

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

19<sup>th</sup> December 2016

Our Reference: 16256:GB093

Peets Funds Management Pty Ltd Level 3, 492 St Kilda Road MELBOURNE VIC 3004

Dear Sirs,

### RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING HAVEN ESTATE – STAGE 4, TARNIET

Please find attached our Report Nos 16256/R001 to 16256/R007 that relate to the field density testing that was conducted across the filled allotments at the above subdivision. The level 1 inspections and associated field density testing commenced in late April 2016 and was completed in early June 2016.

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.

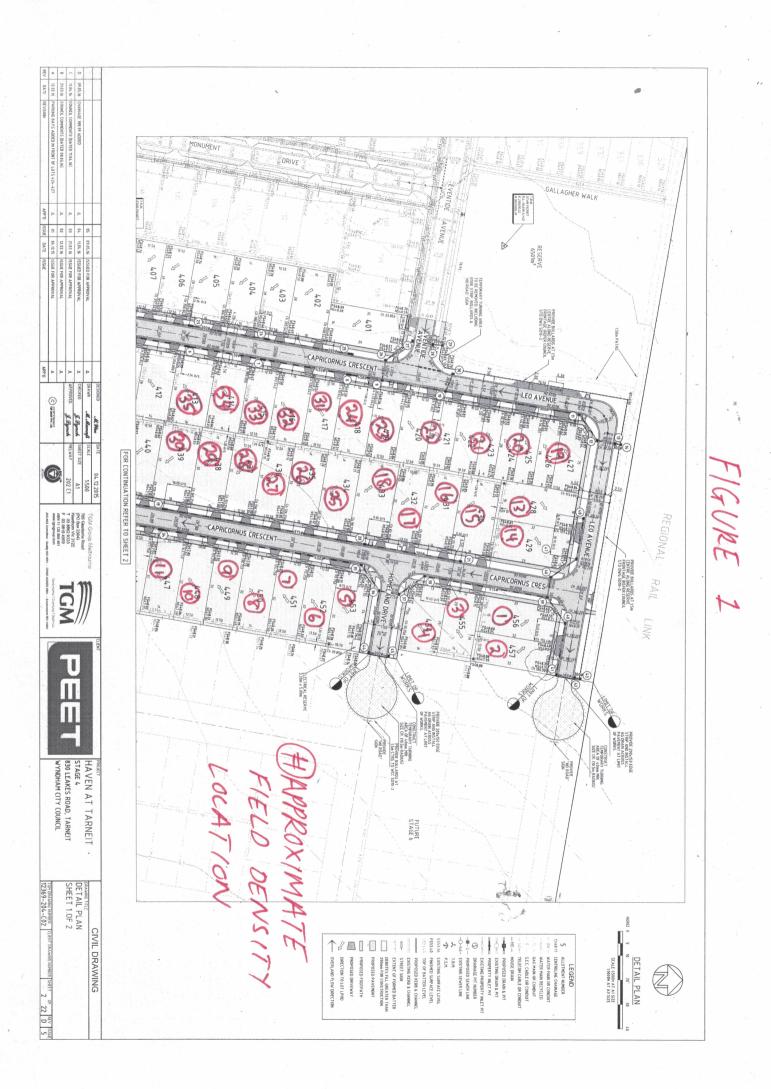
The site inspection and testing was performed by experienced geotechnicians from this office. Any areas that were deemed unsatisfactory were reworked and retested under their supervision. The testing was performed to the relevant Australian Standards and the accompanying test reports carry NATA endorsement. 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).

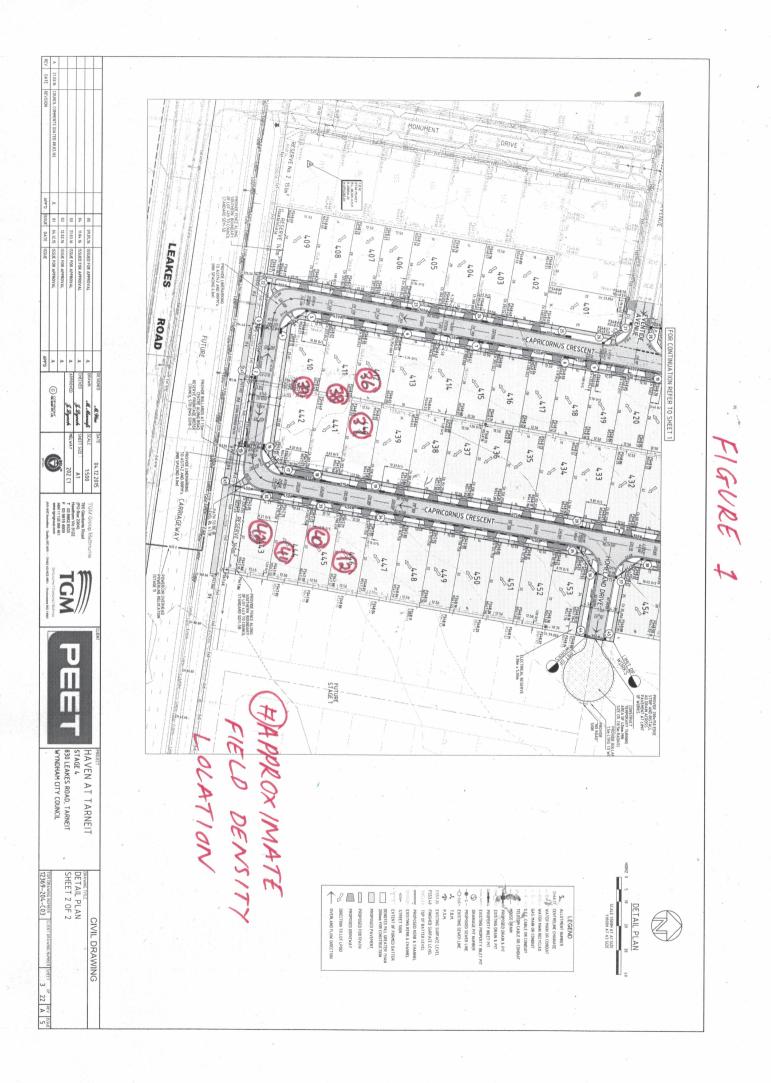
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

**Civil Geotechnical Services** 

Griffin Brown 16256 : GB093 : December 2016







8 Rose Avenue, (	-					Re Da	b No eport No ate Issued	16256 16256/R00 06/06/16
Project I	PEETS FUNDS MANAGI HAVEN ESTATE - STAG TARNIET		-			Da	ested by ate tested necked by	GB 21/05/16 JHF
Feature I	EARTHWORKS		Lay	er thickness	200	mm	Time:	08:59
Test procedur	e 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				
Approximate de	pth below FSL							
Measurement d	•	mm	175	175	175	175	175	175
Field wet densit	•	t∕m³	1.90	1.94	1.92	1.92	1.95	1.95
Field moisture c	content	%	24.0	21.4	22.7	24.9	20.3	20.8
Test procedur	e AS 1289.5.7.1							
Test No	EAG 1209.0.7.1		1	2	3	4	5	6
Compactive effo	ort					dard	1	
Oversize rock re	etained on sieve	тт	19.0	19.0	19.0	19.0	19.0	19.0
Percent of overs	size material	wet	0	0	0	1	5	1
Peak Converted		t∕m³	1.88	1.96	1.99	1.94	1.99	1.93
	Converted Wet Density	t∕m³	-	-	-	1.96	2.00	1.95
Optimum Moistu	ure Content	%	25.5	21.5	22.5	22.5	20.0	22.0
			4 50/	0.0%	0.0%	0.5%	0.00/	4.00/
	e Variation From n Moisture Content		1.5% dry	0.0%	0.0%	2.5% wet	0.0%	1.0% dry
							1	
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Ind/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

June 39

Approved Signatory : Justin Fry



Client PEETS FUND	CES	т			Re Da	b No eport No ate Issued ested by	16256 16256/R00 21/06/16 GB
Project HAVEN ESTA Location TARNEIT		1			Da	ate tested necked by	23/05/16 JHF
Feature EARTHWORK	ίS	Lay	er thickness	200	mm	Time:	11:07
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				
Approximate depth below FSL		475	475	475	475	475	475
Measurement depth		175	175	175	175	175	175
Field wet density Field moisture content	<u>t/m³</u> %	1.84 27.6	1.82 22.1	1.87 25.3	1.88 23.2	1.85 29.4	1.85 24.4
Test procedure AS 1289.5. Test No	7.1	7	8	9	10	11	12
Compactive effort				Stan	dard		
Oversize rock retained on siev	ve mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	6	1	2	0	0
Peak Converted Wet Density	t/m³	1.79	1.88	1.83	1.89	1.83	1.81
Adjusted Peak Converted We		-	1.91	1.85	1.91	-	-
Optimum Moisture Content	%	30.5	24.5	27.0	26.0	30.0	26.5
	 om	2.5% dry	2.0% dry	2.0% dry	2.5% dry	0.5% dry	2.0% dry
Moisture Variation Fro Optimum Moisture Cor	itent	- /					



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

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8 Rose Avenue	HNICAL SERVICES e, Croydon 3136					Re Da	b No eport No ate Issued	16256 16256/R00 06/06/16
Client Project Location	PEETS FUNDS MANAGI HAVEN ESTATE - STAG TARNIET		-			Da	sted by ate tested aecked by	GB 25/05/16 JHF
Feature	EARTHWORKS		Lay	er thickness	200	mm	Time:	10:39
-	ure 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				
Approximate	depth below FSL							
Measurement		тт	175	175	175	175	175	175
Field wet den	sity	t∕m³	1.86	1.91	1.92	1.90	1.92	1.97
Field moisture	e content	%	19.6	25.7	19.5	17.0	17.3	15.1
	ure AS 1289.5.7.1							1
Test No	<i>(</i> , ,		13	14	15	16	17	18
Compactive e	c retained on sieve	mm	19.0	19.0	19.0	dard 19.0	19.0	19.0
	ersize material	wet	0	0	0	0	0	0
	ted Wet Density	t/m <sup>3</sup>	1.84	1.99	2.00	1.86	1.89	1.93
	k Converted Wet Density	t/m³	-	-	-	-	-	-
	sture Content	%	22.0	26.0	21.0	21.5	22.0	20.0
Optimum Moi					0.0%	0.0%	0.0%	0.0%
Moist	ture Variation From um Moisture Content		2.5% dry	0.0%	0.0%	0.078		

ACCREDITED FOR TECHNICAL COMPETENCE and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

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8 Rose Avenu Client	CHNICAL SERVICES (e, Croydon 3136 PEETS FUNDS MANAGI		_			Da Te	eport No ate Issued ested by	16256/R00 01/07/16 NB
Project Location	HAVEN ESTATE - STAG TARNEIT	E 4					ate tested necked by	02/06/16 JHF
Feature	EARTHWORKS		Lay	er thickness	200	mm	Time:	11:29
-	lure 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				
Approximate	depth below FSL							
Measuremen	nt depth	тт	175	175	175	175	175	175
Field wet der	nsity	t∕m³	1.75	1.83	1.88	1.88	1.85	1.89
Field moistur	re content	%	26.4	25.2	22.8	20.1	22.8	22.3
	lure AS 1289.5.7.1							
Test No			19	20	21	22	23	24
Compactive			10.0	40.0		dard	40.0	40.0
	k retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
	/ersize material	wet	4	5	6	8	0	2
	rted Wet Density ak Converted Wet Density	t/m³ t/m³	1.83 1.85	1.85 1.87	1.93 1.95	1.95 1.98	1.93	1.91 1.96
-	isture Content	%	29.0	26.5	25.0	22.5	25.0	25.0
			0.5%	4 50/	0.5%	0.00/	0.00/	0.5%
			2.5%	1.5%	2.5% dry	2.0% dry	2.0% dry	2.5% dry
	ture Variation From num Moisture Content		dry	dry	ury	ury	· · · ·	



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VIL GEOTECHNICAL SERVICES 8 Rose Avenue, Croydon 3136					Re Da	bb No eport No ate Issued	16256 16256/R00 21/06/16
Client PEETS FUNDS MANAG						ested by	NB
Project HAVEN ESTATE - STAC Location TARNEIT	5E 4					ate tested	02/06/16 JHF
Location TARNEIT					Ci	hecked by	JUL
Feature EARTHWORKS		Lay	er thickness	200	mm	Time:	11:34
Test procedure AS 1289.2.1.1 & 5.8	3.1						
Test No		25	26	27	28	29	30
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
		TO	то	то	TO	то	то
		FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t∕m³	1.96	1.92	1.80	1.87	1.87	1.79
Field moisture content	%	16.7	18.6	23.3	23.0	22.2	26.8
Test procedure AS 1289.5.7.1							
Test No		25	26	27	28	29	30
Compactive effort				Stan	dard		
Oversize rock retained on sieve	тт	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	3	0	0	0	0	0
Peak Converted Wet Density	t∕m³	2.02	2.02	1.88	1.90	1.88	1.88
Adjusted Peak Converted Wet Density	t∕m³	2.04	-	-	-	-	-
Optimum Moisture Content	%	18.5	21.0	25.5	25.5	25.0	28.0
		4 50/	0.5%	0 50/	0.501		4.00/
Moisture Variation From		1.5%	2.5%	2.5%	2.5%	2.5%	1.0%
Optimum Moisture Content		dry	dry	dry	dry	dry	dry
	%	96.0	95.5	96.0	98.5	99.5	95.0
Density Ratio (R <sub>HD</sub> )	0/						



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8 Rose Avenue	INICAL SERVICES , Croydon 3136					Re Da	b No eport No ate Issued	16256 16256/R00 10/06/16
Client Project Location	PEETS FUNDS MANAG HAVEN ESTATE - STAG TARNEIT		-			Da	ested by ate tested necked by	NB 06/06/16 JHF
Feature	EARTHWORKS		Lay	er thickness	200	mm	Time:	12:32
Test procedı	ıre 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
	lepth below FSL		475	475	475	475	475	475
Measurement	•	mm	175	175	175	175	175	175
Field wet dens Field moisture	1	t/m³ %	1.93 23.7	1.85 22.9	1.86 34.3	1.77 31.0	1.80 30.4	1.86 28.5
Test procedu Test No	Ire AS 1289.5.7.1		31	32	33 Stan	34 dard	35	36
	ion		40.0	19.0	10.0	19.0	19.0	
Compactive ef	retained on sieve	тт	19.0	19.0	19.0	13.0	19.0	19.0
Compactive ef Oversize rock	retained on sieve	mm wet	19.0 4	0	19.0 0	0	3	19.0 2
Compactive ef Oversize rock Percent of ove Peak Converte	retained on sieve ersize material ed Wet Density	wet t/m³	4 2.01				3 1.88	2 1.90
Compactive ef Oversize rock Percent of ove Peak Converte Adjusted Peak	retained on sieve ersize material ed Wet Density < Converted Wet Density	wet t/m³ t/m³	4 2.01 2.03	0 1.95 -	0 1.88 -	0 1.83 -	3 1.88 1.88	2 1.90 1.91
Compactive ef Oversize rock Percent of ove Peak Converte Adjusted Peak	retained on sieve ersize material ed Wet Density < Converted Wet Density	wet t/m³	4 2.01	0 1.95	0	0 1.83	3 1.88	2 1.90
Compactive ef Oversize rock Percent of ove Peak Converte	retained on sieve ersize material ed Wet Density < Converted Wet Density	wet t/m³ t/m³	4 2.01 2.03	0 1.95 -	0 1.88 -	0 1.83 -	3 1.88 1.88	2 1.90 1.91
Compactive ef Oversize rock Percent of ove Peak Converte Adjusted Peak Optimum Mois	retained on sieve ersize material ed Wet Density < Converted Wet Density	wet t/m³ t/m³	4 2.01 2.03	0 1.95 -	0 1.88 -	0 1.83 -	3 1.88 1.88	2 1.90 1.91
Compactive ef Oversize rock Percent of ove Peak Converte Adjusted Peak Optimum Mois Moistu	retained on sieve ersize material ed Wet Density Converted Wet Density sture Content	wet t/m³ t/m³	4 2.01 2.03 22.0	0 1.95 - 24.0	0 1.88 - 33.5	0 1.83 - 31.5	3 1.88 1.88 30.5	2 1.90 1.91 28.0
Compactive ef Oversize rock Percent of ove Peak Converte Adjusted Peak Optimum Mois Moistu	retained on sieve ersize material ed Wet Density c Converted Wet Density sture Content ure Variation From m Moisture Content	wet t/m³ t/m³	4 2.01 2.03 22.0 1.5%	0 1.95 - 24.0 1.0%	0 1.88 - 33.5 0.5%	0 1.83 - 31.5 0.5%	3 1.88 1.88 30.5	2 1.90 1.91 28.0 0.5%



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8 Rose Avenue,	NICAL SERVICES Croydon 3136 PEETS FUNDS MANAG	EMENT	-			Re Da	b No eport No ate Issued ested by	16256 16256/R00 10/06/16 NB
- ,	HAVEN ESTATE - STAG TARNEIT	E 4					ate tested necked by	06/06/16 JHF
Feature	EARTHWORKS		Lay	er thickness	200	mm	Time:	12:33
	re AS 1289.2.1.1 & 5.8.	1						
Test No			37	38	39	40	41	42
Location			REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate de	epth below FSL							
Measurement of		тт	175	175	175	175	175	175
Field wet densi	ty	t∕m³	1.88	1.88	1.87	1.87	1.84	1.96
Field moisture of	content	%	30.2	27.0	27.2	30.0	24.4	23.4
Test procedur	e AS 1289.5.7.1							
Test No			37	38	39	40	41	42
Compactive effe	ort				Stan	dard	•	
Oversize rock r	etained on sieve	тт	19.0	19.0	19.0	19.0	19.0	19.0
Percent of over	size material	wet	0	0	0	0	0	0
Peak Converted	d Wet Density	t∕m³	1.91	1.94	1.90	1.91	1.91	1.99
Adjusted Peak	Converted Wet Density	t∕m³	-	-	-	-	-	-
Optimum Moist	ure Content	%	28.0	24.5	26.5	27.5	25.5	22.5
Moistur	re Variation From		2.0%	2.5%	0.5%	2.5%	1.0%	0.5%
Ontimun	n Moisture Content		wet	wet	wet	wet	dry	wet
opanian			98.5	97.0	98.5	98.0	96.0	98.5
			wet	wet	wet	wet	dry	



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