

Appendix A

Results of Field Investigations

Engineering Log - Excavation

Client: **MACLEAY VALLEY PROPERTY GROUP**
 Principal:
 Project: **GREGORY STREET, SOUTH WEST ROCKS**
 Test pit location: **REFER TO DRAWING**

Excavation No. **TP 1**

Sheet 1 of 1

Project No: **GEOTPMQA00064AA**


Date started: **15.9.2006**

Date completed: **15.9.2006**

Logged by: **TLM**

Checked by:

equipment type and model: Bobcat Mini Excavator Pit Orientation: Easting: m R.L. Surface: Not Measured
 excavation dimensions: 1.5m long 0.3m wide Northing: m datum:

excavation information						material substance								
method	penetration			support	water	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetration meter kPa	structure and additional observations
	1	2	3											
W				N	None Observed				SM	TOPSOIL: SAND, fine to medium grained, dark grey, fine roots, trace organic fines. SAND: fine to medium grained, dark grey, some organic fines, trace roots.	M	Fb		TOPSOIL
							0.5	SM			Fb/L		AEOLIAN	
							1.0	SM	Indurated SAND: fine to medium grained, dark brown / orange / dark grey, with organic fines, wet from 1.5m.		MD/D			
							1.5			W				
							2.0	SC	Weakly Indurated SAND: fine to coarse grained, dark brown / dark grey, trace clay.					
							2.5		Test pit TP 1 terminated at 2.1m					

Sketch


method	support	notes, samples, tests	classification symbols and soil description	consistency/density index
N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	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

Engineering Log - Excavation

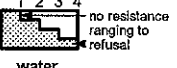



Client: **MACLEAY VALLEY PROPERTY GROUP**
 Principal:
 Project: **GREGORY STREET, SOUTH WEST ROCKS**
 Test pit location: **REFER TO DRAWING**

Excavation No. **TP 2**
 Sheet 1 of 1
 Project No: **GEOTPMQA00064AA**
 Date started: **15.9.2006**
 Date completed: **15.9.2006**
 Logged by: **TLM**
 Checked by:

equipment type and model: Bobcat Mini Excavator Pit Orientation: Easting: m R.L. Surface: Not Measured
 excavation dimensions: 1.5m long 0.3m wide Northing: m datum:

excavation information					material substance									
method	penetration			support	water	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type; plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
E	1	2	3	N					SM	TOPSOIL: Silty SAND, brown / grey, fine roots.	M	Fb	100 200 300 400	TOPSOIL
							0.5		SM	SAND: fine to medium grained, dark grey / brown, with dark organic fines.		Fb/L		AEOLIAN
							1.0			Wet from 0.9m.	W			
							1.5		SC	SAND: fine to coarse grained, white / pale grey, some orange mottles, trace clay low plasticity. Minor water inflow from 1.1m.		L		
							2.0			Hole collapsing. Test pit TP 2 terminated at 1.9m				
							2.5							

Sketch

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration 1 2 3 4  water  water level on date shown  water inflow  water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index 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
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Engineering Log - Excavation

Excavation No. **TP 3**

Sheet 1 of 1

Project No: **GEOTPMQA00064AA**

Client: **MACLEAY VALLEY PROPERTY GROUP**

Date started: **15.9.2006**

Principal:

Date completed: **15.9.2006**

Project: **GREGORY STREET, SOUTH WEST ROCKS**

Logged by: **TLM**

Test pit location: **REFER TO DRAWING**

Checked by:

equipment type and model: Bobcat Mini Excavator		Pit Orientation:		Easting: m	R.L. Surface: Not Measured
excavation dimensions: 1.5m long 0.3m wide		Northing: m		datum:	

excavation information				material substance				structure and additional observations		
method	penetration	support	notes samples, tests, etc	depth metres	graphic log	classification symbol	material		moisture condition	consistency/density index
W	1 2 3	N		RL		SM	TOPSOIL: SAND, fine to medium grained, pale grey, fine roots.	M	Fb	100
				0.5		SP	SAND: fine to coarse grained, grey, trace fine organics.		L	200
				1.0			INDURATED SAND: fine to medium grained, brown / dark brown, with fine organics.	W	D	300
				1.5		SP	SAND: fine to coarse grained, white, trace fine shell fragments? Hole collapsing from 1.6m.		MD	400
				2.0						
				2.5			Test pit TP 3 terminated at 2.2m			

Sketch

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index 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
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Engineering Log - Excavation

Client: **MACLEAY VALLEY PROPERTY GROUP**
 Principal:
 Project: **GREGORY STREET, SOUTH WEST ROCKS**
 Test pit location: **REFER TO DRAWING**

Excavation No. **TP 4**
 Sheet 1 of 1
 Project No: **GEOTPMQA00064AA**
 Date started: **15.9.2006**
 Date completed: **15.9.2006**
 Logged by: **TLM**
 Checked by:

equipment type and model: Bobcat Mini Excavator		Pit Orientation:		Easting: m	R.L. Surface: Not Measured	
excavation dimensions: 1.5m long 0.3m wide		Northing: m		datum:		
excavation information				material substance		
method	penetration	support	notes samples, tests, etc	depth metres	material	structure and additional observations
1 2 3					soil type: plasticity or particle characteristics, colour, secondary and minor components.	
N				0.5	TOPSOIL: Silty SAND, fine to coarse grained, fine roots.	TOPSOIL
					Silty SAND: fine to coarse grained, brown / dark brown, with roots, trace charcoal.	COLLUVIAL
				1.0	Clayey SAND: fine to coarse grained, pale brown with orange mottles, clay low plasticity.	AEOLIAN
			E	1.5	Moderate water inflow at 1.0m.	
					Clayey SAND: fine to coarse grained, white trace orange mottles, clay low plasticity.	
				2.0	Hole collapsing.	
				2.5	Test pit TP 4 terminated at 1.8m	

Sketch

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index 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
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


Engineering Log - Excavation

Client: **MACLEAY VALLEY PROPERTY GROUP**
 Principal:
 Project: **GREGORY STREET, SOUTH WEST ROCKS**
 Test pit location: **REFER TO DRAWING**

Excavation No. **TP 5**
 Sheet 1 of 1
 Project No: **GEOTPMQA00064AA**
 Date started: **15.9.2006**
 Date completed: **15.9.2006**
 Logged by: **TLM**
 Checked by:

equipment type and model: Bobcat Mini Excavator				Pit Orientation:				Easting: m		R.L. Surface: Not Measured				
excavation dimensions: 1.5m long 0.3m wide				Northing: m				datum:						
excavation information								material substance						
method	penetration			support	water	notes samples, tests, etc	depth RL	metric	classification symbol	material	moisture condition	consistency/ density index	pocket penetrometer kPa	structure and additional observations
E	1	2	3	N						soil type: plasticity or particle characteristics, colour, secondary and minor components.	M	Fb	100 200 300 400	TOPSOIL
					None Observed					TOPSOIL: Silty SAND, fine to coarse grained, dark brown, with fine to medium sized roots, trace charcoal.		Fb/S		AEOLIAN
							0.5			Clayey SAND: fine to coarse grained, pale brown with minor pale orange mottling, clay low plasticity, trace roots.				
							1.0							
							1.5			Sandy CLAY: low to medium plasticity, orange / brown, sand fine to coarse grained.	<WpM	St/VS		RESIDUAL
							2.0			Test pit TP 5 terminated at 1.8m				
							2.5							

Sketch

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration 1 2 3 4  no resistance ranging to refusal water  water level on date shown  water inflow  water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index 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
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Engineering Log - Excavation

Client: **MACLEAY VALLEY PROPERTY GROUP**

Principal:

Project: **GREGORY STREET, SOUTH WEST ROCKS**

Test pit location: **REFER TO DRAWING**

Excavation No. **TP 6**

Sheet 1 of 1

Project No: **GEOTPMQA00064AA**

Date started: **15.9.2006**

Date completed: **15.9.2006**

Logged by: **TLM**

Checked by:

equipment type and model: Bobcat Mini Excavator		Pit Orientation:		Easting: m	R.L. Surface: Not Measured						
excavation dimensions: 1.5m long 0.3m wide		Northing: m		datum:							
excavation information				material substance							
method	penetration	support	notes samples, tests, etc	depth RL metres	graphic log	classification symbol	material	moisture condition	consistency/density index	pocket penetrometer kPa	structure and additional observations
1	2	3					TOPSOIL: Silty SAND, fine to coarse grained, dark brown, fine to thick roots.	M	Fb		TOPSOIL
				0.5			SAND: fine to coarse grained, pale brown, trace clay, trace fine to medium roots.				
			None Observed	1.0			Sandy CLAY: low plasticity, orange with brown mottles, sand fine to coarse grained.	<WpM	St/Vst		RESIDUAL
			U ₅₀	1.5			Sandy CLAY: low plasticity, mottled white / red / orange, sand fine to coarse grained.	<Wp	St/Fb		EXTREMELY WEATHERED GRANITE
				2.0			Test pit TP 6 terminated at 1.8m				
				2.5							

Sketch

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit WL liquid limit	consistency/density index 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
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Engineering Log - Excavation

Excavation No. **TP 7**

Sheet 1 of 1

Project No: **GEOTPMAQ00064AA**

Client: **MACLEAY VALLEY PROPERTY GROUP**

Date started: **15.9.2006**

Principal:

Date completed: **15.9.2006**

Project: **GREGORY STREET, SOUTH WEST ROCKS**

Logged by: **TLM**





Test pit location: **REFER TO DRAWING**

Checked by:

excavation information		material substance											
method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations
E		N							TOPSOIL: Silty SAND, fine to coarse grained, dark brown, fine roots.	M	Fb		TOPSOIL
						0.5			Clayey SAND: fine to coarse grained, pale brown, clay low plasticity, fine to large roots.	<Wp	MD		AEOLIAN
						1.0			Sandy CLAY: low plasticity, orange / red, sand fine to coarse grained.	M	St		RESIDUAL
				U ₅₀		1.5				<Wp			
				D					Sandy CLAY: low plasticity, mottled red / white / orange, sand fine to coarse grained.		St/Fb		EXTREMELY WEATHERED GRANITE
						2.0			Test pit TP 7 terminated at 1.9m				
						2.5							

Sketch


TESTPIT 00064AA LOGS.GPJ COFFEY,GDT 19.10.06

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration  no resistance ranging to refusal water  water level on date shown  water inflow  water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index 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
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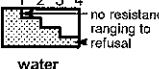
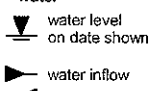
Engineering Log - Excavation

Client: **MACLEAY VALLEY PROPERTY GROUP**
 Principal:
 Project: **GREGORY STREET, SOUTH WEST ROCKS**
 Test pit location: **REFER TO DRAWING**

Excavation No. **TP 8**
 Sheet 1 of 1
 Project No: **GEOTPMQA00064AA**
 Date started: **15.9.2006**
 Date completed: **15.9.2006**
 Logged by: **TLM**
 Checked by:

equipment type and model:				Bobcat Mini Excavator				Pit Orientation:				Easting: m				R.L. Surface:				Not Measured			
excavation dimensions:				1.5m long 0.3m wide				Northing: m				datum:											
excavation information										material substance													
method	penetration			support	water	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations									
	1	2	3																				
E				N					SM	TOPSOIL: Silty Gravelly SAND, fine to coarse grained, dark brown, gravel fine to coarse grained, roots, large cobbles to 600mm.	M	Fb		TOPSOIL / COLLUVIUM									
							0.5		CL	Sandy Gravelly CLAY: low plasticity, brown, sand fine to coarse grained, gravel fine to coarse grained.		Fb/F		COLLUVIAL									
					U ₅₀		1.0		CL	Sandy CLAY: low to medium plasticity, orange with red / white mottles, sand fine to coarse grained.		St		RESIDUAL									
							1.5		CL	Sandy Gravelly CLAY: low plasticity, white with orange / red mottles, sand fine to coarse grained, gravel fine to medium grained.		Fb/VSt		EXTREMELY WEATHERED GRANITE									
							2.0			Test pit TP 8 terminated at 1.6m													
							2.5																

Sketch

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration 1 2 3 4  water 	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₈₃ undisturbed sample 83mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index 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
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Engineering Log - Excavation

Client: **MACLEAY VALLEY PROPERTY GROUP**
 Principal:
 Project: **GREGORY STREET, SOUTH WEST ROCKS**
 Test pit location: **REFER TO DRAWING**

Excavation No. **TP 9**
 Sheet 1 of 1
 Project No: **GEOTPMQA00064AA**
 Date started: **15.9.2006**
 Date completed: **15.9.2006**
 Logged by: **TLM**
 Checked by:

equipment type and model: Bobcat Mini Excavator				Pit Orientation:		Easting: m		R.L. Surface: Not Measured						
excavation dimensions: 1.5m long 0.3m wide						Northing: m		datum:						
excavation information						material substance								
method	penetration			support	water	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
E	1	2	3	N	None Observed				SM	TOPSOIL: Silty Gravelly SAND, fine to coarse grained, dark brown, gravel fine to coarse grained, fine to medium roots with large cobbles (<400mm) of subrounded granite.	M	Fb	100 200 300 400	TOPSOIL / COLLUVIAL
							0.5		SC	Gravelly Clayey SAND: fine to coarse grained, dark brown, clay low plasticity, gravel fine to coarse grained, subrounded. Sandy CLAY: medium plasticity, orange, red / white mottling, sand fine to coarse grained.	M<Wp	F/St		COLLUVIAL
									CL			St	RESIDUAL	
							1.0							
						1.5			CL	Sandy CLAY: low to medium plasticity, white with red / orange mottling, trace gravel.	M	Fb/VSt		EXTREMELY WEATHERED GRANITE
						2.0				Test pit TP 9 terminated at 1.7m				
						2.5								

Sketch

method	support	notes, samples, tests	classification symbols and soil description	consistency/density index
N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	based on unified classification system moisture D dry M moist W wet Wp plastic limit W _L liquid limit	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

Engineering Log - Excavation

Excavation No. **TP10**

Sheet 1 of 1

Project No: **GEOTPMQA00064AA**

Client: **MACLEAY VALLEY PROPERTY GROUP**

Date started: **15.9.2006**

Principal:

Date completed: **15.9.2006**

Project: **GREGORY STREET, SOUTH WEST ROCKS**

Logged by: **TLM**

Test pit location: **REFER TO DRAWING**

Checked by:

equipment type and model:				Bobcat Mini Excavator				Pit Orientation:				Easting: m				R.L. Surface: Not Measured			
excavation dimensions:				1.5m long 0.3m wide				Northing: m				datum:							
excavation information						material substance													
method	penetration			support	water	notes samples, tests, etc	depth		graphic log	classification symbol	material				moisture condition	consistency/ density index	pocket penetrometer	structure and additional observations	
	1	2	3				RL	metres			soil type: plasticity or particle characteristics, colour, secondary and minor components.						100 200 300 400		
E				N						SM	TOPSOIL / FILL: SAND, fine to coarse grained, brown / pale brown, fine to medium roots, clay low plasticity fines, with some silt, trace clay.				M	Fb/VL		TOPSOIL / FILL	
						Bs		0.5		SM	TOPSOIL: Silty SAND, fine to medium grained, dark brown, fine roots, trace organic fines.					Fb		TOPSOIL?	
								1.0		SW	SAND: fine to coarse grained, pale brown / pale orange / yellow.					L		AEOLIAN	
								1.5		SW	SAND: fine to coarse grained, pale orange / pale yellow with some subrounded cobbles to 120mm of moderately weathered orange granite.							RESIDUAL	
								2.0											
								2.5			Test pit TP10 terminated at 2.2m								

Sketch

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index 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
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Engineering Log - Excavation

Excavation No. **TP11**

Sheet 1 of 1

Project No: **GEOTPMQA00064AA**

Client: **MACLEAY VALLEY PROPERTY GROUP**

Date started: **15.9.2006**

Principal:

Date completed: **15.9.2006**

Project: **GREGORY STREET, SOUTH WEST ROCKS**

Logged by: **TLM**

Test pit location: **REFER TO DRAWING**

Checked by:

equipment type and model: Bobcat Mini Excavator		Pit Orientation:		Easting: m	R.L. Surface: Not Measured
excavation dimensions: 1.5m long 0.3m wide		Northing: m		datum:	
excavation information				material substance	
method	penetration	support	water	notes	depth
1	2	3		samples, tests, etc	metres
E		N			0.5
			None Observed	Bs	1.0
					1.5
					2.0
					2.5
				TOPSOIL: SAND, fine to medium grained, grey, fine roots.	
				SAND: fine to medium grained, grey / dark grey, trace black organic fines.	
				Pit collapsing from 0.6m.	
				Wet from 1.2m.	
				Refusal on hole collapsing. Test pit TP11 terminated at 1.3m	

Sketch

TESTPIT 00064AA LOGS.GPJ COFFEY.GDT 22.09.06

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index 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
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Engineering Log - Excavation

Excavation No. **TP12**

Sheet 1 of 1

Project No: **GEOTPMQA00064AA**

Client: **MACLEAY VALLEY PROPERTY GROUP**

Date started: **15.9.2006**

Principal:

Date completed: **15.9.2006**

Project: **GREGORY STREET, SOUTH WEST ROCKS**

Logged by: **TLM**

Test pit location: **REFER TO DRAWING**

Checked by:

equipment type and model: Bobcat Mini Excavator				Pit Orientation:				Easting: m				R.L. Surface: Not Measured			
excavation dimensions: 1.5m long 0.3m wide				Northing: m				datum:							
excavation information						material substance									
method	penetration			support	water	notes samples, tests, etc	depth RL metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations	
E	1	2	3	N					SM	TOPSOIL: Silty SAND, fine to coarse grained, dark brown, fine to medium roots.	M	Fb	130	TOPSOIL	
							0.5		SC	Silty Clayey SAND: fine to coarse grained, brown, clay low plasticity.	<Wp	Fb/F	200	COLLUVIAL?	
					Bs				CL	Sandy CLAY: low to medium plasticity, orange with red / brown mottling, sand fine to coarse grained.	M<Wp	St	300	RESIDUAL	
							1.0						400		
							1.5			Minor water inflow at 1.6m.	W				
							2.0			Test pit TP12 terminated at 1.8m					
							2.5								

Sketch

TESTPIT 00064AA LOGS.GPJ COFFEY.GDT 22.09.

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit W _L liquid limit	consistency/density index 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
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Engineering Log - Excavation

Client: **MACLEAY VALLEY PROPERTY GROUP**
 Principal:
 Project: **GREGORY STREET, SOUTH WEST ROCKS**
 Test pit location: **REFER TO DRAWING**

Excavation No. **TP13**

Sheet 1 of 1


Project No: **GEOTPMQA00064AA**

Date started: **15.9.2006**

Date completed: **15.9.2006**

Logged by: **TLM**

Checked by:

equipment type and model:				Bobcat Mini Excavator		Pit Orientation:		Easting: m		R.L. Surface: Not Measured			
excavation dimensions:				1.5m long 0.3m wide		Northing: m		datum:					
excavation information						material substance							
method	penetration		support	water	notes samples, tests, etc	depth RL metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- kPa meter	structure and additional observations
E	1	2	3	N				SM	TOPSOIL: Silty SAND, fine to coarse grained, dark brown, fine to medium roots.	M	Fb	100 200 300 400	TOPSOIL
					Bs	0.5		SC	Clayey Silty SAND: fine to coarse grained, pale brown, clay low plasticity. Wet from 0.6m, minor water inflow.		Fb/S		COLLUVIAL
						1.0		CL	Sandy CLAY: low to medium plasticity, orange / brown, sand fine to coarse grained (almost Clayey SAND).	M<Wp	St/Fb		RESIDUAL
						2.0			Test pit TP13 terminated at 1.8m				
						2.5							

Sketch

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index 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
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Engineering Log - Excavation

Excavation No. **TP14**

Sheet 1 of 1

Project No: **GEOTPMAQ00064AA**

Date started: 15.9.2006

Date completed: 15.9.2006

Logged by: **TLM**

Checked by:

Client: **MACLEAY VALLEY PROPERTY GROUP**

Principal:

Project: **GREGORY STREET, SOUTH WEST ROCKS**



Test pit location: **REFER TO DRAWING**

equipment type and model:	Bobcat Mini Excavator	Pit Orientation:	Easting:	m	R.L. Surface:	Not Measured
---------------------------	-----------------------	------------------	----------	---	---------------	--------------

excavation dimensions: 1.5m long 0.3m wide





Northing: m

.datum:

excavation information							material substance							
method	penetration			support	water	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter 100 200 300 400 kPa	structure and additional observations
	1	2	3											
W				N	None Observed				SP	TOPSOIL: SAND, fine to medium grained, grey, fine roots.	M	Fb		TOPSOIL
							0.5		SP	SAND: fine to medium grained, dark grey / pale grey, trace roots and organic fines. Hole collapsing from 1m.		L		AEOLIAN
							1.0							
						1.5			SP	SAND: fine to coarse grained, pale grey / white.	W			
						2.0				Hole collapsing. Test pit TP14 terminated at 1.7m				
						2.5								

Sketch

TESTPIT 00064AA LOGS.GPJ COFFEY.GDT 13.10.1

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration  1 2 3 4 no resistance ranging to refusal water  water level on date shown  water inflow  water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index 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
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



Engineering Log - Excavation

Client: **MACLEAY VALLEY PROPERTY GROUP**
 Principal:
 Project: **GREGORY STREET, SOUTH WEST ROCKS**
 Test pit location: **REFER TO DRAWING**

Excavation No. **TP15**
 Sheet 1 of 1
 Project No: **GEOTPMQ00064AA**
 Date started: **15.9.2006**
 Date completed: **15.9.2006**
 Logged by: **TLM**
 Checked by:

equipment type and model: Bobcat Mini Excavator		Pit Orientation:		Easting: m	R.L. Surface: Not Measured
excavation dimensions: 1.5m long 0.3m wide		Northing: m		datum:	
excavation information			material substance		
method	penetration	support	notes	depth	material
1 2 3		water	samples, tests, etc	RL metres	soil type; plasticity or particle characteristics, colour, secondary and minor components.
E		N		0.5	SM TOPSOIL: Silty SAND, fine to coarse grained, dark brown, with fine roots and large cobbles (750mm) of subrounded granite.
				1.0	SW SAND: fine to coarse grained, pale brown, trace orange mottles, with some large (>300mm) subrounded cobbles - orange granite.
				1.5	Minor water inflow at 1.6m.
				2.0	SC Clayey SAND: fine to coarse grained, pale orange / brown, some red mottles, clay low plasticity.
				2.5	Test pit TP15 terminated at 1.8m

Sketch

method N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	support S shoring N nil penetration 1 2 3 4  water  water level on date shown  water inflow  water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index 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
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Appendix B

Results of Laboratory Testing

Coffey Geotechnics Pty Ltd

1/37 Jindalee Rd Port Macquarie NSW 2444
Telephone (02) 65810142 Fax (02) 65810129

DYNAMIC PENETROMETER TEST RESULTS

CLIENT : Macleay Valley Property Group
PO Box 3254, Narellan NSW 2567

PROJECT No : GEOTPMQA0064AA

PROJECT : Gregory Street Subdivision

REPORT No : GEOTPMQA00064AA - 1a

LOCATION : South West Rocks

DATE : 15.09.06

DEPTH M	PENETRATION RESISTANCE BLOWS / 150mm							
	LOCATION							
	TP 1	TP 2	TP 4	TP 7	TP 8	TP 9	TP 10	TP 11
0.00 - 0.15	2	3	2	2	2	4	4	1
0.15 - 0.30	2	4	3	3	3	5	4	2
0.30 - 0.45	2	4	4	4	3	5	2	2
0.45 - 0.60	2	3	3	2	Refusal	6	1	2
0.60 - 0.75	3	4	3	3		6	1	2
0.75 - 0.90	4	5	3	3		6	2	2
0.90 - 1.05	11	4	2	4		Refusal	Refusal	1
1.05 - 1.20	7	3	2	5				3
1.20 - 1.35	5	6	3	5				3
1.35 - 1.50	5	7	4	6				3
1.50 - 1.65								
1.65 - 1.80								
1.80 - 1.95								
1.95 - 2.10								
2.10 - 2.25								
2.25 - 2.40								
2.40 - 2.55								
2.55 - 2.70								
2.70 - 2.85								
2.85 - 3.00								

TEST METHOD

AS1289, 6.3.3 PERTH SAND PENETROMETER

TESTED BY: BL



Approved Signatory: S Ryan Laboratory 9849

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Telephone (02) 65810142 Fax (02) 65810129

DYNAMIC PENETROMETER TEST RESULTS

CLIENT : Macleay Valley Property Group
PO Box 3254, Narellan NSW 2567

PROJECT No : GEOTPMAQ0064AA

PROJECT : Gregory Street Subdivision

REPORT No : GEOTPMAQ00064AA - 1b

LOCATION : South West Rocks

DATE : 15.09.06

DEPTH M	PENETRATION RESISTANCE BLOWS / 150mm							
	LOCATION							
	TP 12a	TP 13	TP 16	TP 17	TP 18			
0.00 - 0.15	2	1	1	1	2			
0.15 - 0.30	4	2	2	2	4			
0.30 - 0.45	3	1	1	3	4			
0.45 - 0.60	3	2	2	3	3			
0.60 - 0.75	3	2	2	6	3			
0.75 - 0.90	2	3	3	5	4			
0.90 - 1.05	1	4	3	3	4			
1.05 - 1.20	2	4	3	3	4			
1.20 - 1.35	7	5	4	6	6			
1.35 - 1.50	8	7	4	7	7			
1.50 - 1.65								
1.65 - 1.80								
1.80 - 1.95								
1.95 - 2.10								
2.10 - 2.25								
2.25 - 2.40								
2.40 - 2.55								
2.55 - 2.70								
2.70 - 2.85								
2.85 - 3.00								

TEST METHOD

AS1289, 6.3.3 PERTH SAND PENETROMETER

TESTED BY: BL



Approved Signatory: S Ryan Laboratory 9849

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Telephone (02) 65810142 Fax (02) 65810129

DYNAMIC PENETROMETER TEST RESULTS

CLIENT : Macleay Valley Property Group
PO Box 3254, Narellan NSW 2567

PROJECT No : GEOTPMAQ00064AA

PROJECT : Gregory Street Subdivision

REPORT No : GEOTPMAQ00064AA - 1c

LOCATION : South West Rocks

DATE : 15.09.06

DEPTH M	PENETRATION RESISTANCE BLOWS / 150mm							
	LOCATION							
	TP 12b							
0.00 - 0.15	2							
0.15 - 0.30	5							
0.30 - 0.45	6							
0.45 - 0.60	5							
0.60 - 0.75	7							
0.75 - 0.90	10							
0.90 - 1.05	12							
1.05 - 1.20	15							
1.20 - 1.35	15							
1.35 - 1.50	17							
1.50 - 1.65								
1.65 - 1.80								
1.80 - 1.95								
1.95 - 2.10								
2.10 - 2.25								
2.25 - 2.40								
2.40 - 2.55								
2.55 - 2.70								
2.70 - 2.85								
2.85 - 3.00								

TEST METHOD

AS1289, 6.3.2 CONE PENETROMETER

TESTED BY: BL



Approved Signatory: S Ryan Laboratory 9849

07/06

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determination of emerson class number

client : *Macleay Valley Property Group*

job no : *GEOTPMQA00064AA*

principal :

laboratory : *PORT MACQUARIE*

project : *Gregory Street Subdivision*

date : *October 17, 2006*

location : *South West Rocks*

test report no. : *1*

test procedure : *AS1289 3.8.1*

date sampled: *11.10.06*

material source:

sample number: *PM 7267*

sample identification: *TP 4, 1.3 - 1.4m*

test data

air dried crumbs

time start of test:

time dispersion commences:

time dispersion completed:

remoulded material

time start of test:

time dispersion commences:

time dispersion completed:

material description

SAND

type of water used: *distilled*

water temperature: *23° C*

immersion of air dried crumbs

does not slake	<input type="checkbox"/>	
slakes	<input checked="" type="checkbox"/>	

swell	<input type="checkbox"/>	⑦
does not swell	<input type="checkbox"/>	⑧

complete dispersion	<input type="checkbox"/>	①
partial dispersion	<input type="checkbox"/>	②
no dispersion	<input checked="" type="checkbox"/>	

immersion of remoulded material

disperses	<input type="checkbox"/>	③
does not disperse	<input checked="" type="checkbox"/>	

calcite or gypsum		
present	<input type="checkbox"/>	④
absent	<input checked="" type="checkbox"/>	

vigorous shaking		
disperses	<input type="checkbox"/>	⑤
flocculates	<input checked="" type="checkbox"/>	⑥

Emerson
class number **6**

determination of emerson class number

client : **Macleay Valley Property Group**

job no : **GEOTPMQA00064AA**

principal :

laboratory : **PORT MACQUARIE**

project : **Gregory Street Subdivision**

date : **October 17, 2006**

location : **South West Rocks**

test report no. : **2**

test procedure : **AS1289 3.8.1**

date sampled: **11.10.06**

material source:

sample number: **PM 7271**

sample identification: **TP 9, 0.6 - 1.0m**

test data

air dried crumbs

time start of
test:

time dispersion
commences:

time dispersion
completed:

remoulded material

time start of
test:

time dispersion
commences:

time dispersion
completed:

material description

Silty CLAY

type of water used: **distilled**

water temperature: **23° C**

immersion of air dried crumbs

does not slake	<input type="checkbox"/>	
slakes	<input checked="" type="checkbox"/>	

complete dispersion	<input type="checkbox"/>	①
partial dispersion	<input type="checkbox"/>	②
no dispersion	<input checked="" type="checkbox"/>	

swell	<input type="checkbox"/>	⑦
does not swell	<input type="checkbox"/>	⑧

immersion of remoulded material

disperses	<input type="checkbox"/>	③
does not disperse	<input checked="" type="checkbox"/>	

calcite or gypsum		
present	<input type="checkbox"/>	④
absent	<input checked="" type="checkbox"/>	

vigorous shaking		
disperses	<input checked="" type="checkbox"/>	⑤
flocculates	<input type="checkbox"/>	⑥

**Emerson
class number 5**

determination of emerson class number

client : **Macleay Valley Property Group**

job no : **GEOTPMQA00064AA**

principal :

laboratory : **PORT MACQUARIE**

project : **Gregory Street Subdivision**

date : **October 17, 2006**

location : **South West Rocks**

test report no. : **3**

test procedure : **AS1289 3.8.1**

date sampled: **11.10.06**

material source:

sample number: **PM 7277**

sample identification: **TP 7, 1.5 - 1.6m**

test data

air dried crumbs

time start of
test:

time dispersion
commences:

time dispersion
completed:

remoulded material

time start of
test:

time dispersion
commences:

time dispersion
completed:

material description

Silty CLAY

type of water used: **distilled**

water temperature: **23° C**

immersion of air dried crumbs

does not slake	<input type="checkbox"/>
slakes	<input checked="" type="checkbox"/>

swell	<input type="checkbox"/>	⑦
does not swell	<input type="checkbox"/>	⑧

complete dispersion	<input type="checkbox"/>	①
partial dispersion	<input type="checkbox"/>	②
no dispersion	<input checked="" type="checkbox"/>	

immersion of remoulded material

disperses	<input type="checkbox"/>	③
does not disperse	<input checked="" type="checkbox"/>	

calcite or gypsum		
present	<input type="checkbox"/>	④
absent	<input checked="" type="checkbox"/>	

vigorous shaking		
disperses	<input checked="" type="checkbox"/>	⑤
flocculates	<input type="checkbox"/>	⑥

Emerson
class number **5**

Coffey Geotechnics Pty Ltd

1/37 Jindalee Road Port Macquarie NSW 2444 Telephone 02 65810142 Fax 02 65810129

SOIL REACTIVITY TEST DETERMINATION OF SHRINK-SWELL INDEX

CLIENT : Macleay Valley Property Group
ADDRESS : PO Box 3254
Narellan NSW 2567

DATE : 21.09.06

PROJECT NO : GEOTPMQA00064AA

PROJECT : Gregory Street, South West Rocks

REPORT NO : GEOTPMQA00064AA-1

SAMPLE LOCATION : TP 6, 1.0-1.4m

SAMPLE DESCRIPTION : PM 7268, Sandy CLAY, moderate to high plasticity, mc > wp, light brown with some orange mottling, fine to coarse grained sand.

CORE SHRINKAGE TEST

Moisture content - air dried 3.3%

Shrinkage - air dried 2.26%

Field Moisture content 24.6%

Shrinkage - oven dried 2.26%

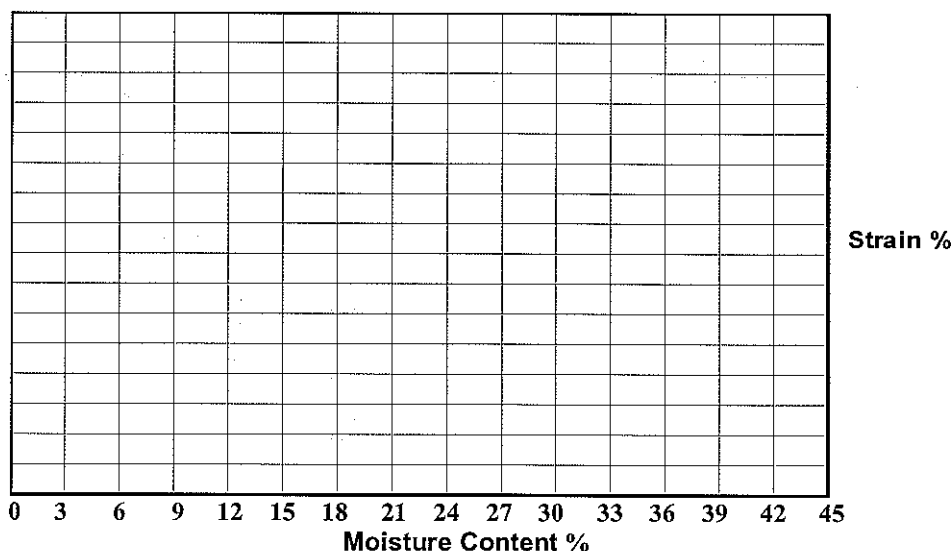
SWELL TEST

Pocket penetrometer – initial 380kPa

Pocket penetrometer – final 160kPa

Moisture content – final 21.0%

Swell under load Nil



Shrink - swell index (Iss) 1.26

Test Method AS 1289.7.1.1-2003



Approved Signatory: *S Chandler*

Laboratory 9849

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SOIL REACTIVITY TEST DETERMINATION OF SHRINK-SWELL INDEX

CLIENT : Macleay Valley Property Group
ADDRESS : PO Box 3254
Narellan NSW 2567

DATE : 21.09.06

PROJECT NO : GEOTPMQA00064AA

PROJECT : Gregory Street, South West Rocks

REPORT NO : GEOTPMQA00064AA-2

SAMPLE LOCATION : TP 7, 1.1-1.5m

SAMPLE DESCRIPTION : PM 7269, Sandy CLAY, moderate plasticity,
mc > wp, light brown with orange mottling, fine to medium grained sand.

CORE SHRINKAGE TEST

Moisture content - air dried 2.9%

Shrinkage - air dried 1.7%

Field Moisture content 22.6%

Shrinkage - oven dried 1.7%

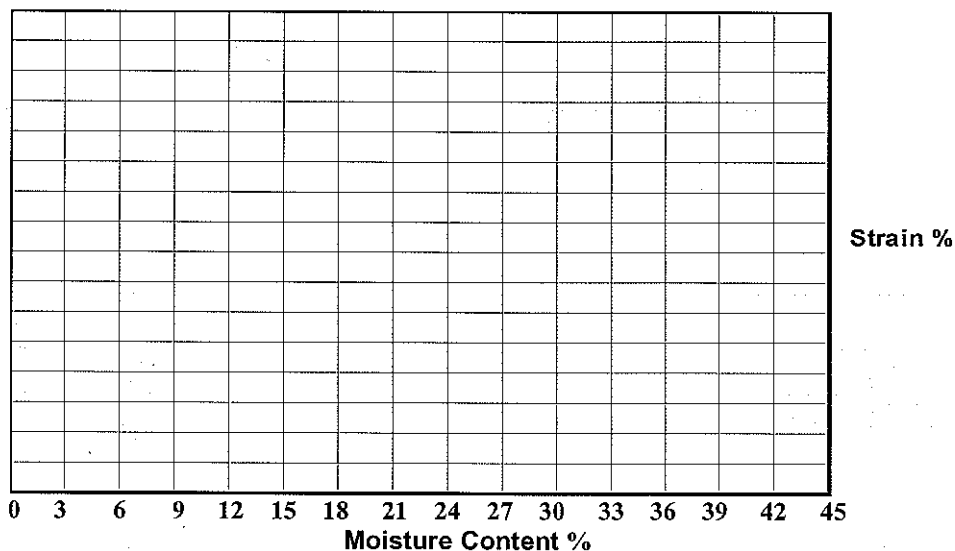
SWELL TEST

Pocket penetrometer – initial 470kPa

Pocket penetrometer – final 460kPa

Moisture content – final 23.1%

Swell under load Nil



Shrink - swell index (Iss) 0.94

Test Method AS 1289.7.1.1-2003



[Signature]

Approved Signatory: S Chandler Laboratory 9849

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SOIL REACTIVITY TEST DETERMINATION OF SHRINK-SWELL INDEX

CLIENT : Macleay Valley Property Group
ADDRESS : PO Box 3254
Narellan NSW 2567

DATE : 21.09.06

PROJECT NO : GEOTPMAQ00064AA

PROJECT : Gregory Street, South West Rocks

REPORT NO : GEOTPMAQ00064AA-3

SAMPLE LOCATION : TP 8, 0.5-0.9m

SAMPLE DESCRIPTION : PM 7270, Sandy CLAY, moderate to high plasticity, $mc > wp$, Orange brown, fine to coarse grained sand, traces of fine gravel.

CORE SHRINKAGE TEST

Moisture content - air dried 23.8%

Shrinkage - air dried 0.8%

Field Moisture content 29.1%

Shrinkage - oven dried 1.5%

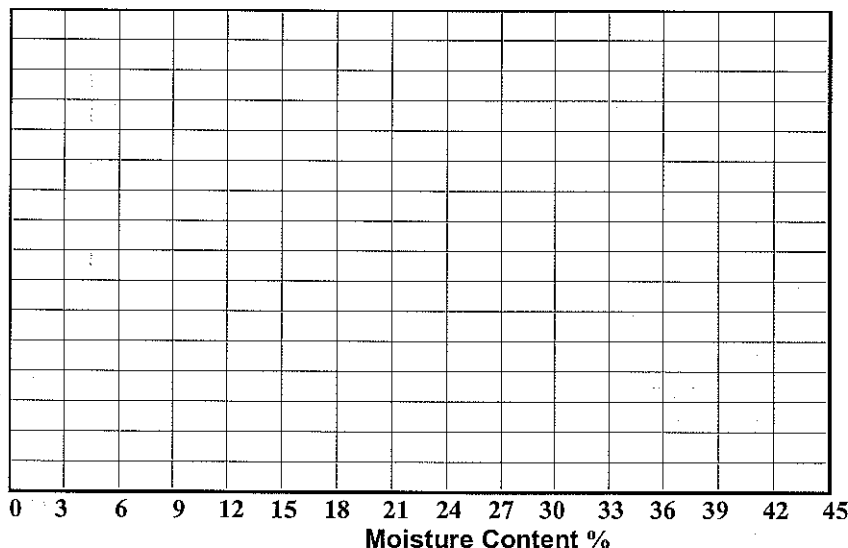
SWELL TEST

Pocket penetrometer – initial 380kPa

Pocket penetrometer – final 340kPa

Moisture content – final 30.7%

Swell under load Nil



Shrink - swell index (Iss) 0.83

Test Method AS 1289.7.1.1-2003



Approved Signatory: S Chandler

Laboratory 9849

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SOIL REACTIVITY TEST DETERMINATION OF SHRINK-SWELL INDEX

CLIENT : Macleay Valley Property Group
ADDRESS : PO Box 3254
Narellan NSW 2567

DATE : 21.09.06

PROJECT NO : GEOTPMQA00064AA

PROJECT : Gregory Street, South West Rocks

REPORT NO : GEOTPMQA00064AA-4

SAMPLE LOCATION : TP 9, 0.6- 1.0m

SAMPLE DESCRIPTION : PM 7272, Sandy CLAY, moderate to high plasticity, $mc > wp$, Orange brown with some pale grey mottling, some fine to coarse grained sand.

CORE SHRINKAGE TEST

Moisture content - air dried 18.6%

Shrinkage - air dried 2.50%

Field Moisture content 32.1%

Shrinkage - oven dried 2.60%

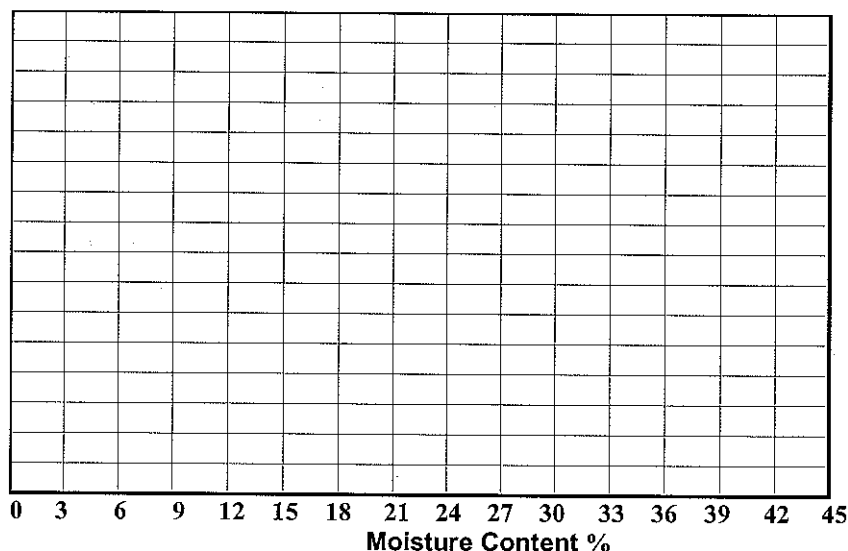
SWELL TEST

Pocket penetrometer – initial 340kPa

Pocket penetrometer – final 290kPa

Moisture content – final 32.6%

Swell under load Nil



Shrink - swell index (Iss) 1.44

Test Method AS 1289.7.1.1-2003



Approved Signatory: S Chandler *Laboratory 9849*

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Telephone (02) 65810142 Fax (02) 65810129

CALIFORNIA BEARING RATIO

CLIENT: Macleay Valley Property Group
ADDRESS: PO Box 3254
Narellan NSW 2567

PROJECT NO: GEOTPMAQ00064AA

REPORT NO: GEOTPMAQ00064AA - 5

PROJECT: Gregory Street Subdivision

DATE: 11.10.06

LOCATION: South West Rocks

Sample No: PM 7273
Sample description: Silty SAND
Sample location: TP 10, 0.2 - 0.5m
Date sampled: 5.10.06

TEST PROCEDURES

Date Tested: 9.10.06
Test Method: AS1289, 6.1.1
Duration of soaking: 4 Days
Compaction level % : 100.0%
Compactive effort: Standard
Drop of rammer (mm): 300mm
Mass of rammer (kg): 2.7kg
Surcharge (kg): 4.5kg

TEST RESULTS:

Field moisture content %: 15.9%
Maximum dry density (kg/m³): 1.83
Optimum moisture content %: 13.6%
Dry density prior to soaking (kg/m³): 1.84
Dry density after soaking (kg/m³): 1.84
Moisture content moulded % : 12.5%
Moisture content after soaking % : 14.2%
Top 30mm after test % 14.7%
Swell after soaking % : 0.1%

C.B.R.VALUES: 2.5mm penetration % : **25%**

5.0mm penetration % : **25%**



Approved Signatory: S Chandler Laboratory 9849

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06/06

T4

Coffey Geotechnics Pty Ltd

1/37 Jindalee Rd Port Macquarie NSW 2444
Telephone (02) 65810142 Fax (02) 65810129

CALIFORNIA BEARING RATIO

CLIENT: Macleay Valley Property Group
ADDRESS: PO Box 3254
Narellan NSW 2567

PROJECT NO: GEOTPMAQ00064AA

REPORT NO: GEOTPMAQ00064AA - 6

PROJECT: Gregory Street Subdivision

DATE: 11.10.06

LOCATION: South West Rocks

Sample No: PM 7274
Sample description: Silty SAND
Sample location: TP 11, 0.3 - 0.5m
Date sampled: 21.09.06

TEST PROCEDURES

Date Tested: 25.09.06
Test Method: AS1289, 6.1.1
Duration of soaking: 4 Days
Compaction level % : 100.0%
Compactive effort: Standard
Drop of rammer (mm): 300mm
Mass of rammer (kg): 2.7kg
Surcharge (kg): 4.5kg

TEST RESULTS:

Field moisture content %: 6.1%
Maximum dry density (kg/m³): 1.67
Optimum moisture content %: 14.7%
Dry density prior to soaking (kg/m³): 1.669
Dry density after soaking (kg/m³): 1.67
Moisture content moulded % : 14.3%
Moisture content after soaking % : 16.3%
Top 30mm after test % 16.3%
Swell after soaking % : Nil

C.B.R.VALUES: 2.5mm penetration % : 14%
5.0mm penetration % : 16%



Approved Signatory: S Chandler Laboratory 9849

The tests, calibrations or measurements covered by this document have been performed in accordance with NATA requirements which include the requirements of ISO/IEC 17025 and are traceable to national standards of measurement. This document shall not be reproduced except in full.

06/06

T4

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Telephone (02) 65810142 Fax (02) 65810129

CALIFORNIA BEARING RATIO

CLIENT: Macleay Valley Property Group
ADDRESS: PO Box 3254
Narellan NSW 2567

PROJECT NO: GEOTPMAQ00064AA

REPORT NO: GEOTPMAQ00064AA - 7

PROJECT: Gregory Street Subdivision

DATE: 11.10.06

LOCATION: South West Rocks

Sample No: PM 7275
Sample description: Silty SAND
Sample location: TP 13, 0.4 - 0.7m
Date sampled: 21.09.06

TEST PROCEDURES

Date Tested: 25.09.06
Test Method: AS1289, 6.1.1
Duration of soaking: 4 Days
Compaction level % : 100.0%
Compactive effort: Standard
Drop of rammer (mm): 300mm
Mass of rammer (kg): 2.7kg
Surcharge (kg): 4.5kg

TEST RESULTS:

Field moisture content %: 18.8%
Maximum dry density (kg/m³): 1.99
Optimum moisture content %: 9.7%
Dry density prior to soaking (kg/m³): 2.0
Dry density after soaking (kg/m³): 2.0
Moisture content moulded % : 9.5%
Moisture content after soaking % : 9.8%
Top 30mm after test % 10.1%
Swell after soaking % : Nil

C.B.R.VALUES: **2.5mm penetration % :** **35%**

 5.0mm penetration % : **45%**



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T4

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Telephone (02) 65810142 Fax (02) 65810129

CALIFORNIA BEARING RATIO

CLIENT: Macleay Valley Property Group
ADDRESS: PO Box 3254
Narellan NSW 2567

PROJECT NO: GEOTPMAQ00064AA

REPORT NO: GEOTPMAQ00064AA - 8

PROJECT: Gregory Street Subdivision

DATE: 11.10.06

LOCATION: South West Rocks

Sample No: PM 7276
Sample description: Silty SAND
Sample location: TP 12, 0.3 - 0.6m
Date sampled: 5.10.06

TEST PROCEDURES

Date Tested: 9.10.06
Test Method: AS1289, 6.1.1
Duration of soaking: 4 Days
Compaction level % : 100.0%
Compactive effort: Standard
Drop of rammer (mm): 300mm
Mass of rammer (kg): 2.7kg
Surcharge (kg): 4.5kg

TEST RESULTS:

Field moisture content %: 14.1%
Maximum dry density (kg/m³): 1.95
Optimum moisture content %: 11.5%
Dry density prior to soaking (kg/m³): 1.97
Dry density after soaking (kg/m³): 1.97
Moisture content moulded % : 10.4%
Moisture content after soaking % : 11.2%
Top 30mm after test % 11.9%
Swell after soaking % : Nil

C.B.R.VALUES: **2.5mm penetration % :** **25%**
5.0mm penetration % : **30%**



A handwritten signature in black ink, appearing to be "S Chandler", written over a horizontal line.

Approved Signatory: S Chandler Laboratory 9849

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Unit 1 / 37 Jindalee Road, Port Macquarie NSW 2444 Phone :6581 0142 Fax : 6581 0129

CLIENT: Macleay Valley Property Group
PROJECT: Gregory Street Subdivision
LOCATION: South Weest Rocks

Notes on Test: Test method as per ASSMAC Guidelines, Appendix 1.

Approved Signatory: S Chandler Laboratory 9849

Appendix C

Flexible Pavement Thickness Design Summary

Job No **PM00064/1**

Flexible Pavement Thickness Design Summary

Sheet **1 of 1**

Client **Macleay Valley Property Group**

Office **Port Macquarie**

Principal

Date **17-Oct-06**

Project **Gregory Street**

By **TLM**

Location **South West Rocks**

Checked **SRM**

road name or type:	Access Road	Access Road	Access Road	
chainage interval: (m)	Natural Sand Subgrade*	Natural Sandy Clay Subgrade*	Select Fill	
design traffic loading: (ESA)	5×10^4	5×10^4	5×10^4	
wearing course thickness: (mm)	40	40	40	
base course thickness: (mm)	100	100	100	
subbase thickness: (mm)	150	150	100	
select thickness: (mm)			300	
total thickness: (mm)	290	290	540	
CBR used for design: (%)	10	7	7	

design traffic loading: Design traffic loading is the number of commercial vehicle axle groups (CVAG) in the design lane during the design period. For definitions, refer Appendix A "Pavement Design" Austroads. Refer covering letter/report.

Material Quality:

wearing course: Meeting requirements of Kempsey Shire Council
base course: Meeting requirements of ARRB Special Report 41
subbase: Meeting requirements of ARRB Special Report 41
select: Minimum CBR 15, Maximum PI of 12

* Natural subgrade to be assessed by proof rolling and inspection at the time of exposure.

** Pavement design shown assumes a minimum 500mm thick layer of imported fill at subgrade level.

Note: Recommended materials types may vary from those of job specification or statutory authority. Refer covering letter/report.

Compaction Requirements:

wearing course:
base course: **100% Modified**
subbase: **98% Modified**
select: 100% Standard
subgrade: 100% Standard
fill below: 95% Standard

Note: Recommendations for compaction may vary from those of job specification or statutory authority. Refer covering letter/report.

Modified: Minimum required dry density ratio, AS1289 5.4.1-1993, calculated using field dry density determined by AS1289 5.3.1-1993 or equivalent, and the maximum dry density obtained using AS1289 5.2.1-1993 or equivalent.

Standard: As above, but maximum dry density obtained using AS1289 5.1.1-1993 or equivalent.

Density Index: Minimum required Density Index AS1289 5.6.1-1998, calculated using field dry density determined by AS1289 5.3.1-1993 or equivalent, and laboratory values of maximum and minimum density obtained by AS1289 5.5.1-1998 or equivalent.

Drainage: The design assumes the provision of adequate surface and subsurface drainage of the pavement and adjacent areas. Refer covering letter/report.