MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Maroochydore
Unit 1, 35 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Gold Coast Office
Job: GL16/228
Ref: 17084
Author: Ian Masman

12th April 2017.

Golding Contractors Pty Ltd
Po Box 1643
Milton Qld, 4064

ATTENTION: MR CAMERON MCCLURE
Email: Cameron.mcclure@golding.com.au

Dear Sir

RE: LEVEL ONE COMPLIANCE REPORT FOR EARTHWORKS FILLING OPERATONS GAINSBOROUGH GREENS, PRECINCT 7.2 YAWALPAH ROAD, PIMPAMA

Table of Contents

1.0 INTRODUCTION

1.1 General

This report presents results of Level One earthworks inspections, field testing and associated Compaction Compliance testing carried out on earthworks fill placed and compacted to form residential building platforms and embankments below subgrade at the Gainsborough Greens, Precinct 7.2, development, Yawalpah Road, Pimpama (The Site).

The work was commissioned by Mr. Cameron McClure representing Golding Contractors (The Client) using Purchase Order 4500210869.

The earthworks were carried out by The Client.

Earthworks operations were carried out intermittently between 23rd November, 2016 and 29th March, 2017.

1.2 Previous Earthworks

Previous earthworks have been constructed at The Site during 2014 and 2015.

Previous earthworks were constructed by Shadforth Civil on behalf of Mirvac Construction, under Level One Inspections and Testing by Morrison Geotechnic. Level One Compliance Reports for the existing fill are attached to this report as Appendix D.

1.3 The Project

The proposed development at The Site includes residential allotments, new pavements and associated underground service networks.

Earthworks filling was required to form building platforms supporting proposed residences and embankments below subgrade to support future pavements. Earthworks construction at The Site included stripping vegetation, organics and topsoil; proof roll testing of the existing fill and natural ground surfaces, and then filling The Site to the project design levels.

The Site is bounded by undeveloped land to the North and East, railway lines to the West, and a new development to the South.

Picture 1: Aerial View of the Site (Image Source: Nearmap.com, showing 8th March, 2017).

2.0 THE BRIEF

The Brief from the Client was limited to:

- Level One Inspection of the placement and compaction of fill materials between the existing ground levels and the design earthworks levels in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.1.
- City of Gold Coast Council Requirements.
- Notes on KN Group project drawings.

All other design requirements such as CBR and Quality of Materials, site classification, material assessments, foundation assessments and slope / global stability appraisals were not included in the Brief and are therefore excluded from this Report.

KN Group Earthworks Contour Plans 14 – 218-17C to 14-218-20C indicate the extents of fill to be constructed at The Site. The plans are considered to be a reasonable indication of the actual fill constructed during our involvement.

For confirmation of the actual thickness of fill on an individual lot, a Lot Disclosure Plan can be requested from the Developer.

2.1 Additional Requirements

Morrison Geotechnic was not engaged to carry out additional works other than what was outlined in the Brief.

3.0 METHODOLOGY

Earthworks Inspections and Testing was carried out on the stripped and exposed ground surfaces and during the placement and compaction of fill materials forming residential allotments and embankments below subgrade.

Field and laboratory testing included walk over assessments of the existing ground conditions, proof roll testing of the stripped surfaces including the existing fill and natural surface, observation of filling and compaction activities and field density testing using a soil moisture density gauge and Hilf Density compactions.

3.1 Stripped Surface Assessment

The Site had been cleared of all debris, trees and topsoil. Visible organic matter, un-compacted or loose soil, unsuitable materials and any over wet areas were removed to expose the existing fill or natural foundation.

The materials exposed after stripping and clearing the site which formed the fill foundation can be broadly summarized as:

- Natural – Sandy Clay (CH), at least very stiff, high plasticity, fine to medium grained sand, brown and moist.
- Existing Fill – Sandy Clay (CH), at least very stiff, high plasticity, fine to medium grained sand, brown and moist.

The stripped surface was proof rolled by The Client in the presence of our Geotechnicians using a Cat 815 Compactor carrying out multiple passes. Areas where movements were observed beneath the wheels of the plant were removed to a suitable base or tyned, 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 visible movement or vertical deflection was observed during proof roll testing, the stripped surface was assessed to be suitable as a foundation for the placement of fill.

Any ponds or dams were dewatered and all wet silts clays and other deleterious materials were removed to a suitable base.

Picture 2: View of the Stripped Surface Prior to the Placement of Fill

3.2 Filling Operations

Fill materials were sourced from cut areas at The Site.

Materials used as fill at The Site can be summarized as: -

- Onsite –Sandy Clay (CL – CI), low to medium plasticity, fine to medium grained sand, yellow/brown and moist.

Placement and compaction of the fill materials was carried out using the following plant:

- Cat D6 Dozers
- Water Trucks
- Excavator
- 815 Compactors
- Body trucks
- Pad Foot Roller
- Articulated Dump Trucks
- Scrapers

The fill was placed in layers appropriate for the above plant, moisture conditioned at the fill source and during placement and thoroughly mixed to achieve moisture contents suitable for compaction.

To the extent that was reasonably practicable, fill materials visibly containing excessive amounts of silts or deleterious materials such as sticks, oversize particles or construction debris were sorted to remove the contaminants prior to placement, or rejected for use. Some cobble sized particles may remain in the body of the fill, however are unlikely to be in sufficient quantities to adversely affect the performance of the new fill. Sloping areas requiring filling were benched and continually keyed into the slope prior to and during fill placement. Compaction of the fill was carried out using multiple passes of the above compaction plant.

Field density tests and laboratory compactions were carried out on the fill materials in accordance with Table 5.1 and 8.1 of AS3798 2007 (Guidelines on Earthworks for Commercial and Residential Developments) and tested to AS1289 test methods (Testing of Soils for Engineering Purposes). Testing under this Job Number for the recent works achieved the required compaction specification of 95% standard Hilf compaction.

Areas that have preload placed over the fill will require an assessment including proof rolling and possibly Field Density testing of the surface materials following removal of the preloaded material.

Picture 3: Site Earthworks Filling Operations

The location of the field density tests are shown on the Site Plan contained in Appendix A.

The results of the field density and laboratory compaction tests are contained in Appendix B.

These test locations and levels were not obtained by survey and are therefore should only be considered as approximate.

4.0 STATEMENT OF COMPLIANCE

Our representatives observed the relevant earthworks operations during our engagement including the stripped surface, fill placement and compaction operations and carried out field density tests and laboratory compaction tests in accordance with The Brief.

The fill at The Site has been observed to be placed and compacted in a controlled manner and can be termed "Controlled" as defined in AS2870 (Residential Slabs and Footings).

5.0 EXCLUSIONS

The compliance statement excludes any top soil, which may be placed for use as Lot dressing or any other subsequent earthworks after 24th March 2017. All trench backfill, landscaping fill and other fill placed without our knowledge is also excluded.

Assessments of batter stability, global stability, and material quality such as soaked CBR and site classifications are excluded from this commission. The stability of any fill batters in the long term must take account of the variable materials used for the construction of the fill platforms and all surface loads including traffic loads near the crest of all batters.

Our on-site attendance specifically excludes assessments of fill material quality and engineering properties that are outside the requirements of AS.3798 - 2007, including soil or fill reactivity and soaked CBR values. We note that the fill materials comprise clay soils, which may result in unfavorable site classifications for individual lots and low subgrade design strengths for pavements.

Footings and ground slabs for any structures constructed over natural soils or controlled fill should be designed to accommodate the characteristic ground surface movements and settlement potential. Assessments of these design parameters are beyond the scope of this Report.

Controlled fill (Level 1 Fill) provides an overview that the Earthwork Specification has been met. There are instances where significant long term settlements of controlled fill can occur. Large total and differential settlements can be expected where fill has been placed over soft and compressible soils and where the thickness of controlled fill varies significantly across a lot.

In some cases, fill materials with high silt content can deteriorate in wet weather conditions resulting in allowable bearing pressures less than 100 kPa

6.0 LIMITATIONS

This Report has been prepared by Morrison Geotechnic Pty Ltd (Morrison Geotechnic), and may include contributions from Morrison Geotechnic's officers and employees, sub-contractors, sub-consultants or agents (Contributors).

This Report is for the sole benefit and use of Golding Contractors Pty Ltd (Client), its designers, clients and relevant statutory authorities for the sole purpose of providing geotechnical advice and recommendations in respect of Gainsborough Greens, Precinct 7.2, Yawalpah Road, Pimpama Development (Project). The Report is only intended to address those issues expressly described in the Brief/ Work Instructions in this Report. This report should not be relied upon for assessing fill extents and thicknesses.

This Report should not be used or relied upon for any other purpose without Morrison Geotechnic's prior written consent. Morrison Geotechnic and the Contributors do not accept any responsibility or liability in any way whatsoever for the use or reliance of this Report by anyone other than the Client, its designers, its clients and relevant statutory authorities or by anyone else for any purpose other than that for which it has been prepared.

Except with Morrison Geotechnic's prior written consent, this Report may not be:

(a) released to any other party, whether in whole or in part (other than to the Client's officers, employees, advisers, designers, clients and relevant statutory authorities);

(b) Used or relied upon by any other party.

Morrison Geotechnic and the Contributors, do not accept any liability or responsibility whatsoever for, or in respect of, any use or reliance upon this Report by any other party. Morrison Geotechnic is not obliged to enter into discussions with any third party in respect of this Report.

The information (including technical information and information obtained through discussions) on which this report is based has been provided by the Client and third parties. Morrison Geotechnic and the Contributors:

(a) have relied upon and presumed the accuracy of this information;

(b) have not verified the accuracy or reliability of this information (other than as expressly stated in this Report);

(c) have not made any independent investigations or enquiries in respect of those matters of which it has no actual knowledge at the time of giving this Report to the Client; and

(d) Make no warranty or guarantee, expressed or implied, as to the accuracy or reliability of this information.

Morrison Geotechnic and the Contributors do not accept responsibility or liability for any incorrect assumptions related to this Report. For the avoidance of doubt, this Report:

(a) is not an environmental, contamination or hazardous materials assessment; may be invalid, incomplete or inaccurate (including errors in the scope of work, investigation methodology, observations, opinions and advice) where the information provided to Morrison Geotechnic was invalid, incomplete or inaccurate;

(b) Is limited to observations of those parts of the site described in Section 1.0.

No warranty or guarantee, whether express or implied, is made in respect of the geotechnical data, information, advice, opinions and recommendations present in this Report.

If further information becomes available, or additional assumptions need to be made, Morrison Geotechnic reserves its right to amend this Report.

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

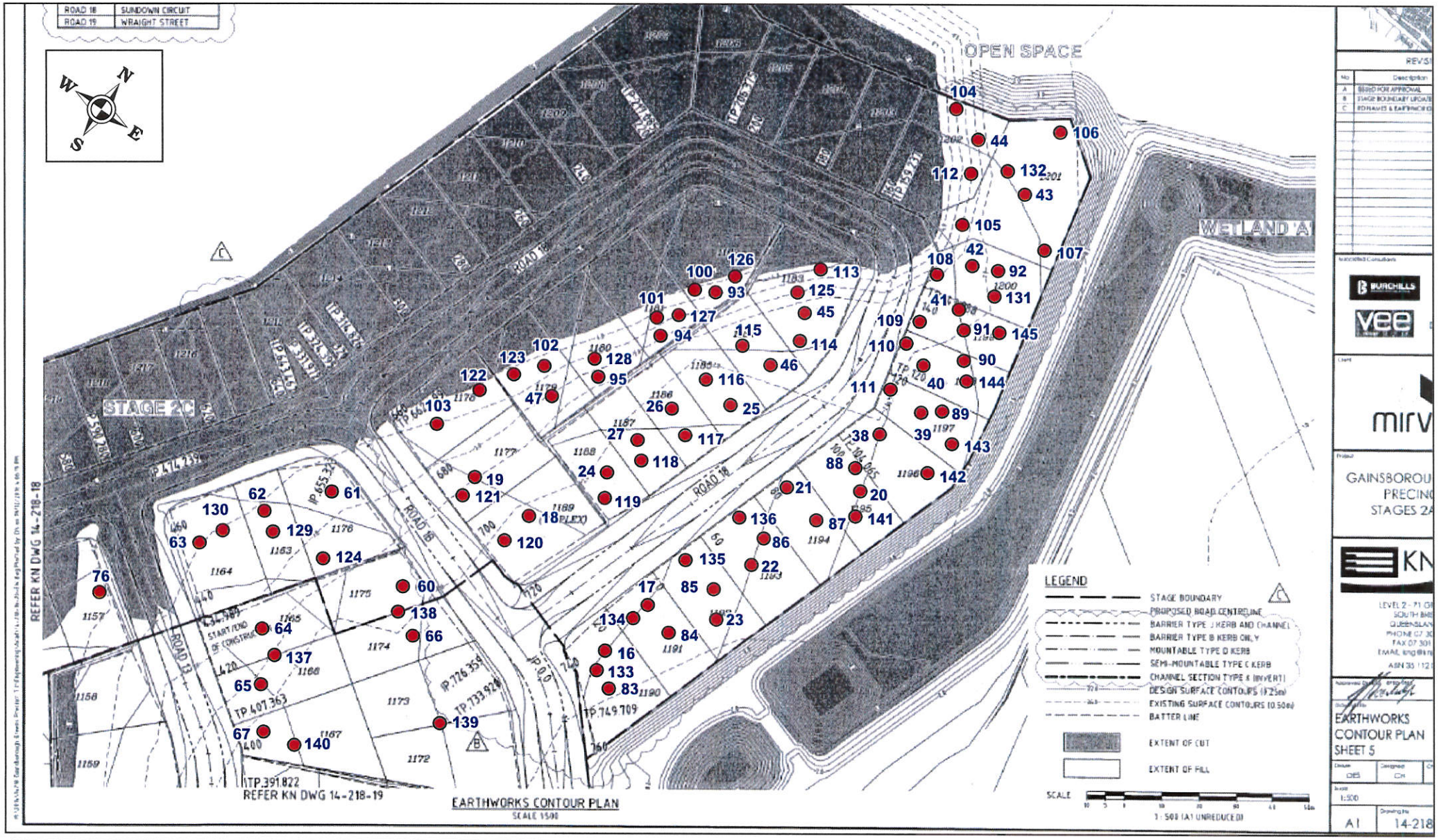
Ian Masman
For and on behalf of
MORRISON GEOTECHNIC PTY LIMITED

M. D. RILEY (RPEQ 5641)

ATTACHMENTS:
Appendix A – Site Plan Showing Test Locations
Appendix B – Test Reports
Appendix C – Photo Gallery
Appendix D – Test Reports from GL14/184 Areas J & K

APPENDIX 'A'

(Site Plan showing Test Locations)

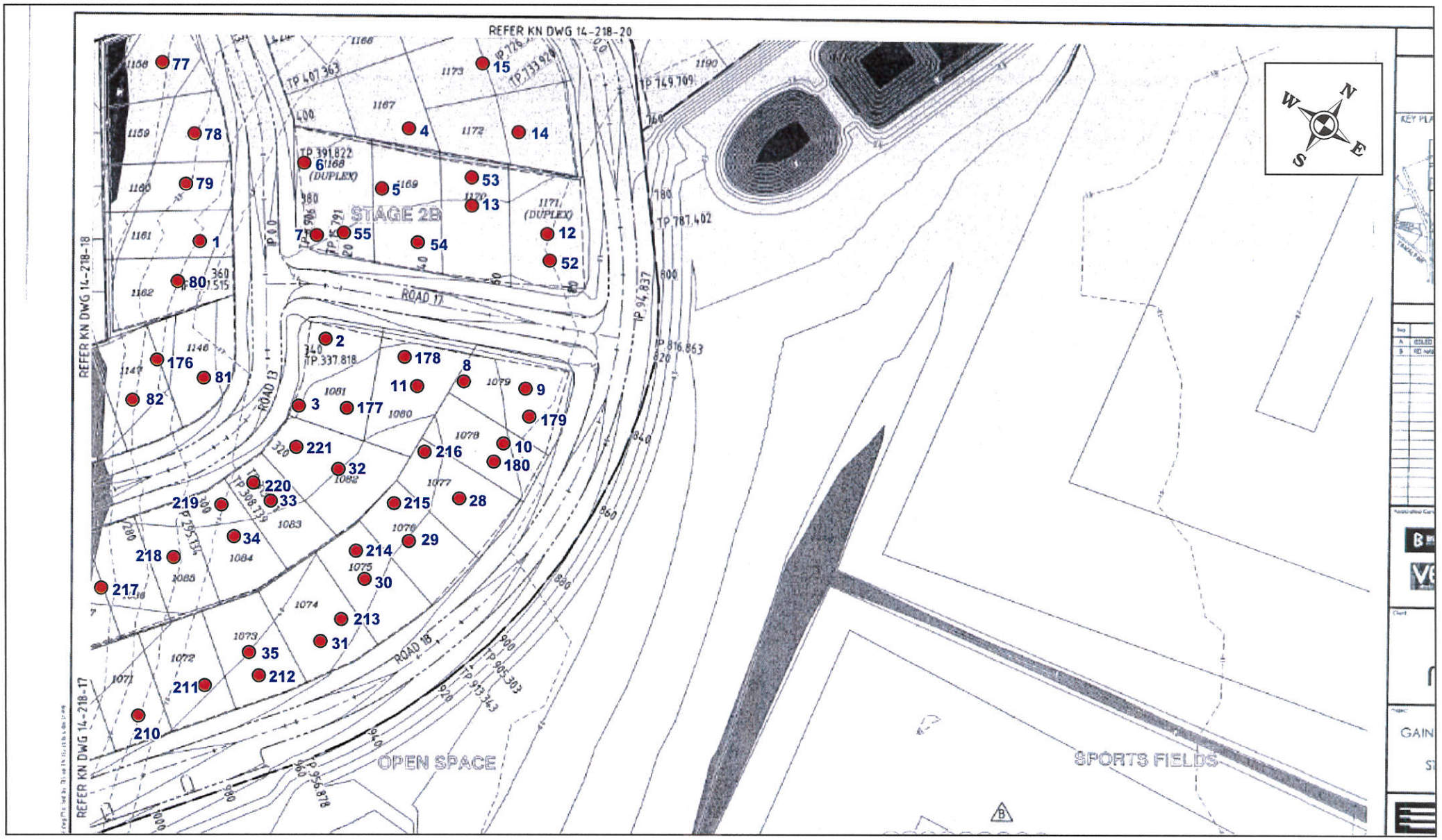


MORRISON GEOTECHNIC

ABN: 51 009 878 899
Unit 1/5 Brendan Drive Nerang 4211 Ph: 5596 1599
Email: goldcoastlab@morrisongeo.com.au Fax: 5527 2027

Engineers: D.Riley, J.Daly, S.Wynne, D.Dragun, B.Taylor
D.Vanderhor & B.Elsmore
Geologists: L.Bexley & R.Howchin

Map Description :	**Field Density Test Locations (Sheet 1 of 5)**		
Client :	**Golding Contractors Pty Ltd**		
Project :	**Gainsborough Greens Precinct 7.2**		
Project No :	**GL16/228**	Date: **18/4/17**	Scale : Not to Scale

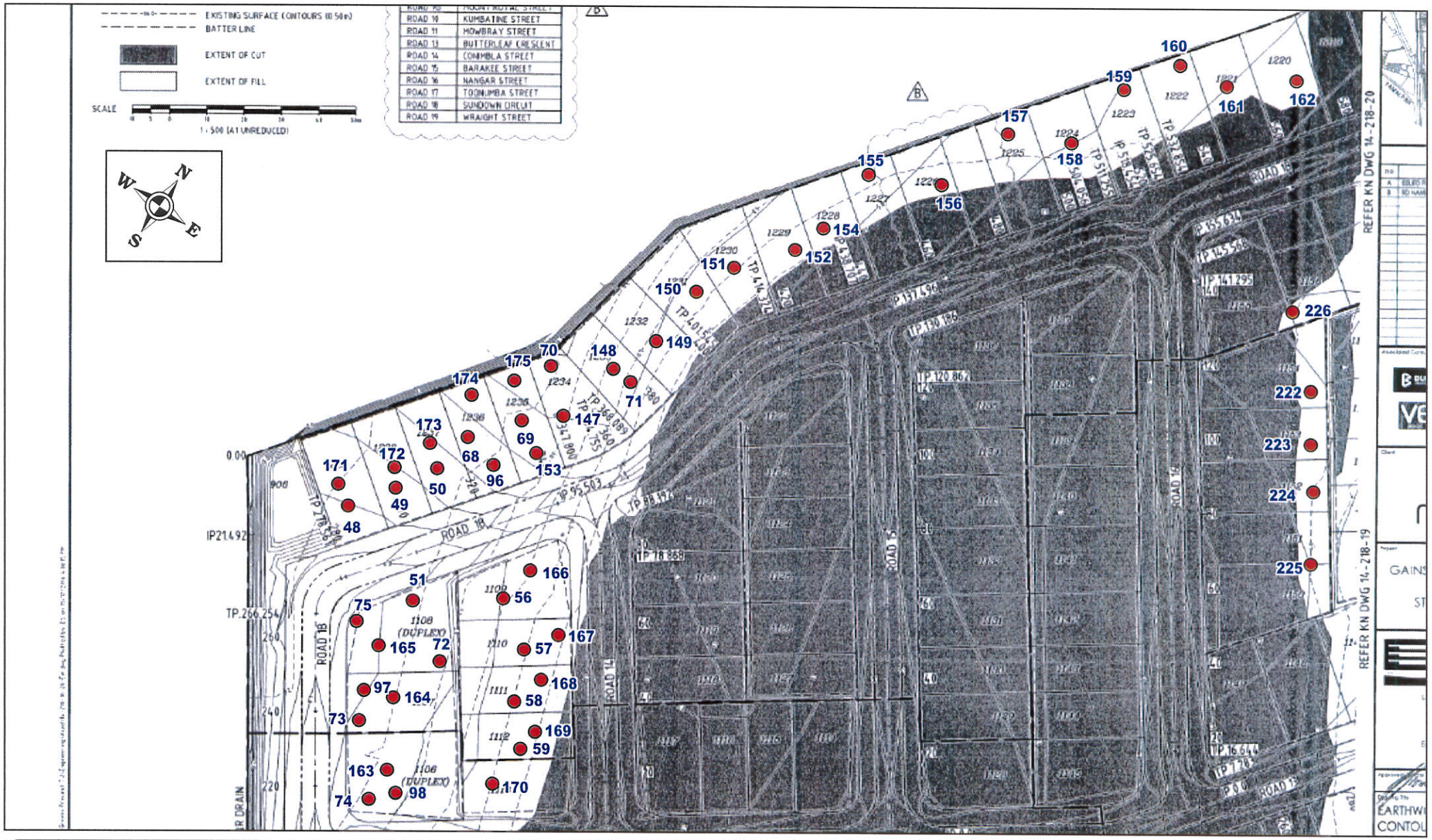


MORRISON GEOTECHNIC

ABN: 51 009 878 899
Unit 1/5 Brendan Drive Nerang 4211 Ph: 5596 1599
Email: goldcoastlab@morrisongeo.com.au Fax: 5527 2027

Engineers: D.Riley, J.Daly, S.Wynne, D.Dragun, B.Taylor
D.Vanderhor & B.Elsmore
Geologists: L.Bexley & R.Howchin

Map Description :	**Field Density Test Locations (Sheet 2 of 5)**		
Client :	**Golding Contractors Pty Ltd**		
Project :	**Gainsborough Greens Precinct 7.2**		
Project No :	**GL16/228**	Date: **18/4/17**	Scale : Not to Scale

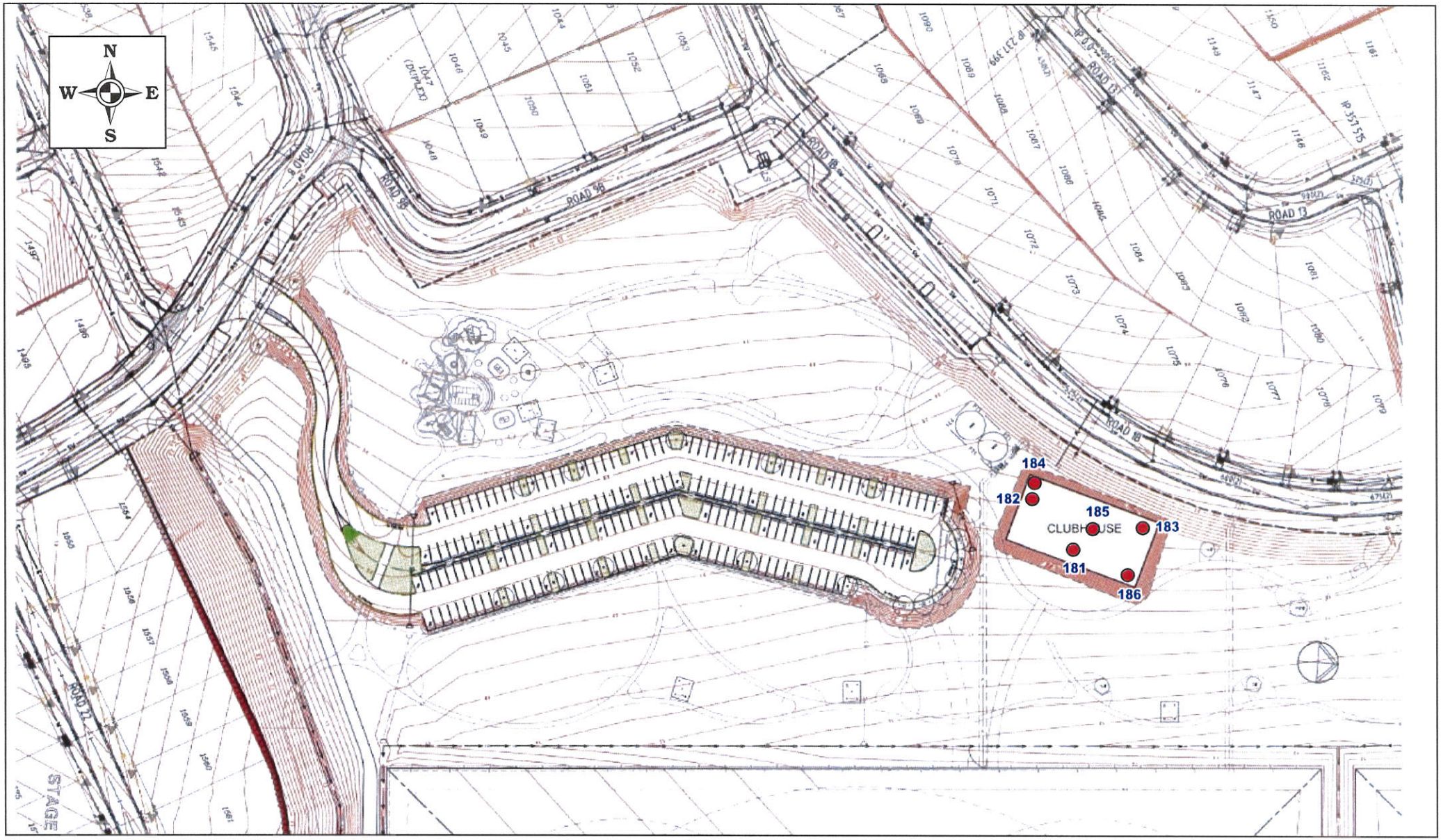


MORRISON GEOTECHNIC

ABN: 51 009 878 899
Unit 1/5 Brendan Drive Nerang 4211 Ph: 5596 1599
Email: goldcoastlab@morrisongeo.com.au Fax: 5527 2027

Engineers: D.Riley, J.Daly, S.Wynne, D.Dragun, B.Taylor
D.Vanderhor & B.Elsmore
Geologists: L.Bexley & R.Howchin

Map Description :	**Field Density Test Locations (Sheet 3 of 5)**		
Client :	**Golding Contractors Pty Ltd**		
Project :	**Gainsborough Greens Precinct 7.2**		
Project No :	**GL16/228**	Date: **18/4/17**	Scale : Not to Scale

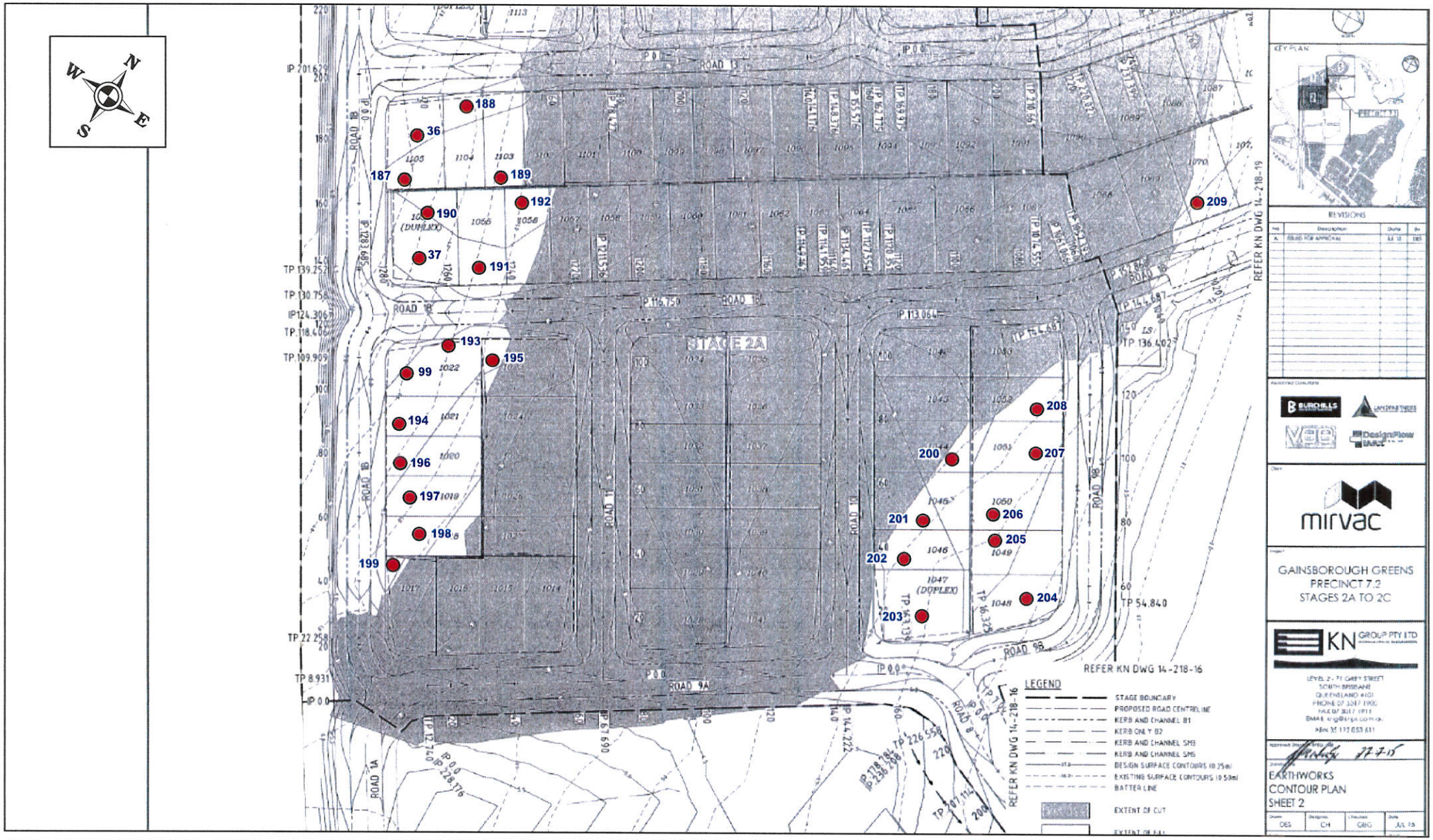


MORRISON GEOTECHNIC

ABN: 51 009 878 899
Unit 1/5 Brendan Drive Nerang 4211 Ph: 5596 1599
Email: goldcoastlab@morrisongeo.com.au Fax: 5527 2027

Engineers: D.Riley, J.Daly, S.Wynne, D.Dragun, B.Taylor
D.Vanderhor & B.Elsmore
Geologists: L.Bexley & R.Howchin

Map Description :	**Field Density Test Locations (Sheet 4 of 5)**		
Client :	**Golding Contractors Pty Ltd**		
Project :	**Gainsborough Greens Precinct 7.2**		
Project No :	**GL16/228**	Date: **18/4/17**	Scale : Not to Scale



MORRISON GEOTECHNIC

ABN: 51 009 878 899
Unit 1/5 Brendan Drive Nerang 4211 Ph: 5596 1599
Email: goldcoastlab@morrisongeo.com.au Fax: 5527 2027

Engineers: D.Riley, J.Daly, S.Wynne, D.Dragun, B.Taylor
D.Vanderhor & B.Elsmore
Geologists: L.Bexley & R.Howchin

Map Description :	**Field Density Test Locations (Sheet 5 of 5)**		
Client :	**Golding Contractors Pty Ltd**		
Project :	**Gainsborough Greens Precinct 7.2**		
Project No :	**GL16/228**	Date: **18/4/17**	Scale : Not to Scale

APPENDIX 'B'

(Laboratory Test Results)

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.1/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**25/11/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	226505	226506	226507	
Test Number :	1	2	3	
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	
Date Sampled :	23/11/2016	23/11/2016	23/11/2016	
Date Tested :	23/11/2016	23/11/2016	23/11/2016	
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	
Material Source :	ONSITE	ONSITE	ONSITE	
Lot Number :	1161	1081	1081	
Sample Location :	REFER TO SITE PLAN E 529322 N 6923607 0.7m BELOW FL	REFER TO SITE PLAN E 529363 N 6923608 0.8m BELOW FL	REFER TO SITE PLAN E 529359 N 6923593 1m BELOW FL	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	23.9	23.6	21.4	
Hilf MDR Number :	226505	226506	226507	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	
Moisture Ratio (%) :	101	100.5	91	
Field Wet Density (t/m³) :	1.960	1.950	1.940	
Optimum Moisture Content (%) :	23.7	23.5	23.5	
Moisture Variation :	-0.1	0.0	2.0	
Peak Converted Wet Density (t/m³) :	1.880	1.880	1.930	
Hilf Density Ratio (%) :	**104.5**	**104.0**	**100.5**	
Minimum Specification :	95	95	95	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.2/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	226723	226724	226725	226726
Test Number :	4	5	6	7
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	25/11/2016	25/11/2016	25/11/2016	25/11/2016
Date Tested :	25/11/2016	25/11/2016	25/11/2016	25/11/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1167	1169	1168	1168
Sample Location :	REFER TO SITE PLAN E 529351 N 6923666 RL 2.18	REFER TO SITE PLAN E 529352 N 6923654 RL 2.11	REFER TO SITE PLAN E 529335 N 6923649 RL 2.38	REFER TO SITE PLAN E 529342 N 6923633 RL 2.29
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	15.5	15.9	17.5	21.4
Hilf MDR Number :	226723	226724	226725	226726
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	93	92.5	87.5	89
Field Wet Density (t/m³) :	1.910	1.940	1.920	1.920
Optimum Moisture Content (%) :	16.7	17.2	20.0	24.1
Moisture Variation :	1.2	1.3	2.5	2.6
Peak Converted Wet Density (t/m³) :	1.950	1.950	1.860	1.860
Hilf Density Ratio (%) :	**98.0**	**99.5**	**103.5**	**103.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.3/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**6/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	226838	226839	226840	226841
Test Number :	8	9	10	11
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	28/11/2016	28/11/2016	28/11/2016	28/11/2016
Date Tested :	28/11/2016	28/11/2016	28/11/2016	28/11/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1079	1079	1078	1080
Sample Location :	REFER TO SITE PLAN E 529395 N 6923619 RL 1.58	REFER TO SITE PLAN E 529412 N 6923623 RL 1.47	REFER TO SITE PLAN E 529410 N 6923606 RL 1.55	REFER TO SITE PLAN E 529385 N 6923601 RL 1.41
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	13.6	14.3	12.3	13.4
Hilf MDR Number :	226838	226839	226840	226841
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	88.5	103.5	101	86.5
Field Wet Density (t/m³) :	1.940	1.910	1.950	1.930
Optimum Moisture Content (%) :	15.4	13.8	12.2	15.5
Moisture Variation :	1.8	-0.4	0.0	2.1
Peak Converted Wet Density (t/m³) :	1.990	1.940	1.990	1.990
Hilf Density Ratio (%) :	**97.5**	**98.5**	**98.0**	**97.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.4/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**7/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	226863	226864	226865	226866
Test Number :	12	13	14	15
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	29/11/2016	29/11/2016	29/11/2016	29/11/2016
Date Tested :	29/11/2016	29/11/2016	29/11/2016	29/11/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1171	1170	1172	1173
Sample Location :	REFER TO SITE PLAN E 529397 N 6923657 RL 1.98	REFER TO SITE PLAN E 529381 N 6923654 RL 1.72	REFER TO SITE PLAN E 529382 N 6923690 RL 1.79	REFER TO SITE PLAN E 529367 N 6923692 RL 1.84
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	24.3	25.2	24.5	25.0
Hilf MDR Number :	226863	226864	226865	226866
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	99.5	99.5	100	100
Field Wet Density (t/m³) :	1.920	1.900	1.910	1.910
Optimum Moisture Content (%) :	24.5	25.4	24.5	25.0
Moisture Variation :	0.1	0.1	0.0	0.0
Peak Converted Wet Density (t/m³) :	1.920	1.920	1.910	1.920
Hilf Density Ratio (%) :	**99.5**	**99.0**	**100.0**	**100.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.5/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**8/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	226899	226900	226901	226902
Test Number :	16	17	18	19
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	30/11/2016	30/11/2016	30/11/2016	30/11/2016
Date Tested :	30/11/2016	30/11/2016	30/11/2016	30/11/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1190	1191	1189	1177
Sample Location :	REFER TO SITE PLAN E 529396 N 6923725 RL 2.10	REFER TO SITE PLAN E 529403 N 6923734 RL 1.92	REFER TO SITE PLAN E 529361 N 6923745 RL 1.98	REFER TO SITE PLAN E 529348 N 6923748 RL 2.12
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	18.3	19.7	19.5	19.2
Hilf MDR Number :	226899	226900	226901	226902
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	98.5	100	99	100
Field Wet Density (t/m³) :	1.940	1.920	1.960	1.930
Optimum Moisture Content (%) :	18.6	19.7	19.7	19.2
Moisture Variation :	0.2	0.0	0.2	0.0
Peak Converted Wet Density (t/m³) :	1.980	1.990	1.970	1.990
Hilf Density Ratio (%) :	**98.0**	**97.0**	**99.5**	**97.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :				

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.6/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**8/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	226937	226938	226939	226940
Test Number :	20	21	22	23
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	1/12/2016	1/12/2016	1/12/2016	1/12/2016
Date Tested :	1/12/2016	1/12/2016	1/12/2016	1/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1195	1194	1193	1192
Sample Location :	REFER TO SITE PLAN E 529433 N 6923792 RL 1.94	REFER TO SITE PLAN E 529423 N 6923782 RL 1.79	REFER TO SITE PLAN E 529422 N 6923764 RL 2.05	REFER TO SITE PLAN E 529413 N 6923748 RL 1.98
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	18.4	17.3	17.6	18.6
Hilf MDR Number :	226937	226938	226939	226940
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	100	98	98	100.5
Field Wet Density (t/m³) :	1.960	1.950	1.940	1.970
Optimum Moisture Content (%) :	18.4	17.6	18.0	18.5
Moisture Variation :	0.0	0.3	0.3	0.0
Peak Converted Wet Density (t/m³) :	2.000	2.010	2.000	2.020
Hilf Density Ratio (%) :	**98.0**	**96.5**	**97.0**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :				

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.7/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	226973	226974	226975	226976
Test Number :	24	25	26	27
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	2/12/2016	2/12/2016	2/12/2016	2/12/2016
Date Tested :	2/12/2016	2/12/2016	2/12/2016	2/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1188	1185	1186	1187
Sample Location :	REFER TO SITE PLAN E 529370 N 6923767 RL 2.2	REFER TO SITE PLAN E 529384 N 6923790 RL 1.8	REFER TO SITE PLAN E 529380 N 6923810 RL 1.9	REFER TO SITE PLAN E 529383 N 6923777 RL 2.0
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	18.7	17.7	19.1	17.6
Hilf MDR Number :	226973	226974	226975	226976
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	92	90.5	92.5	100.5
Field Wet Density (t/m³) :	1.910	1.900	1.920	1.910
Optimum Moisture Content (%) :	20.3	19.5	20.6	17.5
Moisture Variation :	1.5	1.8	1.5	0.0
Peak Converted Wet Density (t/m³) :	1.930	1.930	1.920	1.990
Hilf Density Ratio (%) :	**99.5**	**99.0**	**100.5**	**96.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.8/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227045	227046	227047	227048
Test Number :	32	33	34	35
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	5/12/2016	5/12/2016	5/12/2016	5/12/2016
Date Tested :	5/12/2016	5/12/2016	5/12/2016	5/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1082	1083	1084	1073
Sample Location :	REFER TO SITE PLAN E 529375 N 6923577 RL 3.48	REFER TO SITE PLAN E 529367 N 6923562 RL 3.01	REFER TO SITE PLAN E 529360 N 6923549 RL 3.24	REFER TO SITE PLAN E 529379 N 6923527 RL 3.17
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	20.3	20.8	20.5	20.9
Hilf MDR Number :	227045	227046	227047	227048
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	101.5	98	98.5	100.5
Field Wet Density (t/m³) :	1.990	1.980	1.970	1.990
Optimum Moisture Content (%) :	20.0	21.3	20.8	20.8
Moisture Variation :	-0.1	0.5	0.2	0.0
Peak Converted Wet Density (t/m³) :	2.010	1.970	2.010	1.990
Hilf Density Ratio (%) :	**99.5**	**100.5**	**98.0**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.9/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227025	227026	227027	227028
Test Number :	28	29	30	31
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	3/12/2016	3/12/2016	3/12/2016	3/12/2016
Date Tested :	3/12/2016	3/12/2016	3/12/2016	3/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1077	1076	1075	1074
Sample Location :	REFER TO SITE PLAN E 529407 N 6923587 RL 2.78	REFER TO SITE PLAN E 529404 N 6923570 RL 2.71	REFER TO SITE PLAN E 529394 N 6923560 RL 2.54	REFER TO SITE PLAN E 529392 N 6923543 RL 2.63
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	17.8	18.0	18.7	19.2
Hilf MDR Number :	227025	227026	227027	227028
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	88	104	105.5	93
Field Wet Density (t/m³) :	1.980	1.990	1.990	1.970
Optimum Moisture Content (%) :	20.3	17.3	17.7	20.6
Moisture Variation :	2.5	-0.6	-0.9	1.4
Peak Converted Wet Density (t/m³) :	1.880	1.950	1.940	1.900
Hilf Density Ratio (%) :	**105.0**	**102.5**	**102.5**	**104.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

IAN MASMAN (Gold Coast) - GOLD COAST MANAGER
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.10/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**14/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227149	227150	227151	227152
Test Number :	36	37	38	39
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	8/12/2016	8/12/2016	8/12/2016	8/12/2016
Date Tested :	8/12/2016	8/12/2016	8/12/2016	8/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1054	1105	1196	1197
Sample Location :	REFER TO SITE PLAN E 529142 N 6923354 RL 2.91	REFER TO SITE PLAN E 529122 N 6923385 RL 2.73	REFER TO SITE PLAN E 529432 N 6923807 RL 1.64	REFER TO SITE PLAN E 529442 N 6923820 RL 1.82
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	17.4	16.8	18.1	17.2
Hilf MDR Number :	227149	227150	227151	227152
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	90.5	101.5	103	100
Field Wet Density (t/m³) :	2.030	2.010	2.020	2.020
Optimum Moisture Content (%) :	19.2	16.5	17.5	17.2
Moisture Variation :	1.9	-0.1	-0.5	0.0
Peak Converted Wet Density (t/m³) :	1.950	1.960	1.990	1.970
Hilf Density Ratio (%) :	**104.5**	**102.5**	**101.5**	**102.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.11/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**14/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227153	227154	227155	227156
Test Number :	40	41	42	43
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	8/12/2016	8/12/2016	8/12/2016	8/12/2016
Date Tested :	8/12/2016	8/12/2016	8/12/2016	8/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1198	1199	1200	1201
Sample Location :	REFER TO SITE PLAN E 529436 N 6923833 RL 1.82	REFER TO SITE PLAN E 529440 N 6923844 RL 1.88	REFER TO SITE PLAN E 529434 N 6923860 RL 1.74	REFER TO SITE PLAN E 529437 N 6923886 RL 1.79
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	16.1	18.5	18.0	17.6
Hilf MDR Number :	227153	227154	227155	227156
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	98	105.5	103	103.5
Field Wet Density (t/m³) :	2.030	2.000	2.020	2.030
Optimum Moisture Content (%) :	16.5	17.5	17.5	17.0
Moisture Variation :	0.4	-0.9	-0.5	-0.5
Peak Converted Wet Density (t/m³) :	1.960	1.980	1.970	2.000
Hilf Density Ratio (%) :	**103.5**	**101.0**	**102.5**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.12/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**14/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227200	227201	227202	227203
Test Number :	44	45	46	47
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	9/12/2016	9/12/2016	9/12/2016	9/12/2016
Date Tested :	9/12/2016	9/12/2016	9/12/2016	9/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1202	1183	1184	1179
Sample Location :	REFER TO SITE PLAN E 529418 N 6923888 RL 1.76	REFER TO SITE PLAN E 529399 N 6923833 RL 1.71	REFER TO SITE PLAN E 529396 N 6923814 RL 1.82	REFER TO SITE PLAN E 529348 N 6923779 RL 1.79
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	16.3	16.3	15.9	15.4
Hilf MDR Number :	227200	227201	227202	227203
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	103.5	103.5	102.5	103
Field Wet Density (t/m³) :	2.010	2.020	2.020	2.010
Optimum Moisture Content (%) :	15.7	15.7	15.5	14.9
Moisture Variation :	-0.5	-0.5	-0.4	-0.4
Peak Converted Wet Density (t/m³) :	2.010	2.010	1.990	2.000
Hilf Density Ratio (%) :	**100.0**	**100.5**	**101.5**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.13/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**19/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227231	227232	227233	227234
Test Number :	48	49	50	51
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	12/12/2016	12/12/2016	12/12/2016	12/12/2016
Date Tested :	12/12/2016	12/12/2016	12/12/2016	12/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1239	1238	1237	1108
Sample Location :	REFER TO SITE PLAN N 6923479 E 529064 RL 1.952	REFER TO SITE PLAN N 6923488 E 529073 RL 1.990	REFER TO SITE PLAN N 6923496 E 529082 RL 2.065	REFER TO SITE PLAN N 6923470 E 529094 RL 2.099
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	14.4	12.5	10.6	11.5
Hilf MDR Number :	227231	227232	227233	227234
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	78	83	73.5	80.5
Field Wet Density (t/m³) :	2.030	2.030	2.030	2.020
Optimum Moisture Content (%) :	18.4	15.1	14.4	14.3
Moisture Variation :	3.9	2.7	3.9	2.9
Peak Converted Wet Density (t/m³) :	1.950	1.920	1.890	1.950
Hilf Density Ratio (%) :	**104.5**	**105.5**	**107.5**	**103.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.14/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**19/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227275	227276	227277	227278
Test Number :	52	53	54	55
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	13/12/2016	13/12/2016	13/12/2016	13/12/2016
Date Tested :	13/12/2016	13/12/2016	13/12/2016	13/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1171	1170	1169	1168
Sample Location :	REFER TO SITE PLAN E 529400 N 6923651 FINISHED LEVEL	REFER TO SITE PLAN E 529369 N 6923664 FINISHED LEVEL	REFER TO SITE PLAN E 529363 N 6923643 FINISHED LEVEL	REFER TO SITE PLAN E 529353 N 6923637 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	18.4	19.6	18.4	19.5
Hilf MDR Number :	227275	227276	227277	227278
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	91	100	97	94
Field Wet Density (t/m³) :	1.930	1.940	1.980	1.920
Optimum Moisture Content (%) :	20.2	19.6	19.0	20.8
Moisture Variation :	1.8	0.0	0.6	1.3
Peak Converted Wet Density (t/m³) :	1.920	1.930	1.900	1.910
Hilf Density Ratio (%) :	**100.5**	**100.5**	**104.0**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.15/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**22/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227322	227323	227324	227325
Test Number :	56	57	58	59
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	14/12/2016	14/12/2016	14/12/2016	14/12/2016
Date Tested :	14/12/2016	14/12/2016	14/12/2016	14/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1109	1110	1111	1112
Sample Location :	REFER TO SITE PLAN E 529115 N 6923488 RL 2.099	REFER TO SITE PLAN E 529113 N 6923465 RL 2.186	REFER TO SITE PLAN E 529130 N 6923461 RL 2.125	REFER TO SITE PLAN E 529126 N 6923445 RL 2.109
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	16.2	15.5	15.9	16.5
Hilf MDR Number :	227322	227323	227324	227325
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	99.5	98.5	101	99
Field Wet Density (t/m³) :	1.990	1.980	2.020	2.010
Optimum Moisture Content (%) :	16.3	15.8	15.8	16.7
Moisture Variation :	0.1	0.2	0.0	0.2
Peak Converted Wet Density (t/m³) :	1.950	1.930	1.940	1.990
Hilf Density Ratio (%) :	**102.0**	**103.0**	**104.0**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.16/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**22/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227338	227339	227340	227341
Test Number :	60	61	62	63
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	15/12/2016	15/12/2016	15/12/2016	15/12/2016
Date Tested :	15/12/2016	15/12/2016	15/12/2016	15/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ON SITE	ON SITE	ON SITE	ON SITE
Lot Number :	1175	1176	1163	1164
Sample Location :	REFER TO SITE PLAN E 529333 N 6923709 RL 3.170	REFER TO SITE PLAN E 529313 N 6923726 RL 3.251	REFER TO SITE PLAN E 529300 N 6923712 RL 3.269	REFER TO SITE PLAN E 529289 N 6923694 RL 3.269
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	15.5	15.9	15.3	17.1
Hilf MDR Number :	227338	227339	227340	227341
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	87	87	86	87.5
Field Wet Density (t/m³) :	1.960	1.950	1.940	1.970
Optimum Moisture Content (%) :	17.8	18.3	17.8	19.5
Moisture Variation :	2.3	2.5	2.6	2.4
Peak Converted Wet Density (t/m³) :	1.900	1.900	1.890	1.890
Hilf Density Ratio (%) :	**103.0**	**103.0**	**102.5**	**104.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.17/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**23/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227433	227434	227435	227436
Test Number :	64	65	66	67
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	16/12/2016	16/12/2016	16/12/2016	16/12/2016
Date Tested :	16/12/2016	16/12/2016	16/12/2016	16/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1165	1166	1174	1167
Sample Location :	REFER TO SITE PLAN E 529308 N 6923683 RL 3.295	REFER TO SITE PLAN E 529324 N 6923679 RL 3.402	REFER TO SITE PLAN E 529347 N 6923701 RL 3.332	REFER TO SITE PLAN E 529331 N 6923664 RL 3.605
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	14.7	16.6	15.3	
Hilf MDR Number :	227433	227434	227435	227436
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	86	87	86.5	110
Field Wet Density (t/m³) :	2.000	1.980	1.960	2.000
Optimum Moisture Content (%) :	17.1	19.1	17.7	
Moisture Variation :	2.4	2.4	2.4	2.3
Peak Converted Wet Density (t/m³) :	1.930	1.930	1.930	1.920
Hilf Density Ratio (%) :	**103.5**	**102.5**	**101.5**	**104.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.18/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**23/12/2016**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227566	227567	227568	227569
Test Number :	68	69	70	71
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	20/12/2016	20/12/2016	20/12/2016	20/12/2016
Date Tested :	20/12/2016	20/12/2016	20/12/2016	20/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1236	1235	1234	1233
Sample Location :	REFER TO SITE PLAN E 529084 N 6923513 RL 4.90	REFER TO SITE PLAN E 529092 N 6923520 RL 4.87	REFER TO SITE PLAN E 529095 N 6923535 RL 4.76	REFER TO SITE PLAN E 529110 N 6923544 RL 4.85
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	12.0	10.7	13.6	10.8
Hilf MDR Number :	227566	227567	227568	227569
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	73.5	76.5	76.5	71
Field Wet Density (t/m³) :	1.910	1.900	1.960	1.910
Optimum Moisture Content (%) :	16.3	14.0	17.8	15.2
Moisture Variation :	4.4	3.5	4.2	4.5
Peak Converted Wet Density (t/m³) :	1.900	1.890	1.890	1.900
Hilf Density Ratio (%) :	**100.5**	**100.5**	**103.5**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.19/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**11/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227634	227635	227636	227637
Test Number :	72	73	74	75
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	21/11/2016	21/11/2016	21/11/2016	21/11/2016
Date Tested :	21/11/2016	21/11/2016	21/11/2016	21/11/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	IMPORT	IMPORT	IMPORT	IMPORT
Lot Number :	1108	1107	1106	1108
Sample Location :	REFER TO SITE PLAN E 529098 N 6923455 RL 4.08	REFER TO SITE PLAN E 529090 N 6923438 RL 4.13	REFER TO SITE PLAN E 529008 N 6923413 RL 4.00	REFER TO SITE PLAN E 529076 N 6923451 RL 4.32
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	14.8	13.1	14.5	10.7
Hilf MDR Number :	227634	227635	227636	227637
Hilf MDR Method :			AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	87.5	81.5	95	80.5
Field Wet Density (t/m³) :	1.970	1.960	1.950	1.950
Optimum Moisture Content (%) :	16.9	16.1	15.3	13.3
Moisture Variation :	2.1	3.1	0.8	2.7
Peak Converted Wet Density (t/m³) :	1.970	1.900	2.020	1.900
Hilf Density Ratio (%) :	**100.0**	**103.0**	**96.5**	**102.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.20/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**12/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227672	227673	227674	227675
Test Number :	76	77	78	79
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	22/12/2016	22/12/2016	22/12/2016	22/12/2016
Date Tested :	22/12/2016	22/12/2016	22/12/2016	22/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1157	1158	1159	1160
Sample Location :	REFER TO SITE PLAN E 529277 N 6923666 RL 3.2	REFER TO SITE PLAN E 529291 N 6923651 RL 3.0	REFER TO SITE PLAN E 529295 N 6923632 RL 3.3	REFER TO SITE PLAN E 529305 N 6923621 RL 3.4
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	15.0	14.5	14.2	14.5
Hilf MDR Number :	227672	227673	227674	227675
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	85	83	81.5	81
Field Wet Density (t/m³) :	1.940	1.930	1.930	1.910
Optimum Moisture Content (%) :	17.7	17.5	17.5	17.9
Moisture Variation :	2.7	3.1	3.4	3.5
Peak Converted Wet Density (t/m³) :	1.870	1.830	1.860	1.830
Hilf Density Ratio (%) :	**104.0**	**105.5**	**104.0**	**104.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.21/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**12/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227676	227677	227678	227679
Test Number :	80	81	82	83
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	22/12/2016	22/12/2016	22/12/2016	22/12/2016
Date Tested :	22/12/2016	22/12/2016	22/12/2016	22/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1162	1146	1147	1190
Sample Location :	REFER TO SITE PLAN E 529316 N 6923615 RL 3.1	REFER TO SITE PLAN E 529332 N 6923582 RL 3.2	REFER TO SITE PLAN E 529316 N 6923576 RL 3.4	REFER TO SITE PLAN E 529393 N 6923719 RL 3.3
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	7	7	-
Oversize Dry (%) :				
Oversize Density (t/m³) :		2.467	2.363	
Field Moisture Content (%) :	14.4	14.5	15.2	16.7
Hilf MDR Number :	227676	227677	227678	227679
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	81.5	82.5	78.5	89.5
Field Wet Density (t/m³) :	1.930	1.940	1.900	1.910
Optimum Moisture Content (%) :	17.7	17.6	19.4	18.7
Moisture Variation :	3.4	3.2	4.3	2.0
Peak Converted Wet Density (t/m³) :	1.880	1.9*	1.89*	1.870
Hilf Density Ratio (%) :	**102.5**	**102.0**	**100.5**	**102.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.22/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**12/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227680	227681	227682	227683
Test Number :	84	85	86	87
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	22/12/2016	22/12/2016	22/12/2016	22/12/2016
Date Tested :	22/12/2016	22/12/2016	22/12/2016	22/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1191	1192	1196	1194
Sample Location :	REFER TO SITE PLAN E 529404 N 6923738 RL 3.1	REFER TO SITE PLAN E 529413 N 6923755 RL 3.3	REFER TO SITE PLAN E 529418 N 6923769 RL 3.0	REFER TO SITE PLAN E 529422 N 6923780 RL 2.9
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	4	3
Oversize Dry (%) :				
Oversize Density (t/m³) :			2.368	2.420
Field Moisture Content (%) :	16.3	15.3	13.6	13.1
Hilf MDR Number :	227680	227681	227682	227683
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	85	78.5	78	75.5
Field Wet Density (t/m³) :	1.910	1.910	1.930	1.920
Optimum Moisture Content (%) :	19.2	19.5	17.4	17.3
Moisture Variation :	2.9	4.3	3.8	4.3
Peak Converted Wet Density (t/m³) :	1.880	1.860	1.89*	1.85*
Hilf Density Ratio (%) :	**102.0**	**102.5**	**102.0**	**104.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.23/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**12/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227684	227685	227686	227687
Test Number :	88	89	90	91
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	22/12/2016	22/12/2016	22/12/2016	22/12/2016
Date Tested :	22/12/2016	22/12/2016	22/12/2016	22/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1195	1197	1198	1199
Sample Location :	REFER TO SITE PLAN E 529432 N 6923794 RL 3.4	REFER TO SITE PLAN E 529446 N 6923821 RL 3.7	REFER TO SITE PLAN E 529446 N 6923834 RL 3.0	REFER TO SITE PLAN E 529447 N 6923848 RL 2.8
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	6
Oversize Dry (%) :				
Oversize Density (t/m³) :				2.414
Field Moisture Content (%) :	13.6	14.8	13.8	14.2
Hilf MDR Number :	227684	227685	227686	227687
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	83.5	79	76.5	79.5
Field Wet Density (t/m³) :	1.920	1.920	1.920	1.910
Optimum Moisture Content (%) :	16.3	18.7	18.0	17.9
Moisture Variation :	2.8	3.9	4.2	3.7
Peak Converted Wet Density (t/m³) :	1.880	1.880	1.880	1.9*
Hilf Density Ratio (%) :	**102.0**	**102.0**	**102.0**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.24/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**12/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227688	227689	227690	227691
Test Number :	92	93	94	95
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	22/12/2016	22/12/2016	22/12/2016	22/12/2016
Date Tested :	22/12/2016	22/12/2016	22/12/2016	22/12/2016
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1200	1182	1181	1180
Sample Location :	REFER TO SITE PLAN E 529444 N 6923863 RL 3.4	REFER TO SITE PLAN E 529374 N 6923826 RL 3.6	REFER TO SITE PLAN E 529366 N 6923808 RL 3.7	REFER TO SITE PLAN E 529358 N 6923791 RL 3.2
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	1	5	3
Oversize Dry (%) :				
Oversize Density (t/m³) :		2.391	2.444	2.406
Field Moisture Content (%) :	13.6	14.2	15.7	13.4
Hilf MDR Number :	227688	227689	227690	227691
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	82.5	80	75	78
Field Wet Density (t/m³) :	1.920	1.920	1.940	1.910
Optimum Moisture Content (%) :	16.5	17.8	20.9	17.2
Moisture Variation :	2.9	3.6	5.2	3.9
Peak Converted Wet Density (t/m³) :	1.870	1.86*	1.88*	1.89*
Hilf Density Ratio (%) :	**102.5**	**103.0**	**103.5**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.25/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**17/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227712	227713	227714	227715
Test Number :	96	97	98	99
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	10/01/2017	10/01/2017	10/01/2017	10/01/2017
Date Tested :	10/01/2017	10/01/2017	10/01/2017	10/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1236	1107	1106	1022
Sample Location :	REFER TO SITE PLAN E 529087 N 6923509 RL 5.0	REFER TO SITE PLAN E 529100 N 6923444 RL 4.9	REFER TO SITE PLAN E 529106 N 6923422 RL 4.8	REFER TO SITE PLAN E 529159 N 6923322 RL 4.8
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	17.8	17.7	17.7	17.9
Hilf MDR Number :	227712	227713	227714	227715
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	101.5	103.5	103.5	97
Field Wet Density (t/m³) :	2.030	2.020	2.010	2.020
Optimum Moisture Content (%) :	17.6	17.1	17.1	18.5
Moisture Variation :	-0.1	-0.5	-0.5	0.6
Peak Converted Wet Density (t/m³) :	2.070	2.070	2.070	2.000
Hilf Density Ratio (%) :	**98.0**	**97.5**	**97.5**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.26/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**18/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**		**Page 1 of 1**

Sample Number :	227767	227768	227769	227770
Test Number :	100	101	102	103
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	11/01/2017	11/01/2017	11/01/2017	11/01/2017
Date Tested :	11/01/2017	11/01/2017	11/01/2017	11/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1182	1181	1179	1178
Sample Location :	REFER TO SITE PLAN E 529376 N 6923824 RL 4.3	REFER TO SITE PLAN E 529368 N 6923809 RL 4.0	REFER TO SITE PLAN E 529358 N 6923795 RL 4.1	REFER TO SITE PLAN E 529327 N 6923755 RL 3.8
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	15.9	16.2	16.3	16.4
Hilf MDR Number :	227767	227768	227769	227770
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	92.5	86	95	92.5
Field Wet Density (t/m³) :	1.910	1.910	1.900	1.860
Optimum Moisture Content (%) :	17.2	18.8	17.2	17.8
Moisture Variation :	1.3	2.7	0.9	1.4
Peak Converted Wet Density (t/m³) :	1.960	1.910	1.960	1.940
Hilf Density Ratio (%) :	**97.5**	**100.0**	**97.0**	**95.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.27/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**24/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227944	227945	227946	227947
Test Number :	104	105	106	107
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	16/01/2017	16/01/2017	16/01/2017	16/01/2017
Date Tested :	16/01/2017	16/01/2017	16/01/2017	16/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1202	1201	1201	1201
Sample Location :	REFER TO SITE PLAN E 529429 N 6923896 RL 3.02	REFER TO SITE PLAN E 529430 N 6923877 RL 3.40	REFER TO SITE PLAN E 529440 N 6923896 RL 3.47	REFER TO SITE PLAN E 529448 N 6923881 RL 3.75
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	15.1	15.2	15.2	14.5
Hilf MDR Number :	227944	227945	227946	227947
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	101.5	107.5	103.5	107
Field Wet Density (t/m³) :	2.020	2.050	2.010	2.010
Optimum Moisture Content (%) :	14.9	14.1	14.7	13.5
Moisture Variation :	-0.1	-0.9	-0.4	-0.8
Peak Converted Wet Density (t/m³) :	2.080	2.110	2.120	2.080
Hilf Density Ratio (%) :	**97.0**	**97.5**	**95.0**	**97.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.28/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**24/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	227948	227949	227950	227951
Test Number :	108	109	110	111
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	16/01/2017	16/01/2017	16/01/2017	16/01/2017
Date Tested :	16/01/2017	16/01/2017	16/01/2017	16/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1200	1199	1198	1197
Sample Location :	REFER TO SITE PLAN E 529431 N 6923862 RL 2.59	REFER TO SITE PLAN E 529429 N 6923848 RL 3.06	REFER TO SITE PLAN E 529431 N 6923831 RL 3.10	REFER TO SITE PLAN E 529433 N 6923822 RL 3.92
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	14.3	14.7	15.2	14.3
Hilf MDR Number :	227948	227949	227950	227951
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	107	106.5	106	107.5
Field Wet Density (t/m³) :	2.020	2.020	2.000	2.020
Optimum Moisture Content (%) :	13.4	13.8	14.4	13.3
Moisture Variation :	-0.8	-0.8	-0.7	-0.9
Peak Converted Wet Density (t/m³) :	2.110	2.120	2.110	2.100
Hilf Density Ratio (%) :	**95.5**	**95.0**	**95.0**	**96.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.29/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**25/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228163	228164	228165	228166
Test Number :	115	116	117	118
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	19/01/2017	19/01/2017	19/01/2017	19/01/2017
Date Tested :	19/01/2017	19/01/2017	19/01/2017	19/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1184	1185	1186	1187
Sample Location :	REFER TO SITE PLAN E 529399 N 6923811 FINSIHED LEVEL	REFER TO SITE PLAN E 529396 N 6923798 FINSIHED LEVEL	REFER TO SITE PLAN E 529375 N 6923794 FINSIHED LEVEL	REFER TO SITE PLAN E 529382 N 6923774 FINSIHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	8.8	9.8	12.1	12.0
Hilf MDR Number :	228163	228164	228165	228166
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	70	84	81.5	89
Field Wet Density (t/m³) :	1.980	1.990	1.970	1.960
Optimum Moisture Content (%) :	12.6	11.7	14.8	13.5
Moisture Variation :	3.8	1.9	2.7	1.5
Peak Converted Wet Density (t/m³) :	2.040	2.010	1.980	1.990
Hilf Density Ratio (%) :	**96.5**	**99.0**	**99.0**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.30/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**25/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228167	228168	228169	228170
Test Number :	119	120	121	122
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	19/01/2017	19/01/2017	19/01/2017	19/01/2017
Date Tested :	19/01/2017	19/01/2017	19/01/2017	19/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1188	1189	1177	1178
Sample Location :	REFER TO SITE PLAN E 529376 N 6923762 FINSIHED LEVEL	REFER TO SITE PLAN E 529364 N 6923747 FINSIHED LEVEL	REFER TO SITE PLAN E 529348 N 6923752 FINSIHED LEVEL	REFER TO SITE PLAN E 529329 N 6923753 FINSIHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	9.3	8.9	8.8	8.8
Hilf MDR Number :	228167	228168	228169	228170
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	84	67	75.5	80.5
Field Wet Density (t/m³) :	1.980	2.000	2.000	1.980
Optimum Moisture Content (%) :	11.1	13.3	11.7	10.9
Moisture Variation :	1.8	4.4	2.9	2.3
Peak Converted Wet Density (t/m³) :	2.020	1.980	2.060	2.020
Hilf Density Ratio (%) :	**98.0**	**101.0**	**97.5**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.31/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**25/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228171	228172		
Test Number :	123	124		
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4		
Date Sampled :	19/01/2017	19/01/2017		
Date Tested :	19/01/2017	19/01/2017		
Material Type :	GENERAL FILL	GENERAL FILL		
Material Source :	ONSITE	ONSITE		
Lot Number :	1179	1176		
Sample Location :	REFER TO SITE PLAN E 529346 N 6923780 FINSIHED LEVEL	REFER TO SITE PLAN E 529323 N 6923720 FINSIHED LEVEL		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	12.3	11.2		
Hilf MDR Number :	228171	228172		
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1		
Moisture Ratio (%) :	77	84.5		
Field Wet Density (t/m³) :	1.990	2.000		
Optimum Moisture Content (%) :	16.0	13.3		
Moisture Variation :	3.7	2.1		
Peak Converted Wet Density (t/m³) :	1.970	2.040		
Hilf Density Ratio (%) :	**101.0**	**97.5**		
Minimum Specification :	95	95		
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.32/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**25/01/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228122	228123	228124	
Test Number :	112	113	114	
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	
Date Sampled :	18/01/2017	18/01/2017	18/01/2017	
Date Tested :	18/01/2017	18/01/2017	18/01/2017	
Material Type :	GENERAL FILL	GENERAL FILL	TRENCH BACKFILL	
Material Source :	ONSITE	ONSITE	ONSITE	
Lot Number :	1202	1183	1183	
Sample Location :	REFER TO SITE PLAN E 529411 N 6923884 RL 4.42	REFER TO SITE PLAN E 529402 N 6923827 RL 4.59	REFER TO SITE PLAN E 529400 N 6923843 RL 4.52	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	15.6	16.7	16.1	
Hilf MDR Number :	228122	228123	228124	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	
Moisture Ratio (%) :	103	103	103	
Field Wet Density (t/m³) :	2.010	2.010	2.000	
Optimum Moisture Content (%) :	15.2	16.2	15.6	
Moisture Variation :	-0.4	-0.4	-0.4	
Peak Converted Wet Density (t/m³) :	2.070	2.080	2.090	
Hilf Density Ratio (%) :	**97.5**	**96.5**	**95.5**	
Minimum Specification :	95	95	95	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.33/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**1/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228316	228317	228318	228319
Test Number :	125	126	127	128
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	20/01/2017	20/01/2017	20/01/2017	20/01/2017
Date Tested :	20/01/2017	20/01/2017	20/01/2017	20/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1183	1182	1181	1180
Sample Location :	REFER TO SITE PLAN E 529393 N 6923833 FINISHED LEVEL	REFER TO SITE PLAN E 529376 N 6923821 FINISHED LEVEL	REFER TO SITE PLAN E 529367 N 6923807 FINISHED LEVEL	REFER TO SITE PLAN E 529360 N 6923789 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	15.6	15.1	14.9	14.5
Hilf MDR Number :	228316	228317	228318	228319
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	82.5	77	75.5	66.5
Field Wet Density (t/m³) :	1.940	1.970	1.970	1.910
Optimum Moisture Content (%) :	18.9	19.6	19.7	21.8
Moisture Variation :	3.3	4.6	4.9	7.4
Peak Converted Wet Density (t/m³) :	1.840	1.840	1.830	1.780
Hilf Density Ratio (%) :	**105.5**	**107.5**	**107.5**	**107.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.34/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**1/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228320	228321	228322	228323
Test Number :	129	130	131	132
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	20/01/2017	20/01/2017	20/01/2017	20/01/2017
Date Tested :	20/01/2017	20/01/2017	20/01/2017	20/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1163	1164	1200	1201
Sample Location :	REFER TO SITE PLAN E 529310 N 6923708 FINISHED LEVEL	REFER TO SITE PLAN E 529295 N 6923697 FINISHED LEVEL	REFER TO SITE PLAN E 529438 N 6923863 FINISHED LEVEL	REFER TO SITE PLAN E 529440 N 6923886 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	14.7	14.2	15.3	15.4
Hilf MDR Number :	228320	228321	228322	228323
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	81	77	70.5	72.5
Field Wet Density (t/m³) :	1.980	1.990	1.970	1.990
Optimum Moisture Content (%) :	18.1	18.4	21.6	21.3
Moisture Variation :	3.6	4.4	6.3	5.9
Peak Converted Wet Density (t/m³) :	1.810	1.800	1.810	1.820
Hilf Density Ratio (%) :	**109.5**	**110.5**	**109.0**	**109.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.35/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**1/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228436	228437	228438	228439
Test Number :	133	134	135	136
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	23/01/2017	23/01/2017	23/01/2017	23/01/2017
Date Tested :	23/01/2017	23/01/2017	23/01/2017	23/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1190	1191	1192	1193
Sample Location :	REFER TO SITE PLAN E 529402 N 6923715 FINISHED LEVEL	REFER TO SITE PLAN E 529411 N 6923735 FINISHED LEVEL	REFER TO SITE PLAN E 529422 N 6923749 FINISHED LEVEL	REFER TO SITE PLAN E 529414 N 6923773 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	9.8	9.6	10.9	10.6
Hilf MDR Number :	228436	228437	228438	228439
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	83	83.5	72	86.5
Field Wet Density (t/m³) :	2.020	2.010	2.030	2.000
Optimum Moisture Content (%) :	11.8	11.5	15.1	12.3
Moisture Variation :	2.0	1.9	4.2	1.7
Peak Converted Wet Density (t/m³) :	2.060	2.020	1.990	2.050
Hilf Density Ratio (%) :	**98.5**	**99.5**	**102.0**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.36/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**1/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228545	228546	228547	228548
Test Number :	137	138	139	140
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	24/01/2017	24/01/2017	24/01/2017	24/01/2017
Date Tested :	24/01/2017	24/01/2017	24/01/2017	24/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1165 & 1166	1174 & 1175	1172 & 1173	1167
Sample Location :	REFER TO SITE PLAN E 529317 N 6923680 FINISHED LEVEL	REFER TO SITE PLAN E 529340 N 6923706 FINISHED LEVEL	REFER TO SITE PLAN E 529369 N 6923689 FINISHED LEVEL	REFER TO SITE PLAN E 529340 N 6923672 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	14.1	12.4	15.9	17.1
Hilf MDR Number :	228545	228546	228547	228548
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	91.5	82.5	87	87.5
Field Wet Density (t/m³) :	1.960	1.970	2.000	1.990
Optimum Moisture Content (%) :	15.4	15.1	18.3	19.6
Moisture Variation :	1.3	2.8	2.3	2.4
Peak Converted Wet Density (t/m³) :	1.890	1.870	1.920	1.940
Hilf Density Ratio (%) :	**104.0**	**105.0**	**104.5**	**103.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16/228.37/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228770	228771	228772	228773
Test Number :	141	142	143	144
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	30/01/2017	30/01/2017	30/01/2017	30/01/2017
Date Tested :	30/01/2017	30/01/2017	30/01/2017	30/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1195	1196	1197	1198
Sample Location :	REFER TO SITE PLAN E 529439 N 6923792 FINISHED LEVEL	REFER TO SITE PLAN E 529447 N 6923806 FINISHED LEVEL	REFER TO SITE PLAN E 5294438 N 6923820 FINISHED LEVEL	REFER TO SITE PLAN E 5294452 N 6923833 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	15.8	15.9	15.0	15.3
Hilf MDR Number :	228770	228771	228772	228773
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	103	101.5	101.5	102.5
Field Wet Density (t/m³) :	2.080	2.060	2.030	1.990
Optimum Moisture Content (%) :	15.3	15.7	14.8	14.9
Moisture Variation :	-0.4	-0.1	-0.1	-0.2
Peak Converted Wet Density (t/m³) :	2.110	2.120	2.120	2.090
Hilf Density Ratio (%) :	**98.5**	**97.5**	**95.5**	**95.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16/228.38/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228774			
Test Number :	145			
Sampling Method :	AS1289.1.2.1 CL. 6.4			
Date Sampled :	30/01/2017			
Date Tested :	30/01/2017			
Material Type :	GENERAL FILL			
Material Source :	ONSITE			
Lot Number :	1199			
Sample Location :	REFER TO SITE PLAN E 5294440 N 6923846 FINISHED LEVEL			
Test Depth (mm) :	150			
Layer Depth (mm) :	-			
Maximum Size (mm) :	19			
Oversize Wet (%) :	-			
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	14.8			
Hilf MDR Number :	228774			
Hilf MDR Method :	AS1289.5.7.1			
Compactive Effort :	Standard			
Field Density Method :	AS1289.5.8.1 & 5.7.1			
Moisture Method :	AS 1289.2.1.1			
Moisture Ratio (%) :	89.5			
Field Wet Density (t/m³) :	1.980			
Optimum Moisture Content (%) :	16.6			
Moisture Variation :	1.7			
Peak Converted Wet Density (t/m³) :	2.050			
Hilf Density Ratio (%) :	**96.5**			
Minimum Specification :	95			
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.39/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228861	228862	228863	228864
Test Number :	147	148	149	150
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	31/01/2017	31/01/2017	31/01/2017	31/01/2017
Date Tested :	31/01/2017	31/01/2017	31/01/2017	31/01/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1234	1233	1232	1231
Sample Location :	REFER TO SITE PLAN E 529104 N 6923531 FINISHED LEVEL	REFER TO SITE PLAN E 529109 N 6923547 FINISHED LEVEL	REFER TO SITE PLAN E 529112 N 6923562 FINISHED LEVEL	REFER TO SITE PLAN E 529116 N 6923573 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	15.7	16.2	15.1	14.9
Hilf MDR Number :	228861	228862	228863	228864
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	93	96.5	93.5	106
Field Wet Density (t/m³) :	2.070	2.060	2.060	2.070
Optimum Moisture Content (%) :	16.9	16.8	16.2	14.1
Moisture Variation :	1.1	0.6	1.0	-0.7
Peak Converted Wet Density (t/m³) :	2.030	2.030	2.010	2.040
Hilf Density Ratio (%) :	**102.0**	**101.5**	**102.0**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.40/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228865	228866		
Test Number :	151	152		
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4		
Date Sampled :	31/01/2017	31/01/2017		
Date Tested :	31/01/2017	31/01/2017		
Material Type :	GENERAL FILL	GENERAL FILL		
Material Source :	ONSITE	ONSITE		
Lot Number :	1230	1229		
Sample Location :	REFER TO SITE PLAN E 529126 N 6923581 FINISHED LEVEL	REFER TO SITE PLAN E 529128 N 6923599 FINISHED LEVEL		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	16.7	16.7		
Hilf MDR Number :	228865	228866		
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1		
Moisture Ratio (%) :	101.5	103.5		
Field Wet Density (t/m³) :	2.080	2.060		
Optimum Moisture Content (%) :	16.5	16.1		
Moisture Variation :	-0.1	-0.5		
Peak Converted Wet Density (t/m³) :	2.020	2.040		
Hilf Density Ratio (%) :	**103.0**	**101.5**		
Minimum Specification :	95	95		
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.41/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228912	228913	228914	228915
Test Number :	153	154	155	156
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Date Tested :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1235	1228	1227	1226
Sample Location :	REFER TO SITE PLAN E 529093 N 6923520 FINISHED LEVEL	REFER TO SITE PLAN E 529144 N 6923606 FINISHED LEVEL	REFER TO SITE PLAN E 529159 N 6923610 FINISHED LEVEL	REFER TO SITE PLAN E 529155 N 6923632 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	6	5	-
Oversize Dry (%) :				
Oversize Density (t/m³) :		2.442	2.402	
Field Moisture Content (%) :	14.8	13.7	14.2	15.7
Hilf MDR Number :	228912	228913	228914	228915
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	91.5	88.5	86	93
Field Wet Density (t/m³) :	2.000	1.990	1.940	1.970
Optimum Moisture Content (%) :	16.2	15.4	16.5	16.9
Moisture Variation :	1.4	1.7	2.3	1.3
Peak Converted Wet Density (t/m³) :	1.990	2*	2.04*	1.990
Hilf Density Ratio (%) :	**100.5**	**99.5**	**95.5**	**99.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.42/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	228916	228917	228918	228919
Test Number :	157	158	159	160
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Date Tested :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1225	1224	1223	1222
Sample Location :	REFER TO SITE PLAN E 529174 N 6923640 FINISHED LEVEL	REFER TO SITE PLAN E 529188 N 6923656 FINISHED LEVEL	REFER TO SITE PLAN E 529200 N 6923667 FINISHED LEVEL	REFER TO SITE PLAN E 529211 N 6923674 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	14.6	15.3	15.1	15.3
Hilf MDR Number :	228916	228917	228918	228919
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	87	91.5	87	87.5
Field Wet Density (t/m³) :	1.970	1.960	1.960	1.960
Optimum Moisture Content (%) :	16.8	16.7	17.4	17.5
Moisture Variation :	2.2	1.4	2.3	2.2
Peak Converted Wet Density (t/m³) :	2.010	1.990	2.000	2.000
Hilf Density Ratio (%) :	**98.0**	**98.5**	**98.0**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.43/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**		**Page 1 of 1**

Sample Number :	228920	228921		
Test Number :	161	162		
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4		
Date Sampled :	1/02/2017	1/02/2017		
Date Tested :	1/02/2017	1/02/2017		
Material Type :	GENERAL FILL	GENERAL FILL		
Material Source :	ONSITE	ONSITE		
Lot Number :	1221	1220		
Sample Location :	REFER TO SITE PLAN E 529226 N 6923681 FINISHED LEVEL	REFER TO SITE PLAN E 529234 N 6923694 FINISHED LEVEL		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	15.4	15.2		
Hilf MDR Number :	228920	228921		
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1		
Moisture Ratio (%) :	87	94		
Field Wet Density (t/m³) :	1.960	1.980		
Optimum Moisture Content (%) :	17.7	16.2		
Moisture Variation :	2.3	1.0		
Peak Converted Wet Density (t/m³) :	2.010	2.000		
Hilf Density Ratio (%) :	**97.5**	**99.0**		
Minimum Specification :	95	95		
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.44/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	229001	229002	229003	229004
Test Number :	163	164	165	166
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	2/02/2017	2/02/2017	2/02/2017	2/02/2017
Date Tested :	2/02/2017	2/02/2017	2/02/2017	2/02/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1106	1107	1108	1109
Sample Location :	REFER TO SITE PLAN E 529117 N 6923423 FINISHED LEVEL	REFER TO SITE PLAN E 529101 N 6923445 FINISHED LEVEL	REFER TO SITE PLAN E 529089 N 6923467 FINISHED LEVEL	REFER TO SITE PLAN E 529106 N 6923483 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	10.3	10.2	15.3	14.0
Hilf MDR Number :	229001	229002	229003	229004
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	84	83	86.5	86.5
Field Wet Density (t/m³) :	1.960	1.970	1.960	1.960
Optimum Moisture Content (%) :	12.3	12.3	17.7	16.2
Moisture Variation :	2.1	2.2	2.4	2.2
Peak Converted Wet Density (t/m³) :	1.940	1.960	1.960	1.980
Hilf Density Ratio (%) :	**101.0**	**101.0**	**100.5**	**99.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.45/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	229005	229006	229007	229008
Test Number :	167	168	169	170
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	2/02/2017	2/02/2017	2/02/2017	2/02/2017
Date Tested :	2/02/2017	2/02/2017	2/02/2017	2/02/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1110	1111	1112	1113
Sample Location :	REFER TO SITE PLAN E 529121 N 6923468 FINISHED LEVEL	REFER TO SITE PLAN E 529118 N 6923457 FINISHED LEVEL	REFER TO SITE PLAN E 529135 N 6923452 FINISHED LEVEL	REFER TO SITE PLAN E 529136 N 6923431 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	12.8	15.2	15.9	16.1
Hilf MDR Number :	229005	229006	229007	229008
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	86.5	87	87.5	87
Field Wet Density (t/m³) :	1.970	1.950	1.970	1.940
Optimum Moisture Content (%) :	14.8	17.5	18.2	18.5
Moisture Variation :	2.0	2.3	2.3	2.3
Peak Converted Wet Density (t/m³) :	1.950	1.970	1.950	1.950
Hilf Density Ratio (%) :	**101.0**	**99.0**	**101.0**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.46/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	229107	229108	229109	229110
Test Number :	171	172	173	174
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	3/02/2017	3/02/2017	3/02/2017	3/02/2017
Date Tested :	3/02/2017	3/02/2017	3/02/2017	3/02/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1239	1238	1237	1236
Sample Location :	REFER TO SITE PLAN E 529054 N 6923489 FINISHED LEVEL	REFER TO SITE PLAN E 529061 N 6923502 FINISHED LEVEL	REFER TO SITE PLAN E 529070 N 6923512 FINISHED LEVEL	REFER TO SITE PLAN E 529081 N 6923518 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	5	-	4
Oversize Dry (%) :				
Oversize Density (t/m³) :		2.457		2.398
Field Moisture Content (%) :	15.6	15.5	16.6	15.8
Hilf MDR Number :	229107	229108	229109	229110
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	87.5	91.5	94.5	93
Field Wet Density (t/m³) :	1.990	1.980	1.990	1.950
Optimum Moisture Content (%) :	17.8	16.9	17.5	17.0
Moisture Variation :	2.2	1.4	0.9	1.3
Peak Converted Wet Density (t/m³) :	1.940	2*	1.960	1.99*
Hilf Density Ratio (%) :	**102.5**	**99.0**	**101.5**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.47/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	229111	229112	229113	229114
Test Number :	175	176	177	178
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	3/02/2017	3/02/2017	3/02/2017	3/02/2017
Date Tested :	3/02/2017	3/02/2017	3/02/2017	3/02/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1235	1146 & 1147	1081	1080
Sample Location :	REFER TO SITE PLAN E 529097 N 6923518 FINISHED LEVEL	REFER TO SITE PLAN E 529329 N 6923574 FINISHED LEVEL	REFER TO SITE PLAN E 529366 N 6923592 FINISHED LEVEL	REFER TO SITE PLAN E 529382 N 6923604 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	7	8	4	-
Oversize Dry (%) :				
Oversize Density (t/m³) :	2.419	2.466	2.423	
Field Moisture Content (%) :	15.0	16.5	15.7	17.1
Hilf MDR Number :	229111	229112	229113	229114
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	96	91.5	92.5	101
Field Wet Density (t/m³) :	2.020	2.040	2.010	1.990
Optimum Moisture Content (%) :	15.6	18.0	17.0	16.9
Moisture Variation :	0.6	1.5	1.3	0.0
Peak Converted Wet Density (t/m³) :	1.99*	1.98*	1.97*	1.950
Hilf Density Ratio (%) :	**101.5**	**102.5**	**101.5**	**102.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.48/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**9/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	229115	229116		
Test Number :	179	180		
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4		
Date Sampled :	3/02/2017	3/02/2017		
Date Tested :	3/02/2017	3/02/2017		
Material Type :	GENERAL FILL	GENERAL FILL		
Material Source :	ONSITE	ONSITE		
Lot Number :	1079	1078		
Sample Location :	REFER TO SITE PLAN E 529401 N 6923620 FINISHED LEVEL	REFER TO SITE PLAN E 529408 N 6923602 FINISHED LEVEL		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	14.5	15.5		
Hilf MDR Number :	229115	229116		
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1		
Moisture Ratio (%) :	96.5	90		
Field Wet Density (t/m³) :	2.030	2.010		
Optimum Moisture Content (%) :	15.0	17.2		
Moisture Variation :	0.5	1.7		
Peak Converted Wet Density (t/m³) :	1.960	1.950		
Hilf Density Ratio (%) :	**103.5**	**103.0**		
Minimum Specification :	95	95		
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.49/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**21/02/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	229590	229591	229592	
Test Number :	181	182	183	
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	
Date Sampled :	14/02/2017	14/02/2017	14/02/2017	
Date Tested :	14/02/2017	14/02/2017	14/02/2017	
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	
Material Source :	ONSITE	ONSITE	ONSITE	
Lot Number :				
Sample Location :	CLUB HOUSE REFER TO SITE PLAN E 529464 N 6923547 RL 1.99	CLUB HOUSE REFER TO SITE PLAN E 529455 N 6923549 RL 2.51	CLUB HOUSE REFER TO SITE PLAN E 529453 N 6923528 RL 3.05	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	17.2	15.7	16.0	
Hilf MDR Number :	229590	229591	229592	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	
Moisture Ratio (%) :	101.5	101.5	102	
Field Wet Density (t/m³) :	2.020	2.070	2.020	
Optimum Moisture Content (%) :	16.9	15.5	15.7	
Moisture Variation :	-0.1	-0.1	-0.2	
Peak Converted Wet Density (t/m³) :	2.050	2.060	2.060	
Hilf Density Ratio (%) :	**98.0**	**100.5**	**98.0**	
Minimum Specification :	98	98	98	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.50/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**6/03/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	230161	230162	230163	
Test Number :	184	185	186	
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	
Date Sampled :	22/02/2017	22/02/2017	22/02/2017	
Date Tested :	22/02/2017	22/02/2017	22/02/2017	
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	
Material Source :	ONSITE	ONSITE	ONSITE	
Lot Number :				
Sample Location :	CLUB HOUSE - REFER TO SITE PLAN E 529446 N 6923537 RL 3.10	CLUB HOUSE - REFER TO SITE PLAN E 529447 N 6923533 RL 2.95	CLUB HOUSE - REFER TO SITE PLAN E 529457 N 6923544 RL 3.20	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	13.9	17.4	19.7	
Hilf MDR Number :	230161	230162	230163	
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	
Moisture Ratio (%) :	82	79	81.5	
Field Wet Density (t/m³) :	1.950	1.940	1.960	
Optimum Moisture Content (%) :	16.9	22.0	24.1	
Moisture Variation :	2.9	4.5	4.2	
Peak Converted Wet Density (t/m³) :	1.970	1.880	1.920	
Hilf Density Ratio (%) :	**98.5**	**103.5**	**102.0**	
Minimum Specification :	98	98	98	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.51/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/04/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	231317	231318	231319	231320
Test Number :	187	188	189	190
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	27/03/2017	27/03/2017	27/03/2017	27/03/2017
Date Tested :	27/03/2017	27/03/2017	27/03/2017	27/03/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1105	1104	1103	1054
Sample Location :	REFER TO SITE PLAN E 529123 N 6923381 FINISHED LEVEL	REFER TO SITE PLAN E 529140 N 6923383 FINISHED LEVEL	REFER TO SITE PLAN E 529146 N 6923397 FINISHED LEVEL	REFER TO SITE PLAN E 529137 N 6923355 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	13.5	14.4	15.1	14.1
Hilf MDR Number :	231317	231318	231319	231320
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	107.5	96	100.5	97
Field Wet Density (t/m³) :	2.030	2.020	2.090	2.050
Optimum Moisture Content (%) :	12.6	15.0	15.0	14.6
Moisture Variation :	-0.8	0.6	0.0	0.5
Peak Converted Wet Density (t/m³) :	2.140	2.080	2.170	2.080
Hilf Density Ratio (%) :	**95.0**	**97.5**	**96.5**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.52/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/04/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**		**Page 1 of 1**

Sample Number :	231321	231322	231323	231324
Test Number :	191	192	193	194
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	27/03/2017	27/03/2017	27/03/2017	27/03/2017
Date Tested :	27/03/2017	27/03/2017	27/03/2017	27/03/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1055	1056	1022	1021
Sample Location :	REFER TO SITE PLAN E 529155 N 6923367 FINISHED LEVEL	REFER TO SITE PLAN E 529166 N 6923366 FINISHED LEVEL	REFER TO SITE PLAN E 529163 N 6923323 FINISHED LEVEL	REFER TO SITE PLAN E 529162 N 6923308 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	13.8	14.2	14.3	14.0
Hilf MDR Number :	231321	231322	231323	231324
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	96.5	104.5	92	106
Field Wet Density (t/m³) :	2.030	2.020	2.030	2.030
Optimum Moisture Content (%) :	14.3	13.6	15.5	13.2
Moisture Variation :	0.5	-0.5	1.2	-0.7
Peak Converted Wet Density (t/m³) :	2.110	2.130	2.100	2.130
Hilf Density Ratio (%) :	**96.5**	**95.0**	**97.0**	**95.0**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.53/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/04/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	231325	231326	231327	231328
Test Number :	195	196	197	198
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	27/03/2017	27/03/2017	27/03/2017	27/03/2017
Date Tested :	27/03/2017	27/03/2017	27/03/2017	27/03/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1023	1020	1019	1018
Sample Location :	REFER TO SITE PLAN E 529177 N 6923330 FINISHED LEVEL	REFER TO SITE PLAN E 529170 N 6923298 FINISHED LEVEL	REFER TO SITE PLAN E 529176 N 6923287 FINISHED LEVEL	REFER TO SITE PLAN E 529180 N 6923274 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	14.3	14.3	13.5	16.2
Hilf MDR Number :	231325	231326	231327	231328
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	107	106.5	88.5	90.5
Field Wet Density (t/m³) :	2.020	2.020	2.020	2.040
Optimum Moisture Content (%) :	13.4	13.4	15.2	17.9
Moisture Variation :	-0.8	-0.8	1.7	1.6
Peak Converted Wet Density (t/m³) :	2.110	2.120	2.030	2.050
Hilf Density Ratio (%) :	**95.5**	**95.0**	**99.5**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.54/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/04/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	231329	231330	231331	231332
Test Number :	199	200	201	202
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	27/03/2017	27/03/2017	27/03/2017	27/03/2017
Date Tested :	27/03/2017	27/03/2017	27/03/2017	27/03/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1017	1044	1045	1046
Sample Location :	REFER TO SITE PLAN E 529179 N 6923261 FINISHED LEVEL	REFER TO SITE PLAN E 529318 N 6923373 FINISHED LEVEL	REFER TO SITE PLAN E 529319 N 6923359 FINISHED LEVEL	REFER TO SITE PLAN E 529320 N 6923342 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	15.3	15.5	14.3	13.8
Hilf MDR Number :	231329	231330	231331	231332
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	102	89	106.5	101.5
Field Wet Density (t/m³) :	2.040	2.020	2.080	2.020
Optimum Moisture Content (%) :	15.0	17.4	13.4	13.6
Moisture Variation :	-0.2	1.8	-0.8	-0.1
Peak Converted Wet Density (t/m³) :	2.070	2.050	2.150	2.090
Hilf Density Ratio (%) :	**98.5**	**98.5**	**97.0**	**96.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.55/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/04/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	231333	231334	231335	231336
Test Number :	203	204	205	206
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	27/03/2017	27/03/2017	27/03/2017	27/03/2017
Date Tested :	27/03/2017	27/03/2017	27/03/2017	27/03/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1047	1048	1049	1050
Sample Location :	REFER TO SITE PLAN E 529329 N 6923327 FINISHED LEVEL	REFER TO SITE PLAN E 529351 N 6923339 FINISHED LEVEL	REFER TO SITE PLAN E 529348 N 6923356 FINISHED LEVEL	REFER TO SITE PLAN E 529335 N 6923367 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :				
Field Moisture Content (%) :	14.5	14.9	14.9	16.5
Hilf MDR Number :	231333	231334	231335	231336
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	98.5	99.5	93	100
Field Wet Density (t/m³) :	2.030	2.020	2.010	2.020
Optimum Moisture Content (%) :	14.7	15.0	16.0	16.5
Moisture Variation :	0.2	0.1	1.1	0.0
Peak Converted Wet Density (t/m³) :	2.050	2.050	2.070	2.070
Hilf Density Ratio (%) :	**99.0**	**98.5**	**97.0**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.56/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/04/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	231367	231368	231369	231370
Test Number :	207	208	209	210
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	28/03/2017	28/03/2017	28/03/2017	28/03/2017
Date Tested :	28/03/2017	28/03/2017	28/03/2017	28/03/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1051	1052	1070	1071
Sample Location :	REFER TO SITE PLAN E 529334 N 6923385 FINISHED LEVEL	REFER TO SITE PLAN E 529335 N 6923404 FINISHED LEVEL	REFER TO SITE PLAN E 529352 N 6923485 FINISHED LEVEL	REFER TO SITE PLAN E 529361 N 6923494 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	4	-	-	4
Oversize Dry (%) :				
Oversize Density (t/m³) :	2.425			2.412
Field Moisture Content (%) :	12.7	13.1	12.3	13.0
Hilf MDR Number :	231367	231368	231369	231370
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	88.5	91	89.5	87
Field Wet Density (t/m³) :	2.040	2.050	2.020	2.050
Optimum Moisture Content (%) :	14.4	14.4	13.8	14.9
Moisture Variation :	1.7	1.2	1.5	1.9
Peak Converted Wet Density (t/m³) :	2.08*	2.080	2.090	2.08*
Hilf Density Ratio (%) :	**98.0**	**98.5**	**96.5**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.57/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/04/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	231371	231372	231373	231374
Test Number :	211	212	213	214
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	28/03/2017	28/03/2017	28/03/2017	28/03/2017
Date Tested :	28/03/2017	28/03/2017	28/03/2017	28/03/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1072	1073	1074	1075
Sample Location :	REFER TO SITE PLAN E 529368 N 6923512 FINISHED LEVEL	REFER TO SITE PLAN E 529379 N 6923523 FINISHED LEVEL	REFER TO SITE PLAN E 529392 N 6923539 FINISHED LEVEL	REFER TO SITE PLAN E 529401 N 6923556 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	5	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :		2.407		
Field Moisture Content (%) :	13.1	11.3	13.2	13.0
Hilf MDR Number :	231371	231372	231373	231374
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	88	86.5	88	88.5
Field Wet Density (t/m³) :	2.020	2.030	2.010	2.040
Optimum Moisture Content (%) :	14.9	13.1	15.0	14.7
Moisture Variation :	1.8	1.8	1.8	1.7
Peak Converted Wet Density (t/m³) :	2.070	2.09*	2.080	2.080
Hilf Density Ratio (%) :	**98.0**	**97.0**	**96.5**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.58/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/04/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	231375	231376	231377	231378
Test Number :	215	216	217	218
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	28/03/2017	28/03/2017	28/03/2017	28/03/2017
Date Tested :	28/03/2017	28/03/2017	28/03/2017	28/03/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1076	1077	1087 & 1088	1085
Sample Location :	REFER TO SITE PLAN E 529409 N 6923572 FINISHED LEVEL	REFER TO SITE PLAN E 529413 N 6923589 FINISHED LEVEL	REFER TO SITE PLAN E 529336 N 6923521 FINISHED LEVEL	REFER TO SITE PLAN E 529351 N 6923537 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	7	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :		2.417		
Field Moisture Content (%) :	12.4	12.3	12.6	12.2
Hilf MDR Number :	231375	231376	231377	231378
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	89	91	88.5	89
Field Wet Density (t/m³) :	2.010	2.020	2.010	2.020
Optimum Moisture Content (%) :	13.9	13.5	14.2	13.7
Moisture Variation :	1.6	1.2	1.6	1.5
Peak Converted Wet Density (t/m³) :	2.090	2.1*	2.080	2.090
Hilf Density Ratio (%) :	**96.5**	**96.0**	**96.5**	**96.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.59/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/04/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	231379	231380	231381	231382
Test Number :	219	220	221	222
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	28/03/2017	28/03/2017	28/03/2017	28/03/2017
Date Tested :	28/03/2017	28/03/2017	28/03/2017	28/03/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1084	1083	1082	1154
Sample Location :	REFER TO SITE PLAN E 529361 N 6923549 FINISHED LEVEL	REFER TO SITE PLAN E 529365 N 6923563 FINISHED LEVEL	REFER TO SITE PLAN E 529379 N 6923576 FINISHED LEVEL	REFER TO SITE PLAN E 529271 N 6923634 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	5	-	-	6
Oversize Dry (%) :				
Oversize Density (t/m³) :	2.422			2.395
Field Moisture Content (%) :	12.3	12.4	11.2	11.0
Hilf MDR Number :	231379	231380	231381	231382
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	87.5	89	87	87
Field Wet Density (t/m³) :	2.010	2.030	2.020	2.020
Optimum Moisture Content (%) :	14.0	13.9	12.9	12.7
Moisture Variation :	1.7	1.5	1.7	1.7
Peak Converted Wet Density (t/m³) :	2.1*	2.100	2.080	2.09*
Hilf Density Ratio (%) :	**96.0**	**96.5**	**97.0**	**96.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 1, 5 Brendan Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**GOLDING CONTRACTORS**	Report Number:	**GL16-228.60/1**
Address :	**Po Box 65, Arundel BC, QLD, 4214**	Report Date :	**3/04/2017**
Project Name :	**GAINSBOROUGH GREENS - PRECINCT 7.2**	Order Number :	
Project Number :	**GL16/228**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**GAINSBOROUGH DRIVE , PIMPAMA**	**Page 1 of 1**	

Sample Number :	231383	231384	231385	231386
Test Number :	223	224	225	226
Sampling Method :	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4	AS1289.1.2.1 CL. 6.4
Date Sampled :	28/03/2017	28/03/2017	28/03/2017	28/03/2017
Date Tested :	28/03/2017	28/03/2017	28/03/2017	28/03/2017
Material Type :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
Lot Number :	1153	1152	1150 & 1151	1155 & 1156
Sample Location :	REFER TO SITE PLAN E 529278 N 6923620 FINISHED LEVEL	REFER TO SITE PLAN E 529284 N 6923608 FINISHED LEVEL	REFER TO SITE PLAN E 529294 N 6923589 FINISHED LEVEL	REFER TO SITE PLAN E 529257 N 6923647 FINISHED LEVEL
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	6	-	-	-
Oversize Dry (%) :				
Oversize Density (t/m³) :	2.400			
Field Moisture Content (%) :	11.7	11.1	9.9	12.8
Hilf MDR Number :	231383	231384	231385	231386
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Moisture Ratio (%) :	86.5	85.5	87	90
Field Wet Density (t/m³) :	2.040	2.030	2.020	2.030
Optimum Moisture Content (%) :	13.5	13.0	11.4	14.2
Moisture Variation :	1.8	1.9	1.6	1.5
Peak Converted Wet Density (t/m³) :	2.11*	2.070	2.070	2.080
Hilf Density Ratio (%) :	**96.5**	**98.0**	**97.0**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

S Taylor

GARY TAYLOR (Gold Coast) - WORKS SUPERVISOR
NATA Accreditation Number
1169

APPENDIX 'C'

(Photo Gallery)


IMAG0847


IMAG0848


IMAG0849


IMAG0850


IMAG0851


IMAG0853


IMAG0854


IMAG0855


IMAG0856


IMAG0857


IMAG0858


IMAG0900


IMAG0901


IMAG0902


IMG_1236


IMG_1237


IMG_1238


IMG_1239


IMG_1240


IMG_1241


IMG_1242


IMG_1243


IMG_1244


IMG_1245


IMG_1253


IMG_1254


IMG_1255


IMG_1256


IMG_1257


IMG_1258


IMG_1259


IMG_1260


IMG_1261


IMG_1262


IMG_1263


IMG_1289


IMG_1290


IMG_1291


IMG_1292


IMG_1553


IMG_1554


IMG_1555


IMG_1556


IMG_1558


IMG_1559


IMG_1560


IMG_1561


IMG_1562


IMG_1563


IMG_1564


IMG_1565


IMG_6502


IMG_6503


IMG_6504


IMG_6505


IMG_6506


IMG_6507


IMG_6508


IMG_6509


IMG_6510


IMG_6511


IMG_6566


IMG_6567


IMG_6568


IMG_6569


IMG_6570


IMG_6571


IMG_6572


IMG_6573


IMG_6574

IMG_6575

IMG_6576

IMG_6577

IMG_6578

IMG_6579

IMG_6581

IMG_6582

IMG_6583

IMG_6584

IMG_6852

IMG_6853

IMG_6854

IMG_6855

APPENDIX 'D'

(GL14/184 – Field Density Test Reports, Areas J & K)

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 5, 36 Lawrence Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**MIRVAC**	Report Number:	**GL14-184.35/1**
Job Number :	**GL14/184**	Report Date:	**05/11/2014**
Project :	**GAINSBOROUGH GREENS - PRECINCT 7**	Order Number:	
Location :	**SWAN ROAD , PIMPAMA**	Test Method:	**AS1289.5.8.1 & 5.7.1**

Lab No :	202087	202088	202089	202090
ID No :	107	108	109	110
Lot No :	199	-	1444	1443
Item No :	-	-	-	-
Date Sampled :	28/10/2014	28/10/2014	28/10/2014	28/10/2014
Date Tested :	28/10/2014	28/10/2014	28/10/2014	28/10/2014
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	LOT FILL	LOT FILL	LOT FILL	LOT FILL
Sample Location :	AREA K / LOT 199 E 73375.51 N 78580.29 RL 2.13	AREA H E 73618.85 N 78302.55 RL 1.66	AREA H / LOT 1444 E 73546.81 N 78310.81 RL 1.67	AREA H / LOT 1443 E 73621.41 N 78330.23 RL 1.81
Test Depth (mm) :	**150**	**150**	**150**	**150**
Max Size (mm) :	**19**	**19**	**19**	**19**
Oversize Wet (%) :	**0**	**0**	**0**	**0**
Field Wet Density (t/m³):	**1.93**	**1.96**	**1.94**	**1.93**
Field Moisture Cont (%):	**19.7**	**18.4**	**21.6**	**17.1**
PCWD (t/m³) :	**1.91**	**1.96**	**1.93**	**1.99**
Moisture Variation (%):	**2.2**	**2.2**	**0.4**	**0.4**
Compactive Effort :	**Standard**	**Standard**	**Standard**	**Standard**
Hilf Density Ratio (%) :	**101.0**	**100.0**	**100.5**	**97.5**
Min Hilf Dens Ratio (%)	**95**	**95**	**95**	**95**
Remarks:				

Lab Number:	Soil Description
202087	
202088	
202089	
202090	

NATA
ACCREDITATION

This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

IAN MASMAN (Gold Coast)
NATA Accred No:1169

FORM NUMBER

REP AHNUC-1-2

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 5, 36 Lawrence Drive (PO Box 2011), Nerang Q 4211 **P** (07) 5596 1599 **F** (07) 5527 2027
ABN 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**MIRVAC**	Report Number:	**GL14-184.34/1**
Job Number :	**GL14/184**	Report Date:	**05/11/2014**
Project :	**GAINSBOROUGH GREENS - PRECINCT 7**	Order Number:	
Location :	**SWAN ROAD , PIMPAMA**	Test Method:	**AS1289.5.8.1 & 5.7.1**

Lab No :	202083	202084	202085	202086
ID No :	103	104	105	106
Lot No :	161	163	165	198
Item No :	-	-	-	-
Date Sampled :	28/10/2014	28/10/2014	28/10/2014	28/10/2014
Date Tested :	28/10/2014	28/10/2014	28/10/2014	28/10/2014
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	LOT FILL	LOT FILL	LOT FILL	LOT FILL
Sample Location :	AREA K / LOT 161 E 73389.92 N 78507.96 RL 2.06	AREA K / LOT 163 E 73421.99 N 78542.73 RL 2.13	AREA K / LOT 165 E 73438.09 N 78576.44 RL 2.04	AREA K / LOT 198 E 73415.63 N 78601.06 RL 1.90
Test Depth (mm) :	**150**	**150**	**150**	**150**
Max Size (mm) :	**19**	**19**	**19**	**19**
Oversize Wet (%) :	**0**	**0**	**0**	**0**
Field Wet Density (t/m³):	**1.96**	**1.98**	**1.96**	**1.97**
Field Moisture Cont (%):	**18.1**	**17.8**	**24.3**	**23.0**
PCWD (t/m³) :	**1.89**	**1.94**	**1.91**	**1.99**
Moisture Variation (%):	**2.1**	**0.6**	**2.2**	**0.1**
Compactive Effort :	**Standard**	**Standard**	**Standard**	**Standard**
Hilf Density Ratio (%) :	**103.5**	**101.5**	**102.5**	**99.0**
Min Hilf Dens Ratio (%)	**95**	**95**	**95**	**95**
Remarks:				

Lab Number:	Soil Description
202083	
202084	
202085	
202086	

NATA
ACCREDITATION

This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

IAN MASMAN (Gold Coast)
NATA Accred No:1169

FORM NUMBER

REP AHNUC-1-2

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Brendale | Maroochydore
Unit 5, 36 Lawrence Drive (PO Box 2011), Nerang Q 4211 P (07) 5596 1599 F (07) 5527 2027
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**MIRVAC**	Report Number:	**GL14-184.31/1**
Job Number :	**GL14/184**	Report Date:	**03/11/2014**
Project :	**GAINSBOROUGH GREENS - PRECINCT 7**	Order Number:	
Location :	**SWAN ROAD , PIMPAMA**	Test Method:	**AS1289.5.8.1 & 5.7.1**

Lab No :	202025			
ID No :	102			
Lot No :	137			
Item No :	-			
Date Sampled :	27/10/2014			
Date Tested :	27/10/2014			
Material Source :	ONSITE			
For Use As :	LOT FILL			
Sample Location :	AREA J / LOT 137 N 78436.32 E 73352.41 RL 3.80			
Test Depth (mm) :	**150**			
Max Size (mm) :	**19**			
Oversize Wet (%) :	**0**			
Field Wet Density (t/m³):	**1.94**			
Field Moisture Cont (%):	**18.4**			
PCWD (t/m³) :	**1.92**			
Moisture Variation (%):	**2.4**			
Compactive Effort :	**Standard**			
Hilf Density Ratio (%) :	**101.5**			
Min Hilf Dens Ratio (%)	**95**			
Remarks:				

Lab Number:	Soil Description
202025	

NATA ACCREDITATION

This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

IAN MASMAN (Gold Coast)
NATA Accred No:1169

FORM NUMBER

REP AHNUC-1-2

MORRISON GEOTECHNIC

Brisbane | **Gold Coast** | Brendale | Maroochydore
Unit 5, 36 Lawrence Drive (PO Box 2011), Nerang Q 4211 P (07) 5596 1599 F (07) 5527 2027
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**MIRVAC**	Report Number:	**GL14-184.30/1**
Job Number :	**GL14/184**	Report Date:	**03/11/2014**
Project :	**GAINSBOROUGH GREENS - PRECINCT 7**	Order Number:	
Location :	**SWAN ROAD , PIMPAMA**	Test Method:	**AS1289.5.8.1 & 5.7.1**

Lab No :	202021	202022	202023	202024
ID No :	98	99	100	101
Lot No :	-	-	-	144
Item No :	-	-	-	-
Date Sampled :	27/10/2014	27/10/2014	27/10/2014	27/10/2014
Date Tested :	27/10/2014	27/10/2014	27/10/2014	27/10/2014
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	LOT FILL	LOT FILL	LOT FILL	LOT FILL
Sample Location :	AREA J N 78384.27 E 73328.14 RL 4.02	AREA J N 78346.08 E 73340.83 RL 3.42	AREA J N 78366.60 E 73374.73 RL 2.93	AREA J / LOT 144 N 78397.91 E 73368.73 RL 3.02
Test Depth (mm) :	**150**	**150**	**150**	**150**
Max Size (mm) :	**19**	**19**	**19**	**19**
Oversize Wet (%) :	**0**	**0**	**0**	**0**
Field Wet Density (t/m³):	**1.94**	**1.95**	**1.95**	**1.95**
Field Moisture Cont (%):	**19.8**	**22.3**	**19.6**	**20.7**
PCWD (t/m³) :	**1.90**	**1.90**	**1.95**	**1.92**
Moisture Variation (%):	**3.1**	**2.6**	**1.7**	**2.4**
Compactive Effort :	**Standard**	**Standard**	**Standard**	**Standard**
Hilf Density Ratio (%) :	**102.0**	**103.0**	**100.0**	**101.5**
Min Hilf Dens Ratio (%)	**95**	**95**	**95**	**95**
Remarks:				

Lab Number:	Soil Description
202021	
202022	
202023	
202024	

NATA ACCREDITATION

This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

IAN MASMAN (Gold Coast)
NATA Accred No:1169

FORM NUMBER

REP AHNUC-1-2

MORRISON GEOTECHNIC PTY LTD
www.morrisongeo.com.au

BRISBANE
Unit 1 / 35 Limestone Street
PO Box 3063
Darra Qld 4076
P: 07 3279 0900
F: 07 3279 0955
brisbanelab@
morrisongeo.com.au

GOLD COAST
Unit 5 / 36 Lawrence Drive
PO Box 2011
Nerang Qld 4211
P: 07 5596 1599
F: 07 5527 2027
goldcoastlab@
morrisongeo.com.au

BRENDALE
Unit 2 / 26 Strathwyn Street
Brendale Qld 4500
P: 07 3889 6947
F: 07 3889 6896
brendalelab@
morrisongeo.com.au

SUNSHINE COAST
Unit 4 / 81 Wises Road
Maroochydore Qld 4558
P: 07 5443 9522
F: 07 5479 1633
maroochydorelab@
morrisongeo.com.au

MORRISON GEOTECHNIC
ABN 51 009 878 899
RPE UQ 2241

Hilf Density Ratio Report

Client :	**MIRVAC**	Report Number:	**GL14-184.21/1**
Job Number :	**GL14/184**	Report Date:	**23/10/2014**
Project :	**GAINSBOROUGH GREENS - PRECINCT 7**	Order Number:	
Location :	**SWAN ROAD , PIMPAMA**	Test Method:	**AS1289.5.8.1 & 5.7.1**

Lab No :	201712			
ID No :	67			
Lot No :	196			
Item No :	-			
Date Sampled :	20/10/2014			
Date Tested :	20/10/2014			
Material Source :	ONSITE			
For Use As :	GENERAL FILL			
Sample Location :	AREA K / LOT 196 E 78573.47 N 73376.62 RL 1.98			
Test Depth (mm) :	**150**			
Max Size (mm) :	**19**			
Oversize Wet (%) :	**0**			
Field Wet Density (t/m³):	**1.96**			
Field Moisture Cont (%):	**12.6**			
PCWD (t/m³) :	**2.00**			
Moisture Variation (%):	**2.8**			
Compactive Effort :	**Standard**			
Hilf Density Ratio (%) :	**98.0**			
Min Hilf Dens Ratio (%)	**95**			
Remarks:				

Lab Number:	Soil Description
201712	

NATA
ACCREDITATION

This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

IAN MASMAN (Gold Coast)
NATA Accred No:1169

FORM NUMBER

REP AHNUC-1-2

MORRISON GEOTECHNIC PTY LTD
www.morrisongeo.com.au

BRISBANE
Unit 1 / 35 Limestone Street
PO Box 3063
Darra Qld 4076
P: 07 3279 0900
F: 07 3279 0955
brisbanelab@
morrisongeo.com.au

GOLD COAST
Unit 5 / 36 Lawrence Drive
PO Box 2011
Nerang Qld 4211
P: 07 5596 1599
F: 07 5527 2027
goldcoastlab@
morrisongeo.com.au

BRENDALE
Unit 2 / 26 Strathwyn Street
Brendale Qld 4500
P: 07 3889 6947
F: 07 3889 6896
brendalelab@
morrisongeo.com.au

SUNSHINE COAST
Unit 4 / 81 Wises Road
Maroochydore Qld 4558
P: 07 5443 9522
F: 07 5479 1633
maroochydorelab@
morrisongeo.com.au

MORRISON GEOTECHNIC
ABN 51 009 878 899
RPE UQ 2241

Hilf Density Ratio Report

Client :	**MIRVAC**	Report Number:	**GL14-184.20/1**
Job Number :	**GL14/184**	Report Date:	**23/10/2014**
Project :	**GAINSBOROUGH GREENS - PRECINCT 7**	Order Number:	
Location :	**SWAN ROAD , PIMPAMA**	Test Method:	**AS1289.5.8.1 & 5.7.1**

Lab No :	201708	201709	201710	201711
ID No :	63	64	65	66
Lot No :	163	165	166	195
Item No :	-	-	-	-
Date Sampled :	20/10/2014	20/10/2014	20/10/2014	20/10/2014
Date Tested :	20/10/2014	20/10/2014	20/10/2014	20/10/2014
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Sample Location :	AREA K / LOT 163 E 78510.51 N 73388.95 RL 1.84	AREA K / LOT 165 E 78531.60 N 73413.12 RL 1.90	AREA K / LOT 166 E 78582.23 N 73440.34 RL 1.62	AREA K / LOT 195 E 78601.99 N 73414.93 RL 1.50
Test Depth (mm) :	**150**	**150**	**150**	**150**
Max Size (mm) :	**19**	**19**	**19**	**19**
Oversize Wet (%) :	**0**	**0**	**0**	**0**
Field Wet Density (t/m³):	**1.96**	**1.95**	**1.98**	**1.94**
Field Moisture Cont (%):	**14.4**	**16.6**	**16.3**	**19.2**
PCWD (t/m³) :	**2.02**	**2.00**	**1.93**	**1.95**
Moisture Variation (%):	**2.4**	**2.3**	**3.1**	**-1.2**
Compactive Effort :	**Standard**	**Standard**	**Standard**	**Standard**
Hilf Density Ratio (%) :	**97.0**	**97.5**	**102.5**	**99.5**
Min Hilf Dens Ratio (%)	**95**	**95**	**95**	**95**
Remarks:				

Lab Number:	Soil Description
201708	
201709	
201710	
201711	

NATA ACCREDITATION

This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

IAN MASMAN (Gold Coast)
NATA Accred No:1169

FORM NUMBER

REP AHNUC-1-2

MORRISON GEOTECHNIC PTY LTD
www.morrisongeo.com.au

BRISBANE
Unit 1 / 35 Limestone Street
PO Box 3063
Darra Qld 4076
P: 07 3279 0900
F: 07 3279 0955
brisbanelab@
morrisongeo.com.au

GOLD COAST
Unit 5 / 36 Lawrence Drive
PO Box 2011
Nerang Qld 4211
P: 07 5596 1599
F: 07 5527 2027
goldcoastlab@
morrisongeo.com.au

BRENDALE
Unit 2 / 26 Strathwyn Street
Brendale Qld 4500
P: 07 3889 6947
F: 07 3889 6896
brendalelab@
morrisongeo.com.au

SUNSHINE COAST
Unit 4 / 81 Wises Road
Maroochydore Qld 4558
P: 07 5443 9522
F: 07 5479 1633
maroochydorelab@
morrisongeo.com.au

MORRISON GEOTECHNIC
ABN 51 009 878 899
RPE UQ 2241

Hilf Density Ratio Report

Client :	**MIRVAC**	Report Number:	**GL14-184.17/1**
Job Number :	**GL14/184**	Report Date:	**23/10/2014**
Project :	**GAINSBOROUGH GREENS - PRECINCT 7**	Order Number:	
Location :	**SWAN ROAD , PIMPAMA**	Test Method:	**AS1289.5.8.1 & 5.7.1**

Lab No :	201681	201682	201683	201684
ID No :	54	55	56	57
Lot No :	135	146	136	145
Item No :	-	-	-	-
Date Sampled :	17/10/2014	17/10/2014	17/10/2014	17/10/2014
Date Tested :	17/10/2014	17/10/2014	17/10/2014	17/10/2014
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Sample Location :	AREA J / LOT 135 E 78338.79 N 73352.78 RL 2.85	AREA J / LOT 146 E 78351.48 N 73364.32 RL 2.73	AREA J / LOT 136 E 78377.39 N 73367.11 RL 2.76	AREA J / LOT 145 E 78404.11 N 73364.33 RL 2.76
Test Depth (mm) :	**150**	**150**	**150**	**150**
Max Size (mm) :	**19**	**19**	**19**	**19**
Oversize Wet (%) :	**0**	**0**	**0**	**0**
Field Wet Density (t/m³):	**1.94**	**1.96**	**1.93**	**1.99**
Field Moisture Cont (%):	**18.1**	**24.7**	**20.5**	**17.6**
PCWD (t/m³) :	**1.96**	**1.95**	**1.97**	**1.94**
Moisture Variation (%):	**2.7**	**0.2**	**2.5**	**2.2**
Compactive Effort :	**Standard**	**Standard**	**Standard**	**Standard**
Hilf Density Ratio (%) :	**98.5**	**100.5**	**98.0**	**102.5**
Min Hilf Dens Ratio (%)	**95**	**95**	**95**	**95**
Remarks:				

Lab Number:	Soil Description
201681	
201682	
201683	
201684	

NATA
ACCREDITATION

This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

IAN MASMAN (Gold Coast)
NATA Accred No:1169

FORM NUMBER

REP AHNUC-1-2

MORRISON GEOTECHNIC PTY LTD
www.morrisongeo.com.au

BRISBANE
Unit 1 / 35 Limestone Street
PO Box 3063
Darra Qld 4076
P: 07 3279 0900
F: 07 3279 0955
brisbanelab@
morrisongeo.com.au

GOLD COAST
Unit 5 / 36 Lawrence Drive
PO Box 2011
Nerang Qld 4211
P: 07 5596 1599
F: 07 5527 2027
goldcoastlab@
morrisongeo.com.au

BRENDALE
Unit 2 / 26 Strathwyn Street
Brendale Qld 4500
P: 07 3889 6947
F: 07 3889 6896
brendalelab@
morrisongeo.com.au

SUNSHINE COAST
Unit 4 / 81 Wises Road
Maroochydore Qld 4558
P: 07 5443 9522
F: 07 5479 1633
maroochydorelab@
morrisongeo.com.au

MORRISON GEOTECHNIC
ABN 51 009 878 899
RPE UQ 2241

Hilf Density Ratio Report

Client :	**MIRVAC**	Report Number:	**GL14-184.17/1**
Job Number :	**GL14/184**	Report Date:	**23/10/2014**
Project :	**GAINSBOROUGH GREENS - PRECINCT 7**	Order Number:	
Location :	**SWAN ROAD , PIMPAMA**	Test Method:	**AS1289.5.8.1 & 5.7.1**

Lab No :	201681	201682	201683	201684
ID No :	54	55	56	57
Lot No :	135	146	136	145
Item No :	-	-	-	-
Date Sampled :	17/10/2014	17/10/2014	17/10/2014	17/10/2014
Date Tested :	17/10/2014	17/10/2014	17/10/2014	17/10/2014
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Sample Location :	AREA J / LOT 135 E 78338.79 N 73352.78 RL 2.85	AREA J / LOT 146 E 78351.48 N 73364.32 RL 2.73	AREA J / LOT 136 E 78377.39 N 73367.11 RL 2.76	AREA J / LOT 145 E 78404.11 N 73364.33 RL 2.76
Test Depth (mm) :	**150**	**150**	**150**	**150**
Max Size (mm) :	**19**	**19**	**19**	**19**
Oversize Wet (%) :	**0**	**0**	**0**	**0**
Field Wet Density (t/m³):	**1.94**	**1.96**	**1.93**	**1.99**
Field Moisture Cont (%):	**18.1**	**24.7**	**20.5**	**17.6**
PCWD (t/m³) :	**1.96**	**1.95**	**1.97**	**1.94**
Moisture Variation (%):	**2.7**	**0.2**	**2.5**	**2.2**
Compactive Effort :	**Standard**	**Standard**	**Standard**	**Standard**
Hilf Density Ratio (%) :	**98.5**	**100.5**	**98.0**	**102.5**
Min Hilf Dens Ratio (%)	**95**	**95**	**95**	**95**
Remarks:				

Lab Number:	Soil Description
201681	
201682	
201683	
201684	

NATA
ACCREDITATION

This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

IAN MASMAN (Gold Coast)
NATA Accred No:1169

FORM NUMBER

REP AHNUC-1-2

MORRISON GEOTECHNIC PTY LTD
www.morrisongeo.com.au

BRISBANE
Unit 1 / 35 Limestone Street
PO Box 3063
Darra Qld 4076
P: 07 3279 0900
F: 07 3279 0955
brisbanelab@
morrisongeo.com.au

GOLD COAST
Unit 5 / 36 Lawrence Drive
PO Box 2011
Nerang Qld 4211
P: 07 5596 1599
F: 07 5527 2027
goldcoastlab@
morrisongeo.com.au

BRENDALE
Unit 2 / 26 Strathwyn Street
Brendale Qld 4500
P: 07 3889 6947
F: 07 3889 6896
brendalelab@
morrisongeo.com.au

SUNSHINE COAST
Unit 4 / 81 Wises Road
Maroochydore Qld 4558
P: 07 5443 9522
F: 07 5479 1633
maroochydorelab@
morrisongeo.com.au

MORRISON GEOTECHNIC
ABN 51 009 878 899
RPE UQ 2241

Hilf Density Ratio Report

Client :	**MIRVAC**	Report Number:	**GL14-184.7/1**
Job Number :	**GL14/184**	Report Date:	**15/10/2014**
Project :	**GAINSBOROUGH GREENS - PRECINCT 7**	Order Number:	
Location :	**SWAN ROAD , PIMPAMA**	Test Method:	**AS1289.5.8.1 & 5.7.1**

Lab No :	201205	201206	201207	201208
ID No :	19	20	21	22
Lot No :	-	-	-	-
Item No :	-	-	-	-
Date Sampled :	9/10/2014	9/10/2014	9/10/2014	9/10/2014
Date Tested :	9/10/2014	9/10/2014	9/10/2014	9/10/2014
Material Source :	ONSITE	ONSITE	ONSITE	ONSITE
For Use As :	GENERAL FILL	GENERAL FILL	GENERAL FILL	GENERAL FILL
Sample Location :	AREA J LOT 142 E 78392.72 N 73357.10 RL 2.77	AREA J LOT 141 E 78418.57 N 73343.11 RL 3.50	AREA K LOT 164 E 78512.64 N 73392.90 RL 1.64	AREA K LOT 166 E 78538.12 N 73414.60 RL 1.58
Test Depth (mm) :	**150**	**150**	**150**	**150**
Max Size (mm) :	**19**	**19**	**19**	**19**
Oversize Wet (%) :	**0**	**0**	**0**	**0**
Field Wet Density (t/m³):	**1.99**	**1.95**	**1.95**	**1.96**
Field Moisture Cont (%):	**21.9**	**14.1**	**23.9**	**19.0**
PCWD (t/m³) :	**2.09**	**2.04**	**2.01**	**2.04**
Moisture Variation (%):	**-0.9**	**0.8**	**-3.3**	**-1.5**
Compactive Effort :	**Standard**	**Standard**	**Standard**	**Standard**
Hilf Density Ratio (%) :	**95.0**	**95.5**	**97.0**	**95.5**
Min Hilf Dens Ratio (%)	**95**	**95**	**95**	**95**
Remarks:				

Lab Number:	Soil Description
201205	
201206	
201207	
201208	

NATA
ACCREDITATION

This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

IAN MASMAN (Gold Coast)
NATA Accred No:1169

FORM NUMBER

REP AHNUC-1-2

MORRISON GEOTECHNIC PTY LTD
www.morrisongeo.com.au

BRISBANE
Unit 1 / 35 Limestone Street
PO Box 3063
Darra Qld 4076
P: 07 3279 0900
F: 07 3279 0955
brisbanelab@
morrisongeo.com.au

GOLD COAST
Unit 5 / 36 Lawrence Drive
PO Box 2011
Nerang Qld 4211
P: 07 5596 1599
F: 07 5527 2027
goldcoastlab@
morrisongeo.com.au

BRENDALE
Unit 2 / 26 Strathwyn Street
Brendale Qld 4500
P: 07 3889 6947
F: 07 3889 6896
brendalelab@
morrisongeo.com.au

SUNSHINE COAST
Unit 4 / 81 Wises Road
Maroochydore Qld 4558
P: 07 5443 9522
F: 07 5479 1633
maroochydorelab@
morrisongeo.com.au

MORRISON GEOTECHNIC
ABN 51 009 878 899
RPE UQ 2241

Hilf Density Ratio Report

Client :	**MIRVAC**	Report Number:	**GL14-184.4/1**
Job Number :	**GL14/184**	Report Date:	**13/10/2014**
Project :	**GAINSBOROUGH GREENS - PRECINCT 7**	Order Number:	
Location :	**SWAN ROAD , PIMPAMA**	Test Method:	**AS1289.5.8.1 & 5.7.1**

Lab No :	201209	201210	201211	
ID No :	23	24	25	
Lot No :	195	197	198	
Item No :	-	-	-	
Date Sampled :	9/10/2014	9/10/2014	9/10/2014	
Date Tested :	9/10/2014	9/10/2014	9/10/2014	
Material Source :	ONSITE	ONSITE	ONSITE	
For Use As :	LOT FILL	LOT FILL	LOT FILL	
Sample Location :	LOT 195/AREA K E 78573.04 N 73431.55 RL 1.57	LOT 197/AREA K E 78608.68 N 73422.66 RL 1.45	LOT 198/AREA K E 78586.60 N 73376.14 RL 1.52	
Test Depth (mm) :	**150**	**150**	**150**	
Max Size (mm) :	**19**	**19**	**19**	
Oversize Wet (%) :	**0**	**0**	**0**	
Field Wet Density (t/m³):	**1.90**	**2.00**	**1.99**	
Field Moisture Cont (%):	**26.7**	**18.9**	**17.1**	
PCWD (t/m³) :	**1.96**	**2.09**	**2.07**	
Moisture Variation (%):	**-1.1**	**-1.3**	**-0.2**	
Compactive Effort :	**Standard**	**Standard**	**Standard**	
Hilf Density Ratio (%) :	**97.0**	**96.0**	**96.0**	
Min Hilf Dens Ratio (%)	**95**	**95**	**95**	
Remarks:				

Lab Number:	Soil Description
201209	
201210	
201211	

NATA
ACCREDITATION

This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

IAN MASMAN (Gold Coast)
NATA Accred No:1169

FORM NUMBER

REP AHNUC-1-2