



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

9th June 2020

Our Reference: 19610:NB755

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
EMERALD PARK – STAGE 10 (TARNEIT)**

Please find attached our Report No's 19610/R001 to 19610/R009 which relate to the field density testing that was conducted within the filled allotments of the above subdivision. The level 1 inspections and associated field density testing commenced in September 2019 and was completed in March 2020.

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).

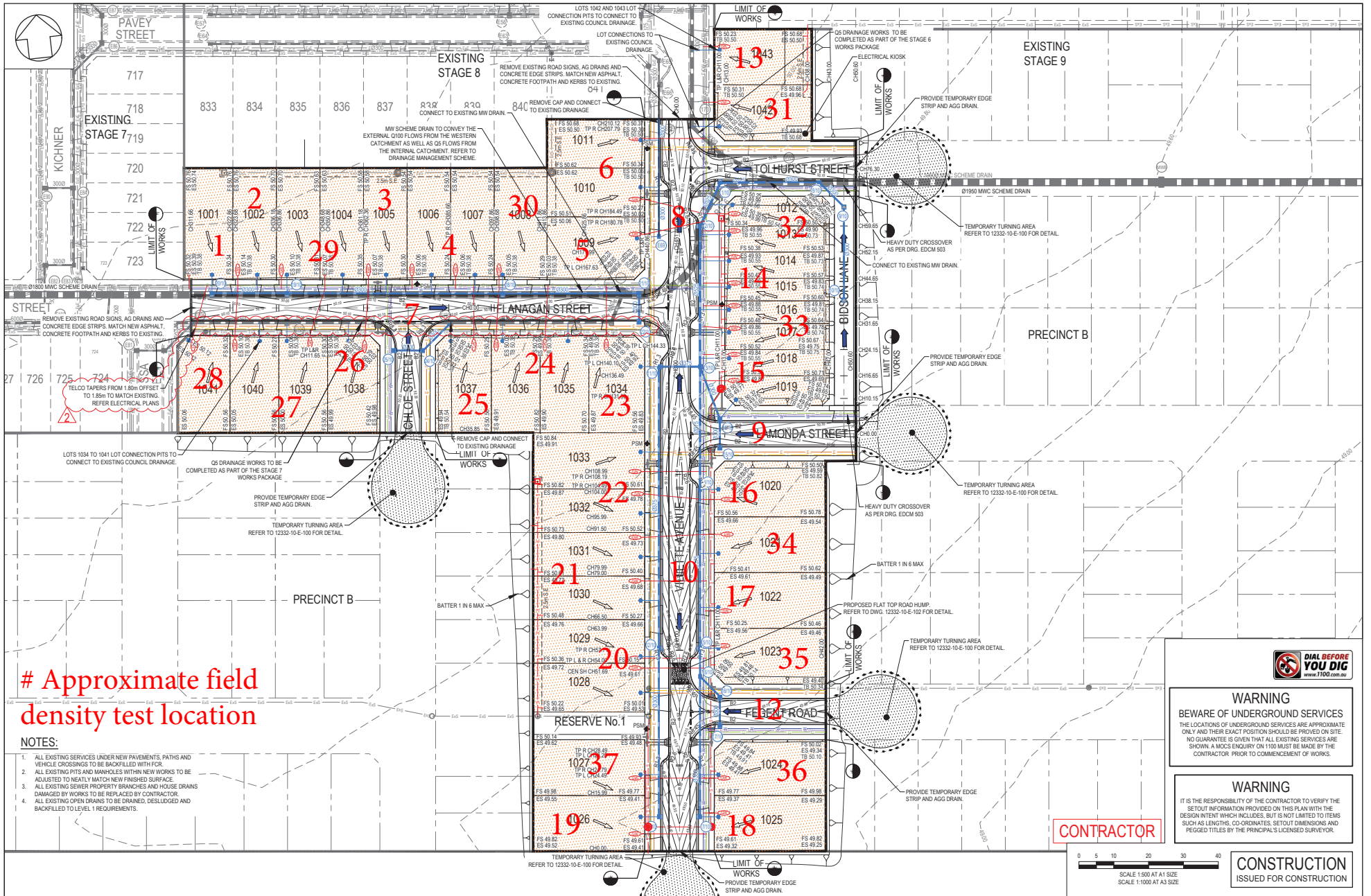
Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

A handwritten signature in blue ink, appearing to read 'Nick Brock', is written over a faint circular stamp.

Nick Brock

FIGURE 1



Approximate field density test location

- NOTES:**
1. ALL EXISTING SERVICES UNDER NEW PAVEMENTS, PATHS AND VEHICLE CROSSINGS TO BE BACKFILLED WITH F.C.
 2. ALL EXISTING PITS AND MANHOLES WITHIN NEW WORKS TO BE ADJUSTED TO NEATLY MATCH NEW FINISHED SURFACE.
 3. ALL EXISTING SEWER PROPERTY BRANCHES AND HOUSE DRAINS DAMAGED BY WORKS TO BE REPLACED BY CONTRACTOR.
 4. ALL EXISTING OPEN DRAINS TO BE DRAINED, DESLUDGED AND BACKFILLED TO LEVEL 1 REQUIREMENTS.

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVED ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN. A MOCS ENQUIRY ON 1100 MUST BE MADE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS.

WARNING
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SETOUT INFORMATION PROVIDED ON THIS PLAN WITH THE DESIGN INTENT WHICH INCLUDES, BUT IS NOT LIMITED TO ITEMS SUCH AS LENGTHS, CO-ORDINATES, SETOUT DIMENSIONS AND PEGGED TITLES BY THE PRINCIPAL'S LICENSED SURVEYOR.

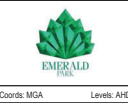
CONTRACTOR



CONSTRUCTION
ISSUED FOR CONSTRUCTION

VER	DATE	REVISION	APPD.
2	19/03/2019	FLANAGAN STREET TELCO OFFSET AMENDED	
1	26/02/2019	QWR TAPPINGS UPDATED	
0	13/12/2018	ISSUED FOR CONSTRUCTION	

EXISTING GAS MAIN	PROPOSED GAS MAIN	STREET NAME SIGN



TAYLORS
Urban Development | Infrastructure
4/170 Fernside Quay Road, Hasting Hill, Victoria, 3168
Tel: 03 9393 2953 | www.taylors.com.au

DESIGNED: MCD AUTHORIZED: JOY DRAFTED: PTT
CHECKED: KMJ AUTH. DATE: 29/06/2018 CAD REF: 12332-10-E-109

WYNDHAM CITY COUNCIL
EMERALD PARK, STAGE 10

SCALE 1:500 @ A1
VERSION 2
SHEET 10 OF 51
DRAWING No.
12332-10-E-109

DETAIL LAYOUT PLAN



COMPACTION ASSESSMENT

Job No 19610
 Report No 19610/R001
 Date Issued 25/09/2019

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	EMERALD PARK - STAGE 10	Date tested	18/09/19
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 09:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	1	2	3	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth <i>mm</i>	175	175	175	-	-	-
Field wet density <i>t/m³</i>	1.97	1.96	1.97	-	-	-
Field moisture content <i>%</i>	23.5	24.1	21.5	-	-	-

Test procedure AS 1289.5.7.1

Test No	1	2	3	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	-	-	-
Percent of oversize material <i>wet</i>	0	0	0	-	-	-
Peak Converted Wet Density <i>t/m³</i>	2.01	2.01	2.01	-	-	-
Adjusted Peak Converted Wet Density <i>t/m³</i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	23.5	24.0	21.5	-	-	-

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	0.0%	-	-	-
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Density Ratio (R_{HD})	%	98.0	98.0	98.0	-	-	-
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Material description

No 1 - 3 Clay Fill

AVRLOT HILF V1.10 MAR 13



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 19610
 Report No 19610/R002
 Date Issued 25/09/2019

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	EMERALD PARK - STAGE 10	Date tested	19/09/19
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	4	5	6	-	-	-
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	1.96	1.98	1.96	-	-
Field moisture content	%	21.9	21.3	22.1	-	-

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	0	0	0	-	-
Peak Converted Wet Density	t/m ³	2.00	2.02	2.00	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	22.0	21.5	22.5	-	-

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	0.0%	-	-	-
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Density Ratio (R _{HD})	%	98.0	98.0	98.0	-	-
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Material description

No 4 - 6 Clay Fill

AVRLOT HILF V1.10 MAR 13



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COMPACTION ASSESSMENT

Job No 19610
 Report No 19610/R003
 Date Issued 07/10/2019

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	EMERALD PARK - STAGE 10	Date tested	20/09/19
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:54
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	7	8	9	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth <i>mm</i>	175	175	175	-	-	-
Field wet density <i>t/m³</i>	1.83	1.83	1.75	-	-	-
Field moisture content <i>%</i>	17.1	21.5	23.3	-	-	-

Test procedure AS 1289.5.7.1

Test No	7	8	9	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	-	-	-
Percent of oversize material <i>wet</i>	6	2	0	-	-	-
Peak Converted Wet Density <i>t/m³</i>	1.81	1.86	1.77	-	-	-
Adjusted Peak Converted Wet Density <i>t/m³</i>	1.84	1.86	-	-	-	-
Optimum Moisture Content <i>%</i>	19.5	24.0	26.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.5% dry	-	-	-
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Density Ratio (R_{HD})	%	99.5	98.5	99.0	-	-	-
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Material description

No 7 - 9 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 19610
 Report No 19610/R004
 Date Issued 14/01/2019

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 10	Date tested	24/10/19
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	08:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	10	11	12	13	14	15
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
Field wet density	t/m ³	2.05	2.02	1.91	1.90	1.82
Field moisture content	%	21.5	22.2	21.6	29.0	16.3

Test procedure AS 1289.5.7.1

Test No	10	11	12	13	14	15
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	0	0
Peak Converted Wet Density	t/m ³	2.10	2.06	1.95	1.95	1.91
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	21.5	22.0	21.5	29.0	14.0

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	0.0%	0.0%	2.5% wet	2.5% wet
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Density Ratio (R _{HD})	%	97.5	98.5	98.0	97.5	95.5	97.0
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Material description

No 10 - 15 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 19610
 Report No 19610/R005
 Date Issued 08/11/2019

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 10	Date tested	25/10/19
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	16	17	18	19	20	21
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
Field wet density	t/m ³	1.94	1.92	1.95	1.88	1.85
Field moisture content	%	19.9	19.7	18.8	20.1	20.1

Test procedure AS 1289.5.7.1

Test No	16	17	18	19	20	21
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	0	0
Peak Converted Wet Density	t/m ³	1.94	1.93	1.95	1.94	1.94
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	20.0	17.5	16.5	17.5	23.5

Moisture Variation From Optimum Moisture Content	0.0%	2.5% wet	2.5% wet	2.5% wet	2.5% dry	2.0% dry
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Density Ratio (R _{HD})	%	100.0	99.0	100.0	97.0	95.0	95.5
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Material description

No 16 - 21 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 19610
 Report No 19610/R006
 Date Issued 13/11/2019

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 10	Date tested	28/10/19
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	25	26	27	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth <i>mm</i>	175	175	175	-	-	-
Field wet density <i>t/m³</i>	1.93	1.95	1.89	-	-	-
Field moisture content <i>%</i>	20.8	24.3	22.4	-	-	-

Test procedure AS 1289.5.7.1

Test No	25	26	27	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	-	-	-
Percent of oversize material <i>wet</i>	0	0	0	-	-	-
Peak Converted Wet Density <i>t/m³</i>	1.95	1.96	1.94	-	-	-
Adjusted Peak Converted Wet Density <i>t/m³</i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	23.5	27.0	25.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.5% dry	-	-	-
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Density Ratio (R_{HD})	%	99.5	100.0	97.5	-	-	-
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Material description

No 25 - 27 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 19610
 Report No 19610/R007
 Date Issued 01/11/2019

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 10	Date tested	29/10/19
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	28	29	30	-	-	-
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/m³	1.93	1.93	1.95	-	-	-
Field moisture content %	20.9	20.7	22.0	-	-	-

Test procedure AS 1289.5.7.1

Test No	28	29	30	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve mm	19.0	19.0	19.0	-	-	-
Percent of oversize material wet	7	7	12	-	-	-
Peak Converted Wet Density t/m³	2.01	2.00	2.01	-	-	-
Adjusted Peak Converted Wet Density t/m³	2.03	2.02	2.05	-	-	-
Optimum Moisture Content %	21.0	21.0	22.5	-	-	-

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	0.0%	-	-	-
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Density Ratio (R_{HD})	95.0	95.0	95.5	-	-	-
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Material description

No 28 - 30 Clay Fill						
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AVRLOT HILF V1.10 MAR 13



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Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 19610
 Report No 19610/R008
 Date Issued 14/11/2019

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 10	Date tested	30/10/19
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	31	32	33	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth <i>mm</i>	175	175	175	-	-	-
Field wet density <i>t/m³</i>	2.03	2.02	2.00	-	-	-
Field moisture content <i>%</i>	20.0	17.0	21.0	-	-	-

Test procedure AS 1289.5.7.1

Test No	31	32	33	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	-	-	-
Percent of oversize material <i>wet</i>	0	0	0	-	-	-
Peak Converted Wet Density <i>t/m³</i>	2.04	2.04	2.03	-	-	-
Adjusted Peak Converted Wet Density <i>t/m³</i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	20.0	17.0	18.5	-	-	-

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	2.5% wet	-	-	-
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Density Ratio (R_{HD})	%	99.5	99.5	98.5	-	-	-
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Material description

No 31 - 33 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 19610
 Report No 19610/R009
 Date Issued 27/04/2020

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 10	Date tested	19/03/20
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	34	35	36	37	-	-
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>	1.90	1.95	1.97	1.89	-	-
Field moisture content <i>%</i>	24.1	22.9	23.4	21.3	-	-

Test procedure AS 1289.5.7.1

Test No	34	35	36	37	-	-
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>	1.93	1.98	2.00	1.92	-	-
Adjusted Peak Converted Wet Density <i>t/m³</i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	21.5	20.5	21.5	19.5	-	-

Moisture Variation From Optimum Moisture Content	2.5% wet	2.5% wet	2.0% wet	2.0% wet	-	-
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Density Ratio (R_{HD})	%	98.5	98.5	98.0	98.5	-	-
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Material description

No 34 - 37 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Accreditation No 9909

Approved Signatory : Justin Fry