TP43

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **43**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP44***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***14 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***14 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 704237; N: 6083367 (WGS84 Zone 55) surface elevation : 592.37m (AHD) pit orientation:

equipment type: 13 Tonne Excavator excavation method: Excavator excavation dimensions: 3.0 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	BX2	592.0	0.5		CL	**Sandy CLAY**: pale brown, fine grained sand, with some fine to medium grained, angular gravel.	<Wp	F		25/10 mm	**COLLUVIUM**
					591.5				**SHALE**: grey-brown, highly weathered, low to medium strength.					**BEDROCK**
					591.0	1.0								
						1.5			Test pit TP44 terminated at 1.5 m Refusal on Bedrock					
					590.5	2.0								
					590.0	2.5								
					589.5	3.0								
					589.0	3.5								
					588.5									

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP44

drawn	**SB**	coffey	client:	Opus International Consultants Pty Ltd	
approved	**BC**		project:	Ellerton Drive Extension	
date	**20/06/2014**		title:	**TEST PIT PROFILE**	
scale	**N.T.S.**		project no: GEOTFYSH9703AA	fig no: **44**	rev:
original size	**A4**				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP45***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***05 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***05 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 704253; N: 6083299 (WGS84 Zone 55) surface elevation : 595.03m (AHD) pit orientation:

equipment type: 6 Tonne Excavator excavation method: Excavator excavation dimensions: 1.3 m long 0.4 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (**SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed		595.0			CL	**Sandy CLAY**: low plasticity, pale brown, fine grained sand.	<Wp	F		25/10 mm	**TOPSOIL**
					594.5	0.5			**SHALE**: grey, highly weathered, low to medium strength.					**BEDROCK**
									Test pit TP45 terminated at 0.6 m Refusal on Bedrock					
					594.0	1.0								
					593.5	1.5								
					593.0	2.0								
					592.5	2.5								
					592.0	3.0								
					591.5	3.5								

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method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP45

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **45**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP46***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***05 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***05 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 704237; N: 6083267 (WGS84 Zone 55) surface elevation : 588.84m (AHD) pit orientation:

equipment type: 6 Tonne Excavator excavation method: Excavator excavation dimensions: 0.0 m long 0.0 m wide DCP id.:

excavation information								material substance								
method	support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description **SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	DCP (blows/ 100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed		588.5	0.5		CL	**Sandy CLAY**: low plasticity, red-brown, fine grained sand, with some fine grained, sub-angular gravel.	<Wp	F H to Fb		25/60 mm	**COLLUVIUM**
					588.0	1.0			**SHALE**: grey, highly weathered, low to medium strength.					**BEDROCK**
					587.5	1.5			Test pit TP46 terminated at 1.2 m Refusal on Bedrock					
					587.0	2.0								
					586.5	2.5								
					586.0	3.0								
					585.5	3.5								
					585.0									

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method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP46

drawn	**SB**	coffey	client:	Opus International Consultants Pty Ltd	
approved	**BC**		project:	Ellerton Drive Extension	
date	**20/06/2014**		title:	**TEST PIT PROFILE**	
scale	**N.T.S.**		project no: GEOTFYSH9703AA	fig no: **46**	rev:
original size	**A4**				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP47***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 704148; N: 6083138 (WGS84 Zone 55) surface elevation : 580.70m (AHD) pit orientation:

equipment type: 13 Tonne Excavator excavation method: Excavator excavation dimensions: 4.0 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	BX2	580.5	0.5			**FILL: Clayey SAND**: medium to coarse grained, orange-brown, medium plasticity, with large cobbles.	M			25/20 mm	**FILL - STOCKPILE**
					580.0	1.0								
					579.5	1.5			**LIMESTONE**: grey, highly weathered, low to medium strength., medium to high strength					**BEDROCK**
					579.0									
					578.5	2.0			Test pit TP47 terminated at 1.9 m Refusal on Bedrock					
					578.0	2.5								
					577.5	3.0								
					577.0	3.5								

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method

N	natural exposure
X	existing excavation
BH	backhoe bucket
B	bulldozer blade
R	ripper
E	excavator

support

N	none
S	shoring

penetration

1 2 3 — no resistance ranging to refusal

water

10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests

U##	undisturbed sample ##mm diameter
D	disturbed sample
B	bulk disturbed sample
E	environmental sample
HP	hand penetrometer (kPa)
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
VS	vane shear peak/remoulded (uncorrected kPa)
R	refusal

classification symbol & soil description
based on Unified Classification System

moisture

D	dry
M	moist
W	wet
W_P	plastic limit
W_L	liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP47

drawn	**SB**	coffey	client:	Opus International Consultants Pty Ltd	
approved	**BC**		project:	Ellerton Drive Extension	
date	**20/06/2014**		title:	**TEST PIT PROFILE**	
scale	**N.T.S.**		project no: GEOTFYSH9703AA	fig no: **47**	rev:
original size	**A4**				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP48***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 704079; N: 6083144 (WGS84 Zone 55) surface elevation : 580.16m (AHD) pit orientation:

equipment type: 13 Tonne Excavator excavation method: Excavator excavation dimensions: 6.0 m long 0.8 m wide DCP id.:

excavation information | **material substance**

method	support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed		580.0	0.5			**FILL: Clayey SAND**: coarse grained, red-brown, medium plasticity clay with some large cobbles and boulders.	M			25/10 mm	**FILL**
					579.5	1.0								VERY LARGE BOULDER AT 1.0m
					579.0	1.5								
					578.5	2.0								
					578.0	2.5								
				BX2	577.5	3.0		CH	**Silty CLAY**: high plasticity, dark brown mottled dark grey, high plasticity, organic specks observed, trace rootlets.	~Wp	VSt			**ALLUVIUM**
					577.0	3.5			Test pit TP48 terminated at 3.0 m Target depth					
					576.5									

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:42

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP48

drawn	**SB**	coffey	client:	Opus International Consultants Pty Ltd	
approved	**BC**		project:	Ellerton Drive Extension	
date	**20/06/2014**		title:	**TEST PIT PROFILE**	
scale	**N.T.S.**		project no: GEOTFYSH9703AA	fig no: **48**	rev:
original size	**A4**				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP49***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 704093; N: 6083011 (WGS84 Zone 55) surface elevation : 593.79m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.2 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (**SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	B	593.5	0.5		SC	**Clayey SAND**: fine to medium grained, reddish brown, medium plasticity clay fines.	D	L		25/30 mm	**COLLUVIUM**
					593.0				**SHALE**: grey, highly weathered, low to medium strength.					**BEDROCK**
						1.0			Test pit TP49 terminated at 0.8 m Refusal on Bedrock					
					592.5	1.5								
					592.0	2.0								
					591.5	2.5								
					591.0	3.0								
					590.5	3.5								
					590.0									

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:42

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP49

drawn	**SB**	coffey	client:	Opus International Consultants Pty Ltd	
approved	**BC**		project:	Ellerton Drive Extension	
date	**20/06/2014**		title:	**TEST PIT PROFILE**	
scale	**N.T.S.**		project no: GEOTFYSH9703AA	fig no: **49**	rev:
original size	**A4**				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP49S***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 704131; N: 6083037 (WGS84 Zone 55) surface elevation : 591.72m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.0 m long 1.2 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (**SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/mm) 5 10 15 20	structure and additional observations
E	N		None Observed		591.5	0.5			**FILL: BOULDERS**: with some sand, gravel and silt.	D				**FILL**
					591.0	1.0								
					590.5	1.5								
					590.0	2.0								
					589.5	2.5			TP49S terminated at 2.3 m Test Pit Collapse					
					589.0	3.0								
					588.5	3.5								
					588.0									

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:42

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP49S

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **50**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP50***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 704050; N: 6082956 (WGS84 Zone 55) surface elevation : 601.54m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 2.7 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (**SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		Observed		601.5				**SHALE**: grey, highly weathered, low to medium strength.				25/10 mm	**BEDROCK**
			None						Test pit TP50 terminated at 0.2 m Refusal on Bedrock					
					601.0	0.5								
					600.5	1.0								
					600.0	1.5								
					599.5	2.0								
					599.0	2.5								
					598.5	3.0								
					598.0	3.5								

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 17:54

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP50

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **51**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP51***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 704008; N: 6082911 (WGS84 Zone 55) surface elevation : 607.17m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.0 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	BX2	607.0	0.5		SC	**Clayey SAND**: fine grained, grey-brown, medium plasticity clay.	D	L		25/10 mm	**COLLUVIUM**
					606.5				**SHALE**: grey, highly weathered, low to medium strength.					**BEDROCK**
									Test pit TP51 terminated at 0.8 m Refusal on Bedrock					
					606.0	1.0								
					605.5	1.5								
					605.0	2.0								
					604.5	2.5								
					604.0	3.0								
					603.5	3.5								

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:42

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP51

drawn	**SB**
approved	**BC**
date	**20/06/2014**
scale	**N.T.S.**
original size	**A4**

coffey

client:	Opus International Consultants Pty Ltd
project:	Ellerton Drive Extension
title:	**TEST PIT PROFILE**

project no:	GEOTFYSH9703AA	fig no: **52**	rev:

coffey

Engineering Log - Excavation

		Excavation ID.	***TP52***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703972; N: 6082879 (WGS84 Zone 55) surface elevation : 609.92m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.0 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (**SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	BX2	609.5	0.5		SC	**Clayey SAND**: medium to coarse grained, orange-brown, high plasticity clay fines.	D	MD			**COLLUVIUM**
				BX2					**SHALE**: grey, highly weathered, low to medium strength.				25/60 mm	**BEDROCK**
					609.0	1.0			Test pit TP52 terminated at 0.9 m Refusal on Bedrock					
					608.5	1.5								
					608.0	2.0								
					607.5	2.5								
					607.0	3.0								
					606.5	3.5								
					606.0									

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:42

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP52

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **53**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP53***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703775; N: 6082784 (WGS84 Zone 55) surface elevation : 627.15m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.0 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	BX2	627.0	0.5			**TOPSOIL: Sandy SILT**: low liquid limit, dark grey, fine to medium grained sand.	D			25/70 mm	**TOPSOIL**
					626.5	1.0			**SHALE**: brown, bedded at 70°, highly weathered, low to medium strength.					**BEDROCK**
					626.0	1.5			Test pit TP53 terminated at 1.1 m Refusal on Bedrock					
					625.5	2.0								
					625.0	2.5								
					624.5	3.0								
					624.0	3.5								
					623.5									

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:42

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP53

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **54**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP54***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703756; N: 6082829 (WGS84 Zone 55) surface elevation : 622.41m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.0 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	BX2	622.0	0.5			**TOPSOIL: Sandy SILT**: low liquid limit, pale brown, fine grained sand.	<WI / D				**FILL**
									FILL: Silty SAND: fine to medium grained, pale brown.					
					621.5	1.0			**ADAMELLITE**: medium grained, brown-grey, highly weathered, low to medium strength.				25/10 mm	**BEDROCK**
									Test pit TP54 terminated at 1.1 m Refusal on Bedrock					
					621.0	1.5								
					620.5	2.0								
					620.0	2.5								
					619.5	3.0								
					619.0	3.5								
					618.5									

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:42

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP54

drawn	**SB**	coffey	client:	Opus International Consultants Pty Ltd	
approved	**BC**		project:	Ellerton Drive Extension	
date	**20/06/2014**		title:	**TEST PIT PROFILE**	
scale	**N.T.S.**		project no: GEOTFYSH9703AA	fig no: **55**	rev:
original size	**A4**				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP55***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703759; N: 6082723 (WGS84 Zone 55) surface elevation : 630.19m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.0 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	B	630.0	0.0			**TOPSOIL: Sandy SILT**: low liquid limit, dark grey, fine to medium grained sand.	<WI			25/10 mm	**TOPSOIL**
					629.5	0.5			**ADAMELLITE**: medium grained, red brown - dark brown, highly weathered, low to medium strength.	M	MD			**BEDROCK**
									Test pit TP55 terminated at 0.7 m Refusal on Bedrock					
					629.0	1.0								
					628.5	1.5								
					628.0	2.0								
					627.5	2.5								
					627.0	3.0								
					626.5	3.5								

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:42

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP55

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **56**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP56***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703684; N: 6082712 (WGS84 Zone 55) surface elevation : 629.12m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.0 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	B	629.0	0.0			**TOPSOIL: Sandy SILT**: low liquid limit, dark grey, fine to medium grained sand.	<Wl				**TOPSOIL**
								SC	**Clayey SAND**: fine to coarse grained, orange-brown, mottled pale grey, red, brown, high plasticity clay, with some fine to medium grained, angular to sub-angular gravel.	M	D			**RESIDUAL**
					628.5	0.5							25/70 mm	
					628.0	1.0	+ + +		**ADAMELLITE**: medium grained, orange-grey, highly weathered, low to medium strength.					**BEDROCK**
									Test pit TP56 terminated at 1.2 m Refusal on Bedrock					
					627.5	1.5								
					627.0	2.0								
					626.5	2.5								
					626.0	3.0								
					625.5	3.5								

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:42

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP56

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **57**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP57***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703645; N: 6082693 (WGS84 Zone 55) surface elevation : 631.89m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.0 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	B	631.5	0.5		SC	**TOPSOIL: Sandy SILT**: low liquid limit, grey-brown, fine to medium grained sand.	<WI				**TOPSOIL**
									Clayey SAND: medium grained, orange-brown, medium plasticity clay fines, with some fine to medium grained, sub-rounded sub-angular gravel.	M	D		25/60 mm	**COLLUVIUM**
					631.0	1.0			**ADAMELLITE**: medium grained, orange-grey, highly weathered, low to medium strength.					**BEDROCK**
									Test pit TP57 terminated at 1.0 m Refusal on Bedrock					
					630.5	1.5								
					630.0	2.0								
					629.5	2.5								
					629.0	3.0								
					628.5	3.5								
					628.0									

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:42

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP57

drawn	**SB**	coffey	client:	Opus International Consultants Pty Ltd	
approved	**BC**		project:	Ellerton Drive Extension	
date	**20/06/2014**		title:	**TEST PIT PROFILE**	
scale	**N.T.S.**		project no: GEOTFYSH9703AA	fig no: **58**	rev:
original size	**A4**				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP58***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703517; N: 6082690 (WGS84 Zone 55) surface elevation : 624.49m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.0 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (**SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	BX2	624.0	0.5		SC	**FILL: Sandy SILT**: low liquid limit, grey-brown, fine to medium grained sand.	~WI				**FILL**
									Clayey SAND: medium to coarse grained, mottled orange/yellow/grey, medium plasticity clay fines, with some fine to medium grained, angular gravel.	M	MD / D		25/50 mm	**COLLUVIUM**
					623.5	1.0	+ + + +		**ADAMELLITE**: medium grained, orange-grey, highly weathered, low to medium strength.					**BEDROCK**
									Test pit TP58 terminated at 1.2 m Refusal on Bedrock					
					623.0	1.5								
					622.5	2.0								
					622.0	2.5								
					621.5	3.0								
					621.0	3.5								

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP58

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **59**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP59***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703477; N: 6082687 (WGS84 Zone 55) surface elevation : 620.55m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 2.9 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed		620.5				**FILL: Silty SAND**: medium grained, brown.	M				**FILL**
								SM	**Silty SAND**: medium grained, orange-brown.		D			**COLLUVIUM**
				BX2	620.0	0.5			**ADAMELLITE**: medium grained, grey-orange, extremely to highly weathered, low to medium strength.				25/30 mm	**BEDROCK**
					619.5	1.0								
									Test pit TP59 terminated at 1.2 m Refusal on Bedrock					
					619.0	1.5								
					618.5	2.0								
					618.0	2.5								
					617.5	3.0								
					617.0	3.5								

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:43

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP59

drawn	**SB**	coffey	client:	Opus International Consultants Pty Ltd	
approved	**BC**		project:	Ellerton Drive Extension	
date	**20/06/2014**		title:	**TEST PIT PROFILE**	
scale	**N.T.S.**		project no: GEOTFYSH9703AA	fig no: **60**	rev:
original size	**A4**				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP60***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703437; N: 6082683 (WGS84 Zone 55) surface elevation : 616.31m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 8.2 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (**SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	BX2	616.0	0.5		SC	**TOPSOIL: Silty CLAY**: dark brown, medium to high plasticity clay, with some fine to medium grained sand.	~Wp	MD			**TOPSOIL**
									Clayey SAND: coarse grained, orange-brown, medium plasticity clay.	M	D			**RESIDUAL**
					615.5	1.0							25/20 mm	
					615.0	1.5			**ADAMELLITE**: medium grained, orange-grey, extremely to highly weathered, low to medium strength.					**BEDROCK**
					614.5	2.0			Test pit TP60 terminated at 1.6 m Refusal on Bedrock					
					614.0	2.5								
					613.5	3.0								
					613.0	3.5								
					612.5									

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:43

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP60

drawn	**SB**	coffey	client:	Opus International Consultants Pty Ltd	
approved	**BC**		project:	Ellerton Drive Extension	
date	**20/06/2014**		title:	**TEST PIT PROFILE**	
scale	**N.T.S.**		project no: GEOTFYSH9703AA	fig no: **61**	rev:
original size	**A4**				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP61***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703397; N: 6082680 (WGS84 Zone 55) surface elevation : 612.29m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.1 m long 0.9 m wide DCP id.:

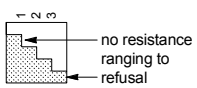
excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (**SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	BX2	612.0	0.5		SM	**Silty SAND**: medium grained, orange-brown, with some fine to medium grained, angular gravel.	D	MD			**COLLUVIUM**
					611.5	1.0			**ADAMELLITE**: medium grained, grey-brown, highly weathered, low to medium strength.				25/5 mm	**BEDROCK**
					611.0	1.5			Test pit TP61 terminated at 1.0 m Refusal on Bedrock					
					610.5	2.0								
					610.0	2.5								
					609.5	3.0								
					609.0	3.5								
					608.5									

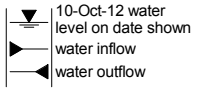
method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration



water



samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP61

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **62**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP62***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703357; N: 6082677 (WGS84 Zone 55) surface elevation : 609.82m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.1 m long 0.9 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	DCP (blows/100 mm)	structure and additional observations
E	N		None Observed	BX2	609.5	0.5		SM	**TOPSOIL: Clayey SILT**: low liquid limit, dark brown.	~Wl				**TOPSOIL**
									Silty SAND: medium to coarse grained, orange, with some fine to medium grained, angular gravel.	M	MD			**COLLUVIUM**
					609.0	1.0			**ADAMELLITE**: medium grained, orange, highly weathered, low to medium strength.				25/20 mm	**BEDROCK**
									Test pit TP62 terminated at 1.0 m Refusal on Bedrock					
					608.5	1.5								
					608.0	2.0								
					607.5	2.5								
					607.0	3.0								
					606.5	3.5								
					606.0									

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:43

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP62

drawn	**SB**	coffey	client:	Opus International Consultants Pty Ltd	
approved	**BC**		project:	Ellerton Drive Extension	
date	**20/06/2014**		title:	**TEST PIT PROFILE**	
scale	**N.T.S.**		project no: GEOTFYSH9703AA	fig no: **63**	rev:
original size	**A4**				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP63***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703318; N: 6082677 (WGS84 Zone 55) surface elevation : 606.23m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.3 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	BX2	606.0	0.0			**TOPSOIL: Clayey SILT**: low liquid limit, brown.	~Wl			25/10 mm	**TOPSOIL**
									ADAMELLITE: medium grained, orange-brown, highly weathered, low to medium strength.					**BEDROCK**
					605.5	0.5			Test pit TP63 terminated at 0.5 m Refusal on Bedrock					
					605.0	1.0								
					604.5	1.5								
					604.0	2.0								
					603.5	2.5								
					603.0	3.0								
					602.5	3.5								

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:43

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP63

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **64**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP64***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703278; N: 6082673 (WGS84 Zone 55) surface elevation : 601.89m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.3 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (**SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed	D	601.5	0.5		SM	**Silty Gravelly SAND**: coarse grained, brown, fine grained, sub-angular gravel.	D to M	MD / D		25/60 mm	**COLLUVIUM**
				BX2	601.0	1.0		CL	**Silty CLAY**: medium plasticity, mottled orange/grey, medium plasticity.	~Wp	St			**RESIDUAL**
					600.5	1.5	+ + +		**ADAMELLITE**: medium grained, brown, highly weathered, low to medium strength.					**BEDROCK**
					600.0	2.0			Test pit TP64 terminated at 2.0 m Refusal					
					599.5	2.5								
					599.0	3.0								
					598.5	3.5								
					598.0									

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:43

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP64

drawn	SB	coffey	client:	Opus International Consultants Pty Ltd	
approved	BC		project:	Ellerton Drive Extension	
date	20/06/2014		title:	**TEST PIT PROFILE**	
scale	N.T.S.		project no: GEOTFYSH9703AA	fig no: **65**	rev:
original size	A4				

coffey

Engineering Log - Excavation

		Excavation ID.	***TP65***
		sheet:	1 of 1
		project no.	***GEOTFYSH9703AA***
client:	***Opus International Consultants Pty Ltd***	date excavated:	***13 May 2014***
principal:	***Queanbeyan City Council***	date completed:	***13 May 2014***
project:	***Ellerton Drive Extension***	logged by:	***BC***
location:	***Queanbeyan NSW***	checked by:	***DB***

position: E: 703238; N: 6082667 (WGS84 Zone 55) surface elevation : 600.04m (AHD) pit orientation:

equipment type: 20 Tonne Excavator excavation method: Excavator excavation dimensions: 3.0 m long 1.0 m wide DCP id.:

excavation information | **material substance**

method	support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	DCP (blows/ 100 mm) 5 10 15 20	structure and additional observations
E	N		None Observed		600.0	0.5			**FILL: Silty Gravelly SAND**: medium to coarse grained, brown, fine to medium grained, angular to sub-angular gravel.	D				**FILL**
					599.5	1.0		SM	**Silty Gravelly SAND**: coarse grained, grey, fine grained, sub-angular gravel.		VD			**COLLUVIUM**
					599.0			GM	**Silty GRAVEL**: fine to medium grained, sub-angular, pale brown.					
						1.5					D			
					598.5						MD			
					598.0	2.0								
				BX2	597.5	2.5								
					597.0	3.0			Test pit TP65 terminated at 3.0 m Target depth					
					596.5	3.5								

CDF_0_9_04BA.GLB Log COF EXCAVATION + PSP/DCP GEOTFYSH09703AA.GPJ <<DrawingFile>> 27/06/2014 15:43

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- N none
- S shoring

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- U## undisturbed sample ##mm diameter
- D disturbed sample
- B bulk disturbed sample
- E environmental sample
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear peak/remouded (uncorrected kPa)
- R refusal

classification symbol & soil description
based on Unified Classification System

moisture
- D dry
- M moist
- W wet
- W_P plastic limit
- W_L liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP65

drawn	**SB**	coffey	client:	Opus International Consultants Pty Ltd	
approved	**BC**		project:	Ellerton Drive Extension	
date	**20/06/2014**		title:	**TEST PIT PROFILE**	
scale	**N.T.S.**		project no: GEOTFYSH9703AA	fig no: **66**	rev:
original size	**A4**				

Appendix C - Laboratory Test Results

Fyshwick,Canberra Laboratory

Coffey Testing Pty Ltd
ABN 92 114 364 046
16 Mildura Street
Fyshwick ACT 2609

Phone: +61 2 6260 7288
Fax: +61 2 6260 7211

Report No: ASM:FYSH14W00524
Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
P.O. Box 152
Fyshwick ACT 2609

Principal:
Project No.: INFOFYSH00568AA
Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: **TRN:**

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: Jan Penon
(Principal Technician)
NATA Accredited Laboratory Number:431
Date of Issue: 13/06/2014

Material Details

Source	Test Pit	**Sampled From**	
Description	Natural Material	**Location**	Queanbeyan, NSW
Specification	AS Grading	**Sampling Method**	Submitted by client

Sample Details

Sample ID	FYSH14S-00967	FYSH14S-00968	FYSH14S-00969	FYSH14S-00970	FYSH14S-00972	FYSH14S-00973
Field Sample ID	00001	00002	00003	00004	00006	00007
Date Sampled	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014
Date Submitted:	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014
Sample Location:	TP02	TP03	TP04	TP08	TP13	TP16
	0.7m to 0.9m	0.0m to 0.5m	0.6m to 0.7m	0.5m to 0.6m	1.0m to 1.5m	0.9m to 1.0m

Other Test Results

Description	Method	Results					Limits
Sample History	AS 1289.1.1	Oven-dried			Oven-dried		
Preparation	AS 1289.1.1	Dry Sieved			Dry Sieved		
Linear Shrinkage (%)	AS 1289.3.4.1	10.0			4.0		
Mould Length (mm)		254			254		
Crumbling		No			No		
Curling		No			No		
Cracking		No			No		
Liquid Limit (%)	AS 1289.3.1.2	33			19		
Method		One Point			One Point		
Plastic Limit (%)	AS 1289.3.2.1	14			12		
Plasticity Index (%)	AS 1289.3.3.1	19			7		
Emerson Class Number	AS 1289.3.8.1	5					
Soil Description							
Type of Water		Potable					
Temperature of Water (°C)		16.0					
MDD (t/m³)	RMS T111 - 2011	1.76	1.86		1.75	1.96	
OMC (%)		14.6	12.6		17.5	11.3	
Method of Determination		Cubic Spline	Cubic Spline		Cubic Spline	Cubic Spline	
Oversize Sieve (mm)		19.0	19.0		19.0	19.0	
Oversize Material (%)							
Oversize Sieve 2 (mm)		37.5	37.5		37.5	37.5	
Oversize Material 2 (%)							
Fraction Tested		- 37.5mm	- 37.5mm		- 37.5mm	- 37.5mm	
Mould Size (Ltr)		1	1		1	1	
Method of Compaction		Standard	Standard		Standard	Standard	
Moisture Content (%)	RMS T120 - 1999	9.5	8.8	10.4	15.6	8.6	6.0

Comments

Field Moisture Refer to Moisture Content% - RMS T120 1999.

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Report No: ASM:FYSH14W00524
Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
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Principal:
Project No.: INFOFYSH00568AA
Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: **TRN:**

Accredited for compliance with ISO/IEC 17025.

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Approved Signatory: Jan Penon
(Principal Technician)
NATA Accredited Laboratory Number:431
Date of Issue: 13/06/2014

Material Details

Source	Test Pit	**Sampled From**	
Description	Natural Material	**Location**	Queanbeyan, NSW
Specification	AS Grading	**Sampling Method**	Submitted by client

Sample Details

Sample ID	FYSH14S-00967	FYSH14S-00968	FYSH14S-00969	FYSH14S-00970	FYSH14S-00972	FYSH14S-00973
Field Sample ID	00001	00002	00003	00004	00006	00007
Date Sampled	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014
Date Submitted:	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014
Sample Location:	TP02	TP03	TP04	TP08	TP13	TP16
	0.7m to 0.9m	0.0m to 0.5m	0.6m to 0.7m	0.5m to 0.6m	1.0m to 1.5m	0.9m to 1.0m

Other Test Results

Description	Method	Results				Limits
CBR At 2.5mm (%)	RMS T117 - 2011	5	1.5	2.5	11	
Maximum Dry Density (t/m³)		1.76	1.86	1.75	1.96	
Optimum Moisture Content (%)		14.6	12.6	17.5	11.3	
Target Laboratory Density Ratio (%)		98	98	98	98	
Laboratory Density Ratio (%)		99	99	98	101	
Target Laboratory Moisture Ratio (%)		100	100	100	100	
Laboratory Moisture Ratio (%)		98	100	101	98	
Swell (%)		0.8	2.0	1.9	0.4	
Moisture Content Top 30mm (%)		18.3	20.8	23.0	13.8	
Moisture Content of Full Depth portion (%)		17.6	17.3	21.0	12.8	
Compaction Rammer		Standard	Standard	Standard	Standard	
Period of Soaking (Days)		10	10	10	10	
Oversize Material (%)		1	0	1	2	

Comments

Field Moisture Refer to Moisture Content% - RMS T120 1999.

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Report No: ASM:FYSH14W00525
Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
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Principal:
Project No.: INFOFYSH00568AA
Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: TRN:

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Approved Signatory: Jan Penon
(Principal Technician)
NATA Accredited Laboratory Number:431
Date of Issue: 13/06/2014

Material Details

Source	Test Pit	Sampled From	
Description	Natural Material	Location	Queanbeyan, NSW
Specification	No Specification	Sampling Method	Submitted by client

Sample Details

Sample ID	FYSH14S-00974	FYSH14S-00975	FYSH14S-00976	FYSH14S-00977	FYSH14S-00978	FYSH14S-00979
Field Sample ID	00008	00009	00010	00011	00012	00013
Date Sampled	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014
Date Submitted:	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014
Sample Location:	TP20	TP22	TP23	TP27	TP35	TP39
	0.6m to 0.7m	0.8m to 0.9m	0.5m to 0.6m	0.5m to 0.6m	0.4m to 0.5m	1.1m to 1.5m

Other Test Results

Description	Method	Results						Limits
MDD (t/m³)	RMS T111 - 2011	1.90	2.00	1.92	1.98	1.75	1.98	
OMC (%)		13.2	9.9	11.5	12.2	18.2	10.1	
Method of Determination		Cubic Spline	Cubic Spline	Cubic Spline	Cubic Spline	Cubic Spline	Cubic Spline	
Oversize Sieve (mm)		19.0	19.0	19.0	19.0	19.0	19.0	
Oversize Material (%)								
Oversize Sieve 2 (mm)		37.5	37.5	37.5	37.5	37.5	37.5	
Oversize Material 2 (%)								
Fraction Tested		- 37.5mm	- 37.5mm	- 37.5mm	- 37.5mm	- 37.5mm	- 37.5mm	
Mould Size (Ltr)		1	1	1	1	1	1	
Method of Compaction		Standard	Standard	Standard	Standard	Standard	Standard	
CBR At 5.0mm (%)	RMS T117 - 2011	2.5	11	13	9	9	15	
Maximum Dry Density (t/m³)		1.90	2.00	1.92	1.98	1.75	1.98	
Optimum Moisture Content (%)		13.2	9.9	11.5	12.2	18.2	10.1	
Target Laboratory Density Ratio (%)		98	98	98	98	98	98	
Laboratory Density Ratio (%)		97	97	100	97	100	99	
Target Laboratory Moisture Ratio (%)		100	100	100	100	100	100	
Laboratory Moisture Ratio (%)		100	100	100	100	100	100	
Swell (%)		1.4	0.4	0.6	-0.1	1.4	0.7	
Moisture Content Top 30mm (%)		20.0	13.4	16.0	12.0	23.0	14.6	
Moisture Content of Full Depth portion (%)		17.8	13.7	13.4	11.7	20.0	13.4	
Compaction Rammer		Standard	Standard	Standard	Standard	Standard	Standard	
Period of Soaking (Days)		10	10	10	10	10	10	
Oversize Material (%)		1	19	0	29	3	1	
Moisture Content (%)	RMS T120 - 1999	11.6		9.0		15.9	11.2	

Comments

Field Moisture Content Refer to Moisture Content% - RMS T120 1999

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Report No: ASM:FYSH14W00525
Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
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Principal:
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Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: TRN:

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Approved Signatory: Jan Penon
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NATA Accredited Laboratory Number:431
Date of Issue: 13/06/2014

Material Details

Source	Test Pit	Sampled From	
Description	Natural Material	Location	Queanbeyan, NSW
Specification	No Specification	Sampling Method	Submitted by client

Sample Details

Sample ID	FYSH14S-00974	FYSH14S-00975	FYSH14S-00976	FYSH14S-00977	FYSH14S-00978	FYSH14S-00979
Field Sample ID	00008	00009	00010	00011	00012	00013
Date Sampled	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014
Date Submitted:	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014
Sample Location:	TP20	TP22	TP23	TP27	TP35	TP39
	0.6m to 0.7m	0.8m to 0.9m	0.5m to 0.6m	0.5m to 0.6m	0.4m to 0.5m	1.1m to 1.5m

Other Test Results

Description	Method	Results		Limits
Sample History	AS 1289.1.1	Oven-dried	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	4.5	4.5	
Mould Length (mm)		254	254	
Crumbling		No	No	
Curling		No	No	
Cracking		No	No	
Liquid Limit (%)	AS 1289.3.1.2	24	24	
Method		One Point	One Point	
Plastic Limit (%)	AS 1289.3.2.1	15	15	
Plasticity Index (%)	AS 1289.3.3.1	9	9	
Emerson Class Number	AS 1289.3.8.1	5		
Soil Description				
Type of Water		Potable		
Temperature of Water (°C)		16.0		

Comments

Field Moisture Content Refer to Moisture Content% - RMS T120 1999

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Issue No: 1

Material Test Report

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Project Name: GEOTFYSH09703AA - Elerton Drive Ext
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Approved Signatory: Jan Penon
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NATA Accredited Laboratory Number:431
Date of Issue: 13/06/2014

Material Details

Source	Test Pit	Sampled From	
Description	Natural Material	Location	Queanbeyan, NSW
Specification	AS Grading	Sampling Method	Submitted by client

Sample Details

Sample ID	FYSH14S-00980	FYSH14S-00981	FYSH14S-00983	FYSH14S-00984	FYSH14S-00985	FYSH14S-00986
Field Sample ID	00014	00015	00017	00018	00019	00020
Date Sampled	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014
Date Submitted:	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014
Sample Location:	TP40	TP41	TP47	TP48	TP44	TP52
	0.4m to 0.6m	0.0m to 0.5m	1.0m to 1.3m	2.5m to 2.8m	0.5m to 0.6m	0.3m to 0.6m

Particle Size Distribution

Method:
AS 1289.3.6.1
Description:
Determination of the Particle Size Distribution of a Soil - Standard Method of Analysis by
Drying by:
Oven
Washed:
Sample Washed

Sieve Size	% Passing		Limits
300mm			
200mm			
150mm			
106mm			
75.0mm			
63.0mm		100	
53.0mm		89	
37.5mm		85	
26.5mm	100	81	
19.0mm	96	79	
13.2mm	95	73	
9.5mm	93	70	
6.7mm	91	66	
4.75mm	90	61	
2.36mm	86	53	
1.18mm	70	41	
600µm	47	30	
425µm	32	26	
300µm	22	24	
150µm	9	21	
75µm	2	17	

Other Test Results

Description	Method	Results	Limits
Fineness Modulus			
Curvature Coefficient	AS 1289.3.6.1		
Uniformity Coefficient			

Comments

Field Moisture Content - Refer to Moisture Content% RMS T120 1999

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Material Test Report

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Approved Signatory: Jan Penon
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NATA Accredited Laboratory Number:431
Date of Issue: 13/06/2014

Material Details

Source	Test Pit	Sampled From	
Description	Natural Material	Location	Queanbeyan, NSW
Specification	AS Grading	Sampling Method	Submitted by client

Sample Details

Sample ID	FYSH14S-00980	FYSH14S-00981	FYSH14S-00983	FYSH14S-00984	FYSH14S-00985	FYSH14S-00986
Field Sample ID	00014	00015	00017	00018	00019	00020
Date Sampled	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014
Date Submitted:	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014
Sample Location:	TP40	TP41	TP47	TP48	TP44	TP52
	0.4m to 0.6m	0.0m to 0.5m	1.0m to 1.3m	2.5m to 2.8m	0.5m to 0.6m	0.3m to 0.6m

Other Test Results

Description	Method	Results						Limits
Moisture Content (%)	RMS T120 - 1999	10.5	12.3	8.6	29.3	10.9	14.1	
Sample History	AS 1289.1.1		Oven-dried					
Preparation	AS 1289.1.1		Dry Sieved					
Linear Shrinkage (%)	AS 1289.3.4.1		8.5					
Mould Length (mm)			254					
Crumbling			No					
Curling			No					
Cracking			No					
Liquid Limit (%)	AS 1289.3.1.2		38					
Method			One Point					
Plastic Limit (%)	AS 1289.3.2.1		19					
Plasticity Index (%)	AS 1289.3.3.1		19					
MDD (t/m³)	RMS T111 - 2011		1.74		1.38	2.00	1.92	
OMC (%)			16.8		28.4	11.4	12.5	
Method of Determination			Cubic Spline		Cubic Spline	Cubic Spline	Cubic Spline	
Oversize Sieve (mm)			19.0		19.0	19.0	19.0	
Oversize Material (%)								
Oversize Sieve 2 (mm)			37.5		37.5	37.5	37.5	
Oversize Material 2 (%)								
Fraction Tested			- 37.5mm		- 37.5mm	- 37.5mm	- 37.5mm	
Mould Size (Ltr)			1		1	1	1	
Method of Compaction			Standard		Standard	Standard	Standard	

Comments

Field Moisture Content - Refer to Moisture Content% RMS T120 1999

Fyshwick,Canberra Laboratory

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Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
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Principal:
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Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: TRN:

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Approved Signatory: Jan Penon
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NATA Accredited Laboratory Number:431
Date of Issue: 13/06/2014

Material Details

Source	Test Pit	Sampled From	
Description	Natural Material	Location	Queanbeyan, NSW
Specification	AS Grading	Sampling Method	Submitted by client

Sample Details

Sample ID	FYSH14S-00980	FYSH14S-00981	FYSH14S-00983	FYSH14S-00984	FYSH14S-00985	FYSH14S-00986
Field Sample ID	00014	00015	00017	00018	00019	00020
Date Sampled	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014
Date Submitted:	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014
Sample Location:	TP40	TP41	TP47	TP48	TP44	TP52
	0.4m to 0.6m	0.0m to 0.5m	1.0m to 1.3m	2.5m to 2.8m	0.5m to 0.6m	0.3m to 0.6m

Other Test Results

Description	Method	Results				Limits
CBR At 5.0mm (%)	RMS T117 - 2011	5.0	1.5	15	13	
Maximum Dry Density (t/m³)		1.74	1.38	2.00	1.92	
Optimum Moisture Content (%)		16.8	28.4	11.4	12.5	
Target Laboratory Density Ratio (%)		98	98	100	98	
Laboratory Density Ratio (%)		99		99	100	
Target Laboratory Moisture Ratio (%)		100	100	100	100	
Laboratory Moisture Ratio (%)		97	101	100	99	
Swell (%)		1.0	6.1		0.2	
Moisture Content Top 30mm (%)		20.4	44.3	12.5	14.1	
Moisture Content of Full Depth portion (%)		18.8	39.9	11.5	13.8	
Compaction Rammer		Standard	Standard	Standard	Standard	
Period of Soaking (Days)		10	10	10	10	
Oversize Material (%)		1	1	13	0	

Comments

Field Moisture Content - Refer to Moisture Content% RMS T120 1999

Fyshwick,Canberra Laboratory

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Report No: ASM:FYSH14W00527
Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
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Principal:
Project No.: INFOFYSH00568AA
Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: TRN:

Accredited for compliance with ISO/IEC 17025.

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Approved Signatory: Jan Penon
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NATA Accredited Laboratory Number:431
Date of Issue: 17/06/2014

Material Details

Source	Test Pit	Sampled From	
Description	Natural Material	Location	Queanbeyan, NSW
Specification	AS Grading	Sampling Method	Submitted by client

Sample Details

Sample ID	FYSH14S-00987	FYSH14S-00989	FYSH14S-00990	FYSH14S-00991	FYSH14S-00992	FYSH14S-00993
Field Sample ID	00021	00023	00024	00025	00026	00027
Date Sampled	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014
Date Submitted:	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014
Sample Location:	TP53	TP56	TP60	TP62	TP64	TP65
	0.5m to 1.0m	0.2m to 1.0m	0.5m to 1.0m	0.5m to 0.8m	1.0m to 1.5m	2.5m to 3.0m

Other Test Results

Description	Method	Results				Limits
MDD (t/m³)	RMS T111 - 2011	1.92	1.94	1.80		
OMC (%)		12.1	12.4	15.8		
Method of Determination		Cubic Spline	Cubic Spline	Cubic Spline		
Oversize Sieve (mm)		19.0	19.0	19.0		
Oversize Material (%)						
Oversize Sieve 2 (mm)		37.5	37.5	37.5		
Oversize Material 2 (%)						
Fraction Tested		- 37.5mm	- 37.5mm	- 37.5mm		
Mould Size (Ltr)		1	1	1		
Method of Compaction		Standard	Standard	Standard		
CBR At 5.0mm (%)	RMS T117 - 2011	9	9	6		
Maximum Dry Density (t/m³)		1.92	1.94	1.80		
Optimum Moisture Content (%)		12.1	12.4	15.8		
Target Laboratory Density Ratio (%)		100	98	98		
Laboratory Density Ratio (%)		99	99	98		
Target Laboratory Moisture Ratio (%)		100	100	100		
Laboratory Moisture Ratio (%)		100	100	99		
Swell (%)		0.0	0.1	0.6		
Moisture Content Top 30mm (%)		10.9	13.9	19.5		
Moisture Content of Full Depth portion (%)		12.1	13.2	18.0		
Compaction Rammer		Standard	Standard	Standard		
Period of Soaking (Days)		10	10	10		
Oversize Material (%)		5	0	5		
Emerson Class Number	AS 1289.3.8.1		5		5	
Soil Description						
Type of Water			Wet		Potable	
Temperature of Water (°C)			16.0		16.0	

Comments

N/A

Fyshwick,Canberra Laboratory

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Report No: ASM:FYSH14W00527
Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
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Principal:
Project No.: INFOFYSH00568AA
Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: TRN:

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Approved Signatory: Jan Penon
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NATA Accredited Laboratory Number:431
Date of Issue: 17/06/2014

Material Details

Source	Test Pit	Sampled From	
Description	Natural Material	Location	Queanbeyan, NSW
Specification	AS Grading	Sampling Method	Submitted by client

Sample Details

Sample ID	FYSH14S-00987	FYSH14S-00989	FYSH14S-00990	FYSH14S-00991	FYSH14S-00992	FYSH14S-00993
Field Sample ID	00021	00023	00024	00025	00026	00027
Date Sampled	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014	22/05/2014
Date Submitted:	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014	23/05/2014
Sample Location:	TP53	TP56	TP60	TP62	TP64	TP65
	0.5m to 1.0m	0.2m to 1.0m	0.5m to 1.0m	0.5m to 0.8m	1.0m to 1.5m	2.5m to 3.0m

Other Test Results

Description	Method	Results					Limits
Moisture Content (%)	RMS T120 - 1999	11.9	14.2	11.9	19.5	41.2	
Fineness Modulus Curvature Coefficient Uniformity Coefficient	AS 1289.3.6.1						

Comments

N/A

Fyshwick,Canberra Laboratory

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Report No: ASM:FYSH14W00590
Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
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Principal:
Project No.: INFOFYSH00568AA
Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: TRN:

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Approved Signatory: Jan Penon
(Principal Technician)
NATA Accredited Laboratory Number:431
Date of Issue: 23/06/2014

Material Details

Source	Test Pit / Borehole	Sampled From	
Description	Natural Material	Location	Queanbeyan, NSW
Specification	No Specification	Sampling Method	Submitted by client

Sample Details

Sample ID	FYSH14S-01140	FYSH14S-01141	FYSH14S-01142	FYSH14S-01143	FYSH14S-01144
Field Sample ID	00028	00029	00030	00031	00032
Date Sampled	5/06/2014	5/06/2014	5/06/2014	5/06/2014	5/06/2014
Date Submitted:	5/06/2014	5/06/2014	5/06/2014	5/06/2014	5/06/2014
Sample Location:	TP 15	TP 42	TP 59	A-BH02	A-BH/03
	0.2m to 0.6m	0.5m to 1.0m	0.8m to 1.2m	0.9m to 1.2m	1.2m to 1.4m

Other Test Results

Description	Method	Results					Limits
MDD (t/m³)	RMS T111 - 2011	1.95	1.88	1.95	1.72	1.82	
OMC (%)		12.8	13.2	11.9	17.9	15.6	
Method of Determination		Cubic Spline	Cubic Spline	Cubic Spline	Cubic Spline	Cubic Spline	
Oversize Sieve (mm)		19.0	19.0	19.0	19.0	19.0	
Oversize Material (%)							
Oversize Sieve 2 (mm)		37.5	37.5	37.5	37.5	37.5	
Fraction Tested		- 37.5mm	- 37.5mm	- 37.5mm	- 37.5mm	- 37.5mm	
Mould Size (Ltr)		1	1	1	1	1	
Method of Compaction		Standard	Standard	Standard	Standard	Standard	
CBR At 5.0mm (%)	RMS T117 - 2011	6	7	8	3.5	4.5	
Maximum Dry Density (t/m³)		1.95	1.88	1.95	1.72	1.82	
Optimum Moisture Content (%)		12.8	13.2	11.9	17.9	15.6	
Target Laboratory Density Ratio (%)		98	98	98	98	98	
Laboratory Density Ratio (%)		100	101	100	97	101	
Target Laboratory Moisture Ratio (%)		100	98	98	98	100	
Laboratory Moisture Ratio (%)		97	95	100	100	100	
Swell (%)		0.1	0.3	0.7	1.1	1.5	
Moisture Content Top 30mm (%)		13.8	15.0	12.6	22.4	18.1	
Moisture Content of Full Depth portion (%)		13.6	14.3	12.5	20.7	17.4	
Compaction Rammer		Standard	standard	Standard	Standard	Standard	
Period of Soaking (Days)		10	10	10	10	10	
Oversize Material (%)		52	39	11	5	5	

Comments

N/A

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Report No: ASM:FYSH14W00632
Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
P.O. Box 152
Fyshwick ACT 2609

Principal:
Project No.: INFOFYSH00568AA
Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: - TRN: -

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: Jan Penon
(Principal Technician)
NATA Accredited Laboratory Number:431
Date of Issue: 23/06/2014

Material Details

Source	Test Pit	Sampled From	
Description	Natural Material	Location	Queanbeyan, NSW
Specification	No Specification	Sampling Method	Submitted by client

Sample Details

Sample ID	FYSH14S-01221
Field Sample ID	00035
Date Sampled	29/05/2014
Date Submitted:	18/06/2014
Sample Location:	TP12
	0.8m to 0.9m

Other Test Results

Description	Method	Results	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Liquid Limit (%)	RTA T108	19	
Method		Four Point	
Plastic Limit (%)	RTA T109	14	
Plasticity Index (%)	RTA T109	5	

Comments

N/A

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Report No: FYSH14S-00993-1
Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
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Principal:
Project No.: INFOFYSH00568AA
Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: TRN:

Accredited for compliance with ISO/IEC 17025.

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Approved Signatory: Jan Penon
(Principal Technician)
NATA Accredited Laboratory Number:431
Date of Issue: 17/06/2014

Sample Details

Sample ID:	FYSH14S-00993
Client Sample:	
Date Sampled:	22/05/2014
Source:	Test Pit
Material:	Natural Material
Specification:	AS Grading
Sampling Method:	Submitted by client
Project Location:	Queanbeyan, NSW
Sample Location:	TP65
	2.5m to 3.0m

Other Test Results

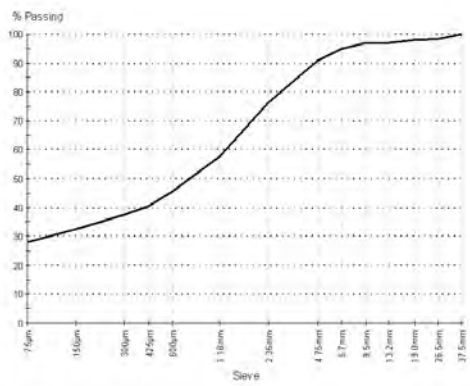
Description	Method	Result	Limits
Emerson Class Number	AS 1289.3.8.1	5	
Soil Description			
Type of Water		Potable	
Temperature of Water (°C)		16.0	
Moisture Content (%)	RMS T120 - 1999	41.2	

Particle Size Distribution

Method:	AS 1289.3.6.1
Drying by:	Oven
Date Tested:	28/05/2014
Note:	Sample Washed

Sieve Size	% Passing	Limits
37.5mm	100	
26.5mm	98	
19.0mm	98	
13.2mm	97	
9.5mm	97	
6.7mm	95	
4.75mm	91	
2.36mm	76	
1.18mm	58	
600µm	45	
425µm	41	
300µm	38	
150µm	32	
75µm	28	

Chart



Comments

N/A

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Report No: FYSH14S-01145-1
Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
P.O. Box 152
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Principal:
Project No.: INFOFYSH00568AA
Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: - TRN: -

Accredited for compliance with ISO/IEC 17025.

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Approved Signatory: Jan Penon
(Principal Technician)
NATA Accredited Laboratory Number:431
Date of Issue: 23/06/2014

Sample Details

Sample ID:	FYSH14S-01145
Client Sample:	B-BH03 0.6m to 0.9m
Date Sampled:	
Source:	Borehole
Material:	Natural Material
Specification:	AS Grading
Sampling Method:	Submitted by client
Project Location:	Queanbeyan, NSW
Sample Location:	B-BH03 0.6m to 0.9m

Other Test Results

Description	Method	Result	Limits
Emerson Class Number	AS 1289.3.8.1	4	
Soil Description			
Type of Water		Potable	
Temperature of Water (°C)		14.0	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Liquid Limit (%)	RTA T108	31	
Method		Four Point	
Plastic Limit (%)	RTA T109	18	
Plasticity Index (%)	RTA T109	13	
Date Tested		19/06/2014	

Particle Size Distribution

Chart

Comments

N/A

Fyshwick,Canberra Laboratory

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Report No: FYSH14S-01146-1
Issue No: 1

Material Test Report

Client: Coffey Geotechnics Pty Ltd (Fyshwick)
P.O. Box 152
Fyshwick ACT 2609

Principal:
Project No.: INFOFYSH00568AA
Project Name: GEOTFYSH09703AA - Elerton Drive Ext
Lot No.: - TRN: -

Accredited for compliance with ISO/IEC 17025.

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Approved Signatory: Jan Penon
(Principal Technician)
NATA Accredited Laboratory Number:431
Date of Issue: 23/06/2014

Sample Details

Sample ID:	FYSH14S-01146
Client Sample:	B-BH03 2.5m to 2.95m
Date Sampled:	
Source:	Borehole
Material:	Natural Material
Specification:	AS Grading
Sampling Method:	Submitted by client
Project Location:	Queanbeyan, NSW
Sample Location:	B-BH03 2.5m to 2.95m

Other Test Results

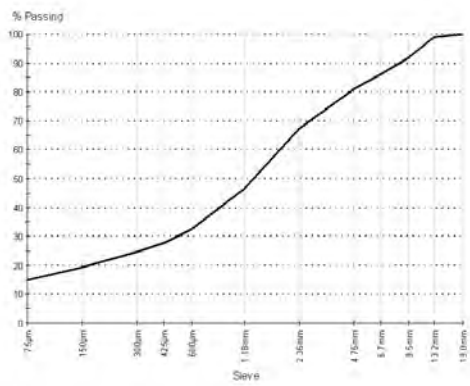
Description	Method	Result	Limits

Particle Size Distribution

Method: AS 1289.3.6.1
Drying by: Oven
Date Tested: 20/06/2014
Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	99	
9.5mm	92	
6.7mm	86	
4.75mm	81	
2.36mm	67	
1.18mm	47	
600µm	33	
425µm	28	
300µm	25	
150µm	19	
75µm	15	

Chart



Comments

N/A

Kariong, Gosford Laboratory

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Report No: KARI14S-01651-1
Issue No: 1

Material Test Report

Client:	Coffey Geotechnics Pty Ltd (Fyshwick) P.O. Box 152 Fyshwick ACT 2609
Principal:	
Project No.:	INFOKARI00451AA
Project Name:	GEOTFYSH09703AA - Ellerton Drive Extension
Lot No.:	TRN:

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: Lachlan Smith
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 20/06/2014

Sample Details

Sample ID:	KARI14S-01651
Client Sample:	TP39
Date Sampled:	31/05/2014
Source:	Site Won
Material:	See Log
Specification:	
Sampling Method:	Submitted by client
Project Location:	Queanbeyan, NSW
Sample Location:	TP39: 1.0 - 1.1m

Test Results

Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	N/A	
Mould Length (mm)		0	
Crumbling		No	
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	25	
Method		One Point	
Plastic Limit (%)	AS 1289.3.2.1	13	
Plasticity Index (%)	AS 1289.3.3.1	12	
Date Tested		20/06/2014	

Comments

N/A

Kariong, Gosford Laboratory

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Report No: KARI14S-01653-1
Issue No: 1

Material Test Report

Client:	Coffey Geotechnics Pty Ltd (Fyshwick) P.O. Box 152 Fyshwick ACT 2609
Principal:	
Project No.:	INFOKARI00451AA
Project Name:	GEOTFYSH09703AA - Ellerton Drive Extension
Lot No.:	TRN:

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Approved Signatory: Lachlan Smith
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 20/06/2014

Sample Details

Sample ID:	KARI14S-01653
Client Sample:	TP64
Date Sampled:	31/05/2014
Source:	Site Won
Material:	See Log
Specification:	
Sampling Method:	Submitted by client
Project Location:	Queanbeyan, NSW
Sample Location:	TP64: 0.2 - 0.6m

Test Results

Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	5.5	
Mould Length (mm)		125	
Crumbling		No	
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	28	
Method		One Point	
Plastic Limit (%)	AS 1289.3.2.1	13	
Plasticity Index (%)	AS 1289.3.3.1	15	
Date Tested		20/06/2014	

Comments

N/A

Kariong, Gosford Laboratory

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Report No: KARI14S-01654-1
Issue No: 1

Material Test Report

Client:	Coffey Geotechnics Pty Ltd (Fyshwick) P.O. Box 152 Fyshwick ACT 2609
Principal:	
Project No.:	INFOKARI00451AA
Project Name:	GEOTFYSH09703AA - Ellerton Drive Extension
Lot No.:	TRN:

Accredited for compliance with ISO/IEC 17025.

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Approved Signatory: Lachlan Smith
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 20/06/2014

Sample Details

Sample ID:	KARI14S-01654
Client Sample:	B-BH03
Date Sampled:	31/05/2014
Source:	Site Won
Material:	See Log
Specification:	
Sampling Method:	Submitted by client
Project Location:	Queanbeyan, NSW
Sample Location:	B-BH03: 1.0 - 1.45m

Test Results

Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	N/A	
Mould Length (mm)		0	
Crumbling		No	
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	22	
Method		One Point	
Plastic Limit (%)	AS 1289.3.2.1	13	
Plasticity Index (%)	AS 1289.3.3.1	9	
Date Tested		20/06/2014	

Comments

N/A

Kariong, Gosford Laboratory

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Report No: SSI:KARI14S-01637
Issue No: 1

Shrink Swell Index Report

Client:	Coffey Geotechnics Pty Ltd (Fyshwick) P.O. Box 152 Fyshwick ACT 2609
Principal:	
Project No.:	INFOKARI00451AA
Project Name:	GEOTFYSH09703AA - Ellerton Drive Extension
Lot No.:	TRN:

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: Lachlan Smith
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 19/06/2014

Sample Details

Sample ID:	KARI14S-01637	Sampling Method:	Submitted by client
Date Sampled:	30/05/2014	Material:	See Log
Date Submitted:	12/06/2014	Source:	Site Won
Date Tested:	13/06/2014		
Project Location:	Queanbeyan, NSW		
Sample Location:	B-BH03: 1.0 - 1.45m		
Borehole Number:	B-BH03		
Borehole Depth (m):	1.0 - 1.45		

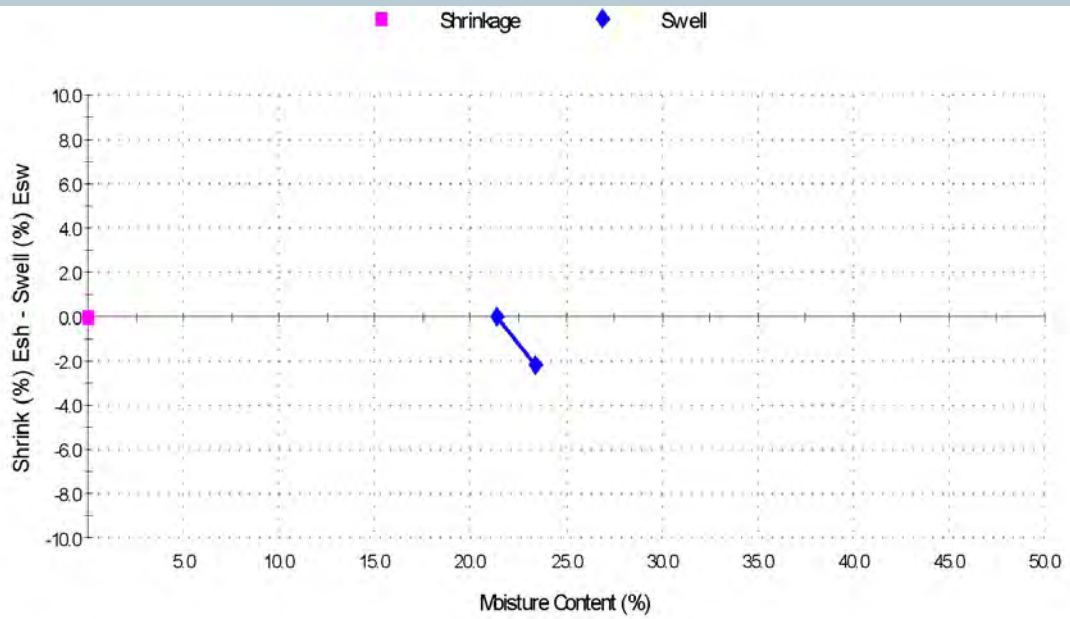
Swell Test AS 1289.7.1.1

Swell on Saturation (%):	-2.1
Moisture Content before (%):	21.4
Moisture Content after (%):	23.3
Est. Unc. Comp. Strength before (kPa):	
Est. Unc. Comp. Strength after (kPa):	

Shrink Test AS 1289.7.1.1

Shrink on drying (%):	
Shrinkage Moisture Content (%):	
Est. inert material (%):	
Crumbling during shrinkage:	
Cracking during shrinkage:	

Shrink Swell



Shrink Swell Index - Iss (%):

Comments

Kariong, Gosford Laboratory

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Report No: SSI:KARI14S-01639
Issue No: 1

Shrink Swell Index Report

Client:	Coffey Geotechnics Pty Ltd (Fyshwick) P.O. Box 152 Fyshwick ACT 2609
Principal:	
Project No.:	INFOKARI00451AA
Project Name:	GEOTFYSH09703AA - Ellerton Drive Extension
Lot No.:	TRN:

Accredited for compliance with ISO/IEC 17025.

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Approved Signatory: Lachlan Smith
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 18/06/2014

Sample Details

Sample ID:	KARI14S-01639	Sampling Method:	Submitted by client
Date Sampled:	30/05/2014	Material:	See Log
Date Submitted:	12/06/2014	Source:	Site Won
Date Tested:	13/06/2014		
Project Location:	Queanbeyan, NSW		
Sample Location:			
Borehole Number:	TP57		
Borehole Depth (m):	0.4 - 0.62		

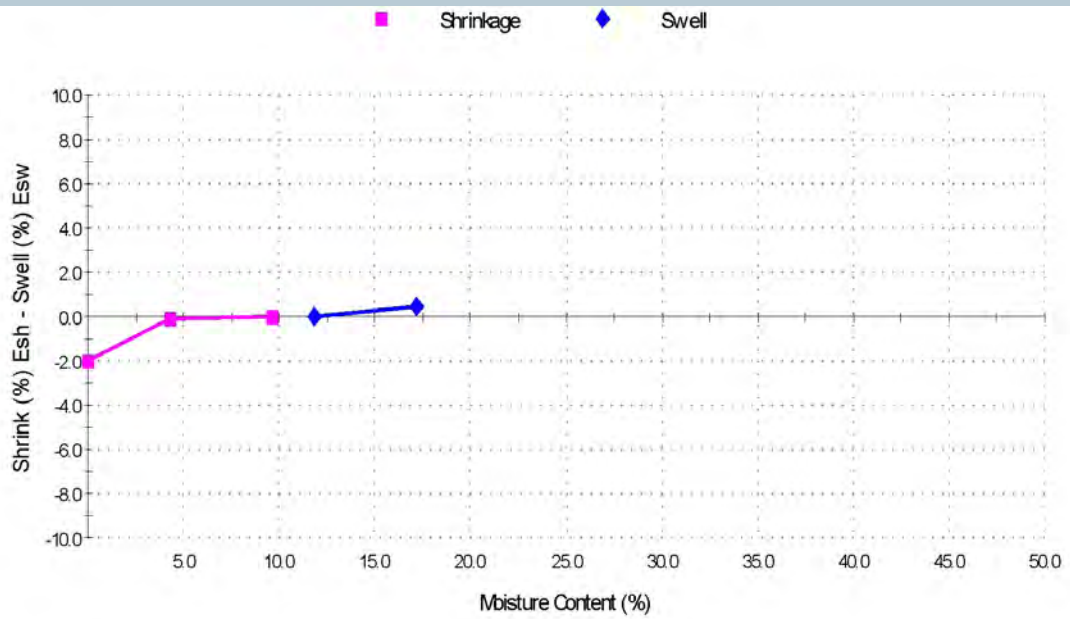
Swell Test AS 1289.7.1.1

Swell on Saturation (%):	0.5
Moisture Content before (%):	11.8
Moisture Content after (%):	17.1
Est. Unc. Comp. Strength before (kPa):	>400
Est. Unc. Comp. Strength after (kPa):	300

Shrink Test AS 1289.7.1.1

Shrink on drying (%):	2.0
Shrinkage Moisture Content (%):	9.6
Est. inert material (%):	<10
Crumbling during shrinkage:	Nil
Cracking during shrinkage:	Nil

Shrink Swell



Shrink Swell Index - Iss (%): 1.2

Comments