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

29th March 2019

Our Reference: 18379:NB464

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
OLIVINE – STAGE 2 (DONNYBROOK)

Please find attached our Report No's 18739/R001 to 18379/R006 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 commenced in July 2018 and was completed in September 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

Nick Brock

FIGURE 1 (1 of 2)

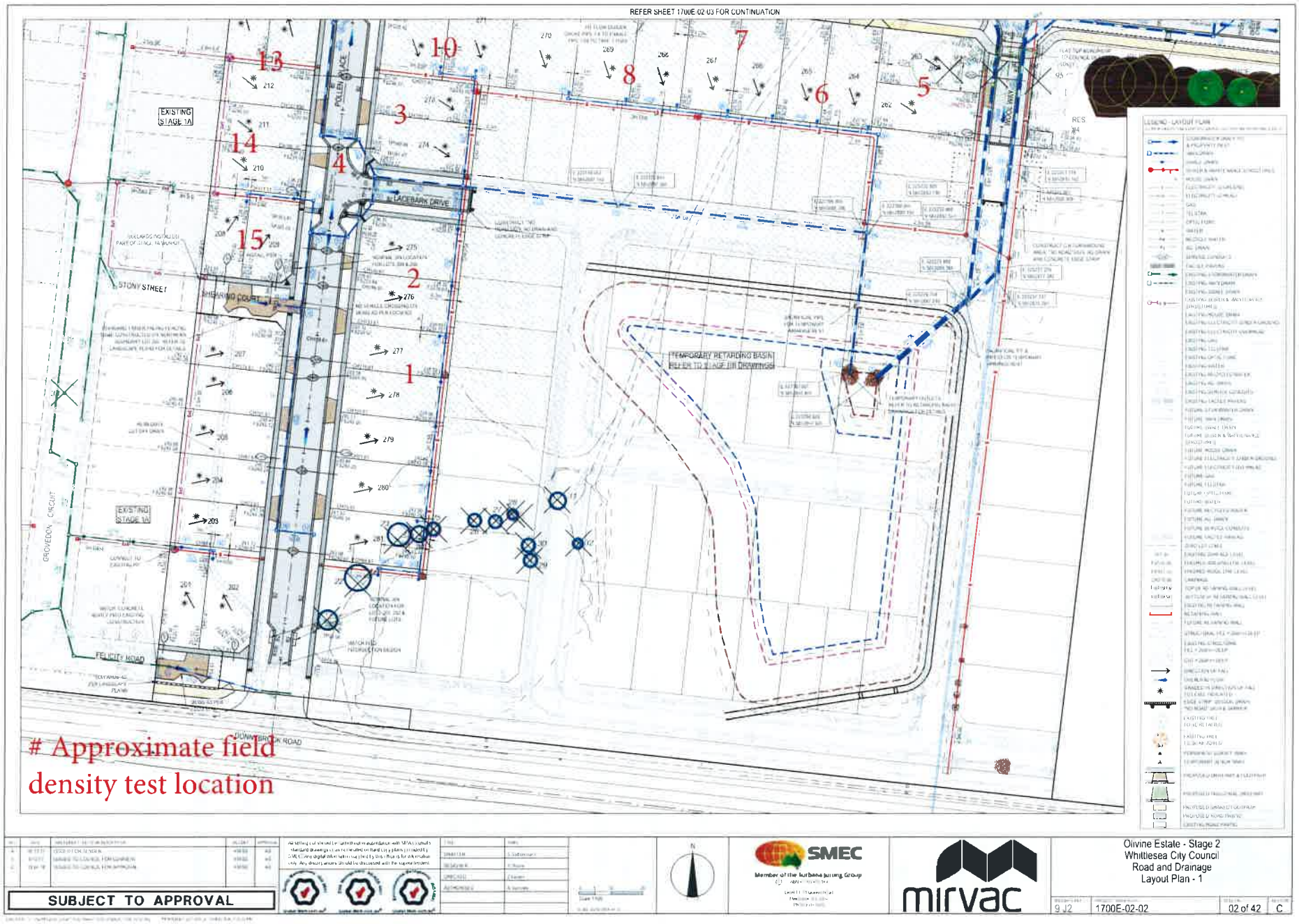
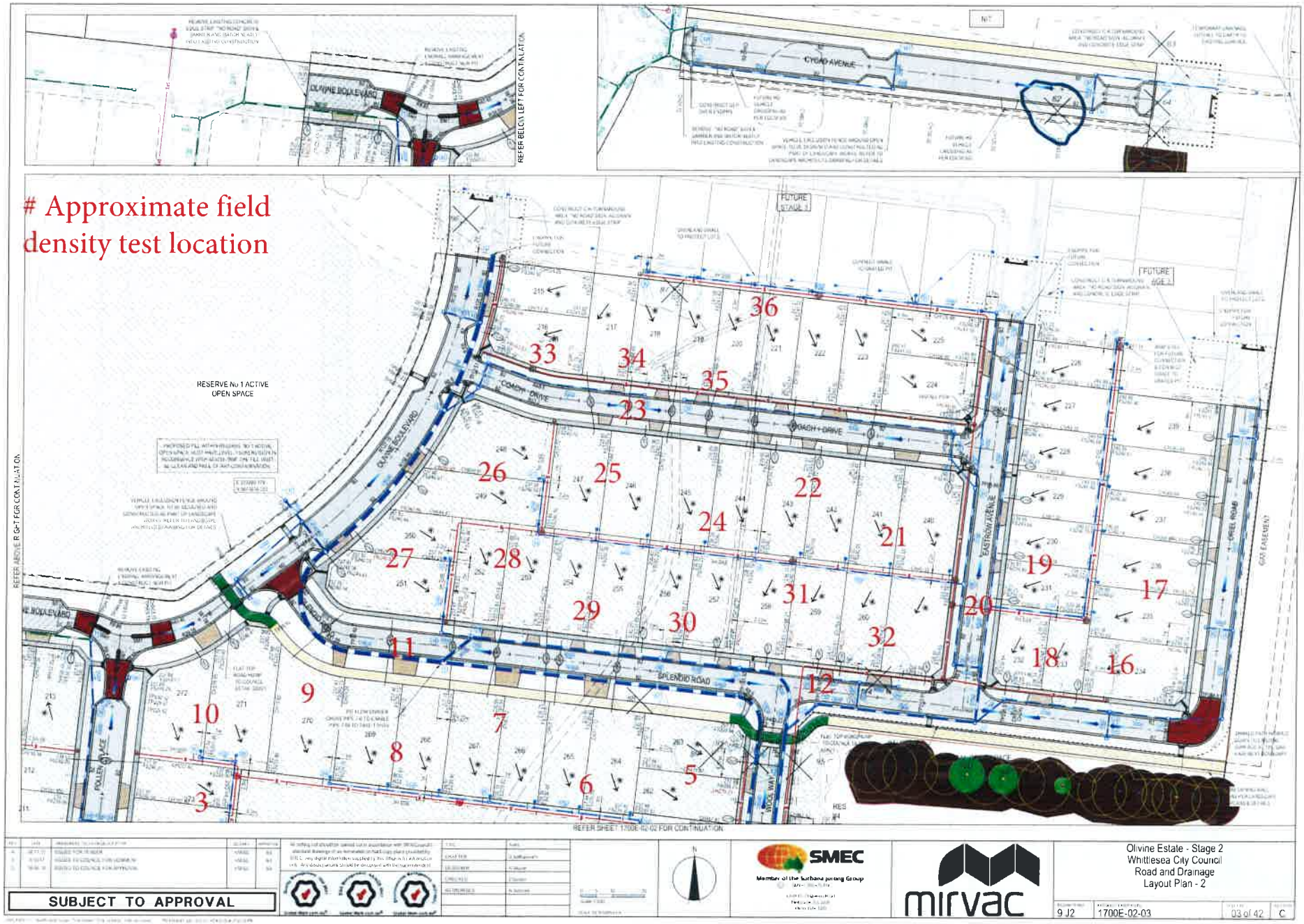


FIGURE 1 (2 of 2)



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES
6 - 8 Rose Avenue, Croydon 3136

Job No	18379
Report No	18379/R001
Date Issued	16/10/2018
Tested by	AC
Date tested	05/07/18
Checked by	JHF

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)
Project	OLIVINE ESTATE - STAGE 2
Location	DONNYBROOK

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 08:56

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/m³*	1.97	2.01	1.89	1.98	1.97	1.99
Field moisture content	*%*	16.8	19.4	16.1	19.7	18.9	18.3

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/m³*	2.00	1.99	1.97	1.97	1.97	1.98
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	17.5	20.0	16.5	21.0	21.0	20.5

Moisture Variation From Optimum Moisture Content	0.5% dry	0.5% dry	0.5% dry	1.0% dry	2.0% dry	2.0% dry

Density Ratio (R_{HD})	*%*	**98.5**	**101.0**	**96.0**	**100.5**	**100.0**	**101.0**

Material description

No 1 - 6 Clay Fill

Approved Signatory Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES
6 - 8 Rose Avenue, Croydon 3136

		Job No	18379
		Report No	18379/R002
		Date Issued	16/10/2018
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	AC
Project	OLIVINE ESTATE - STAGE 2	*Date tested*	05/07/18
Location	DONNYBROOK	*Checked by*	JHF

Feature	**EARTHWORKS**	*Layer thickness*	200 mm	*Time:*	09:12

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		**7**	**8**	**9**	**10**	**11**	**12**
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/m³*	1.87	1.98	1.86	1.97	1.95	1.96
Field moisture content	*%*	20.3	22.3	21.7	17.9	21.3	22.4

Test procedure AS 1289.5.7.1

Test No		7	8	9	10	11	12
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/m³*	1.88	1.98	1.94	1.95	1.95	1.95
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	21.0	20.0	20.0	20.5	21.0	20.0

Moisture Variation From Optimum Moisture Content	0.5% dry	2.5% wet	2.0% wet	2.5% dry	0.5% wet	2.5% wet

Density Ratio (R_{HD}) *%*	**99.5**	**100.0**	**95.5**	**100.5**	**100.0**	**100.5**

Material description

No 7 - 12 Clay Fill

Approved Signatory Justin Fry

COMPACTION ASSESSMENT

		Job No	18379
CIVIL GEOTECHNICAL SERVICES		*Report No*	18379/R003
6 - 8 Rose Avenue, Croydon 3136		*Date Issued*	28/03/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	AC
Project	OLIVINE ESTATE - STAGE 2	*Date tested*	12/07/18
Location	DONNYBROOK	*Checked by*	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 08:47

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		**13**	**14**	**15**	**16**	**17**	**18**
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/m³*	1.64	1.72	1.67	1.71	1.61	1.67
Field moisture content	*%*	13.5	18.0	18.1	19.7	16.8	20.0

Test procedure AS 1289.5.7.1

Test No		13	14	15	16	17	18
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/m³*	1.66	1.73	1.68	1.72	1.63	1.69
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	16.0	20.5	20.5	21.5	19.0	22.5

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.5% dry	2.0% dry	2.0% dry	2.5% dry

Density Ratio (R_{HD})	*%*	**99.0**	**99.0**	**99.5**	**99.5**	**98.5**	**99.0**

Material description

No 13 - 18 Clay Fill

AVRLOT HILF V1.10 MAR 13

NATA TECHNICAL COMPETENCE

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

CIVIL GEOTECHNICAL SERVICES
6 - 8 Rose Avenue, Croydon 3136

		Job No	18379
		Report No	18379/R004
		Date Issued	28/03/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	OLIVINE ESTATE - STAGE 2	Date tested	12/07/18
Location	DONNYBROOK	Checked by	JHF

Feature	**EARTHWORKS**	*Layer thickness*	200 mm	*Time:*	08:48

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		**19**	**20**	**21**	**22**	**23**	**24**
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/m³*	2.04	1.97	2.04	2.00	2.10	2.04
Field moisture content	*%*	17.9	18.9	17.9	18.7	18.9	19.8

Test procedure AS 1289.5.7.1

Test No		19	20	21	22	23	24
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/m³*	2.05	2.00	2.05	2.01	2.10	2.10
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	20.5	21.5	20.5	21.0	21.0	22.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.5% dry	2.5% dry	2.0% dry	2.0% dry

Density Ratio (R_{HD})	*%*	**99.5**	**98.5**	**99.5**	**99.5**	**100.0**	**97.5**

Material description

No 19 - 24 Clay Fill

NATA TECHNICAL COMPETENCE

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

AVRLOT HILF V1 10 MAR 13

COMPACTION ASSESSMENT

		Job No	18379
CIVIL GEOTECHNICAL SERVICES		*Report No*	18379/R005
6 - 8 Rose Avenue, Croydon 3136		*Date Issued*	28/03/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	AC
Project	OLIVINE ESTATE - STAGE 2	*Date tested*	31/07/18
Location	DONNYBROOK	*Checked by*	JHF

Feature	**EARTHWORKS**	*Layer thickness*	200 mm	*Time:*	11:18

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		**25**	**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	REFER TO FIGURE 1
Approximate depth below FSL							
Measurement depth	*mm*	175	175	175	175	175	175
Field wet density	*t/m³*	2.00	2.09	1.89	1.97	2.14	1.95
Field moisture content	*%*	21.6	25.1	26.5	23.8	22.4	22.0

Test procedure AS 1289.5.7.1

Test No		25	26	27	28	29	30
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/m³*	2.05	2.15	1.95	2.05	2.20	2.00
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	24.0	27.5	29.0	26.0	25.0	24.5

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.5% dry	2.0% dry	2.5% dry	2.5% dry

Density Ratio (R_{HD})	*%*	**97.5**	**97.0**	**96.5**	**96.0**	**97.5**	**97.0**

Material description

No 25 - 30 Clay Fill

AVRLOT.HILF V1.10 MAR 13

NATA TECHNICAL COMPETENCE

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

CIVIL GEOTECHNICAL SERVICES
6 - 8 Rose Avenue, Croydon 3136

		Job No	18379
		Report No	18379/R006
		Date Issued	28/03/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	OLIVINE ESTATE - STAGE 2	Date tested	31/07/18
Location	DONNYBROOK	Checked by	JHF

Feature	**EARTHWORKS**	*Layer thickness*	200 mm	*Time:*	11:20

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	*mm*	175	175	175	175	175	175
Field wet density	*t/m³*	2.05	2.02	2.11	1.99	1.99	2.02
Field moisture content	*%*	20.1	22.8	20.2	19.7	23.2	20.2

Test procedure AS 1289.5.7.1

Test No		31	32	33	34	35	36
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/m³*	2.10	2.05	2.15	2.05	2.05	2.00
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	22.5	25.0	22.5	21.5	25.5	22.5

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.0% dry	2.0% dry	2.0% dry	2.5% dry

Density Ratio (R_{HD})	*%*	**97.5**	**98.0**	**98.0**	**97.0**	**97.5**	**101.0**

Material description

No 31 - 36 Clay Fill

Approved Signatory Justin Fry