



CIVIL GEOTECHNICAL SERVICES
ABN 26 474 013 724
PO Box 678 Croydon Vic 3136
Telephone: 9723 0744 Facsimile: 9723 0799

5th July 2016

Our Reference: 15560:GB021

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
ASPECT ESTATE – STAGE 6, GREENVALE

Please find attached our Report Nos 15560/R001 to 15560/R008 that relate to the field density testing that was conducted across the filled allotments at the above subdivision. The level 1 inspections and associated field density testing commenced in early December 2015 and was completed in mid December 2015.

The inspections and testing of the earthworks was undertaken in general accordance with the Level 1 requirements of AS 3798 - Guidelines on Earthworks for Commercial and Residential Developments.

The site inspection and testing was performed by experienced geotechnicians from this office. Any areas that were deemed unsatisfactory were reworked and retested under their supervision. The testing was performed to the relevant Australian Standards and the accompanying test reports carry NATA endorsement. The attached compaction results, which were located randomly throughout the fill profile, are considered to be representative of the bulk fill materials that were placed across the reported allotments by Winslow Constructors during the aforementioned period. The approximate locations of the field density tests can be seen on the attached plan (Figure 1).

We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

A handwritten signature in black ink, appearing to read 'Griffin Brown', written over a white background.

Griffin Brown



COMPACTION ASSESSMENT

Job No 15560
 Report No 15560/R001
 Date Issued 18/12/15

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	ZM
Project	ASPECT - STAGE 6	Date tested	02/12/15
Location	GREENVALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 07:46
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	1	2	3	-	-	-
	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	1.78	1.89	2.02	-	-
Field moisture content	%	22.4	22.0	21.1	-	-

Test procedure AS 1289.5.7.1

Test No	1	2	3	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-
Percent of oversize material	wet	5	9	16	-	-
Peak Converted Wet Density	t/m ³	1.85	1.88	1.93	-	-
Adjusted Peak Converted Wet Density	t/m ³	1.87	1.92	1.99	-	-
Optimum Moisture Content	%	24.0	23.0	23.5	-	-

Moisture Variation From Optimum Moisture Content	1.5% dry	1.0% dry	2.0% dry	-	-	-
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Density Ratio (R _{HD})	%	95.5	98.5	101.5	-	-
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Material description

No 1 - 3 Clay Fill



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 15560
 Report No 15560/R002
 Date Issued 18/12/15

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	ZM
Project	ASPECT - STAGE 6	Date tested	02/12/15
Location	GREENVALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 14:37
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	4	5	6	-	-	-
	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	1.79	1.80	1.88	-	-
Field moisture content	%	25.7	25.6	25.7	-	-

Test procedure AS 1289.5.7.1

Test No	4	5	6	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-
Percent of oversize material	wet	4	0	1	-	-
Peak Converted Wet Density	t/m ³	1.72	1.75	1.81	-	-
Adjusted Peak Converted Wet Density	t/m ³	1.75	-	1.82	-	-
Optimum Moisture Content	%	28.0	27.0	28.5	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	1.5% dry	2.5% dry	-	-	-
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Density Ratio (R _{HD})	%	102.5	103.0	103.0	-	-
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Material description

No 4 - 6 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 15560
 Report No 15560/R003
 Date Issued 18/12/15

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	ZM
Project	ASPECT - STAGE 6	Date tested	03/12/15
Location	GREENVALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:29
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	7	8	9	-	-	-
	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	1.90	1.92	1.84	-	-
Field moisture content	%	24.1	26.5	22.6	-	-

Test procedure AS 1289.5.7.1

Test No	7	8	9	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-
Percent of oversize material	wet	0	2	1	-	-
Peak Converted Wet Density	t/m ³	1.84	1.86	1.91	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	1.89	1.93	-	-
Optimum Moisture Content	%	26.0	28.5	24.0	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	1.5% dry	-	-	-
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Density Ratio (R _{HD})	%	103.0	102.0	95.5	-	-
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Material description

No 7 - 9 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 15560
 Report No 15560/R004
 Date Issued 22/12/15

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	ZM
Project	ASPECT - STAGE 6	Date tested	04/12/15
Location	GREENVALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:10
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	10	11	12	13	14	-
	REFER TO FIGURE 1					
Approximate depth below FSL						
Measurement depth	mm	175	175	175	175	-
Field wet density	t/m ³	1.97	1.83	1.77	1.84	-
Field moisture content	%	19.4	20.5	22.0	23.5	-

Test procedure AS 1289.5.7.1

Test No	10	11	12	13	14	-	
Compactive effort	Standard						
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	-
Percent of oversize material	wet	0	0	0	7	0	-
Peak Converted Wet Density	t/m ³	1.92	1.78	1.80	1.82	1.87	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	1.85	-	-
Optimum Moisture Content	%	22.0	23.0	24.5	26.0	23.0	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.5% dry	2.5% dry	1.0% dry	-
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Density Ratio (R _{HD})	%	103.0	103.0	98.0	99.5	98.5	-
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Material description

No 10 - 14 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 15560
 Report No 15560/R005
 Date Issued 22/12/15

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	ZM
Project	ASPECT - STAGE 6	Date tested	10/12/15
Location	GREENVALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 09:14
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	15	16	-	-	-	-
	REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate depth below FSL						
Measurement depth	mm	175	175	-	-	-
Field wet density	t/m ³	1.86	1.94	-	-	-
Field moisture content	%	20.1	23.1	-	-	-

Test procedure AS 1289.5.7.1

Test No	15	16	-	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	-	-	-
Percent of oversize material	wet	0	0	-	-	-
Peak Converted Wet Density	t/m ³	1.80	1.88	-	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	22.5	25.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	-	-	-	-
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Density Ratio (R _{HD})	%	103.5	103.5	-	-	-
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Material description

No 15 - 16 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 15560
 Report No 15560/R006
 Date Issued 06/01/16

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	ZM
Project	ASPECT - STAGE 6	Date tested	15/12/15
Location	GREENVALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:47
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	17	18	19	-	-	-
	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	1.89	1.93	1.93	-	-
Field moisture content	%	22.8	22.7	25.7	-	-

Test procedure AS 1289.5.7.1

Test No	17	18	19	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-
Percent of oversize material	wet	6	2	7	-	-
Peak Converted Wet Density	t/m ³	1.89	1.87	1.85	-	-
Adjusted Peak Converted Wet Density	t/m ³	1.91	1.88	1.88	-	-
Optimum Moisture Content	%	25.0	25.5	28.0	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.5% dry	2.0% dry	-	-	-
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Density Ratio (R _{HD})	%	99.0	102.5	103.0	-	-
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Material description

No 17 - 19 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 15560
 Report No 15560/R007
 Date Issued 15/01/16

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	NB
Project	ASPECT - STAGE 6	Date tested	18/12/15
Location	GREENVALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:05
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	20	21	22	23	24	25	
	REFER TO FIGURE 1						
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	
Field wet density	t/m ³	1.72	1.83	1.81	1.80	1.85	1.76
Field moisture content	%	6.9	6.0	7.8	7.2	8.9	5.7

Test procedure AS 1289.5.7.1

Test No	20	21	22	23	24	25	
Compactive effort	Standard						
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	3	7	7	1	0	1
Peak Converted Wet Density	t/m ³	1.78	1.77	1.76	1.76	1.79	1.77
Adjusted Peak Converted Wet Density	t/m ³	1.80	1.80	1.80	1.78	-	1.80
Optimum Moisture Content	%	9.0	8.0	10.0	9.0	11.0	7.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.5% dry	2.5% dry	2.0% dry	2.0% dry
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Density Ratio (R _{HD})	%	95.5	102.0	100.5	101.5	103.5	98.0
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Material description

No 20 - 25 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 15560
 Report No 15560/R008
 Date Issued 08/01/16

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	NB
Project	ASPECT - STAGE 6	Date tested	18/12/15
Location	GREENVALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:26
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	26	27	28	29	30	31	
	REFER TO FIGURE 1						
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	
Field wet density	t/m ³	1.85	1.81	1.83	1.78	1.82	1.91
Field moisture content	%	8.3	11.4	13.0	7.3	8.5	8.3

Test procedure AS 1289.5.7.1

Test No	26	27	28	29	30	31	
Compactive effort	Standard						
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	
Percent of oversize material	wet	0	0	0	4	4	9
Peak Converted Wet Density	t/m ³	1.91	1.91	1.92	1.74	1.88	1.80
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	1.76	1.89	1.84
Optimum Moisture Content	%	10.5	13.5	15.5	9.0	10.5	10.5

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.5% dry	2.5% dry	2.5% dry	2.5% dry
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Density Ratio (R _{HD})	%	97.0	95.0	95.0	101.0	96.5	104.0
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Material description

No 26 - 31 Clay Fill



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry