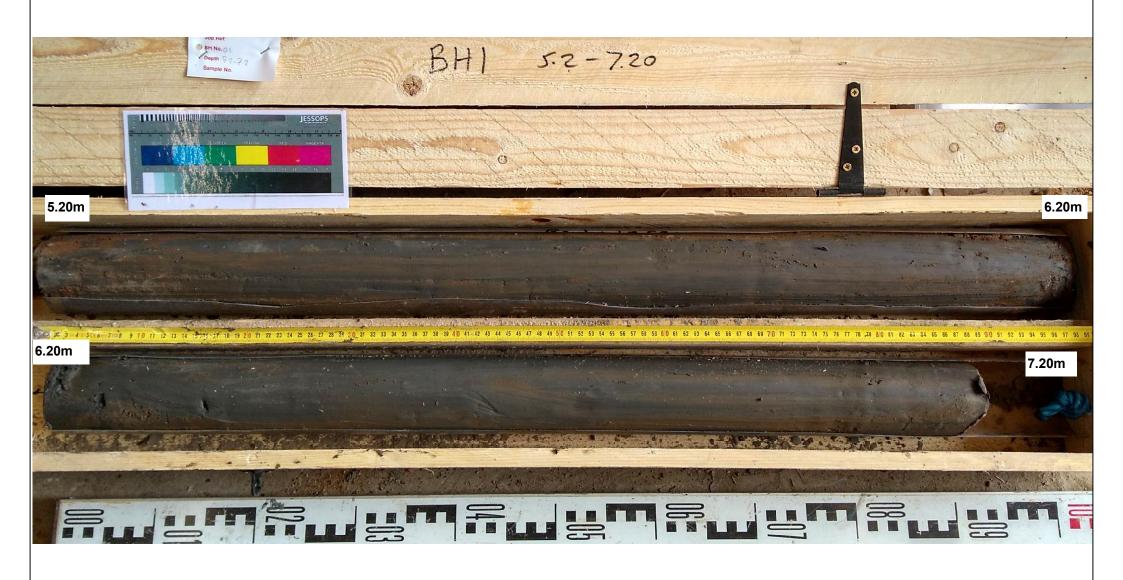
Sample Photographs BH1, 5.20m to 7.20m Depth



Project: Begbroke Science Park, Kidlington

Client: Oxford University Development

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Project No.



Sample Photographs BH1, 12.70m to 18.70m Depth 12.70 13.20 15.70m 15.7-18.7 15.70m 17.20m 18.70m 17.20m Project No. Project: Begbroke Science Park, Kidlington **GROUND ENGINEERING LTD**

C15387

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Oxford University Development

Sample Photographs BH1, 18.70m to 20.20m Depth



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Client: Oxford University Development

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Additional Close Up Core Photographs BH1



BH1, 9.75-10.00m, example of calcite-filled bivalves in Cornbrash Formation



BH1, 11.60-11.85m, example of laminae and ±ipplesqof light grey and white silt in very stiff, laminated, green grey clay of the Forest Marble Formation.

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GROUN ENGINE			G	Site: B	EGBRO	KE SC	IENC	E PARK, KID	LINGTO	N		В	BOREHO BH2	
L I M I Tel: 01733-566566 www.groundengin	Т	E	D	Date: 18/06	6/21	Hole S		50mm dia to 7.2 20mm dia to 10.				447 Ground Level:	955 mE 2	
Samples/Tests Depth m	Core	Deta	ils	(Date) Water	Description of Strata						Legend	d Depth	O.D. Level m	
0.10	D1				MADE GF	ROUND -	Grey, te, br	slightly sandy ick, concrete,	GRAVEL. Limestone	Gravel o	of 1.		0.15	68.60
0.40	D2 D3					_		, silty, very g mestone, brick,					0.80	67.95
1.20 1.20–3.20 1.35–1.65	D4 U1 S	N2	1		MADE GF clayey, limesto concret	ROUND – , sandy one. Gra te, lim	Mediur GRAVEI avel o estone	m dense, brown, L with occasiona f angular to sul , flint, quartz	red brow al cobble o-angular ite, clir	wn and gr es of bri r brick, nker and	rey, ick and ash.			
2 20	D5				MADE GF	ROUND -	Soft,	orange brown, s ular to rounded	slightly limestor	gravelly	, silty		1.90	66.85
2.20 2.20–3.20 2.35–2.65	D5 U2 S	N6			quartz, Loose, angular ironsto	, quart: orange r to ro	zite, brown unded	ironstone and as , silty SAND ANI limestone, flin	sh. D GRAVEL. t, quart:	. Gravel z, quartz	of zite and	×,	2.30	66.45
3.20 3.35-3.58	D6 S	50	*		(SUMMER Very de sandy (RTOWN - ense, or GRAVEL v	range b with o	Y SAND AND GRAVE prown and yellow ccasional cobble ed flint, quarts sional fossil be	√ brown, es of lin	slightly mestone.	/ silty, Gravel mestone ts.	, , , , , , , , , , , , , , , , , , ,	2.80	65.95
4.20 4.20-5.20	D7 U3				Med (SUMMER	dium der RTOWN -	nse be	low 4.20m depth. Y SAND AND GRAVE	EL MEMBER	₹)		X	4.40	64.35
4.35-4.65 4.40 4.80	S V1 V2	N2 (9 (12			Stiff grave(l flint a	grey, o ly CLAY and iro	orange . Grave nstone	brown and dark el of angular to . (REWORKED KEI	grey mot sub-and LAWAYS	ttled, sl gular lin CLAY MEME	lightly mestone, BER)	, , , , , , , , , , , , , , , , , , ,	4.60	64.15
5.15 5.20-6.20 5.35-5.65	V3 U4 S	(12 N1			Stiff, occasion parting Coar 5.00m o	rse grav	y fissu avel s fossil vel si:	ured, dark blue ize pyrite nodul traces. ze concretionary	grey CL/ Les. Rare / limesto	AY with e grey si one nodul	ilt Le at	 		
5.65 6.15 6.20-7.20 6.35-6.65	V4 V5 U5 S	(14 (14 N3	0+)		(KELLAV	JAYS CL <i>i</i>	AY MEMI	BER)				***		
7.20 7.35-7.65	s 93 47	N4										***	7.90	60.85
8.70	95 47	40	1		Weak to argilla bivalve razor o 20mm th 9.68m a	strong aceous, es. Foss clams. I nick at and 50mm	g, thir shelly sils ir Horizor 8.52m m thick	nly to medium be y LIMESTONE with nclude cardiid b ntal beds of ver , 100mm thick at at 9.80m depth	edded, gr n abundar pivalves, ry stiff, t 9.33m,	rey, nt fossil , oysters , dark gr 20mm thi	and rey clay; ick clay			-
	100 96	92	2		(CORNBF	RASH FOI	RMATION	N)					10.00	58.75
2. 1	No liv	e ro	ots	xcavated t observed d 117mm di				le to 4.20m, 107	7mm dia 1	to 5.20m	, 97mm dia	a to		ct No
7.20	Om, re	amed	ou	t with rol led to 7.2	ller bit	t and co	ored 92	2mm dia to 10.20	Om depth	/			Scale 1:50	Page 1/2
KEY					_		G	roundwater Strike	S		Grou		Observatio	ons
CCR - Total Core					N	lo Struck	Rose to	Depth m Rate	Cased	Sealed	Date	Hole	Depth m Casing	Water
RQD - Rock Qualitification of the control of the co	ty Desig dex te ▼ c▼	natio c Le	n % evel) n					_ 34.04	18/06/21		7.20	NA

GROUND ENGINEERING					Site: BEGBROKE SCIENCE PARK, KIDLINGTON									E	BOREHC BH2		
L I M I Tel: 01733-566566 www.groundengin	Т	Ε	Ε		Date: 18/	06/21	Hole Size: 150mm dia to 7.20m 120mm dia to 10.20m								Groun Level:	7955 mE 2	
Samples/Tests	Core Details (Date) TCR SCR ROD FI Water						Description of Strata							44.5541111	Legen	d Depth	O.D. Level
Depth m			92		Water	11500	nre	avious	page"							m 10.00	m
10.20		-					<u> </u>			 at 10.20m de	n+L						58.75 <u>-</u> 58.55 -
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REMARKS							- v.:									Droin	ect No
NEWANO															153		
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							T							_		1:50	2/2
KEY							Groundwater Strikes						Groundwater Observations				
TCR - Total Core							NI-	Qtril	Rose to	Depth m Rate		Cased	Sealed	Date	Hole	Depth m	Water
SCR - Solid Core RQD - Rock Qualit	ty De	ery signa	∞ (• ation	л с % (ore run) (of core ru	in)	140	OLIUCK	NUSE IC	Rate		Cased	Sealed	Date	эіоне	Casing	vvaler
Fl - Fracture Inc	dex																
✓ Water Strik✓ Water Rise	te c	.▼.c :▼w	Lev Lev	ero: el C	n complet asing Wit	ion hdraw n											
▼s Standpipe I	Level			_													

Sample Photographs BH2, 1.20m to 3.20m Depth



Project: Begbroke Science Park, Kidlington

Client: Oxford University Development

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Sample Photographs BH2, 4.20m to 6.20m Depth



Project: Begbroke Science Park, Kidlington

Client: Oxford University Development

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Project No.

Sample Photographs BH2, 6.20m to 10.2m Depth BHZ 6.2-8.7 6.20m 7.20m 8.70m 7.20m BHZ 8.7- 10:20 8.70m Project: Begbroke Science Park, Kidlington Project No. **GROUND** ENGINEERING LTD

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Additional Close Up Core Photographs BH2 (Sheet 1 of 2)



BH2, 5.00m, coarse gravel size concretionary limestone nodule in Kellaways Clay Member



BH2, 7.80, example of bivalve fossil fragments near base of Kellaways Clay Member.

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Additional Close Up Core Photographs BH2 (Sheet 2 of 2)



BH2, 9.90m, coarse gravel size cordiid bivalve (with both halves) in Cornbrash Formation.



BH2, 10.00, example of £ysterqfossil in Cornbrash Formation.



BH2, 9.90, example of ±azor clamqin Cornbrash Formation.

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Project No.

GROUN ENGINE		NG		BEGBRO	KE SCIENCE PARK, KIDLINGTON		REHO BH3		
L M Tel: 01733-566566 www.groundengin	T E		Date: 16/ to 17/	/06/21 /06/21	Hole Size: 150mm dia to 7.20m 120mm dia to 20.20m	44779 Ground Level:	94 mE 2° 68.20	13550 n Om. 0.0	
Samples/Tests Depth m	+	Details RQD FI	(Date) Water	Inst.	Description of Strata	Legend	Depth m	O.D. Level m	
0.20	D1				MADE GROUND - Light brown, slightly gravelly, silty SAND. Gravel of angular brick, ash, flint, granite and ironstone.	×." <u></u>	0.30	67.90	
0.70	D2				Soft, becoming firm, friable, brown and orange brown mottled, slightly gravelly, sandy, silty CLAY. Gravel of angular to rounded limestone, ironstone, flint, quartz and quartzite.	X			
1.20-2.20 1.35-1.65 1.40 1.60	U1 S V1 V2	N4 (58) (53)			(SUMMERTOWN - RADLEY SAND AND GRAVEL MEMBER)	×	1.65	66.55	
2.20 2.35-2.58	D3	50*	This 50 Constitution is a second seco		Dense, becoming very dense, orange brown, silty, gravelly SAND. Gravel of angular to sub-rounded flint, limestone, ironstone, quartz and quartzite.	* × ° × ° × ° × ° × ° × ° × ° × ° × ° * ° × ° * ° × ° * ° *			
2.33-2.36	5	JUK			(SUMMERTOWN - RADLEY SAND AND GRAVEL MEMBER)	° × ,	2.80	65.40	
3.20 3.35-3.57	D4 S	50*	≣ 69		Very dense, yellow brown and orange brown, slightly silty, very sandy GRAVEL with occasional cobbles of limestone. Gravel of angular to rounded limestone, flint, quartz, quartzite and ironstone.	X X X X X X X X X X X X X X X X X X X			
4.20	D5				(SUMMERTOWN - RADLEY SAND AND GRAVEL MEMBER)	, X		(7, 6)	
4.20 4.20-5.20 4.35-4.65 4.50	D5 U2 S V3	N31 (114)			Stiff, orange brown, grey and dark grey mottled, slightly gravelly CLAY. Gravel of angular limestone and flint. (REWORKED KELLAWAYS CLAY MEMBER)	, x x	4.35	63.85	
4.90 5.20-6.20 5.35-5.65	V4 U3 S	(140+) N34			Stiff, closely fissured, dark blue grey CLAY with occasional gravel size pyrite nodules. Rare grey silt partings and fossil traces.				
6.20-7.20	U4	N/ 2			(KELLAWAYS CLAY MEMBER)	*			
6.35-6.65	S	N43		{		*			
7.20 7.35-7.65	s	N47			Weak to strong, thinly to medium bedded, grey, argillaceous, shelly LIMESTONE with abundant fossil burrows and bivalves. Horizontal beds of very	*	7.50	60.70	
	86 68	60 4			burrows and bivalves. Horizontal beds of very stiff, dark grey clay; 10mm thick at 8.16m, 40mm thick at 8.91m, 30mm thick at 8.91m, 30mm thick at 9.53m, 10mm thick at 9.93m depth.				
8.70								-	
inaccia propacycana propacycany.	100 93	53 6			(CORNBRASH FORMATION)		10 00	58.20	
REMARKS 1. Starter pit excavated to 1.20m depth 2. Live roots observed to 1.80m depth 3. Window sampled 117mm dia to 2.20m, open hole to 4.20m, 107mm dia to 5.20m, 97mm dia 3. Window sampled 117mm dia to 2.20m, open hole to 4.20m, 107mm dia to 5.20m, 97mm dia							Project 1538	et No	
6.20 4. C	6.20m, 87mm dia to 7.20m then reamed out with roller bit and cored 92mm dia to 20.20m de 4. Casing installed to 7.20m depth 5. Gas monitoring standpipe installed to 5.00m depth								
KEY						dwater Ob		ns	
TCR - Total Core F SCR - Solid Core F RQD - Rock Quality	Recoverý y Design	% (of	core run)		Depth m o Struck Rose to Rate Cased Sealed Date 16/06/21 1	Hole (epth m Casing 7.20	Water NA	
FI - Fracture Ind ▼ Water Strike ▼ Water Rise ▼s Standpipe L	e ▼ c c ▼ v		on complet Casing Witl		16/06/21 1 17/06/21 1 17/06/21 1 18/06/21 2 30/06/21 1	7.70 0.20 0.20 5.00	7.20 7.20 7.20 7.20 1.00	NA NA 3.98 3.27	

GROUN ENGINE	M	G	Site: I		BOREHOLE BH3			
L I M I Tel: 01733-566566 www.groundengin	T E	E o.uk	D	Date: 16/0 to 17/0	06/21 06/21	Hole Size: 150mm dia to 7.20m 120mm dia to 20.20m Ground Level:	794 mE 2 68.2	13550 mi Om. O.D
Samples/Tests Depth m	Core			(Date) Water	Inst.	Description of Strata Legence	Depth m	O.D. Level m
10.20	100 93	53	6		{	"See previous page" Stiff, laminated, light green grey, silty CLAY with occasional thin laminae of light grey silt. Rare black carbonaceous specks.	10.00 10.20	1
	97 86	86	6			Moderately weak to strong, very thinly bedded, green grey, oolitic LIMESTONE with occasional very thin beds and thick laminae of very stiff, green grey, silty clay.	11.10	57.10
11.70	27 22	10	>20	ļ		(FOREST MARBLE FORMATION) Very stiff, laminated, green grey, silty CLAY with occasional thin laminae and ripples of light grey and white silt. Rare black carbonaceous specks.	12.10	56.10
13.20						Locally calcareous and cemented to an extremely weak mudstone below 13.20m depth.		_
	100 93	86	2			Occasional very thin beds of weak, colitic limestone below 14.10m depth. (FOREST MARBLE FORMATION)		_
14.70	77 56	47	17			Weak to medium strong, very thinly to thinly bedded, green grey, oolitic LIMESTONE with occasional very thin beds and thick laminae of very stiff, green grey, silty clay. (FOREST MARBLE FORMATION) Sub-vertical fracture at 15.00m to 15.70m depth,	14.60	53.60
16.20						Very stiff, laminated, green grey, silty CLAY with occasional thin laminae of light grey and white silt. Rare black carbonaceous specks.	15.80	52.40 -
	98 93	93	3	9		(FOREST MARBLE FORMATION) Moderately weak to strong, thinly to medium bedded, light grey and white, colitic LIMESTONE with cross bedding of coids up to 25 degrees from horizontal.	16.95	51.25
17.70			,			(FOREST MARBLE FORMATION)		_
19.20	88 80	73	4			15mm thick layer of white sand at 18.70m depth. Limestone is grey and argillaceous below 18.70m depth. Very stiff, fissured, dark green grey CLAY. Locally	19.05	49.15_
	100 94	87	6			Very stiff, fissured, dark green grey CLAY. Locally 'gritty' with sand and fine gravel size fossil shell fragments to 19.60m depth. (FOREST MARBLE FORMATION)		48.30
REMARKS					<u> </u>	"See next page"	Project 1538	
			**************************************		1	Groundwater Strikes	Scale 1:50	Page 2/3
KEY TCR - Total Core F	Recoverv	% (of c	ore run)		Groundwater Strikes Groundwater C Depth m	bservatio epth m	ris
SCR - Solid Core F RQD - Rock Quality FI - Fracture Ind Water Strike Water Rise Standpipe L	Recovery Design ex CV	% ation	of of on %	core run)	n) on	Struck Rose to Rate Cased Sealed Date Hole	1.00 1.00	Water 3.30 3.32

GROUN ENGINE		Site: BEGBROKE SCIENCE PARK, KIDLINGTON										BOREHOLE BH3			
L I M I	T E D	Date:	/06/21	Hole Size: 150mm dia to 7.20m 120mm dia to 20.20m								447794 mE 2 Ground			
Tel: 01733-566566 www.groundengin		to 17	/ _{/06} /21							· · · · · · · · · · · · · · · · · · ·	Leve		3.20	m. O.D.	
Samples/Tests	Core Details	(Date) Water	Inst.				escription	of Strata			Lege		- 1	O.D. Level	
Depth m 20.20	100 94 87 6	E .		Moder grey, burro	rately oolit ows and OREST	strong, ic LIME: fossil MARBLE	medium STONE wi shell f FORMATIO	bedded, th occas ragments N)	grey and ional fo	dark ssil	 			m 48.20 48.00	
				(F Boreh	OREST Note co	MARBLE Impleted	FORMATIO at 20.2	N) TOM depth							
REMARKS															
VEV					Gr	oundw at	er Strike	S		Grou	ndw ater				
KEY TCR - Total Core F	Recovery % (of	core run)				Dept		-		0.00		dwater Observations Depth m			
SCR - Solid Core R RQD - Rock Quality FI - Fracture Ind V Water Strike Water Rise Standpipe Le	Recovery % (of y Designation % ex e \sqrt{c} c \sqrt{c} \text{v} Level c \sqrt{w} Level	core run) (of core run) on complete	un) tion	lo Struck	Rose to	Rat	e	Cased	Sealed	Date	Hole	Casing		Water	

Sample Photographs BH3, 1.20m to 5.20m Depth



Project: Begbroke Science Park, Kidlington

Client: Oxford University Development

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Project No.

Sample Photographs BH3, 5.20m to 7.20m Depth



Project: Begbroke Science Park, Kidlington

Client: Oxford University Development

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