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

20th April 2022

Our Reference: 22034:NB1217

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
UNITY PARK – STAGE 2 (TARNEIT)

Please find attached our Report No's 22034/R001 to 22034/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 was performed in January 2022.

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).

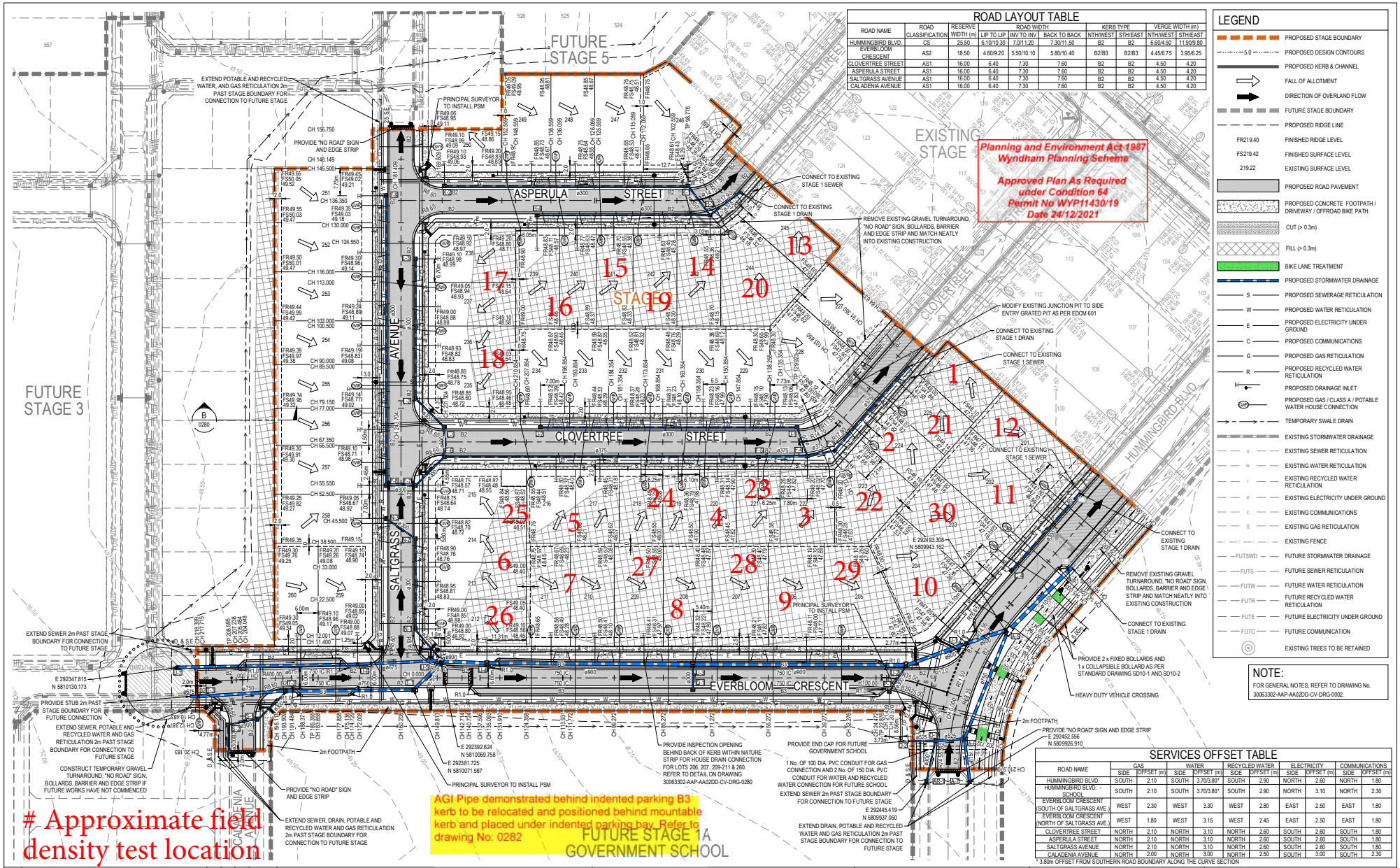
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

Nick Brock

FIGURE 1



ROAD LAYOUT TABLE

ROAD NAME	ROAD CLASSIFICATION	RESERVE WIDTH (m)	ROAD WIDTH			KERB TYPE		VERGE WIDTH (m)	
			LIP TO LIP	INV TO INV	BACK TO BACK	NTH/WEST	STH/EAST	NTH/WEST	STH/EAST
HUMMINGBIRD BLVD.	CS	25.50	6.10/10.30	7.0/11.20	7.30/11.50	B2	B2	6.60/4.50	11.90/9.80
EVERBLOOM CRESCENT	AS2	18.50	4.60/9.20	5.50/10.10	5.80/10.40	B2/B3	B2/B3	4.45/6.75	3.95/6.25
CLOVERTREE STREET	AS1	16.00	6.40	7.30	7.60	B2	B2	4.50	4.20
ASPERULA STREET	AS1	16.00	6.40	7.30	7.60	B2	B2	4.50	4.20
SALTGRASS AVENUE	AS1	16.00	6.40	7.30	7.60	B2	B2	4.50	4.20
CALADENIA AVENUE	AS1	16.00	6.40	7.30	7.60	B2	B2	4.50	4.20

LEGEND

- PROPOSED STAGE BOUNDARY
- PROPOSED DESIGN CONTOURS
- PROPOSED KERB & CHANNEL
- FALL OF ALLOTMENT
- DIRECTION OF OVERLAND FLOW
- FUTURE STAGE BOUNDARY
- PROPOSED RIDGE LINE
- FR219.40 FINISHED RIDGE LEVEL
- FS219.42 FINISHED SURFACE LEVEL
- 219.22 EXISTING SURFACE LEVEL
- PROPOSED ROAD PAVEMENT
- PROPOSED CONCRETE FOOTPATH / DRIVEWAY / OFFROAD BIKE PATH
- CUT (> 0.3m)
- FILL (> 0.3m)
- BIKE LANE TREATMENT
- PROPOSED STORMWATER DRAINAGE
- S PROPOSED SEWERAGE RETICULATION
- W PROPOSED WATER RETICULATION
- E PROPOSED ELECTRICITY UNDER GROUND
- C PROPOSED COMMUNICATIONS
- G PROPOSED GAS RETICULATION
- R PROPOSED RECYCLED WATER RETICULATION
- PROPOSED DRAINAGE INLET
- PROPOSED GAS / CLASS A / POTABLE WATER HOUSE CONNECTION
- TEMPORARY SWALE DRAIN
- EXISTING STORMWATER DRAINAGE
- EXISTING SEWER RETICULATION
- EXISTING WATER RETICULATION
- EXISTING RECYCLED WATER RETICULATION
- EXISTING ELECTRICITY UNDER GROUND
- EXISTING COMMUNICATIONS
- EXISTING GAS RETICULATION
- EXISTING FENCE
- FUTSWD FUTURE STORMWATER DRAINAGE
- FUTS FUTURE SEWER RETICULATION
- FUTW FUTURE WATER RETICULATION
- FUTR FUTURE RECYCLED WATER RETICULATION
- FUTE FUTURE ELECTRICITY UNDER GROUND
- FUTC FUTURE COMMUNICATION
- EXISTING TREES TO BE RETAINED

NOTE:
FOR GENERAL NOTES, REFER TO DRAWING No. 30063302-AAP-AA02DD-CV-DRG-0002.

SERVICES OFFSET TABLE

ROAD NAME	GAS		WATER		RECYCLED WATER		ELECTRICITY		COMMUNICATIONS	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
HUMMINGBIRD BLVD.	SOUTH	2.10	SOUTH	3.70/3.80*	SOUTH	2.90	NORTH	2.60	NORTH	1.80
HUMMINGBIRD BLVD. - SCHOOL	SOUTH	2.10	SOUTH	3.70/3.80*	SOUTH	2.90	NORTH	3.10	NORTH	2.30
EVERBLOOM CRESCENT (SOUTH OF SALTGRASS AVE.)	WEST	2.30	WEST	3.30	WEST	2.80	EAST	2.50	EAST	1.80
EVERBLOOM CRESCENT (NORTH OF SALTGRASS AVE.)	WEST	1.80	WEST	3.15	WEST	2.45	EAST	2.50	EAST	1.80
CLOVERTREE STREET	NORTH	2.10	NORTH	3.10	NORTH	2.60	SOUTH	2.60	SOUTH	1.80
ASPERULA STREET	NORTH	2.10	NORTH	3.10	NORTH	2.60	SOUTH	2.60	SOUTH	1.80
SALTGRASS AVENUE	NORTH	2.10	NORTH	3.10	NORTH	2.60	SOUTH	2.60	SOUTH	1.80
CALADENIA AVENUE	NORTH	2.00	NORTH	3.00	NORTH	2.50	SOUTH	3.00	SOUTH	2.30

* 3.80m OFFSET FROM SOUTHERN ROAD BOUNDARY ALONG THE CURVE SECTION

Issue	Description	DR	CH	VE	Date
A	ISSUED FOR CONSTRUCTION	MD	KM	SE	17.12.21
04	AMENDED TO ADDRESS COUNCIL COMMENTS	MD	KM	SE	15.12.21
03	AMENDED TO ADDRESS COUNCIL COMMENTS	MD	KM	SE	19.11.21
02	ISSUED FOR APPROVAL	MD	KM	SE	26.10.21
01	ISSUED FOR TENDER	MD	KM	SE	20.08.21

Scales: 1 : 500 (0 10 20 30 40 50m)

Client: HB Land, A member of Ho Bee Land

Status: ISSUED FOR CONSTRUCTION

Original Issue Signatures			
Drawn	M.DULAY	Original Size	A1
Designed	R.MACAS	Height Datum	AHD
Project Manager	S.EISEL	Grid	MGA
Verified	K.MAK		

Project: UNITY PARK STAGE 2, WYNDHAM CITY COUNCIL

Title: ROADWORKS AND DRAINAGE LAYOUT PLAN

ARCADIS
Arcadis Australia Pacific Pty Limited
Level 32, 140 William Street
MELBOURNE VIC 3000
ABN 76 104 485 289
Tel No: +61 3 8623 4000
www.arcadis.com.au

Project No. | Originator | Zone | Stage | Phase | Discipline | Type | Drawing No. | Issue
30063302 - AAP - AA02DD - CV - DRG - 0220 - A

Date Plotted: 20 Dec 2021 - 05:28pm File Name: C:\Users\dulaym4970\ACCDocs\Arcadis\A-AU-30063302-Leakes Road Estate\Project Files\01_WORK IN PROGRESS\01_Civil_CV\Stage2\Drawings\30063302-AAP-AA02DD-CV-DRG-0220-Roadworks.dwg V1

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	22034
		Report No	22034/R001
		Date Issued	31/01/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JB
Project	UNITY PARK - STAGE 2	*Date tested*	20/01/22
Location	TARNEIT	*Checked by*	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 12:00

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*	1.95	1.75	1.73	1.70	1.75	1.88
Field moisture content	*%*	22.7	22.2	22.4	20.6	18.1	19.9

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*	2.01	1.81	1.76	1.73	1.81	1.90
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	20.5	24.5	25.0	23.0	19.0	22.5

Moisture Variation From Optimum Moisture Content		2.5% wet	2.0% dry	2.5% dry	2.5% dry	1.0% dry	2.5% dry

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	*%*	**97.5**	**96.5**	**98.5**	**98.5**	**97.0**	**99.0**

Material description

No 1 - 6 Clay Fill

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES
6 - 8 Rose Avenue, Croydon 3136

		Job No	22034
		Report No	22034/R002
		Date Issued	01/02/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	UNITY PARK - STAGE 2	Date tested	21/01/22
Location	TARNEIT	Checked by	JHF

Feature	**EARTHWORKS**	*Layer thickness*	200 mm	*Time:*	11:30

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	1.90	1.76	1.68	1.81	1.82	1.83
Field moisture content	%	23.5	31.7	25.7	25.1	26.8	28.4

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	1.93	1.80	1.73	1.84	1.87	1.87
Adjusted Peak Converted Wet Density	t/m³	-	-	-	-	-	-
Optimum Moisture Content	%	26.0	29.0	28.0	27.5	25.5	30.5

Moisture Variation From Optimum Moisture Content		2.5% dry	2.5% wet	2.5% dry	2.5% dry	1.5% wet	2.0% dry

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	**98.5**	**97.5**	**97.0**	**98.5**	**97.0**	**98.0**

Material description

No 7 - 12 Clay Fill

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	22034
		Report No	22034/R003
		Date Issued	01/02/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JB
Project	UNITY PARK - STAGE 2	*Date tested*	24/01/22
Location	TARNEIT	*Checked by*	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 12:30

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*	1.81	1.67	1.64	1.73	1.86	1.85
Field moisture content	*%*	24.1	25.3	22.7	30.8	23.5	30.8

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*	1.80	1.74	1.71	1.77	1.86	1.88
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	25.5	28.0	25.5	33.0	23.5	32.5

Moisture Variation From Optimum Moisture Content		1.5% dry	2.5% dry	2.5% dry	2.0% dry	0.0%	2.0% dry

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	*%*	**100.5**	**96.0**	**95.5**	**98.0**	**100.0**	**98.0**

Material description

No 13 - 18 Clay Fill

NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	22034
		Report No	22034/R004
		Date Issued	10/02/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JB
Project	UNITY PARK - STAGE 2	*Date tested*	25/01/22
Location	TARNEIT	*Checked by*	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 13:00

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*	1.88	1.90	1.91	1.83	1.90	1.91
Field moisture content	*%*	29.0	28.8	25.4	27.4	27.0	26.4

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*	1.92	1.95	1.96	1.91	1.92	1.93
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	27.5	27.5	27.5	26.0	29.5	28.5

Moisture Variation From Optimum Moisture Content		1.5% wet	1.0% wet	2.0% dry	1.5% wet	2.5% dry	2.0% dry

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	*%*	**98.0**	**97.5**	**97.5**	**96.0**	**98.5**	**98.5**

Material description

No 19 - 24 Clay Fill

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES
6 - 8 Rose Avenue, Croydon 3136

		Job No	22034
		Report No	22034/R005
		Date Issued	09/02/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	UNITY PARK - STAGE 2	Date tested	27/01/22
Location	TARNEIT	Checked by	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 10:00

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	*mm*	175	175	175	-	-	-
Field wet density	*t/m³*	1.91	1.94	1.90	-	-	-
Field moisture content	*%*	25.9	29.2	28.0	-	-	-

Test procedure AS 1289.5.7.1

Test No		25	26	27	-	-	-
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/m³*	1.94	1.97	1.94	-	-	-
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	26.0	29.5	27.5	-	-	-

Moisture Variation From Optimum Moisture Content		0.0%	0.0%	0.5% wet	-	-	-

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	*%*	**98.0**	**99.0**	**98.0**	**-**	**-**	**-**

Material description

No 25 - 27 Clay Fill

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES
6 - 8 Rose Avenue, Croydon 3136

		Job No	22034
		Report No	22034/R006
		Date Issued	09/02/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JB
Project	UNITY PARK - STAGE 2	*Date tested*	28/01/22
Location	TARNEIT	*Checked by*	JHF

Feature	**EARTHWORKS**	*Layer thickness*	200 mm	*Time:*	10:00

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*	2.04	2.00	1.88	-	-	-
Field moisture content	*%*	22.1	22.5	25.2	-	-	-

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*	0	0	0	-	-	-
Peak Converted Wet Density	*t/m³*	2.06	2.04	1.93	-	-	-
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	24.5	25.0	26.0	-	-	-

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

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	*%*	**99.0**	**98.0**	**97.5**	**-**	**-**	**-**

Material description

No 28 - 30 Clay Fill

Approved Signatory : Justin Fry