## Former Nursery and Track



Partly demolished greenhouse.



Partly demolished shed and former dwelling on level top bench, Lot 521.



Former nursery benched areas.



Farm dam in southern portion of former nursery.



Farm dam in southern portion of former nursery.

## Former Quarry



Paddock area on Lot 521.



Bitumen and gravel access road into Nursery though the former quarry extents.



Paddock area on Lot 521.



Disturbed area north of access track from Hakone Road on Lot 54.



Disturbed area south of access track on Hakone Road, Lot 54.



Embankment on southern edge of landfill, Lot 54.



Dumped rubbish at southern edge of Lot 54, northern edge of Lot 51.

#### **Former Landfill**



Main benched area of former quarry/landfill.



Partially exposed concrete pipe on edge of drainage swale in main benched area of former quarry/landfill.



Surface rubbish dumped in lower irregular area of former quarry/landfill.



Surface rubbish (roadworks) dumped in lower irregular area of former quarry/landfill.



Piles of rubbish in lower irregular quarry area on track eastern margin.



Example of fill exposed in test pit spoil

#### **Eastern Forested and Track**



Gate and access track from Hakone Road.



Stockpiles of former quarry waste on edge of main track from Hakone Road, Lot 55.

#### **Southern Forested**



Illegal dumping on eastern edge of southern forested Lot 4.



Illegal dumping on eastern edge of southern forested Lot 4.

#### Former Rural-Residential



Old driveway and dirt access track into Lot 51. Joins up to landfill.



Old driveway into Lot 52.



Cut pad of former greenhouses on Lot 51, and illegal dumping.



Dam, and fill upslope exposed in ETP75, Lot 51.



Fibro cement sheeting sampled with SS92 near dam, Lot 51.

## Eastern Boundary Track



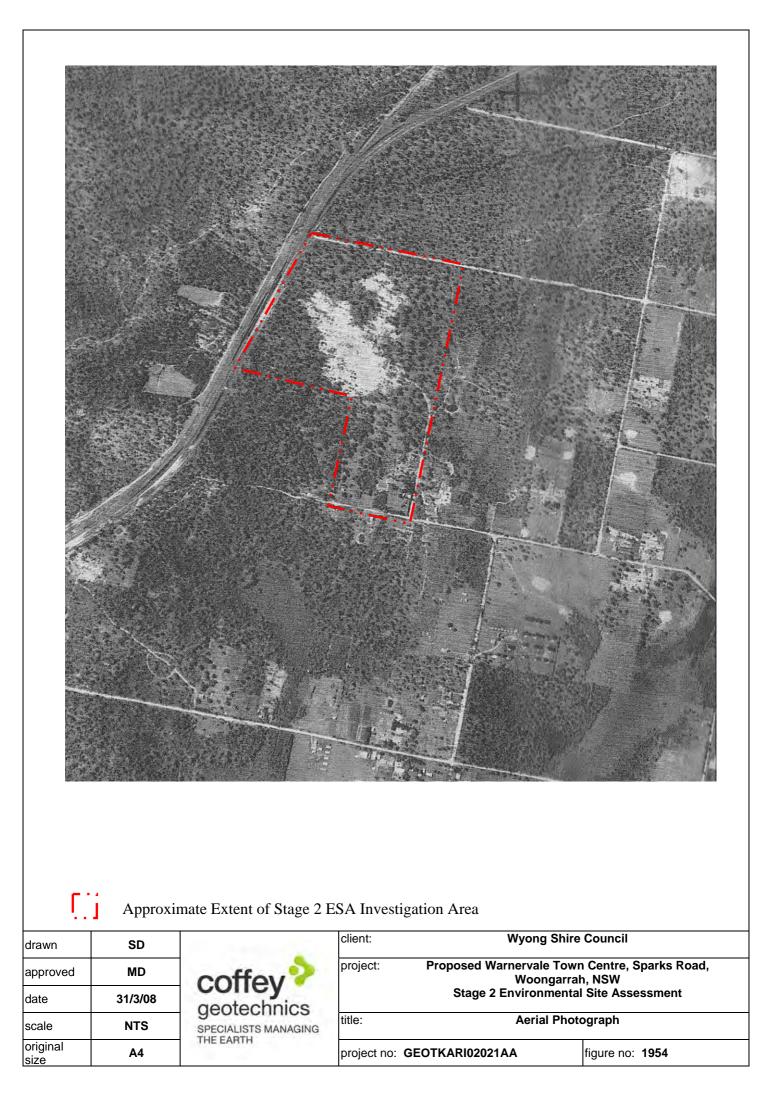
Dirt drive comprising Lot 1 DP375712 and Lot 1 DP371647.



Construction waste being dumped on western side of drive, onto Lot 52.

## Appendix B

Aerial Photographs

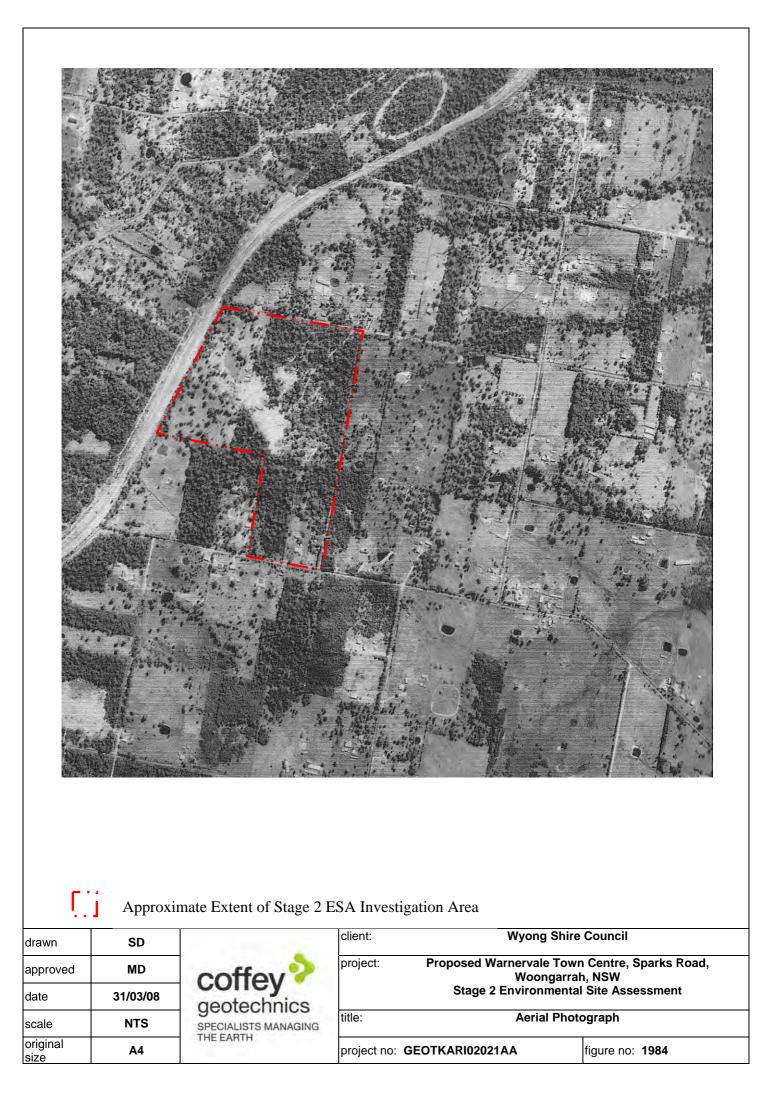




Uï

Approximate Extent of Stage 2 ESA Investigation Area

drawn	SD	States and States	client:	Wyong Shire	Council
approved	MD	coffey	project:	Proposed Warnervale Tow Woongarra	•
date	31/03/08	geotechnics		Stage 2 Environmenta	I Site Assessment
scale	NTS	SPECIALISTS MANAGING	title:	Aerial Phot	ograph
original size	A4	THE EARTH	project no:	GEOTKARI02021AA	figure no: 1975





Ūï

Approximate Extent of Stage 2 ESA Investigation Area

drawn	SD	and the second sec	client:	Wyong Shire	Council
approved		coffey	project:	Proposed Warnervale Town Woongarra	•
date	22/11/07	geotechnics		Stage 2 Environmenta	I Site Assessment
scale	NTS	SPECIALISTS MANAGING	title:	Aerial Phot	ograph
original size	A4	THE EARTH	project no:	GEOTKARI02021AA	figure no: 1994

# Appendix C

Borehole Logs

1	-	r	A	f	NO	9	0	ne	ote	chnics								
C		C	/		Ξy	1	2	,		ion nuo			E	Boreho	e No	).	EBH0	01
Ε	n	ıg	ir	e	ering	j L	og	- E	Bor	ehole				Sheet Project	No:		1 of 1 <b>GEOTK</b>	(ARI02021AA
Clie	ent	t:			WY	ONG	SHI	RE C	OUN				[	Date sta	artec	:	13.9.20	07
Pri	nci	ipal	:										[	Date co	mple	etec	: <b>13.9.20</b>	07
Pro	oje	ct:			WAI	RNE	RVA	LET	OWN	CENTRE			L	ogged	by:		DH	
Bo	reh	nole	Lo	catio	n: See	Fig	ure -						(	Checke	d by		SD	
drill	mc	odel	and	mour	iting:	MOBIL	E DRIL	L		Easting: 356822	slope:	-90°				R.L	. Surface: 3	6
			eter:	rmati		125 m	m	mat	arial au	Northing 6321563 bstance	bearing:					dat	um: A	HD
	-	-		mau	notes									∕ ×	÷.	<u>.</u>		
method		N penetration	support	water	samples, tests, etc	RL	depth metres	graphic log	classification symbol	materi soil type: plasticity or par colour, secondary and n	ticle characteristics	S,	moisture condition	consistency/ density index	200 A pocket	a		icture and al observations
ADV		Ī	NI	ed	E	_		7/19)	SC	BITUMEN; Gravelly Clayey SAND; Fine	to modium grained		М				BITUMEN PAV	EMENT
∢				Serv			-			orange-brown, fine to coarse gr plasticity fines, orange/brown.	ained gravel, low	i Saliu,					COLLOVIAL	-
				None Observed			-		CL	Sandy CLAY; Medium to high	plasticity, orange,		M=WP				RESIDUAL -	
				Ž	E					sand, gravel fines.								-
						35	1											
							-	-		Borehole EBH001 terminated at	: 1m							-
							-	-										-
							-	-										-
							-	-										-
						_34	2											
							-	-										
							-	-										-
																		-
						_33	3											
							-	_										-
							-	-										
							-	-										-
							-	-										-
						_32	4											
							-											-
							-	-										-
																		-
						_31	5	_										_
							-	_										
							-	-										
							-	-										
							-	-										-
me AS AD RR W CT HA DT B V T		d	a ro c h d b V	uger s uger d oller/tri vashbo able to and au iatube lank bi / bit 'C bit	cone ore iol iger	M C pe	ater 10/1/9		evel	notes, samples, tests           U <sub>50</sub> undisturbed sample 50mr           U <sub>53</sub> undisturbed sample 63mr           D         disturbed sample 63mr           N         standard penetration test           N*         SPT - sample recovered           Nc         SPT with solid cone           V         vane shear (kPa)           P         pressuremeter           Bs         bulk sample           E         environmental sample	m diameter m diameter t (SPT)		ription unified cl				consistency/v VS F St VSt H Fb VL L MD	density index very soft soft firm stiff very stiff hard friable very loose loose medium dense
	shc	own	oy su				water	inflow		R refusal		indu					D	dense

Form GEO 5.3 Issue 3 Rev.2

C	C	)f	f	ey	9	g	geo	ote	chn	ics				Boreho	le No	).	EBH	002	
	no	in		orino	. 1	00	c	Por	ehole				ę	Sheet			1 of 1		
—		<b>j</b> II	IE		·					;			I	Project	No:			KARI02021	AA
Cli	ent:			WYC	DNG	SHI	RE C	OUN	CIL				I	Date sta	arted	:	13.9.2	007	
Pri	ncipa	l:											I	Date co	mple	eted	: <b>13.9.2</b>	007	
Pro	oject:			WAF	RNE	RVA	LET	OWN	CENTRE	Ξ			I	Logged	by:		DH		
Во	rehole	e Loc	catio	n: See	Fig	ure -							(	Checke	d by:		SD		
drill	model	and	moun	iting:	MOBIL	E DRIL	L		Easting:	356768	slope:	-90°				R.L	. Surface:	41	
	e diame				125 m	m	<b>i</b> .		Northing	6321490	bearin	ıg:				dati	um:	AHD	
ar	illing ਿ	_	mat		1		mate		bstance				1	~ ×		5	1		
method	5 penetration	5	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	soil ty colo	pe: plasticity or	terial particle characte nd minor compon	ristics, ents.	moisture condition	consistency/ density index	100 A pocket	'a		ructure and nal observations	s
ADV		NIL	,ed	E			<u> }  </u>	SM	TOPSOIL; black and b		to medium grain	ed sand,	М			Π	TOPSOIL		
~			Observed		1	-		CL		Y; Low to medi	um plasticity, pal	e grey,	M <pl< td=""><td></td><td></td><td></td><td>RESIDUAL</td><td></td><td></td></pl<>				RESIDUAL		
			None O		-	-													
			٩	E		-													
					40	1													
						_			Borehole E	BH002 terminate	d at 1m								
						_													
						_													
						_													
					_39	2													
						_													
						_													
						-	-												
						-													
					_38	3													
						-													
						-													
						-	-												
						-													
					_37	4													
						-													
						-													
						-													
						-													
					_36	5													
						-													
						-													
						-													
					05	-													
	thod	-		crowing*		pport	· .	l I në	notes, sam		Omm diamate-			mbols an	d			y/density index	
AS AD RR		а	uger s uger d oller/trie		С	mud casing		l nil	U <sub>63</sub> u	indisturbed sample 5 indisturbed sample 6 listurbed sample				lassificatio	n		VS S F	very soft soft firm	
W CT		w	ashbo /ashbo	ore	pe 1	netratio	no resista	nce	N s	ilisturbed sample standard penetration SPT - sample recove		system moistur	.e				F St VSt	stiff	
HA DT		h	able to and au iatube				ranging to refusal		Nc S	SPT with solid cone		D d	ry noist				H Fb	very stiff hard friable	
B V		b	latube lank bil ′ bit	t		10/1/9	8 water I e shown		Р р	rane shear (kPa) pressuremeter pulk sample		W w	ioisi vet astic limit				FD VL L	very loose loose	
т	shown	Т	Cbit			- water			E e	uik sampie environmental sample efusal	e		asuc irriit quid limit				MD D	noose medium dense dense	
e.g.			DT			water				210301							VD	very dense	

1	-	r	f	f		9	0	ne	ote	chnics						
•	-	C	/		Ξy	1	2	,	0.0	onnioo			Boreho	le No	).	EBH003
E	in	ng	ir	e	ering	g L	og	- E	Bor	ehole			Sheet Project	No:		1 of 1 <b>GEOTKARI02021AA</b>
Cli	ent	t:			WY	ONG	SHI	RE C	OUN			I	Date st	arted		13.9.2007
Pri	nci	ipal										I	Date co	mple	etec	t: <b>13.9.2007</b>
Pro	oje	ct:			WA	RNE	RVA	LET	OWN	CENTRE		I	ogged	by:		DH
Во	reh	nole	Lo	catio	n: See	Fig	ure -					(	Checke	d by		SD
drill	mc	odel	and	mour	iting:	MOBIL	E DRIL	L		Easting: 356774 slo	ope: -90°	,			R.L	Surface: 44
		ame				125 m	m	1			earing:				dat	um: AHD
ar	-	<u> </u>		mat		1				bstance			~ X	+	)	1
method		N penetration	support	water	notes samples, tests, etc		depth metres	graphic log	classification symbol	material soil type: plasticity or particle chara colour, secondary and minor comp	acteristics, ponents.	moisture condition	consistency/ density index	100 A pocket	a	structure and additional observations
ADV			NIL	/ed		-		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	CL	BITUMEN; Sandy CLAY; Low to medium plasticity,	orange-brown.	M <pl< td=""><td></td><td></td><td></td><td>BITUMEN PAVEMENT</td></pl<>				BITUMEN PAVEMENT
				Observed	E	-				some quartz gravel.	orange promi,					
				None C			_									
				ž	E		_									
						43	1			Borehole EBH003 terminated at 1m						
							-	-								
							-	-								
							-	-								-
						40	2	-								-
						_42	<u> </u>									-
							-	-								-
							_									
						_41	3									_
							-	-								
							-	-								
							-	-								-
						40	4									-
						_40	-									-
							-									-
							-	-								
						_39	5									_
							-									
							-	-								-
							-	-								-
						38	6									-
AS AD RR W CT HA DT B V T			a ro c h d b V T y su	uger d bller/tri vashbo able to and au iatube lank bi / bit 'C bit	cone ore iol iger	Su M C pe 1	mud casing peretratio 2 3 4 ater 10/1/9 - on dat	no resista ranging to refusal 8 water l e shown	evel	notes, samples, tests           U <sub>50</sub> undisturbed sample 50mm diameter           U <sub>53</sub> undisturbed sample 63mm diameter           D         disturbed sample 63mm diameter           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	soil des based o system D d M n W v Wp p				<u></u>	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

Form GEO 5.3 Issue 3 Rev.2

C		0	t	t	ey	0	9	geo	ote	chni	CS				Boreho	le No	).	EBH	004
										ehole					Sheet			1 of 1	
		y		60							7				Project				KARI02021AA
Clie	ent:				WYC	DNG	SHIF	RE C	OUN	CIL				I	Date sta	arted	:	13.9.2	
Pri	ncip	al:												I	Date co	mple	eted	: <b>13.9.2</b>	2007
Pro	oject	:			WAF	RNE	RVAI	LE T	OWN	CENTRE	ł			I	_ogged	by:		DH	
Во	rehc	ole L	_006	atior	n: <b>See</b>	Fig	ure -							(	Checke	d by		SD	
drill	mod	el a	nd m	noun	ting:	MOBIL	E DRIL	L		Easting:	356740	slope	: -90°			-	R.L	Surface:	43
	e diar					125 m	m	•		Northing	6321453	bearir	ng:				datu	ım:	AHD
dr	illing	_	forr	nati	on		1	mat		Ibstance					;	<u> </u>			
method	12		support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	soil typ colou	be: plasticity or	erial particle characte id minor compon	eristics, ients.	moisture condition	consistency/ density index	100 A pocket	<b>'</b> a	-	tructure and onal observations
ADV			NIL	ed	Е				CL	Sandy CLA	Y; Low to medi	um plasticity, ora	nge-brown.	M=PL				RESIDUAL DUP 6	
◄				Observed		1	-												
				le Ob			-												
				None	Е		-												
							-												
						42		<u>[]-[] [</u> ]		Borehole EB	H004 terminate	d at 1m							
							-												
							-												
							-												
						_41	2												
							-												
							_												
							-												
							_												
						_40	3_												
							_												
							_												
							_												
							_												
						_39	4												
								1											
						_38	5	1											
								1											
						1	-	1											
							_												
							-	1											
						27	6	1											
	thod			ar -			pport		 	notes, sam		0			nbols an	d			cy/density index
AS AD			au	ger dr		С	mud casing		l nil	U <sub>63</sub> un	ndisturbed sample 5 ndisturbed sample 6				lassificatio	n		VS S	very soft soft
RR W			wa	ler/tric ashbo	re	pe 1	netratio	n no resista	nce	N sta	sturbed sample andard penetration		system					F St	firm stiff
CT HA DT B				ble too nd au				ranging to refusal		NC SF	PT - sample recove PT with solid cone	red	<b>moistur</b> D dr					VSt H	very stiff hard
DT B				itube ink bit		wa	n <b>ter</b> 10/1/9	8 water I	evel		ane shear (kPa) essuremeter			ioist iet				Fb VL	friable very loose
V T			V I TC	bit bit		<u> </u>	on dat	e shown		Bs bu	ılk sample nvironmental sample	e		astic limit juid limit				L MD	loose medium dense
*bit e.g.	show	/n by	suffi AD				water				fusal							D VD	dense very dense

0	-		f	f	ev	2	C	le	ote	chni	CS			_							
•		-	-		J									I	Boreho	le No	Э.	E	BHOO	)5	
Е	n	a	in	e	erinc	ı L	oa	- E	3or	ehole	į				Sheet	N.s.			of 1	ARI020	24 1 1
	ent:	-				·									Project		4·		7.9.200		2144
	ncip						•	•							Date co			_	7.9.200		
	oject				WAI	RNE	RVAI		OWN	CENTRE	-				_ogged			D			
	-		Loc	atio			ure -				'				Checke	-	<i>.</i>	S			
				moun			AUGEF			Easting:	356856	slop	e: -90°					Surface		}	
	e dia					50 mm	1			Northing	6321132	bear	ring:				dat	tum:	A	HD	
di		_	nfor	mati		1	+	mate		bstance					~ X	+	þ	1			
method		s penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	soil ty colou	mat pe: plasticity or ur, secondary ar	terial particle charact nd minor compo	teristics, onents.	moisture condition	consistency/ density index	<sup>100</sup> × pocke	300 benetro- 400 meter			cture and I observati	ions
ΗA		ÌÌ	NIL	Ived	E	+			SM	TOPSOIL; brown, some	Silty SAND, fine	e to medium gra grained gravel.	ained sand,	D			Π	TOPS	JIL		
				Observed				ιχΠζ			E; Orange/brow			D	-			HIGHL	Y WEATH	IERED BED	DROCK _
			-	None (	E		<u> </u>			Borehole EE	3H005 terminate	d at 0.5m									
							-														-
						_47	1														
							-														-
							-														_
																					_
						_46	2														
							-														-
																					-
							-														_
						45	3														-
							_														-
							_														_
							_														-
						_44	4														_
							-														-
																					-
																					_
						_43	5														_
							-														-
							-														-
							-														-
						42	6						•								-
me AS AD RR W CT		- 1	au ro w	uger s uger di oller/tric ashbc able to	cone	su M C	ipport mud casing 2 3 4	o <b>n</b> no resista	l nil	U <sub>63</sub> ur D di N st	ples, tests ndisturbed sample 5 ndisturbed sample 6 isturbed sample andard penetration PT - sample recove	3mm diameter test (SPT)	soil des	cation syn cription n unified c			<u> </u>	Con VS S F St VSt	-	very soft soft firm stiff very stiff	ſ
ha Dt			ha di	and au atube	ıger	wa	ater	ranging to refusal		Nc Si V va	PT with solid cone ane shear (kPa)	-	D d M n	ry noist				H Fb		hard friable	
B V T			V	ank bit bit C bit	:	-		8 water l e shown		Bs bu	ressuremeter ulk sample nvironmental sample	٩	Wp p	vet lastic limit quid limit				VL L MD		very loose loose medium den:	89
	shov	vn b	y suf				wateri watero				efusal	-	**L III					D VD		dense very dense	

Form GEO 5.3 Issue 3 Rev.2

C	1	1	f	f	av	9	0	aed	ote	chn	ics								
C	~				-y	2	2	,		0				E	Boreho	e No	).	EBH006	
E	n	gi	in	ee	ering	L	og	- E	Bor	ehole	9				Sheet <sup>D</sup> roject	No:		1 of 1 <b>GEOTKARI0202</b>	1AA
Clie	ent:				WYC	NG	SHIF	RE C	OUNC	CIL				[	Date sta	arted	I:	13.9.2007	
Prir	ncip	al:												[	Date co	mple	eted	13.6.2007	
Pro	ject	:			WAF	RNE	RVAI	LE T	OWN	CENTRE	Ē			L	_ogged	by:		DH	
Bor	eho	le	Loc	atior	n: <b>See</b>	Fig	ure -							(	Checke	d by:	:	SD	
drill	mode	el a	ind r	noun	ting: I	MOBIL	E DRIL	L		Easting:	356780	slope:	-90°				R.L	. Surface: 36	
	dian			mati		125 mi	m			Northing	6321540	bearin	g:				datu	im: AHD	
an		_		nau		1				bstance					X	÷	5		
σ	nenetration		ť		notes samples,			c log	icatio		ma	terial		ion Lie	tency y inde	pocket	neter	structure and additional observation	ıs
method			support	water	tests, etc		depth	graphic log	classification symbol	soil ty	pe: plasticity or	particle character	ristics,	moisture condition	consistency/ density index	kP	Pa		
	12	23	NIL	>	E	RL	metres	15115	SM	TOPSOIL;	Sandy Clayey	SILT, low plasticity		M=PL	00	<u></u> 3 9 9 9	88	TOPSOIL. DUP 5	
ADV						-	-	Rift	SC		ND; Fine to me	dium grained sand	, brown,	M/W					
							-	/		pale yellow.					-				
					Е		-		CL		Y; LOW to med	ium plasticity, orar	ige-brown.	M=PL				RESIDUAL. NO H.C ODOUR	-
				/ed		35	-												-
				Observed		_00													
				None C															-
				Ž															_
							_												-
						_34	2_		СН	Canada CLA					-			EXTREMELY WEATHERED	
							_		СН	grey - greer		nigh plasticity, pale	e grey and	M <pl< th=""><th></th><th></th><th></th><th>CLAYSTONE.</th><th></th></pl<>				CLAYSTONE.	
					E	-	-												
					L		-	41147	1	Borehole El	BH006 terminate	ed at 2.55m							-
							-												-
						_33	3_												
							-												-
							-												-
																			-
						_32	4												
							_												-
							_												
							_												-
							-												-
						_31	<u>5</u>												_
							-												-
							-												-
							-												-
						30	6												-
met AS	hod		 	lder e	crewing*	su	pport mud	N	nil	notes, sam U₅₀ u	iples, tests indisturbed sample :	50mm diameter	classific soil des		nbols an	d		consistency/density index VS very soft	
AD RR			au	iger di Iger/tric	illing*	С	casing			U <sub>63</sub> и	Indisturbed sample				lassificatio	n		S soft F firm	
W CT			w	ashbo ible to	re		netratio	no resista ranging to	nce	N s	standard penetration		moistur	e				St stiff VSt very stiff	
ha Dt			ha dia	and au atube	ger	wa	iter	refusal		Nc S V v	PT with solid cone ane shear (kPa)		D di M m	y ioist				H hard Fb friable	
B V			V	ank bit bit		⊻		3 water le e shown		P p Bs b	oressuremeter oulk sample		Wp pl	et astic limit				VL very loose L loose	
T *bit	show	n by					water i				environmental samp efusal	le	W <sub>L</sub> lic	juid limit				MD medium dense D dense	

Form GEO 5.3 Issue 3 Rev.2

coffey	geotechnics	
concy	0	

			-	14	Ξy	2	2	,						E	Boreho	le N	0.		EBH007	
F	n	ai	n	00	ring	. 1	oa	- F	Ror	ehole					Sheet				1 of 1	
		<u>y</u> ı					SHIF				7				Project				GEOTKARI02021, 13.9.2007	4A
	ent:	al			<i>wr</i> c	/NG	Shir		JOIN	JIL					Date st			- d-		
	incip				14/44		D\///	ET	<u> </u>	CENTRE	-				Date co			eu.	DH	
	oject oreho		00	ation			ure -		<i></i>	CENTRE					_ogged	-			SD	
_						-	E DRIL			Easting:	356825	slope:	-90°		Checke	ia by		1	Surface: 44	
	e dia				0	125 m				Northing	6321477	bearing						atu		
d	rillin	_	forr	nati	on		;	mate		bstance						-				
method		herieriario	support	water	notes samples, tests, etc		depth metres	graphic log	classification symbol	soil typ	mate pe: plasticity or p ur, secondary and		istics,	moisture condition	consistency/ density index	k	a penetro-		structure and additional observations	
	12	23	s Nil			RL	metres	ۍ ۱۲۱۱۲	SM		SAND; Fine to			M	00	9 00	184	1 1 1	TOPSOIL	
ADV				None Observed	E	-	-		CL	dark brown.	Low to medium	-		M <pl< td=""><td></td><td><math>\left  \right  \right </math></td><td></td><td></td><td>RESIDUAL</td><td></td></pl<>		$\left  \right  \right $			RESIDUAL	
				e Obs			-									$\left  \right  \right $				-
				Non	Е		-		CL	some orange	Medium to high e-brown mottling.	plasticity, pale g	rey,			$\left  \right  \right $				-
						43	-									$\left  \right  \right $				-
						43		/////		Borehole EB	3H007 terminated	at 1m					$\dagger$			
							-	1								$\left  \right  \right $				-
																				-
							_													-
						_42	2													_
							_													_
							_													-
							-													-
							-													-
						_41	3_													_
							-													-
							-													-
							-													-
						40	4	1												-
						<b>–</b>	-	1								$\left  \right  \right $				
																$\left  \right  \right $				-
																$\left  \right  \right $				-
							_									$\left  \right  \right $				-
						_39	<u>5</u>	l								$\left  \right  \right $				_
							-									$\left  \right  \right $				-
							-									$\left  \right  \right $				-
							-	ł								$\left  \right  \right $				-
							-									$\left  \right  \right $				-
AS AC	)		au roli wa	ger so ger dr ler/tric ashbo ble too	xone re	M C	6 pport casing netratio 2 3 4	<b>n</b> no resistar	nil	U <sub>63</sub> ur D dit N st	ples, tests ndisturbed sample 50 ndisturbed sample 63 sturbed sample andard penetration to PT - sample recovered	mm diameter est (SPT)	soil des	cation syr cription n unified cl					consistency/density index       VS     very soft       S     soft       F     firm       St     stiff       VSt     very stiff	
HA			ha	nd au nd au		wa	ater	ranging to refusal		Nc SF	PT with solid cone ane shear (kPa)		D d	ry noist					H hard Fb friable	
B V				ınk bit		<b>_</b>	10/1/98	8 water le e shown	evel	P pr	ressuremeter ulk sample		W w	vet lastic limit					VL very loose L loose	
T *bit	t shov	/n by	TC suffi	bit x			- water i	inflow		E er	nvironmental sample efusal			quid limit					MD medium dense D dense	
		-	AD	T		-◄	water	outflow											VD very dense	

Image: Section	0	2	١f	f	OV	2	0	aed	ote	chnics						
Engineering     VirONG SHIRE COUNCIL     Date standed:     13.9.2007       Principal:     VIRONG SHIRE COUNCIL     Date standed:     13.9.2007       Principal:     VIRONG SHIRE COUNCIL     Date standed:     13.9.2007       Principal:     VIRONG SHIRE COUNCIL     Early Standed:     Date complete:     13.9.2007       Principal:     VIRONG SHIRE COUNCIL     Early Standed:     Date complete:     13.9.2007       Borehold Location:     See Figure -     Checked by:     Soft     All       Borehold Location:     Note figure -     Checked by:     Soft     All       Borehold Location:     Note figure -     Checked by:     Soft     All       Borehold Location:     Received Location:     Received Location:     All     Checked by:     Soft       Borehold Location:     Received Location:     Received Location:     Received Location:     All     Checked by:     Soft       Borehold Location:     Received Location:     Rece	•				Cy	2		,						le No.		
Clent:     WYONG SHIRE COUNCL     Date stanted:     13.6.2007       Principal:     Date complete:     13.6.2007       Principal:     Date complete:     13.6.2007       Dentrote Location:     See Figure -     Checker by     SD       Simulation:     See Figure -     Checker by     SD       Simulation:     Torm Number (60:256)     dentrote complete:     13.6.2007       Simulation:     Torm Number (60:256)     material     softwarter complete:     13.6.2007       Simulation:     Torm Simulation:     Torm Simulation:     Torm Simulation:     10.00000000000000000000000000000000000	Ε	ng	ir	e	ering	I L	og	- E	Sor	ehole				No:		
Protection:       WERNENCE TOWN CENTRE       Logget in       Definition         Bit model and manning       MORE FORM:       See 1       Control 1000       See 1       See 1         Bit model and manning       MORE FORM:       Events       See 1       See 1 </td <td></td> <td></td> <td>,</td> <td></td> <td></td> <td>·</td> <td></td>			,			·										
Project:       WERKENLETOWN CENTRE       Logget in       Decket in:       Decket	Pri	ncipal	:										Date co	mplete	ed:	13.9.2007
Benched Location:       See Figure -       Checken by:       Set <ul> <li></li></ul>					WΔF	RNF	RVA	FT	OWN	CENTRE						
Hill model and mounting       MOSELE DRLL       Easting       306838       slope       40"       R.L. Sunface:       40         Interdiment       105 mm       Northing       051036       bearing:       datam       AHD         Interdiment       105 mm       Northing       051036       bearing:       datam       AHD         Interdiment       105 mm       Northing       051036       bearing:       datam       AHD         Interdiment       105 mm       Northing       051036       bearing:       Interdiment       AHD         Interdiment       1010       0510       Interdiment       Interdiment <td></td> <td>-</td> <td></td> <td>ratio</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>02/////2</td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td>		-		ratio						02/////2				-		
Into damin         125 mm         Northing         62123         baring         call         Autom         Autom           cmlling         matrixel         readerial substance         readerial substance         readerial substance         readerial substance         readerial substance         readerial substance           readerial         readerial substance         readerial substance         readerial substance         readerial substance         readerial substance         readerial substance           readerial         readerial         readerial substance         readerial substance         readerial substance         readerial substance         readerial substance           readerial         readerial         readerial         readerial substance         readerial substance         readerial substance         readerial substance         readerial substance           readerial         readerial         readerial         readerial substance         readerial substance <t< td=""><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Easting: 356838</td><td>slope: -90°</td><td></td><td>CHECKE</td><td></td><td>L Su</td><td></td></t<>			-							Easting: 356838	slope: -90°		CHECKE		L Su	
Bit Holds         Index somption         Bit Holds					-	125 m	m			Northing 6321526	bearing:					
8         12.3         8         9         N         0         90         0 <th0< th="">         0         0         0</th0<>	dr		nfo	mat	on	-	1	mate		bstance			1		1	
9     Image construction     Image construction <t< th=""><th>method</th><th></th><th>support</th><th>water</th><th>samples,</th><th>RL</th><th></th><th>graphic log</th><th>classification symbol</th><th>soil type: plasticity or particle cl</th><th>haracteristics, xomponents.</th><th>moisture condition</th><th>consistency/ density index</th><th>kPa</th><th></th><th></th></t<>	method		support	water	samples,	RL		graphic log	classification symbol	soil type: plasticity or particle cl	haracteristics, xomponents.	moisture condition	consistency/ density index	kPa		
Image: Source State and Source State and Source State and Source State and Source State S	ADV		NIL	-	E					roots and organics.						
E						1				Gravelly Clayey SAND; Fine to coa	rse grained sand,	<b>'</b> ]				
network       38       2         38       3       2         38       2         37       3         38       2         37       3         38       4         38       5         38       5         38       5         38       5         38       5         38       5         38       5         38       6         38       7         38       7         39       6         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1         30       1 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td>CL</td> <td>Sandy Silty CLAY; Medium to high</td> <td>plasticity, pale</td> <td>-</td> <td></td> <td></td> <td>R</td> <td>ESIDUAL</td>						-			CL	Sandy Silty CLAY; Medium to high	plasticity, pale	-			R	ESIDUAL
method					E		-									
method						_39	1									-
method							-									
method							-									
method				/ed			-									
method				bser			-									
method				one O		_38	2									-
method       a.ge convergent       37       3       -       -       -       -       -       NO GROUNDWATER INFLOW.         36       4       - <t< td=""><td></td><td></td><td></td><td>ž</td><td></td><td></td><td>-  </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>				ž			-									
method       a.ge convergent       37       3       -       -       -       -       -       NO GROUNDWATER INFLOW.         36       4       - <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>-  </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							-									
_37       3       _37       3         _38       4							-			Some Siltsone and Sandstone Gravel					BE	EDROCK
method       36       4       Borehole EBH008 terminated at 4m       -         36       4       Borehole EBH008 terminated at 4m       -       -         36       4       -       -       -       -         36       4       -       -       -       -       -         36       4       -       -       -       -       -         36       4       -       -       -       -       -         36       4       -       -       -       -       -       -         36       4       -       -       -       -       -       -       -         36       4       -						07	-									J GROUNDWATER INFLOW.
method       34       6         method       34       6         AS       auger screwing* AD       support       notes, samples, tests       cassification symbols and outsubted sample 60mm dameter U <sub>3</sub> cassification symbols and consistency/density index       consistency/density index         AS       auger screwing* AD       M md       N nil C casing       notes, samples, tests       classification symbols and solid description       consistency/density index         FR       rollentricone       M md       N nil C casing       notes, samples, tests       classification symbols and solid description       consistency/density index         FR       rollentricone       N md       N md       N md charder       S soft         Portication       N md charder       N soft-density index       S soft       S soft         Particition       N md charder       N soft-density index       S soft       S soft         V       N md charder       N soft-density index       S soft       S soft         Particition       N md charder       N soft-density index       S soft         V       V soft-martal sample       N soft-density index       S soft         Particition       N soft-density index       N soft-density index       S soft         V       V soft<						_3/	3									-
method       34       6         method       34       6         AS       auger screwing* AD       support       notes, samples, tests       cassification symbols and outsubted sample 60mm dameter U <sub>3</sub> cassification symbols and consistency/density index       consistency/density index         AS       auger screwing* AD       M md       N nil C casing       notes, samples, tests       classification symbols and solid description       consistency/density index         FR       rollentricone       M md       N nil C casing       notes, samples, tests       classification symbols and solid description       consistency/density index         FR       rollentricone       N md       N md       N md charder       S soft         Portication       N md charder       N soft-density index       S soft       S soft         Particition       N md charder       N soft-density index       S soft       S soft         V       N md charder       N soft-density index       S soft       S soft         Particition       N md charder       N soft-density index       S soft         V       V soft-martal sample       N soft-density index       S soft         Particition       N soft-density index       N soft-density index       S soft         V       V soft<							-									
method       34       6         method       34       6         AS       auger screwing* AD       support       notes, samples, tests       cassification symbols and outsubted sample 60mm dameter U <sub>3</sub> cassification symbols and consistency/density index       consistency/density index         AS       auger screwing* AD       M md       N nil C casing       notes, samples, tests       classification symbols and solid description       consistency/density index         FR       rollentricone       M md       N nil C casing       notes, samples, tests       classification symbols and solid description       consistency/density index         FR       rollentricone       N md       N md       N md charder       S soft         Portication       N md charder       N soft-density index       S soft       S soft         Particition       N md charder       N soft-density index       S soft       S soft         V       N md charder       N soft-density index       S soft       S soft         Particition       N md charder       N soft-density index       S soft         V       V soft-martal sample       N soft-density index       S soft         Particition       N soft-density index       N soft-density index       S soft         V       V soft<							-									
method       34       6         method       34       6         AS       auger screwing* AD       auger diling* cased diling* PR       notes, samples, tests undetubed sample 50mm dameter U <sub>a</sub> classification symbols and solid description based on undetubed sample 63mm dameter U <sub>a</sub> classification symbols and solid description based on undetubed sample 63mm dameter U <sub>a</sub> classification symbols and solid description based on undetubed sample 63mm dameter U <sub>a</sub> classification symbols and solid description based on undetubed sample 63mm dameter U <sub>a</sub> classification symbols and solid description based on undetubed sample 63mm dameter U <sub>a</sub> classification symbols and solid description based on undetubed sample 63mm dameter U <sub>a</sub> classification symbols and solid description based on undetubed sample 63mm dameter U <sub>a</sub> visture V V       V       very solid V         Dr       datuber U V       very solid vertication vertication vertication vertication V       V       V       V       V         Dr       datuber V       very solid vertication vertication V       V       V       V       V       V         T       TC bd V       V       V       V       V       V       V       V         T       TC bd V       very solid vertifinflow       E       environmental sample       V       V       V       V       V       V       V       V       V       V </td <td></td>																
method						36	4									
method       34       6         AS       auger screwing*         AD       auger drilling*         RR       roleptricone         W       washbore         CT       cable tool         HA       hand auger         DT       diaube         W       water         V       Voit         T       TCbt         V       Vbit         T       TCbt         V       Vbit         V       voite         V       Vbit         T       TCbt         V       water inflow         R       water inflow         R       provestimation         No       standard penetration         No       SPT - sample recovered         Nc       SPT - sample recovered <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Borehole EBH008 terminated at 4m</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>										Borehole EBH008 terminated at 4m						
method       34       6         AS       auger screwing*         AD       auger drilling*         RR       roleptricone         W       washbore         CT       cable tool         HA       hand auger         DT       diaube         W       water         V       Voit         T       TCbt         V       Vbit         T       TCbt         V       Vbit         V       voite         V       Vbit         T       TCbt         V       water inflow         R       water inflow         R       provestimation         No       standard penetration         No       SPT - sample recovered         Nc       SPT - sample recovered <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-  </td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							-									
method       34       6         AS       auger screwing*         AD       auger drilling*         RR       roleptricone         W       washbore         CT       casing         DT       dialube         DT       dialube         V       Vbit         V       Vbit         T       TCbt         V       Vbit         T       TCbt         V       voit         V       value relevel         V       value relevel         R       refusal							-									
method       34       6         AS       auger screwing*         AD       auger drilling*         RR       roleptricone         W       washbore         CT       casing         DT       dialube         DT       dialube         V       Vbit         V       Vbit         T       TCbt         V       Vbit         T       TCbt         V       voit         V       value relevel         V       value relevel         R       refusal							-	-								
method     support     notes, samples, tests     classification symbols and     consistency/density index       AS     auger drilling*     M mud     N nil     U <sub>b0</sub> undisturbed sample 50mm diameter     soil description     VS     very soft       AD     auger drilling*     C casing     U <sub>b0</sub> undisturbed sample 60mm diameter     based on unified classification     S     soft       RR     roller/informe     penetration     D     disturbed sample     D     based on unified classification     S     soft       VW     washbore     12.3.4     no resistance     N*     SPT - sample recovered     N     standard penetration test (SPT)     moisture     VSt     very stiff       TA     hand auger     value     refusal     N*     SPT - sample recovered     D     diff     VSt     very stiff       DT     diatube     water     V     vane shear (kPa)     M     moist     Fb     fraide       V     V bit     v     10/1/98 water level     P     pressuremeter     W     W     W     W     VL     very loose       V     V bit     on date shown     Bs     bulk sample     Wp     plastic limit     L     loose       V     V bit     water inflow     R <td></td> <td></td> <td></td> <td></td> <td></td> <td>_35</td> <td>5_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td>						_35	5_									-
method     support     notes, samples, tests     classification symbols and     consistency/density index       AS     auger drilling*     M mud     N nil     U <sub>b0</sub> undisturbed sample 50mm diameter     soil description     VS     very soft       AD     auger drilling*     C casing     U <sub>b0</sub> undisturbed sample 60mm diameter     based on unified classification     S     soft       RR     roller/informe     penetration     D     disturbed sample     D     based on unified classification     S     soft       VW     washbore     12.3.4     no resistance     N*     SPT - sample recovered     N     standard penetration test (SPT)     moisture     VSt     very stiff       TA     hand auger     value     refusal     N*     SPT - sample recovered     D     diff     VSt     very stiff       DT     diatube     water     V     vane shear (kPa)     M     moist     Fb     fraide       V     V bit     v     10/1/98 water level     P     pressuremeter     W     W     W     W     VL     very loose       V     V bit     on date shown     Bs     bulk sample     Wp     plastic limit     L     loose       V     V bit     water inflow     R <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-  </td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							-									
method     support     notes, samples, tests     classification symbols and     consistency/density index       AS     auger drilling*     M m.d.     N nil     U <sub>bo</sub> undisturbed sample 50mm diameter     based on unified classification     VS     very soft       AD     auger drilling*     C casing     D     disturbed sample 63mm diameter     based on unified classification     S     soil description       RR     roller/informe     penetration     D     disturbed sample     S     soil description     S     soil description       W     washbore     12.3.4     no resistance     N     standard penetration test (SPT)     N     standard penetration test (SPT)     St     stiff       TA     hand auger     No     refusal     N''     SPT - sample recovered     N''     N''     SPT - sample recovered     N''     S''     very stiff       HA     hand auger     water     V     vane shear (NPa)     M     moist     F     fraide       DT     diatube     water     V     vane shear (NPa)     M     moist     Fb     fraide       V     V bit     10/1/98 water level     P     pressuremeter     W     W     wet     VL     very loose       V     V bit     - <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>-  </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>							-									
method     support     notes, samples, tests     classification symbols and     consistency/density index       AS     auger drilling*     M mud     N nil     U <sub>b0</sub> undisturbed sample 50mm diameter     soil description     VS     very soft       AD     auger drilling*     C casing     U <sub>b0</sub> undisturbed sample 60mm diameter     based on unified classification     S     soft       RR     roller/informe     penetration     D     disturbed sample     D     based on unified classification     S     soft       VW     washbore     12.3.4     no resistance     N*     SPT - sample recovered     N     standard penetration test (SPT)     moisture     VSt     very stiff       TA     hand auger     value     refusal     N*     SPT - sample recovered     D     diff     VSt     very stiff       DT     diatube     water     V     vane shear (kPa)     M     moist     Fb     fraide       V     V bit     v     10/1/98 water level     P     pressuremeter     W     W     W     W     VL     very loose       V     V bit     on date shown     Bs     bulk sample     Wp     plastic limit     L     loose       V     V bit     water inflow     R <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-  </td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							-									
method     support     notes, samples, tests     classification symbols and     consistency/density index       AS     auger drilling*     M m.d.     N nil     U <sub>bo</sub> undisturbed sample 50mm diameter     based on unified classification     VS     very soft       AD     auger drilling*     C casing     D     disturbed sample 63mm diameter     based on unified classification     S     soil description       RR     roller/informe     penetration     D     disturbed sample     S     soil description     S     soil description       W     washbore     12.3.4     no resistance     N     standard penetration test (SPT)     N     standard penetration test (SPT)     St     stiff       TA     hand auger     No     refusal     N''     SPT - sample recovered     N''     N''     SPT - sample recovered     N''     S''     very stiff       HA     hand auger     water     V     vane shear (NPa)     M     moist     F     fraide       DT     diatube     water     V     vane shear (NPa)     M     moist     Fb     fraide       V     V bit     10/1/98 water level     P     pressuremeter     W     W     wet     VL     very loose       V     V bit     - <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>							-									
AD       auger drilling*       C casing       U <sub>a</sub> undisturbed sample 63mm diameter       based on unified classification       S       soft         RR       roller/tricone       penetration       D       disturbed sample       system       F       firm         W       washbore       12.3.4       N       standard penetration test (SPT)       system       St       stiff         CT       cable tool       no resistance ranging to       N       standard penetration test (SPT)       moisture       Vst       very stiff         HA       hard auger       Nt       SPT with solid cone       D       dry       H       hard         DT       diatube       water       V       vane shear (kPa)       M       moist       Fb       friable         B<					070141-2-*	su	pport	<u> </u>	~				nbols an	<u>       </u> d		
W     washbore     1.2.3.4     N     standard penetration test (SPT)     moisture     St     stiff       CT     cable tool     no resistance ranging to HA     no resistance refusal     N*     SPT - sample recovered     moisture     VSt     very stiff       DT     diatube     water     V     vane shear(kPa)     M     moist     Pb     fraidele       D     blank bit     ↓     10/1/98 water level     P     pressuremeter     W     Wet     VL     very loose       V     V bit     ↓     on date shown     Bs     bulk sample     Wp     plastic limit     L     loose       T     TC bit     ▶     water inflow     R     refusal     D     dense     D	AD		а	uger d	rilling*	С	casing		1111	U <sub>63</sub> undisturbed sample 63mm diame	eter based o	on unified o	lassificatio	n		S soft
HA     hand auger     Image of the set of	w		v	ashbo	ore	pe 1	234	no resista	nce	N standard penetration test (SPT)	-					St stiff
B     blank bit     ↓     10/1/98 water level     P     pressuremeter     W     wet     VL     very loose       V     V bit     →     on date shown     Bs     bulk sample     Wp     plastic limit     L     loose       T     TCbt     →     water inflow     E     environmental sample     W_i liquid limit     MD     medium dense       *bit shown by suffix     →     water inflow     R     refusal     D     dense	HA		h	and au			dillin: -	ranging to refusal		Nc SPT with solid cone	Do	dry				H hard
T     TC bit     E     environmental sample     W_ilquid limit     MD     medium dense       *bit shown by suffix     ▶     water inflow     R     refusal     D     dense	в		b	lank bi	t		10/1/9			P pressuremeter	W v	wet				VL very loose
	т	shown	T by su	C bit ffix			- wateri	inflow		E environmental sample						MD medium dense D dense

Form GEO 5.3 Issue 3 Rev.2

											chnics			Boreho	le N	0.		<b>EBH009</b>
	ent:		ir	le	e	ring wyo					ehole		F	Sheet Project Date st	arte	d:		GEOTKARI02021A/ 13.9.2007
Pro	ncip oject	:t:		catio	n.	WAR See				own	CENTRE		l	Date co ₋oggec Checke	l by:		ed:	13.9.2007 DH SD
drill hole	moc e dia	del a imet	and ter:	mou	nting	g: N 1		E DRIL	L		-	ope: -90° earing:				R	L. atur	Surface: 51.5
method		5 penetration	support		s	<b>notes</b> amples, ests, etc	RL	depth	graphic log	symbol 2	material soil type: plasticity or particle char colour, secondary and minor com	acteristics,	moisture condition	consistency/ density index	k	300 Benetro-		structure and additional observations
ADV			NII	e Observed		E	51	-		CL	BITUMEN; Sandy CLAY; Low to medium plasticity orange-brown mottled.	pale grey and	M <pl< td=""><td>-</td><td></td><td></td><td></td><td>BITUMEN PAVEMENT RESIDUAL DUP 7</td></pl<>	-				BITUMEN PAVEMENT RESIDUAL DUP 7
				None		E		- - 1		CL	Sandy CLAY to Clayey SAND; Low to plasticity, red-brown. Borehole EBH009 terminated at 1m		M <pl< td=""><td>-</td><td></td><td></td><td></td><td></td></pl<>	-				
							_50	-	-									
							_49	2 										
							_48											
							_47	- - - 5	-									
							_46											
AS AD RR W CT HA DT B V T	shov		a v c h c b V v su	uger oller/tr ashb able t and a iatube lank b ' bit C bit	drilling icone oore ool uger	e	M C pe wa	mud casing netratio 2 3 4 ater 10/1/9	no resista ranging to refusal 8 water l e shown inflow	evel	notes, samples, tests           U <sub>50</sub> undisturbed sample 50mm diameter           U <sub>53</sub> 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	soil de based o system D o M r W v	cation syr scription on unified cl re dry noist vet olastic limit quid 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

C		0	T	T	ey	-	6	jeo	DIE	chni	cs				Boreho	le N	lo.		EBH	010	
Engineering Log - Borehole									•			Sheet Project	No		1 of 1 <b>GEOTKARI02021AA</b>						
Clie		<u>J</u>				ONG SHIRE COUNCIL										arte		13.9.2007			
Principal:																	lete	d:			
	Project: WAF						RVA		OWN	CENTRE					Logged				DH		
							RNERVALE TOWN CENTRE Figure -									ed b			SD		
drill	mod	el a	nd n	noun			E DRIL			Easting:	356828	s	ope:	-90°				L. Su	Inface:	55	
	e diar					125 m	n	•		Northing	6321406	be	earing:				da	itum:		AHD	
dr	-	<u> </u>	for	nati		1		mate		bstance					_ ×		6				
method	1 1 2		support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	soil typ	ma be: plasticity or ir, secondary a	<b>terial</b> particle chara nd minor com	acteristics, ponents.	moisture	consistency/ density index	1	300 B penetro-			ructure and nal observatio	ons
ADV			NIL		E				SM	Silty SAND; organics.	Fine to mediu	m grained sa	nd, black wit	h M					OPSOIL/FILI	_?	
4				pe					CL	Sandy CLA	; Low plastici	ty, orange, fir nded gravel.	ne to mediun	m — M <w< td=""><td>P</td><td></td><td></td><td>FI</td><td>LL? — — —</td><td></td><td></td></w<>	P			FI	LL? — — —		
				Observed	E							Ū			_						·
				None O	E		_		CL	grained sand	<b>7</b> ; Low plastici , some quartz	ty, orange, fir gravel.	ne to mediun	n M <w< td=""><td>P</td><td></td><td></td><td>R</td><td>ESIDUAL</td><td></td><td></td></w<>	P			R	ESIDUAL		
				Ñ		_54	1														_
							-														
							-														-
							-			Borehole EB	H010 terminate	ed at 1.5m									-
						53	2														
						_00	_	1													_
							_														
							-														
						_52	3														_
							-														
							-														
							-														
						_51	4														
							<u> </u>														
																					-
							_														
							-														
						_50	5														_
							-														
							-														
							-														
						10	-														
AS AD RR W CT HA DT B V	thod auger screwing* auger drilling* roller/tricone washbore cable tool hand auger diatube blank bit V bit				auger drilling* C casing penetration 2 3 4 cable tool hand auger diatube blank bit V 10/1/98 water l					U <sub>50</sub> un U <sub>53</sub> un D dia N* SF Nc SF V va P pr Bs bu	U <sub>50</sub> undisturbed sample 50mm diameter         soil de           U <sub>53</sub> undisturbed sample 63mm diameter         based d           D         disturbed sample         based d           N         standard penetration test (SPT)         moistur           N*         SPT - sample recovered         moistur           Nc         SPT with solid cone         D         D           V         van shear (kPa)         M         m           P         pressuremeter         W         V					symbols and on ed classification			VS S F St VSt H Fb VL L	y/density index very soft soft firm stiff very stiff hard friable very loose loose	
		/n by	suff				water				vironmental samp fusal	le	WL	liquid limit					MD D	medium dense dense	е
V T *bit e.g.	*bit shown by suffix e.g. ADT						water	outflow		R refusal									D dense VD very dense		

(	C	0	f	fe	ey	2	ç	geo	ote	chnics		E	Borehol	le N	0.	EBH011	
	Engineering Log - Borehole     Sheet       Client:     WYONG SHIRE COUNCIL     Date state												No:		1 of 1 GEOTKARI02021AA		
									OUN			Date started:			14.9.2007		
	Principal: Project: <b>WARNERVA</b>								014/61	CENTRE		Date co Logged	•		d: 14.9.2007 DH		
	oreho		Loc	atior						CLAIRE			Checke	-		SD	
dri	ll moc	del a	nd r	noun			E DRIL	L		Easting: 357033 slope:	-90°			,		Surface: 46	
	le dia <b>rillin</b>		-	mati		125 m	m	mate	erial su	Northing 6321388 bearing bstance	:				dat	um: AHD	
	method penetration support t 5 2 water			notes samples, tests, etc	RL	depth	ohic log	classification symbol	material soil type: plasticity or particle characteri colour, secondary and minor componer	moisture condition	consistency/ density index	k	300 a penetro- 400 meter	structure and additional observations			
ADT	-		NIL		E	-	-		× × ×	FILL; Gravelly SAND, fine to medium grained, fine to medium grained gravel.	, brown,	D				FILL/TOPSOIL NO H.C ODOUR	
				/ed	E	_	-			SANDSTONE; Orange/pale grey.		D				EXTREMELY WEATHERED	
				None Observed		45	1 - - - - 2									-	
					E		-										
						_43				Borehole EBH011 terminated at 2.5m						_	
							-										
						_42	<u>4</u> –									-	
						_41											
							-										
							-										
m GEO 5.3 Issue 3 Rev.2 et ⊥ < ¤ □ 당 Ω 중 궒 P 당	CT cable tool HA hand auger DT diatube B blank bit V V bit T TCbit				illing* cone re ol		ater 10/1/98	n no resista ranging to refusal 8 water 1 8 water 1 e shown inflow	evel	notes, samples, tests         U <sub>50</sub> undisturbed sample 50mm diameter         U <sub>53</sub> 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	W we Wp pla	cription unified cla e y pist				consistency/density index         VS       very soft         S       soft         F       firm         St       stiff         VSt       very stiff         H       hard         Po       friable         VL       very loose         L       loose         MD       medium dense         D       dense         VD       very dense	

C	20	)	ff	ev	9	ç	geo	ote	chni	cs				_	Boreho			501040		
							- Borehole								Sheet Project		υ.	EBH012 1 of 1 GEOTKARI02021A	Δ	
Client: WYONG SHIF																arte	٩.	14.9.2007		
Principal:								00/11							Date co					
								~~~~	OFNEDE							•				
	oject:							JVVN	CENTRE					l	ogged	l by:		DH		
_			catio							356961			-90°	(	Checke	ed by	/:	SD		
			l mour	5		E DRIL	L		Easting:		slope:				R.L	. Surface: 49.5				
	e diam		ormat		125 m	m	mate	vrial eu	Northing	6321353	t	bearing:					datı	um: AHD		
		_					mate		-						~ X	+	þ			
method	pout and the samples samples samples tests, et		samples, tests, etc	RL	depth metres	graphic log	classification symbol	soil typ colour	material soil type: plasticity or particle characteristics, colour, secondary and minor components.			6,	moisture condition	consistency/ density index	100 A pocket 200 A pocket 300 b meter		structure and additional observations			
ADT		+	None Observed	E	-	-			FILL; Gravel brown, fine to			rained san	d,	D				FILL/TOPSOIL		
			None O	E	_49	-			SANDSTONE	; Orange/pa	ale grey.			D				EXTREMELY WEATHERED BEDROCK. HIGHLY WEATHERED BEDROC		
					-	1			Borehole EBH	-1012 terminat	ed at 1m							ADT REFUSAL AT 1M		
					_48	-													-	
						2													_	
					47	-													-	
					_47	-													-	
						3														
					_46	-													-	
						4													-	
					_45	-													-	
						-													-	
						<u>5</u>														
					_44	-													-	
						6													-	
method       AS     auger screwing*       AD     auger drilling*       RR     roller/tricone       W     washbore       CT     cable tool       HA     hand auger       DT     dialube       B     blank bit       V     V bit       T     TC bit       "bit shown by suffix       e.g.     ADT					M C pe 1 wa	pport mud casing netratio 2 3 4 netratio 2 3 4 netratio 10/1/98	n no resistar ranging to refusal 8 water le e shown inflow		U <sub>s3</sub> uno D dist N sta N* SP Nc SP V var P pre Bs bull E env	les, tests disturbed sample disturbed sample turbed sample turbed sample recover T - sample recover T - sample recover T - vith solid cone ne shear (kPa) ssuremeter k sample vironmental sam usal	: 63mm diameter on test (SPT) vered e		soil desc based on system moisture D dr M me W we Wp pla	e poist	nbols an			consistency/density index           VS         very soft           S         soft           F         firm           St         stiff           VSt         very stiff           H         hard           FD         friable           VL         very loose           L         loose           MD         medium dense           D         dense           VD         very dense		

c ć -