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

2nd May 2022

Our Reference: 22191:NB1218

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
UNITY PARK – STAGE 3 (TARNEIT)

Please find attached our Report No's 22191/R001 to 22191/R004 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 March 2022 and was completed in April 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).

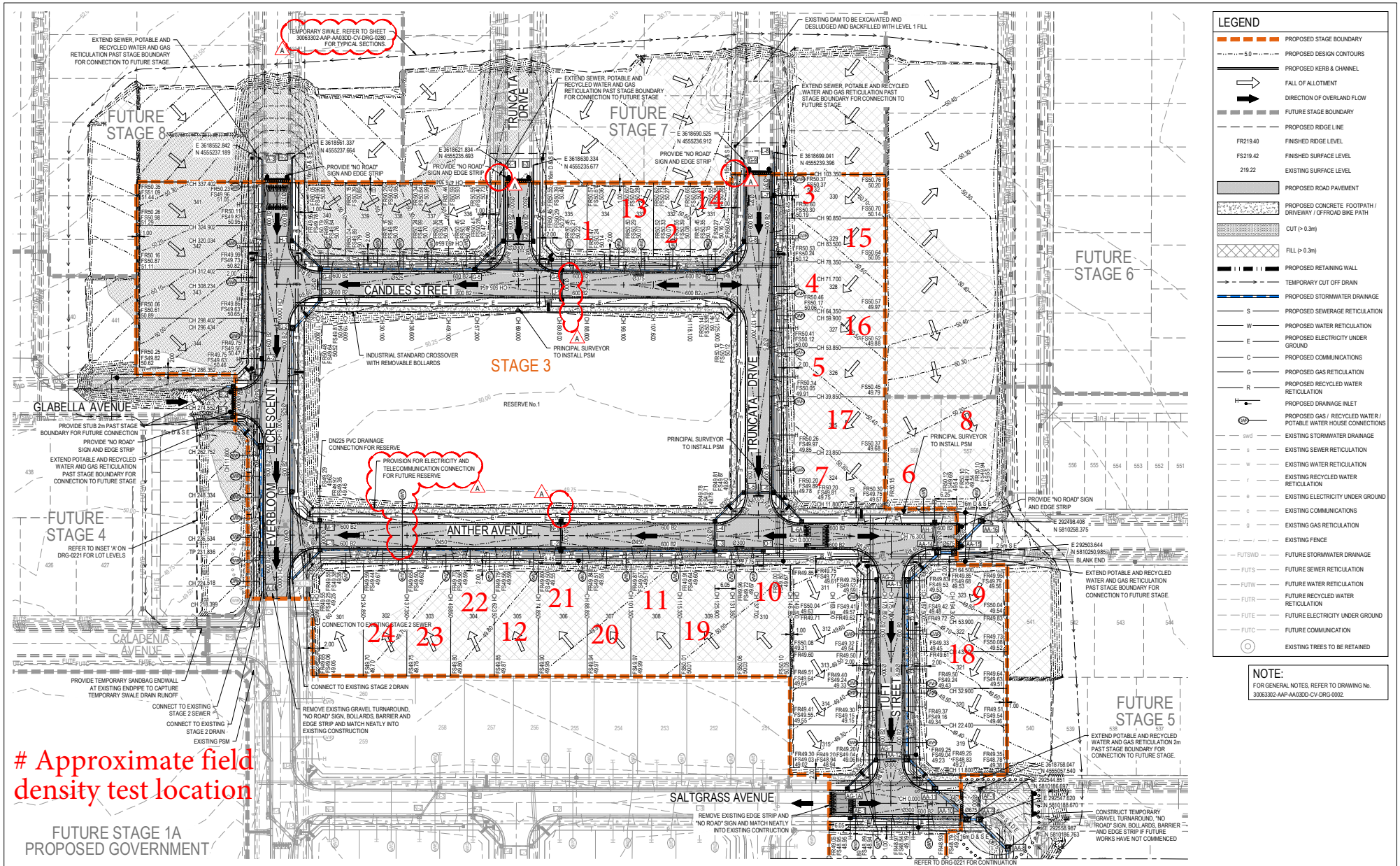
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

Nick Brock

FIGURE 1



Issue	Description	DR	CH	VE	Date
A	ISSUED FOR CONSTRUCTION	HP	KM	SE	10.02.22
02	AMENDED TO ADDRESS COUNCIL COMMENTS	HP	KM	SE	21.01.22
01	ISSUED TO COUNCIL FOR APPROVAL	HP	KM	SE	13.12.21

Scales

0 10 20 30 40 50m

1 : 500

100mm on Original

Client

HB Land
A member of Ho Bee Land

Status: FOR CONSTRUCTION

Original Issue Signatures			
Drawn	H.PALOMIQUE	Original Size	A1
Designed	S.HARMANIS	Height Datum	AHD
Project Manager	S.EISEL	Grid	MGA
Verified	K.MAK		

Project: UNITY PARK STAGE 3
WYNDHAM CITY COUNCIL

Title: ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 1 OF 2

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	AA03DD	CV	DRG	0220	A		

Date Plotted: 11 Feb 2022 - 04:25pm File Name: C:\Users\palomiqh6754\ACCDocs\Arcadis\A-AU-30063302-Leakes Road Estate\Project Files\01_WORK IN PROGRESS\01_Civil_CV\Stage3\Drawings\30063302-AAP-AA03DD-CV-DRG-0220-Roadworks.dwg V1

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	22191
		Report No	22191/R001
		Date Issued	17/03/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JB
Project	UNITY PARK - STAGE 3	*Date tested*	10/03/22
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		**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*	1.82	1.80	1.83	1.84	1.81	1.86
Field moisture content	*%*	32.8	31.9	29.9	30.1	30.4	29.3

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*	1.84	1.84	1.86	1.86	1.90	1.89
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	33.0	32.5	30.5	31.0	31.0	30.5

Moisture Variation From Optimum Moisture Content		0.0%	0.5% dry	0.5% dry	1.0% dry	0.5% dry	1.0% 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})	*%*	**99.0**	**98.0**	**98.5**	**99.0**	**95.5**	**98.5**

Material description

No 1 - 6 Clay Fill

AVRLOT HILF V1.10 MAR 13

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	22191
		Report No	22191/R002
		Date Issued	27/04/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JB
Project	UNITY PARK - STAGE 3	*Date tested*	16/03/22
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		**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	1.85	1.85	1.85	1.89	1.83
Field moisture content	*%*	29.5	27.3	33.1	29.9	30.8	31.7

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*	1.99	1.91	1.91	1.90	1.87	1.89
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	31.5	30.0	35.0	32.0	33.5	34.0

Moisture Variation From Optimum Moisture Content		2.0% dry	2.5% dry	2.0% dry	2.0% dry	2.5% 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})	*%*	**95.5**	**97.0**	**96.5**	**97.5**	**101.5**	**97.0**

Material description

No 7 - 12 Clay Fill

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	22191
		Report No	22191/R003
		Date Issued	27/04/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JB
Project	UNITY PARK - STAGE 3	*Date tested*	17/03/22
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		**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*	1.94	1.91	1.87	1.89	1.95	1.96
Field moisture content	*%*	23.7	25.8	24.4	23.5	27.4	24.1

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*	1.95	1.93	1.92	1.97	1.97	1.99
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	26.5	28.5	27.5	26.0	30.0	24.0

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

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})	*%*	**99.5**	**99.0**	**97.5**	**96.0**	**98.5**	**98.5**

Material description

No 13 - 18 Clay Fill

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	22191
		Report No	22191/R004
		Date Issued	02/05/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JB
Project	UNITY PARK - STAGE 3	*Date tested*	26/04/22
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		**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*	1.80	1.82	1.79	1.79	1.82	1.82
Field moisture content	*%*	28.4	25.0	28.5	27.0	23.4	19.0

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*	1.85	1.90	1.84	1.86	1.85	1.86
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	31.0	27.0	28.0	27.0	23.0	19.5

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	0.5% wet	0.0%	0.5% wet	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})	*%*	**97.0**	**95.5**	**97.5**	**96.0**	**99.0**	**97.5**

Material description

No 19 - 24 Clay Fill

AVRLOT HILF V1.10 MAR 13

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

Approved Signatory : Justin Fry