1.0 INTRODUCTION

1.1 General

This report presents results and documentation for the compaction control, inspection and testing programme on earthworks for the residential subdivision located at 105-107 Gordon Road, Redland Bay.

Civil Quality Assurance (Qld.) Pty. Ltd. (CQA) was commissioned by Sutgold Pty Ltd c/- Ross Campbell & Associates (Qld) Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with clause 8.2 of AS 3798-2007 "Guidelines on earthworks for commercial and residential developments".

The purpose of the Level 1 commission and of this report is to provide a statement of compliance with the specification for the earthworks elements of the project.

The testing and inspection programme was carried out in general compliance with AS 3798, the project specification and local authority testing frequency requirements as appropriate.

The report references the following Australian Standards:

- AS 3798-2007 "Guidelines on earthworks for commercial and residential developments"
- AS 1289-2000 "Method of testing soils for engineering purposes"
- AS 2870-1996 "Residential slabs and footings"

1.2 The Development

The development comprises a 43 lot residential subdivision and associated infrastructure including sewer & stormwater reticulation.

2.0 WORKS AND SPECIFICATIONS

The earthworks generally comprised:

- Level 1 Controlled Filling of Lots 1-9, 15-21, 29-31 & 40-43

The earthworks specification as provided, for which Level 1 certification is required, is as follows:

- Allotment fill 95% Standard

2.1 Supplementary Specifications

In accordance with details provided by Mr Ching Meng Tan of Ross Campbell & Assoc (Q) P/L the following supplementary specifications were implemented during the course of the contract.

DATE	LOT #	MATERIAL REMOVED
29 April	Lot 5	Removal of overwet Silty Sand (temporary unsuitable) Existing concrete piers (unsuitable)
8 May 10 May	Lot 2	Removal of unsuitable material consisting of concrete piers and electrical conduit
13 May	Lots 15 - 18 Lots 40 - 43	Removal of unsuitable material (consisting of excessive palm root growth)
17 May	Lots 41 - 43	Removal of uncontrolled fill (temporary unsuitable)
18 May	Lots 15 - 16	Removal of unsuitable material consisting of concrete v-drain and existing pavement
18 May	Lots 40 - 41	Removal of temporary unsuitable consisting of uncontrolled fill and overwet Silty Sand
18 May	Lots 41 - 43	Removal of unsuitable material consisting of concrete priers
19 May	Lot 41	Removal of uncontrolled fill (temporary unsuitable)
19 May	Lots 41 - 43	Removal of uncontrolled fill (temporary unsuitable), concrete piers & electrical conduit (unsuitable)
19 May	Lot 41	Overwet Silty Sand (temporary unsuitable)
20 May	Lots 41 - 42	Overwet Silty Sand (temporary unsuitable)
26 May	Lot 20	Severe palm root growth (unsuitable)
27 May	Lot 30	Removal of existing stump (unsuitable)
27 May	Lots 5 - 6	Removal of existing power pole
2 June	Lot 31	Removal of electrical conduit (unsuitable)
2 June	Lot 20	Removal of existing stump (unsuitable)
7 June	Lot 19	Removal of uncontrolled fill & overwet Silty Sand (temporary unsuitable)
7 June	Lot 1	Removal of road base driveway (temporary unsuitable)
7 June	Lot 19	Removal of overwet Silty Sand (temporary unsuitable)
16 June	Lots 4 - 5	Removal of overwet Silty Sand (temporary unsuitable)

3.0 FILL FOUNDATION

The stripped surfaces of proposed fill areas were inspected, tined and proof rolled prior to placement of fill. In general, the proof rolling was carried out with the equipment used to compact the fill.

Compliance of the fill foundation and approval to commence filling was on the basis of:

- adequate removal of topsoil and organics
- soundness (minimum deflection) under proof rolling

- satisfactory exposure of natural ground and/or previously placed fill which had been approved by the superintendent

In order to comply with the above criteria, it was necessary to remove unsound materials from the following areas.

- Lots 4-5, 15-20, 30 & 40-43

All inspection details are provided in the "Daily Site Visit Report" sheets in Appendix B. Photographs of the fill foundation and any critical earthworks stages are provided in Appendix C.

The approximate lateral extent of stripping and filling is shown on drawings in Appendix D.

4.0 COMPLIANCE TESTING

4.1 Reference Density

As required by AS 3798, for unprocessed materials, a laboratory reference density test was carried out for each field density test. The Hilf Density method (AS 1289 5.7.1) was adopted for the laboratory reference test.

4.2 Field Density Test Locations

All test locations were selected by the geotechnical inspection and testing authority, (CQA). The locations were selected at random and staggered across the fill areas. Generally a three dimensional location was obtained for each field density test (e.g. from two allotment boundaries and a reduced level derived from AHD). However test locations were not professionally surveyed and therefore should be considered as approximate only. Test locations are described on the Field Density Test Reports presented in Appendix A.

4.3 Field Density Test Results

All field density tests carried out on structural filling on this project between 28/4/10 and 21/6/10 meet the minimum specification requirements of 95% Standard Compaction (AS 1289 5.8.1, 5.7.1 & 2.1.1).

Areas represented by failed tests (if applicable) were re-compacted and re-tested prior to placement of additional filling. Detailed test results are provided in field density test reports presented in Appendix A.

5.0 FILL CERTIFICATION

a) The fill foundation was inspected and tested and was considered to comply with the requirements of Table 5.1 of AS 3798 and the project specification to a depth of not less than 150mm.

b) Based on the test results and site inspections, CQA concludes that the placement of structural fill on lots 1-9, 15-21, 29-31 & 40-43 as laterally defined in Appendix D is considered to comply with the requirements of Table 5.1 of AS 3798 and the project specification.

c) All fill in the areas defined above, placed within the time frame of our inspection and testing programme between 28/4/10 and 21/6/10 is considered as "Controlled Fill" in accordance with AS 2870 (Clause 6.4.2(a)) and AS 3798.

6.0 LIMITATIONS

Unless otherwise stated in this report, Level 1 inspection, testing and certification does not address or include the following:

- slope stability
- reactive soils
- soft natural soils and/or pre-existing (uncontrolled) fill on the site outside of the controlled fill area
- soils which may be contaminated with toxic substances
- backfill to service trenches and/or retaining (including boulder) walls subsequent to the controlled fill commission or when not included in the level 1 commission
- site drainage
- topsoil placed subsequent to completion of controlled filling

Certification of Level 1 controlled fill, within the area defined in Appendix D, assumes that all filling within this area during the time of our commission took place with our knowledge. Any fill placed outside the nominated earthwork operation periods without our knowledge is therefore not certified as controlled fill.

The purchaser, site investigator, engineer and builder should be aware of the possibility of unstable natural soils, services and pre-existing uncontrolled fill occurring on parts of the site other than the immediate areas of controlled fill placed in the current operation (as defined in Appendix D) between 28/4/10 and 21/6/10.

A full geotechnical site investigation and foundation design for the specific ground conditions should be carried out by suitably qualified and experienced personnel on each lot, prior to building when house type and location is known. This service can be provided if required, by contacting Civil Quality Assurance (Qld.) Pty. Ltd. on 07 - 3881 3511.

P. Fraser
BE Tech MEngSc MIE Aust CPEng RPEQ
for and on behalf of
CIVIL QUALITY ASSURANCE (Q) P/L
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FORM CQA/CF/09G

26 June 2010
Job No. CQAL/10/024

Sutgold Pty Ltd
c/- Ross Campbell & Associates (Qld) Pty Ltd
PO Box 306
CLEVELAND QLD 4163

RE: **CERTIFICATE OF CONTROLLED FILLING:**
105-107 GORDON ROAD, REDLAND BAY
REAL PROPERTY DESCRIPTION:
LOT NO. 2 ON RP214863

LOT NO. 5

Fill was placed on this lot during the construction of this estate.

Civil Quality Assurance (Qld) Pty Ltd (CQA) was commissioned on this project to provide earthworks inspection and testing services on a Level 1 basis as detailed in clause 8.2 of AS 3798-2007 "Guidelines on earthworks for commercial and residential developments". Full details of the inspection and testing program are provided in the CQA report (form CQA/CF/10), Job No. CQAL/10/024 dated 26/6/10.

Based on the test results and site inspections, CQA concludes that the fill foundation to a depth of not less than 150mm and placement of compacted fill on Lot 5 as defined laterally in the attached drawing is considered to comply with the requirements of Table 5.1 of AS 3798 and the project specification.

All fill in the areas defined in the attached drawing, placed within the time frame of our inspection and testing programme between 28/4/10 and 21/6/10 is considered to be "Controlled Fill" in accordance with AS 2870 "Residential Slabs and Footings" (Clause 6.4.2 (a)) and AS 3798.

Unless otherwise stated, Level 1 certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by suitably qualified and experienced personnel, prior to building when the house type and location is known. This service can be provided if required, by contacting Civil Quality Assurance (Qld.) Pty. Ltd. on 3881 3511.

P. Fraser
BE Tech MEngSc MIE Aust CPEng RPEQ
for and on behalf of
CIVIL QUALITY ASSURANCE (Q) P/L

Enc. Drawing showing lateral extent of controlled filling
wblh0110jd.doc

CIVIL QUALITY ASSURANCE (QLD) PTY LTD
ABN 52 058 855 431

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MALENY OFFICE
154 ENGLE ROAD
PHONE (07) 5429 6882
FAX (07) 5429 6882

NATA
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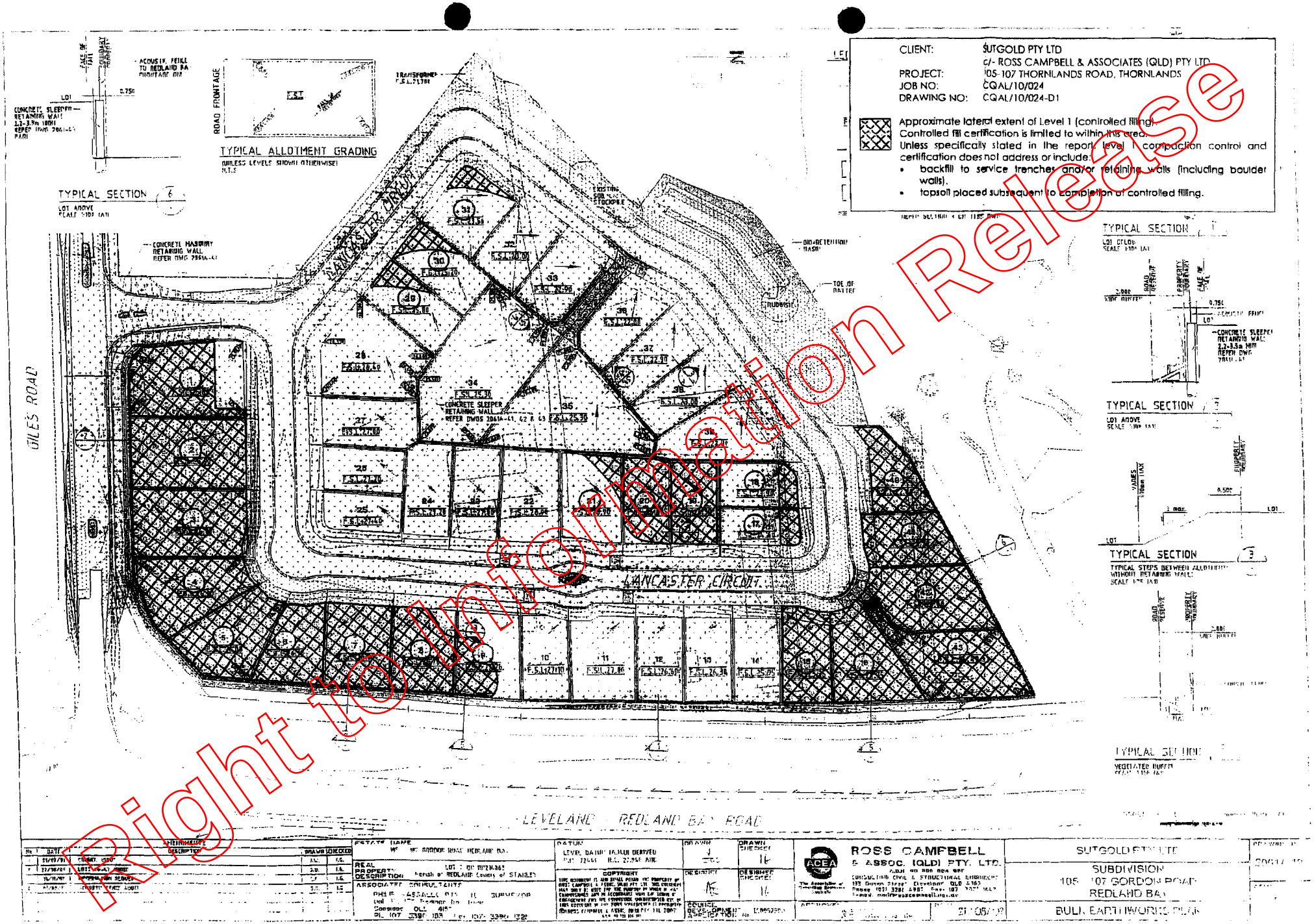

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1/10 BABDOYLE STREET, LOGANHOLME, QLD 4129
OFFICE: (07) 3801 3233 FAX: (07) 3801 3633

CQA/R/21C

FIELD DENSITY RATIO (HILF) TEST REPORT (A.S.)

CLIENT:	SUTGOLD P/L C/- ROSS CAMPBELL & ASSOC (Q) P/L	REPORT NO:	5
PROJECT:	105-107 GORDON ROAD, REDLAND BAY	JOB NO:	CQAL/10/024
JOB DESCRIPTION:	RESIDENTIAL SUBDIVISION	DATE:	13 May 2010

SAMPLE NUMBER	DL/10/2249							
DATE/TIME TESTED	7/5/10, 8.15am							
DEPTH OF TEST (mm)	150							
DEPTH OF LAYER (mm)	-							
LAYER TERMINOLOGY	AF14							
TEST LOCATION	Lot 5, 8m off back, 3m off left boundaries							
TEST ELEVATION	RL: 23.92							
SOIL DESCRIPTION	Sandy Clay							
OVERSIZE SIEVE (mm)	19.0							
OVERSIZE - WET BASIS (%)	-							
FIELD MOISTURE CONTENT (%)	15.0							
OPTIMUM MOISTURE CONTENT(%)	16.0							
MOISTURE VARIATION (%)	-1.0							
FIELD WET DENSITY (t/m^3)	2.09							
PEAK CONVERTED WET DENSITY (t/m^3)	2.10							
ADJUSTED PEAK CONVERTED WET DENSITY (t/m^3)								
HILF DENSITY RATIO / SPEC (%)	**99.5**	**95**						

TEST PROCEDURE	Field	A.S. 1289 5.8.1		
	Laboratory	A.S. 1289 5.7.1 (Standard Compaction), 2.1.1		
TERMINOLOGY LEGEND	(S) Subgrade	(B) Base Course	(SF) Select Fill	(EF) Embankment Fill
	(LSB) Lower Subbase	(SB) Subbase Course	(AF) Allotment Fill	(SWTF) Stormwater Trench Fill
		(F) Fill	(STF) Sewer Trench Fill	

- Field testing and selection of test locations carried out in general accordance with AS 3798 Level 1 guidelines.
- Test locations were not professionally surveyed therefore recorded locations should be considered as approximate only.

W BATTISSON
AUTHORISED SIGNATORY
NATA Accreditation No. 4991

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CQA/R/21C

FIELD DENSITY RATIO (HILF) TEST REPORT (A.S.)

CLIENT: SUTGOLD P/L C/- ROSS CAMPBELL & ASSOC (Q) P/L
REPORT NO: 6

PROJECT: 105-107 GORDON ROAD, REDLAND BAY
JOB NO: CQAL/10/024

JOB DESCRIPTION: RESIDENTIAL SUBDIVISION
DATE: 13 May 2010

SAMPLE NUMBER	DL/10/2250	DL/10/2251	DL/10/2252	
DATE/TIME TESTED	10/5/10, 9.30am	10/5/10, 9.45am	10/5/10, 10.00am	
DEPTH OF TEST (mm)	150	150	150	
DEPTH OF LAYER (mm)	-	-		
LAYER TERMINOLOGY	AF15	AF16	AF17	
TEST LOCATION	Lot 3, 10m off back, 8m off right boundaries	Lot 4, 6m off back, 3m off left boundaries	Lot 5, 8m off back, 12m off left boundaries	
TEST ELEVATION	RL: 24.85	RL: 25.12	RL: 25.48	
SOIL DESCRIPTION	Sandy Clay	Sandy Clay	Sandy Clay	
OVERSIZE SIEVE (mm)	19.0	19.0	19.0	
OVERSIZE - WET BASIS (%)	-	-	-	
FIELD MOISTURE CONTENT (%)	12.0	20.0	18.0	
OPTIMUM MOISTURE CONTENT(%)	12.5	20.0	18.0	
MOISTURE VARIATION (%)	-0.5	0.0	0.0	
FIELD WET DENSITY (t/m^3)	2.06	2.08	2.04	
PEAK CONVERTED WET DENSITY (t/m^3)	2.16	2.08	2.12	
ADJUSTED PEAK CONVERTED WET DENSITY (t/m^3)	-	-	-	
HILF DENSITY RATIO / SPEC (%)	**95.0** / **95**	**100.0** / **95**	**96.0** / **95**	

TEST PROCEDURE
Field A.S. 1289 5.8.1
Laboratory A.S. 1289 5.7.1 (Standard Compaction), 2.1.1

TERMINOLOGY LEGEND
(S) Subgrade; (LSB) Lower Subbase; (B) Base Course; (SB) Subbase Course; (F) Fill; (SF) Select Fill; (AF) Allotment Fill; (STF) Sewer Trench Fill; (EF) Embankment Fill; (SWTF) Stormwater Trench Fill

- Field testing and selection of test locations carried out in general accordance with AS 3798 Level 1 guidelines.
- Test locations were not professionally surveyed therefore recorded locations should be considered as approximate only.

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CQA/R/21C

FIELD DENSITY/RATIO (HILF) TEST REPORT (A.S. 1289)

CLIENT: SUTGOLD P/L C/- ROSS CAMPBELL & ASSOC (Q) P/L
REPORT NO: 7

PROJECT: 105-107 GORDON ROAD, REDLAND BAY
JOB NO: CQAL/10/024

JOB DESCRIPTION: RESIDENTIAL SUBDIVISION
DATE: 14 May 2010

SAMPLE NUMBER	DL/10/2311		DL/10/2312		DL/10/2313		DL/10/2314	
DATE/TIME TESTED	11/5/10, 7.30am		11/5/10, 7.45am		11/5/10, 8.00am		11/5/10, 8.15am	
DEPTH OF TEST (mm)	150		150		150		150	
DEPTH OF LAYER (mm)	-		-		-		-	
LAYER TERMINOLOGY	AF18		AF19		AF20		AF21	
TEST LOCATION	Lot 3, 6m off back, 10m off right boundaries		Lot 4, 18m off front, 3m off right boundaries		Lot 5, 9m off back, 4m off right boundaries		Lot 6, 6m off back, 10m off left boundaries	
TEST ELEVATION	RL: 25.72		RL: 25.84		RL: 26.02		RL: 26.27	
SOIL DESCRIPTION	Sandy Gravelly Clay		Sandy Clayey Gravel		Sandy Clay		Sandy Clay	
OVERSIZE SIEVE (mm)	19.0		19.0		19.0		19.0	
OVERSIZE - WET BASIS (%)	-		-		-		-	
FIELD MOISTURE CONTENT (%)	12.5		19.5		18.5		21.5	
OPTIMUM MOISTURE CONTENT(%)	12.5		19.0		18.5		21.5	
MOISTURE VARIATION (%)	0.0		0.5		0.0		0.0	
FIELD WET DENSITY (t/m^3)	2.16		2.01		2.09		2.09	
PEAK CONVERTED WET DENSITY (t/m^3)	2.23		2.07		2.12		2.06	
ADJUSTED PEAK CONVERTED WET DENSITY (t/m^3)	-		-		-		-	
HILF DENSITY RATIO / SPEC (%)	**97.0**	**95**	**97.0**	**95**	**98.5**	**95**	**101.0**	**95**

TEST PROCEDURE
Field A.S. 1289 5.8.1
Laboratory A.S. 1289 5.7.1 (Standard Compaction), 2.1.1

TERMINOLOGY LEGEND
(S) Subgrade; (LSB) Lower Subbase; (B) Base Course; (SB) Subbase Course; (F) Fill; (SF) Select Fill; (AF) Allotment Fill; (STF) Sewer Trench Fill; (EF) Embankment Fill; (SWTF) Stormwater Trench Fill

- Field testing and selection of test locations carried out in general accordance with AS 3798 Level 1 guidelines.
- Test locations were not professionally surveyed therefore recorded locations should be considered as approximate only.

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CQA/R/21C

FIELD DENSITY (RATIO) TEST REPORT

CLIENT: SUTGOLD P/L C/- ROSS CAMPBELL & ASSOC (Q) P/L
REPORT NO: 18

PROJECT: 105-107 GORDON ROAD, REDLAND BAY
JOB NO: CQAL/10/024

JOB DESCRIPTION: RESIDENTIAL SUBDIVISION
DATE: 31 May 2010

SAMPLE NUMBER	DL/10/2853	DL/10/2854	DL/10/2855
DATE/TIME TESTED	26/5/10, 8.45am	26/5/10, 11.00am	26/5/10, 12.15pm
DEPTH OF TEST (mm)	150	150	150
DEPTH OF LAYER (mm)	-	-	-
LAYER TERMINOLOGY	AF48	AF49	AF50
TEST LOCATION	Lot 40, 11m off back, 12m off right boundaries	Lot 6, 7m off back, 2m off right boundaries	Lot 5, 9m off back, 3m off left boundaries
TEST ELEVATION	Final Surface Level	RL: 24.59	RL: 25.82
SOIL DESCRIPTION	Sandy Clay	Sandy Clay	Sandy Clay
OVERSIZE SIEVE (mm)	19.0	19.0	19.0
OVERSIZE - WET BASIS (%)	-	-	-
FIELD MOISTURE CONTENT (%)	18.5	17.0	19.0
OPTIMUM MOISTURE CONTENT(%)	18.0	18.0	19.0
MOISTURE VARIATION (%)	0.0	-1.5	0.5
FIELD WET DENSITY (t/m^3)	2.06	1.99	2.06
PEAK CONVERTED WET DENSITY (t/m^3)	2.11	2.09	2.13
ADJUSTED PEAK CONVERTED WET DENSITY (t/m^3)	-	-	-
HILF DENSITY RATIO / SPEC (%)	**97.5** / **95**	**95.0** / **95**	**97.0** / **95**

TEST PROCEDURE
Field A.S. 1289 5.8.1
Laboratory A.S. 1289 5.7.1 (Standard Compaction), 2.1.1

TERMINOLOGY LEGEND
(S) Subgrade; (LSB) Lower Subbase; (B) Base Course; (SB) Subbase Course; (F) Fill; (SF) Select Fill; (AF) Allotment Fill; (STF) Sewer Trench Fill; (EF) Embankment Fill; (SWTF) Stormwater Trench Fill

- Field testing and selection of test locations carried out in general accordance with AS 3798 Level 1 guidelines.
- Test locations were not professionally surveyed therefore recorded locations should be considered as approximate only.

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CQA/R/21C

FIELD DENSITY RATIO (HILF) TEST REPORT (AS 1289)

CLIENT: SUTGOLD P/L C/- ROSS CAMPBELL & ASSOC (Q) P/L
REPORT NO: 33

PROJECT: 105-107 GORDON ROAD, REDLAND BAY
JOB NO: CQAL/10/024

JOB DESCRIPTION: RESIDENTIAL SUBDIVISION
DATE: 22 June 2010

SAMPLE NUMBER	DL/10/3341		DL/10/3342		DL/10/3343		
DATE/TIME TESTED	16/6/10, 12.45pm		16/6/10, 1.00pm		16/6/10, 1.15pm		
DEPTH OF TEST (mm)	150		150		150		
DEPTH OF LAYER (mm)	-		-		-		
LAYER TERMINOLOGY	AF66		AF67		AF68		
TEST LOCATION	Lot 5, 2m off back, 3m off right boundaries		Lot 4, 3m off back 7m off left boundaries		Lot 4, 2m off back, 10m off right boundaries		
TEST ELEVATION	RL: 22.91		RL: 22.84		RL: 22.82		
SOIL DESCRIPTION	Sandy Clay		Sandy Clay		Sandy Clay		
OVERSIZE SIEVE (mm)	19.0		19.0		19.0		
OVERSIZE - WET BASIS (%)	-		-		-		
FIELD MOISTURE CONTENT (%)	16.5		16.0		17.0		
OPTIMUM MOISTURE CONTENT(%)	16.5		16.0		17.5		
MOISTURE VARIATION (%)	0.0		0.0		-0.5		
FIELD WET DENSITY (t/m^3)	2.09		2.10		2.07		
PEAK CONVERTED WET DENSITY (t/m^3)	2.15		2.17		2.12		
ADJUSTED PEAK CONVERTED WET DENSITY (t/m^3)	-		-		-		
HILF DENSITY RATIO / SPEC (%)	**97.0**	**95**	**97.0**	**95**	**97.5**	**95**	

TEST PROCEDURE
Field A.S. 1289 5.8.1
Laboratory A.S. 1289 5.7.1 (Standard Compaction), 2.1.1

TERMINOLOGY LEGEND
(S) Subgrade; (LSB) Lower Subbase; (B) Base Course; (SB) Subbase Course; (F) Fill; (SF) Select Fill; (AF) Allotment Fill; (STF) Sewer Trench Fill; (EF) Embankment Fill; (SWTF) Stormwater Trench Fill

- Field testing and selection of test locations carried out in general accordance with AS 3798 Level 1 guidelines.
- Test locations were not professionally surveyed therefore recorded locations should be considered as approximate only.

W BATTISSON
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NATA Accreditation No. 4991
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GEOTECHNICAL CONSULTANTS

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CQA/R/21C

FIELD DENSITY RATIO (HILF) TEST REPORT (AS)

CLIENT: SUTGOLD P/L C/- ROSS CAMPBELL & ASSOC (Q) P/L
REPORT NO: 34

PROJECT: 105-107 GORDON ROAD, REDLAND BAY
JOB NO: CQAL/10/024

JOB DESCRIPTION: RESIDENTIAL SUBDIVISION
DATE: 22 June 2010

SAMPLE NUMBER	DL/10/3344		DL/10/3345		DL/10/3346		
DATE/TIME TESTED	17/6/10, 11.00am		17/6/10, 11.15am		17/6/10, 11.30am		
DEPTH OF TEST (mm)	150		150		150		
DEPTH OF LAYER (mm)	-		-		-		
LAYER TERMINOLOGY	AF69		AF70		AF71		
TEST LOCATION	Lot 5, 3m off back, 15m off left boundaries		Lot 5, 4m off back, 7m off right boundaries		Lot 4, 3m off back, 4m off left boundaries		
TEST ELEVATION	RL: 24.91		RL: 24.58		RL: 23.95		
SOIL DESCRIPTION	Sandy Clay		Sandy Clay		Sandy Clay		
OVERSIZE SIEVE (mm)	19.0		19.0		19.0		
OVERSIZE - WET BASIS (%)	-		-		-		
FIELD MOISTURE CONTENT (%)	21.5		18.5		20.5		
OPTIMUM MOISTURE CONTENT(%)	21.5		19.0		21.0		
MOISTURE VARIATION (%)	0.0		-0.5		-0.5		
FIELD WET DENSITY (t/m^3)	2.03		2.05		2.00		
PEAK CONVERTED WET DENSITY (t/m^3)	2.06		2.12		2.11		
ADJUSTED PEAK CONVERTED WET DENSITY (t/m^3)			-		-		
HILF DENSITY RATIO / SPEC (%)	**96.5**	**95**	**96.5**	**95**	**95.0**	**95**	

TEST PROCEDURE
Field A.S. 1289 5.8.1
Laboratory A.S. 1289 5.7.1 (Standard Compaction), 2.1.1

TERMINOLOGY LEGEND
(S) Subgrade, (LSB) Lower Subbase, (B) Base Course, (SB) Subbase Course, (F) Fill, (SF) Select Fill, (AF) Allotment Fill, (STF) Sewer Trench Fill, (EF) Embankment Fill, (SWTF) Stormwater Trench Fill

- Field testing and selection of test locations carried out in general accordance with AS 3798 Level 1 guidelines.
- Test locations were not professionally surveyed therefore recorded locations should be considered as approximate only.

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CIVIL QUALITY ASSURANCE (QLD) PTY. LTD.

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CQA/R/21C

FIELD DENSITY RATIO (FDR) TEST REPORT (AS)

CLIENT: SUTGOLD P/L C/- ROSS CAMPBELL & ASSOC (Q) P/L — REPORT NO: 37

PROJECT: 105-107 GORDON ROAD, REDLAND BAY — JOB NO: CQAL/10/024

JOB DESCRIPTION: RESIDENTIAL SUBDIVISION — DATE: 23 June 2010

SAMPLE NUMBER	DL/10/3404	DL/10/3405	DL/10/3406	
DATE/TIME TESTED	18/6/10, 10.00am	18/6/10, 10.10am	18/6/10, 10.20am	
DEPTH OF TEST (mm)	150	150	150	
DEPTH OF LAYER (mm)	-	-	-	
LAYER TERMINOLOGY	AF72	AF73	AF74	
TEST LOCATION	Lot 5, 5m off back, 10m off right boundaries	Lot 4, 2m off back, 8m off left boundaries	Lot 4, 3m off back, 14m off left boundaries	
TEST ELEVATION	RL: 25.71	RL: 24.91	RL: 23.58	
SOIL DESCRIPTION	Sandy Clay	Sandy Clay	Sandy Clay	
OVERSIZE SIEVE (mm)	19.0	19.0	19.0	
OVERSIZE - WET BASIS (%)	-	-	-	
FIELD MOISTURE CONTENT (%)	25.0	14.5	16.5	
OPTIMUM MOISTURE CONTENT(%)	25.0	14.5	16.5	
MOISTURE VARIATION (%)	-0.5	-0.5	0.0	
FIELD WET DENSITY (t/m^3)	2.02	2.14	2.13	
PEAK CONVERTED WET DENSITY (t/m^3)	1.97	2.08	2.12	
ADJUSTED PEAK CONVERTED WET DENSITY (t/m^3)		-	-	
HILF DENSITY RATIO / SPEC (%)	**102.5** **95**	**102.5** **95**	**100.5** **95**	

TEST PROCEDURE	Field A.S. 1289 5.8.1 Laboratory A.S. 1289 5.7.1 (Standard Compaction), 2.1.1
TERMINOLOGY LEGEND	(S) Subgrade; (LSB) Lower Subbase; (B) Base Course; (SB) Subbase Course; (F) Fill; (SF) Select Fill; (AF) Allotment Fill; (STF) Sewer Trench Fill; (EF) Embankment Fill; (SWTF) Stormwater Trench Fill

- Field testing and selection of test locations carried out in general accordance with AS 3798 Level 1 guidelines.
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