# REPORT

# Boston Alternative Energy Facility – Environmental Statement

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

| Client:                             | Alternative Use Boston Projects Ltd |
|-------------------------------------|-------------------------------------|
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| Date:                               | 23 March 2021                       |









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| Document title: | Boston Alternative Energy Facility – Envi  | ronmental Statement |
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| Reference:      | Lincs Laboratory, Ground Investigation R<br>PB6934-RHD-01-ZZ-RP-N-3011_A11.2<br>0.0/Final<br>Date: 23 March 2021 | eport               |
| Project name:   | Boston Alternative Energy Facility   |                     |
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|                 |  |                     |

Classification

Project Related

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01 March 2021

LINCS LABORATORY, GROUND INVESTIGATION REPORT

PB6934-RHD-01-ZZ-RP-N-3011\_A11.2 i



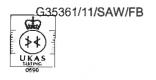


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Ground Investigation Report for Boston Waste Transfer Station, Slippery Gowt Lane, Riverside Industrial Estate, Lincolnshire

lssued

21 December 2011









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

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Fliells

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S-7. Bottenie

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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                        |
| A Senice Ur      | il of Lincolnshire County Council |

# 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<br>Standpipe<br>(m BGL) | Water level<br>25/11/2011<br>(m BGL) | Water level<br>02/12/2011<br>(m BGL) | Water level<br>15/12/2011<br>(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<br>Glacial Till (m) | Pile Capacity (kN)<br>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



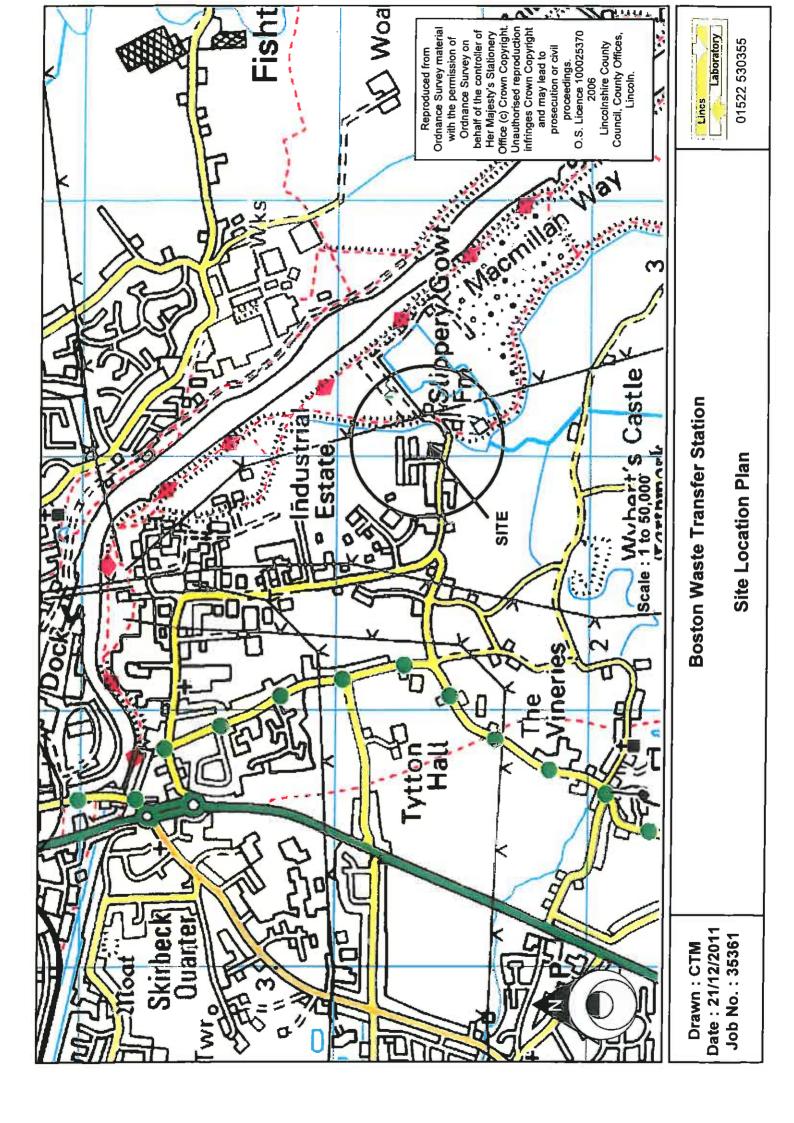


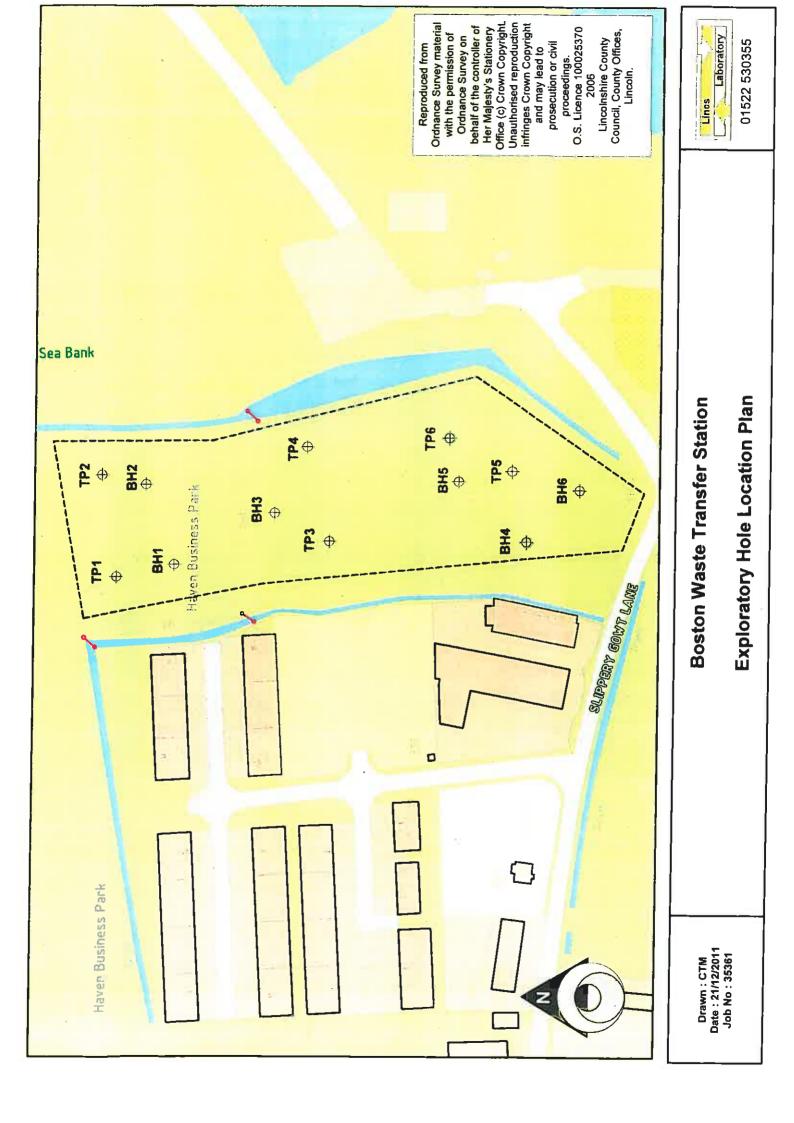
# **APPENDIX (i)**

DRAWINGS

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# **APPENDIX (ii)**

# **EXPLORATORY HOLE LOGS**

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BH1 to 6 TP1 to 7

| lor<br>l       | N<br>N<br>N             | Job Number:  | 35                 | 35361   |   |   |  |  | Site: Boston WTS, Slippery Gowt Lane  | wt Lane   |   |                         |                  | Borehole.: BH1       | : BH1                 | Sheet  | et 1 of                   | 2                 |
|----------------|-------------------------|--|--------------------|---|---|---|--|--|---|---|---|-------------------------|------------------|----------------------|-----------------------|--|---------------------------|-------------------|
| Reg            | Remarks :<br>Surface: ( | stubble fie  | ld. Groi           | Indwater was s  | tanding in bc   | rehole  | 3 at   |  | Location: 534061E - 341755N (See plan)  | Dlameter of Hole:   | of Hole:                                      | 150mm                   | Ę                |                      |                       |  | •                         |                   |
| 3.2<br>24r     | tm afte<br>т (slot      | r being lef.<br>led betwee   | ft overn<br>en 24m | 3.2m after being left overnight. A 50mm standpipe was installed to<br>24m (slotted between 24m and 18m BGL).      | tandpipe was  | instal  | led to   |  | Cllent: LCC   | Casing Dlameter:  | ameter:                                       | 150mm                   | Ē                | 1                    |                       |  |                           |                   |
|                |                         |  |                    |   |   |   |  |  | Drilling Method: Dando 150  | Logged By:  | y: SAW  | M                       | Log              | Log Scale: 10 n      | m/page Gro            | Ground Level:  |                           | m A(              |
|                |                         |  | Sa                 | Sample/Test   | 0   | hange   | Change of Strata   | ata  |   | Penetration   |   | Atterbe                 | Atterberg Limits | fts Density          | 1-                    |  | Chomical<br>International |                   |
| Dale           | Calling O               | Vetter<br>Visiter  | No T               | Type Depth  | Legend  |   |  | Reduced Thickness<br>Level of<br>Protom                    | Description of Strata   | Test<br>Results   | NMC   | 3                       | P -              | CBR Bulk             | +                     | Type   | SO,                       | <u>5</u> <u>-</u> |
| ~              |                         | Ê  |                    | E)  |   |   | Ĵ  | Ê  |   |   | *   | %                       | %                | % % Mgm <sup>3</sup> | Mg/m <sup>3</sup> kPa | Øu <sup>°</sup> Shear<br>Test  | Hd /6                     |                   |
| 11/11          |                         | <u>6</u>   |                    | 0.00-0.50   |   |   |  | 0.50   | o Orange brown silty sandy clayey TOPSOIL.  |   |   |                         |                  |                      |                       |  | -                         |                   |
|                |                         |  |                    | 001-0010  |   | 8   | 8  |  | (Firm becoming very soft) orange brown very slity CLAY. (TB)  |   |   |                         |                  |                      |                       |  |                           |                   |
|                |                         | 88   | 00                 | 1.20-1.85   |   |   |  | 2.20   | 0   | N=2   | _   |                         |                  |                      |                       |  |                           |                   |
|                |                         | 005  | <u>ם מ</u>         | 2.20-2.85   | )          <br>             <br>             <br>             <br>             <br>             <br>             <br>   |   |  |  | -   | <u>الم</u>  |   |                         |                  |                      |                       |  |                           |                   |
|                | nimč                    | 3.20   | <u> </u>           | 3.20-3.65   |   | R<br>N  | R  | 1.50   | (Very soft) brown slity CLAY with<br>pockets of black peaty clay. (TB)  | 9=<br>2   | ភ្  | 23                      | 28               | ñ                    |                       |  |                           |                   |
| 1              |                         | 000  | <u></u>            | 4.204.65  | 2   2     2   2   2   2   2   2   2   2   | <b>8</b><br>• • • • • • • • • • • • • • • • • • •           | <u>ę</u>   |  | (Very soft) grey brown silty CLAY with<br>pockets of black peaty clay. (TB)   | 2<br>2  |   |                         |                  |                      | -<br>                 |  |                           |                   |
| I              |                         | 012  |                    | 5,20-5,65   | * #   *   *   *  <br>*   *   *   *  <br>  *   *   | ·   |  | 150  |   | NED   |   |                         |                  |                      |                       |  |                           |                   |
|                |                         | 013  |                    | 5.70-6.00<br>6.20-6.65  |   | 2<br>5  | 2  | 0.70   | (Soft) orange brown silty CLAY with<br>pockets of black peaty clay. (TB)  | Ray<br>I  |   |                         |                  |                      |                       |  |                           |                   |
| Į              |                         | 016  |                    | 6.70-7.00   |   | e 40  | g p  | 0:30   | <ul> <li>(Medium dense) grey very slity fine<br/>SAND. (TB)</li> </ul>  |   | 17  | 53                      | 13               | 16                   | ···                   |  |                           |                   |
|                |                         | 210<br>810   | <u>300</u>         | 7.50  | ןאָן אָיזאָן אָין<br>אָן אָזין אָזין<br>גן אָזן אָזין אָזין<br>גן אָזן אָזין אָזין אַזען<br>גן אָזן אָזן אָזין אָן<br>גן אַזן אָזן אָזן אָזן אָן<br>גן געריין אָזן אָזן אָן | 2.50<br>7.50<br>7.50  | 99   | 0.80   | <ul> <li>(Firm) light grey and orange brown very<br/>slity CLAY with rare fine chalk and<br/>flint gravel. (GT)</li> </ul>  | N=21  |   |                         | _                |                      |                       |  |                           |                   |
|                |                         | 020  | <u></u>            | 9.00-9.45   | 19191191191191191191<br>191191191191191191<br>191191  | 8<br>5  |  |  | (Medium dense) grey very silty coarse<br>SAND. (DD)<br>(Firm becoming stift) grey very silty<br>CLAY with fine subrounded chalk gravel.   | ten k   |   |                         |                  |                      |                       |  |                           |                   |
|                |                         |  |                    |   |   |   |  | Ę.   |   |   |   |                         |                  |                      |                       |  | <u> </u>                  |                   |
| Scale<br>Shown | RW Rive                 | Watter Samples<br>D Small Bag<br>B Large Bag<br>T Tub<br>J Jar<br>RW River/Drein Water |                    | Undisturbed Samples<br>U100 105mm Dia Core<br>U38 U100<br>C75 75mm Dia Core<br>Groundwater:<br>I Struck Z Rose Io | Penetri<br>S<br>CP<br>CP<br>Blowa h<br>26/150<br>26/150<br>26   | Stand<br>Stand<br>Cone<br>E N V<br>biows<br>biows<br>Undist | st<br>and Pent<br>Pentralk<br>alue<br>for 150n<br>urbed Si | rallon Te:<br>In Test<br>Im after s<br>Mole (<br>Imple Blc | ation Test Type of Shear Test Notes<br>Standard Pentralion Test Verse of Shear Vane Core Shear Vane Standard Pentralion Test Verse Verse Shear Box Value Standard Shear Box Value Strandal (Undralined) Until biows for 150mm after seating drive only Qu <sup>4</sup> Internal Friction Angle (Brither Undralined Sample Blows | es<br>Geology : Refer to appendix at end of logs<br>U100F = Failted U100 sample<br>(Bracketed) soil strengths are visually assessed | endix at au tau tau tau tau tau tau tau tau t | nd of log.<br>ually ass | pesse            |                      | -                     | LINCS<br>LINCS<br>LINCS<br>Labhorne (01522) 530355<br>Fax (01522) 510573 | INCS                      | 22                |

| ۶           | b Nu                    | Job Number:   | 35361               | 61   |   |   |                                       |  | Site: Boston WTS, Slippery Gowt Lane  | owt Lane   |                      |                  |         | Bon        | Borehole.: BH1         | BH1                |                | Sheet  | t 2 of   | 6        |
|-------------|-------------------------|---|---------------------|--|---|---|---------------------------------------|--|---|--|----------------------|------------------|---------|------------|------------------------|--------------------|----------------|--|--|----------|
| Rer<br>S    | Remarks :<br>Surface: s | stubble field   | 1. Groun            | idwater was stai   | nding In bo   | rehole                                  | ta l                                  |  | Location: 534061E - 341755N (See plan)  | Diameter of Hole:  | f Hole:              | 150mm            | F       |            |                        |                    |                |  |  | <b>,</b> |
| 5 3         | 2m aftei<br>im (siott   | r being left<br>ed betweer                                      | overnig<br>n 24m a  | 3.2m after being left overnight. A 50mm standpipe was installed to<br>24m (slotted between 24m and 18m BGL).   | ndpipe was  | install                                 | ed lo                                 |  | Client: LCC   | Casing Diameter:   | meter:               | 150mm            | F       |            |                        |                    |                |  |  |          |
|             |                         |   |                     |  |   |   |                                       |  | Drilling Method: Dando 150  | Logged By:   | : SAW                | 3                | Log S   | Log Scale: | 10 m/p                 | m/page Gro         | Ground Level:  | vel: -   |  | PA m     |
|             |                         |   | San                 | Sample/Test  | Ū   | hange                                   |                                       | a  |   | Penetration  |                      | Atterberg Limits | g Limit |            | Density                | ⊩                  | Shear Strength |  | Chemical   |          |
| Date        | Casing                  | _   | o Type              | <u> </u>   | Legend  |   |                                       | Reduced Thickness<br>Lavel of<br>m AOD Stratum | Description of Strata   | Test<br>Results  | NMC                  | L<br>L           |         | CBR        | 0                      | <u>ہ</u>           | 0110           |  |  | Tet      |
| (2011)      | Ē                       | (m)   | _                   | Ê  | _   |   |                                       | Ê  |   | -  | *                    | *                | *       | *          | Mg/m <sup>3</sup> Mg/m | m <sup>3</sup> kPa | 3              | Shear g/l                                      |  |          |
|             |                         | 022   | . v C               | 10.50-10.95  | 4   4   4<br>6 [ 6] 6<br>7 6<br>7 7<br>7 7<br>7 7<br>7 7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7   |   |                                       |  | to medium angular and subrounded chalk gravel. (GT)   | 23775mm  | =                    | 4                | Ę.      | 26         |                        |                    |                |  |  | L        |
| 1           |                         |   |                     |  |   | 2.0                                     | 20                                    | 9 I  | Band of hard grey MUDSTONE. (DD)  |  |                      |                  |         |            | • • • •                |                    |                |  |  |          |
|             | _                       |   |                     | _  | <u> </u>  |   | _                                     |  | (Stiff) dark grey silty CLAY with fine<br>to coarse angular and subrounded chalk<br>gravet. (GT)                          | }  |                      |                  |         | _          |                        |                    |                |  | _  | _        |
| l           |                         | 024   | 0 D                 | 12 00-12.45  | ₽ <sup>1</sup>   } <sup>2</sup><br> 2   12 <br> 1  2   14<br> 1  2   14<br> 1  2   14<br> 1  2   14<br> 14  14  14<br> 14  14  14<br> 14  14  14  14  14  14  14  14  14  14 | .r. 1                                   |                                       | 1  | +   | 10=N   |                      |                  |         |            |                        |                    |                | <u> </u>                                       |  |          |
|             |                         |   |                     | ,  |   | <u>а, т. т</u> -                        |                                       | 4.20   |   |  |                      |                  |         |            |                        |                    |                |  |  |          |
| 1           |                         | 026<br>027  | sa                  | 13.50-13.95  |   |   |                                       |  |   | N=42   | 17                   | 35               | 16      | 19         |                        |                    |                |  |  |          |
|             |                         |   |                     |  |   | S                                       |                                       |  |   | <del> </del> -   |                      |                  |         |            |                        |                    |                |  |  |          |
| <u> </u>    |                         | 950<br>050  | <u>00</u>           | 15.00-15.45  |   | 12:00<br>12:00                          | 0                                     | 1  | (Stiff becoming very stiff) grey silty<br>CLAY with fine to coarse subrounded<br>chalk gravel.                            | N-44   |                      |                  |         |            |                        |                    |                |  |  |          |
| 1           |                         |   |                     |  |   | <del>15-11-2</del>                      |                                       |  |   |  |                      |                  |         |            |                        |                    |                |  |  |          |
|             |                         | 150   |                     |  |   |   |                                       |  | 1   | N=71   | 19                   | ñ                | 50      | 13         |                        |                    |                |  |  |          |
| _           |                         | 032<br>033  | ωD                  | 17.50-17.95  |   | . <b>1</b> . <b>1</b> 34                | _                                     |  |   | 36/150m  | F.                   |                  |         |            |                        |                    | _              |  | _  |          |
| J           |                         |   |                     |  | <u> </u>  | 17.95                                   | 10                                    |  | Borehole continued using rotary coring.   | 1  |                      |                  |         |            |                        |                    |                |  |  |          |
|             |                         |   |                     | ,  | <del>זודי]וו</del>  |   |                                       | -  | 1   |  |                      |                  |         |            |                        |                    |                |  | _  |          |
|             |                         |   |                     |  |   |   |                                       |  | Continued next sheet  |  |                      |                  |         |            |                        |                    |                |  |  |          |
| Scale<br>as | D Small                 | Disturbed Samples<br>Water Sample<br>D Smalt Bag<br>B Large Bag |                     | in the second seco | Penetra<br>CP   | Cone F                                  | tt<br>Ind Pentra<br>Ventration        | allon Test                                     | ype of Shear Test<br>Shear Vane<br>B. Shear Box   | Notes<br>Geology : Refer to appendix at end of logs.                           | ndix at en           | d of logs.       | -       |            |                        |                    |                | LINCS  | 4  |          |
| Shown       |                         | T Tub<br>J Jar<br>RW River/Drain Water                          | C75<br>Grou<br>¥ Si | C75 75mm Dia Core<br>Groundwater:<br>▼ Struck ⊠ Rose to  | 26/150<br>26/150<br>(26)  | = N V&<br>blows  <br>blows  <br>Undistr | for 150m<br>for part or<br>inthed Sau | mi Bifter st<br>rwhole of<br>nple Blow         | I = N value<br>brows for 150mm after seating<br>brows for part or whole of seating drive only<br>Undisturbed Sample Blows | U100F = Falled U100 sample<br>(Bracketed) soil strengths are visually assessed | ample<br>Is are visu | asse ýller       | ssed    |            |                        |                    | Telep          | Telephone (01522) 530355<br>Fax (01522) 510573 | LABORATORY<br>ne (01522) 530355<br>01522) 510573 | ۲<br>55  |
|             |                         |   |                     |  |   |   |                                       |  |   |  |                      |                  |         |            |                        |                    |                | ·  |  |          |

| ۲                    | ZQ                    |  | 10000                  | 10  |   |   |  |  | Site: Boston WTS, Slippery Gowt Lane   | Gowt Lane  |                                      |                  |             | Bor | Borehole.: BH1 | BH1      |                | Sheet  | က                        | of 3       |
|----------------------|-----------------------|--|------------------------|---|---|---|--|--|--|--|--------------------------------------|------------------|-------------|-----|----------------|----------|----------------|--|--------------------------|------------|
| a<br>v<br>v<br>e     | Remarks :<br>Surface: | :<br>: stubble fie   | ald. Groui             | Idwater was stan  | ding in bo  | rehole  | 폐  |  | Location: 534061E - 341755N (See plan)   | Dlameter of Hole:  | of Hole:                             | 150mm            | F           |     |                |          |                |  |                          |            |
| რ შ<br>              | .2m aft<br>4m (sk     | ter being le.  | ft overnig<br>en 24m s | 3.2m after being left overnight. A 50mm standpipe was Installed to<br>24m (slotted between 24m and 18m BGL).      | dpipe was   | Install   | ed to  |  | Client: LCC  | Casing Diameter:   | ameter:                              | 150mm            | E           |     |                |          |                |  |                          |            |
|                      |                       |  |                        |   |   |   |  |  | Drilling Method: Dando 150   | Logged By:   | y: SAW                               | 3                | Log Scale:  |     | 10 m/          | m/page G | Ground Level:  | evel: -  |                          | E AC       |
|                      |                       |  | San                    | Sample/Test   |   | Change of Strata  | of Stra  | 5  |  | Penatration  |                                      | Atterberg Limits | g Limit     |     | Density        | 1        | Shear Strength |  | Chemical                 |            |
| Date<br>(2011)       | (TT) Casting          | E E  | No Type                | 30 Depth<br>(m)   | Legend  | a close   |  | Reduced Thickness<br>Level Stratum<br>(m) (m)                  | Description of Strata  | Test<br>Results  | NMC %                                | - ~<br>~         | ۲<br>۲<br>۲ | CBR | Bulk           | > " =    | Øu°            | -  | el so                    |            |
| .1                   |                       |  |                        |   |   |   |  |  | Borehole continued using rotary coring.  |  |                                      |                  |             |     |                |          |                | 1581   | ,                        |            |
| J                    |                       |  |                        |   | 11111777  |   |  | 6.05   |  |  |                                      |                  |             |     |                |          |                |  |                          | _          |
| 1                    |                       |  |                        |   | ·····   |   |  |  |  |  |                                      |                  |             |     |                |          |                |  |                          |            |
|                      |                       |  |                        | lur   | <del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>                  |   |  |  | 1  |  |                                      |                  |             |     |                |          |                |  |                          |            |
| I                    |                       |  |                        |   | +++++++++++++++++++++++++++++++++++++++                           | 24.00   | -  | ļ  | End of Borehole al 24.00 m   |  |                                      |                  |             |     |                |          |                |  |                          |            |
| 1                    |                       |  |                        |   |   | _   |  |  |  |  |                                      |                  |             |     |                |          |                |  |                          |            |
|                      |                       |  |                        |   |   |   |  |  |  |  |                                      |                  |             |     |                |          |                |  |                          |            |
|                      |                       |  |                        |   |   |   |  |  |  |  |                                      |                  |             |     |                |          |                |  |                          |            |
|                      |                       |  |                        |   |   |   |  |  | ſ  |  |                                      |                  |             |     |                |          |                |  |                          |            |
| 11                   |                       |  |                        |   |   |   |  |  |  |  |                                      |                  |             |     |                |          |                |  |                          |            |
| Scale<br>as<br>Shown |                       | Disturbed Samples<br>Watter Sample<br>B Lange Bag<br>J Jar<br>RW River/Drain Water | en                     | Undisturbed Samples<br>U100 105mm Dia Core<br>U38 U100<br>C75 75mm Dia Core<br>Groundwater:<br>I Struck ⊠ Rose Io | Penetr<br>S<br>CP<br>Blows h<br>26/150<br>26 <sup>+</sup><br>(26) | Ifon Test<br>Standar<br>Cone P<br>E N Val<br>blows fr<br>blows fr | rd Pentr<br>Marticle<br>Pentration<br>De 150m<br>Sr part o | ation Test<br>n Test<br>m after sea<br>r whole of<br>mple Blow | ation Test<br>ation Test<br>Cone Pentration Test | Notes<br>Geology : Refer to appendix at end of logs.<br>U100F = Failed U100 sample<br>(Bracketed) soil strengths are visually assessed | endix at er<br>sample<br>(hs are vis | d of logs.       | ssed        | _   |                | -        |                | LINCS<br>LINCS<br>LABORATORY<br>Telephone (01522) 530355<br>Fax (01522) 510573 | 30RAT<br>1522) 5(2) 5(2) | 13 555 ORV |

| Job Number:<br>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<br>24m (slotted between 24m and 18m BGL). Cored on 412.  | t ovemight. A 50mm si<br>an 24m and 18m BGL) | ight. A 50mm st<br>1 and 18m BGL) | 12                                    | andpil.<br>Core          | pe was i<br>id on 41 | installed<br>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<br>Depth (m)                             |                                   | Cr I                                  | SCR<br>%                 | RoD<br>%             | ш               | Legend   | GL<br>Balcow<br>GL<br>(m)                                      | Reduced Thickness<br>Level of<br>m ACD Stratum<br>(m) (m)                     | hickness<br>of<br>Stratum<br>(m) | Description of Strata   |                          | Sample/Test NMC<br>Depth (m) and<br>Type % | NMC %      | PLI 9<br>Diam <sup>2</sup> MN | qu PLI<br>Axial<br>MN/m | oltsiisteni<br>elisteb | SPT N Value<br>and<br>Other Tests  |     |
|   |  |                                   |                                       |                          |                      | L               |  |  |   | <del> </del>                     | Borehole undertaken using Light Cable<br>Percussion   | <u></u>                  |  |            | 1                             | 1                       |                        |  |     |
|   |  |                                   |                                       |                          |                      |                 |  |  |   |                                  |   |                          |  |            |                               |                         |                        | N=2  |     |
|   |  |                                   |                                       |                          |                      |                 |  |  |   |                                  |   |                          |  |            |                               |                         |                        | N=1  |     |
|   |  |                                   |                                       |                          |                      |                 |  |  |   |                                  |   |                          | +  |            |                               |                         |                        | 0=N  |     |
|   |  |                                   |                                       |                          |                      |                 |  |  |   |                                  |   |                          |  |            |                               |                         |                        | 0=2  |     |
|   |  |                                   |                                       |                          |                      |                 |  |  |   |                                  |   |                          |  |            |                               |                         |                        | 0=N  |     |
|   |  |                                   |                                       |                          |                      |                 |  |  |   |                                  |   |                          |  |            |                               |                         |                        | N=3  |     |
|   |  |                                   |                                       |                          |                      |                 |  |  |   |                                  |   |                          |  |            |                               | _                       |                        |  |     |
|   |  |                                   |                                       |                          | -                    |                 |  |  |   | ł                                |   |                          |  |            |                               |                         |                        | N=21   |     |
|   |  |                                   |                                       |                          |                      |                 |  |  |   | 18.00<br>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<br>SCR<br>SCR<br>FI                     |                                   | 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | overy<br>overy<br>esigni | ation %              |                 | T Top of Sample<br>PLI Point Load Index<br>I Approx. unlaxial compressive strength<br>A Axial Point Load Test Result<br>D Diametral Point Load Test Result<br>Groundwater: | ple<br>ndex<br>nual comp<br>cad Test F<br>int Load 1<br>I V St | compressive strength<br>Test Resuft<br>oad Test Result<br>🗹 Struck X. Rose to | strength<br>ult<br>Rose to       | Notes: Geology: Refer to appendix at end of togs.<br>Soli strangths in (brackets) are assessed visually | if logs.<br>sed visually |  |            |                               | -                       | Telephone<br>Fax (01   | LINCS<br>LINCS<br>LaboraTORY<br>Telephone (01522) 530355<br>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<br>Su            | Remarks :<br>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<br>m (slotted   | eing left ov<br>between 2  | 3.2m after being left overnighl. A 50mm standpipe was installed to<br>24m (slotted between 24m and 18m BGL). Cored on 412. | BGL).  | ndpipe<br>Cored (   | was in:<br>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<br>(2011)       | (T) Casing                 | Depth<br>Water<br>(m) No   | Run<br>Depth (m)   | A CR   | % SCR   | Rop<br>*           | E<br>E   | Legend   |                                       | Reduced Thickness<br>Lavel of<br>m AOD Stratum<br>(m) (m)                           | delmess<br>of<br>Krahum<br>(m) | Description of Strata   | <u>öŏ</u>         | Sample/Test NMC<br>Depth (m) and<br>Type %         | MC PLI<br>Diam<br><sup>%</sup> MN <sup>m</sup> <sup>2</sup> | m du m            | Axtal<br>Axtal<br>MNm 2<br>Installatio<br>details | SPT N Value<br>and<br>Other Tests  |
| 1                    |                            |  |  | -  |   |                    |  |  |                                       |   |                                | Borehole undertaken using Llght Cable<br>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<br>און אין אין אין אין איזא<br>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<br>Continued next sheet  |                   | 19.50-19.95 S 16<br>19.50-19.95 D<br>19.50-21.00 C | 16.00   |                   |   | 69/150mm   |
| Scale<br>as<br>Shown | C SS B D Sam               | ples/Tests<br>Small Bag<br>Large Bag<br>SPT 'N' Value<br>Rock Core Sample<br>(85mm diameter) | Symb<br>SCR<br>SCR<br>FI   | ols<br>Total Core Recovery %<br>Solid Core Recovery %<br>Rock Quality Designatic<br>Fracture Index | ols<br>Total Core Recovery %<br>Solid Core Recovery %<br>Rock Quality Designation %<br>Fracture Index |                    | T Top of Sat<br>PLI Point Load<br>Approx. ur<br>A Axial Point<br>D Diametral I<br>Groundwater: | Top of Sample<br>Point Load index<br>Approx. unfavial compressive strength<br>Axial Point Load Test Result<br>Diametral Point Load Test Result<br>undwater: Z Struck T Rose to | elex<br>d Test R<br>t Load Te<br>Z Sh | compressive strength<br>Fest Result<br>oad Test Result<br>⊠ Struck <b>▼</b> Rose to | se to                          | Notes: Geology: Refer to appendix at end of logs.<br>Soli strangths in (brackets) are assessed visually                                   | gs.<br>vísuaily   |  | 1   |                   |   | LINCS<br>LINCS<br>LABORATORY<br>Telephone (01522) 530355<br>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 :<br>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<br>24m (slo  | er being lef<br>tted betwee  | eft over    | 3.2m after being left overnight. A 50mm standpipe was installed to<br>24m (slotted between 24m and 18m BGL). Cored on 412. | s install.<br>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<br>No   | Run TCR SCR RQD<br>Depth(m) % % %  | Ē                 | Legend  |  |   | Reduced Thickness<br>Level Stratum<br>(m) (m)                                | Description of Strata   |                   | Sample/Test<br>Depth (m) and<br>Type | % NMC      | PLI<br>Diam <sup>2</sup><br>MNim <sup>2</sup> | qu PLI<br>Axial<br>MN/m MN/m |               | SPT N Value<br>and<br>Other Tests                                  | <u>ф</u> 10 |
|                      |                       |  |             |  |                   |   | 14.3.3.1   |   |  | 18.00m - 19.95m : Remaining Detail : 19.40m -<br>19.50m : coarse subrounded chalk gravel.   | 9.40m -<br>el.    | 19.50-19.80 D                        |            |   |                              |               |  |             |
|                      |                       |  |             |  |                   |   | <u>, , , , , , , , , , , , , , , , , , , </u>              |   | 3.45   | 19.95m - 23.40m : (Very stift) dark grey very<br>silty CLAY with fine to coarse subrounded<br>chalk gravel and occasional small chalk<br>cobles. (GT) | very<br>ed        | -21.00-22.50 C                       |            |   |                              |               |  |             |
|                      |                       |  |             |  |                   | 4   4   4   4   4   4  <br>1   4   5   7   7   7   7   7   7   7   7   7  | <u>, , , , , , , , , , , , , , , , , , , </u>              |   |  | Detail 21.75m - 21.95m : 21.75-21.95 No<br>recovery, possible band of sand.<br>21.75-21.95 No recovery, possible band of<br>sand.                     | o<br>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<br>as<br>Shown | C85<br>C85            | Samples/Tests<br>D Smail Bag<br>B Large Bag<br>N SPT N' Value<br>CB5 Rook Core Sample<br>(85mm diameler) | e<br>teler) | Symbols<br>TCR Total Core Recovery %<br>SCR Solid Core Recovery %<br>RQD Rock Quality Designation %<br>FI Frecture Index   |                   | T Top of Sample<br>PLI Point Load Index<br>A Approx. unlaxial compressive strength<br>A Approx. unlaxial compressive strength<br>D Diametral Point Load Test Result<br>D Diametral: <u>\[\]</u> Struck <u>\[\]</u> Result<br>Groundwater: <u>\[\]</u> Struck <u>\[\]</u> Result | Imple<br>Id Index<br>Intextal co<br>I Load Te<br>Point Loa | mpressiw<br>st Result<br>d Test R€<br>Struck <b>g</b> | compressive strength<br>Test Result<br>ced Test Result<br>⊠ Struck ⊈ Rose (o | Notes : Geology : Refer to appendix at and of logs.<br>Soll strengths in (brackets) are assessed visually   | gs.<br>1 visually |                                      |            | -   |                              |               | LINCS CARONATORY<br>Telephone (01522) 530355<br>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<br>Su   | Remarks :<br>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<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0 | mm st.<br>: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<br>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<br>Level of                         | Description of Strata  | Test<br>Results  | NMC                                      | Е                       | ЪГ            |            | CBR. Bulk           | k Dry          |                      | + -   | -                       |
| ~   | Ê                     |  |              |                                       |  |   |  |   | (w)   |  |  | %  | %                       | *             | *          | % Mg/m <sup>3</sup> | n Mg/m 3       | kPa<br>wu            | Shear   | L                       |
| 11/11   |                       |  | -            | 0                                     | 0:00-0:50  |   |  |   | 0.50  | Grey brown sandy silty clayey TOPSOIL.   |  |  |                         |               |            | -                   |                |                      |   |                         |
|   |                       |  | 200          | ۰                                     | 8.<br>8.<br>8.   |   | 0.0  | 9   |   | (Firm becoming soft) orange brown sandy<br>silly CLAY. (TB)  |  |  |                         |               |            |                     |                |                      |   |                         |
|   |                       |  | 2003<br>100  | D                                     | 1.20-1.65  |   | · · · ·  | _   | 2.00  |  | ž  | 58                                       | 37                      | 20            | 17         |                     | _              |                      |   |                         |
| 1   |                       |  | 500          | SPT<br>D                              | 2.20-2.65  |   |  |   | 1   | 4  | -  |  |                         |               |            |                     |                |                      |   |                         |
|   |                       |  |              |                                       |  |   | 5.50   | 9   |   | (Very soft) grey brown very slity CLAY.<br>(TB)  |  |  |                         |               |            |                     |                |                      |   |                         |
|   |                       |  | 008          | SPT<br>D                              | 3.20-3.65  |   |  |   | 2.00  |  | 0<br>N   |  |                         |               |            |                     |                |                      |   |                         |
| 1   |                       |  | 000          | SPT                                   | 4<br>20<br>25<br>25<br>25<br>26<br>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<br>SPT                              | 5:90-6.10<br>5.20-6.65   |   | 6.20   | <b>8</b> 0  | 0:30  | (Firm) black pseudo fibrous organic  | ¥  |  |                         |               |            |                     |                |                      |   |                         |
| ]   |                       |  |              |                                       |  | 1 64 64 64 64<br>( 64 64 64 64<br>(1 18 68 68 68<br>( 18 68 64 64 6 | . <u>1. 1. 1.</u> -                            |   | 1.30  | (Very soft) grey green slity CLAY with<br>fine to coarse angular and subrounded<br>chalk and flint gravel. (GT)  |  |  |                         |               |            |                     |                |                      |   |                         |
|   |                       |  | 015          | D                                     | 7:50-7:95  |   | 9992<br>22 22 22 22 22 22 22 22 22 22 22 22 22 | 82  | 0.20  | (Firm) grey brown very sandy CLAY with<br>occasional fine to coarse angular and<br>subrounded chalk and filnt gravel. (GT)   | S1=N   |  |                         |               |            |                     |                |                      |   |                         |
|   |                       |  | 019          | SPT<br>D                              | 56-00<br>6   |   | , , , , , , , , , , , , , , , , , , ,          |   |   | (Stiff) grey very silty CLAY with fine<br>to medium subrounded chalk gravel and<br>rare coarse angular filnt gravel. (GT)  | N#520  |  |                         |               |            |                     |                |                      |   |                         |
| 1   |                       |  |              |                                       | *****  |   |  |   |   | Continued next sheet   |  |  |                         |               |            |                     |                |                      |   |                         |
| Scale<br>as<br>Shown  |                       | Westurbed Samples<br>Water Sample<br>D Small Bag<br>B Large Bag<br>J Jar<br>KW RiverOrain Water<br>RW RiverOrain Water | <b>Ables</b> | Undist<br>U100<br>U38<br>C75<br>Groun | Undisturbed Samples<br>U100 105mm Dia Core<br>U38 U100<br>C75 75mm Dia Core<br>Groundwater:<br>≰ Sinck ⊠ Rose to | Pernetr<br>S<br>CP<br>Blows I<br>26/150<br>26*<br>(26)              | Cone<br>Stand<br>Cone<br>blows<br>blows        | st<br>and Pent<br>Pentralli<br>alue<br>for 150<br>for part<br>urbed S | Tation Test<br>on Test<br>I'm efter se<br>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<br>Geology : Refer to appendix at end of logs.<br>U100F = Failed U100 sample<br>(Bracketed) soil strengths are visually assessed | ppendix at €<br>) sample<br>gths are vi: | and of loc<br>sually as | 3s.<br>sessed | -          | -                   |                |                      | LINCS<br>LABORATORY<br>Telephone (01522) 530355<br>Fax (01522) 530355 | ATORY<br>530355<br>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 :<br>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<br>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<br>(2011) (m) (m)   | 2<br>5 b c                         | Type                         | Depth<br>(m)   |   | Reduced Thickness<br>Level of<br>m AOD Stratum<br>(m) (m)   | Description of Strata   | Results   | NMC 1                                 | %                         | ā »        | CBR Bulk Dry<br>% Maim 3 Maim | Cu<br>kPa<br>kPa     | Type<br>Shear  | SO4 PH  |       |
|   | 032<br>020                         | N La C                       | %<br> [  |   | <u>  </u>   | (Stiff) grey very sitty CLAY with fine<br>to medium subrounded chalk gravel and<br>rare coarse angular flint gravel. (GT)                               | N=43  |                                       |                           |            |                               |                      | 1  |   |       |
|   |                                    |                              |  |   |   |   | -   |                                       |                           | _          |                               |                      |  |   |       |
|   | 022<br>023                         | D                            |  |   |   |   | 6⊱=N  | 15                                    | 38                        |            |                               |                      |  |   |       |
|   |                                    |                              | ****   |   | 10.75   |   |   |                                       |                           |            |                               |                      |  |   |       |
|   | 024<br>025                         | D                            | 13 50-13.95  |   |   |   | N=55  |                                       |                           |            |                               |                      |  |   |       |
|   |                                    |                              |  |   | <u> </u>  |   |   |                                       |                           |            | -                             |                      |  |   |       |
|   | 026<br>027                         | D                            | 15.00-15.45<br>15.00-15.45   |   |   |   | N=57  |                                       |                           |            |                               |                      |  |   |       |
|   |                                    |                              |  |   |   |   |   |                                       |                           |            |                               |                      |  |   |       |
|   | 028                                | D                            | 16.50-16.95<br>16.50-16.95   |   |   |   | N#82  | 4                                     | N<br>                     | 23 15      |                               |                      |  |   |       |
| -   | 030                                | D SPT                        | 18:00-18:45  |   |   |   |   | ٤                                     |                           |            |                               |                      |  |   |       |
|   |                                    |                              |  | 18.45   |   | End of Borehole at 18.45 m  |   |                                       |                           |            |                               |                      |  |   |       |
|   |                                    |                              |  |   | <u> </u>  |   | -   |                                       |                           |            |                               |                      |  |   |       |
| Scale Witwhed Samples<br>as Diswithed Samples<br>as B Large Bag<br>Shown T Tub<br>J Jar<br>RW River/Drain Water | amples<br>amples<br>og<br>un Water | Undi<br>U1000<br>U38<br>Grou | sturbed Samples<br>105mm Dia Core<br>75mm Dia Core<br>indwater:<br>truck ⊻ Rose to | Penetration Test<br>S Standard Penta<br>S Cone Pentratio<br>CP Cone Pentratio<br>Ellows N = N Value<br>26/150 blows for 150m<br>26° blows for part (<br>25) Undisturbed S | ation Test<br>ation Test<br>Standard Pertration Test<br>Cone Pentration Test<br>Cone Pentration Test<br>N = N Value<br>N = N Value<br>blows for part or whole of sealing<br>blows for part or whole of sealing drive only<br>Undisturbed Semple Blows | ype of Shear Test Not<br>Shear Vane<br>B Shear Box<br>X Triaxial (Undrained)<br>U Undrained Cohesive Strength<br>U <sup>o</sup> Internal Friction Angle | as<br>Geology : Refer to appendix at and of logs.<br>U100F = Failed U100 sample<br>(Bracketed) soil strengths are visually assessed | endix at env<br>tample<br>hs are visu | 1 of logs,<br>ally asses: | - 3        | -                             |                      | LINCS<br>LINCS<br>LINCS<br>S3355<br>Fax (01522) 510573 | 5<br>5<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>2<br>1<br>1<br>5<br>10<br>5<br>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:<br>rface: stubt  | ble field.                          | Ground                               | Remarks :<br>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<br>of<br>Casing Water   | ۹<br>۲                              | Type                                 | Depth   | Legend  | De D                               | Reduced Thicknes<br>Level of<br>m AOD Stratum  | Thickness<br>of<br>Stratum                | Description of Strata   | Test<br>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   | <br>           <br>   |  |  | 0.70                                      | (Firm) orange brown very silty CLAY.<br>(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<br>silty CLAY. (TB)  | ž  |  |                           |            |         |                |                |  |  |       |
|                      |   | 00<br>800                           | νD                                   | 3.20-3.65   |   | 2.70   | <u>.</u>                                       | 2<br>2                                    | (Very soft) grey brown silty CLAY. (TB)   | ₽<br>2   |  |                           |            |         |                |                |  |  |       |
|                      |   | 000                                 | so                                   | 4.20-4.65   |   | 4.20   |  |   | Very soft) grey brown silty CLAY with<br>rare pockets of black organic clav. (TB)   | 2<br>2   |  |                           |            |         |                |                |  |  |       |
| 1                    |   | 011<br>012<br>013                   | <i>"</i> 0000                        | 200 55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-550-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-55<br>570-5 |   | -) - (()   |  | 2.00                                      |   | 0=N  |  |                           |            |         |                |                |  |  |       |
|                      |   | 014                                 | 00                                   | 6.20-6.65   |   | 6.20   |  |   | (Very soft) dark grey brown very sandy<br>CLAY with pockets of black organic clay   | B=N  |  |                           |            |         |                |                |  |  |       |
|                      |   | 016<br>017                          | 00                                   |   |   | 7.50   |  | 8 8                                       | (Firm) are rure mut graver. (15 /)<br>(Medium dense) grey sitty SAND and<br>GRAVEL. (DD)<br>(Firm) grey green brown slightly sandy<br>sitty CLAY with fine to medium<br>submunded chalk aroust (GT) | N-24   |  |                           |            |         |                |                |  |  |       |
|                      |   | 018                                 | Ω                                    | 6.<br>6.<br>6.<br>6.<br>6.<br>6.<br>6.<br>6.<br>6.<br>6.<br>6.<br>6.<br>6.<br>6   |   | 00'6   |  |   | (Stiff) dark grey sitty CLAY with fine<br>to medium (occasionally coarse)   | N=24   | · · · · · · · · · · · · · · · · · · ·  |                           |            |         |                |                |  |  |       |
| Scale<br>as<br>Shown | Disturbed Samples<br>Water Samples<br>D Small Bag<br>B Lerge Bag<br>T Tub<br>J Jar<br>River/Drain Water | Samples<br>amples<br>ig<br>in Water | U1000<br>U1000<br>U38<br>C75<br>Grou | sturbed Samples<br>105mm Dia Core<br>U100<br>75mm Dia Core<br>75mm Dia Core<br>indwater:  | Penetration Test<br>Sandan<br>S Standan<br>CP Cone Pt<br>Blows N = N Vali<br>26/150 blows fo<br>26/50 blows fo<br>(26) Undistur | on Test<br>Standard<br>Cone Per<br>= N Value<br>blows for<br>blows for | Pentratic<br>tration T<br>150mm c<br>part or w | on Test<br>est<br>after seal<br>hole of s | d)<br>ve Strength<br>ngle   | Notes<br>Geology : Refer to appendix at and of logs.<br>U100F = Falled U100 sample<br>(Bracketed) soil strengths are visually assessed | pendix al er<br>sample<br>gths are vis | d of logs.<br>Jally assei | - 288      |         |                |                | LINCS<br>LINCS<br>Telephone (01522) 530355<br>Fax (01522) 510573 | S<br>LABORATORY<br>ne (01522) 530355<br>(01522) 510573 |       |

| Ŝ                    | N<br>Q                | Job Number:  |             | 35361                                 | -  |  |   |   | Site: Boston WTS, Slippery (  | Slippery Gowt Lane   |                  | ß          | Borehole.: BH3 | H3              | Sheet 2 of  | [2       |
|----------------------|-----------------------|--|-------------|---------------------------------------|--|--|---|---|---|--|------------------|------------|----------------|-----------------|---|----------|
| Ren<br>SL            | Remarks :<br>Surface: | s :<br>e: stubble  | field. G    | sroundw                               | emarks :<br>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<br>E   |
| Date                 | Centing<br>Centing    | th Depth<br>and Water  | Ŷ           | Type                                  | Depth<br>(m)   | Legend   |   | Raduced Thickness<br>Lavel of<br>m AOD Stratum                          | Description of Strata   | Test<br>Results NMC  | к Р.<br>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<br>025  | nο                                    | 13.<br>56-<br>53.<br>58.<br>59.<br>59.<br>59.<br>50.<br>50.<br>50.<br>50.<br>50.<br>50.<br>50.<br>50.<br>50.<br>50 |  |   |   |   | N=48   |                  |            |                |                 |   |          |
| I                    |                       |  | 026         | 50                                    | 15.00-15.45<br>15.45   | <u>PLELFIEL</u>  | 15.00   |   | End of Borehole at 15.45 m  |  |                  |            |                |                 |   |          |
| ·                    |                       |  |             |                                       |  |  |   |   |   |  |                  |            |                |                 |   |          |
| 1                    |                       |  |             |                                       |  |  |   |   |   |  |                  |            |                |                 |   |          |
|                      |                       |  |             |                                       | ••••   |  |   |   |   |  | ·                |            |                |                 |   |          |
| Scale<br>as<br>Shown |                       | Disturbed Samples<br>Water Sample<br>D Small Bag<br>B Lange Bag<br>T Tub<br>J Jar<br>RW River/Dran Water | Nater Nater | Undist<br>U100<br>U38<br>C75<br>Groun | Undisturbed Samples<br>U100 105mm Dia Core<br>U38 U100<br>C75 75mm Dia Core<br>Groundwater:<br>T Struck Z Rose to  | Pernetration Test<br>S Standar<br>CP Cone Par<br>Blows N = N Vali<br>261 blows ft<br>265 blows ft<br>266 Undistu | lon Test<br>Standar<br>Cone Part<br>blows fc<br>Undistu | I<br>Id Pentration Test<br>ue<br>x 150mm after set<br>x ped Sample Blow | atton Test<br>atton Test<br>Standard Pentration Test<br>Cone Pentration Test<br>a = N value<br>blows for 150mm after seating<br>blows for part or whole of seating drive only<br>Undisturbed Sample Blows | Notes<br>Geology : Refer to appendix at end of logs.<br>U100F = Falled U100 sample<br>(Bracketed) soll strengths are visually assessed | pessesse Áller   | -          | -              |                 | LINCS<br>LINCS<br>S0355<br>Fax (01522) 530355<br>Fax (01522) 510573 | 355<br>3 |

| qoL                     | Job Number:  | ber:  | 35361    | 51  |  |   |   |                              | Site: Boston WTS, Slippery Gowt Lane   | vt Lane  |                                       |                          |            | Borehole.: BH4  | 3H4   | Sheet                                       | -                | of 2    |     |
|-------------------------|--|---|----------|---|--|---|---|------------------------------|--|--|---------------------------------------|--------------------------|------------|---|-------|---|------------------|---------|-----|
| Remarks<br>Surface      | irks :<br>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<br>Wator<br>(m)   | Type     | e<br>(m)  | Legend   |   | Reduced Thickness<br>Level of<br>m AOD Stratum<br>(m) (m) | Nickness<br>of<br>Stratum    | Description of Strata  | Test<br>Results  | % NMC                                 | % FL<br>%                | <u>a</u> * | CBR Bulk Dry<br>% 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<br>CLAY with rare subrounded gravel. (TB)                                   |  |                                       |                          |            |   |       |   |                  |         |     |
| 1                       |  | 88  | wД       | 1.20-1.65   |  | 1.30  |   | 0.50                         | (Firm) orange brown slightly sandy silty<br>CLAY. (TB)   | Met Contraction  | Ř                                     |                          | 30         |   | _     |   |                  |         |     |
| L.                      |  | 900   | v.       | 2 30°3 65   |  | 2.10  |   | 0.80                         | (Soft) orange brown slightly sandy slity<br>CLAY. (TB)   | :<br>+   |                                       |                          |            |   |       |   |                  |         |     |
|                         | <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<br/>fine to medium gravel. (TB)</li> </ul>                           | N=0  | _                                     |                          |            |   |       |   |                  |         |     |
|                         |  | 8   | v        | 4 204 BS  |  | R.:   |   |                              | (Very soft) grey brown silty sandy CLAY<br>with rare pockets of black organic clay.<br>(TB)                          | 1<br>  |                                       |                          |            |   |       |   |                  |         |     |
|                         |  | 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<br/>CLAY with fine subrounded chalk gravel.<br/>(GT)</li> </ul>       | ÷  |                                       |                          | _          |   |       |   |                  |         |     |
| . 1                     |  | 015   | •        | 6.70-7.50   |  | 6.70  |   |                              | (Loose) grey brown with grey and yellow  | +  |                                       |                          |            |   |       |   |                  |         |     |
|                         |  | 016<br>017<br>017   | 00       | 7,50-7.95   |  | 7.50  |   | 8 9                          | claty and fine to medium subrounded<br>chalk and fine to medium subrounded<br>chalk and finit gravel. (GT)           | N=15   | 14                                    | 58                       | 15         |   |       |   |                  |         |     |
|                         |  |   | A        | 06:2  | 1 × × × ×<br>× × × ×<br>× × × ×<br>× × × ×<br>× × × ×                  | 7.90  |   | T                            | <ul> <li>(Firm) grey brown very sandy CLAY with<br/>some fine subrounded chalk and flint<br/>gravet. (GT)</li> </ul> | +  |                                       |                          |            |   |       |   |                  |         |     |
|                         |  | 019<br>020  | wΩ i     | 9.00-9.45   | * * * * * *<br>* * * * *<br>* * * * *<br>* * * * *<br>* * * *<br>* * * |   |   | 8                            | (Medium dense) grey brown silty SAND<br>with fine to coarse subrounded chalk<br>gravel. (GT)                         | 41/150mh   | Ę                                     |                          |            |   |       |   |                  |         |     |
|                         |  | 20  | 2        | 00.01-06.8  |  | 9.50  |   | 0.50                         | Continued next sheet   | -  |                                       |                          |            |   |       |   |                  |         |     |
| Scale Scale Scale Scale | Disturbed San<br>Water San<br>D Small Bag<br>B Lange Bag<br>T Tub<br>J Jar | Disturbed Samples<br>W Water Sample<br>D Small Bag<br>B Large Bag<br>T Tub<br>J Jar |          | Undisturbed Samples<br>U100 105mm Dia Core<br>U38 U100<br>C75 75mm Dia Core<br>Groundwater: | Penetrati<br>S<br>CP<br>Blows N<br>26/150                              | on Test<br>Standard Pentration Test<br>Cone Pentration Test<br>= N Value<br>I Nows for 150mm after se | Pentrali<br>ntrallon 1<br>150mm                           | on Test<br>Fest<br>after sea | N  | ees<br>Geology : Refer to appendix at end of logs.<br>U100F = Falled U100 sample<br>(Bracketed) soit strengths are visually assessed | endix at en<br>lample<br>Ths are visu | d of logs.<br>ally asses | - pes      | -   |       | LINCS<br>LINCS<br>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 :<br>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<br>۳ AC      |
|  | Sample/Test   | st                   | Che  |   | trata  |   |   | Penetration  | lon   | Atterberg Limits             | Limits     | Density                           |                                 | Shear Strength       | gth Chemical  | lical Oth      |
| Date Casing Weter No<br>(2011) (m) (m)   | Type  | Depth<br>(m)         | Legend   | Cepth Reduc<br>Below Tadaco<br>GL TAN   | Level Thickness<br>Level of<br>m AOD Strahum<br>(m) (m)  |   | Description of Strate   | Results  | s NMC                                       | * 5<br>* 1                   | ۶ ۵        | CBR Bulk<br>% Maim <sup>3</sup> k | Dry Cu<br>Maim <sup>3</sup> kPa | ů                    | Type SO Shear al  | H              |
| -  | <u>ه</u>  | 10.50-10.95          |  | 8 9   |  | (Loose) grey brown<br>SAND. (GT)              | brown fine slightly silty   |  |   | _                            |            |                                   |                                 |                      |   |                |
| 023  |   |                      |  | 10.80   | 0.30   |   | (Loose) grey brown fine slightly silty<br>SAND with fine to coarse subrounded<br>chalk gravel. (GT)   |  |   |                              |            |                                   |                                 |                      |   |                |
| 025  | D 12.(  | 12.00-12.45          |  |   |  | (Very dense)<br>SAND and fin<br>and flint GRA | (Very dense) grey brown fine to coarse<br>SAND and fine to coarse subrounded chalk<br>and filnt GRAVEL. (GT)  | N=30   |   |                              |            |                                   |                                 |                      |   |                |
|  |   |                      |  |   | 4.20   | -   | (Firm to stift) grey slightly silty<br>slightly sandy CLAY with fine to medium<br>subrounded chalk gravel. (GT)   |  |   |                              |            |                                   |                                 |                      |   |                |
| 026<br>027   | 5<br>13,  | 13.50-13.95          |  |   |  |   |   | Star<br>N  |   | 33                           | 17 16      |                                   |                                 |                      |   |                |
|  |   | <u></u>              |  |   | ,  |   |   |  |   |                              |            |                                   |                                 |                      |   |                |
| 029  | s<br>D  | 15.00-15.45          | ×  | 15.00   |  | Endo  | End of Borehole at 15.45 m  | 28<br>2  | φ   |                              |            |                                   |                                 |                      |   |                |
|  |   |                      |  |   |  |   |   | ł  |   |                              |            |                                   |                                 |                      |   |                |
|  |   | <del></del>          |  |   |  |   |   |  |   |                              |            |                                   |                                 |                      |   |                |
| 1  |   | ,,,, <u>,</u> ,,,,,, |  |   |  | {   |   |  |   |                              |            |                                   |                                 |                      |   |                |
| <br>I  |   | ****                 |  |   |  |   |   |  |   |                              |            |                                   |                                 |                      |   |                |
| Scale Disturbed Samples<br>Scale Disturbed Samples<br>as Distroal Bag<br>Shown T Tub<br>J Jar<br>RW RiverDrain Water | Undisturbed Samples<br>U100 105mm Dia Core<br>U38 U100<br>C75 75mm Dia Core<br>Groundwater:<br>I Struck ⊠ Rose to |                      | Penetration Test<br>Sisndar<br>S Sisndar<br>S CP<br>Blows N = N Val<br>Blows (f<br>26* blows (f<br>26* blows (f<br>26* Undistu | n Test<br>Randard Pe<br>Cone Pentra<br>Cone Pentra<br>Cone Pentra<br>Lows for 15<br>Iows for pai<br>Indisturbed | Iton Test<br>Standard Pentralion Test<br>Cone Pentralion Test<br>E N Value<br>biows for 150mm after seat<br>biows for part or whole of s<br>Undisturbed Sample Blows | ing<br>drive only                             | Type of Shear Teat<br>V Shear Vane<br>SB Shear Vane<br>SB Shear Box<br>TX Triaxial (UndraIned)<br>Cu Undrained Cohesive Strength<br>Øu° Internal Friction Angle | Notes<br>Geology : Refer to appendix at end of logs.<br>U100F = Failed U100 sample<br>(Bracketed) soil strengths are visually assessed | appendix al «<br>)0 sample<br>ingths are vi | and of logs.<br>sually asses | - 3        |                                   |                                 | Telephone<br>Fax (0) | LINCS<br>LINCS<br>LINCS<br>LABORATORY<br>Telephone (01522) 510573<br>Fax (01522) 510573 | 530355<br>0573 |

| Ŷ                    | b Nu                    | Job Number:   |                   | 35361   |   |   |   |   |                              | Site: Boston WTS, Slippery Gowt Lane  | Lane  |                                     |                          |         | Bor        | Borehole - BH5    | BHS         | U  | Sheaf 1   | C 4C |       |
|----------------------|-------------------------|---|-------------------|---|---|---|---|---|------------------------------|---|---|-------------------------------------|--------------------------|---------|------------|-------------------|-------------|--|---|------|-------|
| Rer<br>N             | Remarks :<br>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 .<br>Jmm sla     | al 6.2m a<br>Indpipe v  | and wa<br>vas ins | is at 4.5m at<br>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<br>etween 9   | might. A<br>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<br>Lavel of                | Thickness                    | Description of Strata   | Test<br>Results   | NMC                                 | LL PL                    | P<br>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<br>1.20-1.65  |   |   |   | 120                          |   | 9-<br>2   |                                     |                          |         |            |                   |             |  | _   | _    |       |
|                      |                         | 58  |                   |   | 530-565<br>2.20-2.65<br>2.20-2.65   |   | 1.70  |   | <u>8</u>                     | (Soft) orange brown very sifty CLAY.<br>(TB)  | - <u> </u>  |                                     |                          |         |            |                   |             |  |   |      |       |
|                      |                         | 88  |                   |   | 339<br>39<br>39<br>39<br>39<br>39<br>39<br>39<br>39<br>39<br>39<br>39<br>39   |   | 2.70  |   |                              | (Very soft) grey brown very silty CLAY.<br>(TB)   | 2<br>Z  |                                     |                          |         |            |                   |             |  |   |      |       |
|                      |                         | 82  |                   |   | 20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>2   |   | 4.20  |   | <u>s</u>                     | (Srift) Hark areas ellity society ("I AV uside  | <u>ج</u><br>۲   | 2                                   | 8                        |         | 27         |                   |             |  | -   |      |       |
|                      |                         | 51  |                   |   | 2029292<br>2029292<br>2029292   | ■ [ # [ # ] # ] #<br>[ 4 ] # [ #<br>31 ] #<br>4 ] 4 ] 4 ] 4   |   | •   | 1.70                         | count dam gray pranty pranty out with pockets of black peat. (TB)   |   |                                     |                          |         |            |                   |             |  |   |      |       |
| 1                    |                         | €   |                   |   |   | · * - * - * - * - * - * - * - * - * - *   | .5<br>06:5  |   |                              |   |   |                                     |                          |         |            |                   |             |  |   |      |       |
|                      |                         | 88  | 014 015           | ۲<br>   | 111111  |   | 6.30  | _   | 0.40                         | (Soft) dark brown pseudo fibrous<br>slightly sandy peaty SILT/CLAY. (TB)  | N=13  |                                     |                          |         |            |                   |             |  |   |      |       |
| 1                    |                         | <u> </u>  |                   |   | , , , , , , , , , , , , , , , , , , ,   |   |   |   | 81                           | (Medium dense) dark brown coarse SAND<br>and corase angular and subrounded chalk<br>and flint GRAVEL. (GD)  |   |                                     |                          |         |            |                   |             |  |   |      |       |
|                      |                         | 8   | 210               |   |   |   | 1.50  |   |                              | (Medium dense) orange brown coarse SAND<br>and fine to coarse subrounded and<br>subangular GRAVEL. (GD)   | N=23  |                                     |                          |         |            |                   |             |  |   |      |       |
| ι.                   |                         |   | 018               | SPT 9.00  | 900-945<br>24<br>24<br>24<br>24<br>24<br>24<br>24<br>24<br>24<br>24<br>24<br>24<br>24   |   |   |   | 1.95                         |   | 2575mm  |                                     |                          |         |            |                   | _           |  |   |      |       |
|                      |                         |   |                   |   |   |   | 9.45  |   |                              | (Stiff becoming very stiff) dark grey<br>Continued next sheet   |   |                                     |                          |         |            |                   |             |  |   |      |       |
| Scale<br>as<br>Shown |                         | <b>Matthed Samples</b><br>D Small Bag<br>B Large Bag<br>J Jar<br>RW River/Drain Water |                   | Undisturbed Samples<br>U100 105mm Dia Core<br>U38 U100<br>C75 75mm Dia Core<br>Groundwater:<br>X Struck Z Rose to | ທ່ວ   | Penetration Teat<br>S Standard<br>CP Cone Pen<br>Blows N = N Value<br>261150 blows for<br>26* blows for<br>(26) Undisturb | n Teat<br>tandard P.<br>one Pentri<br>N Value<br>ows for 15<br>pws for pa | ation Tes<br>Somm aft<br>Comm aft<br>Sample | Test<br>at<br>Blows<br>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<br>Geology : Refer to appendix at and of logs.<br>U100F = Falled U100 sample<br>(Bracketed) soil strengths are visually assessed | hndix at en<br>ample<br>13 are visu | d of logs.<br>ally asses |         | -          |                   |             | LINCS<br>LINCS<br>Telephone (01522) 530355<br>Fax (01522) 510573 | LINCS<br>LABORATORY<br>Felephone (01522) 530355<br>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 :<br>Surface:     | ks :<br>ce: stubble  | field. G   | emarks ;<br>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<br>50mm             | age at 6.2m<br>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<br>n 9.0 s | hť. A<br>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<br>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><br>11111111111111   | <u></u>           |  | •••••  | silty CLAY with fine to coarse chalk<br>gravel. (GT)  | 12=N   | <del>6</del>                              | 5                          | 16         | 8    |                |                                       |   |   |             |
| 1                         |  | 022<br>023 | SPT 12.00-12.45<br>D  |   |                   |  |  |   | 40-N   |   |                            |            |      |                |                                       |   |   |             |
|                           |  | 025        | SPT 13.50-13.95   | ┎┰╔╅┠╝┶┰┵┰┯┯╼┹╄┯┹<br>┝╴╵╵┝╴┝╴┝╴╵┉╹┇<br>┝╵╵┝╵┝╴┝╴╵╸┇   |                   |  | 5<br>5   |   |  |   |                            |            |      |                |                                       |   |   |             |
| l                         |  | 026<br>027 | SPT 15.00-15.45   |   |                   |  |  |   | N=55   |   |                            |            |      |                | · · · · · · · · · · · · · · · · · · · |   |   |             |
|                           |  | 028<br>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<br>Water Samples<br>D Small Bag<br>B Lange Bag<br>T Tub<br>J Jar<br>J Jar<br>M River/Drain Water | ater ater  | Undisturbed Samples<br>U100 105mm Dia Core<br>U38 U100<br>C75 75mm Dia Core<br>Groundwater:<br>▼ Struck ⊠ Rose to                   | Dies Penetration Teat<br>Core Paration Teat<br>Core Parat |                   | Bat<br>Bard Peni<br>Penitratii<br>for 150<br>for 150<br>furbed S | on Test<br>on Test<br>Standard Pentration Test<br>Cone Pentration Test<br>= N Value<br>blows for 150mm after sea<br>blows for 150mm after sea<br>blows for part or whole Blow:<br>Undisturbed Sample Blow: | on Test<br>On Test<br>Standard Pentration Test<br>Cone Pentration Test<br>E N value<br>blows for 150mm after seating<br>blows for 150mm after seating<br>blows for 150mm after seating<br>blows for part or whole of seating drive only<br>blows for part or whole of seating drive only<br>blows for part or whole of seating drive only<br>C U Undrained Cohesive Strength<br>Undrafturbed Sample Blows | Notes<br>Geology : Refer to appendix at end of logs.<br>U100F = Failed U100 sample<br>(Bracketed) soil strengths are visually assessed | opendix al e<br>3 sample<br>vgths are vis | nd of logs.<br>ually asses | pag        |      |                |                                       | LINCS<br>LINCS<br>LINCS<br>LABORATORY<br>Telephone (01522) 510573<br>Fax (01522) 510573 | SS<br>LABORATORY<br>01522) 510573<br>(01522) 510573 | 0RY<br>0355 |

| Jot         | Job Number:  |          | 35361   |   |  |   |  | Site: Boston WTS, Slippery Gowt Lane  | owt Lane   |                                     |                         |                  | Bor        | Borehole.: B | BH6              | Sheet  |   | 012        |
|-------------|--|----------|---|---|--|---|--|---|--|-------------------------------------|-------------------------|------------------|------------|--------------|------------------|--|---|------------|
| Ren<br>Su   | Remarks :<br>Surface: stubble fie  | eld. Gi  | emarks :<br>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:<br>CK                            |                         | , gol            | Log Scale: | 10 m/page    | je Ground Level: | t Level: -   |   | m AO       |
|             |  |          | Sample/Test   | Ū   | hange  |   | ata<br>                                      |   | Penetration  | e                                   | Atterbe                 | Atterberg LImits | ç\$        | Density      | Shear S          | Shear Strength (   | Chemical  | el Othe    |
| Date (2011) | Casing Water<br>(m) (m)  | No<br>No | Type Depth (m)  | Legend  |  |   | Laval Thickness<br>Laval Stratum<br>(m) (m)  | Description of Strata   | Results  | NMC                                 | -<br>* F                | к<br>РL РI<br>%  | CBR        | R Bulk Dry   | Č.<br>Č.         | Type<br>Shear  | So.   | pH Tes     |
| 09/11       | 1  |          | D 0.00-0.50<br>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<br>N   |                                     |                         |                  |            |              |                  |  |   |            |
| 1           | נסי מי<br>   |          | 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<br>1                                    |   | 0<br>N<br>N  |                                     |                         |                  |            |              |                  |  |   |            |
| 1           |  |          | SPT 6.20-6 65   |   |  |   |  |   | N=0<br>N   |                                     |                         |                  |            |              |                  |  |   |            |
|             |  |          | SPT 7.50-7.95   |   | 6.65   |   |  | Very soft wet grey brown silly CLAY.<br>(TB)  | 2<br>2<br>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<br>Continued next sheet   |  |                                     |                         |                  |            |              |                  |  |   |            |
| Scale       | Water Samples<br>D Small Bag<br>B Large Bag<br>J Jar<br>RW River/Drain Water |          | Undisturbed Samples<br>U100 105mm Dia Core<br>U38 U100<br>C75 75mm Dia Core<br>Groundwater:<br>X Struck Z Rose Io | Penetri<br>S<br>CP<br>CP<br>Blows h<br>26/150<br>26/150<br>(26) | Ion Tes<br>Standa<br>Cone F<br>= N Va<br>blows I<br>blows I<br>Undistu | t<br>Ind Pentratio<br>Pentratio<br>Iue<br>or part o<br>Inbed Sa | ation Tes<br>n Test<br>m after s<br>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<br>Geology : Refer to appendix at end of logs.<br>U100F ≈ Falled U100 sample<br>(Bracketed) solt strengths are visually assessed | endix at e<br>sample<br>ths are vis | nd of log:<br>wally ass | essed            | -          | -            |                  | LINCS<br>LINCS<br>LABORATORY<br>Telephone (01522) 530355<br>Fax (01522) 510573 | S<br>LABORATORY<br>ne (01522) 530355<br>01522) 510573 | 0355<br>33 |

| Job N  | Job Number:   |                | 35361   |  |  |   |   |  | Site: Boston WTS, Slippery  | Slippery Gowt Lane   |                   |                             |                       |            | Borehole.: BH6  | BH6 | Ś                     | Sheet 2 of  | of 2      |
|--|---|----------------|---|--|--|---|---|--|---|--|-------------------|-----------------------------|-----------------------|------------|---|-----|-----------------------|---|-----------|
| Remarks :<br>Surface:                                  | :<br>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<br>(m)   | Legend.  | Perty I   | Level Thickness<br>Level Stratum<br>(m) (m)             | Stratum<br>Stratum                                       | Description of Strata   | Test<br>Results  |                   | NMC LL                      | 2 %                   | 2 %        | CBR Bulk Dry<br>% Maim <sup>3</sup> Maim <sup>3</sup> |     | Øu <sup>°</sup> Shear | SO 4  |           |
|  | 90 <u>0</u>   | 58 22<br>20 20 | B X Las   | 10.00-10.50<br>10.50-10.95   |  | 10.50   |   | 0:0  | very wet grey brown clayey SAND and<br>GRAVEL with frequent shells and<br>limestone. (GD)   | Ż  | N¤46              |                             |                       |            |   |     |                       |   |           |
| - 10/11<br>- 10/11                                     |   | 23             | *   | 8<br>2   |  | 09:01   | _   | 1  | Fine to coarse subangular gery brown<br>sifty SAND and GRAVEL with occasional<br>fine to medium shell fragments. (GD)   | +  |                   |                             |                       |            |   |     |                       |   |           |
|  |   | 254            | LdS D   | 12.00-12.45  |  | 12.45   |   | <u></u>  /   | Firm gray slightly gravelly CLAY with<br>fine to medium subrounded to angular<br>gravel and shell fragments. (GT)   | z  | N=56              |                             | 35                    | 17         |   |     |                       |   |           |
| 1011   |   | 26             | SPT<br>D  | 13.00-13<br>14:<br>14:<br>14:<br>14:<br>14:<br>14:<br>14:<br>14:<br>14:<br>14:                                   | 错误   | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |   | 8  | Stiff grey slightly gravely CLAY with<br>fine to medium subrounded to rounded<br>calk gravel. (GT)  | ~  | 25/75mm           |                             |                       |            |   |     |                       |   |           |
|  |   |                |   | ,,,,,  |  |   |   |  | End of Borehole at 13.45 m  |  |                   |                             |                       |            |   |     |                       |   |           |
|  |   |                |   | 1  |  |   |   | +  |   |  |                   |                             |                       |            |   |     |                       |   |           |
| ŧ.   | . <b>e</b>  |                |   |  |  |   |   | ł  |   |  |                   |                             |                       |            |   |     |                       |   |           |
|  |   |                |   |  |  |   |   | +  |   |  |                   |                             |                       |            |   |     |                       |   |           |
|  |   |                |   |  |  |   |   |  | ·   |  |                   |                             |                       |            |   |     |                       |   |           |
| 1  |   |                |   | ***  |  |   |   |  |   |  |                   |                             |                       |            |   |     |                       |   |           |
| 1  |   |                |   |  |  |   |   |  |   |  |                   |                             |                       |            |   |     |                       |   |           |
| <br>11   |   |                |   |  |  |   |   |  |   |  |                   |                             |                       |            |   |     |                       |   |           |
| Scale QISWE<br>as D Sm<br>Shown T Tub<br>L Jar<br>RW R | Disturbed Samples<br>Disturbed Samples<br>Distant Bag<br>B. Lerge Bag<br>J. Jar<br>N. River/Drain Water |                | Undistur<br>U100 10:<br>U38 U1<br>C75 75<br>Groundw<br>Struci | Undisturbed Samples<br>U100 105mm Dla Core<br>U38 U100<br>C75 75mm Dla Core<br>Groundwater:<br>¥ Shuck ⊠ Rose to | Pernetra<br>S<br>CP<br>Blows N<br>26(150<br>(26) | Ion Test<br>Slandar<br>Cone Pe<br>= N Valu<br>blows fo<br>blows fo<br>Undistur              | d Pentrati<br>Intration T<br>e<br>Part or w<br>bed Samp | ion Test<br>Test<br>after sea<br>vhole of s<br>ple Blows | ation Test<br>Standard Pentration Test<br>Come Pentration Test<br>I = N Value<br>Blows for 150mm after seating<br>blows for part or whole of seating drive only<br>Undisturbed Sample Blows | Notes<br>Geology : Refer to appendix at end of logs.<br>U100F = Failed U100 sample<br>(Bracketed) soll strengths are visually assessed | trangths a        | x at end<br>Me<br>re visual | of logs.<br>Iy assess | p          | -   |     | Telephone<br>Fax (0'  | LINCS<br>LINCS<br>LINCS<br>LABORATORY<br>Telephone (01522) 530355<br>Fax (01522) 510573 | ORY 30355 |

| dol                         | Job Number:  | 1                                     | 35361   |   |   |  |   | - *                               | Site: Boston WTS, Slippery Gowt Lane   | vt Lane  |   |   |                                      | Trial                        | Trial Pit.: TP1       | ۲.<br>۲                         |                     | Sheet           | ة<br>م    | [ _        |
|-----------------------------|--|---------------------------------------|---|---|---|--|---|-----------------------------------|--|--|---|---|--------------------------------------|------------------------------|-----------------------|---------------------------------|---------------------|-----------------|-----------|------------|
| Remarks :<br>Surface -      | rite :<br>ce - slubble   | i field. P                            | it sides did  | Remarks :<br>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<br>Depth : 3.20 m | : 0.70m<br>: 3.20 m |                 |           |            |
|                             |  |                                       |   |   |   |  |   | -                                 | Excavation Method: Backhoe Excavator   | Logged By:   | с<br>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<br>(2011)              | E)   | Ŷ                                     | Type  | Depth<br>(m)  | Legend  | Depth<br>below<br>GL avoint<br>(m)   | Reduced Thickness<br>Level of<br>m AOO Stratum<br>(m) (m) | Thickness<br>of<br>Stratum<br>(m) | Description of Strata  | Test<br>Result   | % WWC   | א ר<br>א ר  | <u>ء</u> ×                           | CBR B                        | Bulk Dry<br>Ma/m Ma/m |                                 | βu°                 | -               |           | Oth<br>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<br>slity CLAY with occasional roots. (TB)  | 1  | 23.0  |   |                                      | (f)<br>13.00<br>(8)<br>15.00 | 1.520                 | 8                               |                     |                 |           |            |
| 1                           |  |                                       |   |   |   |  | -   | 06<br>0                           |  | +  |   |   |                                      |                              |                       |                                 |                     |                 |           |            |
|                             |  | 2                                     | ß   | 1.80-2.00   |   | 1.50   | -   | 0.50                              | (Stiff) orange grey brown slightly slity<br>CLAY with occasional orange brown slity<br>laminations and occasional small roots.<br>(TB) |  |   |   |                                      |                              |                       | 8                               | >                   |                 |           |            |
| 4                           |  |                                       |   |   |   | 2.00   |   | 0.60                              | (Firm) orange brown and grey brown<br>silghtty slity CLAY with orange brown<br>silty taminations. (TB)                                 |  |   |   |                                      |                              |                       | 6                               | >                   |                 |           |            |
| ł                           |  | ری<br>                                | <br>  | 3.00.3.20   | → → → → → → → → → → → → → → → → → → →                       | 5.   |   |                                   | (Soft) grey brown, orange brown and dark<br>grey CLAY with frequent black roots and<br>organic matter. (TB)                            |  |   |   |                                      |                              |                       |                                 |                     |                 |           |            |
| 08/11                       |  |                                       |   |   | ¥)<br>† [<br> ₄[<br> ≿k                                     | 3.20   |   |                                   | End of Trial Pit at 3.20 m   |  |   |   |                                      |                              |                       | 32                              | >                   |                 |           |            |
| Scale DI<br>as D<br>Shown B | Disturbed Samples<br>W water Sample<br>D Small Bag<br>Lange Bag<br>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<br>U100 105mm Dlamete<br>U38 U100<br>Groundwater:<br>Shuck 🗵 Rose to | 1 0 k   | Symbols<br>PT Penetration<br>P Probe CBR<br>(i) Other Tests | Symbols<br>PT Penetration Tests<br>P Probe CBR<br>(I) Other Tests Undertaken |   |                                   | ype of Shear Test<br>Shear Vane Cu Undrained Cohesive Strangth<br>B Shear Box Øu* Internal Friction Angle<br>X Triaxial<br>(Undrained) | Notes : Geology and Other Teats :<br>See "Sample I<br>Soli strengths<br>from on-si | A Other Tests :<br>See "Sample Descriptions & Symbols" at end of logs<br>Soil strengths (in brackets) are assessed<br>from on-site observations | rer Tests :<br>"Sample Descriptions & \$<br>strengths (in brackets) an<br>from on-sile observations | lons & Syr<br>kets) are a<br>valions | nbois" al i<br>ssessed       | - Jud of logs         |                                 |                     | CS<br>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 :<br>Surface -           | ks :<br>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<br>Depth : 3.00 m | _               |                    |          |
|                                  |   |           |   |  |   |   | _                           | Excavation Method: Backhoe Excavalor   | Logged By:   | r.<br>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<br>(2011)                   | Vation<br>of<br>(TT)  | Ŷ         | Type Depth (m)  | Legend   |   | Reduced Thickne<br>Level of<br>m AOD Stratur<br>(m) (m) | Thickness<br>Stratum<br>(m) | Description of Strata  | Test<br>Result   | NMC LL   | 4 %  | × CBR                  | 0 5   |                                 | - h-            | so <sub>4</sub> pH | Tes      |
| 08/11                            |   |           |   |  |   |   | 0.30                        | (Soft) brown and grey brown slightly<br>slity clayey TOPSOIL with occasional<br>small roots.   | ł  |  |  |                        |   |                                 | <u>i</u>        |                    |          |
|                                  |   |           | 0.60-0.80   |  | 0.<br>0.  |   | 0.70                        | (Stiff) orange brown silty CLAY and<br>orange brown silt with occasional small<br>roots. (TB)  | {  | 20.0   |  | (T)7.30<br>(6)15.00    | 1.670   |                                 |                 |                    |          |
|                                  |   |           |   |  | 00  |   |                             | (Stiff) grey brown and orange brown<br>silly CLAY with occasional grey silty<br>laminations. (TB)  |  |  |  |                        |   | 8                               | >               |                    |          |
|                                  |   | 2         | B 1.80-2 00   |  |   | -   | 9;<br>1                     |  |  |  | · · · · · · · · · · · · · · · · · · ·  |                        |   |                                 |                 |                    |          |
|                                  | 2.00  |           |   |  | 2.00  |   | 030                         | (Soft) orange brown and grey brown silty<br>CLAY. (TB)   |  |  |  |                        |   |                                 |                 |                    |          |
|                                  |   |           |   |  | 2.30  |   | ,<br>A                      | (Soft) dark grey and orange brown CLAY<br>with frequent black roots and organic<br>matter. (TB)  |  |  |  |                        |   | 8<br>8                          | >               |                    |          |
|                                  |   | n         | B 2.80-3.00   | 1 4 5 4 5 4 5 4 5 4<br>1 9 1 4 1 4 1 4 1<br>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<br>as bown B<br>Shown B | sturbed Sam<br>Water Sam<br>Small Bag<br>Large Bag<br>Tin J |           | Undisturbed Samples<br>Undisturbed Samples<br>U100 105mm Diameler<br>U38 U100<br>Groundwater:<br>▼ Struck ⊠ Rose to | Ser e e  | Panbols<br>Penetration Tests<br>Probe CBR<br>Other Tests Undertaken | Brtaken   |                             | e of Shear Test<br>Shear Vane Cu Undrained Cohesive Strength<br>Shear Box Øu <sup>e</sup> Internal Friction Angle<br>Triaxlal<br>(Undrained) | Notes : Geology and Other Tests :<br>See "Sample I<br>Soil strengths<br>from or-si | I Other Tests :<br>Other Tests :<br>See "Sample Descriptions & Symbols" at<br>Soil strengths (in brackets) are assessed<br>from on-site observations | her Tests :<br>"Sample Descriptions & (<br>strengths (in brackets) an<br>from on-site observations | Symbols'<br>are assess | I Other Tests :<br>See "Sample Descriptions & Symbols" at and of logs<br>Soil strengths (in brackets) are assessed<br>from on-site observations |                                 | LINCS<br>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 :<br>Surface -        | <b>ks</b> :<br>ce - stubble fic                             | eld. Pit                                | Remarks :<br>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<br>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<br>(2011)                | Water<br>Water<br>(m)                                       | No N                                    | Type Depth   | Legend GL mAOD Svetum  | Stratum  | Description of Strata   | Test NMC<br>Result v.   | к Б.<br>К. Б.  |                                       | CBR Bulk Dry  | v Cu Qu                         |           |          | Othi  |
| 08/11                         |   |   |  | 1  | 0.30     | (Soft) brown slightly silty clayey<br>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<br>brown slightly slity CLAY with<br>occasional small roots and orange and<br>grey slit laminations. (TB) | 50.0  |  |                                       | (T)7.20<br>(B)9.20<br>(B)9.20   | 8                               |           |          |       |
| L                             |   |   |  |  | 0.0      |   |   |  |                                       |   |                                 |           |          |       |
|                               |   | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | 1.80-2.00  | 1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20<br>1.20 | 0:0      | (Firm) orange brown slightly silty CLAY<br>with occasional light grey and orange<br>laminations. (TB)   |   |  |                                       |   | 4<br>2                          | >         |          |       |
|                               |   |   |  | 200<br>200<br>200<br>200<br>200<br>200<br>200<br>200<br>200<br>200   |          | (Soft) orange brown and grey brown slity<br>CLAY with occasional pockets of black<br>organic matter. (TB)   |   |  |                                       |   |                                 |           |          |       |
|                               | en  |   | 2.80-3.00<br>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        |   |   |  |                                       |   |                                 |           |          |       |
| -<br>                         |   | ••                                      |  | 8  | 1        | End of Trial Ptt at 3.00 m  |   |  |                                       |   | 24                              | >         |          |       |
| Scale DI<br>as V V<br>Shown B | sturbed Sam<br>Water Sam<br>Small Bag<br>Large Bag<br>Tin J |   | Undisturbed Samples<br>U100 105mm Diameter<br>U38 U100<br>Groundwater:<br>⊈ Situck ⊠ Rose to | Symbols<br>PT Penetrallon Tests<br>P Probe CBR<br>(i) Other Tests Undertaken   | <u>F</u> | Type of Shear Test<br>V Shear Vane Cu Undrained Cohesive Strength<br>SB Shear Box Øu" Internal Friction Angle<br>TX Triaxtel<br>(Undrained)       | Notes : Geology and Other Tests :<br>See "Sample Descriptions & Symbols" at<br>Soll strengths (in brackets) are assessed<br>from on-site observations | her Teets :<br>"Sample Descriptions & S<br>strengths (in brackets) an<br>from on-site observations | ons & Symbo<br>els) are ass<br>ations | 4 Other Tests :<br>See "Sample Descriptions & Symbols" at end of logs<br>Soil strengths (in brackets) are assessed<br>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 :<br>Surface -        | :<br>- 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<br>Depth | Width : 0.70m<br>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<br>Level of<br>m AOO Stratum | Description of Strata  | Test  | NMC   |   |                                    | <b>1</b>  | k Dry          | Cu<br>Bu°                       | Type Sof  | so₄ <sub>pH</sub> |      |
| (2011)<br>D8/11               | (E)  | -        | Ē  |   | Ē   | Ē  |  |   | *   | %   | *                                  | W m/m   | m/g/m          | kPa                             |           | 1/06              | _    |
|                               |  |          |  |   |   |  | Brown slightly silty clayey TOPSOIL with<br>occasional small roots.  |   |   |   |                                    |   |                |                                 |           |                   | _    |
|                               |  |          |  |   | ŝ   | 5  |  |   |   |   |                                    |   |                |                                 |           |                   | _    |
|                               | -  | Ð        | 0.60-0.80  | 4   4   4   4   4  <br>4   4   5   5   4   4  <br>4   1   5   5   5   5   5  <br>1   1   5   5   5   5   5  <br>1   1   5   5   5   5   5   5   5   5   | 09:0  | 0.50   | (Stiff) brown and grey brown slightly<br>slifty CLAY with occasional small roots.<br>(TB)  |   | 24.0  |   | <del></del>                        | (1)12.00<br>(8)11.00  | 1.590          | 26                              | >         |                   |      |
| · · · · · ·                   |  |          |  | 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.<br>(TB)   |   |   |   |                                    |   |                |                                 |           |                   |      |
|                               |  |          |  | · · · · · · · · · · · · · · · · · · ·   | 2.40  |  | (Soft) dark grey and orange brown CLAY.<br>(TB)  |   |   |   |                                    |   |                |                                 |           |                   |      |
|                               |  |          |  |   |   | 0.60   |  |   |   |   |                                    |   |                |                                 |           |                   |      |
| 1                             | 5<br>F   | <u>۵</u> | 3.00-3.20  |   |   |  |  |   |   |   |                                    |   |                |                                 |           |                   |      |
| 08/11                         |  |          |  |   | 3.20  | _  | End of Trial PIL at 3.20 m   |   |   |   |                                    |   |                | 2                               | >         |                   |      |
| Scale Dist<br>as D<br>Shown B | Disturbed Samples<br>W Water Sample<br>D Smail Bag<br>B Large Bag<br>T Tin J Jar |          | Undisturbed Samples<br>U100 105mm Dlameter<br>U38 U100<br>Groundwater:<br>▼ Struck ⊻ Rose Io | Ser e e   | nbols<br>Penetration Tests<br>Probe CBR<br>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 :<br>See "Sample I<br>Soil strengths<br>from on-sil | I Other Tes<br>See "Samp<br>Soil strengt<br>from on | I Other Tests :<br>See "Sample Descriptions & Symbols" at<br>Soil strengths (in brackets) are assessed<br>from on-site observations | ans & Sym<br>ets) are as<br>attons | 1 Other Tests :<br>See "Sample Descriptions & Symbols" at end of logs<br>Soil strengths (In brackets) are assessed<br>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 :<br>Surface -      | ks ;<br>:e - slubble fiel  | ld. Pit  | Remarks :<br>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<br>Depth : 3.00 m | : 0.70m<br>: 3.00 m  |           |          |      |
|                             |  |          |  |         |  |   | ш<br>                             | Excavation Method: Backhoe Excavator  | Logged By:  | k<br>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<br>(2011)              | (m)  | ۲<br>۷   | Type Depth (m)   | Legend  |  | Reduced Thickness<br>Level of<br>m AOD Stratum<br>(m) (m) | Thickness<br>of<br>Stratum<br>(m) | Description of Strata   | Test<br>Result  | % WWC   | %   | <u>a</u> *                            | CBR Bulk  | Dry<br>%                        | Cu Qu <sup>°</sup> S | 1. h      | SO4 pH   | Tes  |
| 08/11                       |  |          |  |         |  |   | 07                                | (Stiff) brown clayey TOPSOIL with occasional small roots.   | <br>  |   |   |                                       |   |                                 | <u> </u>             |           |          |      |
|                             | -  | <u> </u> | 0.60-0.80  |         | <b>9</b><br><b>6</b>   |   | 99.0                              | (Stiff) orange brown slightly silty CLAY<br>with frequent grey clay laminations and<br>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<br>sitty CLAY with occasional grey<br>laminations. (TB)   |   |   |   |                                       |   |                                 |                      |           |          |      |
|                             | 8  |          | 8 1.80-2.00  |         |  |   | 8                                 |   |   |   |   |                                       |   |                                 | ><br>6               |           |          |      |
| L                           |  |          |  |         |  |   | 8                                 | (Soft) orange brown slightly silty CLAY with grey and orange laminations. (TB)  |   |   |   |                                       |   |                                 | 27                   | >         |          |      |
|                             | n<br>  |          | B 2.80-3.00  |         |  |   | 0.20                              | (Soft) dark grey, black and grey orange<br>CLAY. (TB)   |   |   | -   |                                       |   |                                 |                      |           |          |      |
|                             |  |          |  |         | 8  |   | i<br>I                            | End of Trial Pit at 3.00 m  |   |   |   |                                       |   |                                 | ×                    |           |          |      |
| Scale Di<br>as V<br>Shown B | Disturbed Samples<br>W Water Sample<br>D Small Bag<br>B Large Bag<br>H Tin J Jar |          | Undisturbed Samples<br>U100 105mm Diameter<br>U38 U100<br>Groundwater:<br>▼ Siruck ⊻ Rose to | S B P C | Symbols<br>PT Penetrallon Tests<br>P Probe CBR<br>(I) Other Tests Undertaken | rtaken  |                                   | e of Shear Teet<br>Shear Vane Cu Undrained Cohesive Strength<br>Shear Box Øu <sup>4</sup> Internal Friction Angle<br>Thaxiai<br>(Undrained) | Notes : Geology and Other Tests :<br>See "Sampla I<br>Soil strengths<br>from on-sit | Other Tes<br>See "Samp<br>Soil strengt<br>from or | Other Tests :<br>See "Sample Descriptions & Symbols" at<br>Soil strengths (In brackets) are assessed<br>from on-site observations | ions & Sym<br>(ets) are as<br>vations | d Other Tests :<br>See "Sample Descriptions & Symbols" at end of logs<br>Soil strengths (in brackets) are assessed<br>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 :<br>Surface - | rks :<br>Ice - stubble   | i field. P        | it sides did  | 1 not collapse  | <br>  |   |       |                |  | 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<br>Depth : 3.00 m |           |           |     |
|                        |  |                   |   |   |   |   |       |                | Excavation Method: Backhoe Excavator   | Logged By:  | сK<br>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<br>(2011)         |  | °Z                | Type  | Depth<br>(II)   | Legend  | Depth Reduced<br>below Level<br>GL m AOD<br>(m) (m)               |       | Stratum<br>(m) | Description of Strata  | Test<br>Result  | % NMC                                  | ~ Б<br>~   |  | CBR Bulk<br>% 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<br>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<br>with occasional small roots and rare<br>small pocket of very soft black clay.<br>(TB)              |   | 19.0                                   |  |  | (B)14.00<br>(B)14.00            | 1.700          |                                 |           |           |     |
| l                      |  |                   |   | <u></u> ╹╌╌╷╸╸┟╶╴┼  |   | 1.00<br>0   | 0     | 0.50           | (Stiff) orange brown slightly silty<br>CLAY. (TB)  |   |  |  |  |                                 |                | 8                               | >         |           |     |
|                        |  | 8                 | n   |   |   | 8   | D     | <br>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<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>8<br>7       |   | 3.80  | G     | 0.20           | (Soft) dark grey and orange brown CLAY<br>with occasional large pockets of soft  |   |  |  |  |                                 |                |                                 | 26        |           |     |
| 3                      |  |                   |   | <u> </u>  |   | 00.0  |       | [**<br>        | grey silly clay. (TB)<br>End of Trial Pit al 3.00 m  | k   |  |  |  |                                 |                |                                 |           |           |     |
| Scale D<br>as Shown B  | Disturbed Samples<br>W Water Sample<br>D Small Bag<br>B Large Bag<br>B Large Bag | mples<br>j<br>jar | Undisturber<br>U100 105mr<br>U38 U100<br>Groundwate | d Samples<br>n Diameter<br>nr:<br>Rose to                 | Symbols<br>PT Penetralion<br>P Probe CBR<br>(i) Other Tests | nbols<br>Penetrallon Tests<br>Probe CBR<br>Other Tests Undertaken | faken | ₩ <u>₩</u> >8× | e of Shear Test<br>Shear Vane Cu Undrained Cohesive Strength<br>Shear Box Øu <sup>*</sup> Internal Friction Angle<br>Triaklal<br>(Undrained) | Notas : Geology and Other Testa :<br>See "Sample C<br>Soil strengths (<br>from on-sit | Other Tes<br>See "Samp<br>Soll strengt | ier Testa :<br>"Sample Descriptions & ;<br>strengths (in brackets) ar<br>from on-site observations | Chhar Testa :<br>Cehar Testa :<br>See "Sample Descriptions & Symbols" at end of logs<br>Soil strengths (in brackets) are assessed<br>from on-site observations | ools" al end                    | of logs        |                                 | LINCS LAB | 522) 5300 | 355 |

| Remarks :<br>Surface - slubble field. Pit sldes did not collapse.<br>Groundwater was not encountered.<br>Breat Sample/Test Date Water No Type Depth L | ble field. F<br>was not er                 | Pit sldes                   |   |   |   |   |  |  |                                       |   |   |   |                                 | 15                    |                          |      |
|---|--|-----------------------------|---|---|---|---|--|--|---------------------------------------|---|---|---|---------------------------------|-----------------------|--------------------------|------|
| Groundwater v<br>Date Date vater<br>(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<br>Depth : 3.00 m | EF                    |                          |      |
|   |  |                             |   |   |   |   | Excavation Method: Backhoe Excavator   | Logged By:   | ъ<br>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<br>N                                     | Type                        | Depth<br>(m)  | Legend  | Depth Reduced<br>below Level<br>GL m ADD<br>(m) (m) | Reduced Thickness<br>Level of<br>m AOD Stratum<br>(m) (m) | Description of Strata  | Test<br>Result                                     | " " " " " " " " " " " " " " " " " " " | ж Ъг<br>%   | PI CBR  | IR Bulk Dry<br>Mg/m <sup>3</sup> Mg/m <sup>3</sup>                                    |                                 | Zu <sup>c</sup> Shear |                          | Tes  |
| 3   |  |                             |   |   |   | }   | (Firm) brown slightty gravelly clayey<br>TOPSOIL with occasonal small roots and<br>rare plastic bag.           | <br> }   |                                       |   |   |   |                                 | 19a1                  |                          |      |
|   | -  | ۵                           | 20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>2                               |   | 0.40  | 0.20  | (Firm) dark orange brown CLAY with rare blue plastic bag. (MG?)  |  |                                       |   |   |   |                                 |                       |                          |      |
|   |  | I                           |   |   |   |   | (Sliff) dark orange brown slightly silty<br>CLAY with occasional small roots. (TB)                             |  | 19.0                                  |   | (J)<br>(B)<br>(3)<br>(3)<br>(3)<br>(3)<br>(3)<br>(3)<br>(3)<br>(3)<br>(3)<br>(3 | 00  |                                 |                       |                          |      |
|   |  |                             | <u>~ ╄╵ ┶</u>   |   |   | 0:90  |  |  |                                       |   |   |   | 8                               | >                     |                          |      |
|   | И  | ۵.                          | 1.80-2.00   |   | 1.50  | 0.50  | (Soft) brown CLAY with occasional grey<br>and orange laminations and mottles and<br>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<br>89<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80<br>80 |   |   | 1.00  |  |  |                                       |   |   |   |                                 |                       |                          |      |
| 11/20   |  |                             | 1   1   1   |   | 3,00  |   | End of Trial Prt at 3.00 m   |  |                                       |   |   |   | 82                              | >                     |                          |      |
| <b>1</b>  | urbed Samples<br>Water Sample<br>Small Bag | Undistu<br>U100 1(<br>U38 U | Undisturbed Samples<br>U100 105mm Diameter<br>U38 U100  | Symbols<br>PT Penetration Tests<br>D comba Coto | ation Tests   |   | Type of Shear Test<br>V Shear Vane Cu Undrained Cohesive Strength<br>SB Shear Box Øu'r Internal Friction Andre | Notes : Geology and Other Tests :<br>See "Sample I | Other Tests                           | :<br>Descriptio   | na & Symbol:  | Scher Tests :<br>Sother Tests :<br>See "Sample Descriptions & Symbols" at end of logs |                                 | LINCS                 | $\neg$                   | Г    |
| Shown B Large Bag<br>T Tin J  | Bag<br>J Jar                               | Ground<br>Struc             |   | . €   | Other Tests Undertaken                              | laken   | Trlaxlal<br>(Undrained)  | -,   | Soil strengths<br>from on-s           | strengths (in brackels) an<br>from on-site observations | Soll strengths (in brackets) are assessed<br>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<br>less than 2% |
|-----------------------------------|---|
| occasional                        | intermittent appearance 2% to 5%        |
| with a trace                      | less than 10%                           |
| with a little<br>or with frequent | 10% to 25%                              |
| with some<br>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)**

,

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.

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√1 - Client (Via S Wells)

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

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

| Lab<br>Sample<br>No. | BH<br>(No) | Sample<br>(type) | Depth<br>(m) | NMC<br>(%) | LL<br>(%) | PL<br>(%) | <b>Pl</b><br>(%) | Ret 425um<br>(%) |
|----------------------|------------|------------------|--------------|------------|-----------|-----------|------------------|------------------|
| 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)<br>ii)<br>iii)<br>i∨)<br>∨) | Sampler<br>Sampling Procedure<br>Date Received<br>Date Tested<br>Test Procedures | : Lincs Lab Contracted Drillers (SIS)<br>: BS5930:1999 (Not UKAS Accredited)<br>: 23.11.11<br>: 2 to 9.12.11<br>: (MC) BS 1377:Pt 2:1990 CI 3.2 (UKAS Accredited)<br>(PL) BS 1377:Pt 2:1990 CI 5.3 (UKAS Accredited) |
|--------------------------------|--|--|
|                                |  | (PL) BS 1377:Pt 2:1990 CI 5.3 (UKAS Accredited)<br>(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<br>No. | (No) | (type) | (m)       | Density<br>(Mg/m <sup>3</sup> ) | Тор<br>(%) | Base<br>(%) | Тор<br>(%) | Base<br>(%) | Məan<br>(%) | 20mm<br>(%) |
| 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<br>(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:<br>Sampler:<br>Sampling Procedure: | U = Undisturbed, d = Disturbed, B = Bulk<br>Lincs Lab (CK) & SIS Lincs Lab<br>Sub-Contracted Drillers<br>BS 5930:1999 (Not UKAS Accredited) | Date Received:<br>Date Tested: | 23.11.11<br>1 <b>0-13.12.1</b> 1 |  |
|---|---|--------------------------------|----------------------------------|--|
|---|---|--------------------------------|----------------------------------|--|

### **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

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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**

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|                           |          | 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<br>50, of 2:1<br>soll/water extract<br>(g/):  | <0.1               |
| Material passing a<br>2mm BS test sieve<br>(% dry mass of<br>original sample)                            | 6                  |
| Sample description   | Brown clay         |
| Depth (m)  | 0.6-0.80           |
| Sample<br>type   | Bulk<br>/Disturbed |
| Client<br>sample<br>reference  | 5758-11<br>7P1     |
| NCA<br>sample<br>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<br>SO <sub>4</sub> of 2:1<br>soil/water extract<br>(g/l):  | 0.5                |
| Sulfate content as<br>SO3 of 2:1<br>soll/water extract<br>(g/l):              | 0.4                |
| Material passing a<br>2mm BS test sieve<br>(% dry mass of<br>original sample) | 96                 |
| Sample description  | Brown clay         |
| Depth {m}   | 0.60-0.80          |
| Sample<br>type  | Buik/<br>Disturbed |
| Client<br>sample<br>reference   | 5760-11<br>TP3     |
| NCA<br>sample<br>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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Tel 0114 253 6333 Fav 0116 251 470" 7.11 Hividian Street, Lencester, 111 4Dit

**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 |  |
|-----------|--------------------------|---|--|
|-----------|--------------------------|---|--|

| pH value  | 8.0                             |
|---|---------------------------------|
| Sulfate content as<br>SO4 of 2:1<br>soll/water extract<br>(s/1):              | 0.4                             |
| Sulfate content as<br>SO3 of 2:1<br>soll/water extract<br>fa/ll:              | 0.3                             |
| Material passing a<br>2mm BS test sieve<br>(% dry mass of<br>original samole) | 68                              |
| Sample description  | Brown clay occasional roothairs |
| Depth (m)   | 0.60-0.80                       |
| Sample<br>type  | Bulk/<br>Disturbed              |
| Client<br>sample<br>reference   | 5763-11<br>TP6                  |
| NCA<br>sample<br>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

page 7 of 22

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

LN2 2LQ Lincoln

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

St Georges Lane Riseholme Lincs Laboratory LNZ ZLQ Lincoln

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page 9 of 22

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|--|------------------------------|--------------------------|-----------------------------|--|-------------|--|
| WATER  |                              |                          | Date                        | Supphate content as SO <sub>3</sub> (g/l): | 1.0>        | Lincs Laboratory<br>St Georges Lane<br>Risetholme<br>Lincoln<br>LNZ 2LQ  |
| <b>DICHOLLS COLTON</b><br>ANALYTICAL<br>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><br>ANALYTICAL<br><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.<br>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<br>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<br>for the formation of the intervence of the adjoint of<br>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.<br>Aled by multiplying the wighter context er SD.<br>101   |
| 0320   |                              |                          | Order reference: 4601568559 | NCA sample reference:                      | 11-18649    | HOTES<br>Tering was in accordance with 15.3377 / Part 3 : 13<br>2 Supplus content as SQL has been calculated by mult<br>2 Sorrentino<br>CL. Sorrentino<br>Operations Manager UK & Ireland<br>Nicholls Colton Analytical  |

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page 10 of 22

Report No. 59526





Nichell Cetter Analytical 7-13 Marking Street Le cetter LEI 40-Tel 0110 258 6333 Fax 0116 251 4705 e-mail testings nitholls cotton on us website inwise challs calten ea ut

### **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   |  |  |  |

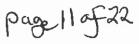
| NCA sample<br>reference | Client sample<br>reference | Sample description | Depth (m) | pH value |
|-------------------------|----------------------------|--------------------|-----------|----------|
| 11-18649                | S767-11 BH1                | Water              | 7.50      | 7.7     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

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 (<br>type   | Disturbed 13.50  |
| Client<br>sample<br>reference  | S769-11<br>BH1   |
| NCA<br>sample<br>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

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

Lincs Laboratory St Georges Lane Riseholme LNZ ZLQ Lincoln

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

NDTES 2. 2. 2.

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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Tel 0116.253 6333 Fax 0116 251 470° e-mail: testing@inichplis-colton coluwebsite www.nichoffs.colten.co.ul

7 11 Marding Street tencestor LE1 40H

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

L' L. Sorrentino ł

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

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**NICHOLLS COLTON** 

7 21 Harding Street Loicester LEI 40H

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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<br>SO4 of 2:1<br>soll/water extract<br>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<br>2mm BS test sieve<br>(% dry mass of<br>original sample)  | 98              |
| Sample description   | Brown clay      |
| Depth (m)  | 1.20-1.65       |
| Sample<br>type   | Disturbed       |
| Client<br>sample<br>reference  | 5778-11.<br>BH4 |
| NCA<br>sample<br>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

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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<br>2mm BS test sleve<br>(% dry mass of<br>ortiginal samole)   | 68                               |
| Sample description   | Grey slightly gravelly sand clay |
| Depth (m)  | 7.50-7.95                        |
| Sample<br>type   | Disturbed                        |
| Client<br>sample<br>reference  | S779-11<br>BH4                   |
| NCA<br>sample<br>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

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| YICFALLI COLLON ANALVIICAL<br>7-11 Harding Street. Lorentar (EJ 4DH<br>7-10 0115,253 6333 Fax 0113,251 4709<br>9-Mail Taitinggi nicholls collen co ui<br>wehsilo Avva nicholls collen co ui |                         | Date of issue: 14/12/2011   | Sulphate content as SO <sub>4</sub> (g/l):<br>Sulphate content as SO <sub>4</sub> (g/l): | 0.6 0.7     | Lincs Laboratory<br>St Georges Lane<br>Riseholme<br>LIncoln<br>LN2 2LQ   |
|---|-------------------------|-----------------------------|--|-------------|--|
| UND WATER   |                         |                             | Sulphat  |             |  |
| <b>ANALYTICAL</b><br>ANALYTICAL<br>TEST REPORT<br>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<br>ANALYTICAL<br>TEST REPORT<br>BS 1377 WATER SOLUBLE SULFATE CONTENT OF GROUND WATER<br>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.<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>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.<br>1 miljøbiete content at 20.3   |
|   |                         |                             | Client sample reference:   | 5780-11 BH4 | 377 : Ракт 3 1990 ติลณร<br>หน้นเลย์ by ทยทับสัทศ เป็<br>เป็นได้<br>สิกานี้   |
| 0320  |                         | Örder reference: 4601568559 | NCA sample reference:  | 11-18656    | Norts<br>1. Teking wen in accordence with \$5.1377 : Farr 3. 12<br>2. Support content as \$0, has been cakutured by mu<br>2. Sorrentino<br>Ciperations Manager UK & Ireland<br>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<br>reference | Client sample<br>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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e-mail: test-ng@n-cholls-colton\_co\_uk Tel 0110 253 6333 Far 0116 251 4709

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

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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

22 L. Sorrentino Ŧ -

Operations Manager UK & Ireland Nicholls Colton Analytical

Lincs Laboratory St Georges Lane Riseholme Lincoln LN2 2LQ

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| <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<br>St Georges Lane<br>Riseholme<br>Lincoln<br>LN2 2LQ  |
|--|--|-------------------------|-----------------------------|---|-------------|---|
|  | WATER  |                         |                             | Sulphate cont   |             | L LING<br>St G  |
| <b>DICHOLLS COLTON</b><br>ANALYTICAL<br>TEST REPORT  | L377 WATER SOLUBLE SULFATE CONTENT OF GROUND WATER<br>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><br>Analytical   | / WATER SOLUBLE SULFA<br>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.<br>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<br>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<br>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<br>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<br>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.<br>На зиђћаја сентет ав 50, b  |
|  |  |                         |                             | Client samp   | S785        | 1377: Բեզի 3 - 1990 Churs<br>Եժեսնեւտեմ Եչ տակոցինուլ է   |
| U KAAS   |  |                         | Order reference: 4601568559 | NCA sample reference:   | 11-18658    | MOTES<br>Terrang was in accordance with B\$ 1377 : Part 3 - 1990 Chanae S<br>Subhate centern as SQL has been calculated by multiplying the su<br>L. Sorrentino<br>C. Sorrentino<br>Operations Manager UK & Ireland<br>Nicholls Colton Analytical  |

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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<br>reference | Client sample<br>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

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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



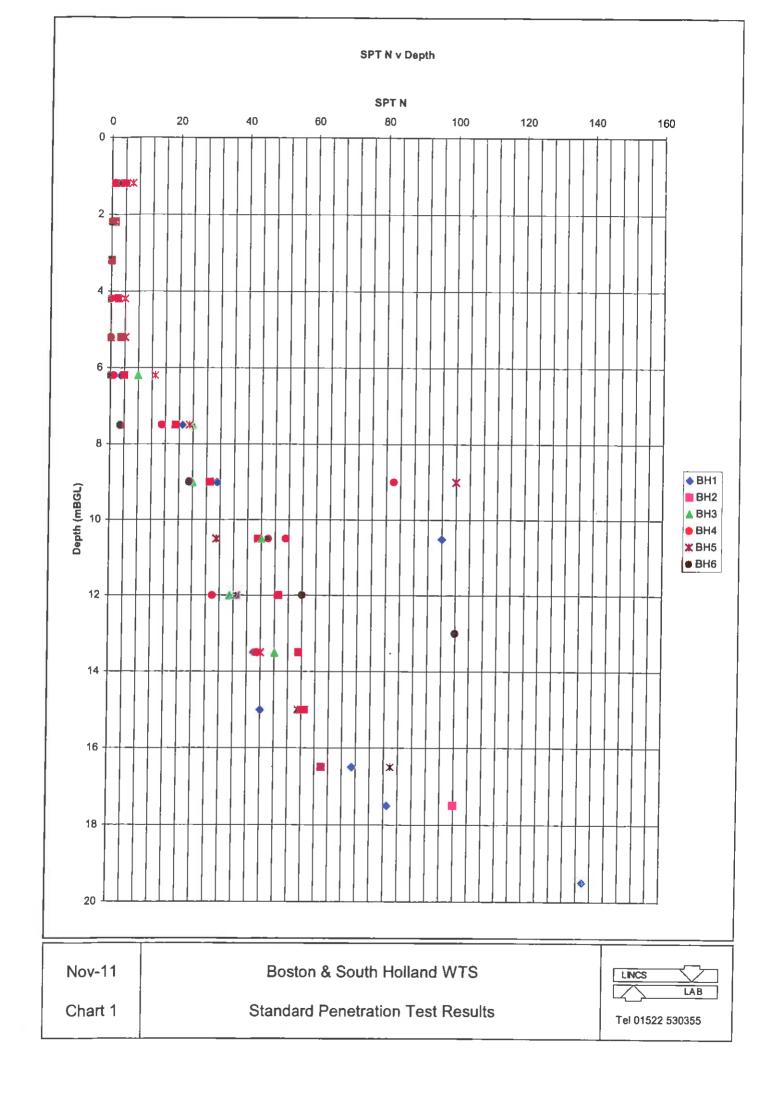
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|------------------|---------------------------------------|
| $\bigtriangleup$ | Laboratory                            |
| A Service        | a Unit of Lancolnahara County Council |

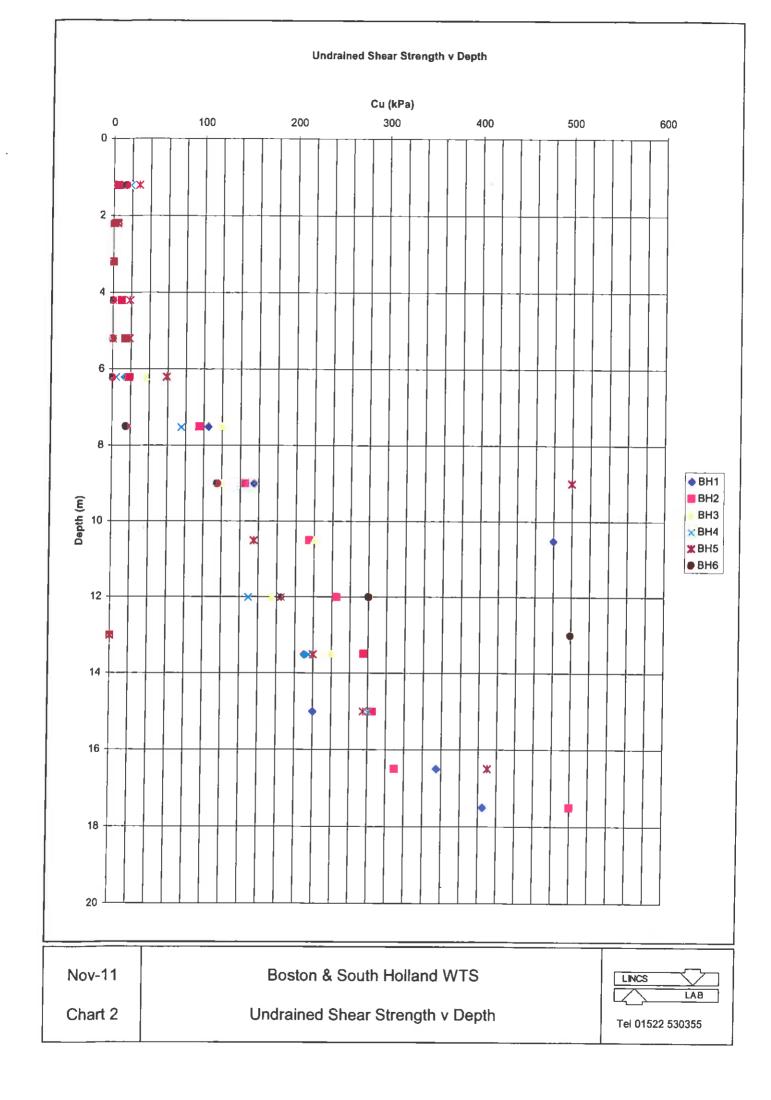
### **APPENDIX** (iv)

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CHARTS

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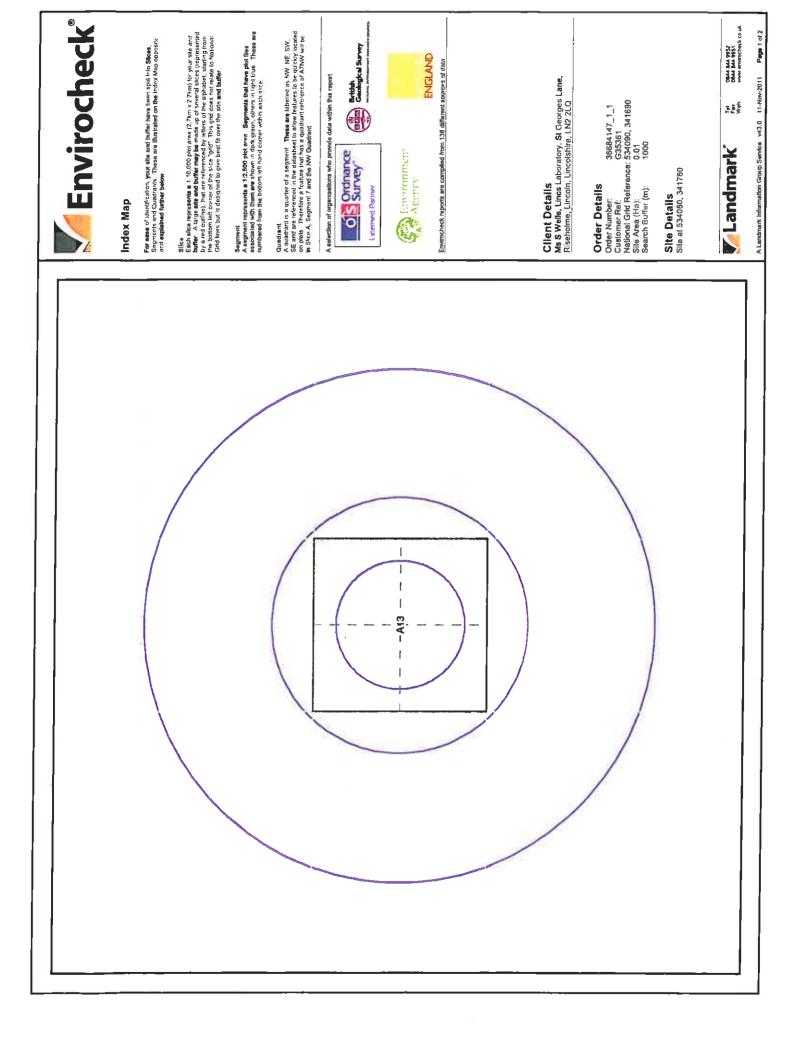


### APPENDIX (v)

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HISTORICAL MAPS

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**ANDMARK STANDARD TERMS AND CONDITIONS** 

any person who provides funding secured on the whole or part of the or part of the Property Sile. E,

References to "You", "Your" and "Yourself" refer to the contracting party who accesses the

Website or places an Order with Us.

in these Terms, the following lerms have the

DEFINITIONS oliowing mer clause 1 d

ollowing meanings "Agreement" has the meaning set out in

1. Basis of Contract

- Property Site, any person for whom You act m e ž
- professional or commercial capacity in relation to the Property Site; any person who acts for You in a

not expressly accepted by You, they will be

deemed to have been accepted by You.

"Consumer" means a natural person acting for purposes other than his trade, business or

reseller who We have duly appointed to resell

**Our Reports and Services** 

Authorised Reseller<sup>®</sup> means an agent or

Services from Us. Where these Terms are between Us and You where You purchase

These Terms govern the relationship

and You agree to be bound by lifese Terms, when You place any Order, or pay for any Services provided to You by Us

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- professional or commercial capacity in relation to the Property Site; and/or part of the Property Site as part of an Information Pack but for the avoidance of doubl, We shall have no liability to such prospective buyer unless the prospective (or actual) buyer shall not prospective buyer subsequently purchase the Property Site, and the prospective buyers of the whole or be antitled to make the Service Ś
- evallable to eny other third party. You shell not hold yourself out or describe yourself as Our agent or an agent of any of the Supplierr You shall ensure that acknowledgements ü

Suppliers shall have any liability for errors or ontiestors in information provided by or on behalf of You or from Your feiture to

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ocation or property.

where You are not a Consumer, an employee of Yours who uses the Services provided to You; or (iii) a person identified in clause 2.b or "End User" means either. (i) a Consumer or a Consumer's friend or family member who uses the Services provided to the Consumer, or (ii)

"Feet" means any charges leved by Un or an Authorised Reseller for Services provided to

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their respective employees

We may modify these Terms, and may

discontinue or revise any or all other aspects of the Services al Our sole discretion, with Immediate affect and

accurate and correct and that the Report has been prepared for the correct location and property type. Neither We nor any

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materials and updates included in and/or

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mformation services and software, and other

"Content" means any data, computing and

Inchude both material developed by or on behalf

of Us and Third Party Content

check that the details that You provide in

relation to Your Order are complete.

You shall take all reasonable steps to

of copyright and database right ownership are included in a conspicuous position in all copies of the Content. You may not deten any of Our or the Suppliers' intellectual property protection notices (including without limitation copyright notices or trade marke) from the Content

You shall use Your best and avours to use menuras, including measures We or suppliers may reasonably recommend from time to inne, to ensure that all Contrent which You hold or are responsible for is secure from unauthorited use or adequate technological and security BCCOAB,

variation to these Terms shall be posted on Our Websites You acknowledge that it shall remain Your responsibility to check Our Webatte from time to lime for any such unnendments or variation to these Terms.

"First Purchaser" means the first person, or legal entry to purchase the Property Site following provision of a Roport. "Tella Purchaser's Lender" means the provider for the First Purchaser. "Information Pacif, "means a pack compiled

Ilmitation changing the Services available at any given time. Any amendment or

without prior notice, including without

Continued Orders of the Services by You shall be deemed an acceptance by You to

The Content shall only be used structly in accordance with these Terms and not for any other purpose; nor shall any use of the Content be made that would or might be incorporating such Content for commercial use or rental. deermed is be disparaging to Us, the Suppliers or any of them. You shall not be entitled to resell or rent any Content or otherwise any supply products Order and Our privacy policy, which is evaluable on the vebsite, constitute the evaluate agreement between the parties relating to the supply of Services to You by Us ("Sgreement") You exchrowidge that You have not rolled on any autiement.

Fees and delivery details in relation to Your

copyright, patent, design right (registered or urregistered), earner or trade antik (registered or unregistered), database right or other data ight, moral right or know how or any other

These Terms together with Your Order, the be bound by any such amendments to the

(ems)

by or on behalf of the owner or prospective buyer of the Property Site designed the marketing or purchase of the Property Site and containing information provided by or on behalf

of the owner or prospective buyer of the Property Site. "Intellectual Property Rights" means You shall not reverse anginesr, separate or otherwise lamper with the Content so that Content can be extracted and used for any purpose outside the scope of the Agreement.

promise or representation made or given by or on behalf of Us which is not set out in the Agreement or defivery details. Northing in this clause 1.d shall limit or exclude any

á subsidiaties of such holding companies (as such interna are admendin such action 1155 of the Companies Aut 2005) or by any government entry associated with You (in each case as applicable). You agree, and shell procure, inter any such company or If You are a Company or public body. You agree that the licensed use of Content pursuant to the Agreement always nubsidiaries, holding companies or antity shall enter into a separate excludes its use by any of Your agmement with Us

m a later document or purport to exclude or override these Terms and neither the

course of conduct between perties nor trade practice shall act to modify these

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Subject to clauses 6.d, 6 k and 8.I, We ahali use all reasonable skill, care and

2. Services and Licensed Use

that provides services, software, date, Information and other content or functionality of

by Us pursuant to these Terms, including

without limitation, any Report

any form to Us. Terms" means these terms and conditions

diligence in the performance of the

Services,

"Third Party Cortent" means the services, software, data, information and other content or functionality provided by Supphers and linked to

Website" means any website hontod by Us

or contained in the Services.

and includes the Content and any report, service, document, data-set, software or information contagned in such webaites or

served from them

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conditions including any lerms and conditions which You may purport to apply

"Report" includes any information that We supply to You including all reports, services, distants, software or information contained in "Services" means the provision of any service "Supplier" means any third party organisation

These Terms shall prevail at all times to the exclusion of all other terms and

Rability for fraud.

"Order" means the request for Services from

Un by You

intellectual property right. References to "Wes" "Us" and "Our" are references to Landmark Information Group Limiled, whose replatered office is 7 Abbey Court, Eagle Way, Exeter, EX2 7HY.

"Property Site" means a land site in relation

which We provide a Service.

even if such other provisions are submitted

prohibited. If You wish to use the Content in a manner which is not authorised by the Terms, then You must contact Us to seek the necessary consents or licences (which may include further licences from the Suppliers), for which there may be All other uses of the Content are additional Fees.

You agree to notify Us as soon as You

the owner of the whole or part of the Property Sile at the date of the Report, any person who purchases the whole

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Subject always to these Terms You may, without further change, make the Services evailable to:

suspect any infingement of Our or any of Our Supplier's intellectvat property rights and You agree to give Us all reasonably required essistance in pursuing any potential Infringement

 You acknowledge and agree that all Intelectual Property Rights for Contant are antificiated Property Rights for Contant are and shall continue to be owned by Us or Our Supplets and nothing in the Agreement that Itematic, assign or grant any rights to You (save for the licence as set out above). 3. Intellectual Property and Confidentiality Subject to any use of the Content in

accordance with these "prins, You accordance with these "prins, You accordance that any parson to whom You phould procure that any parson to whom You provide access to the Content shall, treat as atricity private and call fallormation which they obtain from the services and content you agree to indemnety Us egenet all liabilities, domages, penallies. suffered or incurred by Us in relation to any breach or alleged breach of this clause 3 b costs, expenses (including legal expenses on an indemnity basis) or other loss

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 -

You shall, subject to clease 4.b.lk mmediately cease to use the Report and any Content, You shall, subject to clause 4.b.lli, . 

within 20 days of such lormination of sophy, dealory all Contant in any media whort You hold of for which You are responsible and provide at Our request, a sworm statement by a except in the event of termination by duly authorised person that You no longer hold such Content; ÷

amount due to the strain of th of addressing a company. Inom a regulator or other third party regarding Your use of such Content during the term of the Agreement addressing a complaint or challenge Us under clause 4 s. You may relain Content in an archive following expiry of the Agreement for the sole purpose

remainder of this clause 6 is subject to this provision. If You are a Consumer, Your Nothing in these Terms excludes or limits either party's lephilty for death or personal injury caused by that party's negligence or wifts default or for fraud, and the lime to trime and fixed sum compensation under the Late Payment of Commercial Debta Regulations 2002 Such interest shall accrue on a deily basis 6. Linblity strictly to the extent necessary for the revent purpose of addressing a complaint or challings from a regulator or other think party and in paper or read-only electronic format only, (c) You must theore auch content Intellectual Property Rights (other Uhan Content provided by Ordnance Survey to the extent that the Intellectual owned by Ordnance Survey); (b) You shall not disclose Content retained Your rights are on condition that (a) the archive rights do not apply to Content that include third party Property Rights in such Content are under this clause 4.b.lil to any regulator or other third perty except

statutiony rights (which include, for example, that We will provide the Services to a sessonable stander of and within a reasonable time) are not affected by anything in these Terme. ف

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

can be reasonably interpreted as

effect after such expiry or termination.

connected claims

An individual or a monthly moves showing all Ordens created by You will be generated subject to these Terms, You will pay the

The Content that Services are based on is derived from third party sources to any omission, arror or insecuracy in the Content. Such Content is provided specifically from the sources as described by Us and We do not claim that these represent on exhaustive or comprehensive Therefore, save as set out in clause 6.1 in respect of risk assessments and Information or Content provided, unless White should reasonably have been elected professional opinions, We do not warrant list of all sources that might be consulted the accuracy or completeness of any

Feet at the rates set out in Our or Our Authorized Resteler's involves within 30 days of the date of each involves without deduction. counterclaim or set off. Where Your order comprises a number of Services of teverable elements within any care or more Services, any failure by Us or its Authorized Reseller to provide an

slement or elements of the Services shall

not prejudice Our or Our Authorised Reseller's ability to require payment in respect of the Services delivered to You You acknowledge that time is of the

You acknowledge and agree that neither You nor any End User shall have any clam or recourse against any Supplier of Third You acknowledge and agree that We do not warrant that the online supply of Content or Services or any internet Party Content

You shall pay any other applicable Indirect taxes related to Your use of the Services

Neither We nor any Authorized Reseller

VAT shall be due in addition to any Fees

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estence with respect to the payment of

such Involces.

shell be required to notify You in advance of any amendment to the Fees and the placing of any further Order for Services shell be deemed acceptance of any

If You fail to pay by the due date any

Tevisions to the Fees

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

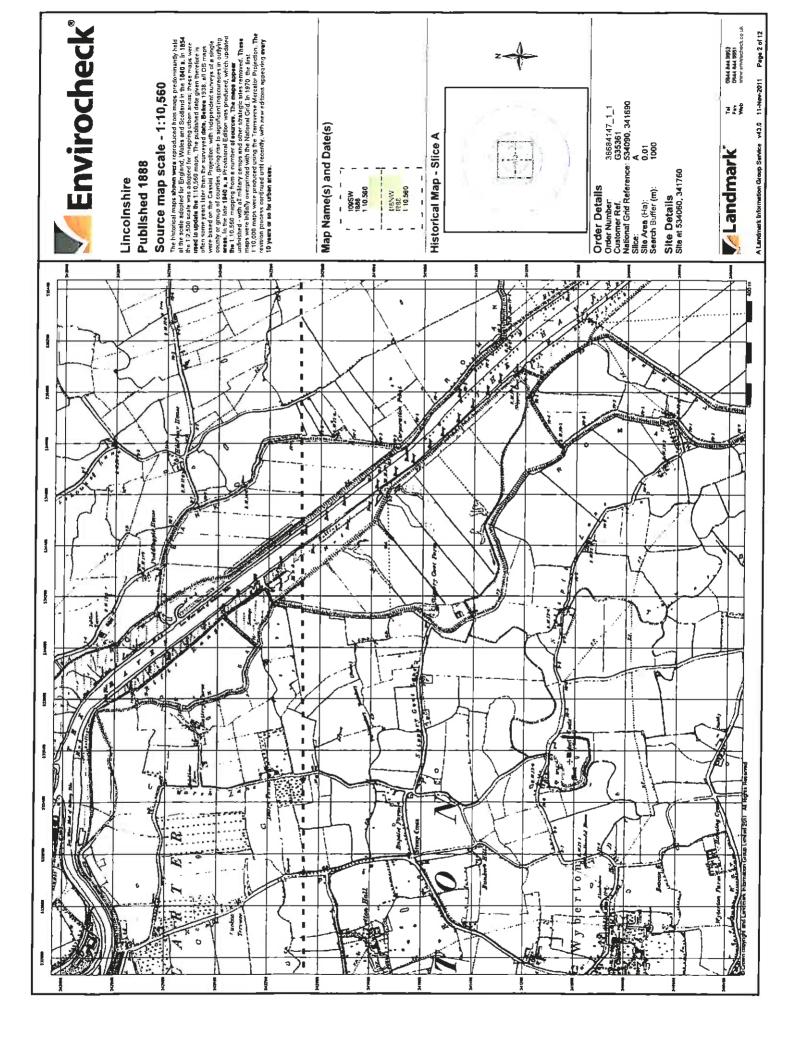
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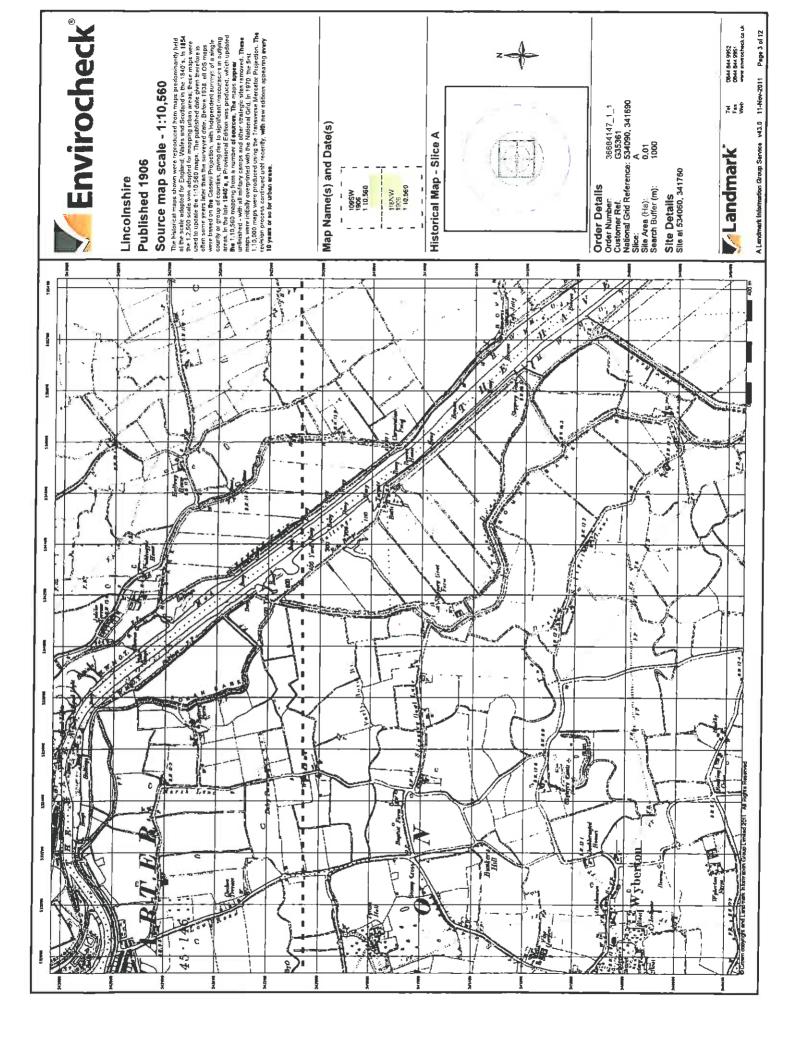
any Regulatory Authority, (5) any

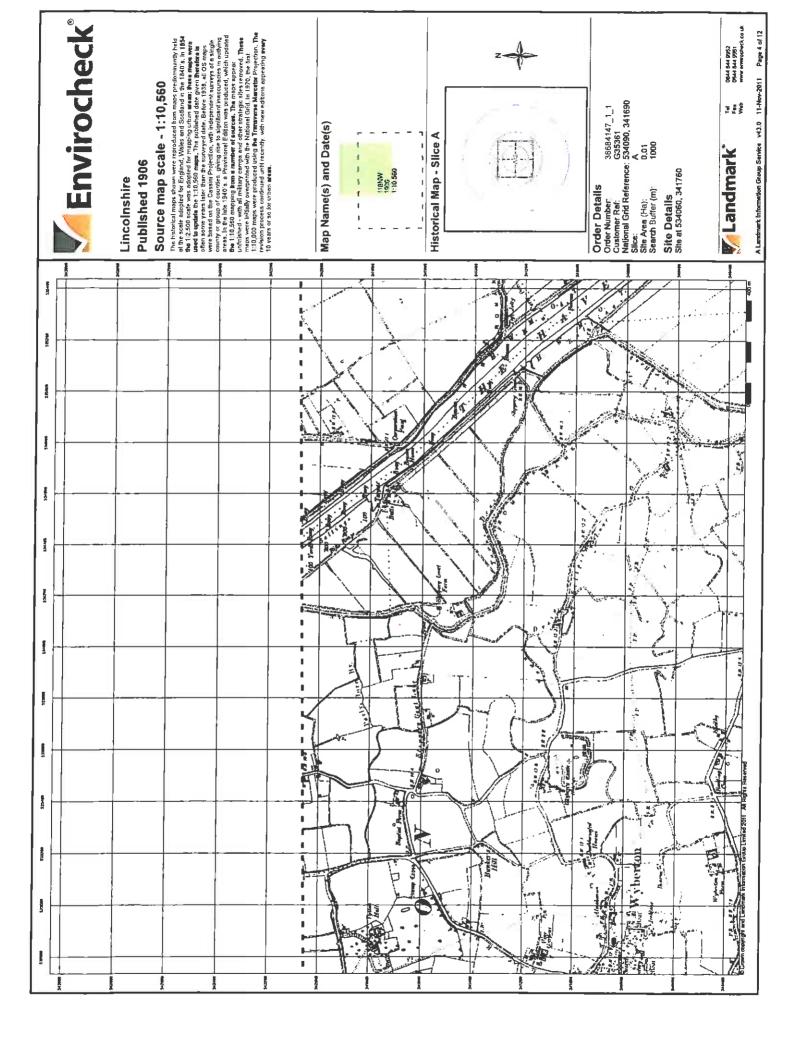
You shall use all reasonable endeavours to

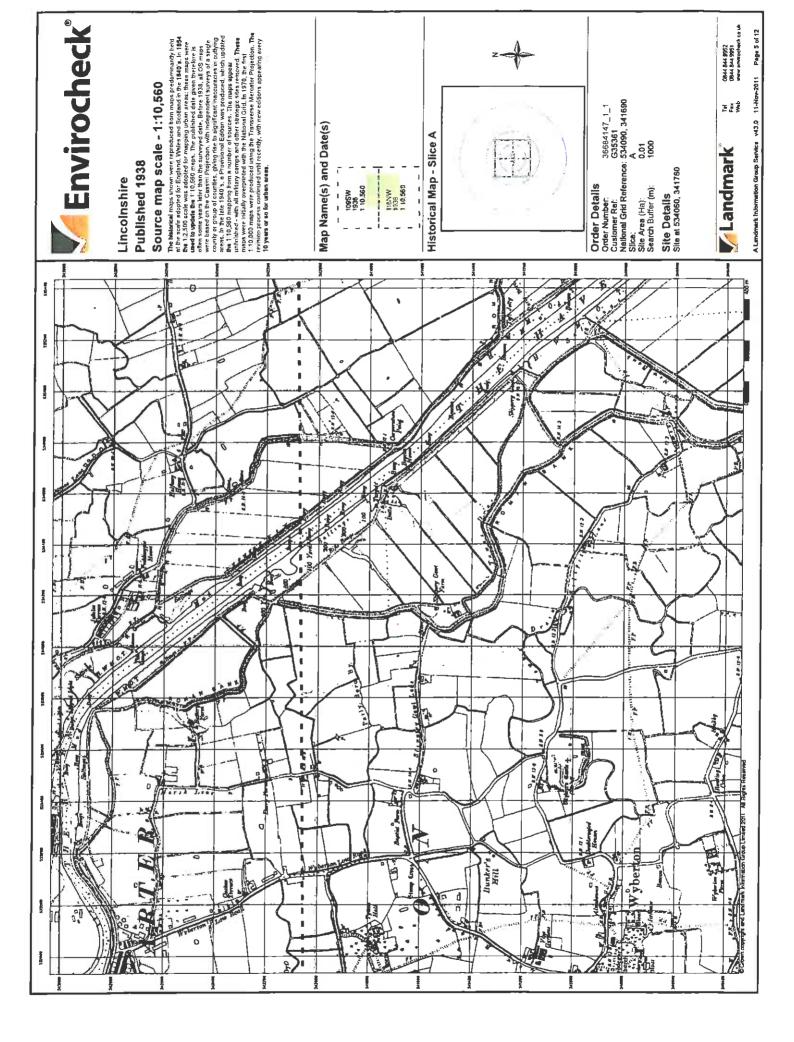
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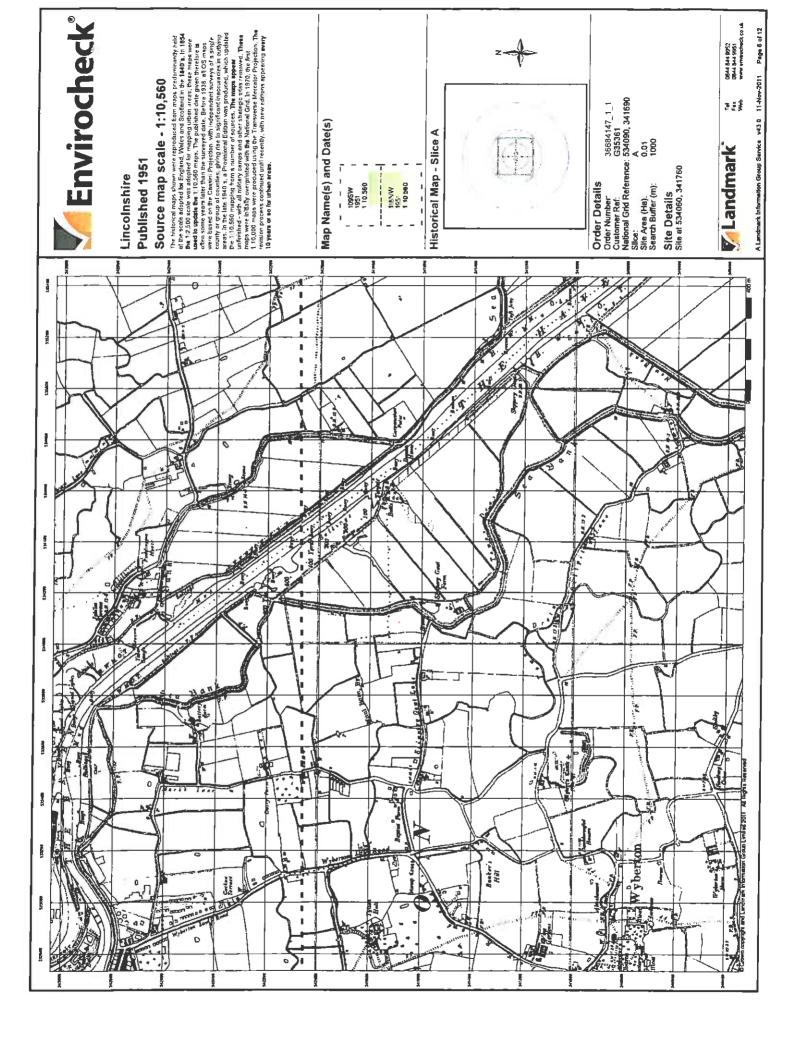
| <b>Envirocheck</b>                                       | Historical Mapping & Photography included:<br>Historical Mapping & Photography included:<br>Historical Mapping & Photography included:<br>Historical Mapping & Photography included:<br>Historical Mapping & 1:10,600 1931 0 1<br>Uncentative Survey 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

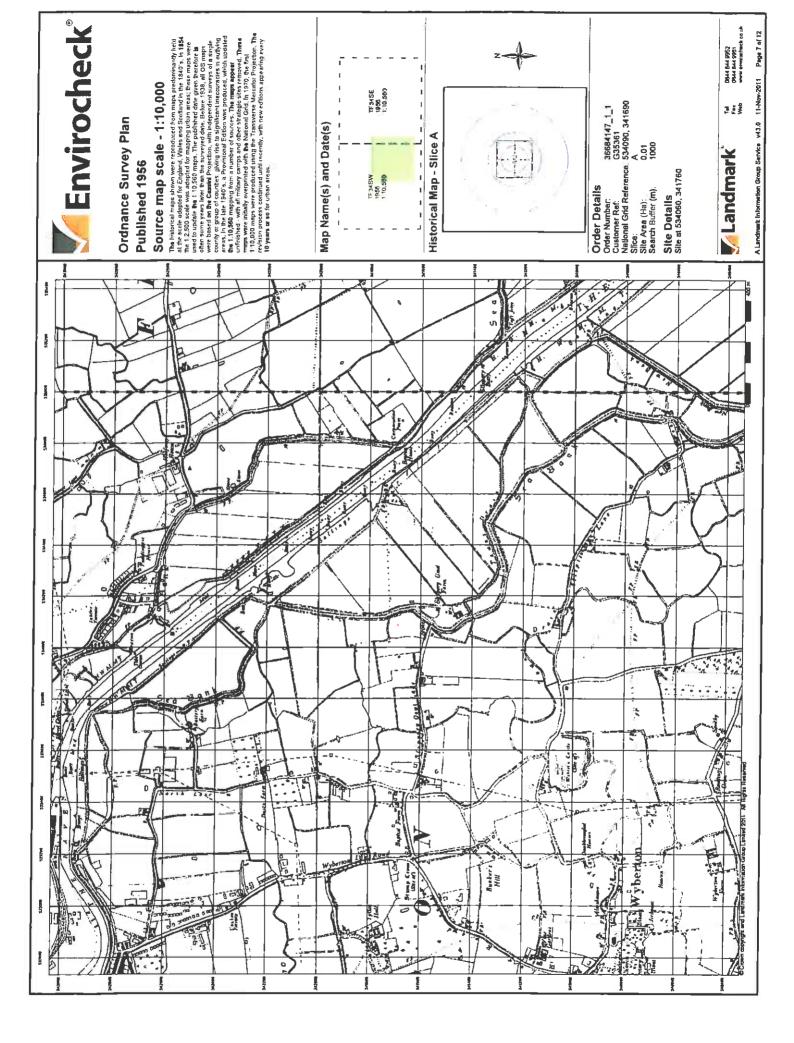


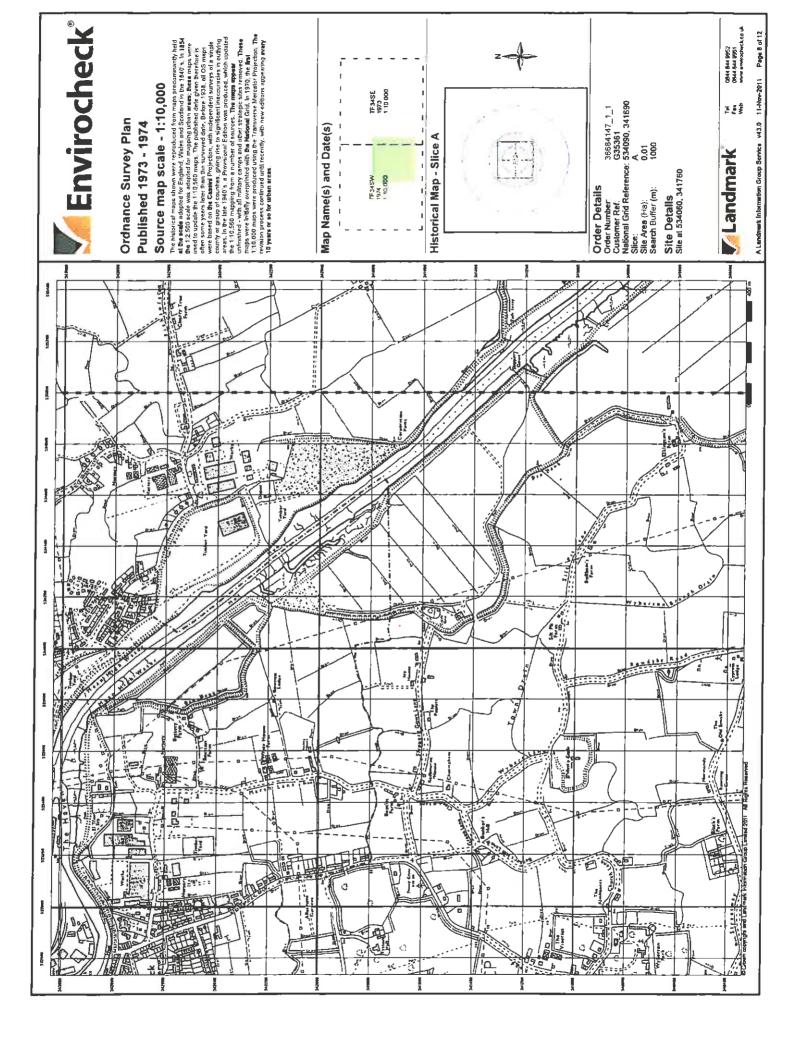


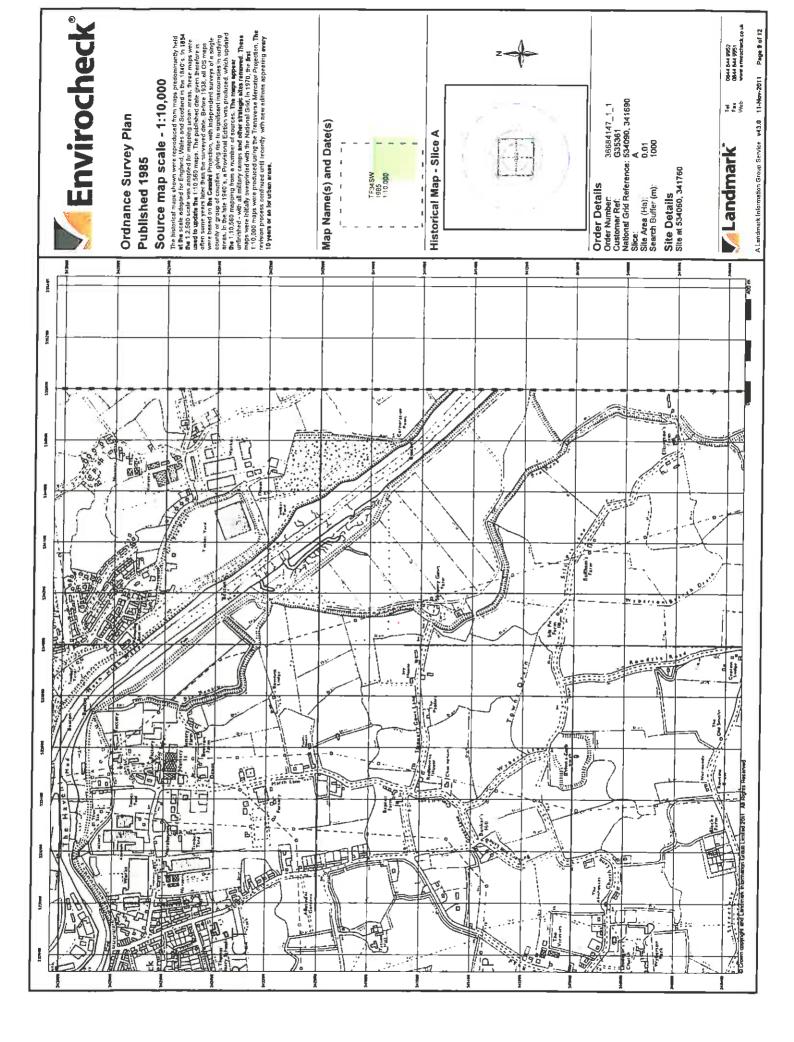


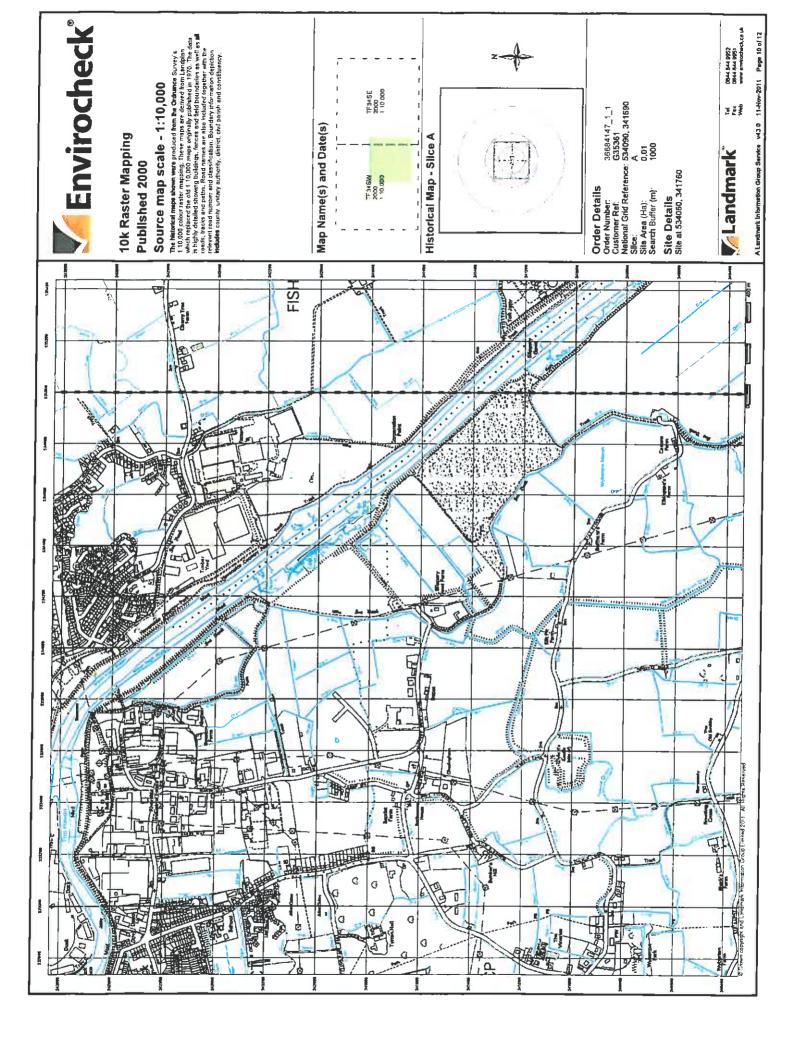


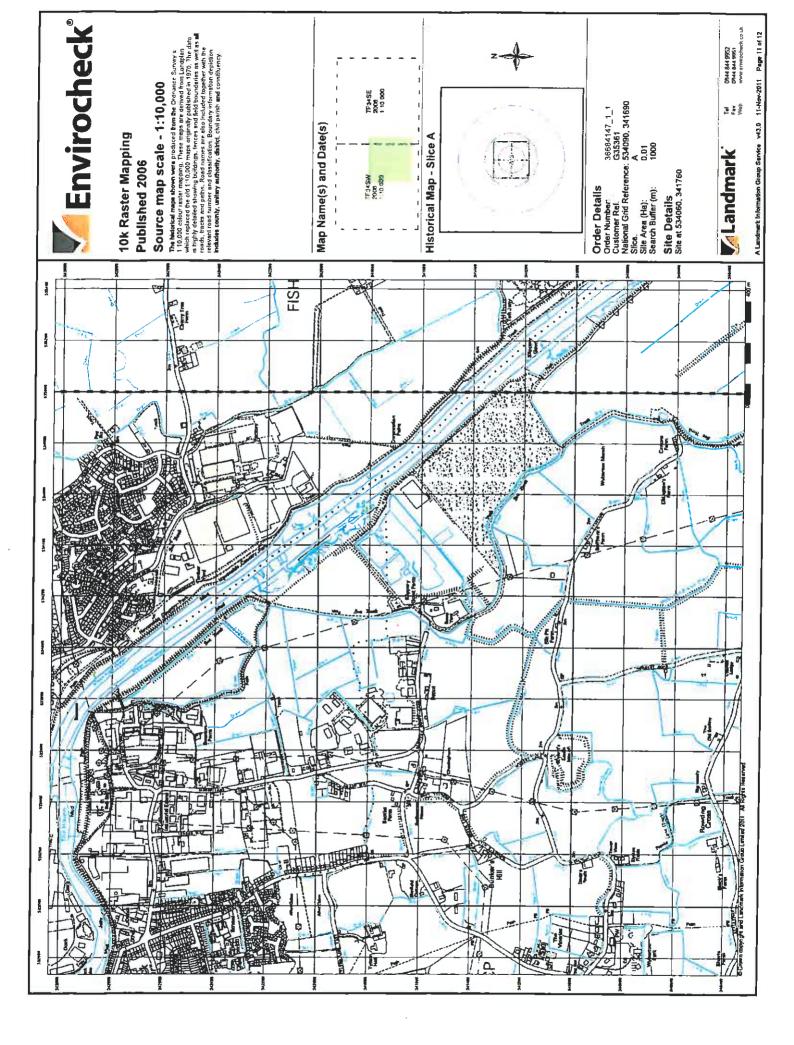


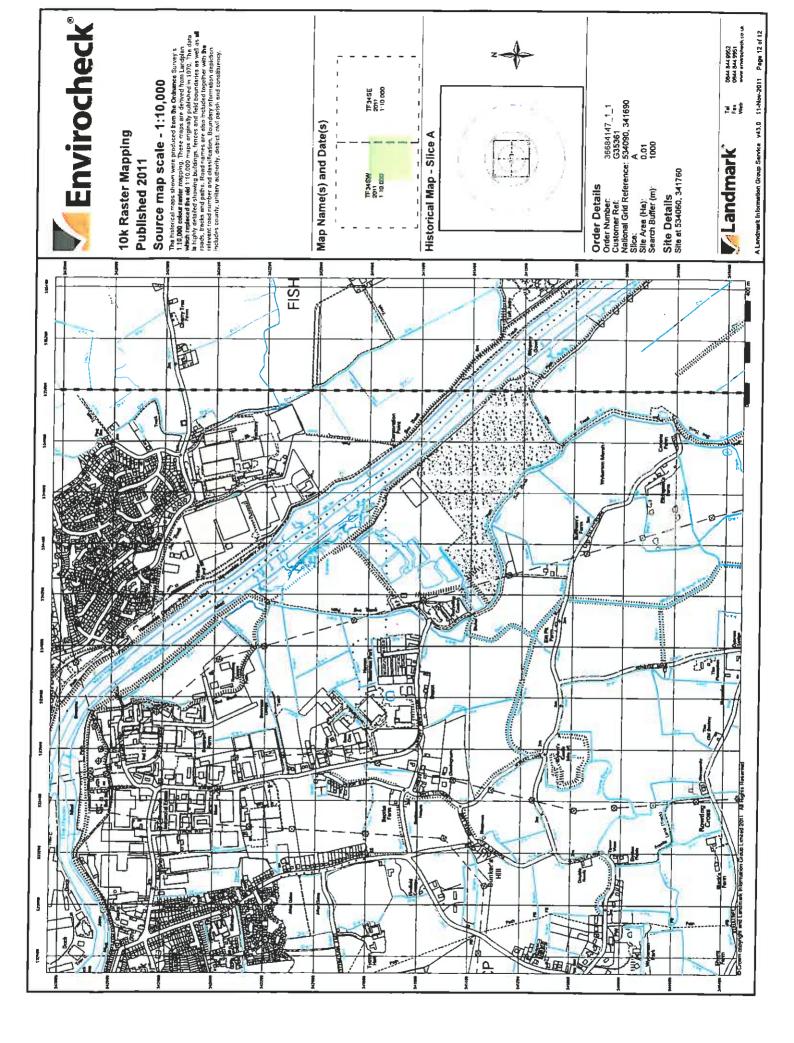




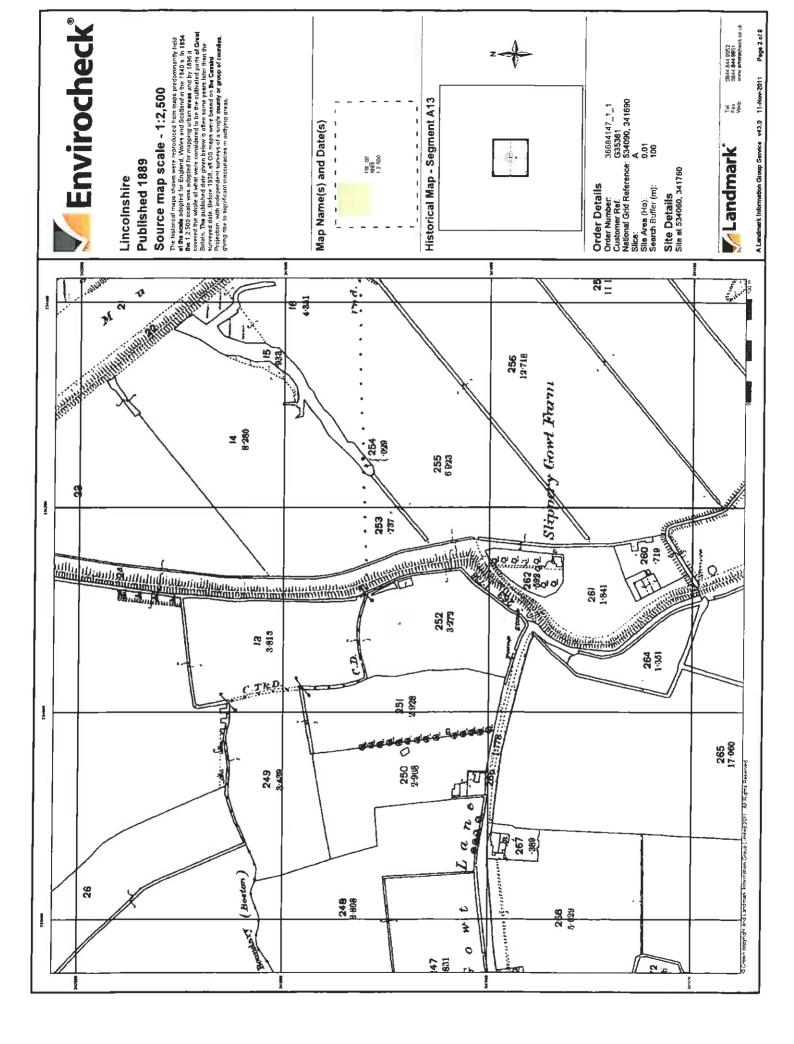


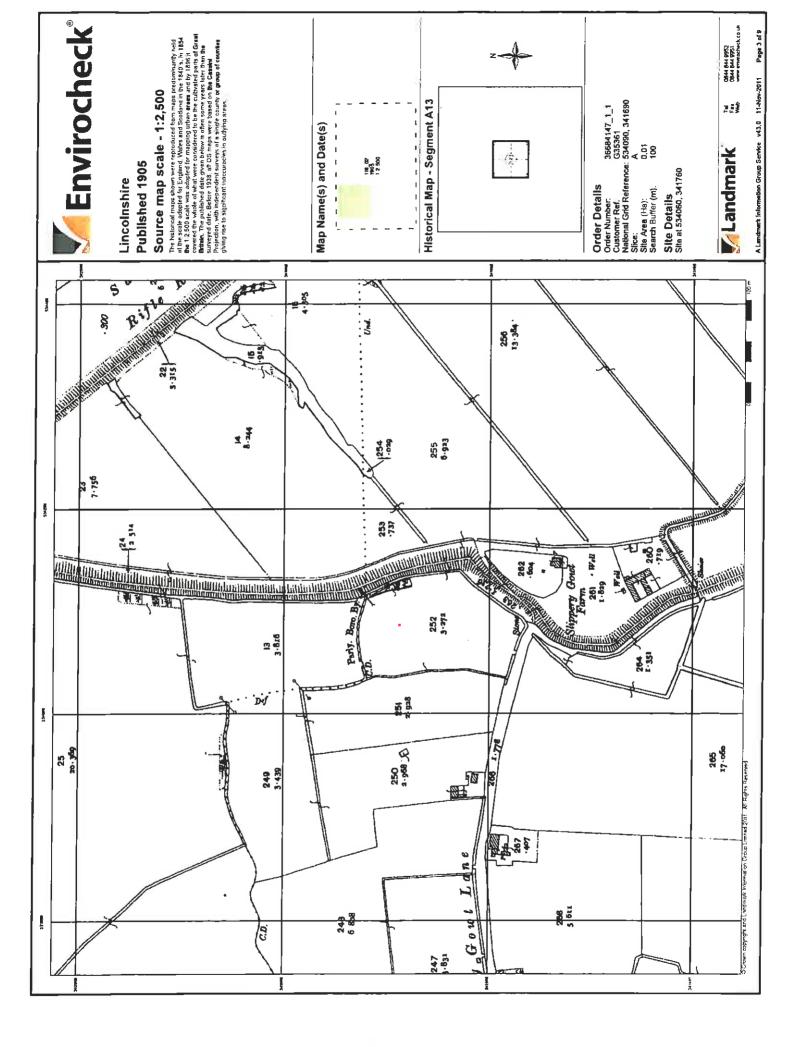


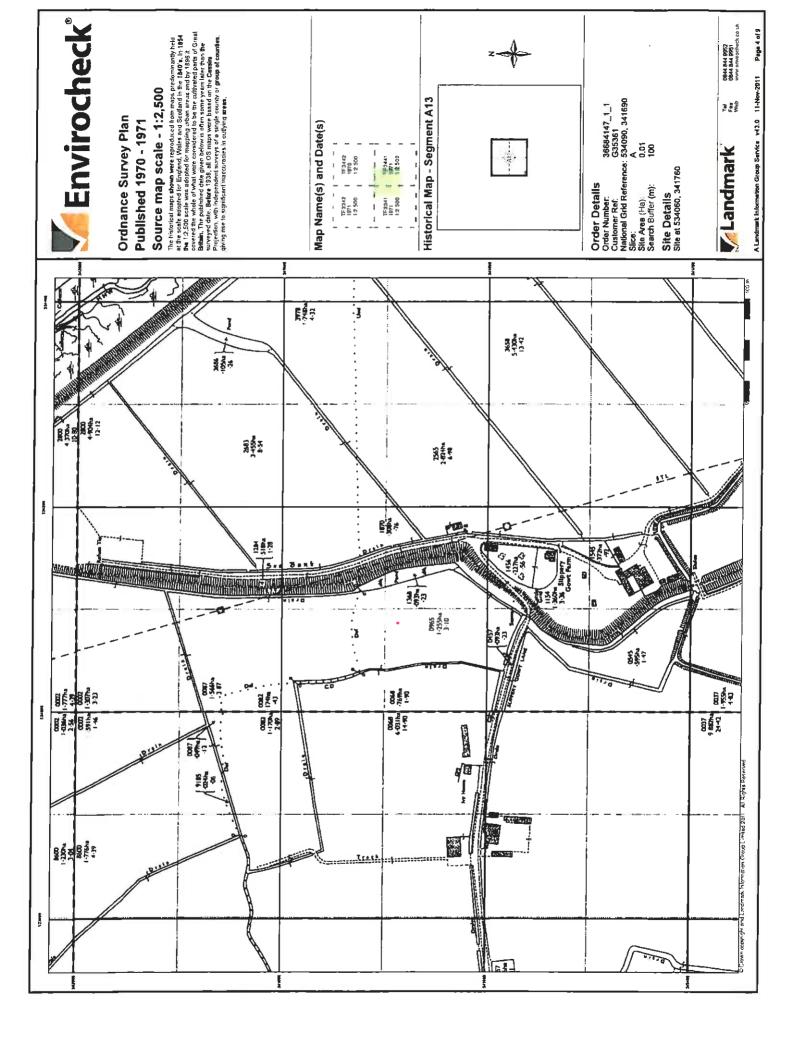




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| Ordnance Survey County Series and<br>Ordnance Survey Plan 1:2,500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information       Large-Scale National Grid Data 1:2,500 and 1:1,250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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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 |
| Reeds to the second sec | Carrent Tes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Do. Bouldens n. Boulders (scattered)<br>D. Positioned Boulder 🔥 Scree                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1:1:4,360                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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PO Paral Times.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Order Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| ******* Administrative County & CWil Parish Boundary<br>Californian County Borough Boundary (England)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Communication of Commun    | Cistern Prog Bts<br>178y Distrimition Prog                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Tance:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| 3.F. G.4. Beaundary Post or Bhaves P.C.D. Pulke Call Box<br>B.R. 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EP, SL. 1<br>Fead Bridge Spr 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | e andready row, rear sa, a pr<br>a 20 Electrichy Sub Station EP, g,<br>Enerthy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Site Details<br>Site at 534060, 341760                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Elevablahy Pykan & P<br>Foot Bridge 31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Davide Paul<br>Hydrawi of Hydraufic<br>Level Crossing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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| od Paul of Boomd 7.028<br>V State Boomd 7.028<br>V State V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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                                                                                 | 1641 Materianis Wita Wests Building arment<br>Litt, Jata Mas Post ar Materia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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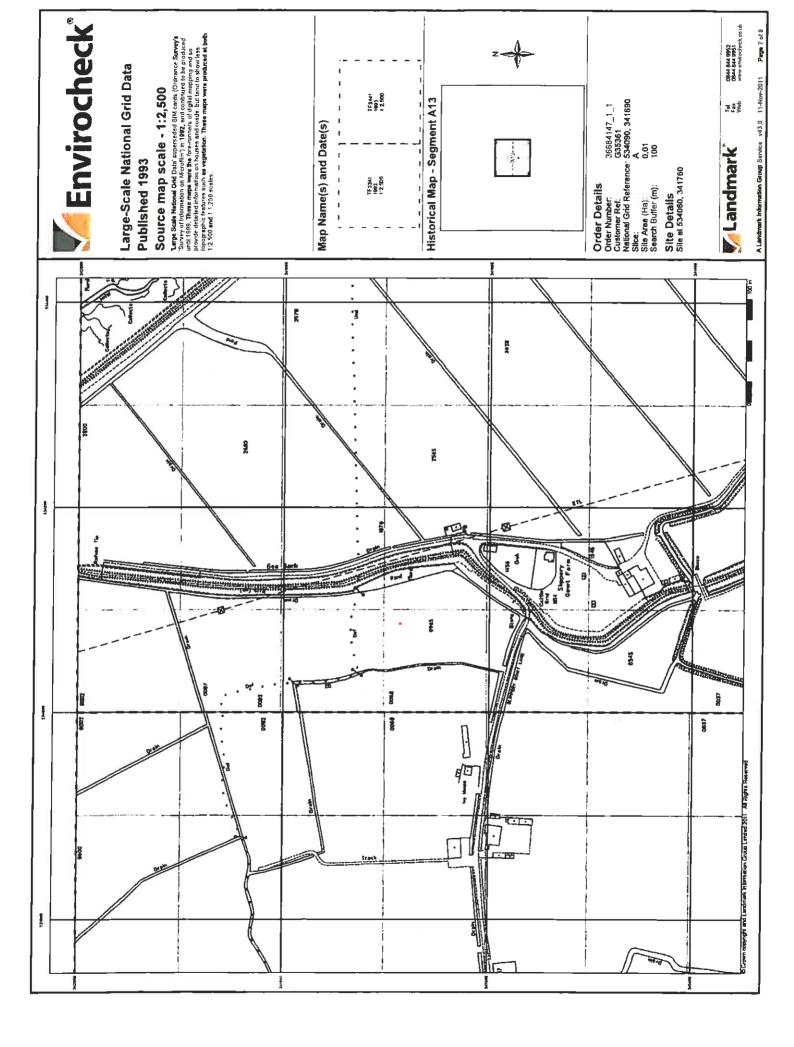






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| Crder Details<br>Crder Number: 35684147_1_1<br>Crder Number: 355861<br>Creater Number: 355860<br>Creater Numbe |                                                                                      |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 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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