



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

25th July 2018

Our Reference: 18268:NB238

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
NEWHAVEN – STAGE 6 (TARNEIT)**

Please find attached our Report No's 18268/R001 to 18268/R007 which relate to the field density testing that was conducted within the filled allotments at the above subdivision. The level 1 inspections and associated field density testing was performed in May 2018.

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 blue ink, appearing to read 'Nick Brock', is written over a light blue circular stamp.

Nick Brock

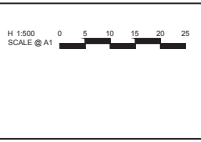
FIGURE 1



Approximate field density test location

File Name: 18051625001.dwg
 User: WONG, J
 Plot Date: 18/12/2017 9:52 AM
 Sheet 2 of 18 Sheets

Rev	Amendments	Approved	Date
D	ISSUED FOR CONSTRUCTION	JS	18-12-17
C	FUTURE FOOTPATH & SEWER AND BALANCE LOT NOTE, ADDED	JS	09-10-17
B	CATCH DRAIN ADDED	JS	27-09-17
A	ISSUED FOR APPROVAL	JS	07-09-17



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Designed
 W. ONG
 Authorised
 J. SPENCER
 Checked
 B. IBBS
 Date
 18-12-17

NEWHAVEN STAGE 6
ROAD & DRAINAGE LAYOUT PLAN
DETAIL PLAN
 WYNDAM CITY COUNCIL
 PEET 1985 PTY LTD
CONSTRUCTION

Dwg No
303438CR200
 Rev
0



COMPACTION ASSESSMENT

Job No 18268
 Report No 18268R001
 Date Issued 25/07/2018

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	NEW HAVEN - STAGE 6	Date tested	05/05/18
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 13:03
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	1	2	3	4	5	6
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1
Approximate depth below FSL						
Measurement depth mm	175	175	175	175	175	175
Field wet density t/m ³	1.83	1.79	1.81	1.87	1.80	1.82
Field moisture content %	24.4	23.3	23.7	24.7	22.6	22.1

Test procedure AS 1289.5.7.1

Test No	1	2	3	4	5	6
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	0	0	0	0	0	0
Peak Converted Wet Density t/m ³	1.90	1.87	1.86	1.91	1.84	1.88
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	25.0	25.5	24.0	25.5	24.5	24.0

Moisture Variation From Optimum Moisture Content	0.5% dry	2.0% dry	0.5% dry	1.0% dry	2.0% dry	2.0% dry
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Density Ratio (R _{HD}) %	96.0	96.0	97.0	97.5	97.5	96.5
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Material description

No 1 - 6 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 18268
 Report No 18268/R002
 Date Issued 25/07/2018

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	NEW HAVEN - STAGE 6	Date tested	07/05/18
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 09:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	7	8	9	10	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1		
Approximate depth below FSL						
Measurement depth	mm	175	175	175	175	-
Field wet density	t/m ³	1.82	1.77	1.84	1.79	-
Field moisture content	%	31.5	31.2	31.5	30.6	-

Test procedure AS 1289.5.7.1

Test No	7	8	9	10	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	-
Percent of oversize material	wet	2	1	2	2	-
Peak Converted Wet Density	t/m ³	1.77	1.80	1.80	1.80	-
Adjusted Peak Converted Wet Density	t/m ³	1.81	1.82	1.84	1.83	-
Optimum Moisture Content	%	33.5	32.0	33.0	32.5	-

Moisture Variation From Optimum Moisture Content	2.0% dry	1.0% dry	1.5% dry	2.0% dry	-	-
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Density Ratio (R_{HD})	%	100.5	97.5	100.5	97.5	-	-
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Material description

No 7 - 10 Clay Fill



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COMPACTION ASSESSMENT

Job No 18268
 Report No 18268/R003
 Date Issued 25/07/2018

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	NEW HAVEN - STAGE 6	Date tested	08/05/18
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	11	12	13	14	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1		
Approximate depth below FSL						
Measurement depth <i>mm</i>	175	175	175	175	-	-
Field wet density <i>t/m³</i>	1.75	1.75	1.78	1.74	-	-
Field moisture content %	22.2	23.8	24.1	23.2	-	-

Test procedure AS 1289.5.7.1

Test No	11	12	13	14	-	-
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	19.0	-	-
Percent of oversize material <i>wet</i>	0	0	0	0	-	-
Peak Converted Wet Density <i>t/m³</i>	1.82	1.82	1.85	1.83	-	-
Adjusted Peak Converted Wet Density <i>t/m³</i>	0	0	0	0	-	-
Optimum Moisture Content %	24.0	26.5	26.0	25.5	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.5% dry	2.0% dry	2.5% dry	-	-
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Density Ratio (R_{HD})	%	96.5	96.5	96.5	95.5	-	-
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Material description

No 11 - 14 Clay Fill



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COMPACTION ASSESSMENT

Job No 18268
 Report No 18268/R004
 Date Issued 24/07/2018

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	NEW HAVEN - STAGE 6	Date tested	09/05/18
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	08:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	15	16	17	18	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1		
Approximate depth below FSL						
Measurement depth	mm	175	175	175	175	-
Field wet density	t/m ³	1.79	1.79	1.82	1.81	-
Field moisture content	%	23.7	27.2	24.6	24.0	-

Test procedure AS 1289.5.7.1

Test No	15	16	17	18	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	-
Percent of oversize material	wet	9	1	7	5	-
Peak Converted Wet Density	t/m ³	1.82	1.82	1.85	1.83	-
Adjusted Peak Converted Wet Density	t/m ³	1.86	1.83	1.88	1.85	-
Optimum Moisture Content	%	26.5	29.0	27.0	26.5	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.0% dry	2.5% dry	-	-
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Density Ratio (R _{HD})	%	96.0	98.0	97.0	98.0	-	-
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Material description

No 15 - 18 Clay Fill



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COMPACTION ASSESSMENT

Job No 18268
 Report No 18268/R005
 Date Issued 24/07/2018

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	NEW HAVEN - STAGE 6	Date tested	10/05/18
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	09:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	19	20	21	-	-	-
Location	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	1.88	1.96	1.90	-	-
Field moisture content	%	27.0	23.5	22.7	-	-

Test procedure AS 1289.5.7.1

Test No	19	20	21	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-
Percent of oversize material	wet	1	6	2	-	-
Peak Converted Wet Density	t/m ³	1.97	1.98	1.96	-	-
Adjusted Peak Converted Wet Density	t/m ³	1.97	2.00	1.97	-	-
Optimum Moisture Content	%	25.0	22.5	23.0	-	-

Moisture Variation From Optimum Moisture Content	2.0% wet	1.0% wet	0.5% dry	-	-	-
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Density Ratio (R _{HD})	%	95.0	98.0	96.5	-	-
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Material description

No 19 - 21 Clay Fill



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COMPACTION ASSESSMENT

Job No 18268
 Report No 18268/R006
 Date Issued 18/07/2018

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	NEW HAVEN - STAGE 6	Date tested	17/05/18
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:32
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	22	23	24	25	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1		
Approximate depth below FSL						
Measurement depth	mm	175	175	175	175	-
Field wet density	t/m ³	1.83	1.79	1.81	1.82	-
Field moisture content	%	24.1	23.6	26.4	25.6	-

Test procedure AS 1289.5.7.1

Test No	22	23	24	25	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	-
Percent of oversize material	wet	8	0	0	4	-
Peak Converted Wet Density	t/m ³	1.86	1.87	1.90	1.86	-
Adjusted Peak Converted Wet Density	t/m ³	1.90	-	-	1.88	-
Optimum Moisture Content	%	26.0	26.5	26.0	27.5	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.5% dry	0.5% wet	2.0% dry	-	-
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Density Ratio (R _{HD})	%	96.5	95.5	95.0	97.0	-	-
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Material description

No 22 - 25 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 18268
 Report No 18268/R007
 Date Issued 24/07/2018

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	NEW HAVEN - STAGE 6	Date tested	23/05/18
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	09:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	26	27	28	29	30	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	
Approximate depth below FSL						
Measurement depth	mm	175	175	175	175	-
Field wet density	t/m ³	1.95	1.90	1.96	1.88	-
Field moisture content	%	22.4	22.9	21.9	24.0	-

Test procedure AS 1289.5.7.1

Test No	26	27	28	29	30	-	
Compactive effort	Standard						
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	-
Percent of oversize material	wet	6	8	6	6	6	-
Peak Converted Wet Density	t/m ³	1.97	1.96	2.00	1.91	1.91	-
Adjusted Peak Converted Wet Density	t/m ³	2.00	1.99	2.02	1.93	1.93	-
Optimum Moisture Content	%	25.0	23.5	22.5	26.0	22.0	-

Moisture Variation From Optimum Moisture Content	2.5% dry	0.5% dry	0.5% dry	2.0% dry	2.5% dry	-
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Density Ratio (R _{HD})	%	98.0	95.5	97.0	97.5	96.0	-
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Material description

No 26 - 30 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 18268
 Report No 18268R008
 Date Issued 24/07/2018

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	NEW HAVEN - STAGE 6	Date tested	24/05/18
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:06
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	31	32	33	34	35	36
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1
Approximate depth below FSL						
Measurement depth <i>mm</i>	175	175	175	175	175	175
Field wet density <i>t/m³</i>	1.86	1.79	1.74	1.76	1.78	1.78
Field moisture content %	24.9	22.8	23.3	23.7	24.3	23.2

Test procedure AS 1289.5.7.1

Test No	31	32	33	34	35	36
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material <i>wet</i>	0	0	0	0	0	0
Peak Converted Wet Density <i>t/m³</i>	1.92	1.84	1.80	1.81	1.82	1.87
Adjusted Peak Converted Wet Density <i>t/m³</i>	-	-	-	-	-	-
Optimum Moisture Content %	26.0	24.5	24.5	25.0	25.5	25.0

Moisture Variation From Optimum Moisture Content	1.0% dry	1.5% dry	1.0% dry	1.5% dry	1.0% dry	2.0% dry
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Density Ratio (R_{HD})	%	97.0	97.5	97.0	97.5	98.0	95.0
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Material description

No 31 - 36 Clay Fill



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