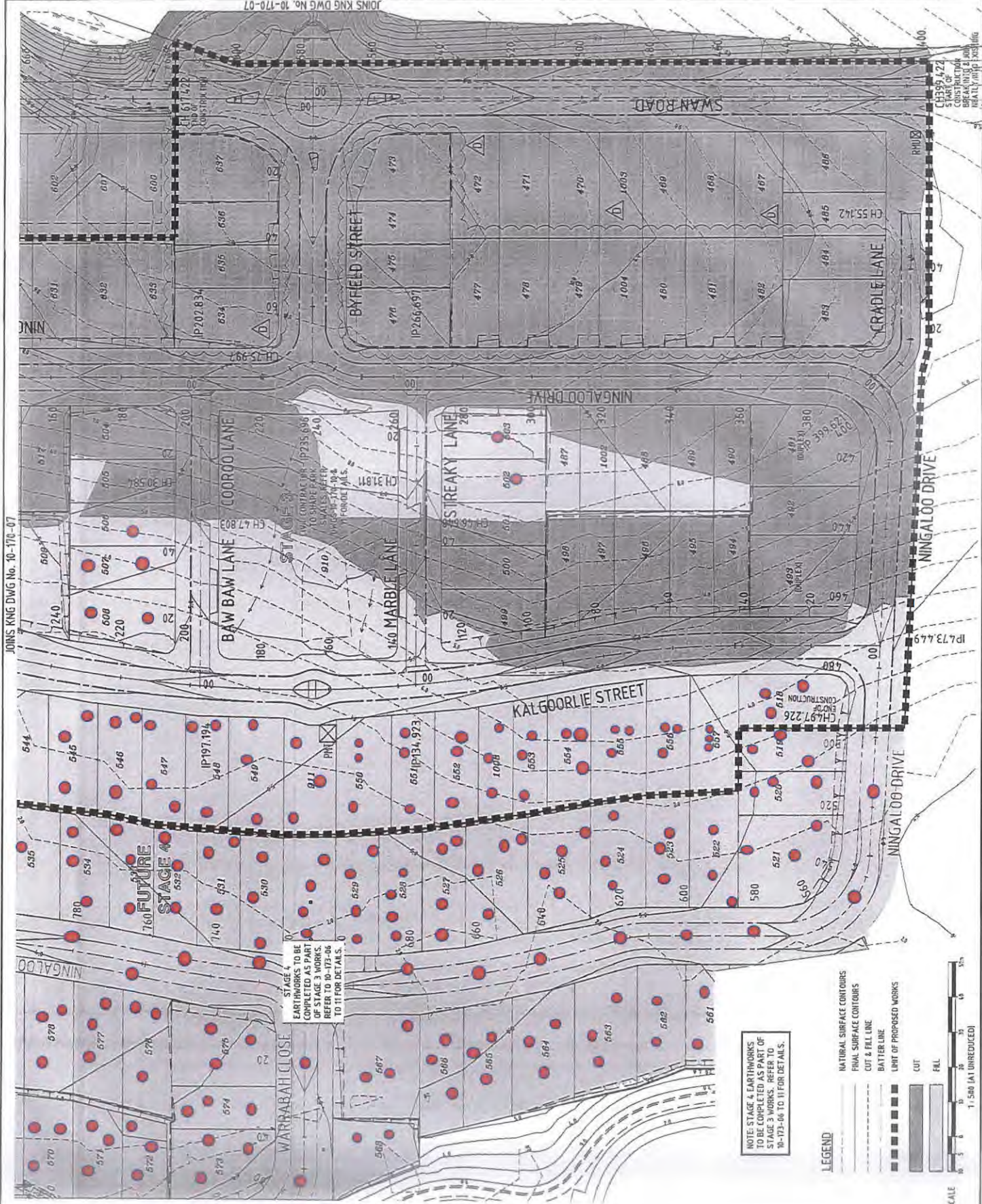
EARTHWORKS CONTOUR PLAN  
SHEET 1 OF 2

Drawn	Checked	Reviewed	By
TD	BW	GM	BPT/11

Scale: 1:500

Drawing No: 10-170-06

Revision: D



NOTE: STAGE 4 EARTHWORKS TO BE COMPLETED AS PART OF STAGE 3 WORKS. REFER TO 10-173-06 TO IT FOR DETAILS.

- LEGEND**
- NATURAL SURFACE CONTOURS
  - FINAL SURFACE CONTOURS
  - CUT & FILL LINE
  - BATTER LINE
  - LIMIT OF PROPOSED WORKS
  - CUT
  - FILL



JOINS KN6 DWG No. 10-170-07

JOINS KN6 DWG No. 10-170-07

CONSTRUCTION BREAKING & JOLLY HEATLY (P) (S) (S) (S)

