

Engineering Log - Piezometer

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **13.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **13.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**

Checked by: **SD**

drill model & mounting: MOBILE DRILL				Easting: 356900		slope: -90°		R.L. Surface: 50.36					
hole diameter: 125MM				Northing: 6321242		bearing:		datum: AHD					
drilling information				material substance									
method	penetration	support	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material				
	1 2 3	water							soil type: plasticity or particle characteristics, colour, secondary and minor components.				
ADT		NIL		E		50			FILL ; Clayey SAND, fine to coarse grained sand, dark grey, some gravel, some demolition rubble including concrete in top 1.5m				
				E		1							
						49							
						2							
						48							
				E		3							
						47							
				E		4							
						46							
						5							
						45							
						6							
									Borehole terminated at 5.5m				
method				support		notes, samples, tests		classification symbols and soil description					
AS	auger screwing*		penetration	C casing		N nil		based on unified classification system					
AD	auger drilling*			U ₅₀ undisturbed sample 50mm diameter		D disturbed sample		VS very soft					
RR	roller/tricone			N standard penetration test (SPT)		N* SPT - sample recovered		S soft					
W	washbore			Nc SPT with solid cone		P pressure meter		F firm					
CT	cable tool			Bs bulk sample		R refusal		St stiff					
DT	diatube			E environmental sample		PID PID measurement		VSt very stiff					
B	blank bit			WS water sample		PZ piezometer		H hard					
V	V bit			ALT air lift test				Fb friable					
T	TC bit							VL very loose					
TBX	Tubex							L loose					
*bit shown by suffix e.g. ADT								MD medium dense					
								D dense					
								VD very dense					

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Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Client: **WYONG SHIRE COUNCIL**

Date started: **14.9.2007**

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Project: **WARNERVALE TOWN CENTRE**

Logged by: **DH**

Borehole Location: **See Figure -**

Checked by: **SD**

drill model & mounting: MOBILE DRILL				Easting: 357066		slope: -90°		R.L. Surface: 36.06			
hole diameter: 125MM				Northing: 6321280		bearing:		datum: AHD			
drilling information					material substance						
method	penetration 1 2 3	support NIL	water None Observed	notes samples, tests, etc	well details	RL metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.		
ADT				E		36		CL	FILL; Gravelly SAND, fine to medium grained sand, brown, fine to medium grained gravel. Sandy CLAY; Medium plasticity, orange/brown, fine to medium grained sand.		
				E		35			SILTSTONE; Pale grey/orange.		
						1		M	EXTREMELY WEATHERED SILTSTONE.		
						2			HIGHLY WEATHERED SILTSTONE		
						3					
						33			Borehole terminated at 3m		
						4					
						32					
						5					
						31					
						6					
method				support		notes, samples, tests		classification symbols and soil description			
AS	auger screwing*		U ₅₀ undisturbed sample 50mm diameter		based on unified classification system		consistency/density index		VS very soft		
AD	auger drilling*		D disturbed sample				S soft		S		
RR	roller/tricone		N standard penetration test (SPT)				F firm		F		
W	washbore		N* SPT - sample recovered				St stiff		St		
CT	cable tool		Nc SPT with solid cone				VSt very stiff		VSt		
DT	diatube		P pressure meter				H hard		H		
B	blank bit		Bs bulk sample				Fb friable		Fb		
V	V bit		R refusal				VL very loose		VL		
T	TC bit		E environmental sample				L loose		L		
TBX	Tubex		PID PID measurement				MD medium dense		MD		
*bit shown by suffix e.g. ADT				WS water sample		W _p plastic limit		D dense			
				PZ piezometer		W _L liquid limit		VD very dense			
				ALT air lift test							

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Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Client: **WYONG SHIRE COUNCIL**

Date started: **14.9.2007**

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Project: **WARNERVALE TOWN CENTRE**

Logged by: **DH**

Borehole Location: **See Figure -**

Checked by: **SD**

drill model & mounting: MOBILE DRILL				Easting: 356939		slope: -90°		R.L. Surface: 42.16	
hole diameter: 125MM				Northing: 6321258		bearing:		datum: AHD	
drilling information					material substance				
method	penetration 1 2 3	support water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material
ADT		NIL		E	42			SC	FILL; Gravelly SAND, fine to medium grained, brown, fine to medium grained gravel. Clayey SAND; Fine to medium grained, orange/grey, medium plasticity clay.
				E	41			CL	Sandy CLAY; Medium plasticity, orange/grey, fine to medium grained sand.
					40				SANDSTONE; Orange/pale grey.
					39				Borehole terminated at 3m
					38				
					37				
					36				
					35				
					34				
					33				
					32				
					31				
					30				
					29				
					28				
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					10				
					9				
					8				
					7				
					6				
method		support		notes, samples, tests		classification symbols and soil description		consistency/density index	
AS	auger screwing*	C	casing	N	nil	U ₅₀	undisturbed sample 50mm diameter	VS	very soft
AD	auger drilling*					D	disturbed sample	S	soft
RR	roller/tricone					N	standard penetration test (SPT)	F	firm
W	washbore					N*	SPT - sample recovered	St	stiff
CT	cable tool					Nc	SPT with solid cone	VSt	very stiff
DT	diatube					P	pressure meter	H	hard
B	blank bit					Bs	bulk sample	Fb	friable
V	V bit					R	refusal	VL	very loose
T	TC bit					E	environmental sample	L	loose
TBX	Tubex					PID	PID measurement	MD	medium dense
						WS	water sample	D	dense
						PZ	piezometer	VD	very dense
						ALT	air lift test		
*bit shown by suffix e.g. ADT									

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date completed: **14.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

drill model and mounting:			MOBILE DRILL		Easting: 356874		slope: -90°		R.L. Surface: 51.5				
hole diameter:			125 mm		Northing 6321282		bearing:		datum: AHD				
drilling information			material substance										
method	penetration	support	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material	moisture condition	consistency/density index			
	1 2 3	water						soil type: plasticity or particle characteristics, colour, secondary and minor components.		100 200 300 400 kPa			
ADT		NIL	E		51			FILL ; Gravely SAND, fine to medium grained, brown, fine to medium grained gravel.		FILL DUP 10 NO H.C ODOUR			
		None Observed	E		1			FILL ; Gravely SAND, fine to medium grained, brown/orange, fine to medium grained gravel.					
			E		50		CL	Sandy CLAY ; Medium plasticity, orange/grey, fine to medium grained sand.		RESIDUAL			
			E		2								
								Borehole EBH016 terminated at 2m					
					49								
					3								
					48								
					4								
					47								
					5								
					46								
					6								
method			support		notes, samples, tests			classification symbols and soil description		consistency/density index			
AS	auger screwing*		M mud		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					S soft			
RR	roller/tricone		penetration		D disturbed sample					F firm			
W	washbore		1 2 3 4		N standard penetration test (SPT)					St stiff			
CT	cable tool		no resistance		N* SPT - sample recovered					VSt very stiff			
HA	hand auger		ranging to refusal		Nc SPT with solid cone					H hard			
DT	diatube				V vane shear (kPa)					Fb friable			
B	blank bit		water		P pressuremeter					VL very loose			
V	V bit		10/198 water level on date shown		Bs bulk sample					L loose			
T	TC bit				E environmental sample					MD medium dense			
*bit shown by suffix e.g.			ADT		R refusal					D dense			
										VD very dense			

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Sheet 1 of 1
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Date completed: **14.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

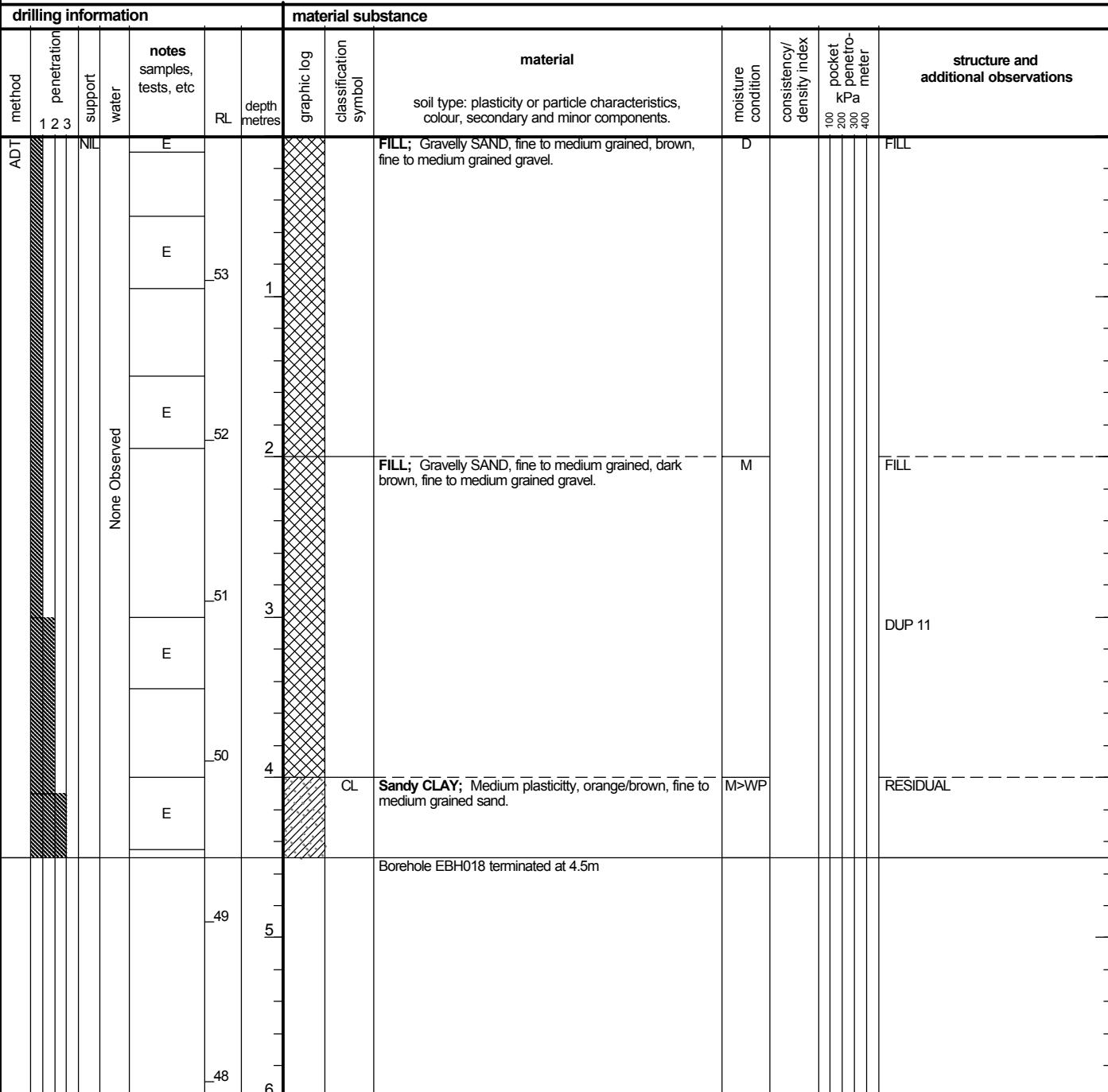
drill model and mounting:							MOBILE DRILL	Easting:	356817	slope:	-90°	R.L. Surface:	55.5	
hole diameter:							125 mm	Northing	6321287	bearing:		datum:	AHD	
drilling information							material substance							
method	penetration 1 2 3	support NIL	water None Observed	notes samples, tests, etc	RL depth 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 100 200 300 400 kPa	structure and additional observations	
ADT				E	55				FILL ; Gravelly SAND, fine to medium grained, brown, fine to medium grained gravel.	D				FILL
				E	54				FILL ; Gravelly Sandy CLAY. Low plasticity, brown/orange, fine to medium grained sand and gravel.	D				NO H.C ODOUR
				E	53				Sandy CLAY ; Medium plasticity, orange/pale white, fine to medium grained sand.	M>wp				RESIDUAL
					52				SANDSTONE ; Orange/pale grey.	M				EXTREMELY WEATHERED BEDROCK
					51									HIGHLY WEATHERED BEDROCK
					50				Borehole EBH017 terminated at 5m					
					49									
					48									
					47									
					46									
					45									
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					5									
					4									
					3									
					2									
					1									
					0									

method	support	notes, samples, tests	classification symbols and soil description	consistency/density index
AS	auger screwing*	U_{50} undisturbed sample 50mm diameter	based on unified classification system	VS very soft
AD	auger drilling*	U_{63} undisturbed sample 63mm diameter		S soft
RR	roller/tricone	D disturbed sample		F firm
W	washbore	N standard penetration test (SPT)		St stiff
CT	cable tool	N* SPT - sample recovered		VSt very stiff
HA	hand auger	Nc SPT with solid cone		H hard
DT	diatube	V vane shear (kPa)		Fb friable
B	blank bit	P pressuremeter		VL very loose
V	V bit	Bs bulk sample		L loose
T	TC bit	E environmental sample		MD medium dense
		R refusal		D dense
				VD very dense
*bit shown by suffix e.g. ADT				

Engineering Log - Borehole

Client:	WYONG SHIRE COUNCIL	Date started:	14.9.2007
Principal:		Date completed:	14.9.2007
Project:	WARNERVALE TOWN CENTRE	Logged by:	DH
Borehole Location:	See Figure -	Checked by:	SD

drill model and mounting:	MOBILE DRILL	Easting:	356832	slope:	-90°	R.L. Surface:	53.9
hole diameter:	125 mm	Northing	6321262	bearing:		datum:	AHD



method	support	notes, samples, tests	classification symbols and soil description	consistency/density index
AS	auger screwing*	U_{50} undisturbed sample 50mm diameter	based on unified classification system	VS very soft
AD	auger drilling*	U_{63} undisturbed sample 63mm diameter		S soft
RR	roller/tricone	D disturbed sample		F firm
W	washbore	N standard penetration test (SPT)		St stiff
CT	cable tool	N* SPT - sample recovered		VSt very stiff
HA	hand auger	Nc SPT with solid cone		H hard
DT	diatube	V vane shear (kPa)		Fb friable
B	blank bit	P pressuremeter		VL very loose
V	V bit	Bs bulk sample		L loose
T	TC bit	E environmental sample		MD medium dense
		R refusal		D dense
				VD very dense
*bit shown by suffix e.g. ADT				

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date completed: **14.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

Engineering Log - Piezometer

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKAI

Principal:

Date completed: **17.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **DH**

Borehole Location: **See Figure -**

Checked by: **SD**

method	support	notes, samples, tests	classification symbols and soil description	consistency/density index
AS	auger screwing*	C casing	undisturbed sample 50mm diameter	VS very soft
AD	auger drilling*	N nil	D disturbed sample	S soft
RR	roller/tricone	penetration 1 2 3 4		F firm
W	washbore	no resistance ranging to refusal		St stiff
CT	cable tool	water 10/198 water level on date shown	Nc SPT with solid cone	VSt very stiff
DT	diatube		P pressure meter	H hard
B	blank bit	water inflow	Bs bulk sample	Fb friable
V	V bit		R refusal	VL very loose
T	TC bit	water outflow	E environmental sample	L loose
TBX	Tubex		PID PID measurement	MD medium dense
*bit shown by suffix		ADT	WS water sample	D dense
e.g.			PZ piezometer	VD very dense
		ALT air lift test	W _p plastic limit	
			W _l liquid limit	

Engineering Log - Piezometer

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **17.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **17.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**

Checked by: **SD**

Engineering Log - Piezometer

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Client: **WYONG SHIRE COUNCIL**

Date started: **17.9.2007**

Principal:

Date completed: **17.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **DH**

Borehole Location: **See Figure -**

Checked by: **SD**

drill model & mounting: MOBILE DRILL			Easting: 356967		slope: -90°		R.L. Surface: 54.13									
hole diameter: 125MM			Northing: 6321130		bearing:		datum: AHD									
drilling information						material substance										
method	penetration 1 2 3	support water	notes samples, tests, etc	well details	RL metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.								
ADT		NIL		E	54		SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown, some low plasticity clay.								
				E	53		SC	FILL; Clayey SAND, fine to medium grained, orange/brown, medium plasticity clay.								
			None Observed		52		CL	Sandy CLAY; Medium plasticity, orange/brown, fine to medium grained sand.								
					51		CL	Sandy silty CLAY; High plasticity, pale grey/orange, fine to medium grained sand.								
					50			Borehole terminated at 4.5m								
					49											
					48											
					47											
					46											
					45											
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					42											
					41											
					40											
					39											
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					37											
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					9											
					8											
					7											
					6											
method			support		notes, samples, tests											
AS	auger screwing*		C casing		U ₅₀ undisturbed sample 50mm diameter											
AD	auger drilling*		N nil		D disturbed sample											
RR	roller/tricone		penetration 1 2 3 4		N standard penetration test (SPT)											
W	washbore		no resistance ranging to refusal		N* SPT - sample recovered											
CT	cable tool		water		Nc SPT with solid cone											
DT	diatube		water		P pressure meter											
B	blank bit		10/1/98 water level on date shown		Bs bulk sample											
V	V bit				R refusal											
T	TC bit				E environmental sample											
TBX	Tubex				PID PID measurement											
	*bit shown by suffix e.g. ADT				WS water sample											
					PZ piezometer											
					ALT air lift test											
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																

Engineering Log - Borehole

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Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date started: **17.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **17.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

drill model and mounting:							MOBILE DRILL	Easting:	356994	slope:	-90°	R.L. Surface:	50.5
hole diameter:							125 mm	Northing	6321105	bearing:		datum:	AHD
drilling information							material substance						
method	penetration 1 2 3	support NIL	notes samples, tests, etc water	RL depth metres	graphic log	classification symbol	material	moisture condition	consistency/ density index	100 kPa	200 kPa	300 kPa	400 kPa
ADT			None Observed		E	SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown, some non-plastic fines.	D					TOPSOIL
				50			SANDSTONE; Orange-pale grey.	D					HIGHLY WEATHERED BEDROCK.
				1			Borehole EBH023 terminated at 1m						
				49									
				2									
				48									
				3									
				47									
				46									
				5									
				45									
				6									
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		VS	very soft			
AD	auger drilling*	C	casing			U ₆₃	undisturbed sample 63mm diameter		S	soft			
RR	roller/tricone	penetration		D		D	disturbed sample		F	firm			
W	washbore	1	2	3	4	N	standard penetration test (SPT)		St	stiff			
CT	cable tool	no resistance ranging to refusal		N*		N*	SPT - sample recovered		VSt	very stiff			
HA	hand auger			Nc		Nc	SPT with solid cone		H	hard			
DT	diatube			V		V	vane shear (kPa)		Fb	friable			
B	blank bit			P		P	pressuremeter		VL	very loose			
V	V bit			Bs		Bs	bulk sample		L	loose			
T	TC bit			E		E	environmental sample		MD	medium dense			
				R		R	refusal		D	dense			
*bit shown by suffix e.g. ADT													

Engineering Log - Piezometer

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Client: **WYONG SHIRE COUNCIL**

Date started: **17.9.2007**

Principal:

Date completed: **17.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **DH**

Borehole Location: **See Figure -**

Checked by: **SD**

drill model & mounting: MOBILE DRILL				Easting: 356927		slope: -90°		R.L. Surface: 53.33				
hole diameter: 125MM				Northing: 6321142		bearing:		datum: AHD				
drilling information					material substance							
method	penetration 1 2 3	support NIL	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol			
ADT				E		53		material soil type: plasticity or particle characteristics, colour, secondary and minor components.				
				SPT		52		FILL; Gravelly SAND, fine to medium grained sand, brown, fine to medium grained gravel.				
						51		FILL; Clayey SAND, fine to medium grained sand, grey/brown, low to medium plasticity clay.				
						50		FILL; Sandy CLAY, medium plasticity, grey/brown, fine to medium grained sand.				
						49		SANDSTONE; Orange/pale grey.				
						48		Borehole terminated at 4.5m				
						47						
						46						
						45						
						44						
						43						
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						40						
						39						
						38						
						37						
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						9						
						8						
						7						
						6						
method				support		notes, samples, tests		classification symbols and soil description			consistency/density index	
AS	auger screwing*		C casing		N nil		undisturbed sample 50mm diameter			VS very soft		
AD	auger drilling*		D disturbed sample		D ₅₀		standard penetration test (SPT)			S soft		
RR	roller/tricone		N		N		N*			F firm		
W	washbore		Nc		Nc		SPT - sample recovered			St stiff		
CT	cable tool		P pressure meter		P		SPT with solid cone			VSt very stiff		
DT	diatube		Bs bulk sample		Bs		pressure meter			H hard		
B	blank bit		R refusal		R		bulk sample			Fb friable		
V	V bit		E environmental sample		E		refusal			VL very loose		
T	TC bit		PID PID measurement		PID		environmental sample			L loose		
TBX	Tubex		WS water sample		WS		PID measurement			MD medium dense		
	*bit shown by suffix e.g. ADT		PZ piezometer		PZ		water sample			D dense		
			ALT air lift test		ALT		piezometer			VD very dense		

Engineering Log - Piezometer

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKAR
17.2.2027

Principal:

Date completed: **17.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **DH**

Borehole Location: **See Figure -**

Checked by: **SD**

drill model & mounting: MOBILE DRILL				Easting: 356876		slope: -90°		R.L. Surface: 53.92			
hole diameter: 125MM				Northing: 6321175		bearing:		datum: AHD			
drilling information				material substance							
method	penetration	support	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material		
	1 2 3	water							soil type: plasticity or particle characteristics, colour, secondary and minor components.		
ADT		NIL		E					FILL ; Silty SAND, fine to medium grained sand, dark brown, non-plastic fines.		
				E					FILL ; Clayey SAND, fine to medium grained sand, orange/brown, low plasticity clay.		
			None Observed		53	1					
					52	2		CL	Sandy CLAY; Medium plasticity, orange/grey, fine to medium grained sand.		
					51	3					
					50	4			SANDSTONE ; Orange/pale grey.		
					49				Borehole terminated at 4.5m		
					5						
					48						
					6						
method	support		notes, samples, tests			classification symbols and soil description			consistency/density index		
AS	auger screwing*		undisturbed sample 50mm diameter			based on unified classification system			VS very soft		
AD	auger drilling*		disturbed sample						S soft		
RR	roller/tricone		standard penetration test (SPT)						F firm		
W	washbore		N*			SPT - sample recovered			St stiff		
CT	cable tool		SPT with solid cone						VSt very stiff		
DT	diatube		pressure meter						H hard		
B	blank bit		Bs bulk sample						Fb friable		
V	V bit		R refusal						VL very loose		
T	TC bit		E environmental sample						L loose		
TBX	Tubex		PID PID measurement						MD medium dense		
*bit shown by suffix e.g. ADT				WS water sample					D dense		
				PZ piezometer					VD very dense		
				ALT air lift test							

Engineering Log - Piezometer

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **17.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **17.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date started: **24.9.2007**
Date completed: **24.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **DH**
Checked by: **SD**

Borehole Location: **See Figure -**

drill model and mounting:							HAND AUGER	Easting:	357001	slope:	-90°	R.L. Surface:	50.1
hole diameter:							50 mm	Northing	6321414	bearing:		datum:	AHD
drilling information							material substance						
method	penetration 1 2 3	support NIL	water None Observed	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 penetrometer 100 200 300 400 kPa	structure and additional observations
HA							SM	TOPSOIL	Silty SAND, Fine to medium grained sand, brown.	D			TOPSOIL
					E								DUP 49
					50.0								
								SANDSTONE	Orange, pale grey.	D			HIGHLY WEATHERED BEDROCK.
					E								
					0.5								
								Borehole HA01 terminated at 0.5m					
					49.5								
					1.0								
method							notes, samples, tests						
AS	auger screwing*						U ₅₀	undisturbed sample 50mm diameter					
AD	auger drilling*						U ₆₃	undisturbed sample 63mm diameter					
RR	roller/tricone						D	disturbed sample					
W	washbore						N	standard penetration test (SPT)					
CT	cable tool						N*	- sample recovered					
HA	hand auger						Nc	- SPT with solid cone					
DT	diatube						V	vane shear (kPa)					
B	blank bit						P	pressuremeter					
V	V bit						Bs	bulk sample					
T	TC bit						E	environmental sample					
							R	refusal					
*bit shown by suffix e.g. ADT							classification symbols and soil description based on unified classification system						
support							moisture						
M	md						D	dry					
C	casing						M	moist					
penetration							W	wet					
1	2	3	4				Wp	plastic limit					
no resistance ranging to refusal							W _L	liquid limit					
water							consistency/density index						
10/1/98 water level on date shown							VS	very soft					
water inflow							S	soft					
water outflow							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 - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date started: **24.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **24.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

drill model and mounting:							HAND AUGER	Easting:	356982	slope:	-90°	R.L. Surface:	51.5				
hole diameter:							50 mm	Northing	6321457	bearing:		datum:	AHD				
drilling information							material substance										
method	penetration 1 2 3	support NIL	water None Observed	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 penetrometer 100 200 300 400 kPa	structure and additional observations				
HA							SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown.			D		TOPSOIL				
				E				SANDSTONE; Orange/pale grey.			D		HIGHLY WEATHERED BEDROCK				
					51.0	0.5		Borehole HA02 terminated at 0.5m									
					50.5	1.0											
method							notes, samples, tests										
AS	auger screwing*		support		M	mud	N	nil	undisturbed sample 50mm diameter	classification symbols and soil description			consistency/density index				
AD	auger drilling*		C		C	casing	U ₆₀		undisturbed sample 63mm diameter	based on unified classification system			VS very soft				
RR	roller/tricone		penetration		1	2	3	4	D disturbed sample				S soft				
W	washbore						U ₆₃		N standard penetration test (SPT)				F firm				
CT	cable tool						D		N' SPT - sample recovered				St stiff				
HA	hand auger						N'		Nc SPT with solid cone				VSt very stiff				
DT	diatube						Nc		V vane shear (kPa)				VH hard				
B	blank bit						V		P pressuremeter				Fb friable				
V	V bit						P		Bs bulk sample				VL very loose				
T	TC bit						E		E environmental sample				L loose				
							R		refusal				MD medium dense				
*bit shown by suffix e.g. ADT							moisture										
							D	dry	M	moist	W	wet	D dense				
									P		Wp	plastic limit	VD very dense				
										R		W _L liquid limit					

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date started: **24.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **24.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

drill model and mounting:							HAND AUGER	Easting:	356928	slope:	-90°	R.L. Surface:	41				
hole diameter:							50 mm	Northing	6321516	bearing:		datum:	AHD				
drilling information							material substance										
method	penetration 1 2 3	support NIL	water None Observed	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 penetrometer 100 200 300 400 kPa	structure and additional observations				
HA							SM	TOPSOIL; Silty SAND, fine to medium grained sand, dark brown.			D		TOPSOIL				
				E				SANDSTONE; Orange/pale grey.			D		HIGHLY WEATHERED BEDROCK				
					40.5	0.5		Borehole HA03 terminated at 0.5m									
					40.0	1.0											
method							notes, samples, tests										
AS	auger screwing*		support		M	md	N	nil	U ₅₀ undisturbed sample 50mm diameter	classification symbols and soil description			consistency/density index				
AD	auger drilling*		Casing		U ₆₃	undisturbed sample 63mm diameter	based on unified classification system			D	VS	very soft					
RR	roller/tricone		penetration		D	disturbed sample				N	S	soft					
W	washbore		1 2 3 4		N	standard penetration test (SPT)				N*	F	firm					
CT	cable tool		no resistance ranging to refusal		N*	SPT - sample recovered				Nc	St	stiff					
HA	hand auger				Nc	SPT with solid cone				V	VSt	very stiff					
DT	diatube				V	vane shear (kPa)				P	H	hard					
B	blank bit				P	pressuremeter				Bs	Fb	friable					
V	V bit				Bs	bulk sample				E	VL	very loose					
T	TC bit				E	environmental sample				R	L	loose					
*bit shown by suffix e.g. ADT										W _p	MD	medium dense					
										W _l	D	dense					
											VD	very dense					

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **24.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **24.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **D**

Borehole Location: **See *Figure -***

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **24.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

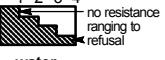
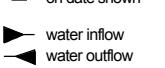
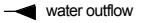
Date started: **27.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **27.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

drill model and mounting: HAND AUGER							Easting: 356967	slope: -90°	R.L. Surface: 51				
hole diameter: 50 mm							Northing 6321386	bearing:	datum: AHD				
drilling information				material substance					structure and additional observations				
method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material	moisture condition	consistency/density index	pocket penetrometer kPa	
HA	Nil	None Observed		E				SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown, some fine to medium grained gravel.	D		100 200 300 400	TOPSOIL. DUP 56
								CL	Sandy CLAY; Medium plasticity, orange/brown, fine to medium grained sand.	M<WP			RESIDUAL
				E	50.5	0.5			Borehole HA07 terminated at 0.5m				
					50.0	1.0							
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 e.g. ADT				support M mud C casing penetration 1 2 3 4  water   	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 W _{pl} 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		

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **27.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **27.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **27.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **27.9.2007**

Project: *WARNERVALE TOWN CENTRE*

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date completed: **27.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **27.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

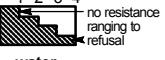
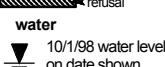
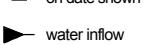
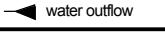
Date started: **27.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **27.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

drill model and mounting:							HAND AUGER	Easting:	356815	slope:	-90°	R.L. Surface:	54.5
hole diameter:							50 mm	Northing	6321260	bearing:		datum:	AHD
drilling information							material substance						
method	penetration 1 2 3	support NIL	water None Observed	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 penetrometer 100 200 300 400 kPa	structure and additional observations
HA							SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown, some fine grained gravel.			D		TOPSOIL
				E				SANDSTONE; Orange/brown.			D		HIGHLY WEATHERED BEDROCK
					54.0	0.5		Borehole HA12 terminated at 0.5m					
					53.5	1.0							
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 e.g. ADT							support M mud C casing penetration 1 2 3 4  water   				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	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

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date started: **27.9.2007**

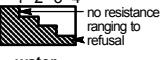
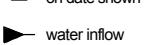
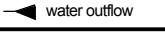
Project: **WARNERVALE TOWN CENTRE**

Date completed: **27.9.2007**

Borehole Location: **See Figure -**

Logged by: **DH**

Checked by: **SD**

drill model and mounting:							HAND AUGER	Easting:	356812	slope:	-90°	R.L. Surface:	53.5					
hole diameter:							50 mm	Northing	6321242	bearing:		datum:	AHD					
drilling information							material substance											
method	penetration 1 2 3	support NIL	water None Observed	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 penetrometer 100 200 300 400 kPa	structure and additional observations					
HA							SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown, some fine to medium grained gravel.			D		TOPSOIL					
				E				SANDSTONE; Orange/brown.			D		HIGHLY WEATHERED BEDROCK					
					53.0	0.5		Borehole HA13 terminated at 0.5m										
					52.5	1.0												
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 e.g. ADT							support M mud C casing penetration 1 2 3 4  water   					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 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	

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **27.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

drill model and mounting: HAND AUGER Easting: 356809 slope: -90° R.L. Surface: 47
 hole diameter: 50 mm Northing: 6321180 bearing: datum: AHD

drilling information				material substance													
method	penetration 1 2 3	support water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material			moisture condition	consistency/ density index	100 200 300 400	structure and additional observations			
HA		NIL					SM	soil type: plasticity or particle characteristics, colour, secondary and minor components.						TOPSOIL			
								TOPSOIL; Silty SAND, fine to medium grained sand, brown, some fine to medium grained gravel.									
			None Observed														

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **27.9.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

drill model and mounting:			HAND AUGER			Easting:	357006	slope:	-90°	R.L. Surface:	45.5					
hole diameter:			50 mm			Northing	6321347	bearing:		datum:	AHD					
drilling information						material substance						structure and additional observations				
method	penetration	support	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material			moisture condition	consistency/density index	pocket penetrometer			
	1 2 3	water						soil type: plasticity or particle characteristics, colour, secondary and minor components.			100 200 300 400	kPa				
HA		NIL	None Observed	E	45.0		SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown.			D		TOPSOIL. DUP 59			
								SANDSTONE; Orange/brown.					EXTREMELY WEATHERED BEDROCK			
				E	45.0	0.5		Borehole HA16 terminated at 0.5m								
method	support			notes, samples, tests			classification symbols and soil description			consistency/density index						
AS	auger screwing*			U ₅₀ undisturbed sample 50mm diameter			based on unified classification system			VS	very soft					
AD	auger drilling*			U ₆₃ undisturbed sample 63mm diameter						S	soft					
RR	roller/tricone			D disturbed sample						F	firm					
W	washbore			N standard penetration test (SPT)						St	stiff					
CT	cable tool			N* SPT - sample recovered						VSt	very stiff					
HA	hand auger			Nc SPT with solid cone						H	hard					
DT	diatube			V vane shear (kPa)						Fb	friable					
B	blank bit			P pressuremeter						VL	very loose					
V	V bit			Bs bulk sample						L	loose					
T	TC bit			E environmental sample						MD	medium dense					
*bit shown by suffix e.g. ADT				R refusal						D	dense					
										VD	very dense					

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date started: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **4.10.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

drill model and mounting:							HAND AUGER	Easting:	357048	slope:	-90°	R.L. Surface:	41
hole diameter:							50 mm	Northing	6321346	bearing:		datum:	AHD
drilling information							material substance						
method	penetration 1 2 3	support NIL	water None Observed	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 penetrometer kPa	structure and additional observations
HA							SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown.		D		100 200 300 400	TOPSOIL
				E				SANDSTONE; Orange/brown.		D			EXTREMELY WEATHERED BEDROCK.
					40.5	0.5		Borehole HA17 terminated at 0.5m					
					40.0	1.0							
method							notes, samples, tests						
AS	auger screwing*			support	M mud	N nil	U ₅₀	undisturbed sample 50mm diameter		classification symbols and soil description			consistency/density index
AD	auger drilling*				C casing		U ₆₃	undisturbed sample 63mm diameter		based on unified classification system			VS very soft
RR	roller/tricone			penetration	1 2 3 4		D	disturbed sample					S soft
W	washbore						N	standard penetration test (SPT)					F firm
CT	cable tool						N'	SPT - sample recovered					St stiff
HA	hand auger						Nc	SPT with solid cone					VSt very stiff
DT	diatube						V	vane shear (kPa)					H hard
B	blank bit						P	pressuremeter					Fb friable
V	V bit						Bs	bulk sample					VL very loose
T	TC bit						E	environmental sample					L loose
							R	refusal					MD medium dense
*bit shown by suffix e.g. ADT							moisture						
							D	dry					D dense
							M	moist					VD very dense
							W	wet					
							W _p	plastic limit					
							W _l	liquid limit					

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

drill model and mounting: HAND AUGER Easting: 357011 slope: -90° R.L. Surface: 43
 hole diameter: 50 mm Northing: 6321315 bearing: datum: AHD

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **4.10.2007**

Project: *WARNERVALE TOWN CENTRE*

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **DH**

Borehole Location: **See Figure -**

Checked by: **SD**

drill model and mounting: HAND AUGER Easting: 356975 slope: -90° R.L. Surface: 44.5
hole diameter: 50 mm Northing: 6321290 bearing: datum: AHD

drilling information				material substance																
method	penetration 1 2 3	support water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material			moisture condition	consistency/ density index	100 200 300 400	structure and additional observations						
HA		NIL					SM	soil type: plasticity or particle characteristics, colour, secondary and minor components.						TOPSOIL						
								TOPSOIL; Silty SAND, fine to medium grained sand, brown.				D		TOPSOIL						
			None Observed					E						EXTREMELY WEATHERED BEDROCK.						
														SANDSTONE; Orange/brown.						
												D								
								E						DUP 60						
					44.0	0.5														
								Borehole HA20 terminated at 0.5m												
								43.5 1.0												
method				support			notes, samples, tests				classification symbols and soil description			consistency/density index						
AS	auger screwing*			M mud			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							S soft						
RR	roller/tricone			penetration			D disturbed sample							F firm						
W	washbore			1 2 3 4			N standard penetration test (SPT)							St stiff						
CT	cable tool			no resistance			N* SPT - sample recovered							VSt very stiff						
HA	hand auger			ranging to refusal			Nc SPT with solid cone							H hard						
DT	diatube						V vane shear (kPa)							Fb friable						
B	blank bit						P pressuremeter							VL very loose						
V	V bit						Bs bulk sample							L loose						
T	TC bit						E environmental sample							MD medium dense						
*bit shown by suffix e.g. ADT							R refusal							D dense						
														VD very dense						

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **4.10.2007**

Borehole Location: **See Figure -**

Logged by: **DH**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date started: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **4.10.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

drill model and mounting:							HAND AUGER	Easting:	357000	slope:	-90°	R.L. Surface:	40.5							
hole diameter:							50 mm	Northing	6321239	bearing:		datum:	AHD							
drilling information							material substance													
method	penetration 1 2 3	support NIL	water None Observed	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 penetrometer 100 200 300 400 kPa	structure and additional observations							
HA							SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown.			D		TOPSOIL							
				E				SANDSTONE; Orange/brown			D		EXTREMELY WEATHERED BEDROCK.							
					40.0	0.5		Borehole HA22 terminated at 0.5m												
					39.5	1.0														
method							notes, samples, tests													
AS	auger screwing*		support		M	mud	N	nil	undisturbed sample 50mm diameter	classification symbols and soil description based on unified classification system										
AD	auger drilling*		penetration		C	casing	U ₅₀	U ₆₃	undisturbed sample 63mm diameter											
RR	roller/tricone		water		1	2	3	4	D	moisture										
W	washbore		no resistance ranging to refusal				N	N	disturbed sample	D	dry	VS	very soft							
CT	cable tool		SPT - sample recovered				N [*]	N [*]	standard penetration test (SPT)	M	moist	S	soft							
HA	hand auger		SPT with solid cone				N [*]	N [*]	SPT with solid cone	W	wet	F	firm							
DT	diatube		vane shear (kPa)				V	V	vane shear (kPa)	P ^b	pressuremeter	St	stiff							
B	blank bit		pressuremeter				P	P	pressuremeter	Bs	bulk sample	Vst	very stiff							
V	V bit		bulk sample				E	E	environmental sample	E	environmental sample	H	hard							
T	TC bit		refusal				R	R	refusal	R	refusal	Fb	friable							
*bit shown by suffix e.g. ADT														VL	very loose					
														L	loose					
														MD	medium dense					
														D	dense					
														VD	very dense					

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date completed: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **4.10.2007**

Borehole Location: **See Figure -**

Logged by: **DH**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

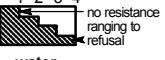
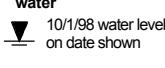
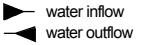
Date started: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **4.10.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

drill model and mounting:							HAND AUGER	Easting:	357092	slope:	-90°	R.L. Surface:	37.5							
hole diameter:							50 mm	Northing	6321216	bearing:		datum:	AHD							
drilling information							material substance													
method	penetration 1 2 3	support NIL	water None Observed	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 penetrometer 100 200 300 400 kPa	structure and additional observations							
HA							SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown.			D		TOPSOIL							
				E				SANDSTONE; Orange/brown.			D		EXTREMELY WEATHERED BEDROCK							
					37.0	0.5		Borehole HA24 terminated at 0.5m												
					36.5	1.0														
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 e.g. ADT							support M mud C casing penetration 1 2 3 4  water   							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 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	

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: *D*

Borehole Location: **See Figure -**

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

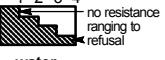
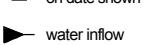
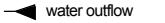
Date started: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **4.10.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

drill model and mounting:							HAND AUGER	Easting:	356940	slope:	-90°	R.L. Surface:	49
hole diameter:							50 mm	Northing	6321326	bearing:		datum:	AHD
drilling information							material substance						
method	penetration 1 2 3	support NIL	water None Observed	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 penetrometer kPa	structure and additional observations
HA							SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown, some fine to medium grained gravel.			D	100 200 300 400	TOPSOIL. DUP 62
				E				SANDSTONE; Orange/brown.			D		HIGHLY WEATHERED BEDROCK
					48.5	0.5		Borehole HA26 terminated at 0.5m					
					48.0	1.0							
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 e.g. ADT							support M mud C casing penetration 1 2 3 4  water   				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 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

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: *D*

Borehole Location: **See Figure -**

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **D**

Borehole Location: **See Figure -**

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date started: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **4.10.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

drill model and mounting:							HAND AUGER	Easting:	357066	slope:	-90°	R.L. Surface:	44.5				
hole diameter:							50 mm	Northing	6321158	bearing:		datum:	AHD				
drilling information							material substance										
method	penetration 1 2 3	support NIL	water None Observed	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 penetrometer 100 200 300 400 kPa	structure and additional observations				
HA							SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown, some fine to medium grained gravel.			D		TOPSOIL				
				E				SANDSTONE; Orange/brown.			D		HIGHLY WEATHERED BEDROCK				
					44.0	0.5		Borehole HA29 terminated at 0.5m									
					43.5	1.0											
method							notes, samples, tests										
AS	auger screwing*		support		M	mud	N	nil	undisturbed sample 50mm diameter	classification symbols and soil description			consistency/density index				
AD	auger drilling*		penetration		C	casing	U ₆₀		undisturbed sample 63mm diameter	based on unified classification system			VS very soft				
RR	roller/tricone		water		1	2	3	4	D disturbed sample				S soft				
W	washbore		no resistance ranging to refusal				U ₆₃		N standard penetration test (SPT)				F firm				
CT	cable tool		water				D		N* SPT - sample recovered				St stiff				
HA	hand auger		10/1/98 water level on date shown				N		N* SPT with solid cone				Vst very stiff				
DT	diatube		water inflow				V		V vane shear (kPa)				H hard				
B	blank bit		water outflow				P		P pressuremeter				Fb friable				
V	V bit						Bs		Bs bulk sample				VL very loose				
T	TC bit						E		E environmental sample				L loose				
*bit shown by suffix e.g. ADT							R		refusal				MD medium dense				
													D dense				
													VD very dense				

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: GEOTKARI02021AA

Principal:

Date completed: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Logged by: **DH**

Borehole Location: **See Figure -**

Checked by: **SD**

Engineering Log - Borehole

Client: **WYONG SHIRE COUNCIL**

Sheet 1 of 1
Project No: **GEOTKARI02021AA**

Principal:

Date started: **4.10.2007**

Project: **WARNERVALE TOWN CENTRE**

Date completed: **4.10.2007**

Borehole Location: **See Figure -**

Logged by: **DH**
Checked by: **SD**

drill model and mounting:							HAND AUGER	Easting:	357021	slope:	-90°	R.L. Surface:	49	
hole diameter:							50 mm	Northing	6321128	bearing:		datum:	AHD	
drilling information							material substance							
method	penetration 1 2 3	support NIL	water None Observed	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 penetrometer 100 200 300 400 kPa	structure and additional observations	
HA							SM	TOPSOIL; Silty SAND, fine to medium grained sand, brown.			D		TOPSOIL	
				E				SANDSTONE; Orange/brown.			D		HIGHLY WEATHERED BEDROCK	
					48.5	0.5		Borehole HA31 terminated at 0.5m						
					48.0	1.0								
method							notes, samples, tests							
AS	auger screwing*		support		M	md	N	undisturbed sample 50mm diameter						
AD	auger drilling*		Casing		U ₆₀			undisturbed sample 63mm diameter						
RR	roller/tricone		penetration		U ₆₃		D	disturbed sample						
W	washbore		1 2 3 4		N		N	standard penetration test (SPT)						
CT	cable tool		no resistance ranging to refusal		N*		N*	SPT - sample recovered						
HA	hand auger				Nc		Nc	SPT with solid cone						
DT	diatube				V		V	vane shear (kPa)						
B	blank bit		water		P		P	pressuremeter						
V	V bit		10/1/98 water level on date shown		Bs		Bs	bulk sample						
T	TC bit				E		E	environmental sample						
					R		R	refusal						
method							classification symbols and soil description based on unified classification system							consistency/density index
AS	auger screwing*		support		M	md	N	undisturbed sample 50mm diameter						
AD	auger drilling*		Casing		U ₆₀			undisturbed sample 63mm diameter						
RR	roller/tricone		penetration		U ₆₃		D	disturbed sample						
W	washbore		1 2 3 4		N		N	standard penetration test (SPT)						
CT	cable tool		no resistance ranging to refusal		N*		N*	SPT - sample recovered						
HA	hand auger				Nc		Nc	SPT with solid cone						
DT	diatube				V		V	vane shear (kPa)						
B	blank bit		water		P		P	pressuremeter						
V	V bit		10/1/98 water level on date shown		Bs		Bs	bulk sample						
T	TC bit				E		E	environmental sample						
					R		R	refusal						
method							classification symbols and soil description based on unified classification system							consistency/density index
AS	auger screwing*		support		M	md	N	undisturbed sample 50mm diameter						
AD	auger drilling*		Casing		U ₆₀			undisturbed sample 63mm diameter						
RR	roller/tricone		penetration		U ₆₃		D	disturbed sample						
W	washbore		1 2 3 4		N		N	standard penetration test (SPT)						
CT	cable tool		no resistance ranging to refusal		N*		N*	SPT - sample recovered						
HA	hand auger				Nc		Nc	SPT with solid cone						
DT	diatube				V		V	vane shear (kPa)						
B	blank bit		water		P		P	pressuremeter						
V	V bit		10/1/98 water level on date shown		Bs		Bs	bulk sample						
T	TC bit				E		E	environmental sample						
					R		R	refusal						
method							classification symbols and soil description based on unified classification system							consistency/density index
AS	auger screwing*		support		M	md	N	undisturbed sample 50mm diameter						
AD	auger drilling*		Casing		U ₆₀			undisturbed sample 63mm diameter						
RR	roller/tricone		penetration		U ₆₃		D	disturbed sample						
W	washbore		1 2 3 4		N		N	standard penetration test (SPT)						
CT	cable tool		no resistance ranging to refusal		N*		N*	SPT - sample recovered						
HA	hand auger				Nc		Nc	SPT with solid cone						
DT	diatube				V		V	vane shear (kPa)						
B	blank bit		water		P		P	pressuremeter						
V	V bit		10/1/98 water level on date shown		Bs		Bs	bulk sample						
T	TC bit				E		E	environmental sample						
					R		R	refusal						
method							classification symbols and soil description based on unified classification system							consistency/density index
AS	auger screwing*		support		M	md	N	undisturbed sample 50mm diameter						
AD	auger drilling*		Casing		U ₆₀			undisturbed sample 63mm diameter						
RR	roller/tricone		penetration		U ₆₃		D	disturbed sample						
W	washbore		1 2 3 4		N		N	standard penetration test (SPT)						
CT	cable tool		no resistance ranging to refusal		N*		N*	SPT - sample recovered						
HA	hand auger				Nc		Nc	SPT with solid cone						
DT	diatube				V		V	vane shear (kPa)						
B	blank bit		water		P		P	pressuremeter						
V	V bit		10/1/98 water level on date shown		Bs		Bs	bulk sample						
T	TC bit				E		E	environmental sample						
					R		R	refusal						