

Borehole No. **BH2**

Sheet 1 of 1

Office Job No.: **B17439/1**Date started: **3.6.2002**Date completed: **3.6.2002**Logged by: **SPP**Checked by: **M****Engineering Log - Borehole**Client: **MARTIN FINDLATER & ASSOCIATES PTY LTD**Principal: **GREENVIEW DEVELOPMENTS PTY LTD**Project: **FRASER DRIVE, TWEED HEADS SOUTH**Borehole Location: **REFER DRAWING 1**drill model and mounting: **JACRO 250 BOMBADIER** Easting: slope: **-90°** R.L. Surface: **32.25**hole diameter: **100 mm** Northing bearing: datum: **AHD**

drilling information				material substance									
method	penetration	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	structure and additional observations
1	2	3											
		N			32			CH	SILTY CLAY: high plasticity, red-brown.				RESIDUAL SOIL
						1							
					31								
						2			... boulder				
					30				... boulder				
						3			... boulder				
					29				... colour change to yellow-red-brown				
					28				... less resistance				
					27				... boulder				
					26								
					25				SILTY CLAY: high plasticity, red brown, grading to extremely weathered and extremely weathered to highly weathered basalt.				
					24								
					23								
					22								
					21								
					20								
					19								
					18								
					17								
					16								
					15								
					14								
					13								
					12								
					11								
					10								
					9								
					8				Borehole BH2 terminated at 7.95m				

method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT	support M mud C casing penetration 1 2 3 4  water  10/1/98 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 N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter 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 VS _t very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
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Coffey

Borehole No. **BH3**

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Office Job No.: **B17439/1**Date started: **3.6.2002**Date completed: **3.6.2002**Logged by: **SPP**Checked by: **M****Engineering Log - Borehole**Client: **MARTIN FINDLATER & ASSOCIATES PTY LTD**Principal: **GREENVIEW DEVELOPMENTS PTY LTD**Project: **FRASER DRIVE, TWEED HEADS SOUTH**Borehole Location: **REFER DRAWING 1**

drill model and mounting: JACRO 250 BOMBADIER Easting: slope: -90° R.L. Surface: 37.25
 hole diameter: 100 mm Northing bearing: datum: AHD

drilling information				material substance									
method	penetration	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	structure and additional observations
1	2	3											
		N			37			CH	SILTY CLAY: high plasticity, red-brown and pale brown-red.	M			RESIDUAL SOIL
						1							
						2							
						3							
						4							
						5			... boulder				
						6			... boulder				
						7		CH	SILTY CLAY: high plasticity, grey-brown to red-brown, grading to extremely weathered basalt.				
						8			Borehole BH3 terminated at 7.9m				

method

AS auger screwing*

AD auger drilling*

RR roller/tricone

W washbore

CT cable tool

HA hand auger

DT diatube

B blank bit

V V bit

T TC bit

*bit shown by suffix
e.g. ADT

support

M mud

C casing

penetration

1 2 3 4

no resistance ranging to refusal

water

10/1/98 water level on date shown

water inflow

water outflow

notes, samples, tests

U₅₀ undisturbed sample 50mm diameter

U₆₃ undisturbed sample 63mm diameter

D disturbed sample

N standard penetration test (SPT)

N* SPT - sample recovered

Nc SPT with solid cone

V vane shear (kPa)

P pressuremeter

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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Borehole No. **BH4**

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Office Job No.: **B17439/1**Date started: **3.6.2002**Date completed: **3.6.2002**Logged by: **SPP**Checked by: **km****Engineering Log - Borehole**Client: **MARTIN FINDLATER & ASSOCIATES PTY LTD**Principal: **GREENVIEW DEVELOPMENTS PTY LTD**Project: **FRASER DRIVE, TWEED HEADS SOUTH**Borehole Location: **REFER DRAWING 1**

drill model and mounting: JACRO 250 BOMBADIER Easting: slope: -90° R.L. Surface: 36.00
 hole diameter: 100 mm Northing bearing: datum: AHD

drilling information					material substance															
method	penetration			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	structure and additional observations					
	1	2	3																	
				N						CH	SILTY CLAY: high plasticity, red-brown.				RESIDUAL SOIL					
							35	1												
							34	2												
							33	3			... boulder									
							32	4			... boulder									
							31	5			... colour change to pale brown-grey									
					U ₅₀						SILTY CLAY: high plasticity, red-brown to brown-grey, grading to extremely weathered basalt.				U50 tube refused on boulder.					
							30	6												
					U ₅₀															
							29	7			Borehole BH4 terminated at 6.45m									
							28	8												
method					support					notes, samples, tests					classification symbols and soil description			consistency/density index		
AS auger screwing*					M mud N nil					U ₅₀ undisturbed sample 50mm diameter					based on unified classification system			VS very soft		
AD auger drilling*					C casing					U ₆₃ undisturbed sample 63mm diameter										
RR roller/tricone					penetration					D disturbed sample					moisture			F firm		
W washbore					1 2 3 4 no resistance ranging to refusal					N standard penetration test (SPT)										
CT cable tool										N* SPT - sample recovered					M moist			VSt very stiff		
HA hand auger					water					Nc SPT with solid cone										
DT diatube					10/1/98 water level on date shown					V vane shear (kPa)					Wp plastic limit			Fb friable		
B blank bit					 water inflow					P pressuremeter										
V V bit					 water outflow					Bs bulk sample								L loose		
T TC bit										E environmental sample										
*bit shown by suffix e.g. ADT										R refusal								D dense		

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method

AS auger screwing*
 AD auger drilling*
 RR roller/tricone
 W washbore
 CT cable tool
 HA hand auger
 DT diatube
 B blank bit
 V V bit
 T TC bit
 *bit shown by suffix
 e.g. ADT

support

M mud N nil
 C casing
penetration
 1 2 3 4

 no resistance ranging to refusal
water
 10/1/98 water level on date shown
 water inflow
 water outflow

notes, samples, tests

U₅₀ undisturbed sample 50mm diameter
 U₆₃ undisturbed sample 63mm diameter
 D disturbed sample
 N standard penetration test (SPT)
 N* SPT - sample recovered
 Nc SPT with solid cone
 V vane shear (kPa)
 P pressuremeter
 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

Coffey

Borehole No. **BH5**

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Office Job No.: **B17439/1**Date started: **4.6.2002**Date completed: **4.6.2002**Logged by: **SPP**Checked by: **km****Engineering Log - Borehole**Client: **MARTIN FINDLATER & ASSOCIATES PTY LTD**Principal: **GREENVIEW DEVELOPMENTS PTY LTD**Project: **FRASER DRIVE, TWEED HEADS SOUTH**Borehole Location: **REFER DRAWING 1**

drill model and mounting: JACRO 250 BOMBADIER Easting: slope: -90° R.L. Surface: 30.0
 hole diameter: 100 mm Northing bearing: datum: AHD

drilling information										material substance																			
method			penetration			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	structure and additional observations												
1	2	3	1	2	3																								
						N						CH	SILTY CLAY: high plasticity, red-brown.					RESIDUAL SOIL											
									29	1																			
								U ₅₀																					
									28	2			SILTY CLAY: high plasticity, red -brown to grey-brown, grading to extremely weathered basalt.																
								U ₅₀																					
								U ₅₀																					
									27	3			... less drilling resistance																
								U ₅₀																					
									26	4			Drilling Rig Refusal Borehole BH5 terminated at 3.9m																
									25	5																			
									24	6																			
									23	7																			
									22	8																			
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT						support M mud C casing penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 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 N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter 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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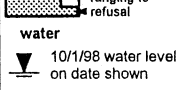
Coffey

Borehole No. **BH6**

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Office Job No.: **B17439/1**Date started: **4.6.2002**Date completed: **4.6.2002**Logged by: **SPP**Checked by: **[Signature]****Engineering Log - Borehole**Client: **MARTIN FINDLATER & ASSOCIATES PTY LTD**Principal: **GREENVIEW DEVELOPMENTS PTY LTD**Project: **FRASER DRIVE, TWEED HEADS SOUTH**Borehole Location: **REFER DRAWING 1**

drill model and mounting: JACRO 250 BOMBADIER Easting: slope: -90° R.L. Surface: 31.00
 hole diameter: 100 mm Northing bearing: datum: AHD

drilling information										material substance															
method	penetration			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	structure and additional observations										
	1	2	3													100	200	300	400						
				N						CH	SILTY CLAY: high plasticity, red-brown.				RESIDUAL SOIL										
							30	1			... colour change to red-brown and yellow-brown														
							29	2																	
							28	3	CH	SILTY CLAY: high plasticity, yellow-brown and pale grey.															
										... grey gravel															
							27	4	CH	SILTY CLAY: high plasticity, yellow-brown, trace of gravel ... boulder															
										... grey gravel easily broken with fingers															
							26	5		SILTY CLAY: high plasticity, red-brown to grey-brown, grading to extremely weathered basalt.															
					U ₅₀																				
							25	6																	
					U ₅₀																				
							24	7																	
							23	8		Drilling Rig Refusal Borehole BH6 terminated at 7.5m															
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT										support M mud N nil C casing penetration 1 2 3 4  water  10/1/98 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 N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter 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 VS _t very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense			

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