# REPORT

# Boston Alternative Energy Facility – Environmental Statement

Appendix 11.2 Lincs Laboratory, Ground Investigation Report for Boston Waste Transfer Station

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Classification

Project Related

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01 March 2021

LINCS LABORATORY, GROUND INVESTIGATION REPORT

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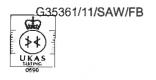


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Ground Investigation Report for Boston Waste Transfer Station, Slippery Gowt Lane, Riverside Industrial Estate, Lincolnshire

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21 December 2011









# Ground Investigation Report for Boston Waste Transfer Station, Slippery Gowt Lane, Riverside Industrial Estate, Lincolnshire

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Any enquiry relating to this report should be addressed to Sam Wells at Lincs Laboratory.

The samples will be stored for one month after publication of the report. Please inform **Sam Wells** if you wish to have these stored for a longer period.



Lincs	
$\bigtriangleup$	Laboratory
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# GROUND INVESTIGATION REPORT FOR BOSTON WASTE TRANSFER STATION, SLIPPERY GOWT LANE, RIVERSIDE INDUSTRIAL ESTATE, LINCOLNSHIRE

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## GROUND INVESTIGATION REPORT FOR BOSTON WASTE TRANSFER STATION, RIVERSIDE INDUSTRIAL ESTATE, LINCOLNSHIRE

### 1.0 INTRODUCTION

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- 1.1 At the request of Lincolnshire County Council's Environmental Management, Lincs Laboratory has undertaken a ground investigation in accordance with the general principles of BS5930 <sup>(1)</sup> and BS EN 1997-2 <sup>(2)</sup> at a proposed waste transfer station site off Slippery Gowt Lane, Riverside Industrial Estate, Boston, Lincolnshire. The purpose of the investigation was to determine the nature of the underlying soils to enable recommendations to be made to aid the design and construction of the proposed waste transfer station.
- 1.2 The proposed development consists of a large steel framed building, weighbridge and office and access roads.
- 1.3 This report is based on data from test results and site records obtained during the ground investigation. There is the possibility of variations in ground conditions that have not been revealed during the ground investigation. It should also be noted that changes in groundwater levels are likely to occur from season to season and that higher groundwater levels may be encountered.

The report is also based on the information given to Lincs Laboratory by the client. Should there be any subsequent alterations to the project's design it will be necessary to check with Lincs Laboratory that the geotechnical assessments and recommendations are still valid.

# 2.0 SITE DESCRIPTION AND GEOLOGY

- 2.1 The site is situated approximately 2.5km south east of the town of Boston (Drawing Number 1, Appendix (i)). It consists of a rectilinear plot of flat arable land bound by a landfill site to the east, arable land to the north, industrial units to the west and Slippery Gowt Lane to the south. Drains run along the east and west boundaries of the site. The site is accessed off Slippery Gowt Lane.
- 2.2 From the Ordnance Survey maps the site has remained undeveloped throughout the recorded history. What is now the Haven Business Park to the west of the site first appears on the historical maps in the year 2000 with just two small buildings, the 2006 map shows the addition of another larger building and further developments appearing further to the west of these. On the 2011 map the Haven Business Park is much larger with an additional 8 or so buildings of different sizes. The land to the north, south and east seems to have remained undeveloped along with the site itself. A copy of the historical maps is included in Appendix (v).
- 2.3 The British Geological Survey 1:50,000 geological sheet for the Boston area <sup>(3)</sup> indicates the site to be situated on Quaternary Terrington Beds over the Jurassic Ancholme Group.





## 3.0 SITE WORK

- 3.1 Between Tuesday 8<sup>th</sup> November 2011 and Tuesday 22<sup>nd</sup> November 2011 six boreholes and seven trial pits were undertaken on the site in positions selected by Lincs Laboratory. The locations of the exploratory holes are shown on Drawing Number 2 in Appendix (i).
- 3.2 The trial pits (TP1 to 7) were excavated using a mechanical backhoe loader to between 3.0m and 3.2m below ground level (BGL). The trial pits were extended below groundwater levels.

Bulk (B) bag samples were taken from all of the trial pits out of the 0.50m margin below the anticipated sub-grade level. Additional samples were taken from the trial pits for reference purposes and additional testing.

3.3 The boreholes (BH1 to 6) were drilled with a Dando 150 to depths between 13.45m and 18.45m BGL. The boreholes were extended below groundwater level. BH1 was extended to 24.0m using a Beretta T44 truck mounted rotary rig.

Bulk (B) bag, small disturbed (d) and undisturbed (U100) samples were taken in all of the boreholes for testing and reference purposes. Continuous core samples were recovered from BH1 from 18.0 to 24.0m BGL.

- 3.4 In-situ standard penetration tests (SPT) were undertaken throughout the strata encountered in the borehole. The Standard Penetration Test involves driving a 50mm outside diameter split barrel sampler with a 65kg drop hammer, which falls 760mm. An initial drive of 150mm is carried out to 'seat' the sampler and then the number of blows required to drive the sampler a further 300mm is recorded, this number is called the standard penetration resistance (N). The full test procedure is detailed in BS 1377 : 1990 Part 9 <sup>(4)</sup>. These results are shown on the borehole logs in Appendix (ii) and on the chart in Appendix (iv). The results are used to refine the soil strength descriptions, as well as for the design recommendations.
- 3.4 Standpipes (50mm diameter slotted pipe) were installed in BH1, 2 and 5 so that groundwater levels could be monitored. The groundwater levels recorded since completion of site work are given below.

Borehole	Depth of Standpipe (m BGL)	Water level 25/11/2011 (m BGL)	Water level 02/12/2011 (m BGL)	Water level 15/12/2011 (m BGL)
BH1	24.00	1.30	1.18	1.10
BH2	18.00	1.04	1.00	0.95
BH5	9.00	1.38	1.37	1.32

# 4.0 LABORATORY WORK

- 4.1 Lincs Laboratory is registered with the United Kingdom Accreditation Service, UKAS registration No. 0699. Achieving accreditation means that the testing laboratory has demonstrated, through external audits that it tests to a high standard.
- 4.2 The following tests were completed at the laboratory: Natural Moisture Content Atterberg Limits California Bearing Ratio (CBR)





Details of the standards used <sup>(4)</sup> and the test results are presented in the Laboratory Test Result Report in Appendix (iii).

Lincs Laboratory is accredited for all of the tests undertaken.

4.3 Selected samples were despatched to another UKAS accredited laboratory for sulphate content and pH value testing. The results are presented in the Laboratory Test Report (Appendix (iii)).

# 5.0 ENGINEERING ASSESSMENT AND RECOMMENDATIONS

#### 5.1 Ground Conditions

The ground investigation confirmed that the anticipated Terrington Beds and Ancholme Clay Group are present on the site. These were found beneath between 0.3 and 0.5m of silty sandy clayey occasionally gravelly topsoil. The Terrington Beds were encountered as very soft to stiff silty clays, clays and silts with organic matter and occasional bands of silty fine sand to a maximum depth of 9.45m BGL in BH6, although more generally 6.5m BGL. These were underlain by Glacial Till and granular Glacial Deposits to a maximum depth of 23.4m BGL. The Glacial Till generally comprised a firm to very stiff silty clay with angular to sub-rounded chalk gravel and medium dense silty sand. The Ancholme Group Clay, comprising a weak mudstone with rare shells, was found in BH1 from 23.4m BGL.

Groundwater was encountered in some of the exploratory holes during excavation at a maximum level of 2.0m BGL as a seepage and at 6.2m BGL during drilling. Ground water levels recorded following the site work indicated a maximum level of 0.95m BGL.

The exploratory hole logs, in Appendix (ii), give the details of the encountered soils at each location.

#### 5.2 Foundation Design

The ground conditions above 6.5m BGL generally comprise soft and very soft clays and are unlikely to provide sufficient bearing capacity for the anticipated loads. It is likely that the loadings from the main structure will need to be carried by piled foundations taken into the underlying Glacial Till.

Advice should be sought from a specialist piling subcontractor with regard to the suitability of the various techniques, especially with regard to groundwater.

Based on a 600mm and 750mm diameter continuous flight auger (CFA) pile toeing into the Glacial Till formation (at a depth of 6.5m BGL). The following are likely capacities for an individual pile.

Pile Diameter (mm)	Penetration into Glacial Till (m)	Pile Capacity (kN) FoS = 2.5
600	3.0	250
600	6.0	510
750	3.0	360
750	6.0	710

The foundation assessment is based upon the ground conditions and engineering properties of the soils encountered during this investigation.





# 5.3 Road Construction

TP No.	Depth (mBGL)	Moisture Content	CBR (%)
		(%)	
1	0.60-0.80	23	13
2	0.60-0.80	20	7.3
3	0.60-0.80	20	7.2
4	0.60-0.80	24	<u>11</u>
5	0.60-0.80	24	11
6	0.60-0.80	19	14
7	0.60-0.80	19	13

Laboratory CBR test results obtained the following results:

For design purposes, it is recommended that a CBR of 3% is used as the sub-grade is considered to be moisture susceptible.

#### 5.4 Radon Assessment

According to information given by the Building Research Establishment (BRE) about Radon <sup>(4)</sup>, and taking into account the nature of the site geology, it is considered that radon protection measures **will not be** required.

#### 5.5 Sulphate Classification for Concrete

The laboratory sulphate content test results are as follows:

Exploratory Hole	Depth (mBGL)	Sulphate Content	pH Value
Ref.		( <u>g/l)</u>	
TP1	0.60-0.80	<0.1	8.1
TP3	0.60-0.80	0.5	7.8
TP6	0.60-0.80	0.4	8.0
TP7	0.60-0.80	<0.1	8.1
BH1	6.70-7.00	<0.1	9.0
BH1	7.50 (Water)	<0.1	7.7
BH1	13.50-13.95	0.5	8.0
BH1	19.50-19.95	0.2	7.9
BH1	23.50-24.00	<0.1	8.0
BH3	0.60-1.00	0.2	7.9
BH4	1.20-1.65	0.6	8.0
BH4	7.50-7.95	0.6	9.2
BH4	7.90 (Water)	0.7	7.3
BH5	4.20-4.65	0.4	6.5
BH6	10.00 (Water)	1.3	7.3

These indicate a Design Sulphate Classification of DS-2 in accordance with BRE Special Digest 1<sup>(6)</sup>. In order to assess an Aggressive Chemical Environment for Concrete (ACEC), the site has been assumed to be greenfield and the groundwater has been assumed to be mobile in the absence of extensive groundwater monitoring. The corresponding pH value test results together with the sulphate content values and previous site usage, represents an ACEC classification of AC-2.

The client is advised to refer to the BRE Special Digest 1<sup>(6)</sup> for guidelines for in-situ and pre-cast concrete elements of the construction.





### 5.6 Contamination

The soils encountered in the exploratory holes did not show any visual or odorous signs of contamination. Additionally, the surrounding land shows good healthy vegetation cover. Considering all these factors, along with the history of the site and the present surrounding land uses, it is not considered that the site is chemically contaminated. However, as with all developments, the workforce should wear overalls, gloves and boots to minimise contact with soils and water. For example, the presence of water contaminated with Weil's disease (caused by rats) is a small probability and working on many projects increases the overall risk of infection to an individual. Care should be taken if any heavily discoloured or pungent smelling materials are encountered as this could indicate that small amounts of chemicals have been discarded. In the unlikely event of encountering suspicious materials, appropriate advice should be sought.





#### 6.0 REFERENCES

- 1. BS 5930 : 1999. "Code of Practice for Site Investigation". Brilish Standards Institution.
- 2. BS EN 1997-2 : 2007. "Eurocode 7 Geolechnical design Part 2 Ground Investigation and testing". British Standards Institution.
- 3. BGS 1:50,000 Geological Solid and Drift map for the Boston Area. Sheet 128. Published 1995.
- 4. BS 1377 : 1990. "Methods of Test for Soils for Civil Engineering Purposes". British Standards Institution.
- 5. BR 211 "Radon : Guidance on Protective Measures for New Dwellings". Building Research Establishment (BRE). Published 2007.
- 6. BRE Special Digest 1: "Concrete in Aggressive Ground". Third Edition. Published 2005. BRE Construction Division.





# 7.0 APPENDICES



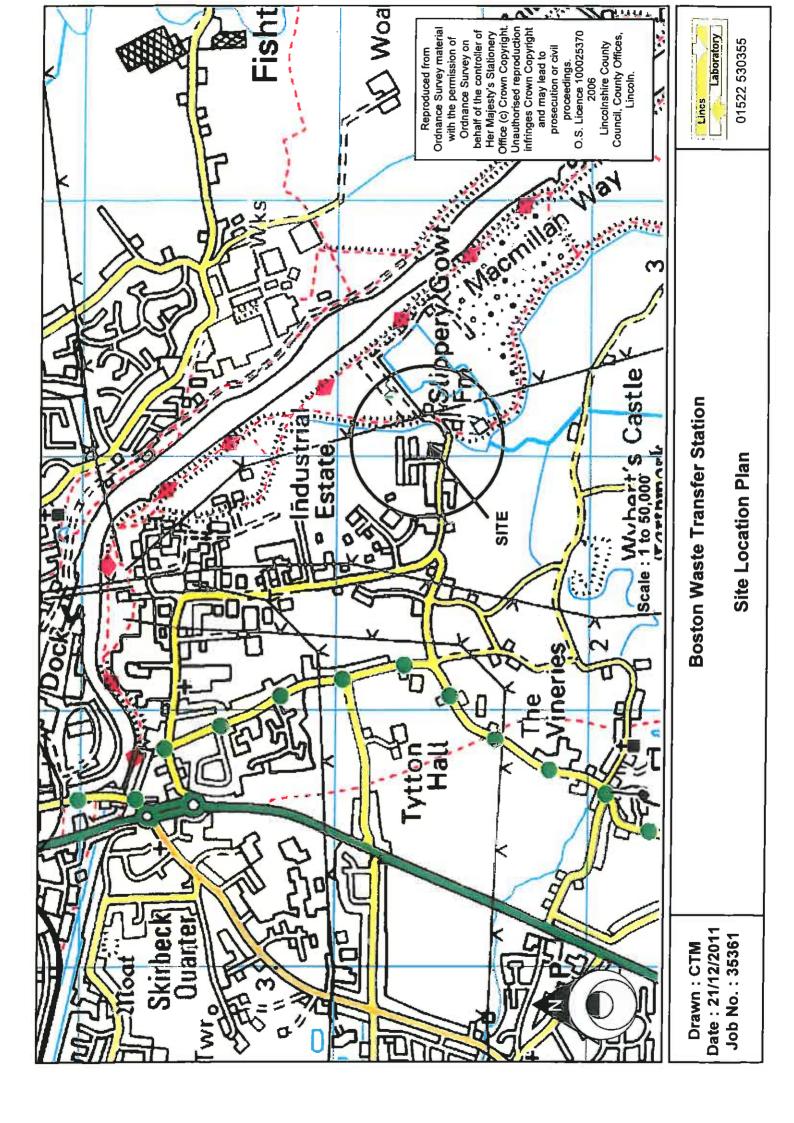


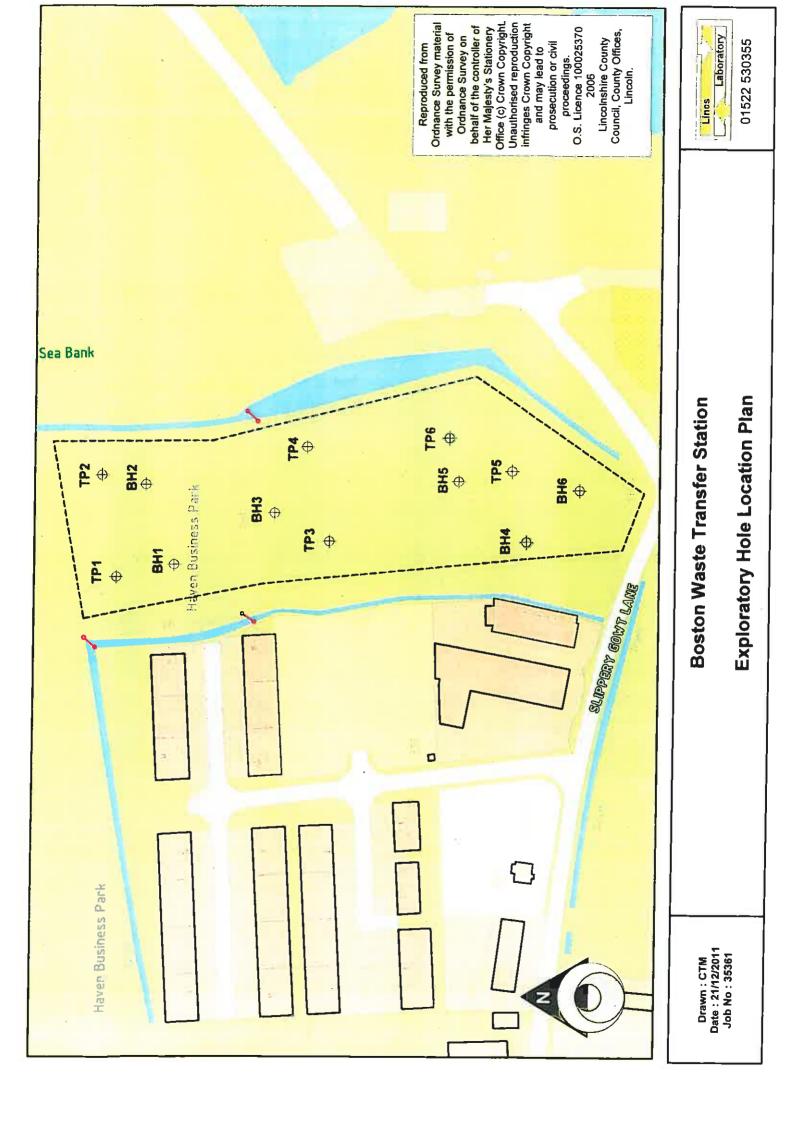
# **APPENDIX (i)**

DRAWINGS

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# **APPENDIX (ii)**

# **EXPLORATORY HOLE LOGS**

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BH1 to 6 TP1 to 7

lor l	N N N	Job Number:	35	35361					Site: Boston WTS, Slippery Gowt Lane	wt Lane				Borehole.: BH1	: BH1	Sheet	et 1 of	2
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Scale as Shown		Disturbed Samples Watter Sample B Lange Bag J Jar RW River/Drain Water	en	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: I Struck ⊠ Rose Io	Penetr S CP Blows h 26/150 26 <sup>+</sup> (26)	Ifon Test Standar Cone P E N Val blows fr blows fr	rd Pentr Marticle Pentration De 150m Sr part o	ation Test n Test m after sea r whole of mple Blow	ation Test ation Test Cone Pentration Test	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	endix at er sample (hs are vis	d of logs.	ssed	_		-		LINCS LINCS LABORATORY Telephone (01522) 530355 Fax (01522) 510573	30RAT 1522) 5(2) 5(2)	13 555 ORV

Job Number: Remarks :		35	35361					S	Site:	Boston		ane		Bor	ehole.	Borehole.: BH1(R)		Sheet 1 of 3	1
e: stubble field. Groundwater was	d. Groundwater was	undwater was		standin	nod ni gi	ehole al	_	اد	cation:	Location: 534061E -	IE - 341755N	Diameter of Hole:	a: 100mm	Instrur	Instrumentation:	ä			
3.2m after being left overnight. A 50mm standpipe was installed to 24m (slotted between 24m and 18m BGL). Cored on 412.	t ovemight. A 50mm si an 24m and 18m BGL)	ight. A 50mm st 1 and 18m BGL)	12	andpil. Core	pe was i id on 41	installed 2.	9	อี	Client: LCC	8		Casing Diameter:	r: 150mm						
			· II					ŏ	Drilling Method:	lethod:	Beretta T44	Logged By:	SAW Log	Log Scale:	10.00 m	m/page Gro	Ground Level:	l: - m AOD	1
	Core Detai	Core Detail		s			Ċ	Change of Strata	f Strata	-			Summary of Laboratory Testing	of Labor	atory Te:	stina	u		1.2
Depth Depth Veter Run Run TCR (m) (m) No Depth(m) %	Run Depth (m)		Cr I	SCR %	RoD %	ш	Legend	GL Balcow GL (m)	Reduced Thickness Level of m ACD Stratum (m) (m)	hickness of Stratum (m)	Description of Strata		Sample/Test NMC Depth (m) and Type %	NMC %	PLI 9 Diam <sup>2</sup> MN	qu PLI Axial MN/m	oltsiisteni elisteb	SPT N Value and Other Tests	
						L				<del> </del>	Borehole undertaken using Light Cable Percussion	<u></u>			1	1			
																		N=2	
																		N=1	
													+					0=N	
																		0=2	
																		0=N	
																		N=3	
																_			
					-					ł								N=21	
										18.00 19.00						<u>.</u>		16=N	
											Conlinued next sheet								
Samples/Tests Symbols Symbols Symbols Symbols Symbols Bag TCR Total Core Recovery % N SPT Yr Value RCD Rock Quality Designation (85mm diameter) FI Fracture Index	Symb SCR SCR FI		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	overy overy esigni	ation %		T Top of Sample PLI Point Load Index I Approx. unlaxial compressive strength A Axial Point Load Test Result D Diametral Point Load Test Result Groundwater:	ple ndex nual comp cad Test F int Load 1 I V St	compressive strength Test Resuft oad Test Result 🗹 Struck X. Rose to	strength ult Rose to	Notes: Geology: Refer to appendix at end of togs. Soli strangths in (brackets) are assessed visually	if logs. sed visually				-	Telephone Fax (01	LINCS LINCS LaboraTORY Telephone (01522) 530355 Fax (01522) 510573	
																			_

Ŝ	Job Number:	1	35361						Si	Site:	Bost	Boston WTS, Slippery Gowt Lane	e		Boret	Borehole.: BH1(R)	H1(R)	Sheet 2 of 3
Ren Su	Remarks : Surface: stul	bble field. (	Groundwater	was sta	i guipu	n boreł	Tole at		Loc	ation:	Location: 534061E - 34	1755N	Diameter of Hole:	100mm	Instrumentation:	intation:		
24	2m after b m (slotted	eing left ov between 2	3.2m after being left overnighl. A 50mm standpipe was installed to 24m (slotted between 24m and 18m BGL). Cored on 412.	BGL).	ndpipe Cored (	was in: on 412.	stalled to		Ū	Cllent: LO	CC	S	Casing Dlameter:	150mm				
									ē	<b>Drilling Method:</b>	ethod:	Beretta T44 Lo	Logged By: SAW	V Log Scale:		10.00 m/page	B Ground Level:	Level: - m AOD
			Core	Core Detalls				Che		Strata				Summary of Laboratory Testing	Laborat	ory Testing		
Date (2011)	(T) Casing	Depth Water (m) No	Run Depth (m)	A CR	% SCR	Rop *	E E	Legend		Reduced Thickness Lavel of m AOD Stratum (m) (m)	delmess of Krahum (m)	Description of Strata	<u>öŏ</u>	Sample/Test NMC Depth (m) and Type %	MC PLI Diam <sup>%</sup> MN <sup>m</sup> <sup>2</sup>	m du m	Axtal Axtal MNm 2 Installatio details	SPT N Value and Other Tests
1				-								Borehole undertaken using Llght Cable Percussion						48/150mm
					_	-					1		ł ——-					_
									<u> </u>		1		+					75=N
											-				<u> </u>			
																		N=42
I											1							N=44
						_												
1																		N=71
			<u> </u>					7		-								61/225mm
							אן איזא איזא איזא איזא און אין אין אין אין איזא און איזא אוא איזא איזא איזא איזא		18.00			(Very stiff) dark grey slightly clayey SILT with fine to coarse subrounded chafk gravel and thin bands of dark grey brown fine sand. (GT)		18.00-19.50 C				
1									19.95			19.4-19.5 with flint and chalk cobbles and Continued next sheet		19.50-19.95 S 16 19.50-19.95 D 19.50-21.00 C	16.00			69/150mm
Scale as Shown	C SS B D Sam	ples/Tests Small Bag Large Bag SPT 'N' Value Rock Core Sample (85mm diameter)	Symb SCR SCR FI	ols Total Core Recovery % Solid Core Recovery % Rock Quality Designatic Fracture Index	ols Total Core Recovery % Solid Core Recovery % Rock Quality Designation % Fracture Index		T Top of Sat PLI Point Load Approx. ur A Axial Point D Diametral I Groundwater:	Top of Sample Point Load index Approx. unfavial compressive strength Axial Point Load Test Result Diametral Point Load Test Result undwater: Z Struck T Rose to	elex d Test R t Load Te Z Sh	compressive strength Fest Result oad Test Result ⊠ Struck <b>▼</b> Rose to	se to	Notes: Geology: Refer to appendix at end of logs. Soli strangths in (brackets) are assessed visually	gs. vísuaily		1			LINCS LINCS LABORATORY Telephone (01522) 530355 Fax (01522) 510573

Ň	Job Number:	Imber:		35361				Site:		Boston WTS. Slipnery Gowt Lane	ar		Bo	Rorehole · RH1/D)		10)	Choot 2 of	6
ŭ .,	Remarks : Surface:	slubble fie	eld. Gr	oundwaler was standing in bo	brehole	ta		Locatio	n: 5340	Location: 534061E - 341755N DI	Diameter of Hole:	100mm	Instr	Instrumentation:			011661 3 01	
	3.2m aft 24m (slo	er being lef tted betwee	eft over	3.2m after being left overnight. A 50mm standpipe was installed to 24m (slotted between 24m and 18m BGL). Cored on 412.	s install. 12.	ed to		Cllent:	СС	Ö	Casing Diameter:		-					
								Drilling	Drilling Method:	Beretta T44	Logged By: S/	SAW Log	Log Scale:		10.00 m/page	Ground Level:	L	m AOD
	2			Core Details			Change		3			Summary of Laboratory Testing	of Labo	oratory To	esting			
Date (2011)	e Cesting	E)	Run No	Run TCR SCR RQD Depth(m) % % %	Ē	Legend			Reduced Thickness Level Stratum (m) (m)	Description of Strata		Sample/Test Depth (m) and Type	% NMC	PLI Diam <sup>2</sup> MNim <sup>2</sup>	qu PLI Axial MN/m MN/m		SPT N Value and Other Tests	<u>ф</u> 10
							14.3.3.1			18.00m - 19.95m : Remaining Detail : 19.40m - 19.50m : coarse subrounded chalk gravel.	9.40m - el.	19.50-19.80 D						
							<u>, , , , , , , , , , , , , , , , , , , </u>		3.45	19.95m - 23.40m : (Very stift) dark grey very silty CLAY with fine to coarse subrounded chalk gravel and occasional small chalk cobles. (GT)	very ed	-21.00-22.50 C						
						4   4   4   4   4   4   1   4   5   7   7   7   7   7   7   7   7   7	<u>, , , , , , , , , , , , , , , , , , , </u>			Detail 21.75m - 21.95m : 21.75-21.95 No recovery, possible band of sand. 21.75-21.95 No recovery, possible band of sand.	o t of	22.50-24.00 C						
							23.40		0.80	(Weak) dark grey MUDSTONE with irregular	gular	Į						
J							54.00		1	laminations and rare shells. (AmG)		1		-				
1									I			I						
<u> </u>									1									
1									I									
Scale as Shown	C85 C85	Samples/Tests D Smail Bag B Large Bag N SPT N' Value CB5 Rook Core Sample (85mm diameler)	e teler)	Symbols TCR Total Core Recovery % SCR Solid Core Recovery % RQD Rock Quality Designation % FI Frecture Index		T Top of Sample PLI Point Load Index A Approx. unlaxial compressive strength A Approx. unlaxial compressive strength D Diametral Point Load Test Result D Diametral: <u>\[\]</u> Struck <u>\[\]</u> Result Groundwater: <u>\[\]</u> Struck <u>\[\]</u> Result	Imple Id Index Intextal co I Load Te Point Loa	mpressiw st Result d Test R€ Struck <b>g</b>	compressive strength Test Result ced Test Result ⊠ Struck ⊈ Rose (o	Notes : Geology : Refer to appendix at and of logs. Soll strengths in (brackets) are assessed visually	gs. 1 visually			-			LINCS CARONATORY Telephone (01522) 530355 Fax (01522) 510573	25

lol	D Nu	Job Number:		35361						Site: Boston WTS, Slippery Gowt Lane	Gowt Lane				ň	breho	Borehole.: BH2	2	Sheet 1 of 2	1 of 2
Ren Su	Remarks : Surface:	stubble	field. G	roundy	rater was encor	untered a	t 6.2m	BGL		Location: 534096E - 341776N (See plan)	Diameter of Hole:	of Hole:	150mm	Ę				!		5
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mm st. :L).	andpipe	was ins	stalled	50mm standpipe was installed to 18m (slotted between 18m and 9m BGL).	l between	18m	and 9n		Client: LCC	Casing Diameter:	lameter:	1 1	uu uu						
										Drilling Method: Dando 150	Logged By:		SAW	Loc	Log Scale:	: 10	m/page	m/page Ground Level:	Level: -	m AO
				Sampl	Sample/Test	Ü	hange	Change of Strata	ata		Penetration		Atterberg Limits	arg Lin	lits	Ā	Density	Shear Strength	ength Chemical	nical Mtv
Date	Carling Carling	And Dept	Ŷ	Type	Depth	Legend			Reduced Thickness Level of	Description of Strata	Test Results	NMC	Е	ЪГ		CBR. Bulk	k Dry		+ -	-
~	Ê								(w)			%	%	*	*	% Mg/m <sup>3</sup>	n Mg/m 3	kPa wu	Shear	L
11/11			-	0	0:00-0:50				0.50	Grey brown sandy silty clayey TOPSOIL.						-				
			200	۰	8. 8. 8.		0.0	9		(Firm becoming soft) orange brown sandy silly CLAY. (TB)										
			2003 100	D	1.20-1.65		· · · ·	_	2.00		ž	58	37	20	17		_			
1			500	SPT D	2.20-2.65				1	4	-									
							5.50	9		(Very soft) grey brown very slity CLAY. (TB)										
			008	SPT D	3.20-3.65				2.00		0 N									
1			000	SPT	4 20 25 25 25 26 26						N=2									
							4			(Soft) grey silty CLAY with pockets of black peal. (TB)	1									
			011	D	5.20-5.65		1 . 1 . 1		1 40		E-N									
1		6.20	013	o SPT	5:90-6.10 5.20-6.65		6.20	<b>8</b> 0	0:30	(Firm) black pseudo fibrous organic	¥									
]						1 64 64 64 64 ( 64 64 64 64 (1 18 68 68 68 ( 18 68 64 64 6	. <u>1. 1. 1.</u> -		1.30	(Very soft) grey green slity CLAY with fine to coarse angular and subrounded chalk and flint gravel. (GT)										
			015	D	7:50-7:95		9992 22 22 22 22 22 22 22 22 22 22 22 22 22	82	0.20	(Firm) grey brown very sandy CLAY with occasional fine to coarse angular and subrounded chalk and filnt gravel. (GT)	S1=N									
			019	SPT D	56-00 6		, , , , , , , , , , , , , , , , , , ,			(Stiff) grey very silty CLAY with fine to medium subrounded chalk gravel and rare coarse angular filnt gravel. (GT)	N#520									
1					*****					Continued next sheet										
Scale as Shown		Westurbed Samples Water Sample D Small Bag B Large Bag J Jar KW RiverOrain Water RW RiverOrain Water	<b>Ables</b>	Undist U100 U38 C75 Groun	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ≰ Sinck ⊠ Rose to	Pernetr S CP Blows I 26/150 26* (26)	Cone Stand Cone blows blows	st and Pent Pentralli alue for 150 for part urbed S	Tation Test on Test I'm efter se or whole of	ation Test Type of Shear Test Slandard Pentration Test Slandard Pentration Test V Shear Vane V Shear Vane V Shear Vane V Near Vane V V Near Vane V V Near Vane V V Vane V V	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	ppendix at € ) sample gths are vi:	and of loc sually as	3s. sessed	-	-			LINCS LABORATORY Telephone (01522) 530355 Fax (01522) 530355	ATORY 530355 0573
			10101			(2-1)				,										0013

Job Number:		35361	31		Site:	:: Boston WTS, Slippery Gowt Lane	t Lane				Borehole.: BH2	BH2	Sheet 2	et 2 of	of 2
Remarks : Surface: stubb	ole field. G	Ground	Iwater was encou	ntered at 6.2m BGL.	A Location:	534096E - 3	Diameter of Hole:	1 1	150mm						
50mm standpit BGL).	ipe was ir	nstalle	d to 18m (slotted	50mm standpipe was installed to 18m (slotted between 18m and 9m BGL).	Client:	: rcc	Casing Diameter:		150mm						
					Drillin	Drilling Method: Dando 150	Logged By:	: SAW		Log Scale:	10	m/page Ground Level:	Level: -		m AOI
		Sam	Sample/Test		3		Penetration		Atterberg Limits	Limits	Density	Shear Strength		Chemical	Othe
Date Casing Weter (2011) (m) (m)	2 5 b c	Type	Depth (m)		Reduced Thickness Level of m AOD Stratum (m) (m)	Description of Strata	Results	NMC 1	%	ā »	CBR Bulk Dry % Maim 3 Maim	Cu kPa kPa	Type Shear	SO4 PH	
	032 020	N La C	%  [		<u>  </u>	(Stiff) grey very sitty CLAY with fine to medium subrounded chalk gravel and rare coarse angular flint gravel. (GT)	N=43						1		
							-			_					
	022 023	D					6⊱=N	15	38						
			****		10.75										
	024 025	D	13 50-13.95				N=55								
					<u> </u>						-				
	026 027	D	15.00-15.45 15.00-15.45				N=57								
	028	D	16.50-16.95 16.50-16.95				N#82	4	N 	23 15					
-	030	D SPT	18:00-18:45					٤							
				18.45		End of Borehole at 18.45 m									
					<u> </u>		-								
Scale Witwhed Samples as Diswithed Samples as B Large Bag Shown T Tub J Jar RW River/Drain Water	amples amples og un Water	Undi U1000 U38 Grou	sturbed Samples 105mm Dia Core 75mm Dia Core indwater: truck ⊻ Rose to	Penetration Test S Standard Penta S Cone Pentratio CP Cone Pentratio Ellows N = N Value 26/150 blows for 150m 26° blows for part ( 25) Undisturbed S	ation Test ation Test Standard Pertration Test Cone Pentration Test Cone Pentration Test N = N Value N = N Value blows for part or whole of sealing blows for part or whole of sealing drive only Undisturbed Semple Blows	ype of Shear Test Not Shear Vane B Shear Box X Triaxial (Undrained) U Undrained Cohesive Strength U <sup>o</sup> Internal Friction Angle	as Geology : Refer to appendix at and of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	endix at env tample hs are visu	1 of logs, ally asses:	- 3	-		LINCS LINCS LINCS S3355 Fax (01522) 510573	5 5 1 1 1 1 1 1 1 1 1 1 2 1 1 5 10 5 10	355

loL	Job Number:	ēr:	35361	1					Site: Boston WTS, Slippery Gowt Lane	sowt Lane				Borel	Borehole.: BH3	H3	Shee	Sheet 1 of	2
Ren	uarks: rface: stubt	ble field.	Ground	Remarks : Surface: stubble field. Groundwater was not encountered.	countered	Ť			Location: 534088E - 341708N (See plan)	Diameter of Hole:	of Hole:	150mm							
								-	Client: LCC	Casing Dlameter:	ameter:	150mm	-						
									Drilling Method: Dando 150	Logged By:	y: SAW	>	Log Scale:	ale: 10	mpage	Bround Level:	Level: -	5	m AOI
			Samp	Sample/Test	ÿ	Change of Strata	Strata			Penetration		Atterberg Limits	) Limits		Density	Shear Strength		Chemical	Othe
Date	Depth Depth of Casing Water	۹ ۲	Type	Depth	Legend	De D	Reduced Thicknes Level of m AOD Stratum	Thickness of Stratum	Description of Strata	Test Results	NMC			OL.	Bulk Dry		-		Tes
~	Ê	-	_	Ê				(E)			*	* *	*	*	Mg/m Mg/m	kPa	Shear		
10/11		8	0			0:30		0.3	Orange brown silly clayey TOPSOIL.				-						
		002	٥	0.60-1.00	             			0.70	(Firm) orange brown very silty CLAY. (TB)										_
I		000	νD			80.1		1.00	(Soft to firm) orange brown silty CLAY with pockets of orange silt. (TB)	N=4	_		_						_
		008		5.20-2.65		2.00		0.70	(Very soft to soft) omage grey brown silty CLAY. (TB)	ž									
		00 800	νD	3.20-3.65		2.70	<u>.</u>	2 2	(Very soft) grey brown silty CLAY. (TB)	₽ 2									
		000	so	4.20-4.65		4.20			Very soft) grey brown silty CLAY with rare pockets of black organic clav. (TB)	2 2									
1		011 012 013	<i>"</i> 0000	200 55 570-550-55 570-5		-) - (()		2.00		0=N									
		014	00	6.20-6.65		6.20			(Very soft) dark grey brown very sandy CLAY with pockets of black organic clay	B=N									
		016 017	00			7.50		8 8	(Firm) are rure mut graver. (15 /) (Medium dense) grey sitty SAND and GRAVEL. (DD) (Firm) grey green brown slightly sandy sitty CLAY with fine to medium submunded chalk aroust (GT)	N-24									
		018	Ω	6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6		00'6			(Stiff) dark grey sitty CLAY with fine to medium (occasionally coarse)	N=24	· · · · · · · · · · · · · · · · · · ·								
Scale as Shown	Disturbed Samples Water Samples D Small Bag B Lerge Bag T Tub J Jar River/Drain Water	Samples amples ig in Water	U1000 U1000 U38 C75 Grou	sturbed Samples 105mm Dia Core U100 75mm Dia Core 75mm Dia Core indwater:	Penetration Test Sandan S Standan CP Cone Pt Blows N = N Vali 26/150 blows fo 26/50 blows fo (26) Undistur	on Test Standard Cone Per = N Value blows for blows for	Pentratic tration T 150mm c part or w	on Test est after seal hole of s	d) ve Strength ngle	Notes Geology : Refer to appendix at and of logs. U100F = Falled U100 sample (Bracketed) soil strengths are visually assessed	pendix al er sample gths are vis	d of logs. Jally assei	- 288				LINCS LINCS Telephone (01522) 530355 Fax (01522) 510573	S LABORATORY ne (01522) 530355 (01522) 510573	

Ŝ	N Q	Job Number:		35361	-				Site: Boston WTS, Slippery (	Slippery Gowt Lane		ß	Borehole.: BH3	H3	Sheet 2 of	[2
Ren SL	Remarks : Surface:	s : e: stubble	field. G	sroundw	emarks : Surface: stubble field. Groundwater was not encountered.	ncountere	Ţ		Location: 534088E - 341708N (See plan)	Diameter of Hole:	150mm					
								I	Client: LCC	Casing Dlameter:	150mm					
									Drilling Method: Dando 150	Logged By: SAW		Log Scale:	10 m/page	B Ground Level:	/el: -	m AQ
				Sample/Test	e/Test	อี	ange (	Change of Strata		lon	Atterberg Limits	lits	Density	Shear Strength	gth Chemical	1 E
Date	Centing Centing	th Depth and Water	Ŷ	Type	Depth (m)	Legend		Raduced Thickness Lavel of m AOD Stratum	Description of Strata	Test Results NMC	к Р. К. Р.	s DI	CBR Bulk Dry		-	
- I		-	020	<u></u> 00	10.50-10.95		Ē	-	subrounded chalk and flint gravel. (GT)	Net	:	-	b	3		
<u> </u>			022	<u>ه</u> م	12.00-12.45											
1			024 025	nο	13. 56- 53. 58. 59. 59. 59. 50. 50. 50. 50. 50. 50. 50. 50. 50. 50					N=48						
I			026	50	15.00-15.45 15.45	<u>PLELFIEL</u>	15.00		End of Borehole at 15.45 m							
·																
1																
					••••						·					
Scale as Shown		Disturbed Samples Water Sample D Small Bag B Lange Bag T Tub J Jar RW River/Dran Water	Nater Nater	Undist U100 U38 C75 Groun	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: T Struck Z Rose to	Pernetration Test S Standar CP Cone Par Blows N = N Vali 261 blows ft 265 blows ft 266 Undistu	lon Test Standar Cone Part blows fc Undistu	I Id Pentration Test ue x 150mm after set x ped Sample Blow	atton Test atton Test Standard Pentration Test Cone Pentration Test a = N value blows for 150mm after seating blows for part or whole of seating drive only Undisturbed Sample Blows	Notes Geology : Refer to appendix at end of logs. U100F = Falled U100 sample (Bracketed) soll strengths are visually assessed	pessesse Áller	-	-		LINCS LINCS S0355 Fax (01522) 530355 Fax (01522) 510573	355 3

qoL	Job Number:	ber:	35361	51					Site: Boston WTS, Slippery Gowt Lane	vt Lane				Borehole.: BH4	3H4	Sheet	-	of 2	
Remarks Surface	irks : ace: ban	e ground	, Ground	d water was enc	countered a	t 7.9m r	isina		Location: 534065E - 341617N (See plan)	Diameter of Hole:	f Hole:	150mm							1
[0 2]	8m BGL	. in 20 mi	ins.	to 2.8m BGL in 20 mins.			ŋ		Client: LCC	Casing Diameter:	meter:	150mm							
								-	Drilling Method: Dando 150	Logged By:	": SAW	>	Log Scale:	ale: 10 m/page		Ground Level:		m AO	9
			Sam	Sample/Test	ភ្		Strata			Penetration		Atterberg Limits	Limits	Density	Shear	Shear Strength	Chemical	cal Oth	ļ
Dale C	Cashing Vision (m)	Vator Wator (m)	Type	e (m)	Legend		Reduced Thickness Level of m AOD Stratum (m) (m)	Nickness of Stratum	Description of Strata	Test Results	% NMC	% FL %	<u>a</u> *	CBR Bulk Dry % Maim <sup>3</sup> Maim <sup>3</sup>	2 å	Øu <sup>°</sup> Shear			Tes
		8	<u> </u>	ľ		5		0.30	Brown silly clayey TOPSOIL.		-		-	•		1591		-	
		003	•	0.50-1.00		0.80		0:50	(firm) orange brown slightly sandy slity CLAY with rare subrounded gravel. (TB)										
1		88	wД	1.20-1.65		1.30		0.50	(Firm) orange brown slightly sandy silty CLAY. (TB)	Met Contraction	Ř		30		_				
L.		900	v.	2 30°3 65		2.10		0.80	(Soft) orange brown slightly sandy slity CLAY. (TB)	: +									
	<b>N</b>	2.80	00					1.40	(Very soft) grey brown mottled orange silty CLAY with occasional pockets of										
1		200	00	3.20-3.65				1	<ul> <li>black organic clay and rare subrounded fine to medium gravel. (TB)</li> </ul>	N=0	_								
		8	v	4 204 BS		R.:			(Very soft) grey brown silty sandy CLAY with rare pockets of black organic clay. (TB)	1 									
		010	۵					500		2									
			o در	5.20-5.65				3											
		;	)			S RO													
		013	ŝ	6.20-6.65		3		- 06:0	<ul> <li>(Soft) dark grey slightly sandy sitty CLAY with fine subrounded chalk gravel. (GT)</li> </ul>	÷			_						
. 1		015	•	6.70-7.50		6.70			(Loose) grey brown with grey and yellow	+									
		016 017 017	00	7,50-7.95		7.50		8 9	claty and fine to medium subrounded chalk and fine to medium subrounded chalk and finit gravel. (GT)	N=15	14	58	15						
			A	06:2	1 ×	7.90		T	<ul> <li>(Firm) grey brown very sandy CLAY with some fine subrounded chalk and flint gravet. (GT)</li> </ul>	+									
		019 020	wΩ i	9.00-9.45	* *			8	(Medium dense) grey brown silty SAND with fine to coarse subrounded chalk gravel. (GT)	41/150mh	Ę								
		20	2	00.01-06.8		9.50		0.50	Continued next sheet	-									
Scale Scale Scale Scale	Disturbed San Water San D Small Bag B Lange Bag T Tub J Jar	Disturbed Samples W Water Sample D Small Bag B Large Bag T Tub J Jar		Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater:	Penetrati S CP Blows N 26/150	on Test Standard Pentration Test Cone Pentration Test = N Value I Nows for 150mm after se	Pentrali ntrallon 1 150mm	on Test Fest after sea	N	ees Geology : Refer to appendix at end of logs. U100F = Falled U100 sample (Bracketed) soit strengths are visually assessed	endix at en lample Ths are visu	d of logs. ally asses	- pes	-		LINCS LINCS Lateobrone (01522) 530355	6 (01522) 530355		
-	> I	Jrain Water	M	■ Struck		Undisturt	Med Sam	ple Blow	Øu° Internal Friction Angle							Fax (01522) 510573	522) 510	573	

Job Number:	35361					Site: Bo	Boston WTS, Slippery Gowt Lane	sowt Lane		-		Borehole.: BH4	:: BH4		Sheet 2	2 of 2
Remarks : Surface: bare ground. Ground water was encountered at 7.9m rising	Ground wale	r was enco	unlered at	7.9m risi	Бu	Location: 534(	534065E - 341617N (See plan)	Diamete	Diameter of Hole:	150mm	-					
lo 2.8m BGL in 20 mir	Ś.				2	Client: LCC		Casing I	Casing Diameter:	150mm						
						Drilling Method:	d: Dando 150	Logged By:		SAW	Log Scale:	10	m/page GI	Ground Level:	el: -	۵ ۳ AC
	Sample/Test	st	Che		trata			Penetration	lon	Atterberg Limits	Limits	Density		Shear Strength	gth Chemical	lical Oth
Date Casing Weter No (2011) (m) (m)	Type	Depth (m)	Legend	Cepth Reduc Below Tadaco GL TAN	Level Thickness Level of m AOD Strahum (m) (m)		Description of Strate	Results	s NMC	* 5 * 1	۶ ۵	CBR Bulk % Maim <sup>3</sup> k	Dry Cu Maim <sup>3</sup> kPa	ů	Type SO Shear al	H
-	<u>ه</u>	10.50-10.95		8 9		(Loose) grey brown SAND. (GT)	brown fine slightly silty			_						
023				10.80	0.30		(Loose) grey brown fine slightly silty SAND with fine to coarse subrounded chalk gravel. (GT)									
025	D 12.(	12.00-12.45				(Very dense) SAND and fin and flint GRA	(Very dense) grey brown fine to coarse SAND and fine to coarse subrounded chalk and filnt GRAVEL. (GT)	N=30								
					4.20	-	(Firm to stift) grey slightly silty slightly sandy CLAY with fine to medium subrounded chalk gravel. (GT)									
026 027	5 13,	13.50-13.95						Star N		33	17 16					
		<u></u>			,											
029	s D	15.00-15.45	×	15.00		Endo	End of Borehole at 15.45 m	28 2	φ							
								ł								
		<del></del>														
1		,,,, <u>,</u> ,,,,,,				{										
 I		****														
Scale Disturbed Samples Scale Disturbed Samples as Distroal Bag Shown T Tub J Jar RW RiverDrain Water	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: I Struck ⊠ Rose to		Penetration Test Sisndar S Sisndar S CP Blows N = N Val Blows (f 26* blows (f 26* blows (f 26* Undistu	n Test Randard Pe Cone Pentra Cone Pentra Cone Pentra Lows for 15 Iows for pai Indisturbed	Iton Test Standard Pentralion Test Cone Pentralion Test E N Value biows for 150mm after seat biows for part or whole of s Undisturbed Sample Blows	ing drive only	Type of Shear Teat V Shear Vane SB Shear Vane SB Shear Box TX Triaxial (UndraIned) Cu Undrained Cohesive Strength Øu° Internal Friction Angle	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	appendix al « )0 sample ingths are vi	and of logs. sually asses	- 3			Telephone Fax (0)	LINCS LINCS LINCS LABORATORY Telephone (01522) 510573 Fax (01522) 510573	530355 0573

Ŷ	b Nu	Job Number:		35361						Site: Boston WTS, Slippery Gowt Lane	Lane				Bor	Borehole - BH5	BHS	U	Sheaf 1	C 4C	
Rer N	Remarks : Surface: s	stubble fi	ield. Gr	oundwater	was encoun	lered as	a slight		╵┛║	Location: 534108E - 341641N (See plan)	Diameter of Hole:	f Hole:	150mm							5	
ងក	sepage . Jmm sla	al 6.2m a Indpipe v	and wa vas ins	is at 4.5m at talled to 9.0	seepage at 6.2m and was at 4.5m after borehole left overnight. A 50mm standpipe was installed to 9.0m (slotted between 9.0 and 3.0m	e left over etween 9	might. A 3.0 and 3	EO.	0	Client: LCC	Casing Diameter:	meter:	150mm								
	BGL)								-	Drilling Method: Dando 150	Logged By:	: SAW	>	; Boj	Log Scale:	10 m/ps	m/page Grou	Ground Level:		E	m AOI
			-'  -	Sample/Test		Cha	0	trata	-1		Penetration		Atterberg Limits	g Limit	40	Density	Shea	Shear Strength	Chemical		
Date	Casing	No.	Ŷ	Type De	Depth		ting a	Reduced Thicknes Lavel of	Thickness	Description of Strata	Test Results	NMC	LL PL	P P	CBR		+-	TYP	-		Tes
(2011)	Ê	Ê							(m)				_			Mg/m <sup>3</sup>	k Pa	Øu <sup>e</sup> Shear		H	
21/11		ð	<u>0</u>	0.0	0:00-0:0			-	0.50	Orange brown very silty clayey TOPSOIL.			+	-	-			-	_	1	
		5	002	D 0.50	0.50-1.00		0.50				1						_				
1		22	600	SPT 1.20	1.20-1.65 1.20-1.65				120		9- 2								_	_	
		58			530-565 2.20-2.65 2.20-2.65		1.70		<u>8</u>	(Soft) orange brown very sifty CLAY. (TB)	- <u> </u>										
		88			339 39 39 39 39 39 39 39 39 39 39 39 39		2.70			(Very soft) grey brown very silty CLAY. (TB)	2 Z										
		82			20 20 20 20 20 20 20 20 20 20 20 20 20 2		4.20		<u>s</u>	(Srift) Hark areas ellity society ("I AV uside	<u>ج</u> ۲	2	8		27				-		
		51			2029292 2029292 2029292	■ [ # [ # ] # ] # [ 4 ] # [ # 31 ] # 4 ] 4 ] 4 ] 4		•	1.70	count dam gray pranty pranty out with pockets of black peat. (TB)											
1		€				· * - * - * - * - * - * - * - * - * - *	.5 06:5														
		88	014 015	۲ 	111111		6.30	_	0.40	(Soft) dark brown pseudo fibrous slightly sandy peaty SILT/CLAY. (TB)	N=13										
1		<u> </u>			, , , , , , , , , , , , , , , , , , ,				81	(Medium dense) dark brown coarse SAND and corase angular and subrounded chalk and flint GRAVEL. (GD)											
		8	210				1.50			(Medium dense) orange brown coarse SAND and fine to coarse subrounded and subangular GRAVEL. (GD)	N=23										
ι.			018	SPT 9.00	900-945 24 24 24 24 24 24 24 24 24 24 24 24 24				1.95		2575mm						_				
							9.45			(Stiff becoming very stiff) dark grey Continued next sheet											
Scale as Shown		<b>Matthed Samples</b> D Small Bag B Large Bag J Jar RW River/Drain Water		Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: X Struck Z Rose to	ທ່ວ	Penetration Teat S Standard CP Cone Pen Blows N = N Value 261150 blows for 26* blows for (26) Undisturb	n Teat tandard P. one Pentri N Value ows for 15 pws for pa	ation Tes Somm aft Comm aft Sample	Test at Blows Blows	Atton Test     Type of Shear Test     Notes       Standard Pentration Test     V     Shear Vane     Geolog       Cone Pentration Test     V     Shear Vane     Geolog       Cone Pentration Test     V     Shear Box     Undrained)     U100F       bicws for 150mm after seating     TX     Triaxtal (Undrained)     U100F       bicws for part or whole of seating drive only     Cu     Undrained Cohesive Strength     (Brack	es Geology : Refer to appendix at and of logs. U100F = Falled U100 sample (Bracketed) soil strengths are visually assessed	hndix at en ample 13 are visu	d of logs. ally asses		-			LINCS LINCS Telephone (01522) 530355 Fax (01522) 510573	LINCS LABORATORY Felephone (01522) 530355 Fax (01522) 510573	573	

ldoL	Job Number:		35361					Site: Boston WTS, Slippery Gowt Lane	r Gowt Lane				Bore	Borehole.: BH5	BH5	Sheet		of 2
Remarks : Surface:	ks : ce: stubble	field. G	emarks ; Surface: stubble field. Groundwater was encountered as a slight	incountered a	as a s	ight		Location: 534108E - 341641N (See plan)	Diameter	Diameter of Hole:	150mm							
Seepe 50mm	age at 6.2m I slandpipe	was in:	seepage at 6.2m and was at 4.5m after borehole left overnight. A 50mm slandpipe was installed to 9.0m (slotted between 9.0 and 3.0m	orted betwee	vernig n 9.0 s	hť. A and 3.0	Ē	Cllent: LCC	Casing D	Casing Diameter:	150mm							
BGL)			,					Drilling Method: Dando 150	Logged By:	By: SAW	N	Log Scale:	1 1	10 m/pe	m/page Gro	Ground Level: -		Ш AC
			Sample/Test	0	hange	Change of Strata	ata		Penetration		Atterberg Limits	Limits		Density		Shear Strength	Chemical	
Date	Casing Water	No	Type Depth	Legend		a Ao	<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>	Description of Strata	Test Results	NMC	LL PL	ē	CBR	Bulk	<u>ح</u>	Bu° chos	so,	
u) (1102)			Ê		Ê	Ē	Ē			%	%	*	*	Mg/m Mg/m	m kPa		1/6	_
[		020	D 10.50-10.95	<u>, 191 61 61 61 6</u> 11111111111111	<u></u>		•••••	silty CLAY with fine to coarse chalk gravel. (GT)	12=N	<del>6</del>	5	16	8					
1		022 023	SPT 12.00-12.45 D						40-N									
		025	SPT 13.50-13.95	┎┰╔╅┠╝┶┰┵┰┯┯╼┹╄┯┹ ┝╴╵╵┝╴┝╴┝╴╵┉╹┇ ┝╵╵┝╵┝╴┝╴╵╸┇			5 5											
l		026 027	SPT 15.00-15.45						N=55						· · · · · · · · · · · · · · · · · · ·			
		028 029	SPT 16.50-16.95		<u></u>	<u>8</u>	1 1	End of Boosholo at 18 05 m	41/150m									
											-							
Scale Scale Scale Scale R	Disturbed Samples Water Samples D Small Bag B Lange Bag T Tub J Jar J Jar M River/Drain Water	ater ater	Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: ▼ Struck ⊠ Rose to	Dies Penetration Teat Core Paration Teat Core Parat		Bat Bard Peni Penitratii for 150 for 150 furbed S	on Test on Test Standard Pentration Test Cone Pentration Test = N Value blows for 150mm after sea blows for 150mm after sea blows for part or whole Blow: Undisturbed Sample Blow:	on Test On Test Standard Pentration Test Cone Pentration Test E N value blows for 150mm after seating blows for 150mm after seating blows for 150mm after seating blows for part or whole of seating drive only blows for part or whole of seating drive only blows for part or whole of seating drive only C U Undrained Cohesive Strength Undrafturbed Sample Blows	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soil strengths are visually assessed	opendix al e 3 sample vgths are vis	nd of logs. ually asses	pag				LINCS LINCS LINCS LABORATORY Telephone (01522) 510573 Fax (01522) 510573	SS LABORATORY 01522) 510573 (01522) 510573	0RY 0355

Jot	Job Number:		35361					Site: Boston WTS, Slippery Gowt Lane	owt Lane				Bor	Borehole.: B	BH6	Sheet		012
Ren Su	Remarks : Surface: stubble fie	eld. Gi	emarks : Surface: stubble field. Groundwater was encountered at 10.1m BGL	countered a	t 10.1	m BGL		Location: 534090E - 341588N (See plan)	Diameter of Hole:	of Hole:	150mm	Ē					• [	
Lisi.	ing lo 3.10m BG	3L in 2	0 mlnutes.					Client: LCC	Casing Diameter:	ameter:		Ē	,					
								Drilling Method: Dando 150	Logged By:	y: CK		, gol	Log Scale:	10 m/page	je Ground Level:	t Level: -		m AO
			Sample/Test	Ū	hange		ata 		Penetration	e	Atterbe	Atterberg LImits	ç\$	Density	Shear S	Shear Strength (	Chemical	el Othe
Date (2011)	Casing Water (m) (m)	No No	Type Depth (m)	Legend			Laval Thickness Laval Stratum (m) (m)	Description of Strata	Results	NMC	- * F	к РL РI %	CBR	R Bulk Dry	Č. Č.	Type Shear	So.	pH Tes
09/11	1		D 0.00-0.50 D 0.50-1.00		020		0:0	Firm brown slightly slity clayey TOPSOIL with frequent roots.				+				lest		
1	e7			ŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢŢ	0		0.50	Firm brown silty CLAY with occasional small roots. (TB)	<u></u>									
					165		0.65	Firm brown slightly slity CLAY. (TB)	° v N									
1	נסי מי 		SPT 2.20-2.65		2	, <u> </u>	18	Soft grey brown CLAY. (TB)	ž									
	r ⊠ 310 -				2.65			Soft wet brown grey silty CLAY. (TB)										
			D 3.20-3.65						0=N									
_I	- 10		D 4.20-4.65		3.5		,	+	N=0								<u> </u>	
)	<u>5</u>		SPT 5.20-5.65		<u> </u>		90.4 1		0 N N									
1			SPT 6.20-6 65						N=0 N									
			SPT 7.50-7.95		6.65			Very soft wet grey brown silly CLAY. (TB)	2 2 1									
	<u>e</u>			**************************************			2.80											
!	17		SPT 9.00-9.45 -	<u>ELFIPIP</u>			-		N=23	32		28	w					
					9.45	10	1 05	Fine to coarse, subangular to rounded Continued next sheet										
Scale	Water Samples D Small Bag B Large Bag J Jar RW River/Drain Water		Undisturbed Samples U100 105mm Dia Core U38 U100 C75 75mm Dia Core Groundwater: X Struck Z Rose Io	Penetri S CP CP Blows h 26/150 26/150 (26)	Ion Tes Standa Cone F = N Va blows I blows I Undistu	t Ind Pentratio Pentratio Iue or part o Inbed Sa	ation Tes n Test m after s mple Bio	Attlon Test     Type of Shear Test     No       Standard Pentration Test     V     Shear Vane       Cone Pentration Test     SB     Shear Vane       A     N value     SB       A     N value     Triaxtal (UndraIned)       A     N value     TX       A     V value     SB       Blows for 150mm after seating     TX       Blows for part or whole of seating drive only     Cu       Undisturbed Sample Blows     Du <sup>o</sup>	Notes Geology : Refer to appendix at end of logs. U100F ≈ Falled U100 sample (Bracketed) solt strengths are visually assessed	endix at e sample ths are vis	nd of log: wally ass	essed	-	-		LINCS LINCS LABORATORY Telephone (01522) 530355 Fax (01522) 510573	S LABORATORY ne (01522) 530355 01522) 510573	0355 33

Job N	Job Number:		35361						Site: Boston WTS, Slippery	Slippery Gowt Lane					Borehole.: BH6	BH6	Ś	Sheet 2 of	of 2
Remarks : Surface:	: stubble	field. Gr	lewbruo.	ter was encou	Intered at	10.1m	BGL		Location: 534090E - 341588N (See plan)	Diame	Diameter of Hole:	1 1	150mm						
rising lo	3.10m B	IGL in 2(	0 minute	rising to 3.10m BGL in 20 minutes.					client: LCC	Casin	Casing Diameter:		150mm						
									Drilling Method: Dando 150	Logged By:	d By:	ð	-	Log Scale:	le: 10 m/page		Ground Level:		шAO
			Sample/Test	Test	ប់	lânge o	Change of Strata			Penetration	ation	Att	Atterberg Limits	.Imits	Density	She	Shear Strength	Chemical	al Othe
Date Cesting		Ŷ	Type	Depth (m)	Legend.	Perty I	Level Thickness Level Stratum (m) (m)	Stratum Stratum	Description of Strata	Test Results		NMC LL	2 %	2 %	CBR Bulk Dry % Maim <sup>3</sup> Maim <sup>3</sup>		Øu <sup>°</sup> Shear	SO 4	
	90 <u>0</u>	58 22 20 20	B X Las	10.00-10.50 10.50-10.95		10.50		0:0	very wet grey brown clayey SAND and GRAVEL with frequent shells and limestone. (GD)	Ż	N¤46								
- 10/11 - 10/11		23	*	8 2		09:01	_	1	Fine to coarse subangular gery brown sifty SAND and GRAVEL with occasional fine to medium shell fragments. (GD)	+									
		254	LdS D	12.00-12.45		12.45		<u></u>  /	Firm gray slightly gravelly CLAY with fine to medium subrounded to angular gravel and shell fragments. (GT)	z	N=56		35	17					
1011		26	SPT D	13.00-13 14: 14: 14: 14: 14: 14: 14: 14: 14: 14:	错误	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		8	Stiff grey slightly gravely CLAY with fine to medium subrounded to rounded calk gravel. (GT)	~	25/75mm								
				,,,,,					End of Borehole at 13.45 m										
				1				+											
ŧ.	. <b>e</b>							ł											
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1																			
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Scale QISWE as D Sm Shown T Tub L Jar RW R	Disturbed Samples Disturbed Samples Distant Bag B. Lerge Bag J. Jar N. River/Drain Water		Undistur U100 10: U38 U1 C75 75 Groundw Struci	Undisturbed Samples U100 105mm Dla Core U38 U100 C75 75mm Dla Core Groundwater: ¥ Shuck ⊠ Rose to	Pernetra S CP Blows N 26(150 (26)	Ion Test Slandar Cone Pe = N Valu blows fo blows fo Undistur	d Pentrati Intration T e Part or w bed Samp	ion Test Test after sea vhole of s ple Blows	ation Test Standard Pentration Test Come Pentration Test I = N Value Blows for 150mm after seating blows for part or whole of seating drive only Undisturbed Sample Blows	Notes Geology : Refer to appendix at end of logs. U100F = Failed U100 sample (Bracketed) soll strengths are visually assessed	trangths a	x at end Me re visual	of logs. Iy assess	p	-		Telephone Fax (0'	LINCS LINCS LINCS LABORATORY Telephone (01522) 530355 Fax (01522) 510573	ORY 30355

dol	Job Number:	1	35361					- *	Site: Boston WTS, Slippery Gowt Lane	vt Lane				Trial	Trial Pit.: TP1	۲. ۲		Sheet	ة م	[ _
Remarks : Surface -	rite : ce - slubble	i field. P	it sides did	Remarks : Surface - stubble field. Pit sides did not collapse.	من				3417551	Orientation:	n: E-W			Dimensions:		1 5	- mo		5	-
Grour	Groundwater was not encountered.	s not er	countered.						Client: LCC	Face Logged : N	N : pet				30	Width : 0.70m Depth : 3.20 m	: 0.70m : 3.20 m			
								-	Excavation Method: Backhoe Excavator	Logged By:	с К		Log Scale:	ale: 3.50	Ē	m/page Gr	Ground Level:	/el: -	E	m AC
	;		Sample/Test	est	ĉ		trata			Tam		Atterberg LImits	LImits		Density		Shear Strength	⊪—	Chemical	
Date (2011)	E)	Ŷ	Type	Depth (m)	Legend	Depth below GL avoint (m)	Reduced Thickness Level of m AOO Stratum (m) (m)	Thickness of Stratum (m)	Description of Strata	Test Result	% WWC	א ר א ר	<u>ء</u> ×	CBR B	Bulk Dry Ma/m Ma/m		βu°	-		Oth Tes
08/11								0:30	Firm, brown silly clayey TOPSOIL with occasional small roots.											
						0.30		0:30	Stiff orange brown silty CLAY with occasional roots. (TB)											
		<del>~</del>	۵	0.000		0.60		1	(Stiff) grey brown and orange brown slity CLAY with occasional roots. (TB)	1	23.0			(f) 13.00 (8) 15.00	1.520	8				
1							-	06 0		+										
		2	ß	1.80-2.00		1.50	-	0.50	(Stiff) orange grey brown slightly slity CLAY with occasional orange brown slity laminations and occasional small roots. (TB)							8	>			
4						2.00		0.60	(Firm) orange brown and grey brown silghtty slity CLAY with orange brown silty taminations. (TB)							6	>			
ł		ری 	 	3.00.3.20	→ → → → → → → → → → → → → → → → → → →	5.			(Soft) grey brown, orange brown and dark grey CLAY with frequent black roots and organic matter. (TB)											
08/11					¥) † [  ₄[  ≿k	3.20			End of Trial Pit at 3.20 m							32	>			
Scale DI as D Shown B	Disturbed Samples W water Sample D Small Bag Lange Bag T Tin J Jar	n n n n n n n n n n n n n n n n n n n	Undisturbed Sample U100 105mm Dlamete U38 U100 Groundwater: Shuck 🗵 Rose to	1 0 k	Symbols PT Penetration P Probe CBR (i) Other Tests	Symbols PT Penetration Tests P Probe CBR (I) Other Tests Undertaken			ype of Shear Test Shear Vane Cu Undrained Cohesive Strangth B Shear Box Øu* Internal Friction Angle X Triaxial (Undrained)	Notes : Geology and Other Teats : See "Sample I Soli strengths from on-si	A Other Tests : See "Sample Descriptions & Symbols" at end of logs Soil strengths (in brackets) are assessed from on-site observations	rer Tests : "Sample Descriptions & \$ strengths (in brackets) an from on-sile observations	lons & Syr kets) are a valions	nbois" al i ssessed	- Jud of logs			CS Tone (015	LINCS LAB	

doL	JOD NUMBEL:		10202					Site: Boston WTS, Slippery Gowt Lane	wt Lane			Tria	Trial Pit.: TP2	22	She	Sheet 1 of	-
Remarks : Surface -	ks : e - stubble fi	ield. Pil	sides did not collar	ose.				Location: 534096E - 341776N	Orientation:	м- Э ;;		Dimen	Dimensions: Le	Length : 2.00m			
Groun	dwaler seep	ages e	Groundwater seepages encountered at 2.0m.	i				Client: LCC	Face Logged : N	N : pa			Σď	Width : 0.70m Depth : 3.00 m	_		
							_	Excavation Method: Backhoe Excavalor	Logged By:	r. CK	Log	Log Scale:	3.50 m/page	ige Ground	Ground Level: -		M AO
			Sample/Test	ភ	Change of Strata	Strata			M	Atte	Atterberg Limits	its:	Density	Shear S	Shear Strength	Chemical	
Date (2011)	Vation of (TT)	Ŷ	Type Depth (m)	Legend		Reduced Thickne Level of m AOD Stratur (m) (m)	Thickness Stratum (m)	Description of Strata	Test Result	NMC LL	4 %	× CBR	0 5		- h-	so <sub>4</sub> pH	Tes
08/11							0.30	(Soft) brown and grey brown slightly slity clayey TOPSOIL with occasional small roots.	ł						<u>i</u>		
			0.60-0.80		0. 0.		0.70	(Stiff) orange brown silty CLAY and orange brown silt with occasional small roots. (TB)	{	20.0		(T)7.30 (6)15.00	1.670				
					00			(Stiff) grey brown and orange brown silly CLAY with occasional grey silty laminations. (TB)						8	>		
		2	B 1.80-2 00			-	9; 1				· · · · · · · · · · · · · · · · · · ·						
	2.00				2.00		030	(Soft) orange brown and grey brown silty CLAY. (TB)									
					2.30		, A	(Soft) dark grey and orange brown CLAY with frequent black roots and organic matter. (TB)						8 8	>		
		n	B 2.80-3.00	1 4 5 4 5 4 5 4 5 4 1 9 1 4 1 4 1 4 1 1 9 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4		-											
					00			End of Trial Pit at 3.00 m							>		
Scale Di as bown B Shown B	sturbed Sam Water Sam Small Bag Large Bag Tin J		Undisturbed Samples Undisturbed Samples U100 105mm Diameler U38 U100 Groundwater: ▼ Struck ⊠ Rose to	Ser e e	Panbols Penetration Tests Probe CBR Other Tests Undertaken	Brtaken		e of Shear Test Shear Vane Cu Undrained Cohesive Strength Shear Box Øu <sup>e</sup> Internal Friction Angle Triaxlal (Undrained)	Notes : Geology and Other Tests : See "Sample I Soil strengths from or-si	I Other Tests : Other Tests : See "Sample Descriptions & Symbols" at Soil strengths (in brackets) are assessed from on-site observations	her Tests : "Sample Descriptions & ( strengths (in brackets) an from on-site observations	Symbols' are assess	I Other Tests : See "Sample Descriptions & Symbols" at and of logs Soil strengths (in brackets) are assessed from on-site observations		LINCS LINCS	LINCS LAB	<u>s</u>

doL	Job Number:		35361			Site: Boston WTS, Slippery Gowt Lane	vt Lane		F	Trial Pit.: TP3	P3	Sheet	t 1 of	Ŧ
Remarks : Surface -	<b>ks</b> : ce - stubble fic	eld. Pit	Remarks : Surface - stubble field. Pit sides did not collapse.			Location: 534069E - 341693N	Orientation: N - S		Ū	Dimensions: Le	Length : 2.00m		- 11	
Grour	Groundwater was not encountered	not enc	ountered.			Client: LCC	Face Logged : E			≥ŏ	Width : 0.70m Depth : 3.00 m			
						Excavation Method: Backhoe Excavator	Logged By: CK		Log Scale:	3.50 п	m/page Ground Level:	evel: -	E	m AOI
		57	Sample/Test	Change of Strata	a l			Atterberg Limits	Limits	Density	Shear Strength		Chemical	
Date (2011)	Water Water (m)	No N	Type Depth	Legend GL mAOD Svetum	Stratum	Description of Strata	Test NMC Result v.	к Б. К. Б.		CBR Bulk Dry	v Cu Qu			Othi
08/11				1	0.30	(Soft) brown slightly silty clayey TOPSOIL with frequent small roots.			:		2			
					0:30	(Firm) orange brown slity CLAY with frequent small roots. (TB)								
			8			(Firm) orange brown and occasional grey brown slightly slity CLAY with occasional small roots and orange and grey slit laminations. (TB)	50.0			(T)7.20 (B)9.20 (B)9.20	8			
L					0.0									
		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1.80-2.00	1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20	0:0	(Firm) orange brown slightly silty CLAY with occasional light grey and orange laminations. (TB)					4 2	>		
				200 200 200 200 200 200 200 200 200 200		(Soft) orange brown and grey brown slity CLAY with occasional pockets of black organic matter. (TB)								
	en		2.80-3.00 2.80-3.00	부 2 년 3 년 3 년 3 년 3 년 3 년 3 년 3 년 3 년 3 년	8									
- 		••		8	1	End of Trial Ptt at 3.00 m					24	>		
Scale DI as V V Shown B	sturbed Sam Water Sam Small Bag Large Bag Tin J		Undisturbed Samples U100 105mm Diameter U38 U100 Groundwater: ⊈ Situck ⊠ Rose to	Symbols PT Penetrallon Tests P Probe CBR (i) Other Tests Undertaken	<u>F</u>	Type of Shear Test V Shear Vane Cu Undrained Cohesive Strength SB Shear Box Øu" Internal Friction Angle TX Triaxtel (Undrained)	Notes : Geology and Other Tests : See "Sample Descriptions & Symbols" at Soll strengths (in brackets) are assessed from on-site observations	her Teets : "Sample Descriptions & S strengths (in brackets) an from on-site observations	ons & Symbo els) are ass ations	4 Other Tests : See "Sample Descriptions & Symbols" at end of logs Soil strengths (in brackets) are assessed from on-site observations		LINCS LAB	LAB	

		10000	10				Site: Boston WTS, Slippery Gowt Lane	vt Lane			F	Trial Pit.: TP4	.: TP4	_	Sheet .	st 1 of	-
Remarks : Surface -	: - slubble field.	Pit side	es did not collaps	ė			Location: 534116E - 341642N	Orientation:	n: N-S		ð	Dimensions:					
Groundy	vater was not (	encoun	Groundwater was not encountered.				Client: LCC	Face Logged : E	ged : E				Width Depth	Width : 0.70m Depth : 3.20 m			
							Excevation Method: Backhoe Excavator	Logged By:	y: CK		Log Scale:	e: 3.50	m/page	Bround Level:	evel: -		m AC
		Sam	Sample/Test	Cha		ata		MPT		Atterberg Limits	LImits	ľ.	Density	Shear Strength		Chemical	
Date	Variation No.	Type		Legend	<b>C N</b>	Reduced Thictores Level of m AOO Stratum	Description of Strata	Test	NMC			<b>1</b>	k Dry	Cu Bu°	Type Sof	so₄ <sub>pH</sub>	
(2011) D8/11	(E)	-	Ē		Ē	Ē			*	%	*	W m/m	m/g/m	kPa		1/06	_
							Brown slightly silty clayey TOPSOIL with occasional small roots.										_
					ŝ	5											_
	-	Ð	0.60-0.80	4   4   4   4   4   4   4   5   5   4   4   4   1   5   5   5   5   5   1   1   5   5   5   5   5   1   1   5   5   5   5   5   5   5   5	09:0	0.50	(Stiff) brown and grey brown slightly slifty CLAY with occasional small roots. (TB)		24.0		<del></del>	(1)12.00 (8)11.00	1.590	26	>		
· · · · · ·				1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1	00		(Firm) grey brown and brown CLAY with occasional orange silty laminations. (TB)							;	•		-
			58			1.00								67	>		
	2	<u> </u>	1.80-2.00														
]					5.00	040	(Soft) orange brown and grey brown CLAY. (TB)										
				· · · · · · · · · · · · · · · · · · ·	2.40		(Soft) dark grey and orange brown CLAY. (TB)										
						0.60											
1	5 F	<u>۵</u>	3.00-3.20														
08/11					3.20	_	End of Trial PIL at 3.20 m							2	>		
Scale Dist as D Shown B	Disturbed Samples W Water Sample D Smail Bag B Large Bag T Tin J Jar		Undisturbed Samples U100 105mm Dlameter U38 U100 Groundwater: ▼ Struck ⊻ Rose Io	Ser e e	nbols Penetration Tests Probe CBR Other Tests Undertaken	Bken	Type of Shear Test Nurdrained Cohestve Strength V Shear Vane Cu Undrained Cohestve Strength SB Shear Box Øu* Internal Friction Angle TX Triaxial (Undrained)	Notes : Geology and Other Tests : See "Sample I Soil strengths from on-sil	I Other Tes See "Samp Soil strengt from on	I Other Tests : See "Sample Descriptions & Symbols" at Soil strengths (in brackets) are assessed from on-site observations	ans & Sym ets) are as attons	1 Other Tests : See "Sample Descriptions & Symbols" at end of logs Soil strengths (In brackets) are assessed from on-sile observations	of logs		LINCS LAB	522) 5300	355

doL	Job Number:	ä	35361				00	Site: Boston WTS, Slippery Gowt Lane	vt Lane			F	Trial Pit.: TP5	: TP5		Sheet	t 1 of	-
Remarks : Surface -	ks ; :e - slubble fiel	ld. Pit	Remarks : Surface - stubble field. Pit sides did not collapse.	pse.			Ē	Location: 534099E - 341617N	Orientation:	S-N :	0	Ĩ	Dimensions:	1	2.00m			
Groun	Groundwater was not encountered.	ol enci	vuntered.				U	Client: LCC	Face Logged : E	3 : beg				Width : 0.70m Depth : 3.00 m	: 0.70m : 3.00 m			
							ш 	Excavation Method: Backhoe Excavator	Logged By:	k K		Log Scale:	e: 3.50	m/page	m/page Ground Level:	vel: -		m AO
		S	Sample/Test	Ū		trata			LON	Ē	Atterberg LImits	LImits	Det	Density S	Shear Strength		Chemical	
Date (2011)	(m)	۲ ۷	Type Depth (m)	Legend		Reduced Thickness Level of m AOD Stratum (m) (m)	Thickness of Stratum (m)	Description of Strata	Test Result	% WWC	%	<u>a</u> *	CBR Bulk	Dry %	Cu Qu <sup>°</sup> S	1. h	SO4 pH	Tes
08/11							07	(Stiff) brown clayey TOPSOIL with occasional small roots.	 						<u> </u>			
	-	<u> </u>	0.60-0.80		<b>9</b> <b>6</b>		99.0	(Stiff) orange brown slightly silty CLAY with frequent grey clay laminations and occasional small roots. (TB)		24.0	<del>_</del>	<u>– Eg</u>	(8)12.00	1.540				
1					<u>8</u>			(Stiff) orangey grey brown slightly sitty CLAY with occasional grey laminations. (TB)										
	8		8 1.80-2.00				8								> 6			
L							8	(Soft) orange brown slightly silty CLAY with grey and orange laminations. (TB)							27	>		
	n 		B 2.80-3.00				0.20	(Soft) dark grey, black and grey orange CLAY. (TB)			-							
					8		i I	End of Trial Pit at 3.00 m							×			
Scale Di as V Shown B	Disturbed Samples W Water Sample D Small Bag B Large Bag H Tin J Jar		Undisturbed Samples U100 105mm Diameter U38 U100 Groundwater: ▼ Siruck ⊻ Rose to	S B P C	Symbols PT Penetrallon Tests P Probe CBR (I) Other Tests Undertaken	rtaken		e of Shear Teet Shear Vane Cu Undrained Cohesive Strength Shear Box Øu <sup>4</sup> Internal Friction Angle Thaxiai (Undrained)	Notes : Geology and Other Tests : See "Sampla I Soil strengths from on-sit	Other Tes See "Samp Soil strengt from or	Other Tests : See "Sample Descriptions & Symbols" at Soil strengths (In brackets) are assessed from on-site observations	ions & Sym (ets) are as vations	d Other Tests : See "Sample Descriptions & Symbols" at end of logs Soil strengths (in brackets) are assessed from on-site observations	of logs		LINCS LAB	5303	

doL	Job Number:		35361						Site: Boston WTS, Slippery Gowt Lane	wt Lane			F	Trial Pit.: TP6	::: <b>TP6</b>		Sheet 1	t 1 of	
Remarks : Surface -	rks : Ice - stubble	i field. P	it sides did	1 not collapse	 					Orlentation:	N-S-N :u		Dir	Dimensions:					
Grou	ndwater see	• sageda	encountere	Groundwater seepages encountered at 2.0m.				0	Client: LCC	Face Logged : E	∃:pe				Width	Width : 0.70m Depth : 3.00 m			
									Excavation Method: Backhoe Excavator	Logged By:	сK ж		Log Scale:	a: 3.50	m/page	Ground Level:	svel: -		шAC
			Sample/Test	est	Ϋ́Ο	Change of Strata	trata				Ĺ	Atterberg Limits	LImits	å	Density	Shear Strength		Chemical	
Date (2011)		°Z	Type	Depth (II)	Legend	Depth Reduced below Level GL m AOD (m) (m)		Stratum (m)	Description of Strata	Test Result	% NMC	~ Б ~		CBR Bulk % Maim <sup>3</sup>	D D D	cu Qu <sup>°</sup>	- H	SO4 PH	
08/11								0:30	(Soft) brown clayey TOPSOIL with occasional small roots.				1		,				
				<u>al</u>		0.30		0:30	(Loose) fine orange SILT with occasional small roots. (TB)	]									
		-	۵	09.0-0-09.0 09.0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0		0.60	0	0.40	(Stiff) grey brown slightly sifty CLAY with occasional small roots and rare small pocket of very soft black clay. (TB)		19.0			(B)14.00 (B)14.00	1.700				
l				<u></u> ╹╌╌╷╸╸┟╶╴┼		1.00 0	0	0.50	(Stiff) orange brown slightly silty CLAY. (TB)							8	>		
		8	n			8	D	 S:	(Firm) orange brown slightly silty CLAY with occasional grey and orange silty day larminations. (TB)								>		
_L				<u>·ႃ</u> ႃ <u></u> · · · · · · · · · · · · · · · · · · ·		2.00			(Soft) orange brown CLAY. (TB)										
		e	Ď	8 8 8 8 8 8 8 8 8 8 7		3.80	G	0.20	(Soft) dark grey and orange brown CLAY with occasional large pockets of soft								26		
3				<u> </u>		00.0		[** 	grey silly clay. (TB) End of Trial Pit al 3.00 m	k									
Scale D as Shown B	Disturbed Samples W Water Sample D Small Bag B Large Bag B Large Bag	mples j jar	Undisturber U100 105mr U38 U100 Groundwate	d Samples n Diameter nr: Rose to	Symbols PT Penetralion P Probe CBR (i) Other Tests	nbols Penetrallon Tests Probe CBR Other Tests Undertaken	faken	₩ <u>₩</u> >8×	e of Shear Test Shear Vane Cu Undrained Cohesive Strength Shear Box Øu <sup>*</sup> Internal Friction Angle Triaklal (Undrained)	Notas : Geology and Other Testa : See "Sample C Soil strengths ( from on-sit	Other Tes See "Samp Soll strengt	ier Testa : "Sample Descriptions & ; strengths (in brackets) ar from on-site observations	Chhar Testa : Cehar Testa : See "Sample Descriptions & Symbols" at end of logs Soil strengths (in brackets) are assessed from on-site observations	ools" al end	of logs		LINCS LAB	522) 5300	355

Remarks : Surface - slubble field. Pit sldes did not collapse. Groundwater was not encountered. Breat Sample/Test Date Water No Type Depth L	ble field. F was not er	Pit sldes												15		
Groundwater v Date Date vater (2011) (m)	was not er		did not collapse	¢,			Location: 534045E - 341595N	Orlentation:	n: N S		Dime	Dimenslons: Le	1.5	1	- 1	
		nounter	ed.				Client: LCC	Face Logged : E	ed : E			≤ Ŏ	Width : 0.70m Depth : 3.00 m	EF		
							Excavation Method: Backhoe Excavator	Logged By:	ъ к		Log Scale:	3.50 m/pa	m/page Groun	Ground Level: -		m AC
		Sample/Test	Test	Ğ		trata		TdM	At	Atterberg Limits	Imits	Density		Shear Strength	Chemical	
- 08/11	N N	Type	Depth (m)	Legend	Depth Reduced below Level GL m ADD (m) (m)	Reduced Thickness Level of m AOD Stratum (m) (m)	Description of Strata	Test Result	" " " " " " " " " " " " " " " " " " "	ж Ъг %	PI CBR	IR Bulk Dry Mg/m <sup>3</sup> Mg/m <sup>3</sup>		Zu <sup>c</sup> Shear		Tes
3						}	(Firm) brown slightty gravelly clayey TOPSOIL with occasonal small roots and rare plastic bag.	  }						19a1		
	-	۵	20 20 20 20 20 20 20 20 20 20 20 20 20 2		0.40	0.20	(Firm) dark orange brown CLAY with rare blue plastic bag. (MG?)									
		I					(Sliff) dark orange brown slightly silty CLAY with occasional small roots. (TB)		19.0		(J) (B) (3) (3) (3) (3) (3) (3) (3) (3) (3) (3	00				
			<u>~ ╄╵ ┶</u>			0:90							8	>		
	И	۵.	1.80-2.00		1.50	0.50	(Soft) brown CLAY with occasional grey and orange laminations and mottles and frequent shells. (TB)									
]			<u></u>		2.00		(Soft) dark grey black and light grey brown CLAY. (TB)						55	>		
			4 - 4 - 4 - 4 - 4 - 4 - 4 89 80 80 80 80 80 80 80 80 80 80 80 80 80			1.00										
11/20			1   1   1		3,00		End of Trial Prt at 3.00 m						82	>		
<b>1</b>	urbed Samples Water Sample Small Bag	Undistu U100 1( U38 U	Undisturbed Samples U100 105mm Diameter U38 U100	Symbols PT Penetration Tests D comba Coto	ation Tests		Type of Shear Test V Shear Vane Cu Undrained Cohesive Strength SB Shear Box Øu'r Internal Friction Andre	Notes : Geology and Other Tests : See "Sample I	Other Tests	: Descriptio	na & Symbol:	Scher Tests : Sother Tests : See "Sample Descriptions & Symbols" at end of logs		LINCS	$\neg$	Г
Shown B Large Bag T Tin J	Bag J Jar	Ground Struc		. €	Other Tests Undertaken	laken	Trlaxlal (Undrained)	-,	Soil strengths from on-s	strengths (in brackels) an from on-site observations	Soll strengths (in brackets) are assessed from on-site observations	sed		Telephone (	Telephone (01522) 530355	55

### GROUND INVESTIGATION REPORT FOR BOSTON WASTE TRANSFER STATION, SLIPPERY GOWT LANE, RIVERSIDE INDUSTRIAL ESTATE, LINCOLNSHIRE

### NOTES ON SAMPLE DESCRIPTIONS AND SYMBOLS

### 1. Sample Descriptions

Sample descriptions are in accordance with BS 5930 : 1999 Code of Practice for Site Investigations<sup>(1)</sup> but with the following additional terms also being used.

rare	intermittent appearance less than 2%
occasional	intermittent appearance 2% to 5%
with a trace	less than 10%
with a little or with frequent	10% to 25%
with some or with numerous	25% to 40%
and	about equal

### 2. <u>Geology</u>

(TB)	Quaternary Terrington Beds
(GT)	Quaternary Glacial Till
(GD)	Quaternary Glacial Deposits
(AmG)	Jurassic Ancholme Group

### 3. Test Results

Where a result of 0.09g/l is reported for SO<sub>4</sub>, the laboratory test result report gave a result of less than 0.1g/l.





### **APPENDIX (iii)**

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LABORATORY TEST REPORT

-

Tel: (01522) 530355

Fax: (01522) 510573

St Georges Lane Riseholme Lincoln LN2 2LQ

www.Lincolnshire.gov.uk/Lincslab

TO:

Environmental Management Witham Park House Witham Park Waterside South LINCOLN

REPORT NO: JOB NO: DATE: 59526 35361 19 December 2011

PROJECT TITLE: WORK UNDERTAKEN: BOSTON & SOUTH HOLLAND WTS ANALYSIS OF GROUND INVESTIGATION SAMPLES

1Jul

Authorising Signature:

(G Johnson; Supervisor - Laboratory Testing)

### Notes:

- 1. This report is factual and only relates to the items tested.
- 2. Advice on the interpretation of these results is available from Lincs Laboratory Consultancy Staff. Opinions and interpretations are outside the scope of our UKAS/ISO 17025 accreditation.
- 3. Any samples or their residues will normally be kept for four weeks after the publication of this report.
- Tests marked 'UKAS accredited' in this report are listed in our UKAS accreditation schedule bearing No.0699.
- 5. This report shall not be reproduced except in full, without written approval of Lincs Laboratory.

### Distribution:

√1 - Client (Via S Wells)

1 - Lab File

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www.Lincolnshire.gov.uk/Lincslab

REPORT:	59526
JOB NO:	35361
DATE:	19 December 2011

### **BOSTON & SOUTH HOLLAND WTS** PROJECT TITLE: ATTERBERG LIMITS TEST RESULTS WORK UNDERTAKEN:

Lab Sample No.	BH (No)	Sample (type)	Depth (m)	NMC (%)	LL (%)	PL (%)	<b>Pl</b> (%)	Ret 425um (%)
S765-11	1	d	3,20-3,65	51	59	28	31	0
S766-11	1	d	6,70-7.00	17	29	13	16	29
S768-11	1	d	10,50-10,95	11	44	18	26	39
S769-11	1	d	13,50-13,95	17	35	16	19	15
S770-11	1	d	16.50-16.95	19	33	20	13	14
S771-11	1	d	19.50-19.80	16	30	20	10	12
S774-11	2	d	1.20-1.65	28	37	20	17	0
S775-11	2	d	12,00-12,45	15	38	19	19	12
S776-11	2	d	16.50-16.95	14	38	23	15	9
S778-11	4	d	1.20-1.65	36	54	24	30	0
S779-11	4	d	7.50-7.95	14	28	15	13	40
S781-11	4	d	13,50-13,95	19	33	17	16	11
S782-11	5	d	4.20-4.65	84	66	39	27	27
S783-11	5	d	10.50-10.95	18	34	16	18	27
S784-11	6	d	9.00-9.45	32	33	28	5	2
S786-11	6	d	12.00-12.45	18	35	18	17	22

### Notes:

i) ii) iii) i∨) ∨)	Sampler Sampling Procedure Date Received Date Tested Test Procedures	: Lincs Lab Contracted Drillers (SIS) : BS5930:1999 (Not UKAS Accredited) : 23.11.11 : 2 to 9.12.11 : (MC) BS 1377:Pt 2:1990 CI 3.2 (UKAS Accredited) (PL) BS 1377:Pt 2:1990 CI 5.3 (UKAS Accredited)
		(PL) BS 1377:Pt 2:1990 CI 5.3 (UKAS Accredited) (LL) BS 1377:Pt 2:1990 CI 4.4 (UKAS Accredited)

lited)

(PI) BS 1377:Pt 2:1990 CI 5.4 (UKAS Accredited) The samples were prepared in accordance with BS 1377:Part 1:1990 (UKAS Accredited)

vi) d = Disturbed vii)

Samples S765, S774, S778 and S784-11 were tested in their material state and all the other samples were washed viii) over a 425um sieve prior to testing.

Page 2 of 22

Tel: (01522) 530355

Fax: (01522) 510573

St Georges Lane Riseholme Lincoln LN2 2LQ

www.LincoInshire.gov.uk/LincsIab

REPORT: JOB NO: DATE: 59526 35361 19 December 2011

PROJECT TITLE: WORK UNDERTAKEN:

### BOSTON & SOUTH HOLLAND WTS CALIFORNIA BEARING RATIO TEST RESULTS

Lab	TP	Sample	Depth	Dry	N	MC		CBR Valu	10	Retained
Sample No.	(No)	(type)	(m)	Density (Mg/m <sup>3</sup> )	Тор (%)	Base (%)	Тор (%)	Base (%)	Məan (%)	20mm (%)
S758-11	1	В	0.60-0.80	1.52	23	23	13	15	14	0
S759-11	2	В	0.60-0.80	1.67	20	18	7.3	15	N/A	0
S760-11	3	В	0.60-0.80	1.69	20	20	7.2	9.2	N/A	0
S761-11	4	В	0.60-0.80	1.59	23	24	12	11	12	0
S762-11	5	В	0.60-0.80	1.54	24	23	11	12	12	0
S763-11	6	в	0.60-0.80	1.70	19	18	14	14	14	0
S764-11	7	В	0.60-0.80	1.68	18	19	13	13	13	0

Notes:

i)

ii)

iv)

Sampler	: Lincs Lab (CK)
Campion	

Sampling Procedure : BS 5930:1999 (Not UKAS Accredited)

iii) Date Received

ived : 23.11.11

Date Tested : 25.11.11 to 2.12.11

v) Test Procedure : BS 1377:Pt 4:1990 Cl 7.4, Surcharge Mass: 13kg (UKAS Accredited)

Method of Compaction : Dynamic (2.5kg rammer) BS1377: Part 4:1990 CL 7.2.4.4 Method 5 (UKAS Accredited)

vi) The samples were prepared in accordance with BS 1377:Part 1:1990 (UKAS Accredited)

vii) 8 = Bulk

viii) The sample was tested in an unsoaked condition.

ix) Copies of the force penetration curves are available on request.

Page 3 of 22

Tel: (01522) 530355

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St Georges Lane Riseholme Lincoln LN2 2LQ

www.Lincolnshire.gov.uk/Lincslab

REPORT:	59526
JOB NO:	35361
DATE:	19 December 2011

### PROJECT TITLE: BOSTON & SOUTH HOLLAND WTS WORK UNDERTAKEN: ANALYSIS OF GROUND INVESTIGATION SAMPLES

Lab Sample No.	BH/TP No.	Sample Type	Depth (m)
S758-11	TP1	В	0.60-0.80
S760-11	TP3	В	0.60-0.80
S763-11	TP6	В	0.60-0.80
S764-11	TP7	В	0.60-0.80
S766-11	BH1	ď	6.70-7.00
S767-11	BH1	w	7.50
S769-11	BH1	d	13.50-13.95
S772-11	BH1	d	19.5-19.95
S773-11	BH1	d	23.50-24.00
S777-11	BH3	d	0.60-1.00
S778-11	BH4	d	1.20-1.65
S77 <del>9</del> -11	BH4	ď	7.50-7.95
S780-11	BH4	w	7.90
S782-11	BH5	d	4.20-4.65
S785-11	BH6	W	10.00

### SAMPLE DETAILS:

Sample Type: Sampler: Sampling Procedure:	U = Undisturbed, d = Disturbed, B = Bulk Lincs Lab (CK) & SIS Lincs Lab Sub-Contracted Drillers BS 5930:1999 (Not UKAS Accredited)	Date Received: Date Tested:	23.11.11 1 <b>0-13.12.1</b> 1	
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### **REMARKS**:

The above samples were sub-contracted to a UKAS accredited laboratory who are accredited for the tests as detailed in their report. A copy of their report can be found on pages 5 to 22 of this report.

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**UICHOLLS COLTON** ANALYTICAL

Tel C116 253 6333 Fax 0116 251 4709 e-mail: testing@nithalls.caltan to ut website www ninholls coliton to un

Nicha: 5 Colton Analytica 7 11 Marding Street Leicenter LE1 2014

**TEST REPORT** 

# BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOIL

### **Boston and South Holland WTS**

.

		Report no. 10166-LIL/001	100/11/001	
Order reference: 46015685	01568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011
10			Material naccine a Sulfate content of Sulfate	at ac Eulfate and an I

pH value	8.1
Sulfate content as Sulfate content as Sol, of 2:1 SO4, of 2:1 SO4, of 2:1 soll/water extract (z/); (z/);	<0.1
Sulfate content as 50, of 2:1 soll/water extract (g/):	<0.1
Material passing a 2mm BS test sieve (% dry mass of original sample)	6
Sample description	Brown clay
Depth (m)	0.6-0.80
Sample type	Bulk /Disturbed
Client sample reference	5758-11 7P1
NCA sample reference	11-18644

NOTES 

Simple preparation was in accordance with \$5 \$1377 ; Part 1 - 1990 Bellin testing was in accordance with \$15.127 ; Part 3 - 1.890 (Juwa 5.5 Di Hesting was in accordance with \$1.2177 ; Part 3 - 1.890 (Juwa 5.5 Sidphala content as S0, has been cakulated by multiplying the adphase content at S0, by 1.2. \$5.1177 ; Part 3 : 1990 dask not requin \$0, Bgutes to be reported.

John Comments L. Sorrentino ١Į

Operations Manager UK & Ireland Nicholls Colton Analytical

**Lincs Laboratory** St Georges Lane Riseholme LN2 2LQ Lincoln

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**TEST REPORT** 

# BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOIL

### **Boston and South Holland WTS**

	Report no. 10166-LIL/002	66-LIL/002	
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011

pH value	7.8
Sulfate content as SO <sub>4</sub> of 2:1 soil/water extract (g/l):	0.5
Sulfate content as SO3 of 2:1 soll/water extract (g/l):	0.4
Material passing a 2mm BS test sieve (% dry mass of original sample)	96
Sample description	Brown clay
Depth {m}	0.60-0.80
Sample type	Buik/ Disturbed
Client sample reference	5760-11 TP3
NCA sample reference	11-18645

NOTES

Sample preparation was in accordance with **16**,1377 ; Part 3, 1990. Sulphate testing was in accordance with 65,1377 ; Part 3, 1990 Glause 5,5. PH testing was in accordance with 65,1377 ; Part 3, 1990 Glause 5,5. Sulphate content as SO, has been calculated by multiplying the sulphate content is SO, by 12, 15,1177 ; Part 3, 1990 does not regeare SO, figures to be reported

Lincs Laboratory St Georges Lane Rischolme Lincoln LNZ ZLQ

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**Operations Manager UK & Ireland** Nicholls Colton Analytical

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**NICHOLLS COLTON** 

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**TEST REPORT** 

# BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOIL

### **Boston and South Holland WTS**

reference	Report no. 10166-LIL/003	Order reference: 4601568559     Date of receipt: 02/12/2011     Date of testing: 10/12/2011 to 13/12/2011     Date of Issue: 14/12/2011	
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pH value	8.0
Sulfate content as SO4 of 2:1 soll/water extract (s/1):	0.4
Sulfate content as SO3 of 2:1 soll/water extract fa/ll:	0.3
Material passing a 2mm BS test sieve (% dry mass of original samole)	68
Sample description	Brown clay occasional roothairs
Depth (m)	0.60-0.80
Sample type	Bulk/ Disturbed
Client sample reference	5763-11 TP6
NCA sample reference	11-18646

NOTES

Sample preparation was in accordance with 85 1177; Part 1, 1590 Bablio testing was in accordance with 85 1177; Part 1, 1590 Clarace 5 Bablio testing was in accordance with 16 1317; Part 1, 1590 Clarace 5 Sadphate control in s Souhan been calculated by multidudic content at SOI by 12, 16 1377; Part 3, 1990 does not require SQL figures to be reported

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**Operations Manager UK & Ireland** Nicholls Colton Analytical

Lincs Laboratory St Georges Lane Riseholme Lincoln LN2 2LQ

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**DICHOLLS COLTON** P ANALYTICAL

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**TEST REPORT** 

# BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOIL

### **Boston and South Holland WTS**

	Report no. 10166-UL/004	166-LIL/004	
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011

pH value	8.1
Sulfate content as 504 of 2:1 soll/water extract (=/i).	-0-T
Sulfate content es SO3 of 2:1 soil/water extract i=/):	<0.1
Material passing a 2mm B5 test sieve {% dry mass of original sample}	87
Sample description	Brown sitty clay
Depth (m)	0.60-0.80
Sample type	Bulk/ Disturbed
Client sample reference	5764-11 TP7
NCA sample reference	11-18647

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Semple properation was in accordence with BS 1177 - Part 1 : 1390 Sulphate ureling was in accordence with BS 1177 - Part 3 : 1390 (Sulury 5 5 pH treding was in accordence with BS 1377 - Part 3 : 1390 (Sulury 5 5 Sulphate contend at SO, has been celebated by multiphyting the authories content at SO iby 1.2. BS 1377 : Part 3 : 1990 does not require SOs figures to be reported

Lincs Laboratory St Georges Lane Riseholme

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Operations Manager UK & Ireland Nicholls Colton Analytical

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**TEST REPORT** 

# BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOIL

### **Boston and South Holland WTS**

	Report no. 10166-Lit/005	1166-LIL/005	
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of Issue: 14/12/2011
		Matadal assistant - Culture	

pH value	9.0
Sulfate content as SO4 of 2:1 soll/water extract (a/l):	<0.1
Sulfate content as SO <sub>3</sub> of 2:1 soil/water extract (g/l):	<0.1
Material passing a 2mm BS test sleve (% dry mass of original sample)	69
Sample description	Light grey slightly gravelly clay
Depth (m)	6.70-7.00
Sample type	Disturbed
Client sample reference	5766-11 BH1
NCA sample reference	11-18648

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lsumple preparation was in accordance with 05 1377 : Part 1 - 1390 Subplime trailing was in accordance with 05 1377 : Part 3 : 1390 Glubas 5.5 pel testing wai in accordance with 05 1377 : Part 3 : 1990 Glubas 5.5 Subplute content as SO, had been celetated by multiphice the ulphate content at SO, by 1.2 : 05 1377 ; Part 3 : 1390 does not require SO, Agures to bergortad

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St Georges Lane Riseholme Lincs Laboratory LNZ ZLQ Lincoln

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WATER			Date	Supphate content as SO <sub>3</sub> (g/l):	1.0>	Lincs Laboratory St Georges Lane Risetholme Lincoln LNZ 2LQ
<b>DICHOLLS COLTON</b> ANALYTICAL TEST REPORT	Boston and South Holland WTS	6-LIL/016	Date of testing: 12/12/2011	Depth (m)	7.50	4 Agures to be laported
<b>DICHOLL</b> ANALYTICAL <u>TEST</u>	Boston and So	Report no. 10166-LIL/016	02/12/2011	Sample type	Water	Tering was in accordance with &S 3377 - Fart 3 : 1990 Clause 5.5. Subplua content as SQL has been calculated by multipring the adjoints content as SQD by 1.2 & 53.1177 i Furt 3 . 1990 dates not require SQL Barrento be reported for the formation of the intervence of the adjoint content as SQD by 1.2 & 55.1177 i Furt 3 . 1990 dates not require SQL Barrento be reported for the formation of the intervence of the adjoint of for a formation of the intervence of the adjoint
<u>BS 137</u>			Date of receipt: 02/12/2011	Client sample reference:	5767-11 BH1	. Fert 3 : 1390 Claure 5.3. Aled by multiplying the wighter context er SD. 101
0320			Order reference: 4601568559	NCA sample reference:	11-18649	HOTES Tering was in accordance with 15.3377 / Part 3 : 13 2 Supplus content as SQL has been calculated by mult 2 Sorrentino CL. Sorrentino Operations Manager UK & Ireland Nicholls Colton Analytical

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Report No. 59526





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### **TEST REPORT**

### BS 1377 pH VALUE

### **Boston and South Holland WT\$**

Report no. 10166-LIL/013				
Order reference: 4601568559	Date of testing: 12/12/2011			
Date of receipt: 02/12/2011	Date of issue: 14/12/2011			

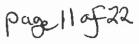
NCA sample reference	Client sample reference	Sample description	Depth (m)	pH value
11-18649	S767-11 BH1	Water	7.50	7.7

NOTES: 1. Samples ware prepared in accordance with BS 1377 : Part 1 1990 2 Testing was in accordance with BS 1377 : Part 3 : 1990 Clause 9.5

L. Sorrentino **Operations Manager UK & Ireland Nicholls Colton Analytical** 

**Lincs Laboratory** St Georges Lane Riseholme Lincoln LN2 2LQ

Page 1 of 1 RT-1377 DH, Page 1 of 1, issued by LH 11.11.10 G-\Nicholis Colton TestIng\TestData\WordDocuments\Reports\New Lemplates\AT = 1377 pH doc



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**TEST REPORT** 

# **BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOIL**

### **Boston and South Holland WTS**

	Report	Report no. 10166-LIL/006	
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011
-			
MCA Cliant		Material passing a Sulfate content as Sulfate content as	nt as Sulfate content as

Depth (m)     Sulfate content as     Sulfate content as       Depth (m)     Sample description     2mm BS test sieve     SO <sub>3</sub> of 2:1     5O <sub>4</sub> of 2:1       (% dry mass of     soil/water extract     soil/water extract     soil/water extract	13.50-         Dark grey slightly gravelly clay         87         0.4         0.5         8.0
Sample Depth ( type	Disturbed 13.50
Client sample reference	S769-11 BH1
NCA sample reference	11-18650

NOTES 2 3

Sumple preparation was in accordance with \$5.1377 : Part 1 . 1590 Participation texture accordance with \$5.1377 : Part 3 - 1590 Chanae S.S participation excordance with \$5.1377 : Part 3 - 1590 Chanae S.S Solphair contest ar 50. hts beam calculated by muchighmic the artiplusie comma at 50.154 12 \* 85.1177 : Part 3 : 1990 days readine \$0.4 Aguset to bereconted

L. Sorrentino )į

**Operations Manager UK & Ireland** Nicholls Colton Analytical

Lincs Laboratory St Georges Lane Riseholme LNZ ZLQ Lincoln

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Michaels Colton Analytical

To: 0116 253 6433 FAx 0116 251 4704 e-mail testing@nichtles colten colui wrbsite www.nicholle.colton.co.us

7 11 Harding Street Leicester, LE1 40H

**TEST REPORT** 

# **BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOLL**

### **Boston and South Holland WTS**

Order reference: 4601568559 Date of recei	ipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011

pH value	7.9
Suffate content as 504 of 2:1 soll/water extract fg/l):	0.2
Sulfate content as SO3 of 2:1 soll/water extract (g/l):	0.2
Material passing a 2mm BS test sieve (% dry mass of original sample)	96
Sample description	Dark grey chalky clay
Depth (m)	19.50- 19.95
Sample type	Disturbed
Cllent sample reference	5772-11 BH1
NCA sample reference	11-18651

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Sungle perparation wei in accardarre weh 85.1377; Part 1.:1990. Behate Netige ans in accordance with 85.1377; Part 3.:1990 (busia 6.5. Di Harding aux in accordance with 85.1377; Part 3.:1990 (busia 6.5. Sidehate content as 50, has been culculated by multipriving the autybase content at 80, by 1.2. #5.1377 \* Part 3::1990 does not require 50, figures to be reported.

L. Sorrentino ζ )į

Operations Manager UK & Ireland Nicholls Colton Analytical

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Lincs Laboratory St Georges Lane Riseholme LN2 2LQ Lincoln

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**DICHOLLS COLTON** ANALYTICAL

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**TEST REPORT** 

# **BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOLL**

### **Boston and South Holland WTS**

Order reference: 4601568559 Date of reveint: 02/13/2011		-
	Dale of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011

pH value	8.0
Sulfate content as SO4 of 2:1 soll/water extract [g/l]:	L.0>
Sulfate content as SO3 of 2:1 soll/water extract (g/l):	<0.1
Material passing a 2mm BS test sieve (% dry mass of original sample)	87
Sample description	Dark grey clay
Depth (m)	23.50- 24.00
Sample type	Disturbed
Client sample reference	S773-11 BH1
NCA sample reference	11-18652

NOTES

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Sampie proprietation was in accordance with MS 1177 Part 1. 1990 Partie results auto accordance with SS 1377. Part 3. 1990 Churate 5.5 Dif Teadrig was in accordance with SS 1377. Part 3. 1990 Churate 5.5 Safehnik canterica sSO: han been rekrubland by multipehnog the subchaire content as SO: by 1.2. BS 1177. : Part 3. 1990 does mutrequere SO: figures to be reported

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Operations Manager UK & Ireland Nicholls Colton Analytical

Lincs Laboratory St Georges Lane Riseholme LNZ ZLQ Lincoln

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**TEST REPORT** 

# **BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOIL**

### **Boston and South Holland WTS**

		Report no. 10166-LIL/009	600/TIT-99	
Order reference: 4601568559	559	Date of receipt: 02/12/2011	Date of lesting: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011
			Mutacial musican a Built a matach a Built a	

pH value	9.7
Suffate content as SO4 of 2:1 soll/water extract (a/i):	0.2
Sulfate content as SO <sub>3</sub> of 2:1 soll/water extract (a/)):	0.2
Material passing a 2mm BS test sieve (% dry mass of original sample)	66
Sample description	Brown silty clay
Depth (m)	0.60-1.00
Sample type	Disturbed
Client sample reference	5777-11 BH3
NCA sample reference	11-18653

NOTES 1. 2. 1.

Sumple Preparation was m. accordance with 85,1377 : Part 1 : 1990. Bette Accordance with 85,1377 : Part 3. 1990 Clause 55 part freading was in accordance with 85,1377 : Part 3. 1990 Clause 55 Subbrar content as SGa, has been calculated by matheyborg the autointair content as SGa, by 1.2 85,1377 : Part 3.;1990 does mat require SGa. Agures to be reponted

L. Šorrentino )÷

Operations Manager UK & Ireland Nicholls Colton Analytical

Lincs Laboratory St Georges Lane Riseholme LN2 2LQ Lincoln

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**TEST REPORT** 

# **BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOL**

### **Boston and South Holland WTS**

	Report no. 10166-LIL/010	010/11-99	
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of Issue: 14/12/2011
		Material neceles a Suifete encourse a Suifete	at as find and and an

pH value	8.0
Sulfate content as SO4 of 2:1 soll/water extract fa/li:	0,6
Aaterial passing a         Sulfate content as         Sulfate content as           Mm BS test sieve         SO <sub>1</sub> of 2:1         SO <sub>4</sub> of 2:1           (% dry mass of soil/water extract original sample)         soil/water extract original sample)         soil/water extract original sample)	0,5
Materlal passing a 2mm BS test sieve (% dry mass of original sample)	98
Sample description	Brown clay
Depth (m)	1.20-1.65
Sample type	Disturbed
Client sample reference	5778-11. BH4
NCA sample reference	11-18654

Sumple proparation was in accordance with BS 1377 F Mart 1. 12990. Dather reforms was in accordance with BS 1377. Fund 1: 12990. Gluowa 5.5 pel liebbug was in accordance with BS 1377. Part 3.12990. Gluowa 5.5. Safebhata content as SOL has been calculated by multiphyng the aughtate renders as SOJ by 1.2. BS 1377.12 art 3.1390. data not inquere SOL figures to be reported

L bee L. Sorrentino ١Į

Operations Manager UK & Ireland Nicholls Colton Analytical

Lincs Laboratory St Georges Lane Riseholme LN2 2LQ Lincoln

Page 1 of 1 NT-1177 Suphuce Sculpu, Page 1 of 1, bund by (N 12 11 10 G:Ntchodis Cotton TextDe/WordDocuments/Report/New templater(NT 1377 Sci Phidoc

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ROIL KER LULI ...... 721 Harding Street Legenses LL1 JDF

TEST REPORT

# BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOIL

### **Boston and South Holland WTS**

	Report no. 10166-LIL/011	66-LIL/011	
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 14/12/2011

Sulfate content as Sulfate content as Sol of 2:1 SO <sub>4</sub> of 2:1 SO <sub>4</sub> of 2:1 soll/water extract soll/water extract $(e^{i})$ .	0.5 0.6 9.2
Material passing a 2mm BS test sleve (% dry mass of ortiginal samole)	68
Sample description	Grey slightly gravelly sand clay
Depth (m)	7.50-7.95
Sample type	Disturbed
Client sample reference	S779-11 BH4
NCA sample reference	11-18655

NOTE: 4

Sample Properation war in accordance work 18:1377. Part 1., 1890 Partie institute and ancordance with 18:1377. Part 3.:1990 (Luase 5.5 Pht Feiturg war in accordance with 18:1377. Part 3.:1990 (Luase 5.5 Subparte content as SOL has been calculated by multiphrate the subhate content as SOL hy 1.2. 18.51377. Part 3.:1990 does not requere 50s figurar to be reported

L. Sorrentino )Į

Operations Manager UK & Ireland Nicholls Colton Analytical

Lincs Laboratory St Georges Lane Riseholme LN2 2LQ Lincoln

Page 1 of 1 RT-1377 Sophers Soliph, Page 1 of 1, bywed by LH 12,1120 G Wichelis Cofton Tesbey(TestDau/WordDocuments)Report/Mew templates)MT 1377 Sul PH Jooc

page 17 of 22

YICFALLI COLLON ANALVIICAL 7-11 Harding Street. Lorentar (EJ 4DH 7-10 0115,253 6333 Fax 0113,251 4709 9-Mail Taitinggi nicholls collen co ui wehsilo Avva nicholls collen co ui		Date of issue: 14/12/2011	Sulphate content as SO <sub>4</sub> (g/l): Sulphate content as SO <sub>4</sub> (g/l):	0.6 0.7	Lincs Laboratory St Georges Lane Riseholme LIncoln LN2 2LQ
UND WATER			Sulphat		
<b>ANALYTICAL</b> ANALYTICAL TEST REPORT ATER SOLUBLE SULFATE CONTENT OF GROUI	6-LIL/017	Date of testing: 12/12/2011	Depth (m)	06.7	a figures to be reported
ANALYTICAL ANALYTICAL TEST REPORT BS 1377 WATER SOLUBLE SULFATE CONTENT OF GROUND WATER Boston and South Holland WTS	Report no. 10166-LU(017	02/12/2011	Sample type	Water	Te karg wer in succedence wich BS 1377 : Ført 3 1990 Claure 5.5. Subjure content as 50, has been caktulated by multiplying the adjubate content as 20, by 1.2. BS 1377   Part 3 : 15910 does not require 50, figures to be reported for the content as 50, has been caktulated by multiplying the adjubate content as 20, by 1.2. BS 1377   Part 3 : 15910 does not require 50, figures to be reported for the content as 50, has been caktulated by multiplying the adjubate content as 20, by 1.2. BS 1377   Part 3 : 15910 does not require 50, figures to be reported for the content as 50, has been caktulated by multiplying the adjubate content as 20, by 1.2. BS 1377   Part 3 : 15910 does not require 50, figures to be reported for the content as 50, has been caktulated by multiplying the adjubate content as 20, by 1.2. BS 1377   Part 3 : 15910 does not require 50, figures to be reported for the content as 50, has been caktulated by multiplying the adjubate content as 20, by 1.2. BS 1377   Part 3 : 15910 does not require 50, figures to be reported for the content as 50, has been caktulated by multiplying the adjubate content as 20, by 1.2. BS 1377   Part 3 : 15910 does not require 50, figures to be reported for the content as 50, has been caktulated by multiplying the adjubate content as 20, by 1.2. BS 1377   Part 3 : 15910 does not require 50, figures to be reported to be reported as 50, by 1.2. BS 1377   Part 3 : 15910 does not require 50, figures to be reported as 50, by 1.2. BS 1377   Part 3 : 15910 does not require 50, figures to be reported as 50, by 1.2. BS 1377   Part 3 : 15910 does not reduce 50, figures to be reported as 50, by 1.2. BS 1377   Part 3 : 15910 does not require 50, figures to be required as 50, by 1.2. BS 1377   Part 3 : 15910 does not required as 50, figures to be reduced as 50, f
<u>BS 137</u>		Date of receipt: 02/12/2011	: reference:	1 BH4	5.5. 1 miljøbiete content at 20.3
			Client sample reference:	5780-11 BH4	377 : Ракт 3 1990 ติลณร หน้นเลย์ by ทยทับสัทศ เป็ เป็นได้ สิกานี้
0320		Örder reference: 4601568559	NCA sample reference:	11-18656	Norts 1. Teking wen in accordence with \$5.1377 : Farr 3. 12 2. Support content as \$0, has been cakutured by mu 2. Sorrentino Ciperations Manager UK & Ireland Nicholls Colton Analytical

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Report No. 59526





### **TEST REPORT**

### BS 1377 pH VALUE

### **Boston and South Holland WTS**

Report no. 1	10166-UL/014
Order reference: 4601568559	Date of testing: 12/12/2011
Date of receipt: 02/12/2011	Date of issue: 14/12/2011

NCA sample reference	Client sample reference	Sample description	Depth (m)	pH value
11-18656	5780-11 8H4	Water	7.90	7.3

NOTES: 1. Samples were prepared in accordance with 85.1377 - Part 1 : 1990 2. Testing was in accordance with 85.1377 - Part 3 : 1990 Gause 9.5

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L. Sorrentino **Operations Manager UK & Ireland** Nicholls Colton Analytical

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Nicholls Colton Analytical 7-11 Herning Street Leitester LL1-4DH

Tel 0110 253 6333 Fax: 0316 251 4709

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website, www.nicholls.colton.co.uk

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## **NICHOLLS COLTON**

Nichalls Chiton And Vt.cal

7-11 Harding Streat Leicenter, LE1 4DH

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website www.nicholis colton ce uk

TEST REPORT

# **BS 1377 WATER SOLUBLE SULFATE CONTENT AND PH OF SOIL**

### **Boston and South Holland WTS**

	Report no. 10166-LIL/012 – Amendment A	112 – Amendment A	
Order reference: 4601568559	Date of receipt: 02/12/2011	Date of testing: 10/12/2011 to 13/12/2011	Date of issue: 20/12/2011

pH value	6.5	
Sulfate content as 504 of 2:1 soll/water extract fa/i):	0.4	
Sulfate content as SO3 of 2:1 soll/water extract fg/):	£.0	
Material passing a 2mm BS test sleve (% dry mass of original sample)	90	
Sample description	Dark brown very sifty clay	
Depth {m}	4.20-4.65	
Sample type	Disturbed	
Client sample reference	5782-11 BH5	
NCA sample reference	11-18657	

3104 - 4 - 4 3104 - 4 - 4

Semple preparation was in accerdance with 163.1377 ; Part 1, 13990. Distance training was no accordance with 15.31377; Part 3.15990 (baueta 3.5 Distance was in accordance with 163.1377; Part 3.15990 (baueta 3.5 Selebrate content as SO4 has been calculated by melliphyng the adphate content as SO4 hay 1.3 .15371; Part 3.13990 does not require SO4 figures to be reported

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Operations Manager UK & Ireland Nicholls Colton Analytical

Lincs Laboratory St Georges Lane Riseholme Lincoln LN2 2LQ

Page 1 of 1 RT - 1377 suphere Solivelt, Page 1 of 1, 1334ved by tH 12,1110 GWRADS Colton Testing'I testbate/WordDocuments/Reports/New templates/RT 1377 Sul PHADOC

page 20 of 22

<ul> <li>M. M. Lin Control Analistica</li> <li>J. Hadine Novet Leocore (E) 40%</li> <li>Tol Dife 53 55 for 0116 251 470%</li> <li>Amail. testing. Bolicholls. Then colling website www.micholls.colling.collin</li></ul>			Date of issue: 14/12/2011	Sulphate content as $SO_3(g/l)$ : Sulphate content as $SO_4(g/l)$ :	E.1.	Lincs Laboratory St Georges Lane Riseholme Lincoln LN2 2LQ
	WATER			Sulphate cont		L LING St G
<b>DICHOLLS COLTON</b> ANALYTICAL TEST REPORT	L377 WATER SOLUBLE SULFATE CONTENT OF GROUND WATER Boston and South Holland WTS	9-11/018	Date of testing: 12/12/2011	Depth (m)	10.00	hgurer to be reported
<b>DICHOLL</b> Analytical	/ WATER SOLUBLE SULFA Boston and Sou	Report no. 10166-UI/018	72/12/2011	Sample type	Water	Tering war in accordance with \$\$.1377 : Part 3 - 1390 Charae S.S. Surphate content as SQL has been cakulated by multiplying the sudshise content as \$0, by 1.2 B\$.1377 . Part 3 : 1990 does not require \$0, hearer to be reported for the content as SQL has been cakulated by multiplying the sudshise content as \$0, by 1.2 B\$.1377 . Fart 3 : 1990 does not require \$0, hearer to be reported for the content as SQL has been cakulated by multiplying the sudshise content as \$0, by 1.2 B\$.1377 . Fart 3 : 1990 does not require \$0, hearer to be reported for the content as SQL has been cakulated by multiplying the sudshise content as \$0, by 1.2 B\$.1377 . Fart 3 : 1990 does not require \$0, hearer to be reported for the content as SQL has been cakulated by multiplying the sudshise content as \$0, by 1.2 B\$.
	<u>85 1377</u>		Date of receipt: 02/12/2011	Client sample reference:	S785-11 BH6	ы 8.5. На зиђћаја сентет ав 50, b
				Client samp	S785	1377: Բեզի 3 - 1990 Churs Եժեսնեւտեմ Եչ տակոցինուլ է
U KAAS			Order reference: 4601568559	NCA sample reference:	11-18658	MOTES Terrang was in accordance with B\$ 1377 : Part 3 - 1990 Chanae S Subhate centern as SQL has been calculated by multiplying the su L. Sorrentino C. Sorrentino Operations Manager UK & Ireland Nicholls Colton Analytical

Page 1 of 1 RT 1177 Subhare Water, Page 1 of 1, kenned by 1.H 17 31 10 G. Mechelis Collion Terretar Verstebezumenens Versons) New terrepleter) KT - 1377 Subphare Water

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Report No. 59526





### **TEST REPORT**

### BS 1377 pH VALUE

### **Boston and South Holland WTS**

Report no. 10166-LIL/015				
Order reference: 4601568559	Date of testing: 12/12/2011			
Date of receipt: 02/12/2011	Date of issue: 14/12/2011			

NCA sample reference	Client sample reference	Sample description	Depth (m)	pH value
11-18658	S785-11 BH6	Water	10.00	7.3

NOTES: 1. Samples were prepared in accordance with 85 1377 - Part 1 : 1990 2. Testing was in accordance with BS 1377 : Part 1 : 1990 Clause 9.5

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L. Sorrentino **Operations Manager UK & Ireland Nicholls Colton Analytical** 

Lincs Laboratory St Georges Lane Riseholme lincoln LN2 2LQ

Page 1 of 1 F GG C COLL RT 1977 pH Page 1 of 1, issued by 1H 11 11 10 G \Micholis Colton Teshing\TestData\WordDocuments\Reports\New templates\RT = 1377 pH doc

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Nichellt Cotte Analytic 1 7 11 Heiding Street LUceite) IE1 40H Tel 0115 255 6333 Fax 0116 151 4709 a mail testing@nichoils.coliton.co.uk website, www.nicholls.colton.co.uk



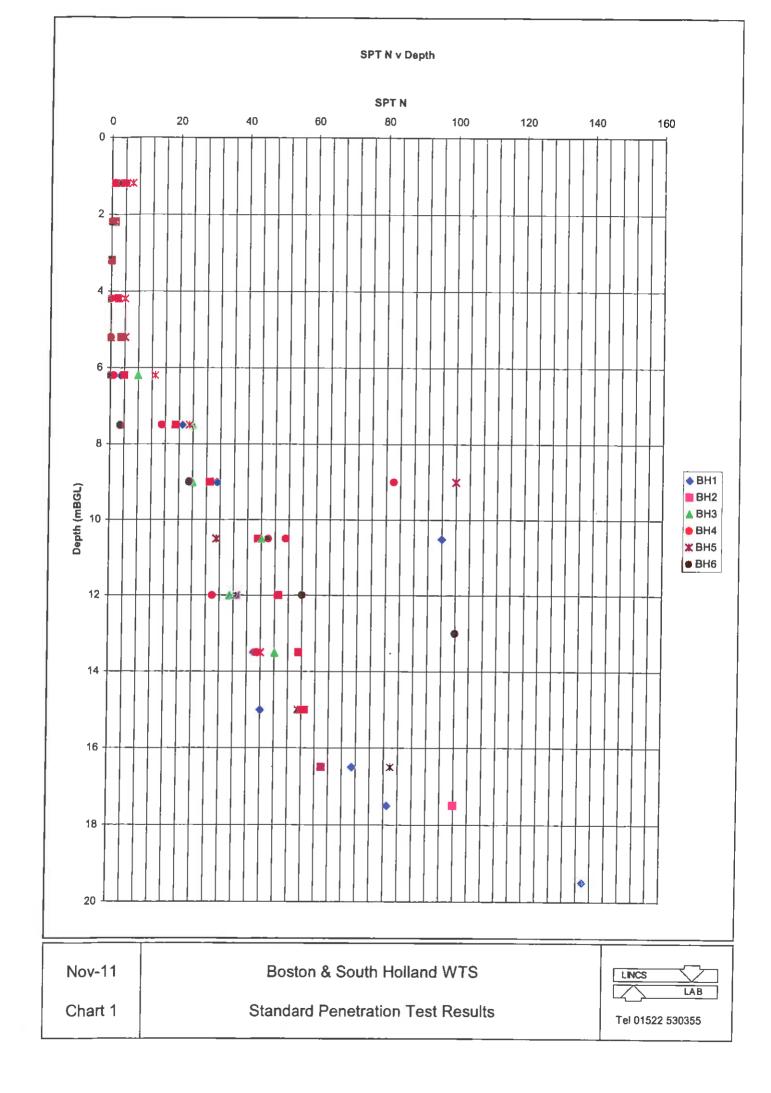
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|------------------|---------------------------------------|
| $\bigtriangleup$ | Laboratory                            |
| A Service        | a Unit of Lancolnahara County Council |

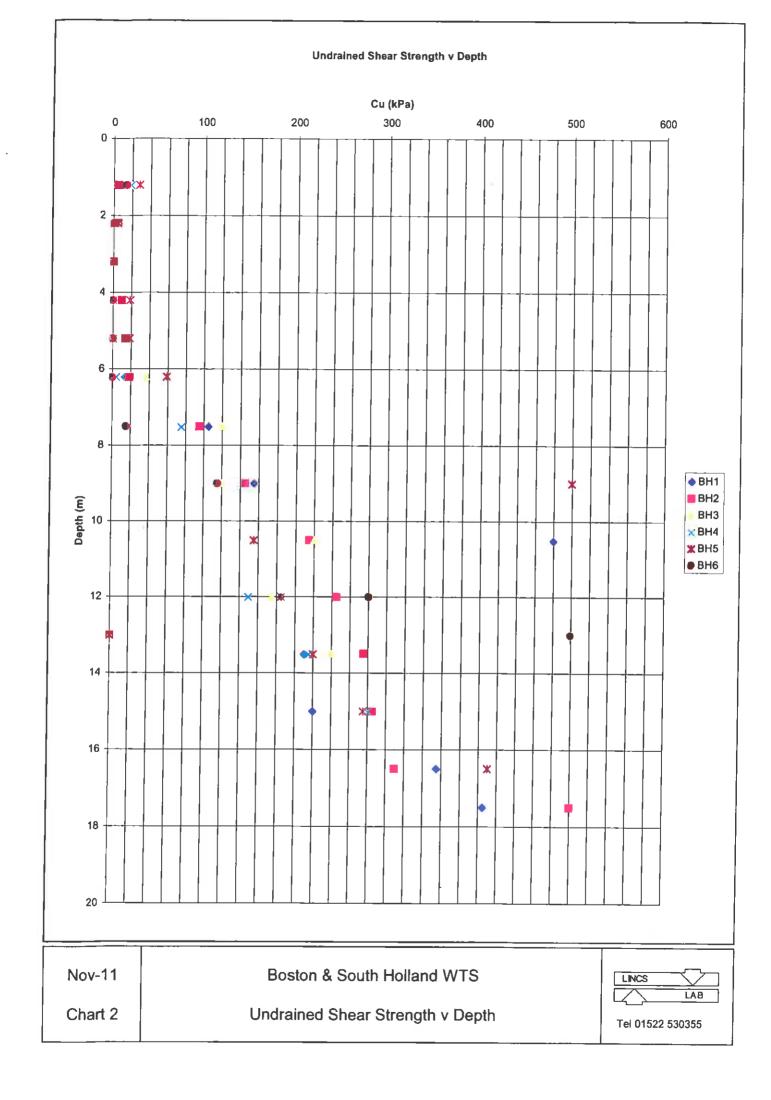
### **APPENDIX** (iv)

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CHARTS

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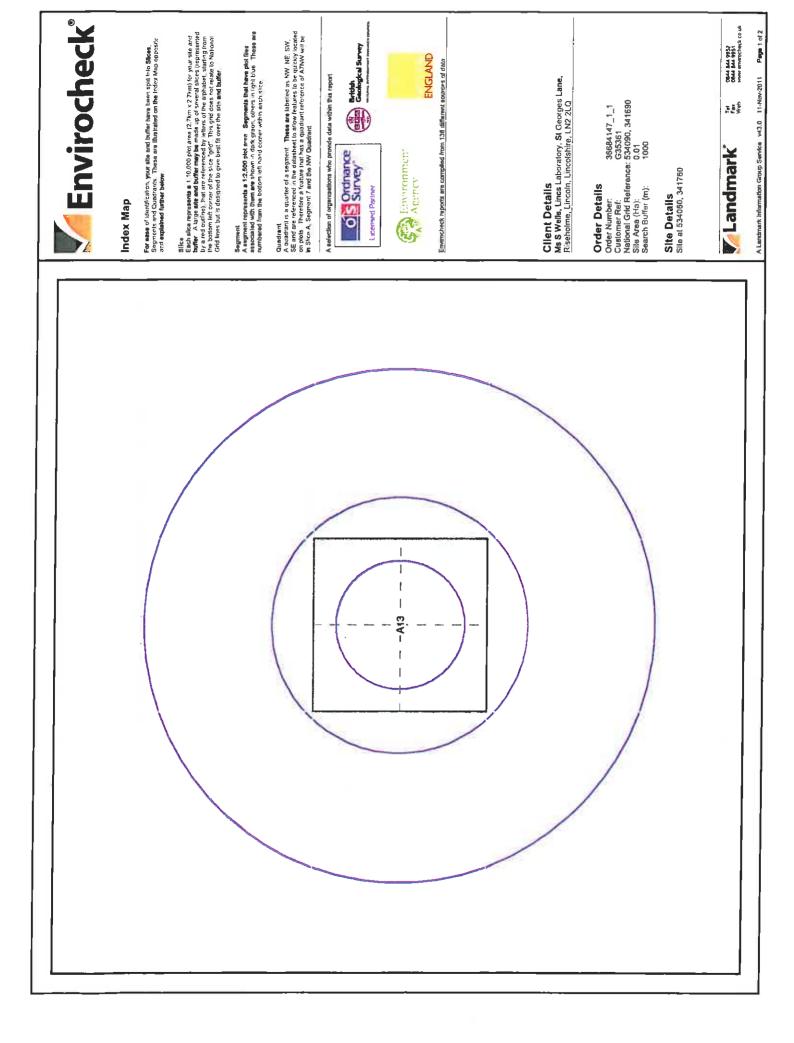


### APPENDIX (v)

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HISTORICAL MAPS

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DEFINITIONS oliowing mer clause 1 d

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5

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At any time, We may terminate the Agreement with immediate affect by giving You written notice: 4. Termination .

5. Payments . If You are in breach of the Terms and, if such breach is capable of remedy. You fail to remedy the breach within 30 days of written notice from Us. specifying the breach and requiring it to be remedied; and

any part of Your undertaking or several any part of Your undertaking or several up (otherwise than for the purpose of a bona fide acheme of solven) bona fide acheme of solven) court of competent jurisdiction stral mode an order to that fifted or if You become subject to an edministration order or enter into a volumlary carry on brainess or if You are presented with a bankruptcy petition. In the event of the termination or axpiry of the Agreement: administrator appointed over You or arrangement with Your creditors or shall cease or threaten to cease to If You have a receiver or administrative receiver or -

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Save as set out in clause 8 a. We shall not be liable to You or to any End Uear in contract, lost (including pagigreres) or for breach of staturchy duly or in any other way for. any indirect or consequential losses (which includes any loss that could not

You hold, and (d) subject to claure (a) We shall have no lability for Your use of it following termination or axphy of the Agreement, and the parties shall have no further

separately from any other data which

Agreement, without prejudice to those which have accrued to either party prior to termination or expiry save that

obligations or rights under the

the "Definitions", clauses 2 c to 2 j (inclusive), this clause 4 b, clauses 5.d, 6, 7, 9, 10 and 11 together with those other clauses the survival of

You and Us at the time of entering into loss arising from or in connection with have been reasonably expected by (hasa Terms)

contract or tort (including negligence) or for breach of statutory duty shall not exceed an amount of ten mittion pounds loss of revenues, profits, contracts or business or failure to realise iii. Ioss of goodwill or reputation Seve as set out in clause 6 a. Our total labelity to You and/or any End User in the set of th (£10,000,000) per claim or series of anticipated savings, or

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interpretation or enforcement of the Agreement or which by their neture

which is necessary for the

surviving the expiry or termination of the Agreement, shall continue to have

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If You fail to pay by the due date any

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ordening service will be uninterrupted or error these or provide any particular facilities or functions, free from defects, free from software virtues, free of arror from whilst geo-coding, processing by compute use resonable andeevours to correct any transmission; or similar, although We will such issues within a reasonable period of computer mathunction, inaccurate processing, free from comuption of date limited to notifying the relevant Supplier) or electronic means or in the course of Ihem becoming known (which may be You acknowledge and agree that no Time shall not be of the assence in providing the Content or Services.

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2 ź 6 R. £ We may provide You with professional opinions or a fait sassistant and a Report. You acknowledge and sgree that We shall carry out (or procurs that third perfere tarry out) such assessment with resconable skill and cars and that We shall be liable where any such risk assessment is carried out Property Stia for any particular purpose nor should it be relied upon for determining seleability or value or used as a substitute any information relating to the actual starte or condition of any Property Site nor should requirements and It is Your responsibility to whether past or current will be identified in for any physical investigation or inspection You acknowledge and agree that We will not be held liable in any way if a Report is You acknowledge and agree that the Services have not been prepared to meet Your or anyone stears avdividual that there are no apparent defects or failures with respect to the description and responsible for ensuring that the insurance policy offered is suitable for Your needs slatement, opinion or risk rating in a Report which resulted from a reasonable consent to forward a copy of the Report to the Services. The Services do not include purchased by You mails solely with the insurer. We do not endorse any particular product of insurer and no information acknowledge and agree that all decisions with regard to the offer of insurance policies for any premises will be made solely at the discretion of the insuren and any indication by Us that insurance will be available on the Property Site. negligentty. Nowithstanding the foregoing We shall not be listifie for any maccurate purchased, You acknowledge and agree that all liability shall remein with the and should seek independent advice. We do not guarantee that an insurrance policy will be available on a Property Site. You shall, on receipt of a Report carry out a reasonable inspection to satisfy Yourself reported on is carried out as part of any Services offered by Us and We do not location of the Property Site and shall promptly inform Us if there are any such acknowledge lihat if You Order any such Insurance We will deem such as Your person may rely on a Service more exclude actuel fitness or unfitness of a contained within the Services should be We accept no liability in this regard The provision of a Report does not constitute treed otherwise than as provided for in these Terms and/or in the Report. physical inspection of the Property Site warrant that all land uses or features You acknowledge and agree that You All llability for any insurance products ensure that the Services ordered are suitable for Your (or the End User's) they be used or taken to indicate or Neither You, nor any End User or any than 12 months after it was originally the insurers. Where such policy is insurers and that You are entirely deemed to imply otherwise You misspretation of the Content defects or failures. intended purpose other ÷, 4 E

In the event the Final Purchaser or Final Purchaser's Level events are obtain any Contribution, it shall notify La m white within 3 months of the date of the Meller The Terr Purchaser or Final Functhaser's Final Final Purchaser or Final Purchaser's Consolvable and control of the some diation works to be carried out under the commission and contlor of the some diation works to be carried out under the Broth Car and the event the Final Purchaser or Final Purchaser's Lender (as support Immelian on the osci producing support Immelian on the osci production Any rights to a Contribution under this cleare 7 are not assignable in the event of a safe of the Property Site and We shall not make any Contribution after the date of works or complying with any other reasonable request by Us, We shall not be written consent to any estimates for such First Purchaser's Lender as applicable shall take all reasonable steps to miligate conduct of works required under the terms Contribution by Us the First Purchaser or communication from a statutory authority any costs incurred in connection with the In the event that the First Purchaser or First Purchaser's Lander receives any without limitation, obtaining Our prior Notwithstanding the payment of the required to pay any Contribution completion of such sale of any Notice. ė ci served on the Frat Purchaser or Frank Purchaser's Lander of a Property Site under Part IA of the Environmental Protection Act 1990 ("the Notice") We shall the Property Site is a single residential dwelling house or a single residential flat within a block of flats. For the avoidance of doubt, this obligation Save where expressly provided, this clause contribution towards the costs of any remoduation works required under a Notice present or having occurred prior to the the Contribution shall only apply where the Contribution is strictly limited to the ensure that End Users acknowledge and agree to the limitations and exclusions of cost of works at the Property Site and any nuclear fuel or from any nuclear wrate from the combustion of nuclear or other hazardous properties of any explosive nuclear assembly or nuclear cleuse 7 shall operate to override or vary the provisions of clause 8. of naturally occurring materials except arising out of or related in any way to asbestos or asbestos-containing from the presence or required remove concentrations which are in excess of In the event that a Remediation Notice is required to carry out under the Notice subject to the provisions of this clause 7 contamination or a pollution incident Indrectly caused by or contributed to fuel or the radioactive toxic explosive compliance by any owner or occupier or arising from tonising radiations or contamination by radioactivity from the Contribution shall only apply to regulation, administrative complaint, notice of violation, or notice letter of Residential Reports (regardless of the result of such Report). Nothing In this (as defined below) on the terms of this clause 7 ("the Contribution"). contribute to the cost of such works as whether for residential purposes or the Contribution will not be paid in respect of any of the following: (1) redioactive contemination of services serving the structures; (3) naturally occurring materials ansing of the Property Site with any statute either the First Purchaser or First Purchaser's Lender (but not both) are does not apply to any commercial property. nor to any Property Site intentional non-compliance arising from the Intentional disregard of or We are prepared to offer, without any component thereof; (2) asbestos being developed or redeveloped admission or inference of liability, a knowing wilful or deliberate non-7 shall apply solely to Envirosearch whatsoever nature, drectly or malerials on or in structures or their natural concentration; (4) In circumstances where such liability set out in this clause 6. materials are present in and on the following terms: at no other site, and date of the Report: Contribution

condition which is known or ought reasonably to have been known to the property belonging to or in the custody or control of the First Purchaser which consequential indirect or economic loss damage or expense including the Without prejudice to Your other rights and remedies under the Agreement, the maximum sum that shall be contributed by We shall only pay a Contribution where the Notice is served within 38 months of the fissue date of the Report. Injury, anguish or nervous about (10) any financial loss in respect of any loss of any rankal, profit, revenue, cost of rent of temporary premises or business interruption, and/or (11) any lossest incurred following a meterial Property Site or the structure. (8) any fines liquidated damages punitive or condition which is caused by acts of war or an act of terrorism; (7) any Us in respect of any Contribution shell be limited to £60,000. In the event that more Property Site the Contribution will only be payable under the first Report purchased by or on behalf of any first Purchased or First Purchaser's Lender and no Contribution will be mude in respect of exemplary damages, (9) any bodily Indraguent Reports purchased by or on behalf of such First Purchaser, First injury including without limitation. development of the Property Site. death, diness or disease, mental does not form a fixed part of the than one Report is purchased on the Purchaser's Lender prior to the purchase of the Report; (6) any change in use of, alteration or Purchaser's Lander of any person connected to them. First Purchaser or the First savings or business or any

their obligations caused by any circumstance beyond their control, and such party shall be entitled to a resconable extension of time for the performance of such obligation. é

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We will (or Our agents will) respond to any such complaints in writing as soon as Any complaints in relation to the Services should, in the first instance, be in writing Support Manager at Our registered office 10.Complaints and Dispute Resolution addressed to the Customer Service practicably possible

ė from time to time, which Proceedure is demned to be incorporated by reference between the parties, the mediator will be noninsted by the Centra for Effective branded by the Centra for Effective branded by the Centra for Effective branded by the Centra for Effective mediation is parity to the dispute mediation is parity to the dispute organisting a mediation. The mediation will a start the date of service of such notice. If the Dispute has (or such other period as they shall agree) after the date of service of such notice then either party may refer the Dispute to the Dispute by mediation in accordance with the Centre for Effective Dispute Resolution If any dispute arises out of or in connection with the Terms of the Agreement or their validity ("Dispute") the parties undertake, subject to clause 10.c, that prior to commencement of court proceedings they will negotiate in good faith to settle such not been resolved to the mutuel satisfaction of the parties within 60 days Model Mediation Procedure as in force courts in accordance with clease 11 /

Clause 10.b shall be without prejudice to the rights of termination stated in clause 4 a and in addition shall not prevent Us from.

shall ensure that they advise Us within a maximum period of two months from

Environmental Protection Act 1990 You

a notice received under Part IA of the

applying for injunctive relief in the case of. (1) breach or threatened breach of threatened infingement of Our or Our Suppliers' intellectual property rights, confidentiality, or (2) infringement or

clauses 7 a and 7.g, and any such communications, even if advised to Us will

not operate as notice under clause 7.6.

under it shall not affect the provisions of

clause 7 h and the service of any hotice

receipt of such communication. This

We restaive the right at any time prior to a claim for Contribution being made in accordance with clause 7.g above, to withorswithe offer of payment of

Contributions without further notice Assignment and Sub-contracting

pursuing a debt claim for the payment of the Fees Ъ

deemed to be deleted from the Agreement and never to have formed part of the a. If any provision of the Agreement is found Agreement and the remaining provisions shall continue in full force and effect suthority to be void, invalid, itlegal or unenforceable, that provision shall be by either a court or other 11.General

We shall be entitled to assign or transfer the Agraement as We resonably see fit.

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j.

The Agreement is personal to You You ahalt not assign, transfer, sub-ticence or

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otherwise design, with any of Your rights and obligations under the Agreement without Our prior written consent. We may suthorise or allow Our contractors and other third parties to provide to Us

No delay, faiture or omission on Our, or any Supplier's, part in enforcing, exercising Our privacy policy as displayed on Our Websile and updated from lime to time governa the use that We shall make of any information provided by You or an End deemed to be or construed as a walver of that or any other right, power, privilege, partial exercise of any such right, power privilege, claim or remedy preclude the exercise of that or any other right, power. claim or remedy conferred by or arising under the Agreement or by law shall be claim or remedy, nor shall any single or or pursuing any right, power, privitege. privilege, claim or remedy.

> and/or to You services necessary or related to the Services and to perform Our obligations and azarces Our rights under these Terms, which may include collecting

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Neither party to the Agreement shall be fiable for any delay or failure to perform

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Events Beyond Our Control payment on Our behalf.

made pursuant to these Terms shall have oright under the Contract (1984) to Thind Parties) Act 1995 to enforce any terms of the Agreement and We shall and be sable on any such thard party unspect of the Products, swe that any Supplier may 1899. Notwithstanding any other provisions of the Agreement, We may rescind or very A person who is not a party to any contract enforce any of these lerms and conditions against You in accordence with the the Agreement in accordance with its terms without the consent of the Suppliers Contracts (Rights of Third Perlies) Act und accordingly section 2(1) of the Contracts (Rights of Third Parties) Act User.

User's compliance with the Terms and You shall be lisble for all breaches of the Terms by the End Users as if they were breaches complies with and is bound by the Terms and shall procure that We may in Our own right enforce such terms and conditions signing the End User pursuant to the Contracte (Rights of Third Partles) Act 1999. You shall be responsible for End You shall ensure that each End User by You

1999 shall not apply

with it shall be governed by and construed in accordance with the laws of England obligations arising out of or in connection The Agreement and any non-contractual and, subject to clause 10.b. each party irrevocably submits to the exclusive iurisdiction of the courts of England and A Landmark Information Group Service

Order Number: 36684147

Landmark Information Group Limited, 7 Abbey Court, Eagle Way, Exeler, EX2 7HY Email: Info@landmark.co.uk C Landmark Information Group Limited

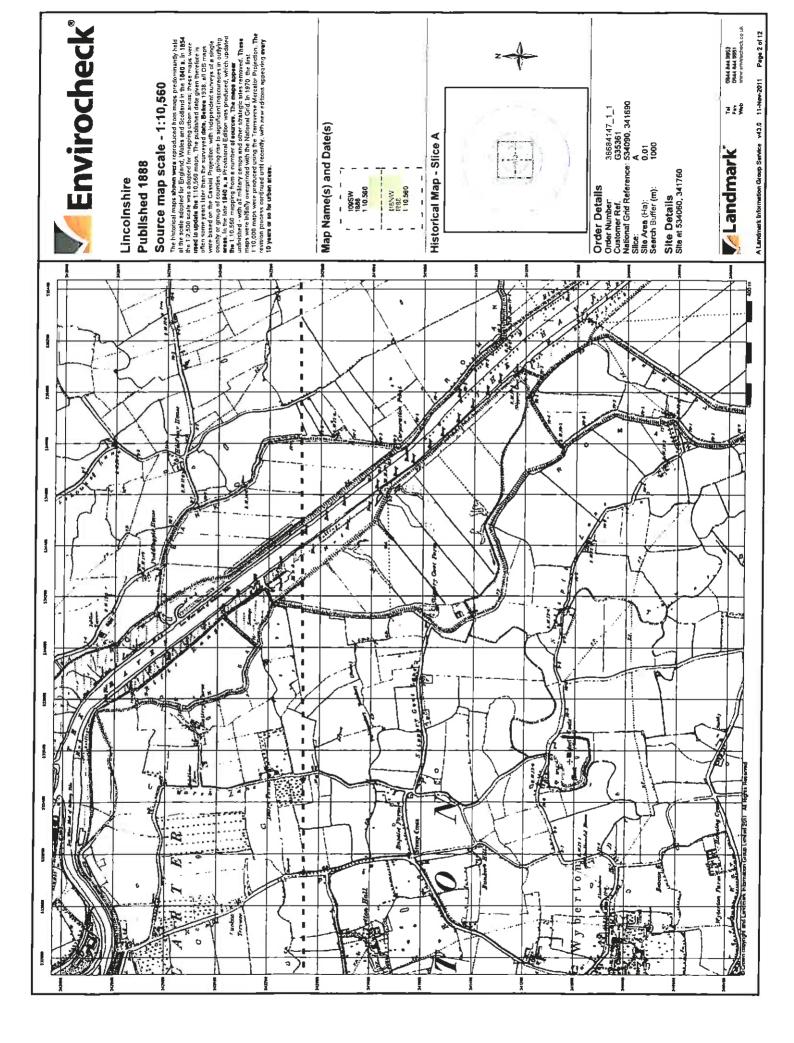
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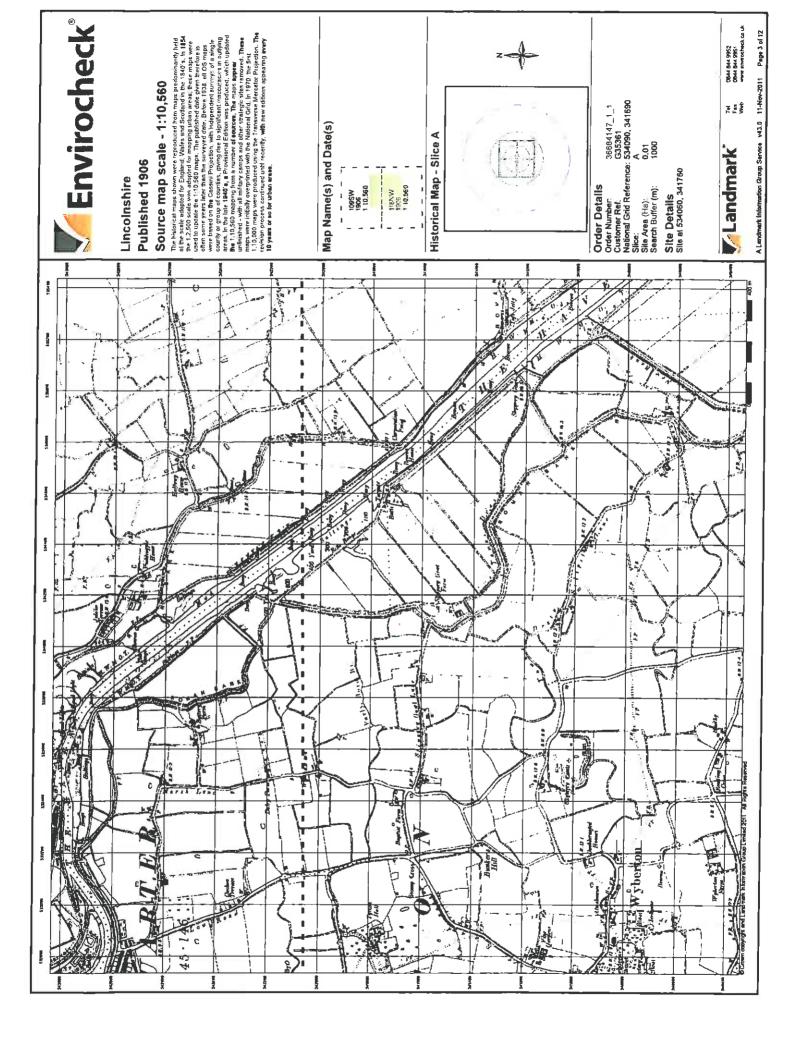
any Regulatory Authority, (5) any

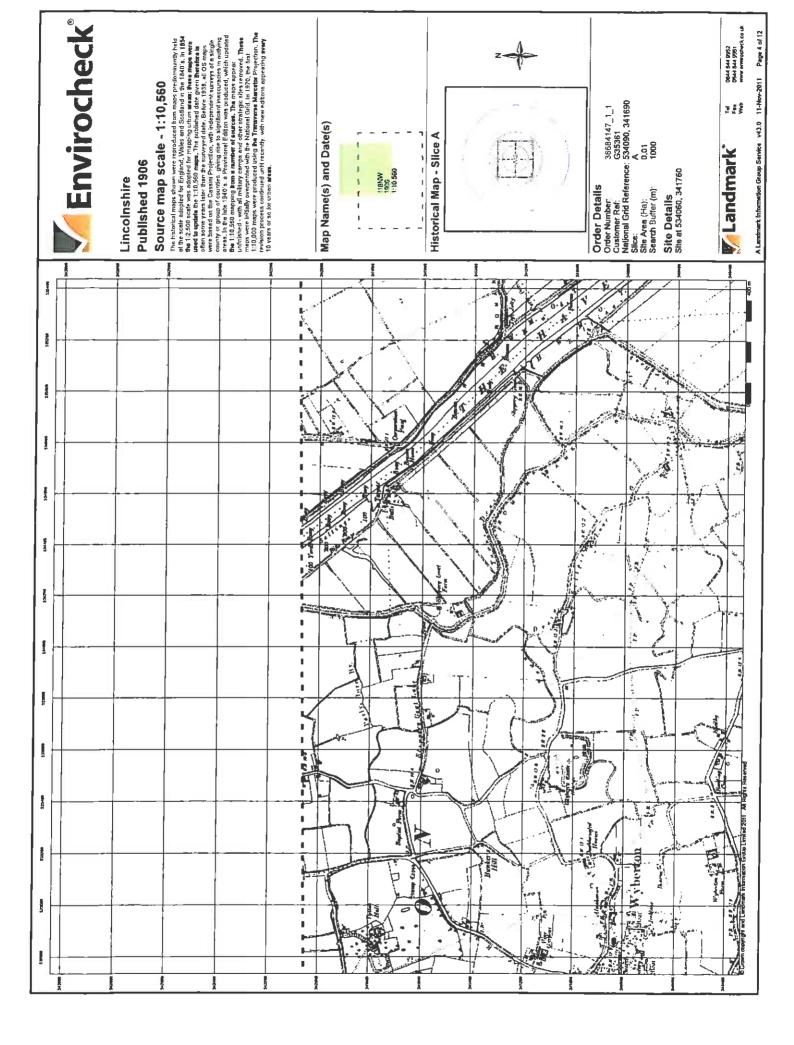
You shall use all reasonable endeavours to

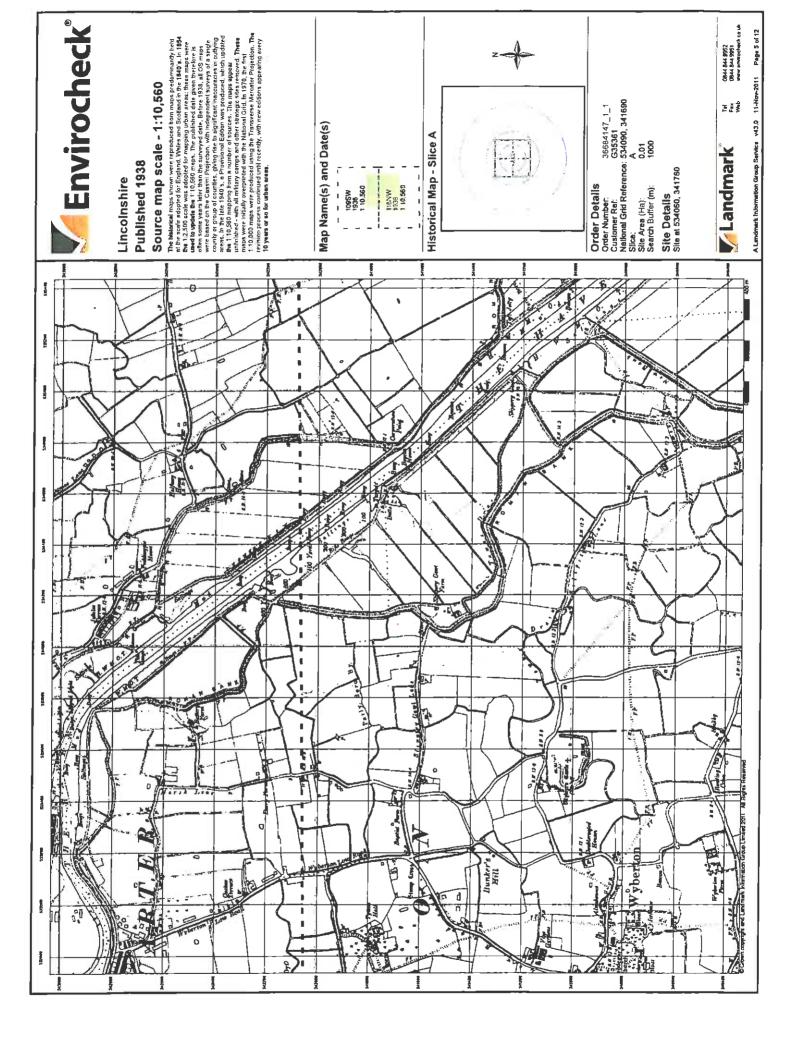
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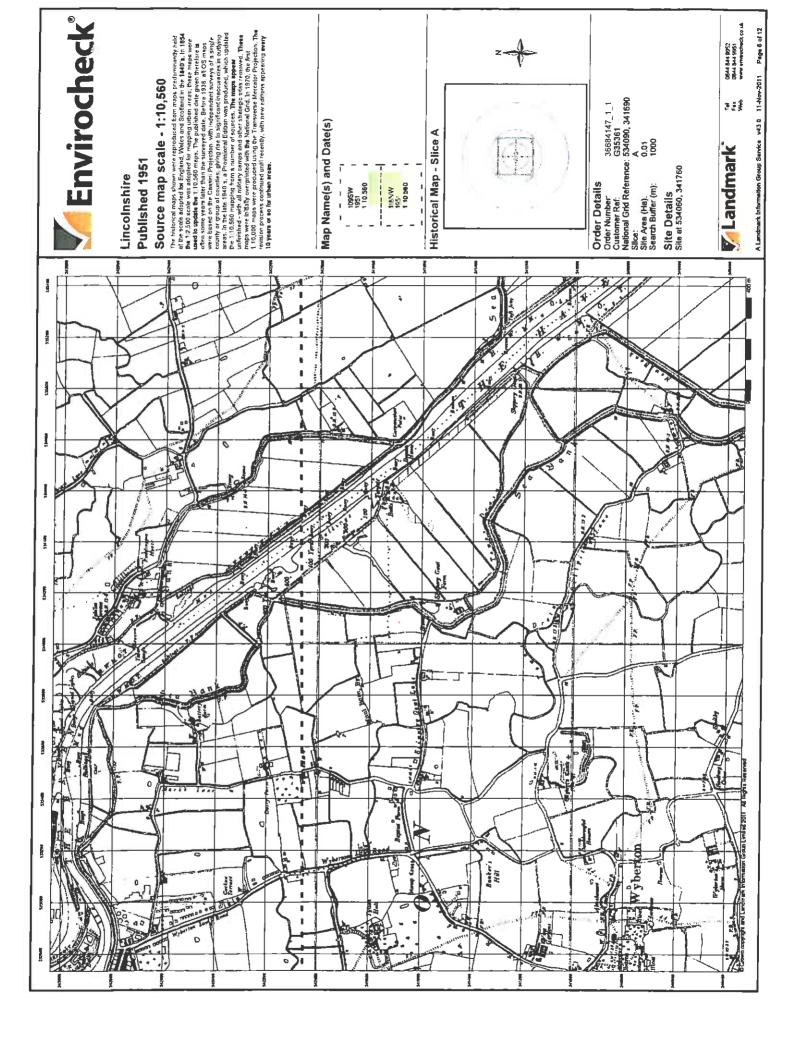
| <b>Envirocheck</b>                                       | Historical Mapping & Photography included:<br>Historical Mapping & Photography included:<br>Historical Mapping & Photography included:<br>Historical Mapping & Photography included:<br>Historical Mapping & 1:10,600 1931 0 1<br>Uncentative Survey Plan 1:10,600 1931 0 1<br>Unclaneae Survey Plan 1:10,000 1931 1 1<br>Orthanees Survey Plan 1:10,000 1931 1 1<br>UN Ratter Mapping 1:10,000 2011 1 1<br>UN Ratter Mapping 1:10,000 2011 1 1<br>UN Ratter Mapping 1:10,000 2011 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Historical Map - Slice A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Order Detalls<br>Order Number: 35684147_1_1<br>Customer Rel: 5330561<br>National Grid Reference: 534090, 341590<br>Site Area (Ha): 0.01<br>Site Area (Ha): 0.01<br>Site Details<br>Site Details<br>Site at 534050, 341760<br>Fit 04444907<br>Fit 064444907<br>Fit 064444907<br>Fit 064444907                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| 1:10,000 Raster Mapping                                  | Image: Strand Pti (Strand                                                                                                                                                                                                                                                                                    | Arra of wooded     Arra of wooded     Arra of wooded     Arra of wooded     Mon-conferous       C     D     Non-conferous     Arra of wooded     Arra of wooded     Arra of wooded       Arra of wooded     D     Arra of wooded     Arra of wooded     Arra of wooded     Arra of wooded       Arra of wooded     D     Non-conferous     Arra of wooded     Arra of wooded     Arra of wooded       Arra of wooded     Conferous     Arra of wooded     Arra of wooded     Arra of wooded       Arra of wooded     Arra of wooded     Arra of wooded     Arra of wooded       Arra of wooded     Arra of wooded     Arra of wooded       Arra of wooded     Arra of wooded     Arra of wooded       Arra of wooded     Arra of wooded     Marrah, Sall | Writer feature     Flow arrows       ************************************                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Historical Mapping Legends Ordnance Survey Plan 1:10,000 | Chalk PH, Clay PH     Sand PH     Sand PH       Refuse of<br>Sand PH     Image     Daves       Sand PH     Image     Daves       Image     Image     Daves       Image     Image     Image       Image     Image <td< th=""><th></th><th>Br. Controly of Chy     Controly of Chy       Anticipation of Develop (Landar)     Marticipation of Develop (Landar)       Marticipation of Develop (Landar)     Marticipation of Develop (Landar)       Marticipation of Develop (Landar)     Encrupty (Burgh) of Causary       Develop (Landar)     Encrupty (Burgh) of Causary       Develop (Landar)     Encrupty (Burgh) of Causary       Develop (Landar)     Provide an abolication (abolication)       Diff (Landar)     Provide an abolication)       Diff (Landar)     Provide an</th></td<> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Br. Controly of Chy     Controly of Chy       Anticipation of Develop (Landar)     Marticipation of Develop (Landar)       Marticipation of Develop (Landar)     Marticipation of Develop (Landar)       Marticipation of Develop (Landar)     Encrupty (Burgh) of Causary       Develop (Landar)     Encrupty (Burgh) of Causary       Develop (Landar)     Encrupty (Burgh) of Causary       Develop (Landar)     Provide an abolication (abolication)       Diff (Landar)     Provide an abolication)       Diff (Landar)     Provide an |
| P<br>Ordnance Survey County Serles 1:10,560              | Gravei     Sand     Other       Pit     Find     Other       Other     Shinge     Other       Oders     Reeds     Shinge       Marsh     Reeds     Narsh       Marsh     Reeds     Shinge       Marsh     Reeds     Narsh       Marsh     Reeds     Reeds       Reeds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Sketched in frishumental                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | River or Canal )<br>Read over<br>Stream<br>- County Boundary (Geographical)<br>- County Boundary (Geographical)<br>- Administrativa County & CMI Par<br>- Administrativa County & CMI Par<br>- County Boundary (Scotlan<br>- Rural District Boundary<br>- Civil Parlet Boundary<br>- Civil Parlet Boundary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

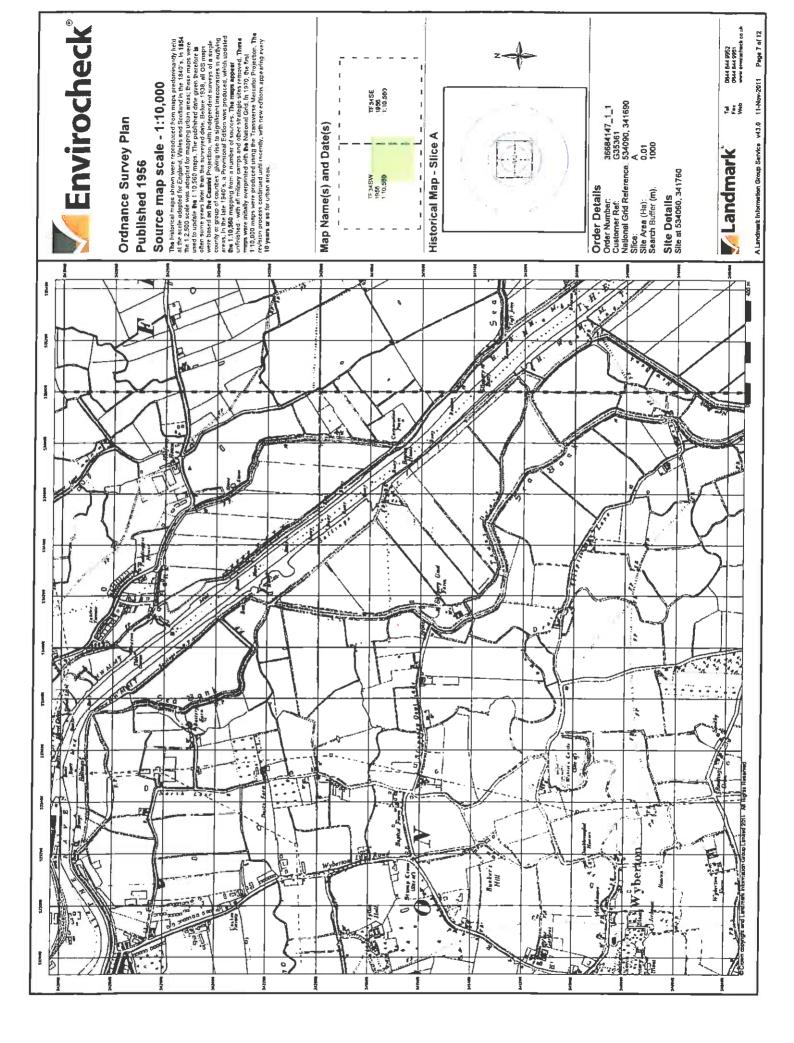


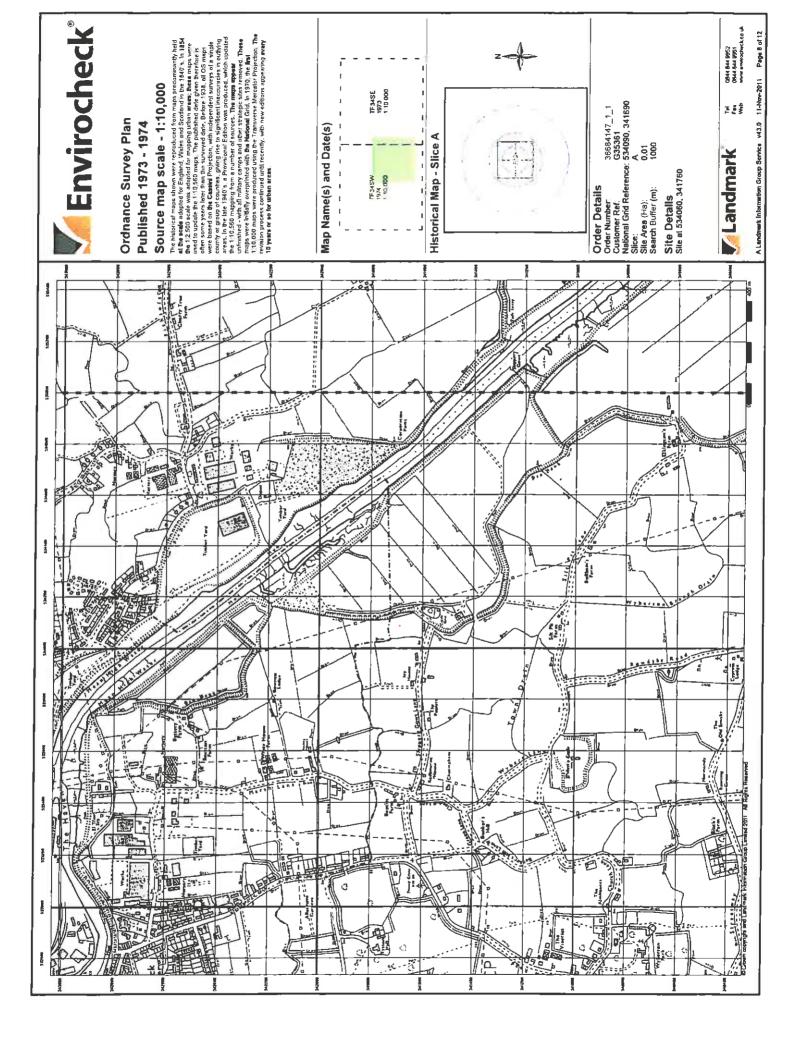


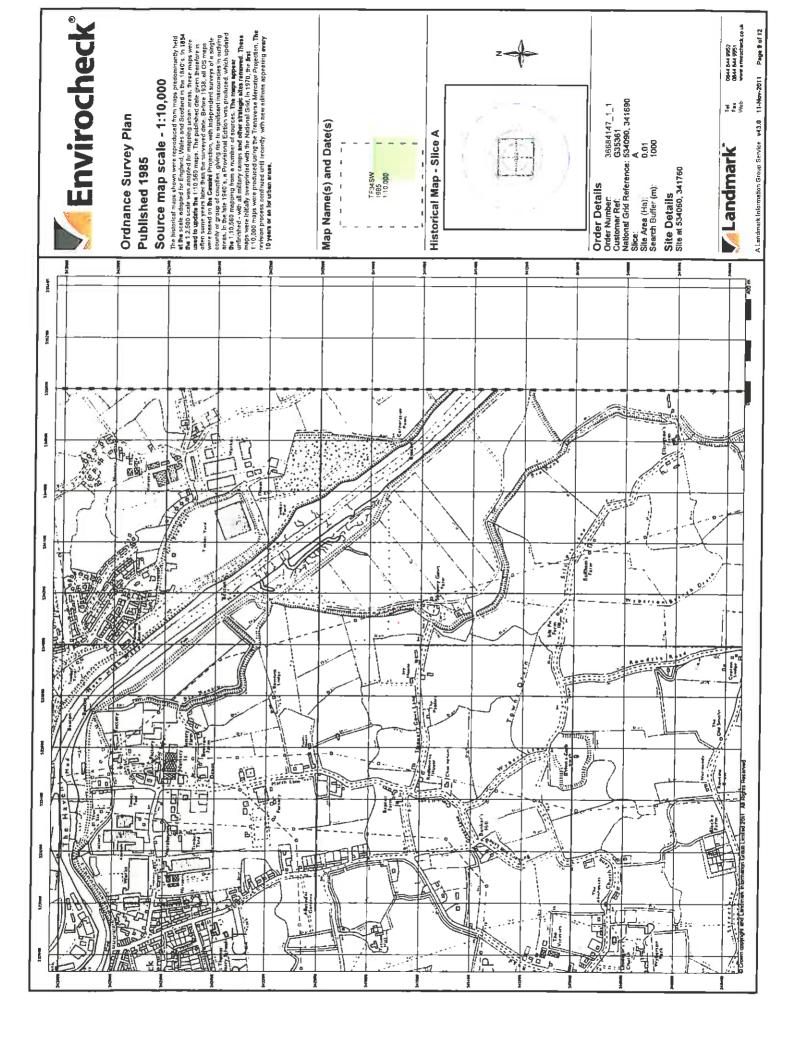


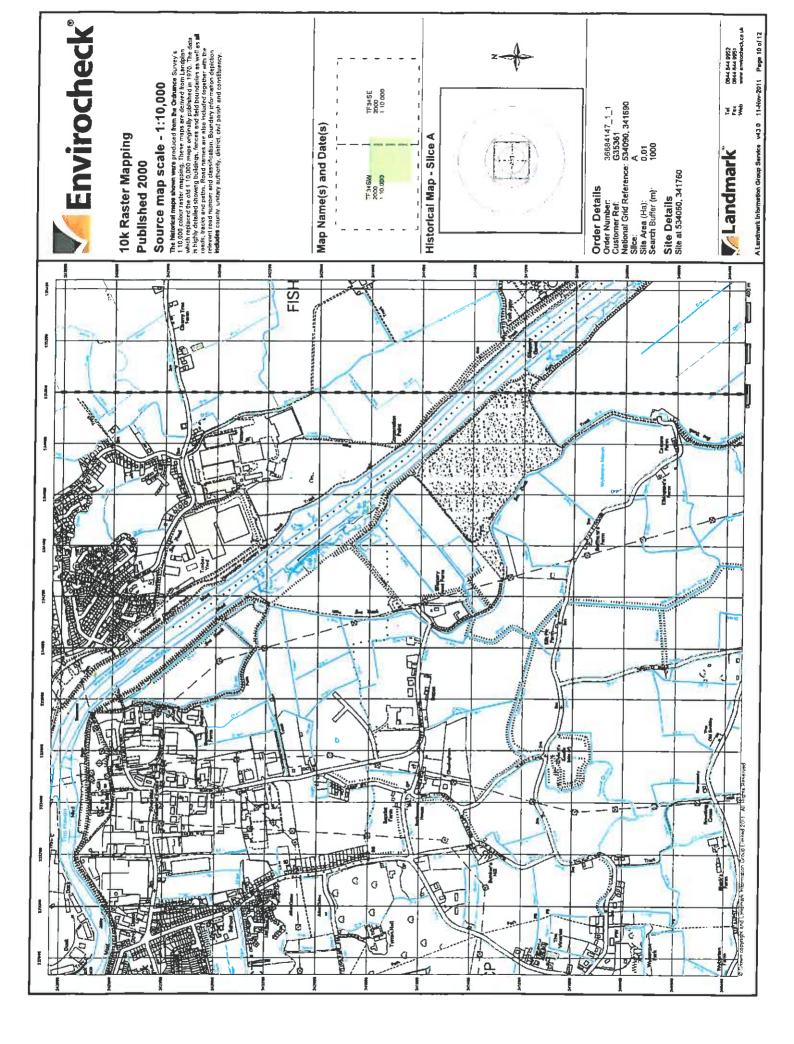


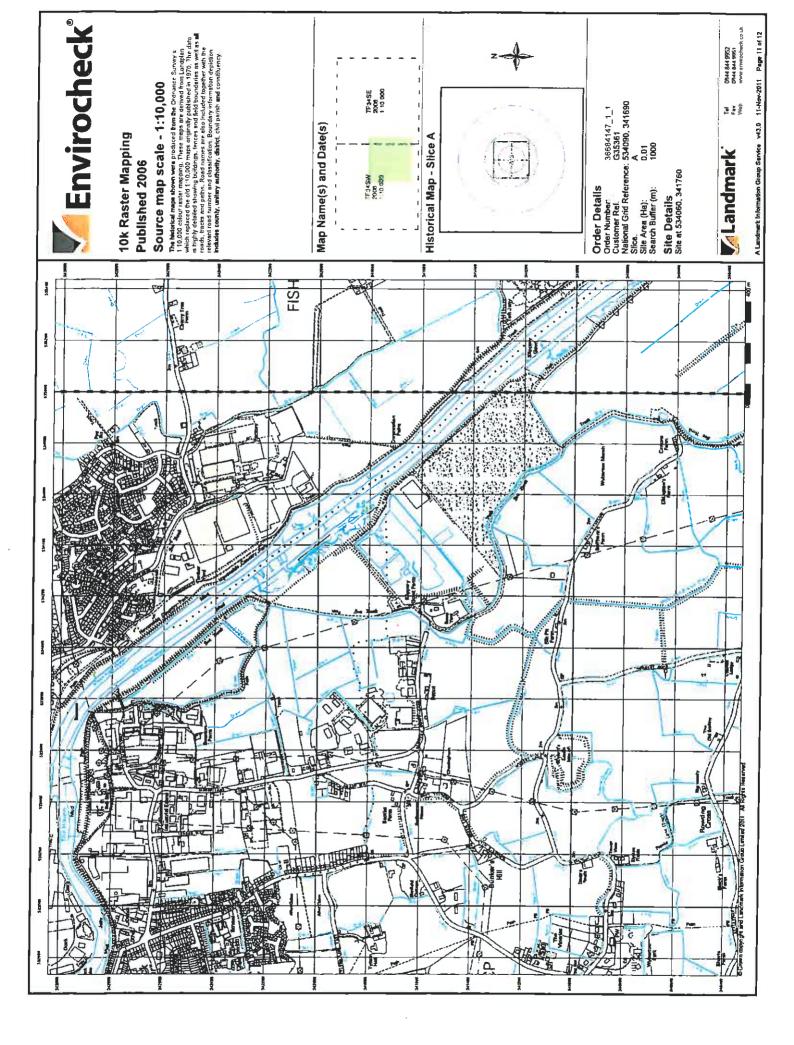


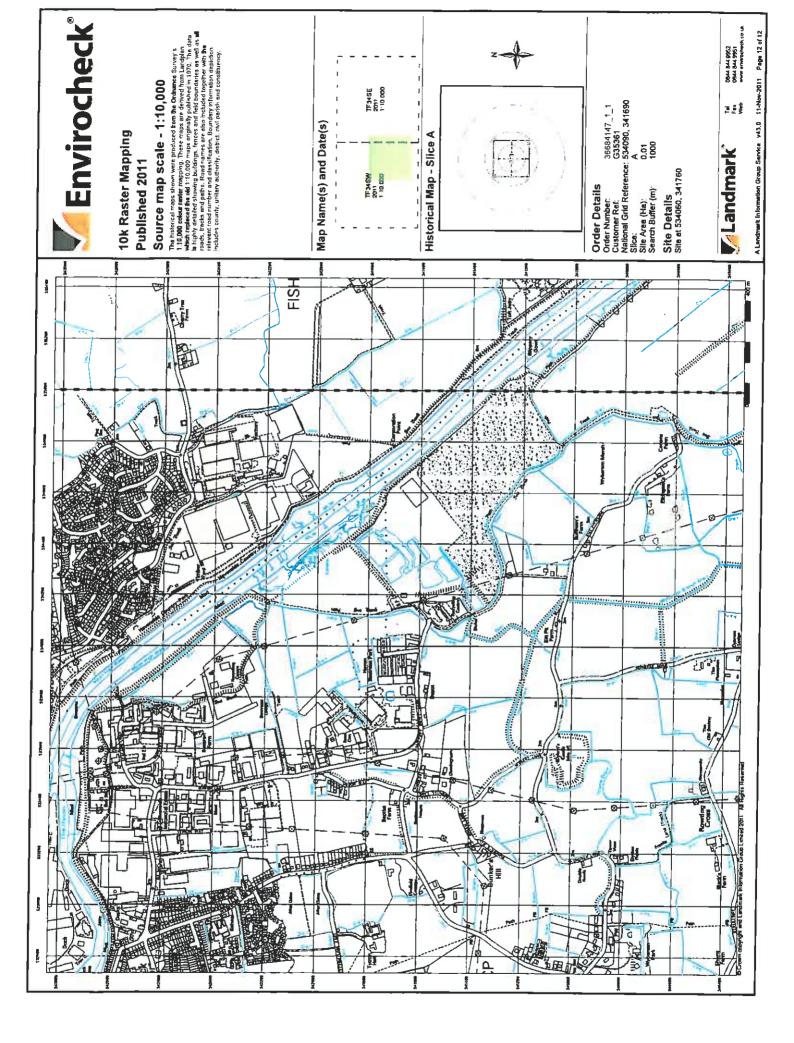




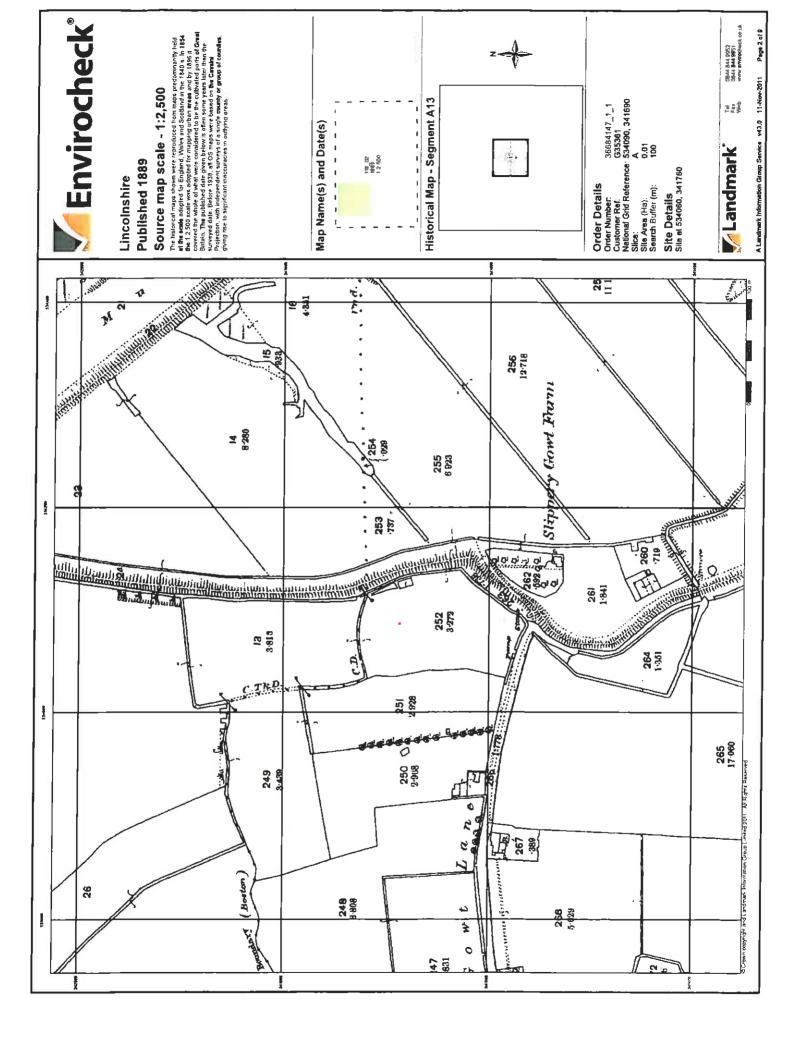


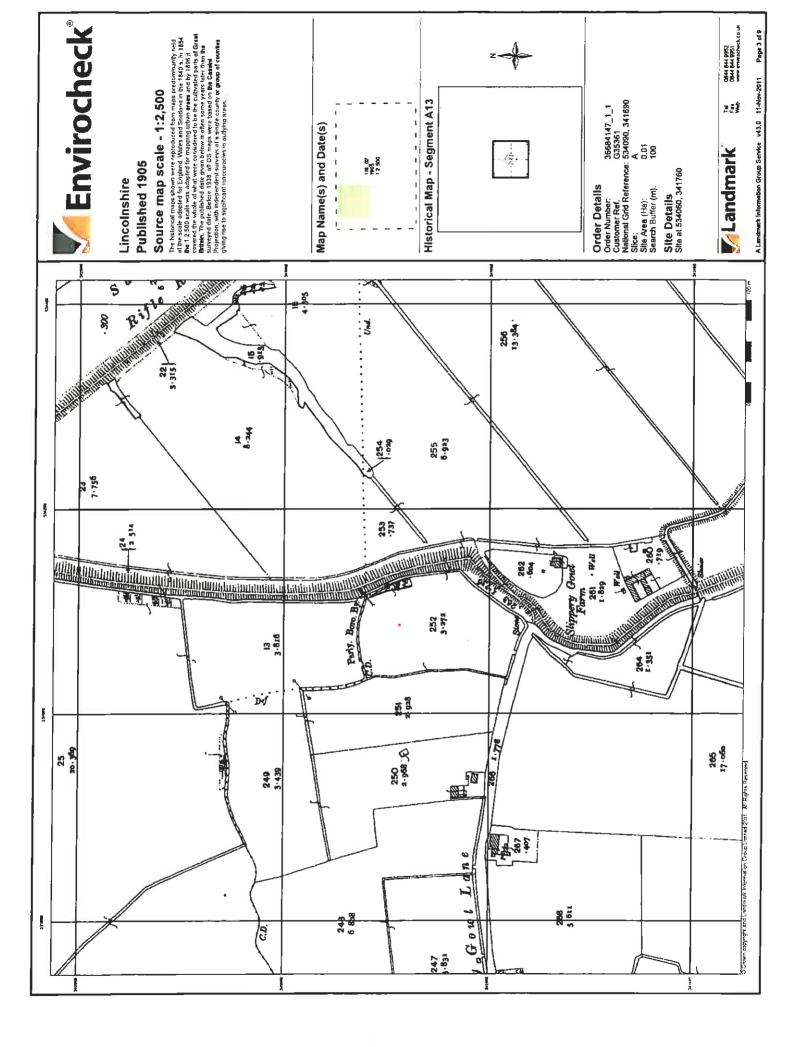


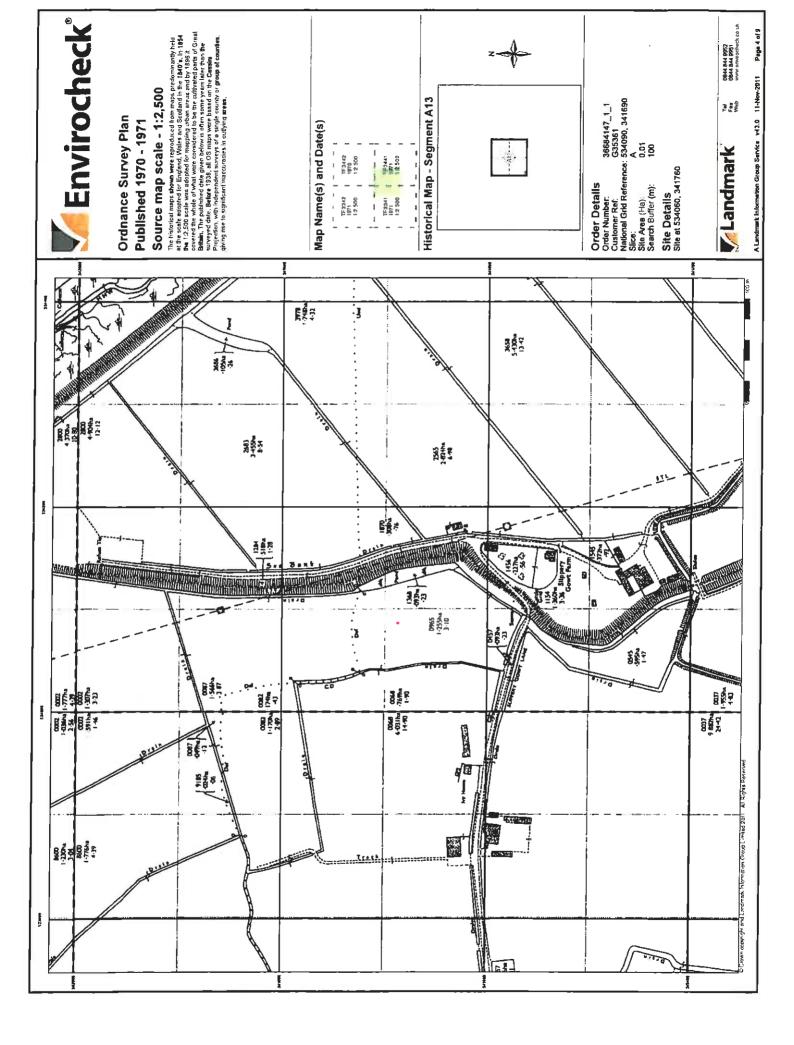




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| Ordnance Survey County Series and<br>Ordnance Survey Plan 1:2,500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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                                                                                                                                                | <b>Envirocheck</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Cary Pill Carvel Sand Pill Pill Pill Pill Pill Pill Pill Pil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Prodive Quarty<br>Cash Pilor<br>Cash Pilor<br>Cash Pilor<br>Bookens                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | The solution of the solution o | Mapping Type         Bank         Path         Path           Mapping Type         Bank         Path         Path           Mapping Type         Bank         Path         Path           Mapping Type         12,500         1999         3           Uncohning         11,2,000         1997         4           Ortherere Survey Plan         1,2,000         1997         4           Lange-Scank Mathemal Oridi Data         1,1,1,200         1995         7           Lange-Scank Mathemal Oridi Data         1,1,1,200         1995         7 |
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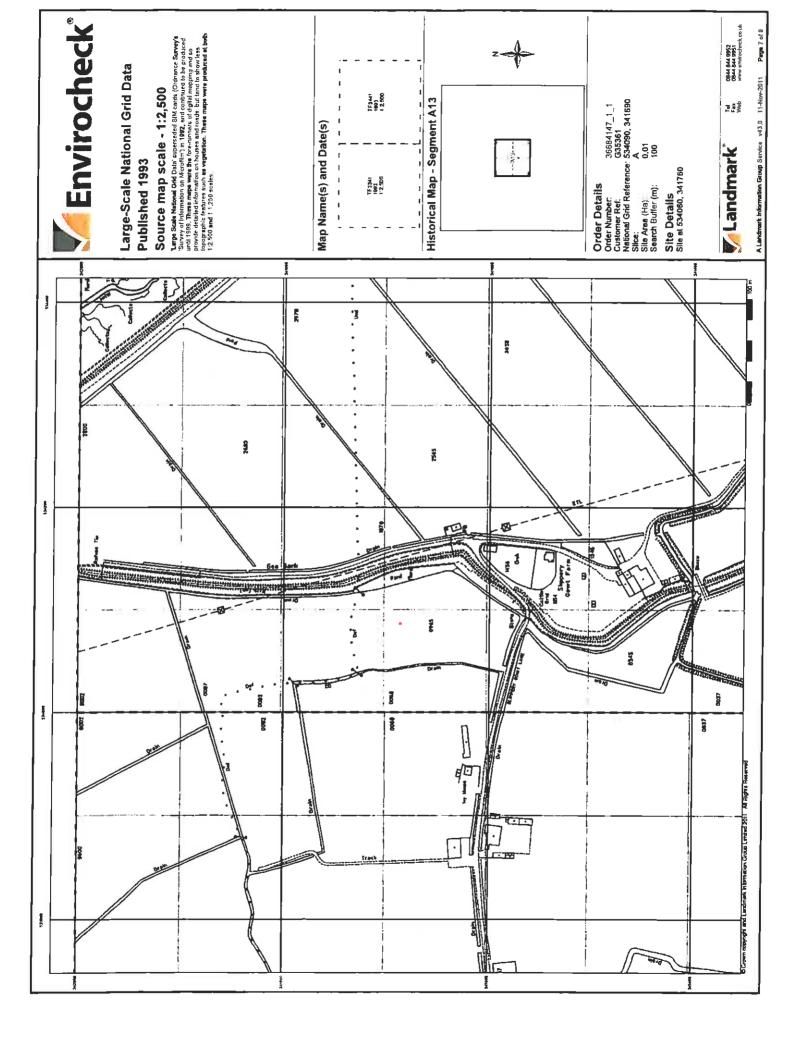






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| Mane(s) and Date(s)<br>Map Name(s) and Date(s)<br>This original is a second                                                                                                                                                                        |                                                                                      |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Additional SIMS<br>Published 1986<br>Source map scale - 1:2,500<br>The SM acd of the set server a bitmedian on Minolini) are<br>unter minor editors of mapping which were produced and published in<br>turble: minor editors of mapping which were produced and published in<br>turble: minor editors of mapping which were produced and published in<br>these maps were produced at both 1,250 and 1,1250 scales. |
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| Crder Details<br>Crder Number: 35684147_1_1<br>Crder Number: 355861<br>Creater Number: 355860<br>Creater Numbe |                                                                                      |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <b>V</b> Envirocheck | Large-Scale National Grid Data<br>Published 1993<br>Source map scale - 1:1,250<br>Large Sear National Gid Data superseted SIM cards (Ordnanes Survey)<br>ung 1993. There maps were the fore-turneet of adjud manping and a<br>program of the fore-turneet and roads, but stud is showless<br>program of the network of a superseted in the other the other<br>12.500 and 11.250 undet. | Map Name(s) and Date(s) | Historical Map - Segment A13 | Order Details<br>Order Number: 36684147 1_1<br>Customer Ref: 335361 _ 1<br>Customer Ref: 335361 _ 1<br>Customer Ref: 335361 _ 1<br>Silice: Area (Ha): 0,01<br>Silice Area (Ha): 0,01<br>Sarch Buffer (m): 100<br>Sile Details<br>Sile at 534060, 341760 | Landmark Ist Cout BA1 9952<br>Web Web BA1 9952<br>Web Web Web Web Web Web Web Web Cont<br>Alendmerk Information Group Service Wild D 11-Mon-2011 Page 6 of 8 |
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