



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

9th February 2023

Our Reference: 23019:NB1454

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
UNITY PARK – STAGE 6 (TARNEIT)

Please find attached our Report No's 23019/R001 to 23019/R005 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 2023.

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).

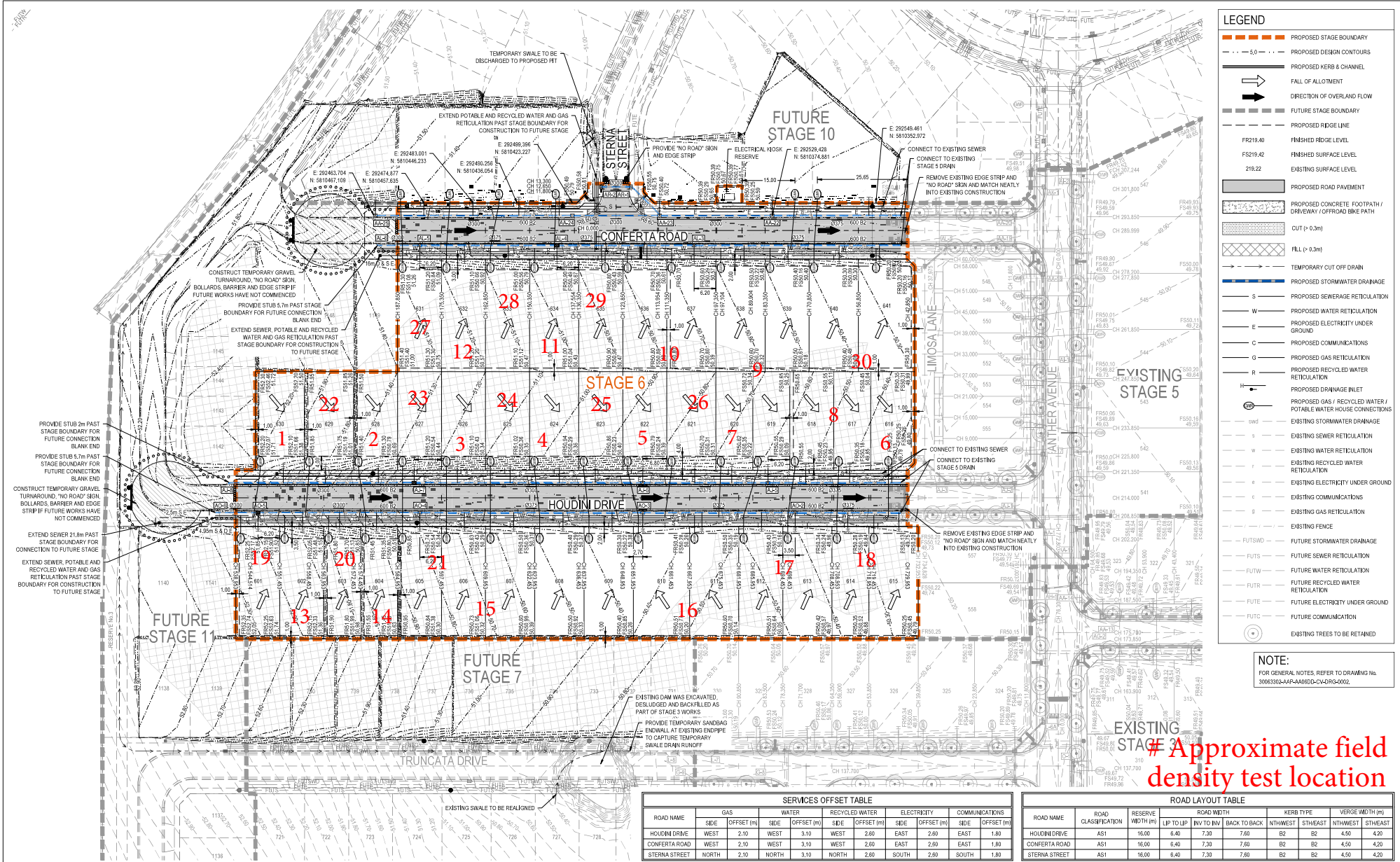
Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

A handwritten signature in blue ink, appearing to be 'Nick Brock', is written over a light blue circular stamp.

Nick Brock

FIGURE 1



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)
- TEMPORARY CUT OFF DRAIN
- 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 / RECYCLED WATER / POTABLE WATER HOUSE CONNECTIONS
- 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 COMMUNICATIONS
- EXISTING TREES TO BE RETAINED

NOTE:
FOR GENERAL NOTES, REFER TO DRAWING No. 30063302-AAP-AA06DD-CV-DRG-0002.

Approximate field density test location

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)
HOUDINI DRIVE	WEST	2.10	WEST	3.10	WEST	2.60	EAST	2.60	EAST	1.80
CONFERTATA ROAD	WEST	2.10	WEST	3.10	WEST	2.60	EAST	2.60	EAST	1.80
STERNA STREET	NORTH	2.10	NORTH	3.10	NORTH	2.60	SOUTH	2.60	SOUTH	1.80

ROAD LAYOUT TABLE										
ROAD NAME	ROAD CLASSIFICATION	RESERVE WIDTH (m)	ROAD WIDTH				KERB TYPE		VERGE WIDTH (m)	
			LP TO LP	INV TO INV	BACK TO BACK	NTHWEST	STHEAST	NTHWEST	STHEAST	
HOUDINI DRIVE	A51	16.00	6.40	7.30	7.60	B2	B2	4.50	4.00	
CONFERTATA ROAD	A51	16.00	6.40	7.30	7.60	B2	B2	4.50	4.00	
STERNA STREET	A51	16.00	6.40	7.30	7.60	B2	B2	4.50	4.00	

Issue	Description	DR	CH	VE	Date
A	ISSUED FOR CONSTRUCTION	HP	SE	SE	15.09.22
02	AMENDED AS PER COUNCIL COMMENTS	HP	SE	SE	05.04.22
03	ISSUED TO COUNCIL FOR APPROVAL	HP	SE	SE	08.07.22
01	ISSUED FOR TENDER	HP	SE	SE	24.06.22

Scales

1 : 500

Client

HB Land
A member of Ho Bee Land

Status: FOR CONSTRUCTION

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Original Issue Signatures

Drawn: H.PALOMIQUE Original Size: A1

Designed: S.HARMANS Height Datum: AHD

Project Manager: S.EISEL Grid: MGA

Verified: S.EISEL

Project: UNITY PARK STAGE 6 WYNDHAM CITY COUNCIL

ROADWORKS AND DRAINAGE LAYOUT PLAN

Arcadis Australia Pacific Pty Limited
Level 15, Queen & Collins Tower
376-380 Collins Street
Melbourne VIC 3000
ABN 76 104 485 289
Tel No: +61 3 9623 4000
www.arcadis.com/au

Project No.: 30063302-AAP-AA06DD-CV-DRG-0220-A



COMPACTION ASSESSMENT

Job No 23019
 Report No 23019/R001
 Date Issued 19/01/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	UNITY PARK - STAGE 6	Date tested	11/01/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	12:00
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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
Field wet density	t/m ³	1.86	1.85	1.80	1.84	1.83
Field moisture content	%	31.0	29.9	30.5	31.6	31.6

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
Percent of oversize material	wet	0	0	0	0	0
Peak Converted Wet Density	t/m ³	1.90	1.88	1.81	1.84	1.88
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	33.5	32.0	33.0	34.0	33.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.5% dry	2.5% dry	1.5% dry	1.5% dry
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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	98.5	99.0	100.0	97.5	98.0
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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

Job No 23019
 Report No 23019/R002
 Date Issued 18/01/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	UNITY PARK - STAGE 6	Date tested	12/01/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:30
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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
Field wet density	t/m ³	1.85	1.85	1.81	1.83	1.79
Field moisture content	%	28.2	30.4	26.5	22.4	26.6

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
Percent of oversize material	wet	0	0	0	0	0
Peak Converted Wet Density	t/m ³	1.89	1.86	1.85	1.89	1.77
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	30.5	32.5	29.0	24.0	26.5

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.5% dry	1.5% dry	0.0%	1.5% dry
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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	99.5	98.0	97.0	101.0	97.5
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Material description

No 7 - 12 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

Job No 23019
 Report No 23019/R003
 Date Issued 18/01/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	UNITY PARK - STAGE 6	Date tested	13/01/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 13:00
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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
Field wet density	t/m ³	1.84	1.82	1.87	1.86	1.87
Field moisture content	%	27.4	30.1	29.0	28.7	28.6

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
Percent of oversize material	wet	0	0	0	0	0
Peak Converted Wet Density	t/m ³	1.89	1.88	1.91	1.89	1.91
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	30.0	30.5	31.0	31.5	31.0

Moisture Variation From Optimum Moisture Content	2.5% dry	0.5% dry	1.5% dry	2.5% dry	2.5% dry	1.5% dry
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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	97.0	98.0	98.5	97.5	99.0
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Material description

No 13 - 18 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
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 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 23019
 Report No 23019/R004
 Date Issued 31/01/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	UNITY PARK - STAGE 6	Date tested	16/01/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	09:00
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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/m ³	1.82	1.85	1.83	1.86	1.85	1.83
Field moisture content	%	25.5	26.1	26.1	27.4	27.8	29.4

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/m ³	1.87	1.88	1.86	1.89	1.89	1.89
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-	-
Optimum Moisture Content	%	27.0	29.0	26.5	28.0	28.5	30.5

Moisture Variation From Optimum Moisture Content		1.5% dry	2.5% dry	0.5% dry	0.5% dry	0.5% dry	1.0% dry
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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	98.5	98.5	98.0	97.5	97.0
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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



COMPACTION ASSESSMENT

Job No 23019
 Report No 23019/R005
 Date Issued 31/01/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Tested by JB
 Date tested 17/01/23
 Checked by JHF

Client WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)
 Project UNITY PARK - STAGE 6
 Location TARNEIT

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 07:30
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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/m ³	1.85	1.84	1.84	1.75	1.74	1.83
Field moisture content %	31.9	32.2	27.2	26.3	24.4	31.6

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/m ³	1.87	1.86	1.86	1.81	1.76	1.84
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	34.5	34.5	29.0	29.0	25.0	34.5

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.0% dry	2.5% dry	1.0% dry	2.5% dry
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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	99.0	99.0	97.0	98.5	99.5
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Material description

No 25 - 30 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