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

19th March 2014

Our Reference: 13289:JHF769

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
ARMSTRONG, MT DUNEED ESTATE (STAGE 4) – MOUNT DUNEED

Please find attached our Report Nos 13289/R001 to 13289/R004 that relate to the field density testing that was conducted within the backfilled easement and filled allotments at the above subdivision. The level 1 inspections and associated field density testing commenced in early August 2013 and was completed in early March 2014.

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 inspections and testing was performed by an experienced geotechnician 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 and backfilled easement by Winslow Constructors during the aforementioned period.

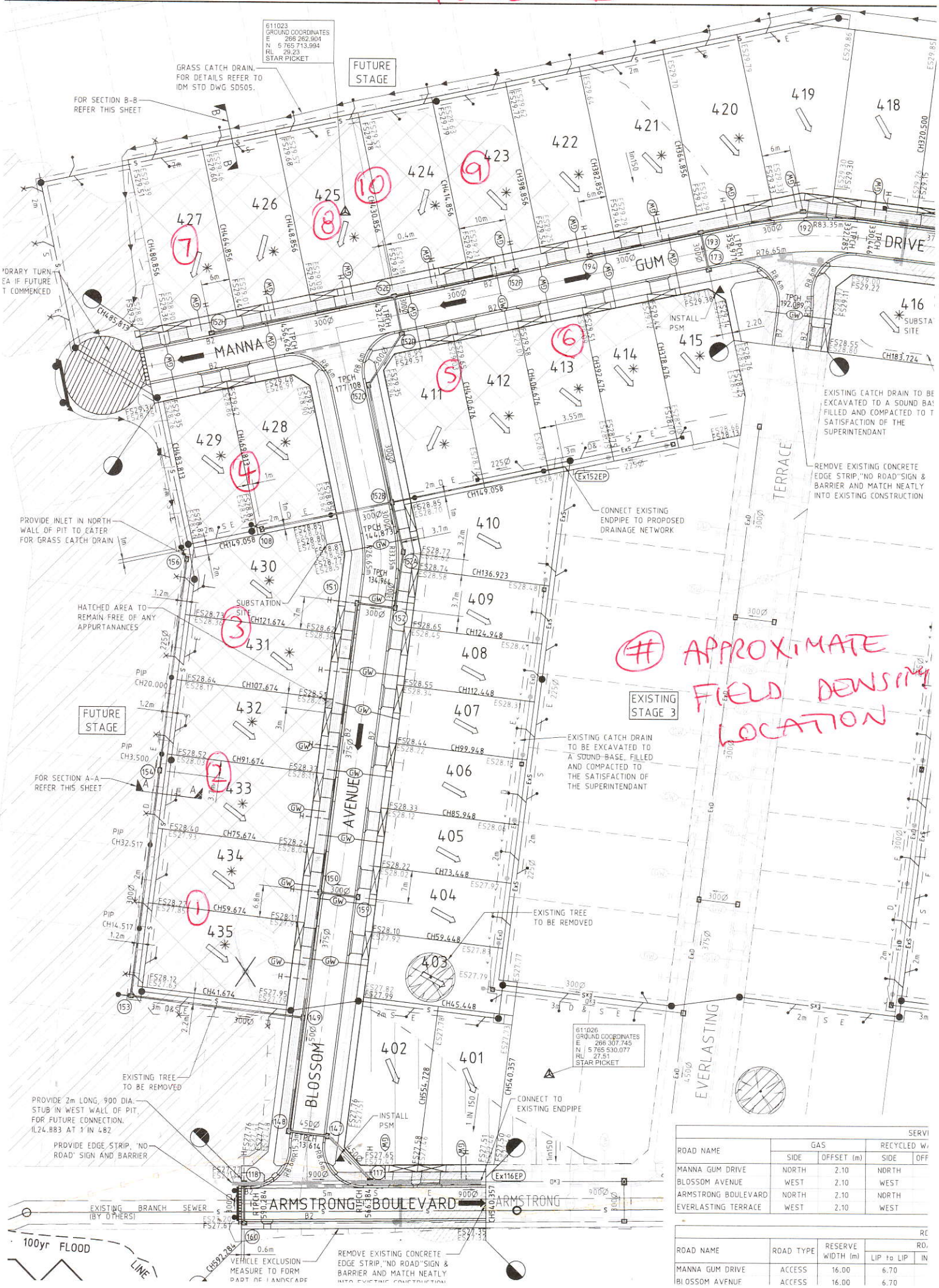
We are of the view that the bulk fill materials that have been placed across the reported allotments and within the backfilled easement by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive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

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

Justin Fry

FIGURE 1



ROAD NAME	GAS		RECYCLED W	
	SIDE	OFFSET (m)	SIDE	OFF
MANNA GUM DRIVE	NORTH	2.10	NORTH	
BLOSSOM AVENUE	WEST	2.10	WEST	
ARMSTRONG BOULEVARD	NORTH	2.10	NORTH	
EVERLASTING TERRACE	WEST	2.10	WEST	

ROAD NAME	ROAD TYPE	RESERVE WIDTH (m)	RO	
			LIP to LIP	IN
MANNA GUM DRIVE	ACCESS	16.00	6.70	
BLOSSOM AVENUE	ACCESS	16.00	6.70	

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	13289
		Report No	13289/R001
		Date Issued	23/08/13
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JWM
Project	ARMSTRONG, MT DUNEED - STAGE 4	*Date tested*	01/08/13
Location	MOUNT DUNEED	*Checked by*	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 10:56

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	*mm*	175	175	175	-	-	-
Field wet density	*t/m³*	1.98	1.94	1.98	-	-	-
Field moisture content	*%*	24.6	24.6	24.6	-	-	-

Test procedure AS 1289.5.7.1

Test No		1	2	3	-	-	-
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*	2.01	1.97	2.00	-	-	-
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	22.0	23.0	22.5	-	-	-

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

Density Ratio (R_{HD})	***%***	**98.0**	**98.5**	**99.0**	**-**	**-**	**-**

Material description

No 1 - 3 Clay Fill

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	13289
		Report No	13289/R002
		Date Issued	10/12/13
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JWM
Project	ARMSTRONG, MT DUNEED - STAGE 4	*Date tested*	09/10/13
Location	MOUNT DUNEED	*Checked by*	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 11:44

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/m³*	2.00	1.98	1.97	-	-	-
Field moisture content	*%*	17.2	21.1	22.2	-	-	-

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/m³*	2.06	1.99	1.97	-	-	-
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	18.5	23.0	23.5	-	-	-

Moisture Variation From Optimum Moisture Content		1.0% dry	1.5% dry	1.0% dry	-	-	-

Density Ratio (R_{HD})	***%***	**97.0**	**99.5**	**100.0**	**-**	**-**	**-**

Material description

No 4 - 6 Clay Fill

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	13289
		Report No	13289/R003
		Date Issued	10/12/13
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JWM
Project	ARMSTRONG, MT DUNEED - STAGE 4	*Date tested*	15/10/13
Location	MOUNT DUNEED	*Checked by*	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 10:35

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	*mm*	175	175	175	-	-	-
Field wet density	*t/m³*	1.99	1.96	1.91	-	-	-
Field moisture content	*%*	24.1	23.9	23.8	-	-	-

Test procedure AS 1289.5.7.1

Test No		7	8	9	-	-	-
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*	1.92	1.91	1.94	-	-	-
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	26.5	26.5	24.5	-	-	-

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

Density Ratio (R_{HD})	*%*	**104.0**	**102.5**	**98.5**	**-**	**-**	**-**

Material description

No 7 - 9 Clay Fill

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	13289
		Report No	13289/R004
		Date Issued	19/03/14
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	JWM
Project	ARMSTRONG, MT DUNEED - STAGE 4	*Date tested*	04/03/14
Location	MOUNT DUNEED	*Checked by*	JHF

Feature	**EARTHWORKS**	*Layer thickness*	200 mm	*Time:*	10:30

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		**10**	-	-	-	-	-
Location		LOT 425 TRENCH BACKFILL					
Approximate depth below FSL		-	-	-	-	-	-
Measurement depth	*mm*	175	-	-	-	-	-
Field wet density	*t/m³*	1.86	-	-	-	-	-
Field moisture content	*%*	-	-	-	-	-	-

Test procedure AS 1289.5.7.1

Test No		10	-	-	-	-	-
Compactive effort		Standard					
Oversize rock retained on sieve	*mm*	19.0	-	-	-	-	-
Percent of oversize material	*wet*	0	-	-	-	-	-
Peak Converted Wet Density	*t/m³*	1.91	-	-	-	-	-
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	-	-	-	-	-	-

Moisture Variation From Optimum Moisture Content	7.5% dry	-	-	-	-	-

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

Material description

No 10 - 10 Clay Fill

Approved Signatory : Justin Fry