



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: 19611:NB756

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
EMERALD PARK – STAGE 11 (TARNEIT)**

Please find attached our Report No's 19611/R001 to 19611/R008 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 October 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).

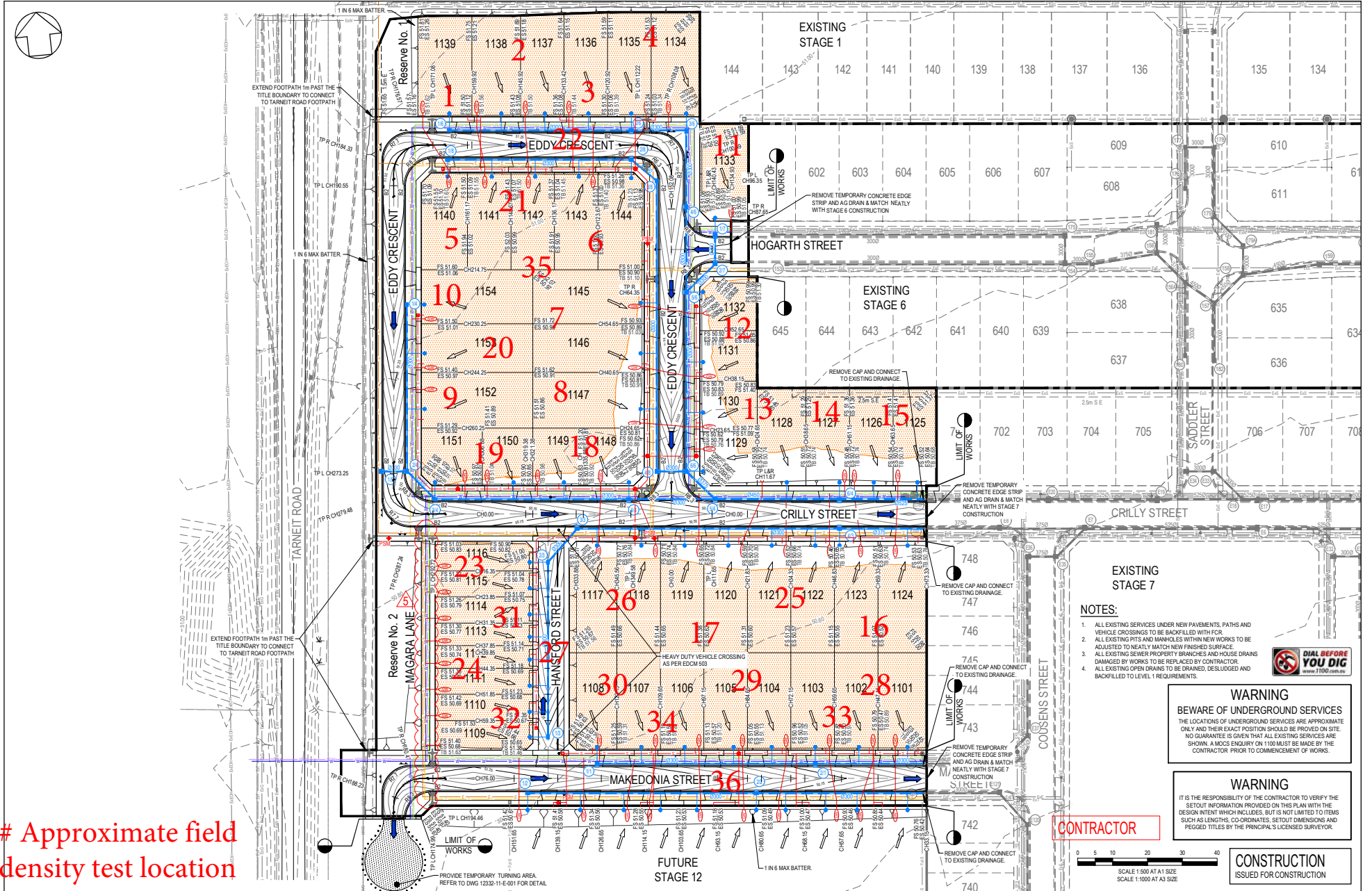
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

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 FCR.
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 PROVIDED 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 PRESSED TITLES BY THE PRINCIPAL'S LICENSED SURVEYOR.

CONTRACTOR

CONSTRUCTION
ISSUED FOR CONSTRUCTION

SCALE 1:500 AT A1 SIZE
SCALE 1:1000 AT A3 SIZE

5	25/07/2019	MAGARA LANE NBN OFFSET AMENDED
4	30/05/2019	CRILLY STREET ELECTRICAL OFFSETS AMENDED
3	12/04/2019	SERVICE CONDUITS ADJUSTED
2	13/03/2019	PSM LOCATIONS ADJUSTED
1	05/02/2019	COUNCIL COMMENTS ADDRESSED
VER.	DATE	REVISION

RCH	EXISTING GAS MAIN	PROPOSED GAS MAIN	STREET NAME SIGN
KMJ	EXISTING WATER MAIN	PROPOSED WATER MAIN	PEM
KMJ	EXISTING ELECTRICITY CABLE	PROPOSED NEW SERVING WATER	PROPOSED 3/4" WATER CONDUIT
KMJ	EXISTING TELCO CABLE & PHT	PROPOSED ELECTRICITY CABLE	EXISTING SURFACE LEVEL
KMJ	EXISTING SEWER MAIN & M.H.	PROPOSED TELCO CABLE	PROPOSED SURFACE BOLDLINE
KMJ	EXISTING DRAIN & PIT	PROPOSED SEWER MAIN & M.H.	FINISHED SURFACE TOP OF BATTER
KMJ	OPEN DRAIN	PROPOSED OPEN PIT & SAND/GRIT BATTERY	FILLING OVER TOP FINISH MORE THAN 200mm
APPD.			INDICATE SLOPE PROPOSED SURFACE

TAYLORS
Urban Development | Infrastructure
4/270 Reserve Quay Road, Hastings Hill, Victoria, 3168
Ph: 61 3 9555 2800 | Email: info@taylorsonline.com.au

DESIGNED: MCD AUTHORIZED: JOY DRAFTED: PTT
CHECKED: KMJ AUTH DATE: 02/07/2018 CAP REF: 12332-11-E-107

COORDS: MGA LEVELS: AHD

WYNDHAM CITY COUNCIL
EMERALD PARK, STAGE 11
DETAIL LAYOUT PLAN

SCALE	1:500 @ A1
VERSION	5
SHEET	8 OF 40
DRAWING NO.	12332-11-E-107



COMPACTION ASSESSMENT

Job No 19611
 Report No 19611/R001
 Date Issued 14/01/2020

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	EMERALD PARK - STAGE 11	Date tested	25/10/19
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:38
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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
Field wet density	t/m ³	1.90	1.90	1.95	1.92	1.93
Field moisture content	%	19.6	21.8	25.3	18.9	24.2

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
Percent of oversize material	wet	0	0	0	0	0
Peak Converted Wet Density	t/m ³	1.96	1.96	2.00	2.00	2.00
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	20.0	22.0	25.0	18.5	24.0

Moisture Variation From Optimum Moisture Content	0.5% dry	0.0%	0.5% wet	0.0%	0.0%	0.5% wet
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Density Ratio (R _{HD})	%	97.0	96.5	97.5	96.0	96.5	96.5
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Material description

No 1 - 6 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

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 19611
Report No 19611/R002
Date Issued 05/02/2020

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 11	Date tested	20/01/20
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:01
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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	1.72	1.74	1.72	1.79	-	-
Field moisture content	%	24.6	25.1	24.8	24.3	-	-

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	0	0	0	0	-	-
Peak Converted Wet Density	t/m ³	1.79	1.80	1.79	1.81	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-	-
Optimum Moisture Content	%	22.0	22.5	22.5	24.5	-	-

Moisture Variation From Optimum Moisture Content		2.5% wet	2.5% wet	2.5% wet	0.0%	-	-
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Density Ratio (R _{HD})	%	96.0	96.5	96.5	99.0	-	-
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Material description

No 7 - 10 Clay Fill

AVRLOT HILF V1.10 MAR 13



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COMPACTION ASSESSMENT

Job No 19611
 Report No 19611/R003
 Date Issued 05/02/2020

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 11	Date tested	21/01/20
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	10:00
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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	mm	175	175	175	175	-
Field wet density	t/m ³	1.95	1.90	1.88	1.90	-
Field moisture content	%	23.4	19.7	22.4	19.3	-

Test procedure AS 1289.5.7.1

Test No	11	12	13	14	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	-
Percent of oversize material	wet	0	0	0	0	-
Peak Converted Wet Density	t/m ³	1.96	1.95	1.95	1.95	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	21.5	17.5	20.0	17.5	-

Moisture Variation From Optimum Moisture Content	1.0% wet	2.5% wet	2.5% wet	1.0% wet	-	-
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Density Ratio (R _{HD})	%	99.5	97.5	96.0	97.5	-
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Material description

No 11 - 14 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 19611
 Report No 19611/R004
 Date Issued 24/01/2020

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 11	Date tested	22/01/20
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 07:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	15	16	17	-	-	-
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>	1.90	1.88	1.81	-	-	-
Field moisture content <i>%</i>	19.1	22.9	24.9	-	-	-

Test procedure AS 1289.5.7.1

Test No	15	16	17	-	-	-
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>	1.92	1.92	1.90	-	-	-
Adjusted Peak Converted Wet Density <i>t/m³</i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	17.0	21.0	23.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.0% wet	2.0% wet	2.5% wet	-	-	-
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Density Ratio (R_{HD})	%	99.0	98.0	95.5	-	-	-
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Material description

No 15 - 17 Clay Fill

AVRLOT HILF V1.10 MAR 13



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COMPACTION ASSESSMENT

Job No 19611
 Report No 19611/R005
 Date Issued 05/06/2020

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 11	Date tested	12/03/20
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	18	19	20	21	22	23
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	1.85	1.87	1.98	1.92	1.96
Field moisture content	%	23.7	19.4	16.9	16.5	20.5

Test procedure AS 1289.5.7.1

Test No	18	19	20	21	22	23
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	1.90	1.90	2.05	1.98	1.99
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	26.5	22.0	19.5	19.0	23.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.5% dry	2.5% dry	2.5% dry	2.5% dry
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Density Ratio (R _{HD})	%	97.5	98.5	96.5	97.0	98.5	97.5
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Material description

No 18 - 23 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 19611
Report No 19611/R006
Date Issued 05/06/2020

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	EMERALD PARK - STAGE 11	Date tested	13/03/20
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	24	25	26	27	28	29
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	1.98	2.04	2.03	1.94	2.00
Field moisture content	%	15.6	15.6	15.4	18.7	19.4

Test procedure AS 1289.5.7.1

Test No	24	25	26	27	28	29
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	2.04	2.07	2.05	2.00	2.05
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	18.0	17.5	17.5	21.0	22.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.0% dry	2.5% dry	2.5% dry	2.0% dry
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Density Ratio (R _{HD})	%	97.0	98.5	99.5	97.0	97.5	96.5
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Material description

No 24 - 29 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 19611
 Report No 19611/R007
 Date Issued 30/04/2020

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	EMERALD PARK - STAGE 11	Date tested	16/03/20
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:28
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	30	31	32	33	-	-
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>	2.03	1.89	1.85	1.87	-	-
Field moisture content <i>%</i>	22.6	22.1	20.7	25.9	-	-

Test procedure AS 1289.5.7.1

Test No	30	31	32	33	-	-
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>	2.06	1.92	1.88	1.97	-	-
Adjusted Peak Converted Wet Density <i>t/m³</i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	20.0	24.5	23.0	23.5	-	-

Moisture Variation From Optimum Moisture Content	2.5% wet	2.5% dry	2.5% dry	2.5% wet	-	-
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Density Ratio (R_{HD})	%	98.5	98.5	98.5	95.0	-	-
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Material description

No 30 - 33 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 19611
 Report No 19611/R008
 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 11	Date tested	17/03/20
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:01
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	34	35	36	-	-	-
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>	2.00	2.02	2.06	-	-	-
Field moisture content <i>%</i>	21.7	23.5	23.4	-	-	-

Test procedure AS 1289.5.7.1

Test No	34	35	36	-	-	-
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>	2.03	2.05	2.10	-	-	-
Adjusted Peak Converted Wet Density <i>t/m³</i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	19.0	21.5	21.5	-	-	-

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

No 34 - 36 Clay Fill

AVRLOT HILF V1.10 MAR 13



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