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Bugley Farm, Warminster Proposed Residential Development Supplementary Foundation Assessment

Report Reference: ESP.8917.4133

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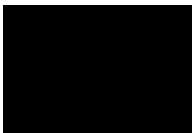
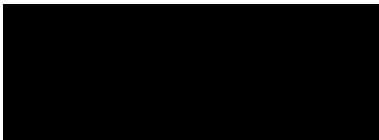
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Bugley Farm, Warminster Proposed Residential Development Supplementary Foundation Assessment

Prepared for:
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Report Reference: **ESP.8917.4133**

Revision	Status	Date	Written by	Checked & approved by
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General Notes

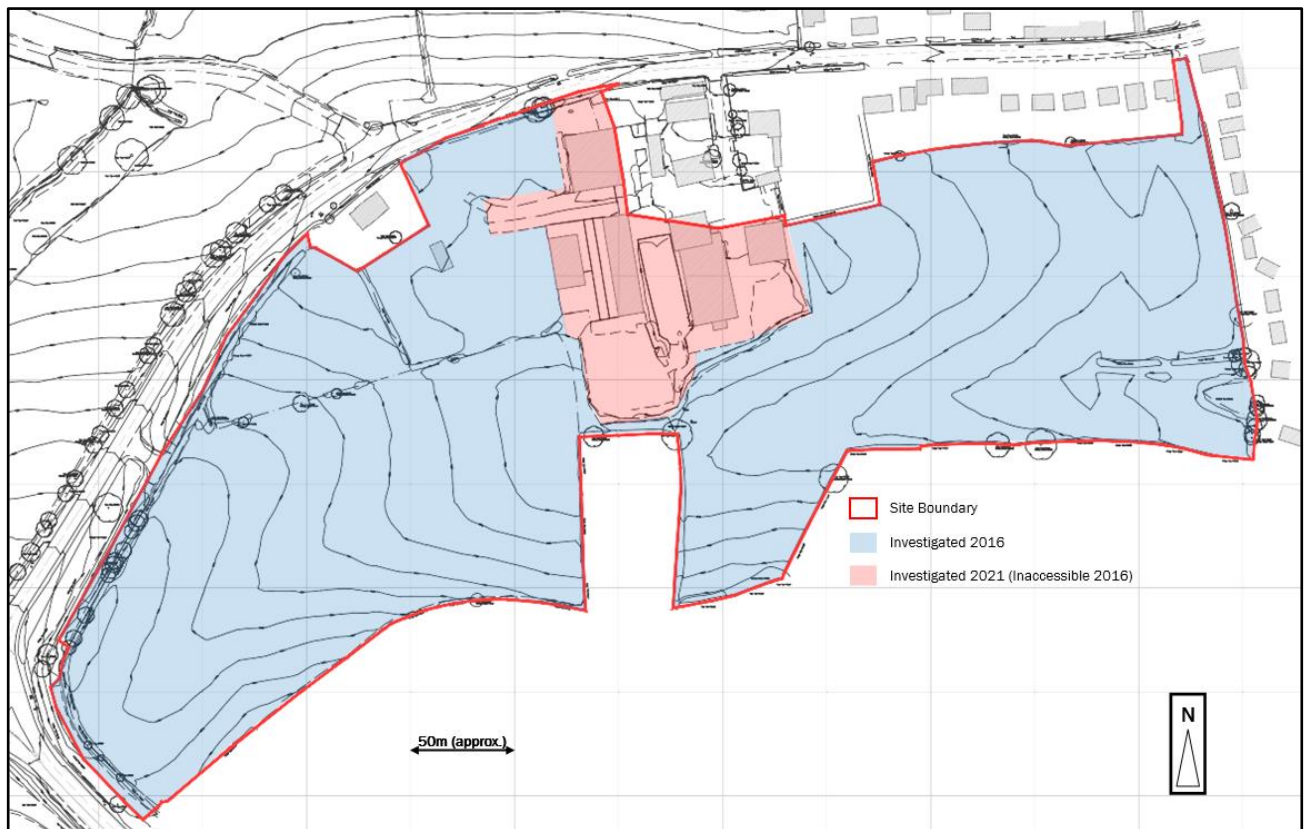
General Construction Advice

1 Introduction

1.1 Background

1.1.1 Previous ESP Investigation and Assessment (ESP, 2017 & ESP, 2022)

ESP have previously undertaken integrated geotechnical and geo-environmental investigations and assessments across the site (excluding the central farmyard area) in 2016, with the final report issued in January 2017 (Ref: ESP.6271t.2676). During this investigation, the farmyard area in the north could not be accessed, therefore the remainder of the site was investigated. The investigation works in the farmyard area were undertaken in July 2021, with the final report issued in February 2022 (Ref: 6271t.02.3602). Insert 1 below indicates the extent of the previous assessments.



Insert 1 – Investigation Areas – 2016 and 2021

These works were undertaken for Persimmon Homes (Wessex), who we now understand are in the process of selling the land to Keepmoat.

The previous reports should be read in conjunction with this supplementary assessment.

1.1.2 Recent ESP Investigation & Assessment (ESP, 2024)

In April 2024, ESP were approached by Protech-PDS Limited (PPDS), a project management company acting on behalf of Keepmoat. PPDS requested ESP to provide feedback on any supplementary investigation and assessment that remained outstanding, in order that Keepmoat could fully understand the land requirements prior to purchase.

The four areas PPDS requested clarification on are:

1. **Soil Strength – review of the foundation solutions previously advised and whether supplementary works could refine the previous advice.**
2. Groundwater Source Protection Zone – no previous assessment of the potential risks to controlled waters was undertaken and ESP have previously advised this should be completed.
3. Gas Protection Measures – review of the ground gas assessment previously advised and whether supplementary works could refine previous advice.
4. Slurry Pit – provide preliminary advice on removal/remediation of the existing slurry pit located in the central area of the site.

This report is for Item 1 above and provides further investigation and assessment for the proposed foundations solutions across the site. A summary of the previous foundation assessment is presented in Section 2.

1.1.3 Proposed Development

Keepmoat Homes Limited (Midlands/Southwest), hereafter known as the Client, are proposing to redevelop the subject site for residential purposes. The Earth Science Partnership Ltd (ESP), Consulting Engineers, Geologists and Environmental Scientists, were instructed by PPDS, acting on behalf of the Client, to undertake an integrated supplementary geotechnical and geo-environmental investigation and assessment to further assess the key area as detailed in Section 1.1.2. The site location is shown on Insert 3 in Section 2.1. This report relates to the foundation assessment for the development only, with items 3 to 4 above to be reported once ongoing sampling/monitoring has been completed.

For all other geo-environmental and geotechnical aspects of the site, the previous assessments (ESP, 2017 and ESP, 2022) should be reviewed.

The proposed development comprises 227no. private and affordable residential units of varying size, with associated areas of private gardens, landscaping and hardstanding. A proposed site layout is shown as Insert 2 below.



Insert 2 – Proposed Development Layout (after PPDS, document ref: STD001-PRO-X-XX-SP-DT-0122)

We understand that the proposed structures would be classified as Geotechnical Category 2 (BS5930:2020).

1.1.4 Future Earthworks

We understand that, in order to construct suitable development plateau, earthworks will be required in areas of the site, which rises to the southwest and slopes to the southeast, as shown on Insert 1 which indicates the general topography. The central farm area is generally flat and level, located above the fields to the southwest and southeast.

At this stage, no details of the proposed earthworks have been provided and a review of this report must be undertaken prior to finalising, once the proposed earthworks have been designed and finalised.

1.2 Objective and Scope of Works

The objective of this investigation was to obtain supplementary information on the geotechnical character and properties of the ground beneath the site, to allow further assessment of the likely foundation solutions across the site.

The scope of works for the investigation was mutually developed with PPDS by ESP within an agreed budget, and comprised a review of all previous findings, an up-to-date field reconnaissance visit, the supervision and direction of cable percussion boreholes, rotary boreholes, windowless sample boreholes, geotechnical laboratory testing, assessment and reporting.

The contract was awarded based on a competitive tender quotation. The terms of reference for the assessment are as laid down in the Earth Science Partnership proposal of 16th April 2024 (ref: ESP.8917.It1.Proposal - Bugely Farm, Warminster), which was instructed by PPDS on behalf of the Client on the 21st May 2024.

The investigation and assessment were undertaken between the end of May and July 2024.

1.3 Report Format

This report includes a brief outline of the site setting (Section 2) and a summary of the previous assessment in relation to the foundations at the site (Section 3), with details of the recent investigation undertaken of BS5930:2020 (Section 4) and updated ground model (Section 5). The supplementary evaluation of the resulting foundation options is presented in Section 6.

This report is issued as a digital version only.

1.4 Limitations of Report

This report represents the findings of the brief relating to the proposed end use and geotechnical category of structure(s) as detailed in Section 1.1 above. The brief did not require an assessment of the implications for any other end use or structures, nor is the report a comprehensive site characterisation and should not be construed as such. Should an alternative end use or structure be considered, the findings of the assessment should be re-examined relating to the new proposals.

Where preventative, ameliorative or remediation works are required, professional judgement will be used to make recommendations that satisfy the site-specific requirements in accordance with good practice guidance.

Consultation with regulatory authorities will be required with respect to proposed works as there may be overriding regional or policy requirements which demand additional work to be undertaken. It should be noted that both regulations and their interpretation by statutory authorities are continually changing.

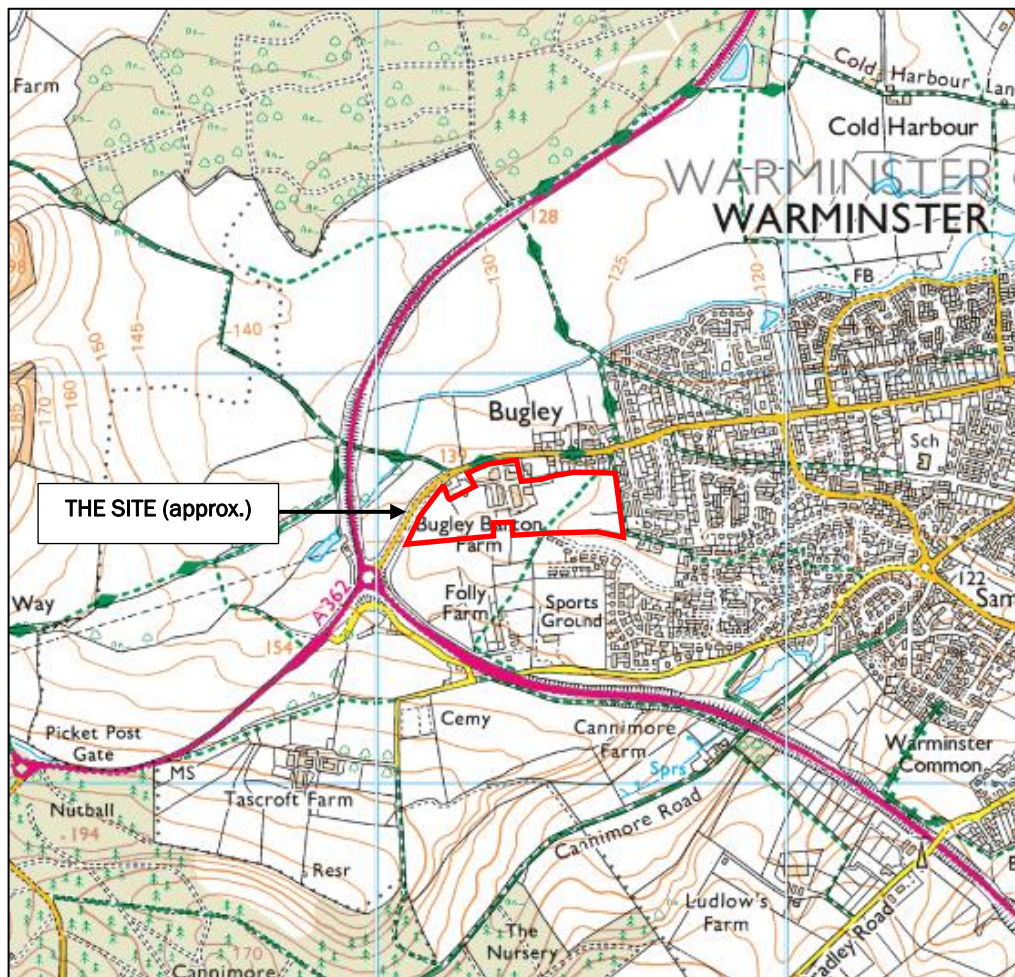
This report represents the findings and opinions of experienced geotechnical specialists. Earth Science Partnership does not provide legal advice and the advice of lawyers may also be required.

2 Site Setting

The site description is largely based on a field reconnaissance and site inspection visit made at the site on 29th May 2024 during dry and sunny weather, and general views of the site are included as a series of photographs within the Plates.

2.1 Site Location

The site is located off Victoria Road on the south-western margins of Warminster in Wiltshire. The National Grid Reference of the approximate centre of the site is (ST) 385328E, 144677N and the postcode is BA12 8HF. A Site Location Plan is presented as Insert 3 below.



Insert 3 - Site Location Plan from Ordnance Survey 1:25,000 scale map.
Reproduced with permission (OS License No.: AL100015788).

2.2 General Overview

The site comprises an irregular shaped parcel of land some 100m to 250m in width (north to south) and around 550m in length (west to east), occupying an area of approximately 9ha. It currently comprises a previously operational arable farm, with two main large fields to the south-west and south-east of the central farm buildings complex – a plan of existing site is presented as Figure 1.

We understand that the farm is no longer fully operational; the southwest field was covered by grass/wildflowers, whilst the southeast field appeared to have been recently cut and possibly ploughed.

Previous discussions (ESP, 2017) with the farmer identified that it was formerly operated as a dairy farm, and several former cattle housing structures (barns, large capacity sheds etc.) remain within the central area. Areas of concrete hardstanding and loose gravel surfacing surround the farm complex with apparent remnant concrete slabs in the north-western part of the farm buildings.

Immediately to the south of the hardstanding and farm buildings in the central part of the site, lies a former slurry pit. This is now heavily overgrown, and has a predominantly solid surface, albeit very soft, however, the southern part of the pit remains a liquid and could not be accessed safely. An apparent outlet pipe runs from this pit into the field to the east.

The farm buildings are generally of brick or concrete block construction with asbestos cement roofs, and some asbestos cement panel side cladding. One of the buildings includes a large generator/engine which was apparently used to power a probable air extraction system for the barns (probably used during the dairy farming). A small above-ground, steel diesel tank lies adjacent to the engine, within the building. Large plastic, circular tanks are located adjacent to the farmhouse around 10m north of the site boundary and are apparently for the storage of heating oil.

Vehicular access to the site is currently gained via a gate and access track in the northwest, off Victoria Road.

2.3 Site Boundaries:

The site is bounded by:

- To the north: Victoria Road, extending west to east across the north of the site, followed by open farmland. A private dwelling is located to the south-east of Victoria Road on the northern boundary of the western field, immediately to the east of the farm buildings complex. Further residential dwellings lie to the north of the eastern field, between it and Victoria Road.
- To the east: by residential properties off Haygrove Close.
- To the south: by a field and housing development followed by sports pitches. The central area of the site is narrower than the remainder and, immediately to the south of the slurry pit, the land comprises further agricultural land.
- To the west: by Victoria Road and the junction with the A36 road, followed by open farmland.

The boundaries of the site comprise mature hedgerows with some large deciduous trees. We are not aware of a tree survey having been undertaken to date.

2.4 Topography

No topographical information was available during the previous investigations. As part of the proposal process for these revised works, PPDS provided a Due Diligence Report (ref: STD001-PRO-X-XX-SP-DT-0122) which was prepared for the Client, which has a summary of the topography at the site, as summarised below.

- The area surrounding the farm buildings has an elevation of around 139m AOD.
- The surrounding fields to the southwest and southeast are around 1.5m to 2.0m below the farm complex.
- The elevation gradually decreases to approximately 132m AOD in the southeast and increases to around 146m AOD in the southwestern portion.

As outlined in Section 1.1.4; in order to construct suitable development plateau, earthworks will likely be required in areas of the site. At this stage, no details of the proposed earthworks have been provided and a review of this report must be undertaken once the proposed earthworks have been designed and finalised.

The Due Diligence Report also indicates that an allowance will be required for retaining structures and a potential requirement for 'Icon wall systems' for areas between plots, if necessary.

2.5 Existing Services

The Client has provided ESP with a series of plans showing the locations of recorded underground services near the farmyard site. Site observations and these utility plans indicate that the site is crossed by the following services:

- A water main trending north to south through the centre of the site.
- A low voltage electricity cable running west to east, marginally entering the site in the north portion.
- BT cables trending northeast to southwest along the margins of the northwest and west boundaries.

2.6 Unexploded Ordnance

A recent Preliminary (Pre-Desk Study) UXO Desk Study assessment of risk has been completed by a specialist Ordnance consultant in accordance with CIRIA guidelines (Stone et al, 2009) and is presented in Appendix A.

The assessment concludes that '*a detailed desk study, whilst always prudent, is not considered essential in this instance*'.

2.7 Previous Investigations and Assessments

ESP have previously undertaken integrated geotechnical and geo-environmental investigations and assessments across the site, reported in January 2017 (Ref: ESP.6271t.2676) and February 2022 (Ref: 6271t.02.3602). Pertinent information from the previous reports relevant to this assessment are presented in the remainder of this report, where appropriate.

2.8 Geology

The published 1:50,000 scale geological map for the area (Sheet 281) indicates the farmyard site to be substantially underlain by Boyne Hollow Chert Member bedrock. The Boyne Hollow Chert is part of the Upper Greensand Formation of Cretaceous age. Chalk bedrock is shown to crop out to the north of Victoria Road but is not present beneath the site.

The Shaftesbury Sandstone Member indicated to crop out in the south-eastern margins of the wider site, however, could be present beneath the investigation as it underlies the Boyne Hollow Chert in succession.

No superficial deposits are shown within the farmyard site boundaries, but deposits of Head are shown to the south, and River Alluvium is shown around the stream to the east of the wider site.

3 Previous Investigation & Assessment (ESP, 2017 & ESP, 2022)

The following section provides a brief summary of the pertinent ground investigation information from previous investigations, followed by details of the previous foundation assessments undertaken.

For full details of the previous investigations and assessments, the past reports should be referred to in full.

3.1 Overview

As detailed in Section 1.1, ESP have previously undertaken integrated geotechnical and geo-environmental investigations and assessments across the site, with the general wider site (excluding the central farmyard area) investigated in 2016 (final reporting in 2017, ESP, 2017), and the farmyard area investigated in 2021 (final reporting in 2022, ESP, 2022).

The investigation of the wider site comprised windowless sample boreholes, trial pits, CBR testing by Dynamic Cone Penetrometer (DCP), soakaway testing and gas/groundwater monitoring. Within the farmyard area, the investigation comprised windowless sample boreholes and hand excavated trial pits.

For reference, the pertinent investigation points (excluding the DCP test and soakaway test locations) are presented on Figure 2 and the investigation point records are presented in Appendices B to D.

3.2 Generalised Ground Model

The previous investigations identified the site to be generally underlain by Topsoil overlying variable, localised, superficial deposits (of possible Head Deposits in the west only and Alluvium in the southeast only), followed by weathered Upper Greensand Formation (comprising both the Boyne Hollow Chert member and Shaftesbury Sandstone Formation).

The shallow, fine-grained soils were found to be of variable strength across the site, resulting in a variable approach to the foundation solution (see Section 3.5). Laboratory testing of the fine-grained soils (both superficial and weathered bedrock) indicated they were of a medium volume change potential, with regards to shrinkage and swelling.

Very Low strength soils were identified in the southeast portion of the site associated with the probable alluvial soils identified.

Within the farmyard complex, variable thicknesses of Made Ground were identified overlying weathered Upper Green Sand Formation bedrock.

During the previous investigation (ESP, 2016), probable fine-grained Made Ground was identified adjacent to the existing Slurry pit immediately to the west and southeast, to a maximum depth of around 2.5m; testing indicated these soils to be of low strength. It was thought that this Made Ground could be associated with previous excavations for the slurry pit.

3.3 Groundwater Bodies

The main groundwater body beneath the site was identified within the coarse-grained Shaftesbury Sandstone Formation, generally at between 1.0 and 3.0m depth. However, in the south-east of

the site, groundwater was identified within the River Alluvium at a shallow depth of 0.5m (Well WS3).

No groundwater was noted during the investigation in the farmyard complex, nor in the subsequent monitoring, to a maximum depth of 3.5m. The farmyard complex is noted to be in the order of 1.5m to 2.0m above the fields to the southwest and southeast.

3.4 Identified Geotechnical Hazards

Following the previous investigations, shrinkage and swelling was identified as a moderate risk, while the risk from running sands/collapse of excavations was considered to be potentially high; although no running sands were identified during the works, the conditions required to generate running sands are locally present (soils of sand and shallow groundwater) and therefore a potential risk was identified. Low strength soils were also identified locally and were noted to be unstable during excavation (likely low shear strength).

3.5 Preliminary Foundation Assessment (ESP, 2017 & ESP, 2022)

3.5.1 ESP, 2017 – Wider Site, Excluding Farmyard Complex

Following the 2016/2017 investigation and assessment of the wider site, the site was zoned in terms of general foundation options, which is shown on Figure 3 and summarised below.

3.5.1.1 Zone A:

Located generally in the east of the site and underlain by at least 2.5 to 3.0m of poor-quality soils before a suitable founding stratum was identified.

Conventional spread or trench fill foundations were deemed unlikely to be suitable in this area, and alternatives such as rafts or piling were recommended. The area was assessed to also likely have a very shallow groundwater table which would also need to be considered in design. The area around the slurry pit is also likely to be included in this zone.

3.5.1.2 Zone B

Located within the western field, where a suitable founding stratum was identified at depths of 2.5 to 3m generally.

In this area, trench fill foundations were considered to be potentially suitable, however, given the depth required, and the potential for running sands, such foundations may be uneconomic and technically difficult to construct due to collapses in the excavation sides. The shallow soils (Boyne Hollow Chert Member) in this zone were identified to be of likely low strength.

3.5.1.3 Zone C:

Located generally in the western field, but also in the more elevated areas of the eastern field (e.g. around WS4 and WS7) where a suitable founding stratum was identified at depths of 2.0 to 2.5m below existing ground level. As for Zone C, trench fill foundations were considered to be potentially viable in this zone, but possibly technically difficult due to the collapse of excavation sides.

3.5.1.4 Zone D

Located in the north-west of the site and north of the eastern field, where a suitable founding stratum was identified at depths of less than 2m. Conventional spread or trench fill foundations were assessed to be likely to be suitable in this area.

3.5.2 ESP, 2021/2022 - Farmyard Complex

The 2021/2022 investigation and assessment of the farmyard complex identified that mass concrete spread foundations could be used, constructed in the coarse-grained natural soils (of both the Boyne Hollow Chert Member and Shaftesbury Sandstone Formation), and placed at a minimum depth of around 1.3m below the then existing surface level. The assessment identified that deeper foundations would be required locally, where thicker Made Ground/fine-grained soils are present (e.g., around WS208).

Shallower foundation options (such as a raft) were also considered appropriate in this area if preferred, following suitable excavation and replacement of compacted fill.

3.5.3 Floor Slab Foundations

The investigation and assessment of the wider site (excluding the farmyard complex) identified that an allowance should be made for suspending floor slabs.

Within the farmyard complex, the use of cast in-situ ground bearing floor slabs was considered suitable for most of the development in this area. However, where Made Ground was identified to be deeper southeast portion (e.g., WS207 and WS208), ground bearing floor slabs were not considered suitable, and they should be suspended.

3.5.4 Earthworks

The above assessments/foundation depth were considered relative to existing ground levels at the time, which we understand are presently the same.

Based on the Due Diligence Report (ref: STD001-PRO-X-XX-SP-DT-0122), in order to construct suitable development plateau, earthworks will be required in areas of the site. At this stage, no details of the proposed earthworks have been provided. This is discussed further in Section 6.1.5.

4 Supplementary Investigation – ESP, 2024

4.1 Proposed Foundation Layout (PDDS, 2021)

Based on the Due Diligence Report (ref: STD001-PRO-X-XX-SP-DT-0122), there are three proposed foundation solutions selected for the site development. These comprise:

1. Trench Fill up to 2.0m depth.
2. Trench Fill up to 2.5m depth.
3. Piled Solution >2.5m.

A proposed foundation layout, prepared by PDDS is presented as Figure 4.

The following works were undertaken to attempt to confirm or improve the proposed foundation solutions.

4.2 Investigation Points

4.2.1 Introduction

The intrusive investigation was undertaken between 29th May and 6th June 2024 in accordance with BS5930:2020 and was designed to refine the previous foundation assessments (see Section 3). It comprised windowless sample boreholes across the site. Information from cable percussion and rotary boreholes (undertaken as part of the other aspects of supplementary works at the site) has also been included where relevant.

Rotary boreholes were not originally included in the scope of works, however during initial cable percussion drilling, likely bedrock was encountered at shallow depth, with limited groundwater strikes. As these boreholes were intended to reach groundwater for the CWRA assessment (see Section 1.1.2), rotary drilling was substituted in to complete the deeper borehole investigation.

Pertinent information from the previous investigations is also included where required.

The investigation points were supervised and logged by an engineering geologist in general accordance with BS5930:2020, BS EN ISO 14688-1:2002, BS EN ISO 14688-2:2018, and BS EN ISO 14689:2018, along with published weathering schemes.

The historical investigation point positions are shown on Figure 2.

4.2.2 Investigation Strategy

The investigation strategy was designed to further assess the possible foundations solution(s) across the site and comprised windowless sample boreholes. Information obtained from cable percussive and rotary boreholes, undertaken for the Controlled Waters Risk Assessment aspect of the works (see Section 1.1.2) has also been included where appropriate.

4.2.3 Windowless Sampling

12no. windowless sample drillholes (WS01 to WS12) were constructed between the 4th and 6th June 2024 to depths between 2.3m and 4.9m. The borehole records are presented as Appendix E, and their positions are shown on Figure 5.

A hydraulically powered rig was used to drive plastic lined sampling tubes into the ground, with the soil recovered within the tubes, which are then split to allow sampling and logging. Disturbed samples were obtained throughout the boreholes for identification and laboratory testing purposes, as shown on the borehole records. SPTs were undertaken at around 1m intervals (see Section 4.2.6 for details).

The windowless sampling provided generally good recovery to the depth of refusal.

At the commencement of each borehole where no hardstanding was present, a square of the grass landscaping was cut, and a service inspection pit excavated by hand to a depth of 1.2m. In areas of hardstanding, the surface was broken out using a hydraulic breaker and a service inspection pit excavated by hand to a depth of 1.2m.

4.2.4 Cable Percussion Boreholes

5no. 150mm diameter cable percussion boreholes (CP01 to CP05) were constructed to depths between 2.1m and 6.3m between 29th and 31st May 2024. The borehole records are presented as Appendix F, and their positions are shown on Figure 5.

At the commencement of each borehole, a service inspection pit excavated by hand to a depth of 1.2m. SPTs were undertaken at around 1m intervals (see Section 4.2.6 for details).

4.2.5 Rotary Drillholes

4.2.5.1 General Information

3no. no. rotary drillholes were constructed (R001 to R003) to depths of between 8.0m and 9.0m between the 3rd and 4th June 2024. The boreholes were progressed using open hole method. The records are presented as Appendix G and their positions are shown on Figure 5.

At the commencement of each borehole, a square of the grass landscaping was cut, and a service inspection pit excavated by hand to a depth of 1.2m, after which, the boreholes were progressed using open hole method.

The ODEX 115 system of simultaneous drilling and casing was used in the superficial deposits, and the depth of casing in each drillhole is shown on the drillhole records.

During the drilling process, the soil/rock chippings returned to the surface were described by the driller and the rate of progress monitored. It should be noted that, although adequate for identification purposes, the nature of the drilling method does not permit an accurate description of the strata.

4.2.6 In-situ Strength Testing – Standard Penetration Tests (SPT)

Standard Penetration Tests (SPT) were carried out using a split spoon/solid cone in the windowless sample and cable percussion boreholes in accordance with BS EN ISO 22476-3:2005+A1:2011 and BS5930 (2020) to assess the relative density of the coarse-grained soils encountered in the borehole and to provide a correlated assessment of the likely undrained shear strength of fine-grained soils using relationships published by Stroud (1975) for fine grained soils. As required in BS5930:2020, the SPT N-values shown on the borehole records are the direct, uncorrected results obtained in the field.

Field SPT N-values may require correction before using in design. In accordance with BS EN ISO 22476-3 (2005), SPT N-values in sandy soils need to be corrected for a number of aspects such as overburden pressure, rod length and rod energy ratio in sands.

Caution must be applied when using in-situ data collected using a solid cone (SPT-C). The solid cone has a greater surface area and, therefore, imparts a lower energy per blow than the split-spoon sampler, and can result in an over-estimation of the true SPT N-value.

Based on the relationship of energy inputs at the point of penetration (Thorburn 1986), it can be inferred that the equivalent SPT N-value for a test using a cone (SPT-C) is equal to:

$$\text{SPT N-value} = \frac{\text{SPT-C}}{1.869}$$

4.3 Instrumentation

Gas and groundwater monitoring wells were installed in selected windowless sample, cable percussion and rotary boreholes. A 50mm diameter monitoring well was installed in selected boreholes in accordance with BS8576:2013 in order to allow monitoring of hazardous ground gases. Although not pertinent to this assessment, the gas monitoring data will be used for separate assessment (see section 1.1.2) however, the groundwater monitoring is relevant for this foundation assessment.

The wells, comprising slotted plastic pipe with a gravel surround (the response zone), bentonite seals above and below the response zone, and a lockable vandal proof cover, were installed as detailed on the borehole records and summarised in the table below.

Table 1: Monitoring Well Installations

Well ID	Date of Installation	Response Zone depth	Response Zone Stratum
WS01	04/06/2024	0.5 – 3.0m	Upper Greensand Formation
WS02	04/06/2024	1.0 – 3.0m	Alluvium & Upper Greensand Formation
WS03	06/06/2024	1.0 – 4.9m	Alluvium & Upper Greensand Formation
WS04	06/06/2024	1.0 – 3.0m	Upper Greensand Formation
WS08	05/06/2024	1.0 – 3.0m	Upper Greensand Formation
WS09	05/06/2024	0.5 – 2.6m	Upper Greensand Formation
WS12	05/06/2024	1.0 – 3.0m	Upper Greensand Formation
CP01	29/05/2024	1.0 – 3.5m	Upper Greensand Formation
CP02	29/05/2024	1.0 – 3.4m	Upper Greensand Formation
CP03	30/05/2024	1.0 – 5.9m	Upper Greensand Formation
CP04	30/05/2024	1.0 – 2.05	Upper Greensand Formation
CP05	31/05/2024	2.0 – 6.3m	Upper Greensand Formation
RO01	03/06/2024	2.0 – 10.0m	Upper Greensand Formation
RO02	04/06/2024	2.0 – 8.0m	Upper Greensand Formation
RO03	04/06/2024	6.0 – 9.0m	Upper Greensand Formation
Notes:			
1. Details of each monitoring well are presented on the individual borehole records (Appendices E, F and G).			

Two monitoring visits have been completed of the recently installed monitoring wells and the findings are presented in Section 5.2.

4.4 Sampling Strategy – Soil Sampling

Samples for logging and geotechnical laboratory testing purposes were collected at regular intervals within the investigation points.

4.5 Geotechnical Laboratory Testing

Geotechnical laboratory testing was undertaken on samples from the previous and recent investigations from the suitable quality classes recovered from the investigation points in order to obtain information on the geotechnical properties on the soils beneath the site.

The following tests were undertaken by a UKAS accredited laboratory on samples selected by ESP in accordance with the methodologies presented in BS1377-2:2022. The results from the previous and recent investigations are presented in Appendices H to J.

- Natural moisture content.
- Atterberg limits.
- Particle Size Analysis.

Selected samples were also analysed for soil sulphate and pH value in accordance with the analytical methods specified in BRE Special Digest SD1 (BRE, 2005). The results of the sulphate testing from the previous and recent investigations are presented in Appendices K to M.

Samples of groundwater recovered from selected boreholes from the recently installed wells were also analysed for the levels of sulphate and pH value in accordance with the analytical methods specified in BRE Special Digest SD1 (BRE, 2005). The results are presented in Appendix N.

5 Development of the Revised Conceptual Model

The following section summarises the information obtained from the previous and recent investigations across the whole site. The slurry pit area has been discussed separately in Section 5.1.6.

In previous assessments, the bedrock has been separated into the Boyne Hollow Chert member and the Shaftesbury Sandstone Formation. For this assessment and for ease of interpretation for the supplementary foundation assessment, the bedrock has been assessed under the parent unit of Upper Greensand Formation.

5.1 Conceptual Ground Model - Geology

The exploratory holes (ESP, 2016 & ESP, 2024) have identified the site to be generally underlain by a thin veneer of Topsoil overlying weathered Boyne Hollow Chert Member and Shaftesbury Sandstone Member bedrock (both of the Upper Greensand formation).

5.1.1 Made Ground

During the 2016 investigation, no Made Ground was identified across the wider site.

During the 2024 investigation, limited Made Ground was identified in CP05 as a likely re-worked natural soil with rare fragments of brick to a depth of 1.2m below surface level. In R002, Made Ground was identified to a maximum depth of 0.7m. Rare brick fragments were noted in R003, with natural soils and anthropogenic materials (including concrete, metal, brick and wire) noted in R002.

5.1.2 Topsoil

Encountered generally across the site to a maximum depth of around 0.5m, as a brown and dark brown, clay of soft consistency, with fragments of sandstone gravel and sand. Rootlets were present.

During the 2016 investigation, WS9, TP14, TP15 identified 200mm of clayey, slightly organic sand/very sandy clay beneath the Topsoil, which may represent a subsoil stratum. This was not noted during the recent works in nearby investigation points (WS09 & WS10 - ESP, 2024).

5.1.3 Possible Head Deposits

Encountered in TP16 and TP17 during the 2016 investigation, in the west of the site beneath the Topsoil as a brown, very sandy, very gravelly clay of soft consistency to 1.0m depth, which may be a Head Deposit.

Possible Head Deposits were not identified in the 2024 investigation. Investigation points WS09 and WS10 in the area of the previously constructed TP16 and TP17 identified soft clays and loose sand to a depth of around 2.0m.

5.1.4 Possible River Alluvium

Identified in 2016 investigation the low-lying eastern margins of the site in Boreholes WS1, WS2 and WS3 to a depth of between 1.5 and 2.2m as a brown and orange, brown with patches of grey and white, silty, gravelly clay of soft or very soft consistency. Sandstone and flint gravel and sandstone cobbles were present.

In the 2024 investigation in the same area in WS02 and WS03 to depths of between 2.45m and 2.8m as a very soft to soft, generally brown with patches of grey and orange/brown silty, sandy, gravelly clay. Organic materials were identified in WS02 between 1.45m and 2.5m as soft to firm brown plant fragments.

In R003, possible alluvial soils were identified between 0.6m and 6.0m depth, with the drillers noting that the casing progressed under its own weight between 2.0m and 6.0m depth. This was logged as possible Alluvium.

Laboratory testing (from previous and recent investigations) within the possible River Alluvium indicated liquid limits between 36% and 61%, plasticity indices between 10% and 38%, and natural moisture contents between 22% and 35%. The modified plasticity indices (after the coarse-grained particles have been removed) suggest that the soils would be generally of medium volume change potential.

Field SPT N-values within the possible River Alluvium were recorded as between 0 (the test rods sank under their own weight) and 10 (average of 4) indicating clays of generally a soft consistency (locally very soft, with one sample indicating a firm clay).

5.1.5 Upper Greensand Formation

Identified across the site beneath the Topsoil/Made Ground and localised superficial deposits, generally as a coarse-grained soil, with localised areas of fine-grained soils, as summarised below.

Fine-Grained Upper Greensand Formation

Identified in the 2016 investigation in WS5 and in 2024 in WS02 and WS04 to WS12, CP03, CP05, and R001 to a maximum depth of 4.0m, generally as a light brown clay (with occasional greenish mottling) with fractions of sand and gravel.

Laboratory testing (from previous and recent investigations) within the fine-grained weathered bedrock indicated liquid limits between 27% and 62%, plasticity indices between 11% and 39%, and natural moisture contents between 14% and 38%. The modified plasticity indices (after the coarse-grained particles have been removed) suggest that the soils would be generally of medium volume change potential, with some soils within this stratum indicating low volume change potential.

Field SPT N-values within the fine-grained weathered bedrock (from previous and recent investigations) were recorded as between 1 and 18 (average of 8) indicating clays of variable consistency, generally soft, with localised variations of very soft and firm to stiff.

Coarse-Grained Upper Greensand Formation

Identified across the site beneath the superficial deposits and/or fine-grained Upper Greensand Formation to a maximum depth of 10m below surface level, generally as greenish grey sand, with fractions of silt/clay and gravel.

Competent bedrock (sandstone, was identified during the recent investigations in the cable percussion and rotary boreholes, from depths of between 1.1m and 6.2m as a strong light green sandstone.

Field SPT N-values within the coarse-grained weathered bedrock (from previous and recent investigations) were recorded as between 3 and 50 (average of 28) indicating sands (occasionally gravels) of variable strength. Where SPT N-Values were 50, this likely indicated competent sandstone bedrock.

5.1.6 Slurry Pit

During the 2016 investigation, boreholes WS6 and WS8 were constructed around the slurry pit to the southeast and west respectively (see Figure 2) and identified Probable Made Ground.

Within Borehole WS6, around 1.7m of probable reworked natural soils (Made Ground) were identified above a 200mm suspected Buried Topsoil layer. In Borehole WS8, 2.5m of possible predominantly fine-grained Made Ground was identified. This Made Ground could be associated with previous excavations for the slurry pit.

During the 2021 investigation of the farmyard area, 1no. hand pit (HDP01) was constructed near the previously constructed WS6 (ESP, 2016). A further 2no. hand excavated pits (HDP02 and HDP03) were constructed within the slurry pit where access was possible (see Figure 2).

HDP01 identified similar shallow conditions as were identified in WS6 previously, with soft silt/clay identified to 0.6m depth, noted to be probable re-worked natural soils (Made Ground).

HDP02 and HDP03 within an accessible portion of the slurry pit identified a soft brown clay with black mottling, to a maximum depth of 0.6m below the surface level. Occasional glass, plastic and wood were also noted. In HDP02, brown/green reworked sand was also noted from 0.35m to 0.6m.

5.2 Conceptual Ground Model - Hydrogeology

The groundwater conditions identified in the previous and recent investigation are summarised in the table below.

During the 2021 investigation and subsequent monitoring, no groundwater was identified to a depth of 3.0m and the monitoring identified all the wells to be dry to a maximum depth of 3.0m.

Table 2 - Summary of Groundwater Ingress in the Investigation

Hole ID	Stratum	Comment on groundwater encountered
ESP, 2016		
TP1	UGF	Very slow seepage at base of pit at 2.2m depth.
TP7	UGF	Very slow seepage at base of pit at 2.7m depth.
TP8	UGF	Very slow seepage at base of pit at 3.5m depth.
TP9	UGF	Very slow seepage at base of pit at 3.4m depth.
WS1	UGF	Water strike at 2.2m depth. Standing levels between 1.69m and 2.19m in well.
WS2	UGF	Water strike at 3.0m depth. Standing levels between 1.85m and 2.36m in well.
WS3	UGF	Water strike at 2.5m depth. Standing levels between 0.52m and 1.07m in well.
WS4	UGF	Water strike at 3.2m depth.
WS6	UGF	Water strike at 3.0m depth. Standing levels between 1.81m and 2.31m in well.
WS8	UGF	Water strike at 2.8m depth. Standing levels between 2.46m and 2.87m in well.
ESP, 2024		
WS01	UGF	Monitored levels between 2.03m and 2.77m.
WS02	ALLUV	Monitored levels between 1.59m and 1.60m.
WS03	UGF/ALLUV	Water strike at 3.0m Monitored levels between 1.25m and 1.38m.
WS04	UGF	Monitored level of 2.03m during one visit. Found to be dry during second visit.
WS05	UGF	Water strike at 2.1m Measured at 2.0m after 20 minutes.
WS08	UGF	Monitored levels between 1.64m and 1.66m.
WS09	UGF	Dry to 2.6m depth during both monitoring visits to date.
WS12	UGF	Dry to 3.0m depth during both monitoring visits to date.
CP01	UGF	Dry to 3.5m depth during both monitoring visits to date.
CP02	UGF	Dry to 3.4m depth during both monitoring visits to date.
CP03	UGF	Water Strike at 1.7m, standing at 1.4m after 20 minutes. Monitored levels between 0.90m and 0.95m.
CP04	UGF	Dry to 2.05m depth during both monitoring visits to date.
CP05	UGF/MG	Water Strike at 2.3m., standing at 1.7m after 20 minutes. Monitored levels between 0.90m and 1.00m.
RO01	UGF	Water strike at 6.0m, standing at 4.0m after 20 minutes. Monitored levels between 4.30m and 4.39m.
RO02	UGF	Water strike at 4.0m, standing at 3.0m after 20 minutes. Monitored levels between 3.12m and 3.60m.
RO03	UGF.	Probable perched water strike at 0.6m in Made Ground, standing at 0.5m after 20 minutes. Deeper water strike at 7.0m. Monitored levels between 1.18m and 1.28m.
Notes: - Full details of groundwater ingress presented on investigation point records in Appendices B to G. - Monitoring is currently ongoing and therefore the above comments for the 2024 investigation are subject to the final readings. - UGF = Upper Greensands Formation. ALLUV = Alluvium. MG = Made Ground.		

Based on the Conceptual Ground Model, we consider that the main groundwater body beneath the site is within the coarse-grained Upper Greensands at a depth of between 1.0m and 3.0m depth. A deeper water body is also present as demonstrated in the rotary boreholes, at a depth of around 4.0 – 7.0m.

Shallow perched water bodies are also likely present within the Made Ground in and around the farmyard complex (CP05). We cannot discount that perched water bodies may also be present in the southeast of the site within the alluvial soils.

The groundwater information obtained to date generally correlates with the topography of the site and is in line with the previous hydrogeological findings.

5.3 Site Instability

5.3.1 Global Site Stability

No evidence was identified of potential landslides or unstable ground previously or during the recent works and we identified no evidence of any global instability issues on the site.

Careful design, planning and execution of any earthworks must be undertaken to ensure suitable stability is achieved during and following any cutting or filling, most notably in any areas of significant earthworks. If required, ESP can aid in designing an earthworks specification for the scheme once finalised.

5.3.2 Excavation Stability

During the 2016 investigation, some spalling of the pit walls during construction of the trial pits was experienced, with some side walls collapsing during excavation, most notably when excavating in the coarse-grained soils of the Upper Greensands Formation. In addition, slumping of the pit sides occurred during the soakaway test in TP1 in the south-east of the site.

5.4 Sulphate Attack

The assessment of the concrete protection against sulphate attack has been undertaken in accordance with BRE SD1 (2005). The assessment combines all previous and current results.

5.4.1 Classification of Site

Due to the presence of Made Ground on the site, we consider that it should be considered as 'brownfield' in terms of concrete classification.

5.4.2 Groundwater Setting

Groundwater was encountered in the investigation points and installed wells in the shallow soils. This is likely to be close to the depth to which buried concrete will be placed. Therefore, groundwater has been considered as mobile in this assessment.

5.4.3 Soil Sulphate Levels and Characteristic Values

The results from the sulphate testing for the shallow soil are summarised in the table **Error! Reference source not found.** below.

Table 3 – Summary of Soil Sulphate Testing

Determinand	Number of Tests	Minimum Value ³	Maximum Value ^{2,4}	Characteristic Value ¹
Water soluble sulphate (mg/l)	42	10	380	77.9
pH values		5.7	10.5	6.2
Acid soluble sulphate (%)		0.01	0.11	Not Required ⁵
Total Sulphur (%)		0.01	0.06	Not Required ⁵
Total Potential Sulphate (%)		0.03	0.18	0.09
Oxidisable Sulphate (%)		0.0	0.07	Not Required ⁵
Notes: 1. Selection of characteristic value based on guidance in BRE SD1 (2005). 2. As levels of water-soluble sulphate are less than 3,000mg/l, there is no need to consider the levels of magnesium present in the soils. 3. As the pH levels all exceed 5.5, there is no need to further assess the soils for the types of acids present (e.g. hydrochloric and nitric acids). 4. As the levels of oxidisable sulphide are well below 0.3%, pyrite is unlikely to be present. 5. Not required for BRE SD1 concrete design class assessment.				

5.4.4 Groundwater Sulphate

The results from the two completed groundwater sampling visits (for the controlled water risk assessment, See Section 1.1.2) have provided the following groundwater sulphate testing, summarised in the table below.

Table 4 - Summary of Groundwater Sulphate Results

Determinand	Number of Tests	Minimum Value	Maximum Value ²	Characteristic Value ¹
Groundwater sulphate (mg/l)	6	1.4	7.5	2.9
pH values		6.8	7.0	6.9
Notes: 1. Selection of characteristic value based on guidance in BRE SD1 (2005). 2. As levels of water-soluble sulphate are less than 3,000mg/l, there is no need to consider the levels of magnesium present in the soils.				

6 Geotechnical Comments

6.1 Site Preparation and Earthworks

6.1.1 Unexploded Ordnance

As discussed in Section 4.1, a specialist preliminary assessment has concluded that '*a detailed desk study, whilst always prudent, is not considered essential in this instance*'.

Therefore, although no special precautions are considered necessary, a careful watch should be maintained during all excavation and any suspected ordnance identified should be investigated further by specialists. Ordnance awareness is recommended during site inductions.

6.1.2 Invasive Plants

No evidence of invasive plants such as Japanese Knotweed/Himalayan Balsam etc. was identified on the site during the site works. However, their growth is seasonal and therefore their presence cannot be discounted.

6.1.3 Existing Foundations and Services

The central north portion of the site has previously been developed as a farmyard, and old foundations and underground structures are anticipated beneath the site.

These sub-structures and any others identified during development should be grubbed up within the zone of influence of the development as part of the site preparation works.

Live services have been identified on site as described in Section 2.5. Considering the presence of these services, an allowance for diversion/a suitable exclusion zone should be made when planning the development and site works. Further details and permissions should be obtained from the provider.

A network of land drains is likely to be present and may provide a seepage path into excavations. The land drains should be diverted where they enter foundation excavations.

6.1.4 New Services

For new services, flexible pipework and connections should be provided as a safeguard against potential settlements. Consideration could be given to increasing the gradients on sewage connections to mitigate against possible settlements, particularly in areas of very soft ground identified at the site, e.g., in the southeast area and locally across the site.

6.1.5 Earthworks

As outlined in Section 1.1.4; in order to construct suitable development plateau, earthworks will likely be required in areas of the site. At this stage, no details of the proposed earthworks have been provided and a review of this report must be undertaken once the proposed earthworks have been designed and finalised.

If required, ESP can aid in designing an earthworks specification for the scheme once finalised.

6.1.6 Retaining Wall Design

The Due Diligence Report (ref: STD001-PRO-X-XX-SP-DT-0122) indicates that an allowance will be required for retaining structures and a potential requirement for 'Icon wall systems' for areas between plots, if necessary. No further information has been provided at this stage.

6.1.7 Slurry pit

We understand that the slurry pit and the ground in proximity, will be excavated and removed from site in the future, either prior to the commencement of the groundworks, or during the initial stages. ESP have provided an outline scope of works and testing, for the removal of the potential hazardous materials and verification that the remaining ground is suitable for development.

We presume that any deep excavations to remove soil will be backfilled with clean, inert materials and engineered to ensure they are suitable for development.

Further works are required in this area and will be completed in the future under the supervision of ESP.

6.2 Geotechnical Risk Register

6.2.1 Updated Geotechnical Risk Register

Following the supplementary site investigation the potential geotechnical hazards have been re-assessed as described in the following section. This includes construction risks identified by the intrusive investigation.

For risk associated with poor temporary stability of excavations and groundwater ingress see Section 6.6.

6.2.2 Shrinkage and Swelling

Laboratory testing has indicated that the fine-grained soils at shallow depth (both superficial and weathered bedrock) are generally of medium volume change potential. This is in line with the previous assessments.

Based on this volume change potential, the minimum foundation depth would need to be 1.25m across the site (allowing for restricted new planting), however this depth would need to be increased in accordance with NHBC/BRE guidelines within the zone of influence of recent, existing or future planting. Outside the zone of influence of any historical or proposed planting, the foundation depths may be shallower, as detailed in the NHBC guidance. This will need to be assessed on a plot-by-plot basis, dependant on the species and proximity of any future/proposed planting.

Given the potential risk of volume change, if not already completed, it is essential that a tree survey (including current tree heights and species) is undertaken prior to any removal of trees in order to allow an assessment of the most economical foundation design. Any proposed planting will also need to be considered. Once finalised, the foundation design should be revised to consider the species of trees. Some species are high water demand and are likely to have an impact on the stability of the soils both laterally and vertically. Foundations may have to be deepened and appropriately proportioned sub-floor voids would also be required beneath suspended floor slabs.

The use of trench fill foundations in these circumstances should be used with great caution as lateral swelling pressures on such large foundation surfaces can lead to rotation or other movement which could lead to failure of the foundation, and they may be subject to uplift forces from the soil swelling.

Swelling pressures can be reduced with the use of suitably dimensioned compressible layers, such as Clayboard or similar, on the sides of the foundations. BRE report 298 provides further guidance on other methods which may be adopted. In addition, the use of deep spread footings (strips or trench fill) can also initiate swelling in the fine-grained soils where roots are severed.

Once the design proposals have been finalised, further advice can be provided by this office as to the required safe depth of foundations across the development. BRE report 298 provides guidance on methods to reduce swelling pressures (e.g. compressible layers).

6.2.3 Running Sands

Although no running sand was identified during the previous or recent investigations, thick horizons of sand are present, and groundwater has been identified at shallow depth. Therefore, the potential for running sand cannot be discounted, which could lead to collapse of excavation sides. This is in line with the previous assessments.

During the 2016 investigation, some spalling of the trial pit walls was experienced (TP1 to TP4 and TP7 to TP9), but this did not appear to be related to running sands; more likely due to the low shear strength of the soils.

We consider that there is the potential that any open excavation below 1.0m depth or greater could experience significant instability and/or collapse and this should be considered during the development stages.

6.2.4 Sulphate Attack on Buried Concrete

The following characteristic values are applicable for the shallow soils at the site (all as SO₄):

Water soluble sulphate:	77.9mg/l.
Groundwater sulphate:	2.9mg/l.
Total potential sulphate:	0.09%
pH value:	6.2%

Based on these characteristic values, we consider that the site would be classified as Design Sulphate Class DS-1 and Aggressive Chemical Environment for Concrete Class AC-1z, allowing for mobile groundwater.

This is in line with the previous assessments. It should be noted that concrete placed in ACEC Classes that include the suffix 'z' (as is stated above) have primarily to resist acid conditions and may be made with any of the cements in Table D2 on page 42, of BRE SD1 (2005).

6.3 Excavation and Dewatering

It is anticipated that excavation throughout most of the site will be within the capabilities of conventional mechanical excavators. Old foundations beneath the farm buildings may require higher capacity machines for their removal. The wheeled excavator used in the previous investigation failed to excavate below 3m in areas within the weathered Upper Greensand Formation.

Given the instability experienced in the investigation, we recommend that support should be provided to excavations as appropriate.

Very shallow groundwater has been encountered during the previous and current monitoring. Shallow groundwater should be considered in the design.

6.4 Retaining Walls

The Due Diligence Report (ref: STD001-PRO-X-XX-SP-DT-0122) indicates that an allowance will be required for retaining structures and a potential requirement for 'Icon wall systems' for areas between plots, if necessary. No further information has been provided at this stage.

7 Supplementary Foundation Assessment

The original foundation assessments (ESP, 2017 and ESP, 2022) should be read in conjunction with the following section.

We understand that the site is being considered for potential development for residential purposes and the comments and recommendations in this report assume that the development will involve the construction of typical two-storey structures of conventional load-bearing timber frame construction.

7.1 Foundation Zones

The ground investigation has identified variable ground conditions across the site including areas of very low strength (e.g. Borehole WS3, 2016 and R003, 2024 in the south/southeast of the site). In addition, large thicknesses of poor quality suspected Made Ground have been identified in the central area around the slurry pit. The depth of the slurry pit materials is also not yet known, and these are likely to possess very poor bearing properties; we understand these are to be removed in the future and ESP will supervise the works and verify the remaining ground is appropriate for development.

As detailed in Section 3.5.1, ESP previously zoned the site into four areas, Zone A to Zone D, where Zone D represented areas where conventional foundations could be constructed within 2m of the surface and Zone A represented areas where no suitable founding stratum was identified within 3m of the surface and alternative solutions such as rafts or piled foundations were recommended. Zones B and C were identified to have suitable founding stratum in the region of 2-3m below the surface and conventional could be suitable, however may not be economically the best option.

As shown in Figure 6, we have repeated this exercise for the recently constructed investigation and identified which foundation zones each of the investigation points aligns with.

Based on the recent investigation findings, we have identified three possible areas where improvements to the foundation depths may be feasible, in the southwest, north central and northeast portions of the site. It should be appreciated that this is based on relatively limited (widely spaced) investigation points and further confirmation will be required, either by plot-by-plot investigation (e.g., dynamic probing the footprints) or by excavation supervision (possible with some in-situ testing) during the foundation excavations.

The previous and recent foundation assessments are based on the existing ground model and current ground levels. We understand that earthworks are proposed for the site and a review of the foundation assessment will be required once the cut and fill designs have been completed.

7.2 Foundation Solution

Given the variability of the ground conditions across the site, a combination of two or more foundations solutions will likely be required, as shown in Figure 4. Whilst trench fill foundations will be possible in some areas, where low strength soils are present to 3m or more below the surface, we understand that a piled solution is preferred; it is possible that a raft foundation solution could be utilised in some areas, however we understand from discussions with PDDS, that this may not be the most economic approach.

7.3 General Foundation Comments

The potential risks from shrinkage and swelling should be considered in all foundation's designs.

Given the presence of groundwater within the shallow soils, to minimise the potential for excavation instability, we recommend that as short a time as possible is left between excavating the foundation trenches and pouring the concrete.

For all spread foundation options, the formations should be cleaned, and subsequently inspected by a suitably qualified engineer prior to placing concrete. Should any soft, compressible or otherwise unsuitable materials be encountered they should be removed and replaced by lean mix concrete or suitable compacted granular material. We recommend that a blinding layer of concrete be placed on the formation after excavation and inspection in order to protect the formation against softening and disturbance.

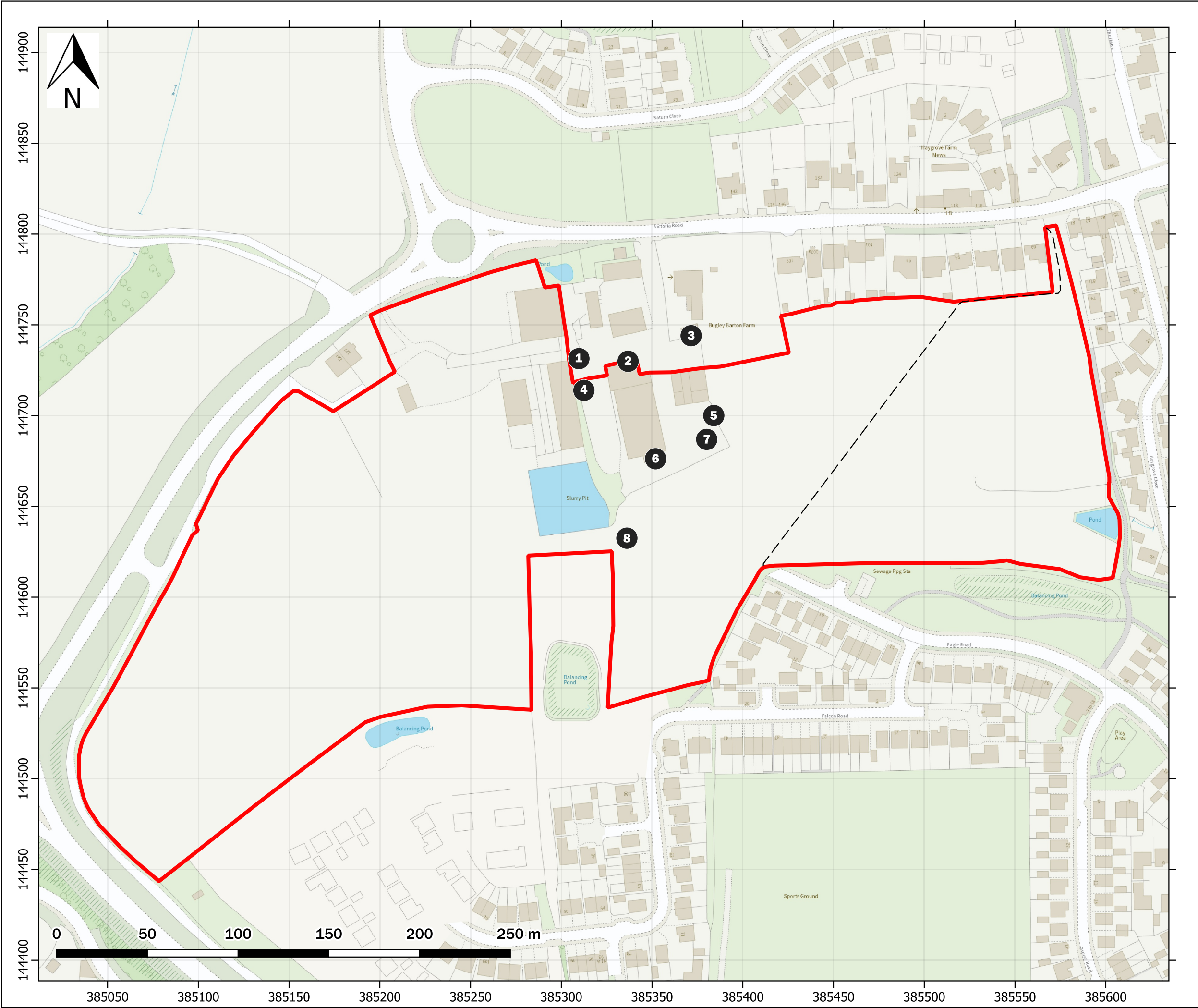
7.4 Floor Slab Foundations

Due to the presence of over 600mm of soft soils and/or Made Ground across the site, we consider that at this stage, an allowance should be made for suspending floor slabs. Further investigation may allow the use of ground bearing slabs, possibly on a plot-by-plot basis. The requirement for possible gas protection to be incorporated into the floor slab construction will be confirmed in our supplementary gas assessment (see Section 1.1.2).

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Figures



Earth Science Partnership

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LEGEND:

- Site Boundary
- — Public Footpath

Site Features

- 1** Above-ground Storage Tank (unknown material) and Herbicide Cannisters.
- 2** Chemical Storage
- 3** Oil Tanks (Farm Building Heating - Outside Site Boundary)
- 4** Stockpile (Possible Asbestos Cement Tile)
- 5** Fuel Tanks
- 6** Diesel Tank and Engine - Generator
- 7** Stockpiles (Gravel and Construction Rubble)
- 8** Outflow Pipe (Slurry Pit)

NOTES:

1. Do not scale from drawing. This drawing should be read in conjunction with all other associated project information.

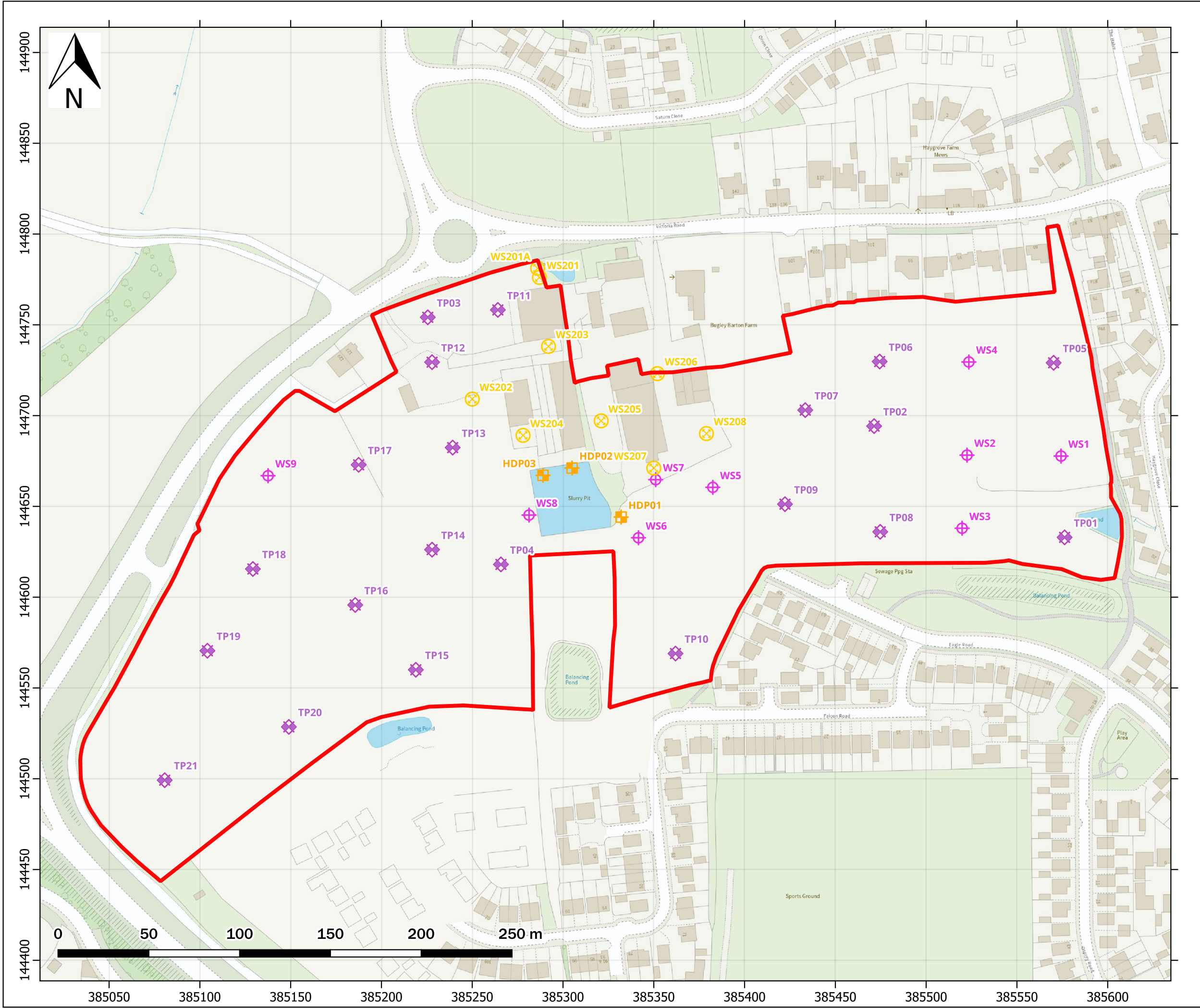
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PROJECT NAME:	Proposed Residential Development Bugley Farm, Warminster	
REPORT REF:	ESP.8917	
CLIENT:	Keepmoat Homes Ltd	
FIGURE TITLE:	Site Plan	
FIGURE NO:	01	REV.: 00
DATE:	09/07/2024	SCALE: 1: 2000
DRAWN BY:	NS	CHECKED BY: DT



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SCIENTISTS

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Cardiff CF15 7RB Tel: 029 2081 3385
enquiries@earthsciencepartnership.com



LEGEND:

Site Boundary

ESP Investigation - 2021

Windowless Sampler Locations

Hand Pit Locations

ESP Investigation - 2016

Windowless Sampler Locations

Trial Pit Locations

NOTES:

1. Do not scale from drawing. This drawing should be read in conjunction with all other associated project information.

2. Contains OS data © Crown copyright and database right (2022). Data may be re-used under the terms of the Open Government Licence (OGL).

PROJECT NAME: Proposed Residential Development Bugley Farm, Warminster

REPORT REF: ESP.8917

CLIENT: Keepmoat Homes Ltd

FIGURE TITLE: Previous ESP Site Investigation Plan - 2016 & 2021

FIGURE NO: 02

REV.: 00

DATE: 09/07/2024

SCALE: 1: 2000

DRAWN BY: NS

CHECKED BY: DT

LEGEND:

- Site Boundary
- +

 Trial Pit Position
- +

 Soakaway Position
- +

 Windowless Sample Borehole Position
- No investigation allowed within this area

Preliminary Foundation Zones:

- Zone A: No suitable founding stratum within 3m of the present site surface.
- Zone B: Trench Fill Foundations to 2.5m to 3.0m
- Zone C: Trench Fill Foundations to 2.0 to 2.5m
- Zone D: Trench Fill Foundations to less than 2.0m

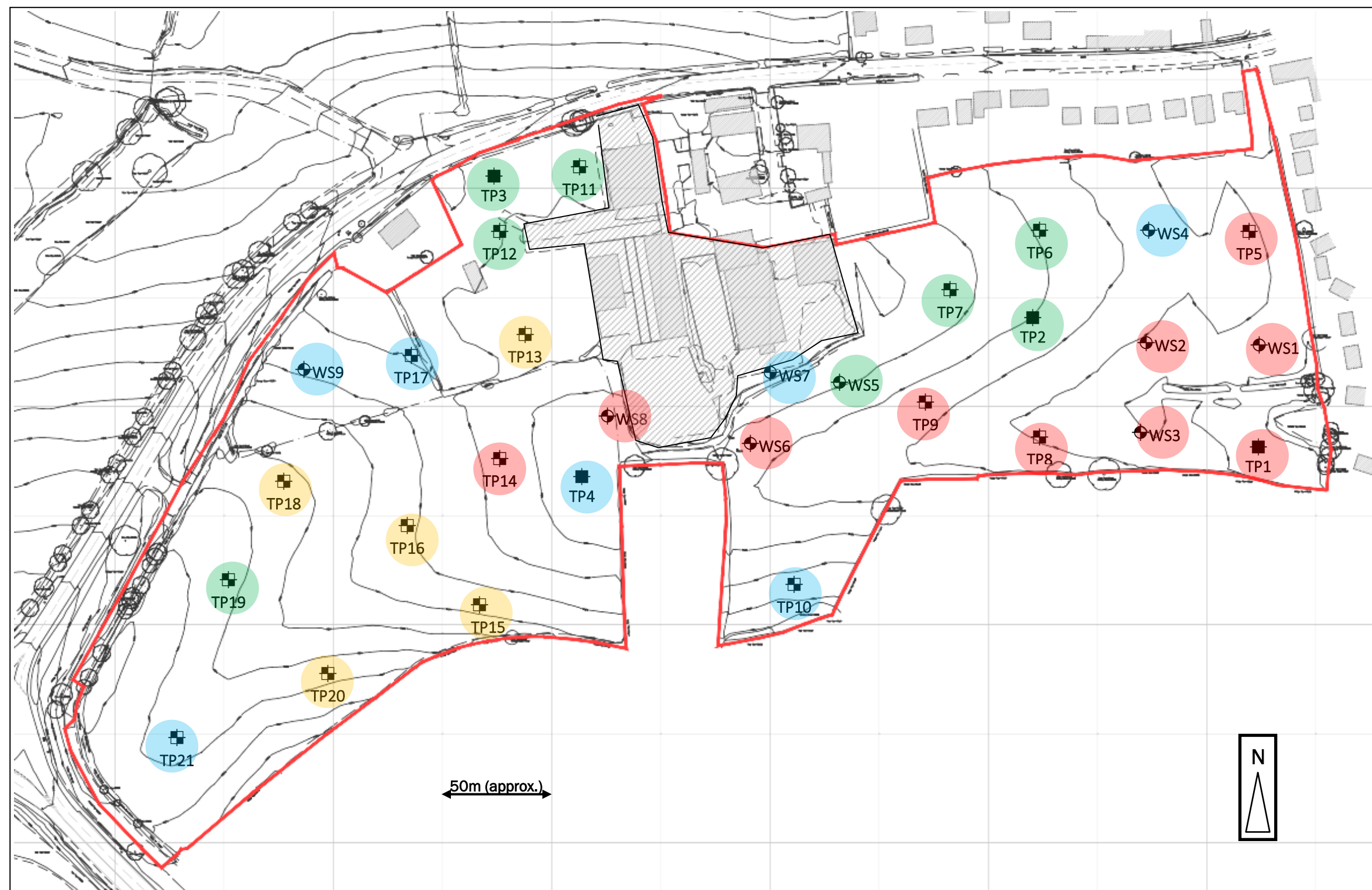
NOTES:
Base drawing previously provided by Persimmon Homes (Wessex)
Drawing Title: Land at Bugley Barton Farm, Warminster

PROJECT:
PROPOSED RESIDENTIAL DEVELOPMENT
BUGLEY FARM, WARMINSTER

SCALE: AS SHOWN (APPROX.) AT A3

FIGURE 3:
PREVIOUS FOUNDATION ZONING PLAN

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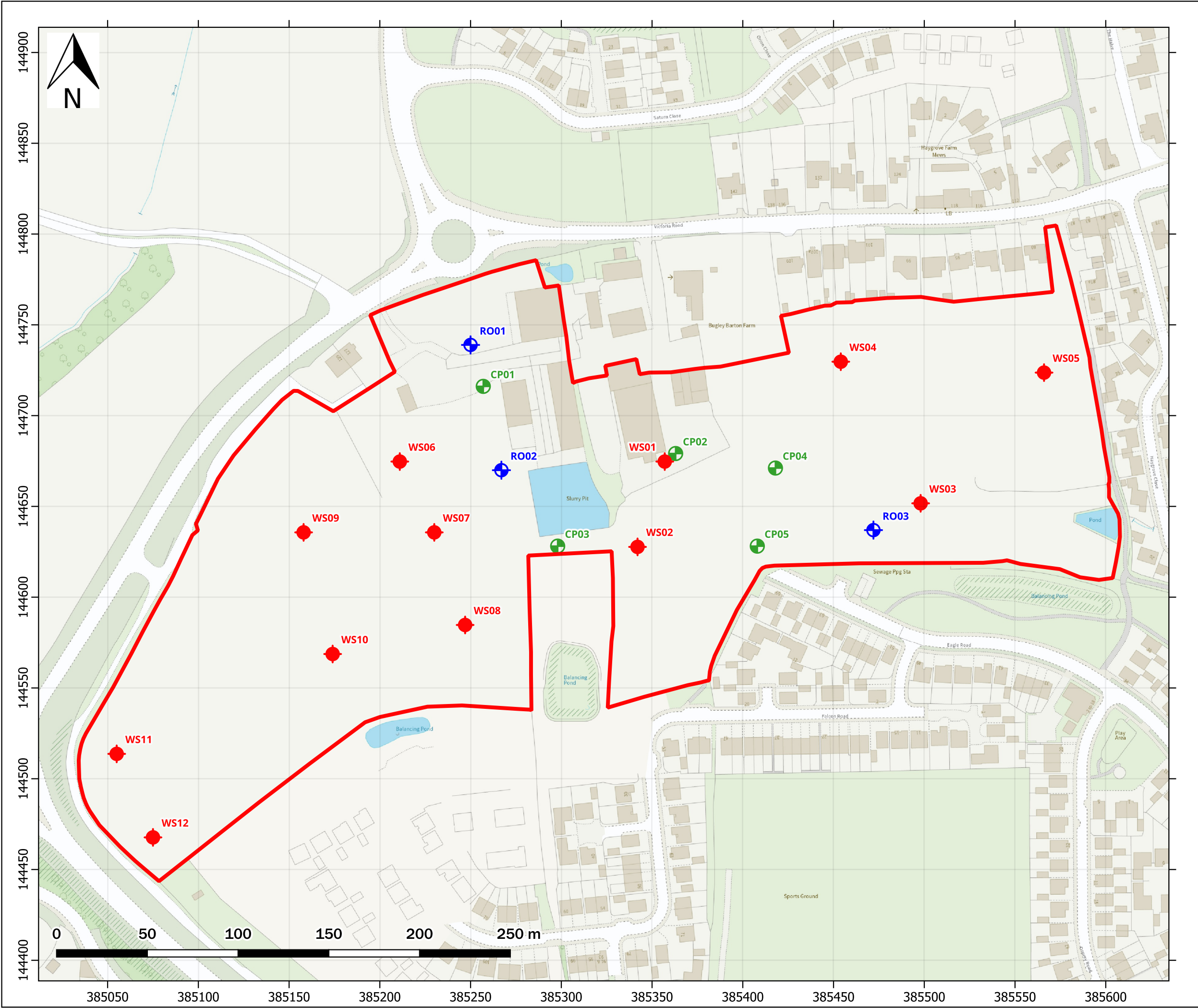




NOTES:

Drawing after Protech-PDS Limited (PPDS) – Document reference: STD001-PRO-X-XX-SP-DT-0122

PROJECT:	PROPOSED RESIDENTIAL DEVELOPMENT BUGLEY FARM, WARMINSTER
SCALE:	AS SHOWN (approx. at A3)
FIGURE 4:	PROPOSED FOUNDATION LAYOUT PLAN (PPDS, 2021)
 EARTH SCIENCE PARTNERSHIP 33 Cardiff Road, Taff's Well, Cardiff CF15 7RB Tel: 029 2081 3385 enquiries@earthsciencepartnership.com	



LEGEND:

Site Boundary

Investigation Points

Cable Percussion Locations

Rotary Openhole Locations

Windowless Sampler Locations

NOTES:

1. Do not scale from drawing. This drawing should be read in conjunction with all other associated project information.

2. Contains OS data © Crown copyright and database right (2024). Data may be re-used under the terms of the Open Government Licence (OGL).

PROJECT NAME: Proposed Residential Development Bugley Farm, Warminster

REPORT REF: ESP.8917

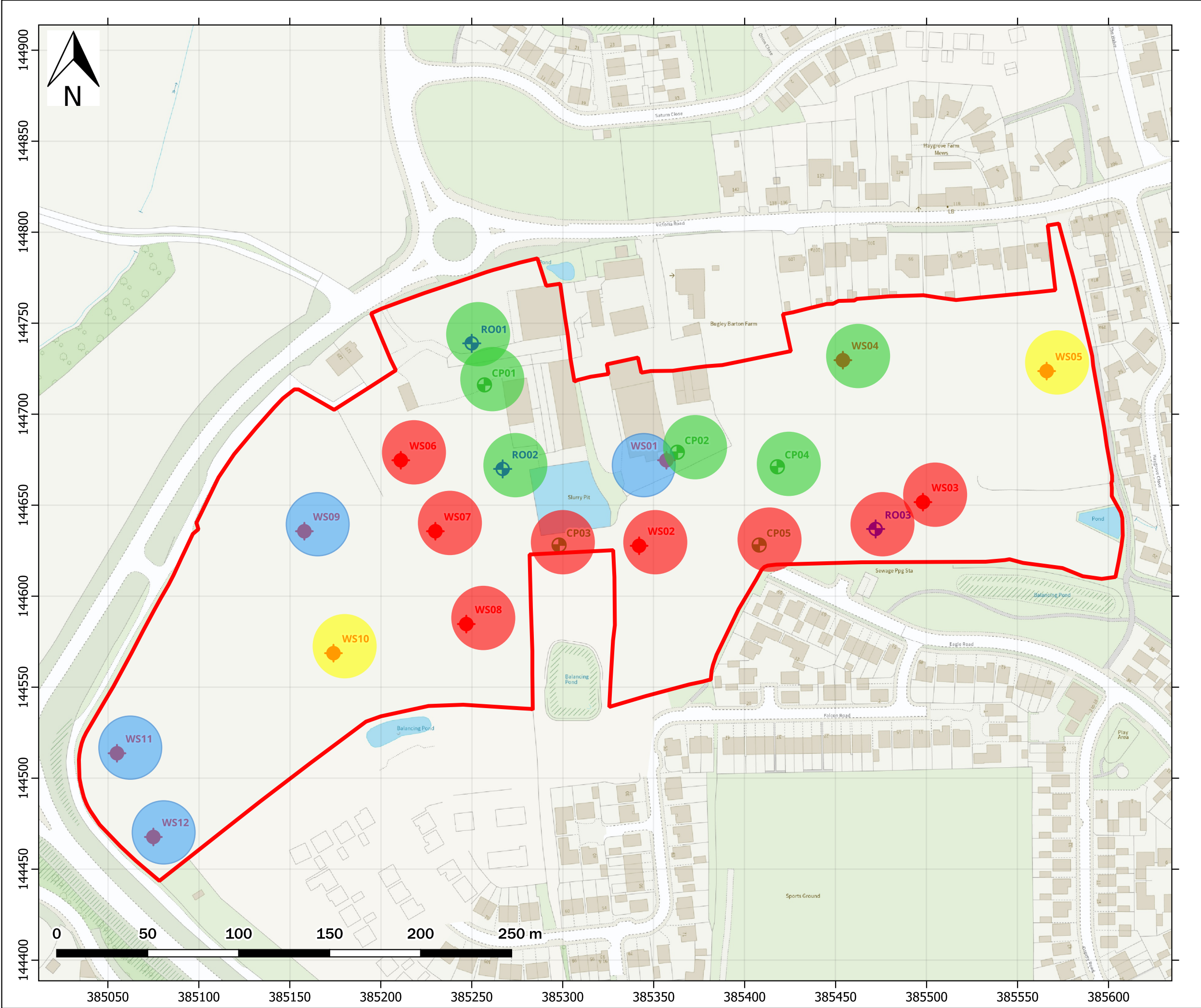
CLIENT: Keepmoat Homes Ltd

FIGURE TITLE: Investigation Point Plan

FIGURE NO: 05 REV.: 00

DATE: 09/07/2024 SCALE: 1: 2000

DRAWN BY: NS CHECKED BY: DT



LEGEND:

Site Boundary

Investigation Points

- Cable Percussion Locations
- Rotary Openhole Locations
- Windowless Sampler Locations

Foundation Zones:

- Zone A: No suitable founding stratum within 3m of the present site surface.
- Zone B: Trench Fill Foundations to 2.5m to 3.0m.
- Zone C: Trench Fill Foundations to 2.0m to 2.5m.
- Zone D: Trench Fill Foundations to less than 2.0m.

NOTES:
1. Do not scale from drawing. This drawing should be read in conjunction with all other associated project information.
2. Contains OS data © Crown copyright and database right (2024). Data may be re-used under the terms of the Open Government Licence (OGL).

PROJECT NAME: Proposed Residential Development Bugley Farm, Warminster

REPORT REF: ESP.8917

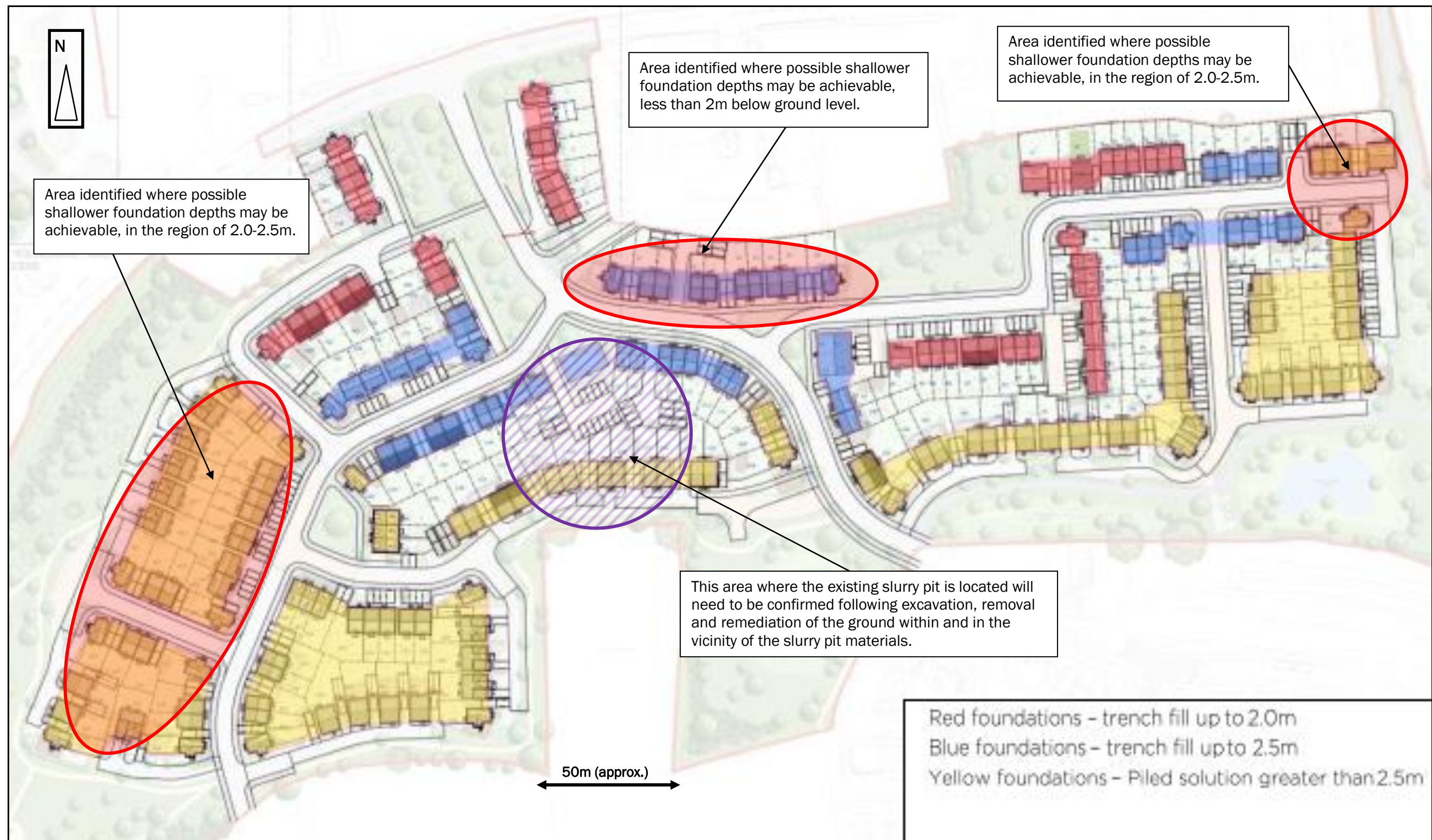
CLIENT: Keepmoat Homes Ltd

FIGURE TITLE: Investigation Point Plan

FIGURE NO: 06 REV.: 00

DATE: 09/07/2024 SCALE: 1: 2000

DRAWN BY: NS CHECKED BY: DT



NOTES:

Drawing after Protech-PDS Limited (PPDS) – Document reference: STD001-PRO-X-XX-SP-DT-0122

Areas identified where possible shallower foundations may be achievable will need to be confirmed by additional plot by plot investigation, or supervision of foundation excavations, if required. Indication of possible improvements based on limited investigation information.

All assessment has been based on the current ground model and current ground levels. We understand that ground level are likely to change with some cut/fill across the site and the foundation assessment will need to be reviewed following confirmation of the planned earthworks.

PROJECT:	PROPOSED RESIDENTIAL DEVELOPMENT BUGLEY FARM, WARMINSTER
SCALE:	AS SHOWN (approx. at A3)
FIGURE 4:	PROPOSED FOUNDATION LAYOUT PLAN (PPDS, 2021)
esp ENGINEERS GEOLOGISTS SCIENTISTS	EARTH SCIENCE PARTNERSHIP 33 Cardiff Road, Taff's Well, Cardiff CF15 7RB Tel: 029 2081 3385 enquiries@earthsciencepartnership.com

Appendix A

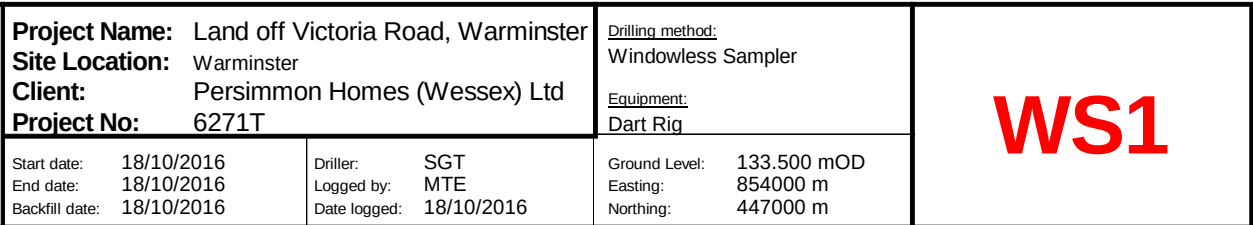
Pre-Desk Study Assessment

Site:	Land at Bugley Barton Farm, Warminster, Wiltshire
Client:	Earth Science Partnership
Contact:	Daniel Thomas
Date:	29 th April 2024
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Transport infrastructure and public utilities. ■ Military barracks, camps, depots, and training areas.
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	1No. Anti-Aircraft (AA) searchlight and Light AA (LAA) gun emplacement was established on land adjacent to the Site.
WWII Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Transport infrastructure and public utilities. ■ Military barracks, camps, depots, and training areas. ■ AA and anti-invasion defences.
WWII Bombing Decoys (within 5km of Site)	None.
WWII Bombing	During WWII the Site was located in the Urban District (UD) of Warminster, which officially recorded 1No. High Explosive (HE) bomb with a bombing density of 0.2 bombs per 405 hectares (ha). No readily available records have been found to indicate that the Site was bombed.
Post-WWII Military Activity on or Affecting the Site	The LAA and searchlight emplacement adjacent to the Site was removed.
Recommendation	A detailed desk study, whilst always prudent, is not considered essential in this instance.
Further information	For information about Zetica's detailed UXO desk studies and other UXO services, please visit our website: www.zeticauxo.com . Details and downloadable resources covering the most common sources of UXO hazard affecting sites in the UK can be found here . If you have any further queries, please don't hesitate to get in contact with us at uxo@zetica.com or 01993 886 682.

This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.

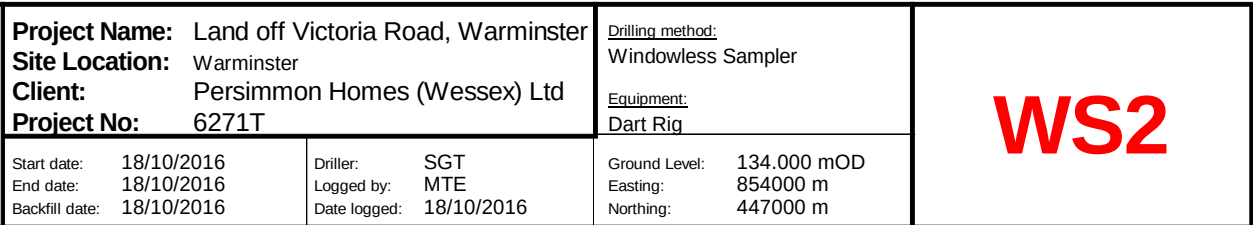
It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.

Appendix B



Progress & Standing Water Levels					Water Strikes							Chiselling			Hole and Casing Diameters			
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed minutes	Depth to Water	Depth Sealed	From Depth	To Depth	Minutes Taken	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
					18/10/2016	-	2.20	-	-	-	-							

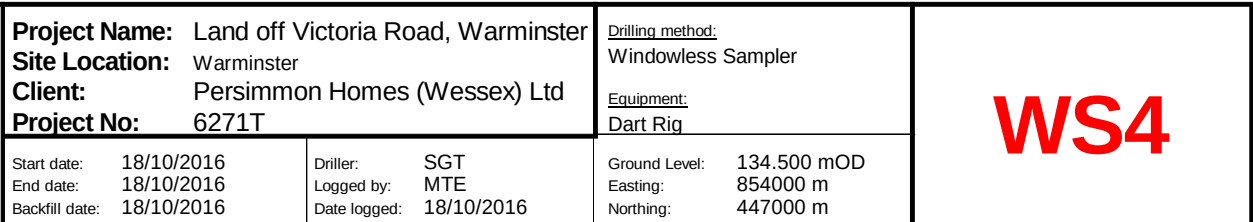
1. Grid reference of centre of site only. Ground level approximate only and interpolated from Topographical Survey.
2. Drillhole undertaken adjacent to pond/marsh area to install gas monitoring well.
3. Well installation installed with upstanding cover on completion.
4. 50mm diameter gas and groundwater monitoring well installed with response zone between 0.7m to 3.0m depth.



Progress & Standing Water Levels					Water Strikes							Chiselling			Hole and Casing Diameters			
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed minutes	Depth to Water	Depth Sealed	From Depth	To Depth	Minutes Taken	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
					18/10/2016	-	3.00	-	-	-	-							

1. Grid reference of centre of site only. Ground level approximate only and interpolated from Topographical Survey.
2. Drillhole undertaken adjacent to pond/marsh area to install gas monitoring well.
3. Well installation installed with upstanding cover on completion.
4. 50mm diameter gas and groundwater monitoring well installed with response zone between 0.7m to 2.9m depth.

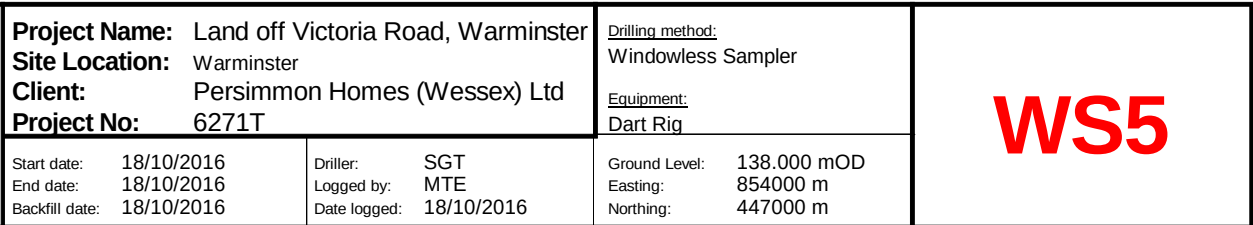
- General Remarks.**
1. Grid reference of centre of site only . Ground level approximate only and interpolated from Topographical Survey.
 2. Drillhole undertaken adjacent to pond/marsh area to install gas monitoring well.
 3. Well installation installed with upstanding cover on completion.
 4. 50mm diameter gas and groundwater monitoring well installed with response zone between 0.7m to 3.8m depth.



Progress & Standing Water Levels					Water Strikes							Chiselling			Hole and Casing Diameters			
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed minutes	Depth to Water	Depth Sealed	From Depth	To Depth	Minutes Taken	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
					18/10/2016	-	3.20	-	-	-	-							

General Remarks:

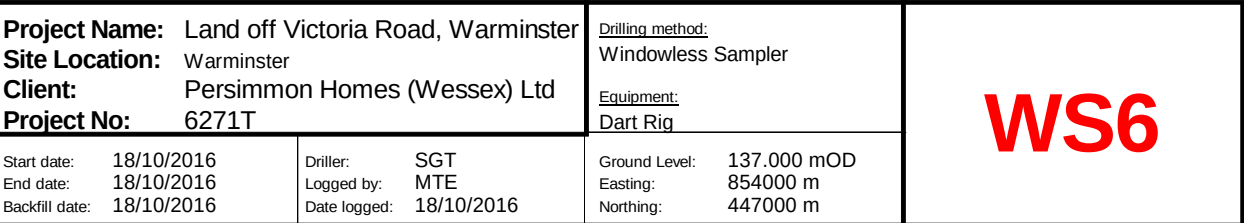
1. Grid reference of centre of site only. Ground level approximate only and interpolated from Topographical Survey.
2. Drillhole undertaken in north east of site to obtain general ground information.
3. Drillhole backfilled with arisings on completion and grass surface reinstated.



Progress & Standing Water Levels					Water Strikes							Chiselling			Hole and Casing Diameters			
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed minutes	Depth to Water	Depth Sealed	From Depth	To Depth	Minutes Taken	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth

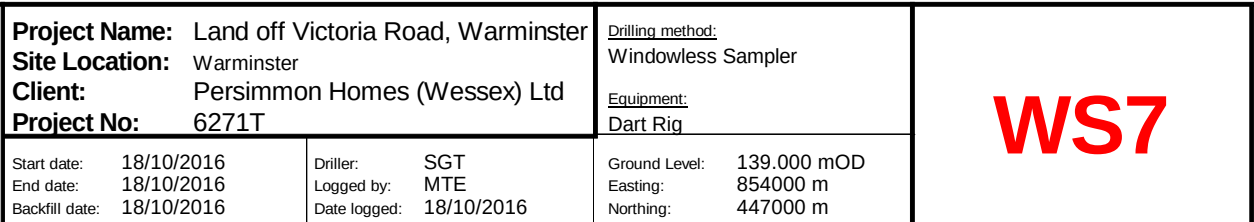
- Grid reference of centre of site only. Ground level approximate only and interpolated from Topographical Survey.
- Drillhole undertaken in south of site to obtain general ground information.
- Drillhole backfilled with arisings on completion and grass surface reinstated.
- No groundwater encountered to base of drillhole.

1. Grid reference of centre of site only. Ground level approximate only and interpolated from Topographical Survey.
2. Drillhole undertaken adjacent slurry pit outflow pipe to install gas monitoring well.
3. Well installation installed with upstanding cover on completion.
4. 50mm diameter gas and groundwater monitoring well installed with response zone between 0.7m to 4.9 depth.

[illegible]

General Remarks:

1. Grid reference of centre of site only. Ground level approximate only and interpolated from Topographical Survey.
2. Drillhole undertaken adjacent slurry pit outflow pipe to install gas monitoring well.
3. Well installation installed with upstanding cover on completion.
4. 50mm diameter gas and groundwater monitoring well installed with response zone between 0.7m to 4.9 depth.



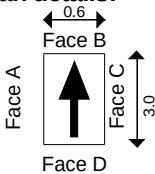
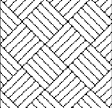
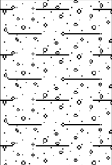
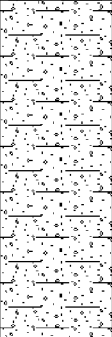
Progress & Standing Water Levels					Water Strikes							Chiselling			Hole and Casing Diameters			
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed minutes	Depth to Water	Depth Sealed	From Depth	To Depth	Minutes Taken	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth

1. Grid reference of centre of site only. Ground level approximate only and interpolated from Topographical Survey.
2. Drillhole undertaken adjacent slurry pit outflow pipe to install gas monitoring well.
3. Well installation installed with upstanding cover on completion.
4. 50mm diameter gas and groundwater monitoring well installed with response zone between 0.7m to 2.8m depth.

- Grid reference of centre of site only. Ground level approximate only and interpolated from Topographical Survey.
- Drillhole undertaken adjacent slurry pit outflow pipe to install gas monitoring well.
- Well installation installed with upstanding cover on completion.
- 50mm diameter gas and groundwater monitoring well installed with response zone between 0.7m to 3.0 depth.

			Project Name: Land off Victoria Road, Warminster Site Location: Warminster Client: Persimmon Homes (Wessex) Ltd Project No: 6271T			Drilling method: Windowless Sampler Equipment: Dart Rig			WS9									
Start date: 18/10/2016 End date: 18/10/2016 Backfill date: 18/10/2016			Driller: SGT Logged by: MTE Date logged: 18/10/2016			Ground Level: 140.000 mOD Easting: 854000 m Northing: 447000 m												
Sample Details and SPT Data						Strata Details						Water						
Depth	Type	PID (ppm)	SPT-N (penetration / sampler blows)	Water Depth	Casing Depth	Depth (Thickness)	Description	Legend	Strikes / Standing	Depth	Backfill / Installations							
0.20	E					(0.30)	Probably loose dark brown clayey occasionally gravelly organic SAND with roots. Gravel of dark greenish brown sandstone is subrounded. (TOPSOIL).											
0.40	E					(0.20)												
						0.50	Probably loose brown clayey occasionally gravelly slightly organic SAND with roots and rootlets. (Possible SUBSOIL).											
0.80	B						Loose brownish green slightly clayey silty fine to coarse glauconitic SAND. (Probable BOYNE HOLLOW CHERT MEMBER).			1								
1.20 - 1.65	SPT-C		N=7			(1.10) (1.20)	Loose brownish green slightly clayey silty fine to coarse glauconitic SAND. Gravelly below 1.6m. (Probable BOYNE HOLLOW CHERT MEMBER).											
1.80	B					(0.10) 1.60	Loose brownish green slightly clayey gravelly silty fine to coarse glauconitic SAND. (Probable BOYNE HOLLOW CHERT MEMBER).											
2.00 - 2.45	SPT-C		N=18			(0.20) 1.70												
2.20	B					(0.10) 1.90	Firm becoming stiff greenish brown very sandy occasionally gravelly CLAY. (Probable BOYNE HOLLOW CHERT MEMBER).			2								
2.50 - 2.81	SPT-C		N > 50 (160mm)			2.00												
						(0.95)	Medium dense light grey sandy angular sandstone GRAVEL. (Probable SHAFTESBURY SANDSTONE MEMBER - 'Ragstone').											
						2.95	Medium dense brownish green slightly clayey gravelly fine to medium SAND, becoming very gravelly and very dense below 2.5m. (Probable SHAFTESBURY SANDSTONE MEMBER).			3								
							End of Borehole at 2.95 m											
Progress & Standing Water Levels					Water Strikes							Chiselling			Hole and Casing Diameters			
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed minutes	Depth to Water	Depth Sealed	From Depth	To Depth	Minutes Taken	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
General Remarks: 1. Grid reference of centre of site only. Ground level approximate only and interpolated from Topographical Survey. 2. Drillhole undertaken in north west of site to obtain general ground information. 3. Drillhole backfilled with arisings on completion and surface reinstated. 4. No groundwater encountered to base of drillhole.																		

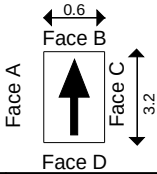
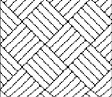
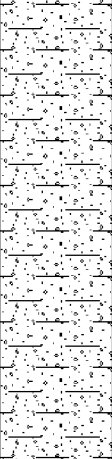
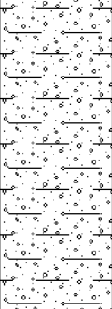
Appendix C

				Site Location: Land off Victoria Road, Warminster Client: Persimmon Homes (Wessex) Ltd Project No: 6271T			TP1		
Survey details: Ground Level: 132.000 mOD Easting: 854000 m Northing: 447000 m Bearing: -				Excavation date: 18/10/2016 Backfill date: 18/10/2016 Logged by: LD		Excavation method/plant: Trial Pitting 6T Tracked		Shoring/support: None	
				Plan details: 		Face stability: Major sidewall collapse after pit excavation.			Groundwater observations: Groundwater at base of pit, very slow inflow.
Sampling & Testing				Stratum Details					
Depth		Type	PID (ppm)	S_u (kPa)	(Thk) & Depth	Description			Legend
0.20		E			(0.40)	Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).			
0.50		E			0.40	Medium dense light grey to grey silty very sandy fine to coarse angular to subangular sandstone and flint GRAVEL. (Possible SHAFTESBURY SANDSTONE FORMATION - 'Ragstone')			
0.80		D			(0.60)				
					1.00	Soft to firm brown and grey very sandy gravelly CLAY with a low angular sandstone cobble content. (Probable SHAFTESBURY ANDSTONE MEMBER).			
					(1.20)				
2.10		B			2.20	End of trial pit at 2.20 m depth.			
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.									
Weather and environmental conditions: Clear and dry.									
Other comments: 1. Grid reference of centre of site only. Ground level approximate and interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm 3. Location of BRE 365 Soakaway Test (SA1). 4. Backfilled with arisings upon completion.									

1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey.
2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm
3. Location of BRE 365 Soakaway Test (SA2).
4. Pit secured with heras fencing overnight.
5. Backfilled with arisings upon completion.

1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey.
2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm
3. Location of BRE 365 Soakaway Test (SA3).
4. Pit secured with heras fencing overnight.
5. Backfilled with arisings upon completion.

EARTH SCIENCE PARTNERSHIP ESP				Site Location: Land off Victoria Road, Warminster Client: Persimmon Homes (Wessex) Ltd Project No: 6271T			TP4		
Excavation date: 18/10/2016 Backfill date: 19/10/2016 Logged by: LD				Excavation method/plant: Trial Pitting Shoring/support: None					
Survey details: Ground Level: 137.500 mOD Easting: 854000 m Northing: 447000 m Bearing: -				Plan details: 0.6 Face B Face A Face C 2.9 Face D		Face stability: Minor sidewall spalling during soakaway testing.		Groundwater observations: No groundwater encountered.	
Sampling & Testing				Stratum Details					
Depth		Type	PID (ppm)	S _u (kPa)	(Thk) & Depth	Description	Legend		
0.20		E			(0.40)	Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).			
0.50		E			0.40	Loose brown becoming green very clayey gravelly fine to coarse glauconitic SAND. Gravel is fine to coarse subangular to angular sandstone and fine to coarse angular flint fragments. (Probable BOYNE HOLLOW CHERT MEMBER)			
1.20		D			(1.70)				
2.00		D			2.10				
2.50		D			(0.70)	Probably loose to medium dense brown and grey very clayey gravelly SAND with low angular sandstone cobble content. Gravel is fine to coarse angular to subangular sandstone. (Probable SHAFTESBURY SANDSTONE MEMBER)			
2.70		B			2.80	End of trial pit at 2.80 m depth.			
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.									
Weather and environmental conditions: Clear and dry.									
Other comments: 1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm 3. Location of BRE 365 Soakaway Test (SA4). 4. Pit secured with heras fencing overnight. 5. Backfilled with arisings upon completion.									

		Site Location: Land off Victoria Road, Warminster Client: Persimmon Homes (Wessex) Ltd Project No: 6271T		TP5			
Survey details: Ground Level: 134.000 mOD Easting: 854000 m Northing: 447000 m Bearing: -		Excavation date: 18/10/2016 Backfill date: 18/10/2016 Logged by: LD				Excavation method/plant: Trial Pitting 6T Tracked	
		Plan details: 		Face stability: No stability issues.		Groundwater observations: No groundwater encountered.	
Sampling & Testing				Stratum Details			
Depth	Type	PID (ppm)	S_u (kPa)	(Thk) & Depth	Description	Legend	
0.20	E			(0.35)	Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).		
0.55	E			0.35	Loose brown becoming green very clayey gravelly fine to coarse glauconitic SAND. Gravel is fine to coarse subangular to angular sandstone and fine to coarse flint nodules. (Probable BOYNE HOLLOW CHERT MEMBER)		
1.10	D			(1.65)			
1.90	D			2.00	Medium dense light grey to grey silty very sandy fine to coarse angular to subangular sandstone GRAVEL. (Probable SHAFTESBURY SANDSTONE MEMBER - 'Ragstone').		
2.70	D			(1.10)			
3.00	B			3.10	End of trial pit at 3.10 m depth.		
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.							
Weather and environmental conditions: Clear and dry.							
Other comments: 1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm. 3. Backfilled with arisings upon completion.							

EARTH SCIENCE PARTNERSHIP ESP				Site Location: Land off Victoria Road, Warminster Client: Persimmon Homes (Wessex) Ltd Project No: 6271T			TP6		
Excavation date: 18/10/2016 Backfill date: 18/10/2016 Logged by: LD				Excavation method/plant: Trial Pitting 6T Tracked		Shoring/support: None			
Survey details: Ground Level: 136.000 mOD Easting: 854000 m Northing: 447000 m Bearing: -				Plan details: 0.6 Face B Face A Face C 3.1 Face D		Face stability: No stability issues.		Groundwater observations: No groundwater encountered.	
Sampling & Testing Depth Type PID (ppm) S_u (kPa)				Stratum Details (Thk) & Depth Description Legend					
0.15 E				(0.25) Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).					
0.35 E				0.25 Loose brown becoming green very clayey gravelly fine to coarse glauconitic SAND. Gravel is fine to coarse subangular to angular sandstone and subrounded to rounded flint fragments. (Probable BOYNE HOLLOW CHERT MEMBER)					
				(1.25)					
1.15 D									
1.60 D				1.50 Medium dense light grey to grey silty very sandy fine to coarse angular to subangular sandstone GRAVEL. (Probable SHAFTESBURY SANDSTONE MEMBER - 'Ragstone').					
2.30 D				(1.70)					
3.00 B									
				3.20 End of trial pit at 3.20 m depth.					
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.									
Weather and environmental conditions: Clear and dry.									
Other comments: 1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm. 3. Backfilled with arisings upon completion.									

EARTH SCIENCE PARTNERSHIP ESP				Site Location: Land off Victoria Road, Warminster Client: Persimmon Homes (Wessex) Ltd Project No: 6271T			TP7		
Excavation date: 18/10/2016 Backfill date: 18/10/2016 Logged by: LD				Excavation method/plant: Trial Pitting 6T Tracked		Shoring/support: None			
Survey details: Ground Level: 138.000 mOD Easting: 854000 m Northing: 447000 m Bearing: -				Plan details: 0.6 Face B Face A Face C 2.8 Face D		Face stability: Significant sidewall collapse during and after excavation.		Groundwater observations: Groundwater at base of pit, very slow inflow.	
Sampling & Testing Depth Type PID (ppm) S_u (kPa)				Stratum Details (Thk) & Depth Description Legend					
0.15 E				(0.20) 0.20 Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).					
0.40 E				Loose brown becoming green very clayey gravelly fine to coarse glauconitic SAND. Gravel is fine to coarse subangular to angular sandstone. (Probable BOYNE HOLLOW CHERT MEMBER)					
0.90 D				(1.30)					
1.80 D				1.50 Medium dense light grey to grey silty very sandy fine to coarse angular to subangular sandstone GRAVEL. (Probable SHAFTESBURY SANDSTONE MEMBER - 'Ragstone').					
2.60 D				(1.20)					
2.70 B				2.70 End of trial pit at 2.70 m depth.					
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.									
Weather and environmental conditions: Clear and dry.									
Other comments: 1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm. 3. Backfilled with arisings upon completion.									

1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey.
2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm.
3. Backfilled with arisings upon completion.

• EARTH SCIENCE PARTNERSHIP • ESP				Site Location: Land off Victoria Road, Warminster Client: Persimmon Homes (Wessex) Ltd Project No: 6271T Excavation date: 18/10/2016 Excavation method/plant: Trial Pitting Shoring/support: None Backfill date: 18/10/2016 Logged by: LD 6T Tracked			TP9		
Survey details: Ground Level: 135.500 mOD Easting: 854000 m Northing: 447000 m Bearing: -				Plan details: 0.6 Face B Face A Face C 3.1 Face D		Face stability: Significant sidewall collapse during and after excavation.		Groundwater observations: Groundwater at base of pit, very slow inflow.	
Sampling & Testing				Stratum Details					
Depth		Type	PID (ppm)	S _u (kPa)	(Thk) & Depth	Description	Legend		
0.10		E			(0.30)	Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).			
0.50		E			0.30	Loose to medium dense light grey to grey silty very sandy fine to coarse angular to subangular sandstone GRAVEL. (Probable SHAFESBURY SANDSTONE MEMBER).			
1.00		D			(1.00)				
1.70		D			1.30	Loose to medium dense brown and grey very clayey gravelly SAND with low angular sandstone cobble content. Gravel is fine to coarse angular to subangular sandstone. (Probable SHAFESBURY SANDSTONE MEMBER).			
2.80		D			(2.10)				
3.00		B							
					3.40	End of trial pit at 3.40 m depth.			
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.									
Weather and environmental conditions: Clear and dry.									
Other comments: 1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm. 3. Backfilled with arisings upon completion.									



Survey details:
Ground Level: 138.500 mOD
Easting: 854000 m
Northing: 447000 m
Bearing: -

Site Location: Land off Victoria Road, Warminster
Client: Persimmon Homes (Wessex) Ltd
Project No: 6271T

Excavation date: 18/10/2016	Excavation method/plant: Trial Pitting	Shoring/support: None
Backfill date: 18/10/2016	6T Tracked	
Logged by: LD		

Plan details:

0.6

Face B

Face A

Face C

3.0

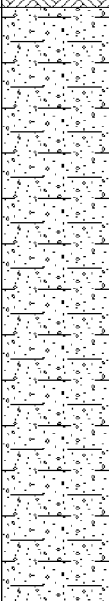
Face D

Face stability:

No stability issues.

TP10

Groundwater observations:
No groundwater encountered.

Sampling & Testing				Stratum Details		
Depth	Type	PID (ppm)	S _u (kPa)	(Thk) & Depth	Description	Legend
0.15	E			(0.30)	Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).	
0.50	E			0.30	Loose brown becoming green very clayey gravelly fine to coarse glauconitic SAND. Gravel is fine to coarse subangular to angular sandstone. (Probable BOYNE HOLLOW CHERT MEMBER)	
1.00	D					
1.70	D					
3.20 3.20	B D				(2.10)	2.40
			(1.00)	3.40	End of trial pit at 3.40 m depth.	

General notes:

1. All linear dimensions are in metres unless stated otherwise.
2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data.
3. Trial pit logged from the ground surface.

Weather and environmental conditions:
Clear and dry.

Other comments:

1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey.
2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm.
3. Backfilled with arisings upon completion.

EARTH SCIENCE PARTNERSHIP ESP				Site Location: Land off Victoria Road, Warminster Client: Persimmon Homes (Wessex) Ltd Project No: 6271T			TP11		
Excavation date: 19/10/2016 Backfill date: 19/10/2016 Logged by: LD				Excavation method/plant: Trial Pitting 6T Tracked		Shoring/support: None			
Survey details: Ground Level: 139.500 mOD Easting: 854000 m Northing: 447000 m Bearing: -				Plan details: 0.6 Face B Face A Face C 3.2 Face D		Face stability: No stability issues.		Groundwater observations: No groundwater encountered.	
Sampling & Testing Depth Type PID (ppm) S_u (kPa)				Stratum Details (Thk) & Depth Description Legend					
0.10 E				(0.60) Loose black slightly clayey sandy coarse angular GRAVEL with some fragments of brick and concrete block fragments. Suspected asbestos cement materials. (MADE GROUND - demolition rubble).					
0.40 E				0.60					
0.90 D				(0.90) Loose brown becoming green very clayey gravelly fine to coarse glauconitic SAND. Gravel is fine to coarse subangular to angular sandstone. (Probable BOYNE HOLLOW CHERT MEMBER)					
1.30 D				1.50					
2.00 D				(1.50) Medium dense light grey to grey silty cobbly very sandy fine to coarse angular to subangular sandstone GRAVEL. Cobbles are angular sandstone. (Probable SHAFTESBURY SANDSTONE - 'Ragstone')					
2.90 B				3.00 End of trial pit at 3.00 m depth.					
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.									
Weather and environmental conditions: Clear and dry.									
Other comments: 1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm. 3. Backfilled with arisings upon completion.									

EARTH SCIENCE PARTNERSHIP ESP				Site Location: Land off Victoria Road, Warminster Client: Persimmon Homes (Wessex) Ltd Project No: 6271T			TP12		
Excavation date: 19/10/2016 Backfill date: 19/10/2016 Logged by: LD				Excavation method/plant: Trial Pitting 6T Tracked		Shoring/support: None			
Survey details: Ground Level: 139.000 mOD Easting: 854000 m Northing: 447000 m Bearing: -				Plan details: 0.6 Face B Face A Face C 3.1 Face D		Face stability: No stability issues.		Groundwater observations: No groundwater encountered.	
Sampling & Testing Depth Type PID (ppm) Su (kPa)				Stratum Details (Thk) & Depth Description Legend					
0.20 E				(0.40) Loose black slightly clayey sandy coarse angular GRAVEL with some fragments of brick and concrete block. (MADE GROUND - demolition rubble).					
0.50 E				(0.20) 0.40 Soft brown very sandy very gravelly CLAY. Gravel is fine to coarse subangular to angular sandstone. (Possible SUBSOIL).					
				0.60 Loose brown becoming green very clayey gravelly fine to coarse glauconitic SAND. Gravel is fine to coarse subangular to angular sandstone. (Probable BOYNE HOLLOW CHERT MEMBER)					
1.20 D				(0.90)					
				1.50 Medium dense becoming very dense grey to light grey slightly clayey very sandy fine to coarse angular to subangular sandstone GRAVEL. (Probable SHAFTESBURY SANDSTONE FORMATION - 'Ragstone').					
2.00 D				(1.50)					
3.00 B				3.00 End of trial pit at 3.00 m depth.					
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.									
Weather and environmental conditions: Clear and dry.									
Other comments: 1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm. 3. Backfilled with arisings upon completion.									

EARTH SCIENCE PARTNERSHIP ESP				Site Location: Land off Victoria Road, Warminster Client: Persimmon Homes (Wessex) Ltd Project No: 6271T			TP13		
Excavation date: 19/10/2016 Backfill date: 19/10/2016 Logged by: LD				Excavation method/plant: Trial Pitting 6T Tracked		Shoring/support: None			
Survey details: Ground Level: 138.500 mOD Easting: 854000 m Northing: 447000 m Bearing: -				Plan details: 0.6 Face B Face A Face C 2.7 Face D		Face stability: No stability issues.		Groundwater observations: No groundwater encountered.	
Sampling & Testing				Stratum Details					
Depth		Type	PID (ppm)	S _u (kPa)	(Thk) & Depth	Description	Legend		
0.20		E			(0.30)	Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).			
0.60		E			0.30	Loose brown becoming green very clayey gravelly fine to coarse glauconitic SAND. Gravel is fine to coarse subangular to angular sandstone and fine to coarse angular flint. (Probable BOYNE HOLLOW CHERT MEMBER)			
1.30		D			(2.30)				
3.00		D			(0.80)	Medium dense grey to light grey slightly clayey very sandy fine to coarse angular to subangular sandstone GRAVEL. Becoming dense with depth. (Probable SHAFTESBURY SANDSTONE FORMATION - 'Ragstone').			
3.30		B			3.40	End of trial pit at 3.40 m depth.			
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.									
Weather and environmental conditions: Clear and dry.									
Other comments: 1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm. 3. Backfilled with arisings upon completion.									

EARTH SCIENCE PARTNERSHIP ESP				Site Location:Land off Victoria Road, Warminster Client:Persimmon Homes (Wessex) Ltd Project No:6271T			TP14		
Excavation date:19/10/2016 Backfill date:19/10/2016 Logged by:LD				Excavation method/plant:Trial Pitting Shoring/support:None 6T Tracked					
Survey details: Ground Level: 138.500 mOD Easting: 854000 m Northing: 447000 m Bearing: -				Plan details: 0.6 Face B Face A Face C 3.0 Face D		Face stability: No stability issues.		Groundwater observations: No groundwater encountered.	
Sampling & Testing DepthTypePID (ppm)Su (kPa)				Stratum Details (Thk) & DepthDescriptionLegend					
0.15 E				(0.30) Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).					
0.45 E				(0.30) Soft brown very sandy very gravelly CLAY. Gravel is fine to coarse subangular to angular sandstone. (Probable SUBSOIL).					
1.10 D				0.60 Loose to medium dense green very clayey very gravelly fine to medium SAND. Gravel is fine to coarse subangular to angular sandstone. Occasional angular sandstone cobbles from 3.0m. (Probable BOYNE HOLLOW CHERT MEMBER).					
2.50 D				(2.60)					
3.10 B				3.20 End of trial pit at 3.20 m depth.					
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.									
Weather and environmental conditions: Clear and dry.									
Other comments: 1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm. 3. Backfilled with arisings upon completion.									

EARTH SCIENCE PARTNERSHIP ESP				Site Location: Land off Victoria Road, Warminster Client: Persimmon Homes (Wessex) Ltd Project No: 6271T Excavation date: 19/10/2016 Excavation method/plant: Trial Pitting Shoring/support: None Backfill date: 19/10/2016 Logged by: LD 6T Tracked			TP16		
Survey details: Ground Level: 140.000 mOD Easting: 854000 m Northing: 447000 m Bearing: -				Plan details: 0.6 Face B Face A Face C 3.3 Face D		Face stability: No stability issues.		Groundwater observations: No groundwater encountered.	
Sampling & Testing Depth Type PID (ppm) S_u (kPa)				Stratum Details (Thk) & Depth Description Legend					
0.20 E				(0.30) Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).					
0.50 E				0.30 Soft brown very sandy very gravelly CLAY. Gravel is fine to coarse subangular to angular sandstone. (Possible HEAD DEPOSITS).					
(0.70)									
1.30 D				1.00 Loose to medium dense green very clayey very gravelly fine to medium SAND. Gravel is fine to coarse subangular to angular sandstone. (Probable BOYNE HOLLOW CHERT MEMBER).					
(2.00)									
2.50 D									
3.30 B				3.00 Medium dense grey slightly clayey very sandy fine to coarse angular to subangular sandstone GRAVEL. Occasional angular sandstone cobbles from 3.0m. Becoming dense with depth. (Probable SHAFTESBURY SANDSTONE FORMATION - 'Ragstone')					
(0.50)									
3.50				3.50 End of trial pit at 3.50 m depth.					
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.									
Weather and environmental conditions: Clear and dry.									
Other comments: 1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm. 3. Backfilled with arisings upon completion.									

EARTH SCIENCE PARTNERSHIP ESP				Site Location:Land off Victoria Road, Warminster Client:Persimmon Homes (Wessex) Ltd Project No:6271T			TP17		
Excavation date:19/10/2016 Backfill date:19/10/2016 Logged by:LD				Excavation method/plant:Trial Pitting Shoring/support:None					
Survey details: Ground Level: 139.000 mOD Easting: 854000 m Northing: 447000 m Bearing: -				Plan details: 0.6 Face B Face A Face C 3.1 Face D		Face stability: No stability issues.		Groundwater observations: No groundwater encountered.	
Sampling & Testing Depth Type PID (ppm) S_u (kPa)				Stratum Details (Thk) & Depth Description Legend					
0.15 E				(0.40) Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).					
0.40 E				0.40 Soft brown very sandy very gravelly CLAY. Gravel is fine to coarse subangular to angular sandstone. (Possible HEAD DEPOSITS).					
				(0.60)					
				1.00 Loose brown becoming green very clayey gravelly fine to coarse glauconitic SAND. Gravel is fine to coarse subangular to angular sandstone. (Probable BOYNE HOLLOW CHERT MEMBER)					
				(1.40)					
2.25 D				2.40 Medium dense grey to light grey slightly clayey very sandy fine to coarse angular to subangular sandstone GRAVEL. Becoming dense with depth. (Probable SHAFTESBURY SANDSTONE FORMATION - 'Ragstone').					
				(0.80)					
3.10 B				3.20 End of trial pit at 3.20 m depth.					
General notes: 1. All linear dimensions are in metres unless stated otherwise. 2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data. 3. Trial pit logged from the ground surface.									
Weather and environmental conditions: Clear and dry.									
Other comments: 1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey. 2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm. 3. Backfilled with arisings upon completion.									

1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey.
2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm.
3. Backfilled with arisings upon completion.

1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey.
2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm.
3. Backfilled with arisings upon completion.



Survey details:
Ground Level: 143.500 mOD
Easting: 854000 m
Northing: 447000 m
Bearing: -

Site Location: Land off Victoria Road, Warminster
Client: Persimmon Homes (Wessex) Ltd
Project No: 6271T

Excavation date: 19/10/2016	Excavation method/plant: Trial Pitting	Shoring/support: None
Backfill date: 19/10/2016	6T Tracked	
Logged by: LD		

Plan details:

Face A (Left), Face B (Top), Face C (Right), Face D (Bottom)

Width: 0.6

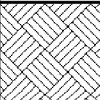
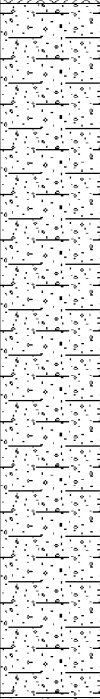
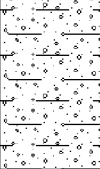
Height: 3.1

Face stability:

No stability issues.

TP20

Groundwater observations:
No groundwater encountered.

Sampling & Testing				Stratum Details		
Depth	Type	PID (ppm)	S _u (kPa)	(Thk) & Depth	Description	Legend
0.30	E			(0.35)	Soft dark brown to black slightly gravelly sandy CLAY with rootlets. Gravel is fine to coarse subangular sandstone. (TOPSOIL).	
0.55	E			0.35	Loose brown becoming green very clayey gravelly fine to coarse glauconitic SAND. Gravel is fine to coarse subangular to angular sandstone and fine to coarse angular flint. (Probable BOYNE HOLLOW CHERT MEMBER)	
1.25	D			(2.45)		
2.90	D			2.80	Medium dense grey to light grey slightly clayey very sandy fine to coarse angular to subangular sandstone GRAVEL. Becoming dense with depth. (Probable SHAFTESBURY SANDSTONE FORMATION - 'Ragstone').	
3.20	B			(0.60)		
				3.40	End of trial pit at 3.40 m depth.	

General notes:

1. All linear dimensions are in metres unless stated otherwise.
2. All relative density and shear strength descriptions are based only on field observations and available in-situ shear vane data.
3. Trial pit logged from the ground surface.

Weather and environmental conditions:
Clear and dry.

Other comments:

1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey.
2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm.
3. Backfilled with arisings upon completion.

1. Grid reference of centre of site only. Ground level approximate only interpolated from Topographical Survey.
2. Environmental samples 'E' consist of a plastic tub, amber glass jar and a vial. Environmental samples taken from the top 600mm.
3. Backfilled with arisings upon completion.

Appendix D

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:

Warminster South

Site Location:

Warminster, Wiltshire

Client:

Persimmon Homes (Wessex)

Project No:

6271t.02

Drilling method

Equipment

GEO 032

Ground Level:

137.00 mOD

Easting:

385287 m

Northing:

144777 m

Start date:

27/07/2021

End date:

27/07/2021

Backfill date:

27/07/2021

Driller:

SGT

Logged by:

CD

Date logged:

27/07/2021

WS201

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/Standing	Depth		Backfill/Installations
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD	
0.25	ES							Firm reddish brown sandy gravelly CLAY with low subangular to rounded cobble content. Gravel is fine to coarse subrounded of sandstone. Abundant gravel sized fragments of brick, metal and wood (MADE GROUND).			(0.60)		
0.50	D										0.60	136.40	
0.75	D							Brown slightly gravelly fine to coarse SAND with occasional angular sandstone cobbles. Gravel is fine to coarse angular of sandstone (BOYNE HOLLOW CHERT MEMBER).			(0.40)		
1.30	D		SPT-C	8 (3,2/2,2,2,2)				Loose becoming medium dense brown mottled green very clayey silty SAND with occasional angular sandstone cobbles (BOYNE HOLLOW CHERT MEMBER).			1.00	136.00	
1.90	D										(1.00)		
2.00 - 2.70	B		SPT-C	14 (15,14/4,3,4,3)				Medium dense becoming very dense green fine to medium glauconitic SAND (BOYNE HOLLOW CHERT MEMBER).			2.00	135.00	
											(0.80)		
			SPT-C	50 (15,9/50 for 255mm)				End of Borehole at 2.800m			2.80	134.20	
											3		
											4		

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth

General Remarks

1. Coordinates and ground level obtained from Garmin Etrex20 handheld GPS and should be considered approximate only.

2. Service plans inspected and position scanned with a cable avoidance tool prior to breaking ground.

3. 50mm gas and groundwater monitoring well installed with a response zone between 0.5 and 2.5 m depth.

4. Groundwater was not encountered.

[illegible]

Consulting Engineers | Geologists | Environmental Scientists

Client: Persimmon Homes
(Wessex)
Project No: 6271t.02

Ground Level:	137.00 mOD
Easting:	385250 m
Northing:	144710 m

Start date: 27/07/2021	Driller: SGT
End date: 27/07/2021	Logged by: CD
Backfill date: 27/07/2021	Date logged: 27/07/2021

[illegible]

1. Coordinates and ground level obtained from Garmin Etrex20 handheld GPS and should be considered approximate only.
2. Service plans inspected and position scanned with a cable avoidance tool prior to breaking ground.
3. 50mm gas and groundwater monitoring well installed with a response zone between 0.5 and 2.0m depth.
4. Groundwater was not encountered during construction of the borehole.

Consulting Engineers | Geologists | Environmental Scientists

Client: Persimmon Homes
(Wessex)
Project No: 6271t.02

Ground Level:	137.00 mOD
Easting:	385292 m
Northing:	144739 m

Start date: 27/07/2021	Driller: SGT
End date: 27/07/2021	Logged by: CD
Backfill date: 27/07/2021	Date logged: 27/07/2021

[illegible]

1. Coordinates and ground level obtained from Garmin Etrex20 handheld GPS and should be considered approximate only.
2. Service plans inspected and position scanned with a cable avoidance tool prior to breaking ground.
3. Borehole backfilled with arisings upon completion.
4. Groundwater was not encountered.

Consulting Engineers | Geologists | Environmental Scientists

Client: Persimmon Homes
(Wessex)
Project No: 6271t.02

Equipment
GEO 032

Ground Level:	137.00 mOD
Easting:	385278 m
Northing:	144690 m

Start date: 27/07/2021	Driller: SGT
End date: 27/07/2021	Logged by: CD
Backfill date: 27/07/2021	Date logged: 27/07/2021

[illegible]

1. Coordinates and ground level obtained from Garmin Etrex20 handheld GPS and should be considered approximate only.
2. Service plans inspected and position scanned with a cable avoidance tool prior to breaking ground.
3. Borehole backfilled with arisings upon completion.
4. Groundwater was not encountered.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:

Warminster South

Site Location:

Warminster, Wiltshire

Client:

Persimmon Homes (Wessex)

Project No:

6271t.02

Drilling method

Equipment

GEO 032

Ground Level:

137.00 mOD

Easting:

385321 m

Northing:

144698 m

Start date:

28/07/2021

End date:

28/07/2021

Backfill date:

28/07/2021

Driller:

SGT

Logged by:

CD

Date logged:

28/07/2021

WS205

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/Standing	Depth		Backfill/Installations
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD	
0.30	ES							Concrete (MADE GROUND).			(0.20)		
								Brown gravelly clayey SAND. Gravel is fine to coarse subangular to angular of sandstone (BOYNE HOLLOW CHERT MEMBER).			0.20	136.80	
0.60	D							Dense becoming very dense light grey gravelly fine to coarse SAND. Gravel is fine to coarse angular of light grey sandstone (SHAFTESBURY SANDSTONE MEMBER).			(0.20)		
											0.40	136.60	
1.00	D										(0.80)		
			SPT-C	50 (4,6/50 for 105mm)				End of Borehole at 1.200m			1		
											1.20	135.80	
											2		
											3		
											4		

Progress & Standing Water Levels					Water Strikes						Chiselling			Hole Diameter		Casing Diameter		
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth

General Remarks

1. Coordinates and ground level obtained from Garmin Etrex20 handheld GPS and should be considered approximate only.

2. Service plans inspected and position scanned with a cable avoidance tool prior to breaking ground.

3. Borehole backfilled with arisings upon completion.

4. Groundwater was not encountered.

Consulting Engineers | Geologists | Environmental Scientists

Client: Persimmon Homes
(Wessex)
Project No: 6271t.02

Ground Level:	137.00 mOD
Easting:	385352 m
Northing:	144724 m

Start date: 28/07/2021	Driller: SGT
End date: 28/07/2021	Logged by: CD
Backfill date: 28/07/2021	Date logged: 28/07/2021

[illegible]

1. Coordinates and ground level obtained from Garmin Etrex20 handheld GPS and should be considered approximate only.
2. Service plans inspected and position scanned with a cable avoidance tool prior to breaking ground.
3. 50mm gas and groundwater monitoring well installed with a response zone between 0.5 and 2.0m depth.
4. Groundwater was not encountered during construction of the borehole.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:

Warminster South

Site Location:

Warminster, Wiltshire

Client:

Persimmon Homes (Wessex)

Project No:

6271t.02

Drilling method

Equipment

GEO 032

Ground Level:

137.00 mOD

Easting:

385350 m

Northing:

144672 m

Start date:

28/07/2021

End date:

28/07/2021

Backfill date:

28/07/2021

Driller:

SGT

Logged by:

CD

Date logged:

28/07/2021

WS207

General Remarks

1. Coordinates and ground level obtained from Garmin Etrex20 handheld GPS and should be considered approximate only.

2. Service plans inspected and position scanned with a cable avoidance tool prior to breaking ground.

3. 50mm gas and groundwater monitoring well installed with a response zone between 0.5 and 2.5m depth.

4. Groundwater was not encountered during construction of the borehole.

Consulting Engineers | Geologists | Environmental Scientists

Client: Persimmon Homes
(Wessex)
Project No: 6271t.02

Ground Level:	137.00 mOD
Easting:	385379 m
Northing:	144691 m

Start date: 28/07/2021	Driller: SGT
End date: 28/07/2021	Logged by: CD
Backfill date: 28/07/2021	Date logged: 28/07/2021

[illegible]

1. Coordinates and ground level obtained from Garmin Etrex20 handheld GPS and should be considered approximate only.
2. Service plans inspected and position scanned with a cable avoidance tool prior to breaking ground.
3. 50mm gas and groundwater monitoring well installed with a response zone between 0.5 and 3.0m depth.
4. Groundwater was not encountered during construction of the borehole.

Earth Science Partnership Consulting Engineers Geologists Environmental Scientists				Excavation method/plant: Hand Tools		Shoring/support: None		HDP01				
Project Name: Warminster South				Excavation date: 28/07/2021								
Site Location: Warminster, Wiltshire				Backfill date: 28/07/2021								
Client: Persimmon Homes				Logged by: CD								
Project No: 6271t.02				Plan details: Face A Face B Face C		Face Stability: Stable		Groundwater observations: No Groundwater				
Survey details: Ground Level: 137.0 mOD Easting: 385332 mOD Northing: 144645 mOD Bearing:												
Depth		Sample		Test Details		Strata Details						
m		Type	Class	Type	Result	Description				Depth (thickness)	mOD	Legend
0.30		ES				Soft to firm brown slightly sandy gravelly SILT (TOPSOIL).				(0.30)	136.70	
						End of Trialpit at 0.300m				0.30		
										1.0		
Weather and environmental conditions:												
1. Intermittent Rain												
Other comments:												
1. Coordinates and ground level obtained from Garmin Etrex20 handheld GPS and should be considered approximate only.												
2. Service plans inspected and position scanned with a cable avoidance tool prior to breaking ground.												
3. Trial pit constructed with hand tools and backfilled with arisings upon completion.												
4. Groundwater was not encountered.												

Earth Science Partnership Consulting Engineers Geologists Environmental Scientists				Excavation method/plant: Hand Tools		Shoring/support: None		HDP03		
Project Name: Warminster South			Excavation date: 28/07/2021			Plan details: Face A Face B Face C				
Site Location: Warminster, Wiltshire Persimmon Homes			Backfill date: 28/07/2021							
Client: (Wessex)			Logged by: CD							
Project No: 6271t.02			Face Stability: Stable			Groundwater observations: No Groundwater				
Survey details: Ground Level: 137.0 mOD Easting: 385289 mOD Northing: 144668 mOD Bearing:										
Depth		Sample		Test Details		Strata Details				
m	Type	Class	Type	Result	Description	Depth (thickness)	mOD	Legend		
0.35	ES				Soft to firm brown mottled black sandy gravelly CLAY. Occasional plastic and wood (Probably reworked natural material - MADE GROUND).	(0.50)	136.50			
					End of Trialpit at 0.500m	0.50				
						1.0				
Weather and environmental conditions:										
1. Intermittent Rain										
Other comments:										
1. Coordinates and ground level obtained from Garmin Etrex20 handheld GPS and should be considered approximate only.										
2. Service plans inspected and position scanned with a cable avoidance tool prior to breaking ground.										
3. Trial pit constructed with hand tools and backfilled with arisings upon completion.										
4. Groundwater was not encountered.										

Appendix E

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Windowless Sampler

Equipment
Dando Terrier MK1

Ground Level:
139.00 mOD

Easting:
385357 m

Northing:
144676 m

Start date:
04/06/2024

End date:
04/06/2024

Backfill date:
04/06/2024

Driller:
SGT - NJ/EA

Logged by:
NS

Date logged:
04/06/2024

WS01

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Install- ations
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD	
0.20 0.30	ES ES							Light grey CONCRETE over a thin bed of medium to coarse angular light grey siltstone GRAVEL. (MADE GROUND)			(0.25) 0.25	138.75	
0.60	ES							Black and dark green loose slightly gravelly silty SAND. Gravel of medium to fine sub-angular glauconitic sandstone. Strong hydrocarbon odour. (Interpreted as Grade E UPPER GREENSAND FORMATION - Potentially Contaminated)			(1.05) 1		
1.00	D		SPT	10 (2,2/3,2,2,3)				Dark green mottled brown becoming green medium loose slightly gravelly silty SAND. Gravel of medium to fine sub-angular glauconitic sandstone. (Interpreted as Grade E UPPER GREENSAND FORMATION)			1.30	137.70	
2.00	D		SPT	14 (1,2/2,3,4,5)	100			At 1.75 - 1.8m depth: Thin bed of light green slightly sandy silty/clayey medium to coarse sub-angular glauconitic sandstone GRAVEL.			(1.20) 2		
2.50 - 2.70	D				100			Very strong to strong light green glauconitic fine- to medium-grained SANDSTONE. (Grade A UPPER GREENSAND FORMATION)			2.50 (0.20)	136.50	
2.90 - 3.00	D		SPT	50 (2,15/50 for 150mm)				Recovered as: Slightly sandy medium to coarse angular to sub-angular GRAVEL.			2.70 (0.30) 3.00	136.30 136.00	
								Green slightly gravelly silty SAND. Gravel of medium to fine sub-angular glauconitic sandstone. (Interpreted as Grade E UPPER GREENSAND FORMATION)					
								End of Borehole at 3.000m					
											4		
											5		
											6		

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
															2.00 3.00	86 76		

General Remarks

1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. No groundwater encountered.

4. BH refused at 3.0m depth on probable bedrock. (See SPT-3.0m results)

5. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 0.5 and 3.0m depth.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential
Development
Site Location:
Bugley Farm, Warminster

Drilling method
Windowless Sampler

Equipment
Dando Terrier MK1

Ground Level:	137.50 mOD
Easting:	385342 m
Northing:	144629 m

WS02

Start date: 04/06/2024

Driller: SGT - NJ/EA

End date: 04/06/2024

Logged by: NS

Backfill date: 04/06/2024

Date logged: 04/06/2024

Client:

Keepmoat Homes Ltd

Project No:

8917

[illegible]

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
															2.00 3.00	86 76		

General Remarks

- Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.
- Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.
- No groundwater encountered.
- Borehole terminated at 3.0m depth for well installation.
- 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 1.0 and 3.0m depth.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Windowless Sampler

Equipment
Dando Terrier MK1

Ground Level:
135.00 mOD

Easting:
385498 m

Northing:
144653 m

Start date:
06/06/2024

End date:
06/06/2024

Backfill date:
06/06/2024

Driller:
SGT - NJ/EA

Logged by:
AC

Date logged:
06/06/2024

WS03

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Install- ations	
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD		
0.30	ES				100			Soft dark brown sandy gravelly CLAY with occasional rootlets up to 4cm long. Gravel is sub angular fine to coarse sandstone. Sand is fine to coarse. (TOPSOIL)			(0.55)			
0.60	ES							Soft light brown slightly sandy gravelly CLAY. Gravel is sub angular fine to coarse sandstone. Sand is fine to coarse. (Possible ALLUVIUM)			0.55	134.45		
1.00	ES		SPT	6 (0,0/1,1,2,2)	50			AZCL [Assessed Zone of Core Loss] (Possible ALLUVIUM)			1.00	134.00		
1.50	D							Soft dark brown sandy gravelly CLAY. Gravel is sub angular fine to coarse sandstone. Sand is fine to coarse. (Possible ALLUVIUM)			1.50	133.50		
1.80	ES		SPT	2 (0,0/0,0,1,1)	100			Very soft light brown slightly sandy gravelly CLAY. Gravel is sub angular fine to coarse sandstone. Sand is fine to coarse. (Possible ALLUVIUM)			1.70	133.30		
2.50	D							Very loose brown mottled light brown slightly gravelly fine to coarse SAND. Gravel is sub angular to sub rounded fine to medium sandstone. (Probable Grade E UPPER GREENSAND FORMATION)			2.45	132.55		
			SPT	7 (2,4/3,2,1,1)	50			AZCL [Assessed Zone of Core Loss] (Probable Grade E UPPER GREENSAND FORMATION) From 3.00m depth: Becomes medium dense.			3.00	132.00		
3.60	D							Loose becoming medium dense with depth brown mottled light brown slightly gravelly fine to coarse SAND. Gravel is sub angular to sub rounded fine to medium sandstone. (Probable Grade E UPPER GREENSAND FORMATION)			3.50	131.50		
3.60	ES		SPT	12 (1,2/2,3,3,4)	100						4.60	130.40		
4.50	D							Medium dense dark greyish green slightly gravelly fine to coarse SAND. Gravel is sub angular to sub rounded fine to medium sandstone. (Interpreted as Grade E UPPER GREENSAND FORMATION) End of Borehole at 4.900m			4.90	130.10		
			SPT	50 (25 for 75mm/50 for 150mm)							5			
											6			

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
					06/06/2024	12:00	3.00		60.00	0.00					2.00 3.00 4.00 4.90	86 86 86 76		

General Remarks

1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. Medium groundwater inflow encountered at 3.00m.

4. A 50mm diameter gas monitoring well installed upon completion with a response zone between 1.00m and 4.90m.

5. Borehole terminated early due to very dense / very stiff ground conditions.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Windowless Sampler

Equipment
Dando Terrier MK1

Ground Level:
136.00 mOD

Easting:
385454 m

Northing:
144731 m

Start date:
06/06/2024

End date:
06/06/2024

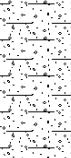
Backfill date:
06/06/2024

Driller:
SGT - NJ/EA

Logged by:
AC

Date logged:
06/06/2024

WS04

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Installations
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD	
0.30	ES							Grass over soft dark brown slightly sandy gravelly CLAY with occasional rootlets up to 6cm long. Gravel is sub angular fine to coarse sandstone. Sand is fine. (TOPSOIL)			(0.40)		
0.60	ES							Soft light brown sandy gravelly CLAY. Gravel is sub angular fine to coarse sandstone. Sand is fine to coarse. (Probable Grade E UPPER GREENSAND FORMATION)			0.40	135.60	
1.00	ES		SPT	7 (3,5/2,2,1,2)							(1.1q)		
1.60	D				100			Loose dark green silty fine to coarse SAND. (Interpreted as Grade E UPPER GREENSAND FORMATION)			1.50	134.50	
			SPT	25 (2,2/7,6,6,6)				Medium dense light green mottled light grey clayey gravelly fine to coarse SAND. Gravel is sub angular fine to coarse sandstone. (Interpreted as Grade E UPPER GREENSAND FORMATION)			(0.35)	134.15	
2.50	D				100						1.85		
2.60	ES										2		
			SPT	45 (10,14/13,10,10,12)							(1.15)		
								End of Borehole at 3.000m			3.00	133.00	
											4		
											5		
											6		

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
															2.00 3.00	86 76		

General Remarks

1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. No groundwater encountered.

4. A 50mm diameter gas monitoring well installed upon completion with a response zone between 1.00m and 3.00m.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Windowless Sampler

Equipment
Dando Terrier MK1

Ground Level:
136.00 mOD

Easting:
385566 m

Northing:
144725 m

Start date:
06/06/2024

End date:
06/06/2024

Backfill date:
06/06/2024

Driller:
SGT - NJ/EA

Logged by:
AC

Date logged:
06/06/2024

WS05

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Installations	
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD		
0.20	ES							Grass over soft dark brown slightly sandy gravelly CLAY with occasional rootlets up to 6cm long. Gravel is sub angular fine to coarse sandstone. Sand is fine. (TOPSOIL)			(0.50)			
0.60	ES							Very soft light brown sandy gravelly CLAY. Gravel is sub angular fine to coarse sandstone. Sand is fine to coarse. (Possible ALLUVIUM)			0.50	135.50		
1.00	ES		SPT	4 (1,1/1,1,1,1)							(1.10)			
1.60	ES				100						1.60 (0.30)	134.40		
2.10	D		SPT	5 (1,1/0,1,2,2)	100			Soft light brown mottled greyish green sandy gravelly CLAY. Gravel is sub angular to sub rounded fine to coarse sandstone. Sand is fine to coarse. (Interpreted as Grade E UPPER GREENSAND FORMATION)			1.90 2 (0.40)	134.10		
			SPT	50 (25 for 75mm/50 for 150mm)				Loose light greyish green very gravelly fine to coarse SAND. Gravel is sub angular to sub rounded fine to medium sandstone. (Interpreted as Grade E UPPER GREENSAND FORMATION)			2.30	133.70		
								End of Borehole at 2.300m						
											3			
											4			
											5			
											6			

Progress & Standing Water Levels					Water Strikes						Chiselling			Hole Diameter		Casing Diameter		
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
					06/06/2024	12:00	2.10		60.00	2.00					2.00 2.30	86 76		

General Remarks

1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. Medium inflow groundwater encountered at 2.10m. 4. Upon completion boreholes backfilled with arising.

5. Borehole terminated early due to very dense / very stiff ground conditions.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Windowless Sampler

Equipment
Dando Terrier MK1

Ground Level:
139.00 mOD

Easting:
385211 m

Northing:
144676 m

Start date:
05/06/2024

End date:
05/06/2024

Backfill date:
05/06/2024

Driller:
SGT - NJ/EA

Logged by:
AC

Date logged:
05/06/2024

WS06

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Installations
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD	
0.30	ES							Grass over soft dark brown slightly sandy gravelly CLAY with occasional rootlets up to 10cm long. Gravel is sub angular fine to coarse sandstone. Sand is fine. (TOPSOIL)			(0.45)		
0.60	ES							Firm light brown sandy gravelly CLAY with low cobble content. Gravel is sub angular fine to coarse sandstone. Cobbles are sub rounded sandstone. Sand is fine to coarse. (Interpreted as Grade E UPPER GREENSAND FORMATION)			0.45	138.55	
1.00	ES		SPT	7 (1,2/1,2,2,2)				Soft light brown slightly gravelly sandy CLAY. Gravel is sub angular fine to coarse sandstone. Sand is fine to coarse. (Interpreted as Grade E UPPER GREENSAND FORMATION)			(0.75)		
1.80	D		SPT	3 (0,1/0,1,1,1)	100			Very soft light brown mottled brown very sandy CLAY with occasional lenses of gravel. Gravel is sub rounded fine to medium sandstone. Sand is fine to coarse. (Interpreted as Grade E UPPER GREENSAND FORMATION)			1	137.80	
2.20	ES		SPT	16 (1,1/2,5,4,5)	100			End of Borehole at 3.000m			(0.30)	137.50	
											1.20		
											1.50		
											2		
											(1.50)		
											3.00	136.00	
											4		
											5		
											6		

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
															2.00	86		
															3.00	76		

General Remarks

1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. No groundwater encountered.

4. Upon completion boreholes backfilled with arising.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential
Development
Site Location:
Bugley Farm, Warminster

Drilling method

Windowless Sampler

Equipment
Dando Terrier MK1

Ground Level: 138.00 mOD

Easting: 385230 m

Northing: 144637 m

WS07

Start date: 05/06/2024

Driller: SGT - NJ/EA

End date: 05/06/2024

Logged by: AC

Backfill date: 05/06/2024

Date logged: 05/06/2024

Client:

Keepmoat Homes Ltd

Project No:

8917

[illegible]

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
															2.00 3.00	86 76		

General Remarks

1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.
2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth
3. No groundwater encountered.
4. Upon completion boreholes backfilled with arising.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Windowless Sampler

Equipment
Dando Terrier MK1

Ground Level:
136.00 mOD

Easting:
385247 m

Northing:
144586 m

Start date:
05/06/2024

End date:
05/06/2024

Backfill date:
05/06/2024

Driller:
SGT - NJ/EA

Logged by:
AC

Date logged:
05/06/2024

WS08

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water	Depth		Backfill/Installations
	Type	Class	Type	Result				Description	Legend		Strikes/Standing	Depth (Thickness)	
0.20	ES							Grass over soft dark brown slightly sandy gravelly CLAY with occasional rootlets up to 10cm long. Gravel is sub angular fine to coarse sandstone. Sand is fine. (TOPSOIL)			(0.40)		
0.60	ES							Soft light brown sandy gravelly CLAY with low cobble content. Gravel is sub angular fine to coarse sandstone. Cobbles are sub rounded sandstone. Sand is fine to coarse. (Possible Grade E UPPER GREENSAND FORMATION)			0.40	135.60	
1.00	ES		SPT	5 (1,2/2,1,1,1)				Soft light brown slightly gravelly sandy CLAY. Gravel is sub angular fine to coarse sandstone. Sand is fine to coarse. (Possible Grade E UPPER GREENSAND FORMATION)			(0.80)		
					100			Very soft light brown mottled brown very sandy CLAY with occasional lenses of gravel. Gravel is sub rounded fine to medium sandstone. Sand is fine to coarse. (Possible Grade E UPPER GREENSAND FORMATION)			1.20	134.80	
2.00	ES		SPT	3 (1,0/1,0,1,1)							(0.40)	134.40	
					80						2		
											(1.10)		
2.80	D		SPT	11 (2,2/2,2,3,4)				Firm light brown mottled brown very sandy CLAY with occasional lenses of gravel. Gravel is sub rounded fine to medium sandstone. Sand is fine to coarse. (Possible Grade E UPPER GREENSAND FORMATION)			2.70	133.30	
								End of Borehole at 3.00m			(0.30)	133.00	
											3.00		
											4		
											5		
											6		

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
															2.00 3.00	86 76		

General Remarks

1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. No groundwater encountered.

4. A 50mm diameter gas monitoring well installed upon completion with a response zone between 1.00m and 3.00m.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Windowless Sampler

Equipment
Dando Terrier MK1

Ground Level:
139.00 mOD

Easting:
385158 m

Northing:
144637 m

Start date:
05/06/2024

End date:
05/06/2024

Backfill date:
05/06/2024

Driller:
SGT - NJ/EA

Logged by:
AC

Date logged:
05/06/2024

WS09

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Installations
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD	
0.30	ES							Grass over soft dark brown sandy CLAY with occasional rootlets up to 5cm long. Gravel is sub angular fine to coarse sandstone. Sand is fine.			(0.40)		
0.60	ES							(TOPSOIL)			0.40	138.60	
1.00	ES		SPT	6 (2,2/2,1,1,2)				Firm light brown sandy gravelly CLAY with low cobble content. Gravel is sub angular fine to coarse sandstone. Cobbles are sub rounded sandstone. Sand is fine to coarse. (Possible Grade E UPPER GREENSAND FORMATION)			(0.80)		
2.00	D		SPT	17 (1,2/2,4,5,6)	100			Loose light greyish green silty gravelly fine to coarse SAND. Gravel is sub angular fine to medium sandstone. (Interpreted as Grade E UPPER GREENSAND FORMATION)			1.20	137.80	
					100			From 1.60m to 1.70m depth: Lense of silty sandy sub angular fine to coarse GRAVEL of sandstone.			(0.60)		
								Stiff dark greyish green slightly gravelly very sandy CLAY. Gravel is sub angular fine to medium sandstone. Sand is fine to coarse. (Interpreted as Grade E UPPER GREENSAND FORMATION)			1.80	137.20	
								Medium dense light greyish green silty gravelly fine to coarse SAND. Gravel is sub angular fine to medium sandstone. (Interpreted as Grade E UPPER GREENSAND FORMATION)			2.35	136.65	
			SPT	50 (25 for 75mm/50 for 150mm)				End of Borehole at 2.600m			2.60	136.40	
											3		
											4		
											5		
											6		

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
															2.00	86		
															2.60	76		

General Remarks

1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. No groundwater encountered.

4. A 50mm diameter gas monitoring well installed upon completion with a response zone between 0.50m and 2.60m.

5. Borehole terminated early due to very dense / very stiff ground conditions.

[illegible]

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Windowless Sampler

Equipment
Dando Terrier MK1

Ground Level:
137.00 mOD

Eastings:
385055 m

Northing:
144515 m

Start date:
05/06/2024

End date:
05/06/2024

Backfill date:
05/06/2024

Driller:
SGT - NJ/EA

Logged by:
AC

Date logged:
05/06/2024

WS11

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Installations	
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD		
0.20	ES							Grass over soft dark brown slightly sandy gravelly CLAY with occasional rootlets up to 9cm long. Gravel is sub angular fine to coarse sandstone. Sand is fine. (TOPSOIL)			(0.40)			
0.60	ES							Firm light brown slightly sandy gravelly CLAY with low cobble content. Gravel is sub angular fine to coarse sandstone. Cobbles are sub rounded sandstone. Sand is fine to coarse. (Possible Grade E UPPER GREENSAND FORMATION)			0.40	136.60		
1.00	ES		SPT	6 (2,2/2,1,2,1)				Light greyish green silty gravelly fine to coarse SAND. Gravel is sub angular fine to medium sandstone. (Interpreted as Grade E UPPER GREENSAND FORMATION)			(0.70)			
1.70	D				100			Loose light greyish green clayey gravelly fine to coarse SAND. Gravel is sub angular fine to medium sandstone. (Interpreted as Grade E UPPER GREENSAND FORMATION)			1 1.10 1.20	135.90 135.80		
2.50	D		SPT	10 (1,0/2,4,2,2)				Loose to medium dense light greyish green mottled grey slightly clayey very sandy sub angular fine to coarse GRAVEL of sandstone. Sand is fine to coarse. (Interpreted as Grade E UPPER GREENSAND FORMATION)			(0.70)			
			SPT	50 (12,12/50 for 150mm)	100			End of Borehole at 2.700m			1.90 2	135.10		
											(0.80)			
											2.70	134.30		
											3			
											4			
											5			
											6			

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
															2.00 2.70	86 76		

General Remarks

1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. No groundwater encountered. 4. Upon completion boreholes backfilled with arising.

5. Borehole terminated early due to very dense / very stiff ground conditions.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:

Proposed Residential Development

Site Location:

Bugley Farm, Warminster

Client:

Keepmoat Homes Ltd

Project No:

8917

Drilling method

Windowless Sampler

Equipment

Dando Terrier MK1

Ground Level:

136.00 mOD

Easting:

385075 m

Northing:

144469 m

Start date:

05/06/2024

Driller:

SGT - NJ/EA

End date:

05/06/2024

Logged by:

AC

Backfill date:

05/06/2024

Date logged:

05/06/2024

Depth

0.10

0.60

1.00

2.10

2.50

2.80

Sample

ES

ES

ES

ES

D

D

Class

Test Details

Type

Result

SPT

5 (1,1/1,1,2,1)

SPT

18 (2,2/4,5,4,5)

SPT

50 (8,15/50 for 150mm)

TCR (%)

100

90

Water Depth

Casing Depth

Strata Details

Description

Legend

Grass over soft dark brown slightly sandy gravelly CLAY with occasional rootlets up to 10cm long. Gravel is sub angular fine to coarse sandstone. Sand is fine. (TOPSOIL)

Soft to firm light brown slightly sandy gravelly CLAY with low cobble content. Gravel is sub angular fine to coarse sandstone. Cobbles are sub rounded sandstone. Sand is fine to coarse. (Possible Grade E UPPER GREENSAND FORMATION)

Soft light brown sandy gravelly CLAY. Gravel is sub angular fine to coarse sandstone. Sand is fine to coarse. (Possible Grade E UPPER GREENSAND FORMATION)

Medium dense dark greyish green slightly clayey slightly gravelly fine to coarse SAND. Gravel is sub rounded fine to medium sandstone. (Interpreted as Grade E UPPER GREENSAND FORMATION)

End of Borehole at 3.000m

Water

Strikes/ Standing

Depth (Thickness)

mOD

Backfill/ Install-ations

Progress & Standing Water Levels

Date

Time

Hole Depth

Casing Depth

Water Depth

Water Strikes

Date

Time

Strike Depth

Casing Depth

Elapsed Minutes

Depth to Water

Depth Sealed

Chiselling

Depth Top

Depth Base

Duration

Hole Diameter

Hole Depth

Hole Diameter

Casing Diameter

Casing Diameter

Casing Depth

General Remarks

1. Co-ordinates and ground levels of investigation points obtained by a GPS Survey undertaken upon completion of site works.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. No groundwater encountered.

4. A 50mm diameter gas monitoring well installed upon completion with a response zone between 1.00m and 3.00m.

Appendix F

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Cable Percussive Drilling

Equipment
Dando 2500 Cable Percussive Rig

Ground Level:
139.50 mOD

Easting:
385257 m

Northing:
144717 m

Start date:
29/05/2024

End date:
29/05/2024

Backfill date:
29/05/2024

Driller:
Jackson Drilling - AR/LP

Logged by:
NS

Date logged:
29/05/2024

CP01

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Installations
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD	
0.30 0.30 0.50 0.50	B ES B ES							Grass over soft loose black slightly fine angular gravelly sandy CLAY with frequent rootlets. (TOPSOIL)			(0.10) 0.10 (0.50) 0.60	139.40 138.90	
1.00 1.20 1.20 - 1.70 1.20 - 1.70	D B D SPT		SPT	9 (1,1/2,1,3,3)				Soft slightly dense dark brown mottled brown sandy fine to coarse angular gravelly CLAY with medium angular cobble content and rare thin rootlets. Gravel and cobbles of white and green sandstone and occasional blue-grey siltstone, brick and concrete fragments. (MADE GROUND)			1		
2.00 2.00 - 2.50 2.00 - 2.50	B D SPT		SPT	27 (8,8/5,4,8,10)		1.70		Green loose becoming dense slightly gravelly silty fine to medium glauconitic SAND. Fine to medium gravel of sub-angular white sandstone. (Interpreted Grade E UPPER GREENSAND FORMATION)			(2.60) 2		
3.00 3.00 - 3.40 3.00 - 3.40 3.40 - 3.50	B D SPT B		SPT SPT-C	50 (8,10/50 for 120mm) 50 (25 for 20mm/50 for 30mm)		3.00 3.00		Strong to very strong light green glauconitic fine- to medium-grained SANDSTONE. (Grade A UPPER GREENSAND FORMATION)			3 3.20 (0.30) 3.50	136.30 136.00	
								Recovered as: Small sub-angular cobbles and coarse angular to sub angular gravel.			4 5 6		
								End of Borehole at 3.500m					

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
												3.50	3.50	00:30	3.50	150	150	3.00

General Remarks

1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. No groundwater encountered.

4. BH refused at 3.4m depth on probable bedrock.

5. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 1.0 and 3.4m.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Cable Percussive Drilling

Equipment
Dando 2500 Cable Percussive Rig

Ground Level:
139.20 mOD

Easting:
385363 m

Northing:
144680 m

Start date:
29/05/2024

End date:
29/05/2024

Backfill date:
29/05/2024

Driller:
Jackson Drilling - AR/LP

Logged by:
NS

Date logged:
29/05/2024

CP02

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Installations	
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD		
0.30	B							Black loose slightly sandy clayey medium to coarse sub-angular GRAVEL. (MADE GROUND)			(0.10)	139.10		
0.30	ES							Soft loose black fine to coarse angular gravelly very sandy CLAY with occasional wood fragments. Gravel of grey siltstone, brick, concrete and other building rubble. (MADE GROUND)			0.10 (0.40)			
0.60	B										0.50	138.70		
0.60	ES										(0.20) 0.70	138.50		
1.00	D							Dark green-brown medium loose slightly fine to medium sub-angular gravelly slightly silty medium to fine glauconitic SAND. Gravel of brick fragments and white sandstone. (MADE GROUND)			1			
1.20	B		SPT	6 (1,1/1,1,2,2)										
1.20 - 2.00	D													
1.20 - 2.00	SPT													
2.00	B		SPT	22 (2,1/3,3,10,6)			1.70				(2.55)			
2.00 - 2.50	D													
2.00 - 2.50	SPT													
3.00	SPT		SPT	50 (6,10/50 for 125mm)			3.00				3			
3.35 - 3.40	B		SPT-C	50 (25 for 20mm/50 for 30mm)			3.00	Strong to very strong light green glauconitic fine- to medium-grained SANDSTONE. (Grade A UPPER GREENSAND FORMATION) Recovered as: Small sub-angular cobbles and coarse angular to sub angular gravel.			3.25 (0.15) 3.40	135.95 135.80		
								End of Borehole at 3.400m						
											4			
											5			
											6			

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
												3.30	3.40	01:00	3.40	150	150	3.00

General Remarks

1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. No groundwater encountered.

4. BH refused at 3.4m depth on probable bedrock.

5. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 1.0 and 3.5m.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential
Development
Site Location:
Bugley Farm, Warminster

Drilling method
Cable Percussive Drilling

Equipment
Dando 2500 Cable Percussive Rig

Ground Level: 137.00 mOD

Easting: 385298 m

Northing: 144629 m

CP03

Start date: 30/05/2024

Driller: Jackson Drilling - AR/LP

End date: 30/05/2024

Logged by: NS

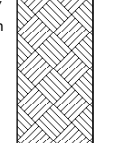
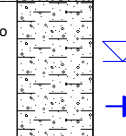
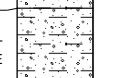
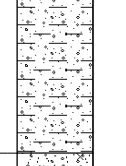
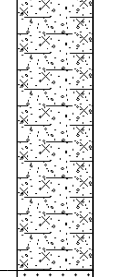
Date logged: 30/05/2024

Client:

Keepmoat Homes Ltd

Project No:

8917

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Installations
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD	
0.20	ES							Grass over soft brown gravelly very sandy silty CLAY with frequent fine rootlets and occassional medium roots . Fine to coarse angular gravel of white and pale green glauconitic sandstone. (TOPSOIL)					
0.50	ES										(1.00)		
1.00	D							Very soft brown mottled orange-brown slightly gravelly sandy CLAY with low cobble content. Fine to medium sub-angular gravel and cobbles of glauconitic sandstone and weak green sandstone. Occassional fine to medium sub-rounded gravel of chert. (Interpreted Grade E UPPER GREENSAND FORMATION)			1.00	136.00	
1.20 - 1.70	B		SPT	4 (1,1/1,1,1,1)							(1.00)		
1.20 - 1.70	D												
2.00 - 2.50	B		SPT-C	4 (1,1/1,1,1,1)		1.5	1.70	Very soft light brown gravelly very sandy CLAY. Gravel of fine to medium sub-angular glauconitic sandstone. (Interpreted Grade E UPPER GREENSAND FORMATION)			2.00	135.00	
2.00 - 2.50	D										(0.50)		
								Very soft to soft light brown mottled green gravelly very sandy silty CLAY. Gravel of fine to medium sub-angular glauconitic sandstone. (Interpreted Grade E UPPER GREENSAND FORMATION)			2.50	134.50	
3.00	SPT		SPT	12 (2,3/2,3,4)		1.5	3.00				3		
											(1.50)		
3.50 - 4.00	B												
3.50 - 4.00	D												
4.00 - 4.50	B		SPT-C	14 (2,3/3,3,4,4)		1.5	4.00	Green medium dense slightly fine angular gravelly silty/clayey fine to medium SAND. (Interpreted Grade D UPPER GREENSAND FORMATION)			4.00	133.00	
4.00 - 4.50	D												
5.00 - 5.50	B		SPT-C	16 (3,3/4,4,4,4)		1.5	4.50				(1.90)		
5.00 - 5.50	D												
6.00	B		SPT-C	50 (25 for 75mm/50 for		1.4	5.90	Strong to very strong pale green glauconitic			5.90	131.10	
											(0.10)	131.00	

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
					30/05/2024	12:00	1.70	1.20	20.00	1.40		5.90	6.00	00:30	6.00	150	150	6.00

General Remarks

1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.
2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.
3. Groundwater strike at 1.7m depth, rising to 1.4m after 20 minutes.
4. BH refused at 6.0m depth on probable bedrock.
5. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 1.5 and 6.0m.

Earth Science Partnership Consulting Engineers Geologists Environmental Scientists						Project Name: Proposed Residential Development Site Location: Bugley Farm, Warminster Client: Keepmoat Homes Ltd Project No: 8917		Drilling method Cable Percussive Drilling Equipment Dando 2500 Cable Percussive Rig Ground Level: 137.00 mOD Eastings: 385298 m Northing: 144629 m			CP03							
Start date: 30/05/2024 End date: 30/05/2024 Backfill date: 30/05/2024			Driller: Jackson Drilling - AR/LP Logged by: NS Date logged: 30/05/2024															
Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water	Depth		Backfill/Installations					
	Type	Class	Type	Result				Description	Legend		Strikes/Standing	Depth (Thickness)		mOD				
				10mm)				Strong to very strong pale green glauconitic SANDSTONE. (Grade A UPPER GREENSAND FORMATION) Recovered as: Small sub-angular cobbles and coarse angular to sub angular gravel. End of Borehole at 6.000m				6.00						
												7						
												8						
												9						
												10						
												11						
												12						
Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
					30/05/2024	12:00	1.70	1.20	20.00	1.40		5.90	6.00	00:30	6.00	150	150	6.00
General Remarks																		
1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey. 2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth. 3. Groundwater strike at 1.7m depth, rising to 1.4m after 20 minutes. 4. BH refused at 6.0m depth on probable bedrock. 5. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 1.5 and 6.0m.																		

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:

Proposed Residential Development

Site Location:

Bugley Farm, Warminster

Client:

Keepmoat Homes Ltd

Project No:

8917

Drilling method

Cable Percussive Drilling

Equipment

Dando 2500 Cable Percussive Rig

Ground Level:

136.50 mOD

Easting:

385418 m

Northing:

144672 m

Start date:

30/05/2024

Driller:

Jackson Drilling - AR/LP

End date:

30/05/2024

Logged by:

NS

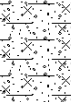
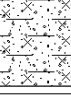
Backfill date:

30/05/2024

Date logged:

30/05/2024

CP04

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Installations
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD	
0.30	ES							Grass over soft dark brown slightly gravelly CLAY with frequent fine rootlets and low cobble content. Fine to coarse gravel and cobbles of sub-angular glauconitic sandstone. (TOPSOIL)			(0.70)		
0.50	ES										0.70	135.80	
1.00	D							Green loose to medium dense slightly gravelly silty fine to medium glauconitic SAND with low cobble content. Gravel and cobbles of sub-angular glauconitic sandstone. (Interpreted Grade D UPPER GREENSAND FORMATION)			1		
1.20	B		SPT	11 (5,4/4,5,1,1)							(1.35)		
1.20 - 1.70	D												
1.20 - 1.70	SPT												
2.10	B		SPT-C	50 (25 for 75mm/50 for 30mm)			1.70	Strong to very strong pale green glauconitic SANDSTONE. (Grade A UPPER GREENSAND FORMATION)			2.05 (0.05)	134.45 134.40	
								Recovered as: Small sub-angular cobbles and coarse angular to sub angular gravel.			2.10		
								End of Borehole at 2.100m					
											3		
											4		
											5		
											6		

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
												2.00	2.10	00:30	2.10	150	150	1.70

General Remarks

1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit refused at 1.1m depth on sandstone cobble.

3. No groundwater encountered.

4. BH refused at 2.1m depth on probable bedrock.

5. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 1.0 and 2.1m.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Cable Percussive Drilling

Equipment
Dando 2500 Cable Percussive Rig

Ground Level:
135.20 mOD

Easting:
385408 m

Northing:
144629 m

Start date:
31/05/2024

End date:
31/05/2024

Backfill date:
31/05/2024

Driller:
Jackson Drilling - AR/LP

Logged by:
NS

Date logged:
31/05/2024

CP05

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Installations
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD	
0.20	ES							Grass over soft brown gravelly very sandy silty CLAY with frequent fine rootlets and occasional medium roots . Fine to coarse angular gravel of white and pale green glauconitic sandstone. (TOPSOIL)			(0.40)		
0.60	ES							Very soft to soft grey-brown becoming grey gravelly very sandy CLAY with low cobble content and rare brick fragment. Gravel and cobbles of sub-angular glauconitic sandstone. (MADE GROUND)			0.40	134.80	
1.00	D										(0.80)		
1.20	B		SPT	4 (1,1/1,1,1,1)							1	134.00	
1.20 - 1.70	D										1.20		
1.20 - 1.70	SPT							Very soft to soft brown gravelly very sandy CLAY with occasional extremely weak green sandstone lithorelics. Fine to coarse gravel of sub-angular glauconitic sandstone. (Interpreted Grade E UPPER GREENSAND FORMATION)					
2.00	B		SPT	6 (1,1/2,1,2,1)		1.7	1.70				2		
2.00 - 2.50	D										(1.80)		
2.00 - 2.50	SPT												
3.00	B		SPT	11 (1,1/2,3,3,3)		1.7	3.00				3.00	132.20	
3.00 - 3.50	SPT							Green loose very gravelly clayey fine to medium glauconitic SAND. Gravel of fine angular to sub-rounded white sandstone, red sandstone and chert. (Interpreted Grade E UPPER GREENSAND FORMATION)			(0.30)	131.90	
			SPT-C	22 (3,4/4,5,5,8)		1.7	4.00	Green loose to medium dense very sandy very clayey medium to coarse sub-angular glauconitic sandstone GRAVEL. (Interpreted Grade E UPPER GREENSAND FORMATION)			(1.10)		
4.50 - 5.00	B										4		
4.50 - 5.00	D							Green medium dense clayey fine to medium glauconitic SAND. (Interpreted Grade D UPPER GREENSAND FORMATION)			4.40	130.80	
5.00 - 5.50	B		SPT-C	20 (3,3/4,5,5,6)		1.7	5.00				5		
5.00 - 5.50	D										(1.80)		
6.00	SPT		SPT	50 (6,8/50 for 150mm)		1.7	6.00				6		

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
					31/05/2024	12:00	2.30	1.70	20.00	1.70		6.20	6.30	00:30	6.30	150	150	6.30

General Remarks

1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. Groundwater strike at 2.3m depth, rising to 1.7m after 20 minutes.

4. BH refused at 6.3m depth on probable bedrock.

5. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 2.0 and 6.3m.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:

Proposed Residential Development

Site Location:

Bugley Farm, Warminster

Client:

Keepmoat Homes Ltd

Project No:

8917

Drilling method

Cable Percussive Drilling

Equipment

Dando 2500 Cable Percussive Rig

Ground Level:

135.20 mOD

Easting:

385408 m

Northing:

144629 m

Start date:

31/05/2024

Driller:

Jackson Drilling - AR/LP

End date:

31/05/2024

Logged by:

NS

Backfill date:

31/05/2024

Date logged:

31/05/2024

CP05

Depth	Sample		Test Details		TCR (%)	Water Depth	Casing Depth	Strata Details		Water Strikes/ Standing	Depth		Backfill/ Installations
	Type	Class	Type	Result				Description	Legend		Depth (Thickness)	mOD	
6.30	B		SPT-C	50 (25 for 115mm/50 for 30mm)		1.7	6.30	Green medium dense clayey fine to medium glauconitic SAND. (Interpreted Grade D UPPER GREENSAND FORMATION) Strong to very strong light green glauconitic fine- to medium-grained SANDSTONE. (Grade A UPPER GREENSAND FORMATION) End of Borehole at 6.300m			6.20	129.00	
											(0.10)	128.90	
											6.30		

Progress & Standing Water Levels					Water Strikes							Chiselling			Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed	Depth Top	Depth Base	Duration	Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
					31/05/2024	12:00	2.30	1.70	20.00	1.70		6.20	6.30	00:30	6.30	150	150	6.30

General Remarks

1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. Groundwater strike at 2.3m depth, rising to 1.7m after 20 minutes.

4. BH refused at 6.3m depth on probable bedrock.

5. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 2.0 and 6.3m.

Appendix G

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Rotary open hole

Equipment
GEO 205 Comacchio Crawler Mounted Rig

Ground Level:
138.50 mOD

Easting:
385250 m

Northing:
144740 m

RO01

Start date: 03/06/2024

End date: 03/06/2024

Backfill date: 03/06/2024

Driller: Jackson Drilling - Ltd

Logged by: HW

Date logged: 03/06/2024

Core Details and SPT Data							Strata Details			Water	Depth		Backfill/Installations
Depth (Length)	TCR (%)	SCR (%)	RQD (%)	FI	Sample	SPT-N	Depth	Description	Legend	Strikes/ Standing	Depth (Thickness)	mOD	
					0.10 - 0.20/ES			Moss over brown very sandy clayey fine to coarse angular GRAVEL with low cobble content. Gravel and cobbles of concrete, brick fragments, slate and grey siltstone. (MADE GROUND)			(0.20)	138.30	
					0.60/ES		0.5				0.20		
					1.00/D		1.0				(0.50)		
							1.5	Soft brown slightly sandy gravelly CLAY with low cobble content. Gravel and cobbles of concrete, brick fragments, slate and grey siltstone. (MADE GROUND)			0.70	137.80	
							2.0				(0.40)		
							2.5	Brown-green loose to medium dense slightly gravelly very clayey fine to medium SAND. Fine to coarse sub-angular gravel of glauconitic sandstone. (Interpreted Grade E UPPER GREENSAND FORMATION)			1.10	137.40	
							3.0						
							3.5	Interbedded glauconitic SANSTONE and green SAND. [Drillers Logs] (UPPER GREENSAND FORMATION)					
							4.0						
							4.5						
							5.0						
							5.5						
							6.0				(8.90)		
							6.5						
							7.0						
							7.5						
							8.0						
							8.5						
							9.0						
							9.5						
							10.0				10.00	128.50	
							10.5						

Progress & Standing Water Levels					Water Strikes								Hole Diameter		Casing Diameter		
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed		Hole Depth	Hole Diameter	Casing Diameter	Casing Depth	
					03/06/2024	12:00	6.00	6.00	20.00	4.00			10.00	140	140	10.00	

General Remarks

1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit refused at 1.1m depth on sandstone cobble.

3. Groundwater strike at 6.0m depth, rising to 4.0m after 20 minutes.

4. BH terminated at 10m depth.

5. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 2.0 and 10.0m.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Rotary open hole

Equipment
GEO 205 Comacchio Crawler

Ground Level:
137.80 mOD

Easting:
385267 m

Northing:
144671 m

RO02

Start date: 03/06/2024

End date: 04/06/2024

Backfill date: 04/06/2024

Driller: Jackson Drilling - Ltd

Logged by: HW

Date logged: 04/06/2024

Core Details and SPT Data							Strata Details			Water	Depth		Backfill/Installations
Depth (Length)	TCR (%)	SCR (%)	RQD (%)	FI	Sample	SPT-N	Depth	Description	Legend	Strikes/Standing	Depth (Thickness)	mOD	
					0.30/ES			Vegetation over soft brown slightly gravelly sandy CLAY with low cobble content. Fine to coarse angular gravel and cobbles of concrete, tarmac, metal, brick, chicken wire, other rubble and glauconitic sandstone. (MADE GROUND)			(0.60)		
					0.60/ES		0.5				0.60	137.20	
					1.00/D		1.0				(0.50)		
							1.10				1.10	136.70	
							1.20				(0.10)	136.60	
							1.5	Green loose to medium dense brown slightly gravelly clayey fine to medium glauconitic SAND. Fine to medium sub-angular gravel of glauconitic sandstone. (Interpreted Grade E UPPER GREENSAND FORMATION)			1.20		
							2.0						
							2.5						
							3.0	Green medium dense clayey fine to medium glauconitic SAND. (Interpreted Grade D UPPER GREENSAND FORMATION)		↘			
							3.5	Interbedded glauconitic SANDSTONE and green SAND. [Drillers Logs]					
							4.0	(UPPER GREENSAND FORMATION)		→			
							4.5						
							5.0						
							5.5						
							6.0						
							6.5						
							7.0						
							7.5						
							8.0						
							8.00				8.00	129.80	
							8.5						
							9.0						
							9.5						
							10.0						
							10.5						

Progress & Standing Water Levels					Water Strikes								Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed		Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
					04/06/2024	12:00	4.00	4.00	20.00	3.00			8.00	140	140	7.00

General Remarks

1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. Groundwater strike at 4.0m depth, rising to 3.0m after 20 minutes.

4. BH refused at 7.0m depth on probable bedrock.

5. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 2.0 and 7.0m.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Rotary open hole

Equipment
GEO 205 Comacchio Crawler Mounted Rig

Ground Level:
133.50 mOD

Easting:
385472 m

Northing:
144638 m

RO03

Start date: 04/06/2024

End date: 04/06/2024

Backfill date: 04/06/2024

Driller: Jackson Drilling - Ltd

Logged by: HW

Date logged: 04/06/2024

Core Details and SPT Data							Strata Details			Water	Depth		Backfill/Installations
Depth (Length)	TCR (%)	SCR (%)	RQD (%)	FI	Sample	SPT-N	Depth	Description	Legend	Strikes/Standing	Depth (Thickness)	mOD	
					0.10 - 0.20/ES			Grass over soft brown gravelly very sandy silty CLAY with frequent fine rootlets and occassional medium roots . Fine to coarse angular gravel of white and pale green glauconitic sandstone. (TOPSOIL)			(0.20) 0.20 (0.40) 0.60 (0.10) 0.70 (1.30)	133.30 132.90 132.80	
					0.50 - 0.60/ES		0.5						
					0.90 - 1.00/D		1.0	Soft brown gravelly sandy CLAY with medium cobble content. Fine to coarse angular gravel and cobbles of grey siltstone, white sandstone and rare brick, concrete and possible black slag (<1%). (MADE GROUND)					
							1.5						
							2.0	Soft grey mottled orange slightly sandy fine to medium sub-angular gravelly CLAY. (Possible ALLUVIUM)					
							2.5						
							3.0	Firm brown mottled grey slightly fine to medium sub-angular gravelly CLAY. (Possible ALLUVIUM)					
							3.5						
							4.0	Unknown Material. Casing sunk under own weight. [Drillers Logs] (Possible ALLUVIUM)			(4.00)		
							4.5						
							5.0						
							5.5						
							6.0	Green SAND. [Drillers Log] (UPPER GREENSAND FORMATION)			6.00	127.50	
							6.5						
							7.0						
							7.5						
							8.0						
							8.5						
							9.0						
							9.5						
							10.0						
							10.5						

Progress & Standing Water Levels					Water Strikes								Hole Diameter		Casing Diameter		
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed		Hole Depth	Hole Diameter	Casing Diameter	Casing Depth	
					04/06/2024	12:00	0.60	6.00	20.00	0.50			9.00	140	140	140	9.00
					04/06/2024	12:00	7.00		20.00	0.00			11.00	140			

General Remarks

1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. Perched Water Table at 0.6m depth. Groundwater strike at 7m depth.

4. Casing self-sunk under own weight between 2 and 6m in unknown material.

5. BH terminated at 11m in Green Sands but collapsed to 9m on extraction.

6. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 6.0 and 9.0m.

Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

Project Name:
Proposed Residential Development

Site Location:
Bugley Farm, Warminster

Client:
Keepmoat Homes Ltd

Project No:
8917

Drilling method
Rotary open hole

Equipment
GEO 205 Comacchio Crawler

Ground Level:
133.50 mOD

Easting:
385472 m

Northing:
144638 m

RO03

Start date: 04/06/2024

End date: 04/06/2024

Backfill date: 04/06/2024

Driller: Jackson Drilling - Ltd

Logged by: HW

Date logged: 04/06/2024

Core Details and SPT Data							Strata Details			Water	Depth		Backfill/Installations
Depth (Length)	TCR (%)	SCR (%)	RQD (%)	FI	Sample	SPT-N	Depth	Description	Legend	Strikes/ Standing	Depth (Thickness)	mOD	
							11.5				11.00	122.50	
							12.0						
							12.5						
							13.0						
							13.5						
							14.0						
							14.5						
							15.0						
							15.5						
							16.0						
							16.5						
							17.0						
							17.5						
							18.0						
							18.5						
							19.0						
							19.5						
							20.0						
							20.5						
							21.0						
							21.5						

Progress & Standing Water Levels					Water Strikes									Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Date	Time	Strike Depth	Casing Depth	Elapsed Minutes	Depth to Water	Depth Sealed			Hole Depth	Hole Diameter	Casing Diameter	Casing Depth
					04/06/2024	12:00	0.60	6.00	20.00	0.50				9.00	140	140	9.00
					04/06/2024	12:00	7.00		20.00	0.00				11.00	140		

General Remarks

1. Co-ordinates and ground levels of investigation points obtained upon completion of site works by Mobile GPS and interpolated from topographic survey.

2. Service plans reviewed and area CAT scanned prior to breaking ground. Hand excavated service inspection pit dug to 1.2m depth.

3. Perched Water Table at 0.6m depth. Groundwater strike at 7m depth.

4. Casing self-sunk under own weight between 2 and 6m in unknown material.

5. BH terminated at 11m in Green Sands but collapsed to 9m on extraction.

6. 63mm diameter gas and groundwater monitoring well installed upon completion with a response zone between 6.0 and 9.0m.

Appendix H



Laboratory Report



Contract Number: 33135

Client's Reference:

Report Date: **29-11-2016**

Client **Earth Science Partnership**
33 Cardiff Road
Taff's Well
Cardiff
CF15 7RB

Contract Title: **Warminster**
For the attention of: **Daniel Thomas**

Date Received: **14-11-2016**
Date Commenced: **14-11-2016**
Date Completed: **29-11-2016**

Test Description	Qty
Moisture Content 1377 : 1990 Part 2 : 3.2 - * UKAS	10
4 Point Liquid & Plastic Limit (LL/PL) 1377 : 1990 Part 2 : 4.3 & 5.3 - * UKAS	10
PSD Wet Sieve method 1377 : 1990 Part 2 : 9.2 - * UKAS	4
Disposal of Samples on Project	1

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
* - denotes test included in laboratory scope of accreditation
- denotes test carried out by approved contractor
@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved Signatories:

Alex Wynn (Associate Director) - Benjamin Sharp (Contracts Manager) - Emma Sharp (Office Manager)
Paul Evans (Quality/Technical Manager) - Vaughan Edwards (Managing Director)

Client ref:	6271t
Location:	Warminster
Contract Number:	33135

[illegible]

Note: Results on this table are in summary format and may not meet the requirements of the relevant standards, additional information is held by the laboratory



For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Ben Sharp (Contracts Manager)

Date: 28.11.16



Test Report: Method of the Determination of the plastic limit and plasticity index
BS 1377 : Part 2 : 1990 Method 5

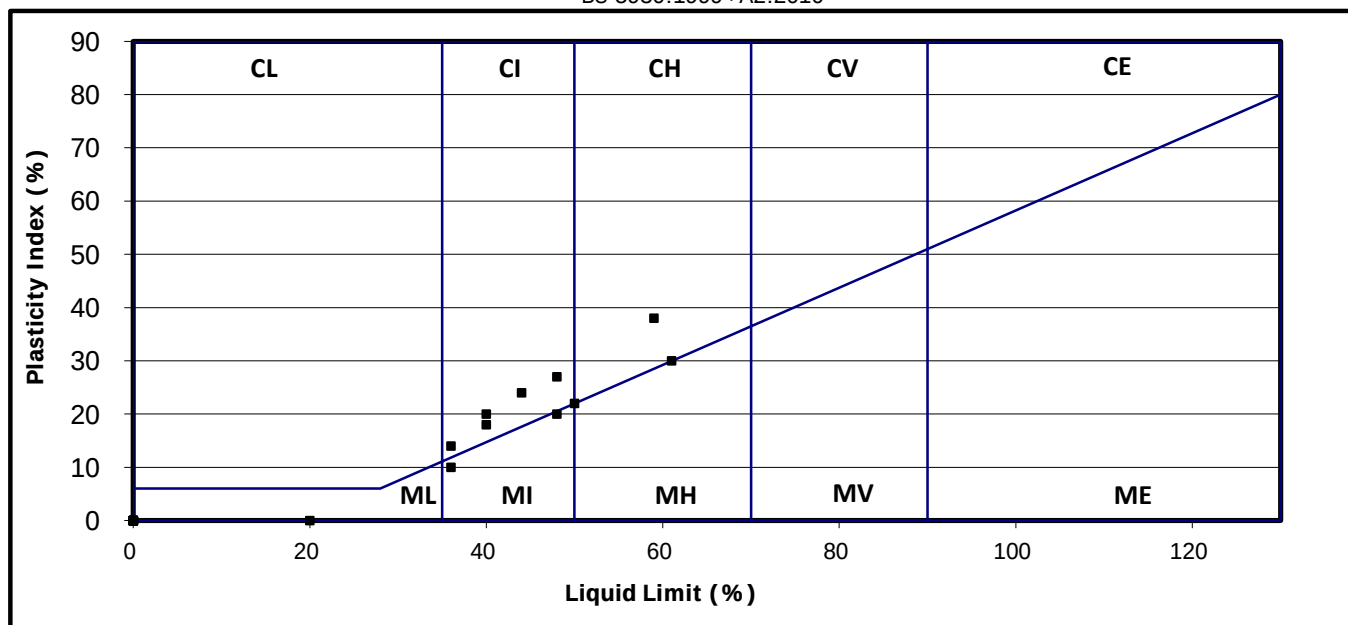
Client ref: 6271t
Location: Warminster
Contract Number: 33135

Hole/ Sample Number	Sample Type	Depth m	Moisture Content % Cl. 3.2	Liquid Limit % Cl. 4.3/4.4	Plastic Limit % Cl. 5.	Plasticity Index % Cl. 6.	% Passing .425mm	Remarks
TP14	D	0.45	20	36	22	14	96	CI Intermediate Plasticity
TP16	D	0.50	26	48	28	20	100	MI Intermediate Plasticity
TP17	D	0.40	14	40	20	20	95	CI Intermediate Plasticity
WS1	D	1.00	35	61	31	30	100	CH High Plasticity
WS2	D	1.00	28	59	21	38	97	CH High Plasticity
WS3	D	2.00	23	36	26	10	82	MI Intermediate Plasticity
WS4	D	1.00	31	50	28	22	55	CI/H Inter/High Plasticity
WS5	D	0.70	25	44	20	24	100	CI Intermediate Plasticity
WS8	D	1.00	24	48	21	27	88	CI Intermediate Plasticity
WS8	D	2.00	27	40	22	18	96	CI Intermediate Plasticity

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

BS 5930:1999+A2:2010



Test Report:

Particle Size Distribution Test BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

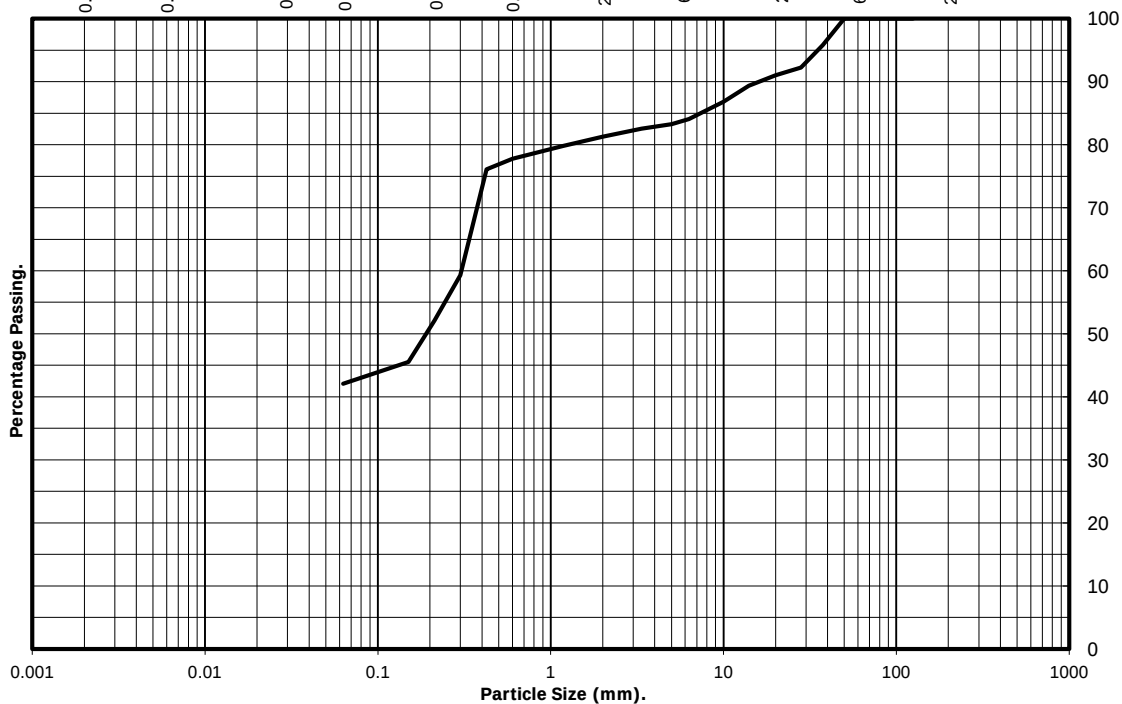
Client ref: 6271t
Contract Number: 33135
Hole Number: TP1

Sample Number:
Depth from (m): 2.10
Depth to (m):
Sample Type: D

Location: Warminster
Description: Brown fine to coarse gravelly fine to coarse sandy SILT/CLAY.

	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	
CLAY	SILT			SAND			GRAVEL			COBBLES

BS Test Sieve	% Passing
125	100
90	100
75	100
63	100
50	100
37.5	96
28	92
20	91
14	89
10	87
6.3	84
5.0	83
3.35	83
2.00	81
1.18	80
0.60	78
0.425	76
0.300	59
0.212	52
0.150	46
0.063	42



Particle Diameter	% Passing
0.02	#
0.006	#
0.002	#

	Silt and Clay	Sand	Gravel	Cobbles	Soil Fraction
	42	39	19	0	Total Percentage

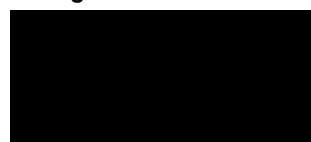
Remarks:

#- not determined

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Ben Sharp (Contracts Manager)

Date: 28.11.16



Test Report:

Particle Size Distribution Test BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

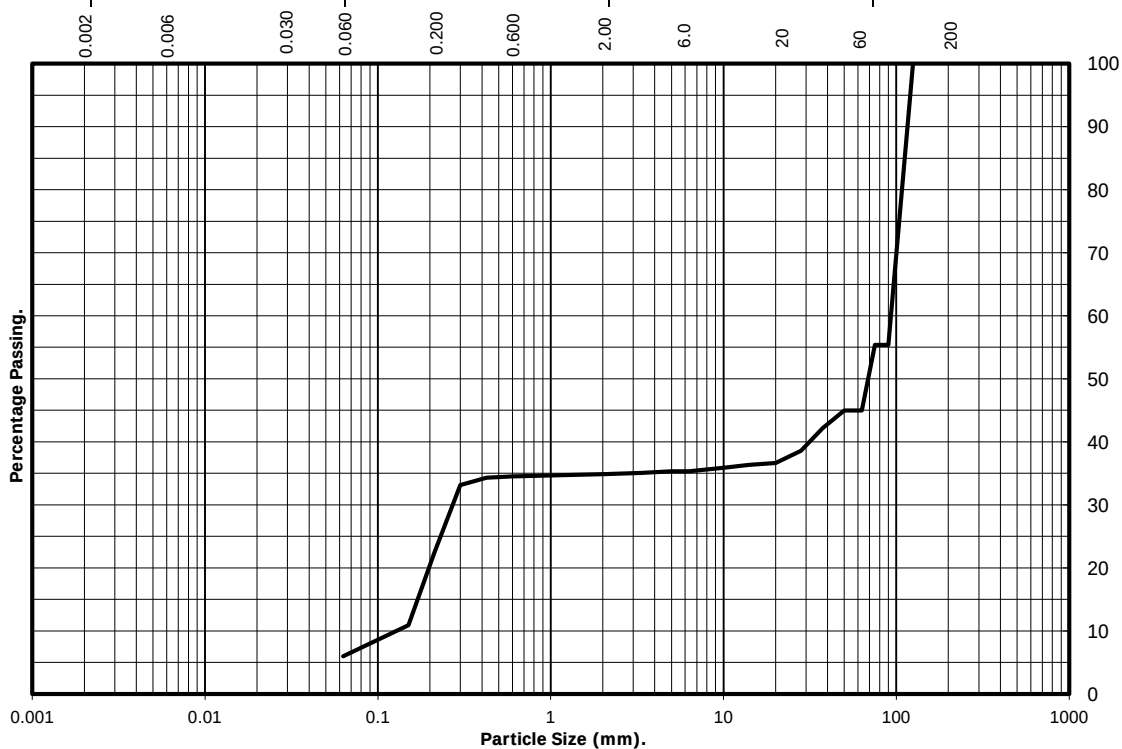
Client ref: 6271t
Contract Number: 33135
Hole Number: TP2

Sample Number:
Depth from (m): 2.20
Depth to (m):
Sample Type: D

Location: Warminster
Description: Green/grey slightly silty fine to coarse sandy fine to coarse GRAVEL / COBBLES.

	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	
CLAY	SILT			SAND			GRAVEL			COBBLES

BS Test Sieve	% Passing
125	100
90	55
75	55
63	45
50	45
37.5	42
28	39
20	37
14	36
10	36
6.3	35
5.0	35
3.35	35
2.00	35
1.18	35
0.60	35
0.425	34
0.300	33
0.212	22
0.150	11
0.063	6



Particle Diameter	% Passing
0.02	#
0.006	#
0.002	#

	Silt and Clay	Sand	Gravel	Cobbles	Soil Fraction
	6	29	10	55	Total Percentage

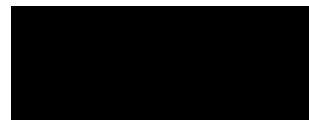
Remarks:

#- not determined

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Ben Sharp (Contracts Manager)

Date: 28.11.16



Test Report:

Particle Size Distribution Test BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

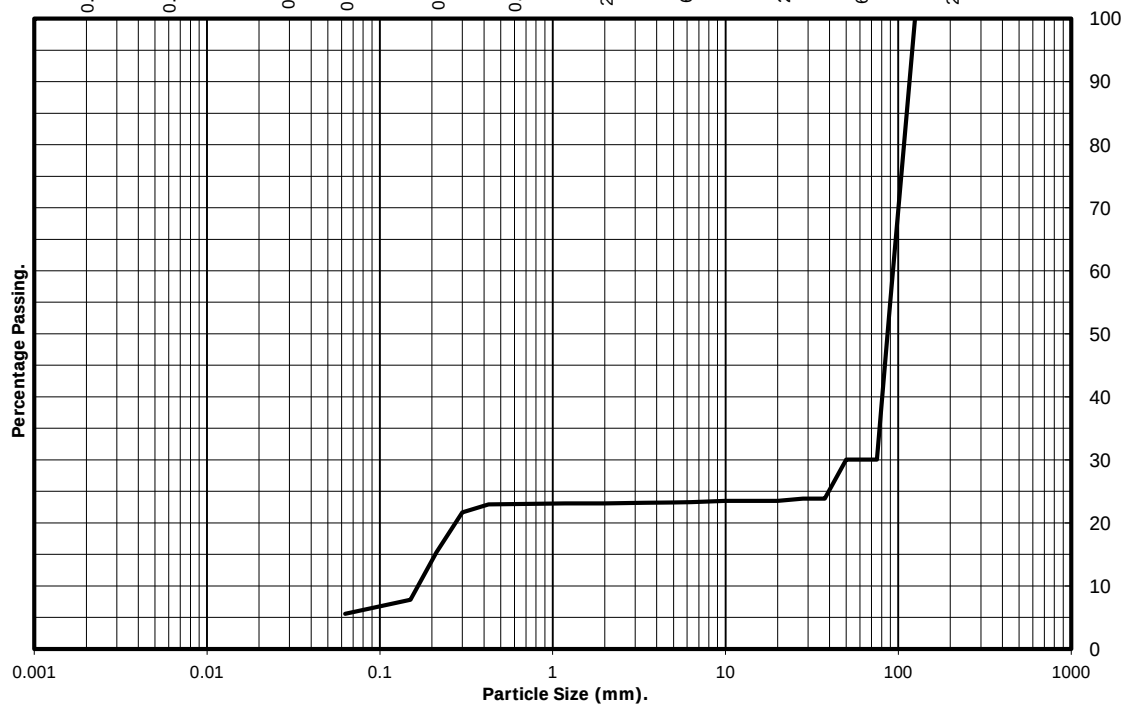
Client ref: 6271t
Contract Number: 33135
Hole Number: TP3

Sample Number:
Depth from (m): 2.10
Depth to (m):
Sample Type: D

Location: Warminster
Description: Green/grey slightly silty fine to coarse sandy fine to coarse GRAVEL / COBBLES.

	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	
CLAY	SILT			SAND			GRAVEL			COBBLES

BS Test Sieve	% Passing
125	100
90	55
75	30
63	30
50	30
37.5	24
28	24
20	24
14	24
10	23
6.3	23
5.0	23
3.35	23
2.00	23
1.18	23
0.60	23
0.425	23
0.300	22
0.212	15
0.150	8
0.063	6



Particle Diameter	% Passing
0.02	#
0.006	#
0.002	#

	Silt and Clay	Sand	Gravel	Cobbles	Soil Fraction
	6	17	7	70	Total Percentage

Remarks:

#- not determined

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Ben Sharp (Contracts Manager)

Date: 28.11.16



Test Report:

Particle Size Distribution Test BS 1377 Part 2:1990.

Wet Sieve, Clause 9.2

Client ref: 6271t
Contract Number: 33135
Hole Number: TP4

Sample Number:
Depth from (m): 2.70
Depth to (m):
Sample Type: D

Location: Warminster
Description: Brown fine to coarse gravelly silty clayey fine to coarse SAND.

	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	
CLAY	SILT			SAND			GRAVEL			COBBLES

BS Test Sieve	% Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	97
20	93
14	90
10	89
6.3	88
5.0	87
3.35	86
2.00	85
1.18	84
0.60	81
0.425	78
0.300	70
0.212	55
0.150	46
0.063	39



Particle Diameter	% Passing
0.02	#
0.006	#
0.002	#

	Silt and Clay	Sand	Gravel	Cobbles	Soil Fraction
	39	46	15	0	Total Percentage

Remarks:

#- not determined

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Ben Sharp (Contracts Manager)

Date: 28.11.16



Appendix I



Laboratory Report



Contract Number: 55224

Client Ref: **ESP6271t.02**

Report Date: **20-08-2021**

Client PO: **9996**

Client **Earth Science Partnership**
33 Cardiff Road
Taff's Well
Cardiff
CF15 7RB

Contract Title: **Warminster South**
For the attention of: **Craig Davies**

Date Received: **04-08-2021**

Date Completed: **20-08-2021**

Test Description	Qty
Samples Received - @ Non Accredited Test	14
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	5
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	5
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	2
Disposal of samples for job	1

Notes: **Observations and Interpretations are outside the UKAS Accreditation**

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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Approved Signatories:

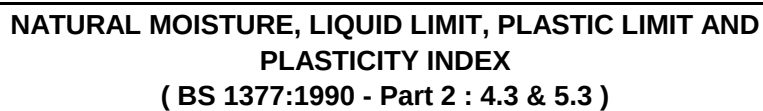
Emma Sharp (Business Support Manager) - Paul Evans (Director) - Richard John (Quality/Technical Manager)

Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager) - Wayne Honey (Quality Assistant / Administrator / Health and Safety Coordinator)

GEO Site & Testing Services Ltd

Unit 3-4, Heol Aur, Dafen Ind Estate, Dafen, Llanelli, Carmarthenshire SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

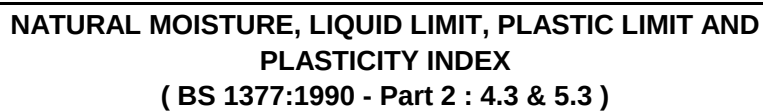


Contract Number	55224	
Site Name	Warminster South	
Date Tested	17/08/2021	
	DESCRIPTIONS	

[illegible]

Operators	Checked	20/08/2021	Richard John (Advanced Testing Manager)
Clayton Jenkins	Approved	20/08/2021	Paul Evans (Quality/Technical Manager)







PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2

Contract Number 55224
Borehole/Pit No. WS203

Site Name Warminster South

Sample No.

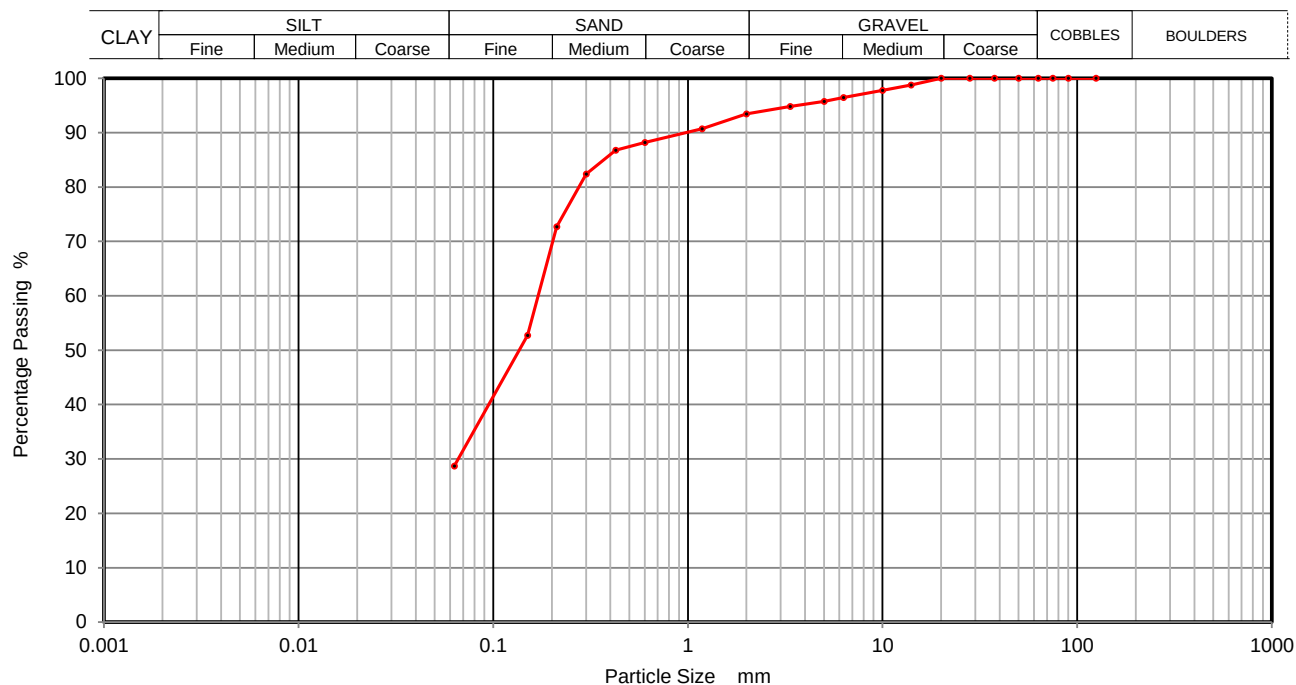
Soil Description Brown slightly fine to medium gravelly silty clayey fine to coarse SAND

Depth Top 1.20

Depth Base 1.90

Date Tested 12/08/2021

Sample Type B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	98		
6.3	96		
5	96		
3.35	95		
2	93		
1.18	91		
0.6	88		
0.425	87		
0.3	82		
0.212	73		
0.15	53		
0.063	29		

Sample Proportions	% dry mass
Cobbles	0
Gravel	7
Sand	64
Silt and Clay	29

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	19/08/2021	Richard John
David	Approved	20/08/2021	Paul Evans





PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2

Contract Number 55224
Borehole/Pit No. WS207

Site Name Warminster South

Sample No.

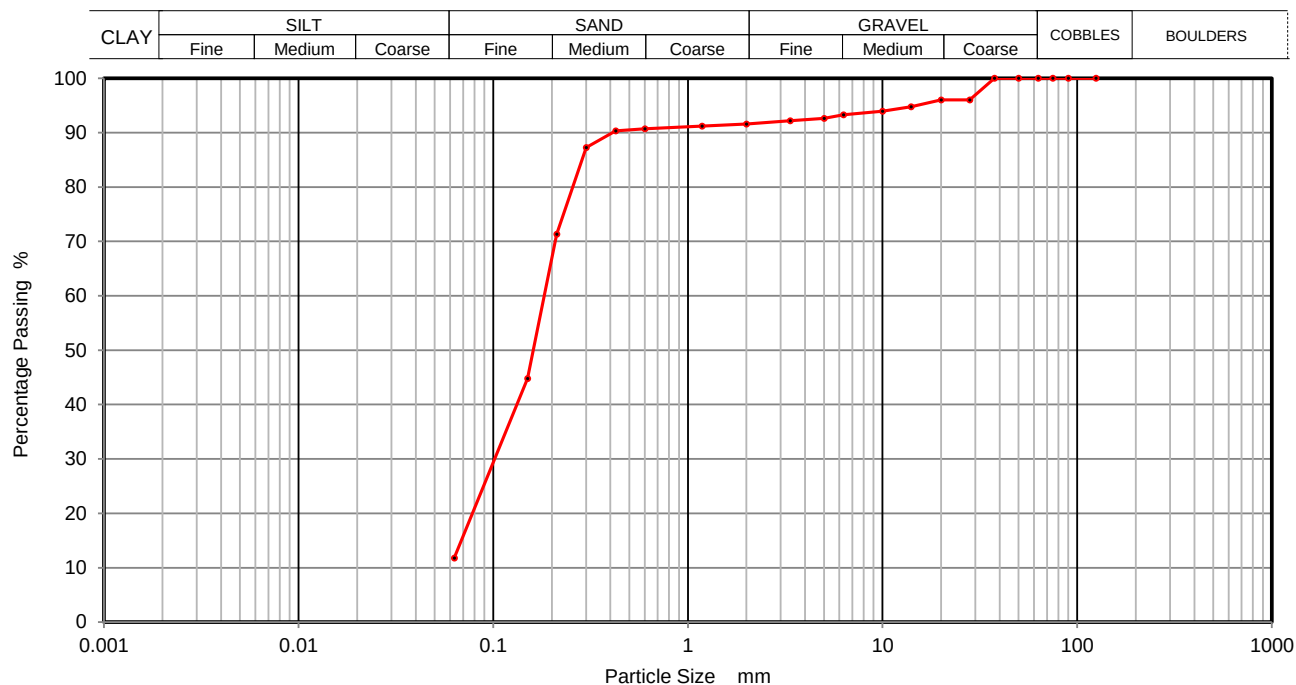
Soil Description Grey slightly fine to coarse gravelly silty/ clayey fine to coarse SAND

Depth Top 1.20

Depth Base 1.95

Date Tested 12/08/2021

Sample Type B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	96		
20	96		
14	95		
10	94		
6.3	93		
5	93		
3.35	92		
2	92		
1.18	91		
0.6	91		
0.425	90		
0.3	87		
0.212	71		
0.15	45		
0.063	12		

Sample Proportions	% dry mass
Cobbles	0
Gravel	8
Sand	80
Silt and Clay	12

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	19/08/2021	Richard John
David	Approved	20/08/2021	Paul Evans



Appendix J



Laboratory Report



Contract Number: 73628

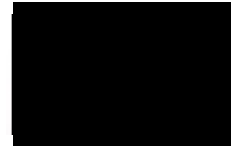
Client Ref: **8917**
Client PO: **12619**

Date Received: **08-07-2024**
Date Completed: **15-07-2024**
Report Date: **15-07-2024**

Client: **Earth Science Partnership**

Contract Title: **Bugley Farm, Warminster**
For the attention of: **Daniel Thomas**

This report has been checked and approved by:



Brendan Evans
Office Administrator

Description	Qty
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	22
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	22
Disposal of samples for job	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)
Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)
Wayne Honey (HR & HSE Manager)

**NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND
PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)**

Contract Number	73628	
Project Name	Bugley Farm, Warminster	
Date Tested	12/07/2024	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
WS02		D	1.20	-	1.40	Grey brown fine to medium gravelly sandy clayey SILT
WS02		D	2.00	-		Brown silty CLAY
WS03		D	1.50	-		Brown fine to medium gravelly silty sandy CLAY
WS03		D	2.00	-		Brown fine to medium gravelly silty CLAY
WS04		D	1.20	-		Brown fine to medium gravelly silty CLAY
WS05		D	1.20	-		Brown fine to medium gravelly silty CLAY
WS06		D	1.20	-		Brown silty CLAY
WS06		D	1.80	-		Brown fine gravelly silty CLAY
WS07		D	1.20	-		Brown silty CLAY
WS07		D	1.80	-		Brown fine gravelly sandy silty CLAY
WS07		D	2.90	-		Brown fine gravelly sandy silty CLAY
WS08		D	1.20	-		Brown fine to medium gravelly silty CLAY
WS08		D	2.00	-		Brown fine to medium gravelly silty CLAY
WS08		D	2.80	-		Brown fine gravelly silty sandy CLAY
WS09		D	2.00	-		Brown fine to medium gravelly silty sandy CLAY
WS10		D	1.20	-		Brown silty sandy CLAY
WS12		D	1.20	-		Brown fine to medium gravelly silty CLAY
WS12		D	2.50	-		Brown fine to medium gravelly silty sandy CLAY
CP03		D	1.20	-	1.70	Brown fine gravelly sandy silty CLAY
CP03		D	3.50	-	4.00	Brown fine to coarse gravelly silty sandy CLAY
CP05		D	1.00	-		Grey brown fine to medium gravelly silty sandy CLAY
CP05		D	2.00	-	2.50	Brown fine to medium gravelly silty sandy CLAY
				-		
				-		

Operator

Clayton Jenkins

NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

(BS 1377:1990 - Part 2 : 4.3 & 5.3)

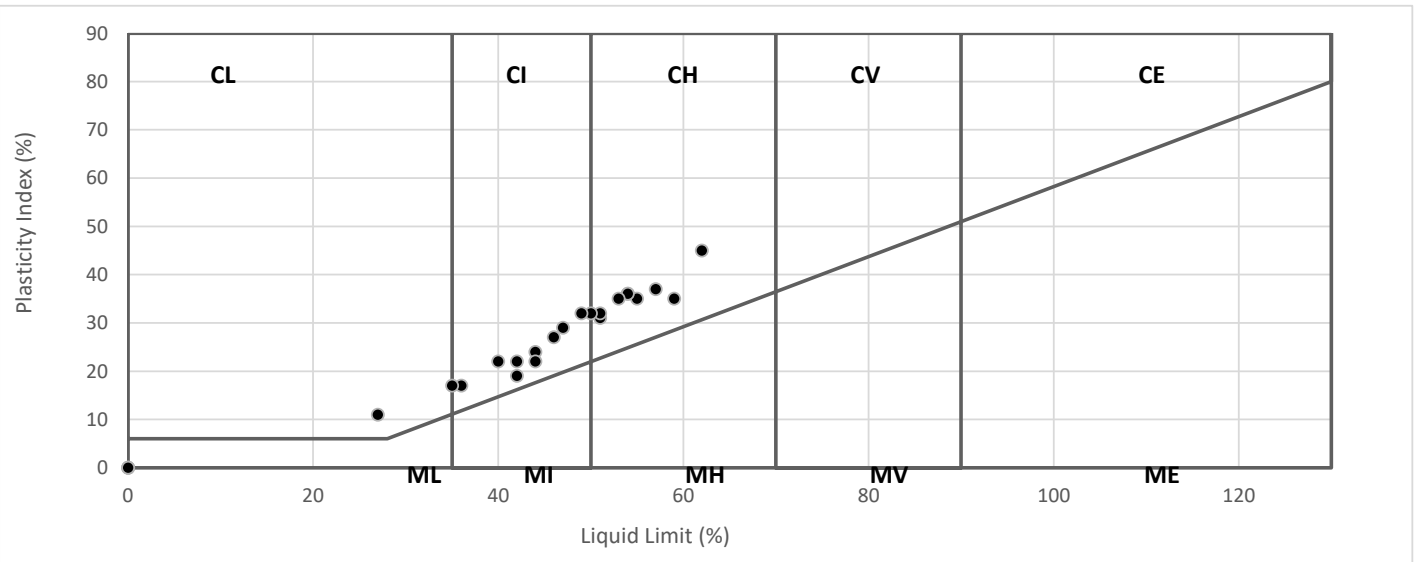
Contract Number	73628	
Project Name	Bugley Farm, Warminster	
Date Tested	12/07/2024	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
WS02		D	1.20	-	1.40	24		NP		75	
WS02		D	2.00	-		25	47	18	29	100	CI Intermediate Plasticity
WS03		D	1.50	-		26	54	18	36	88	CH High Plasticity
WS03		D	2.00	-		22	51	20	31	87	CH High Plasticity
WS04		D	1.20	-		21	51	19	32	87	CH High Plasticity
WS05		D	1.20	-		25	59	24	35	87	CH High Plasticity
WS06		D	1.20	-		24	40	18	22	100	CI Intermediate Plasticity
WS06		D	1.80	-		26	36	19	17	88	CI Intermediate Plasticity
WS07		D	1.20	-		26	55	20	35	100	CH High Plasticity
WS07		D	1.80	-		30	54	18	36	92	CH High Plasticity
WS07		D	2.90	-		31	44	20	24	95	CI Intermediate Plasticity
WS08		D	1.20	-		21	44	22	22	91	CI Intermediate Plasticity
WS08		D	2.00	-		21	50	18	32	85	CI/H Inter/High Plasticity
WS08		D	2.80	-		26	53	18	35	91	CH High Plasticity
WS09		D	2.00	-		22	49	17	32	91	CI Intermediate Plasticity
WS10		D	1.20	-		24	42	23	19	100	CI Intermediate Plasticity
WS12		D	1.20	-		24	57	20	37	90	CH High Plasticity
WS12		D	2.50	-		14	27	16	11	95	CL Low Plasticity
CP03		D	1.20	-	1.70	26	35	18	17	96	CL/I Low/Inter. Plasticity
CP03		D	3.50	-	4.00	24	42	20	22	90	CI Intermediate Plasticity
CP05		D	1.00	-		22	62	17	45	92	CH High Plasticity
CP05		D	2.00	-	2.50	31	46	19	27	91	CI Intermediate Plasticity
				-							
				-							

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION

BS 5930:2015+A1:2020



Operator
Clayton Jenkins



2788

Appendix K



Certificate of Analysis

Certificate Number 16-83470a

02-Dec-16

Client Earth Science Partnership
33 Cardiff Road
Taffs Well
Cardiff
CF15 7RB

Our Reference 16-83470a

Client Reference 6271T

Order No 5575

Contract Title Warminster

Description 34 Soil samples

Date Received 09-Nov-16

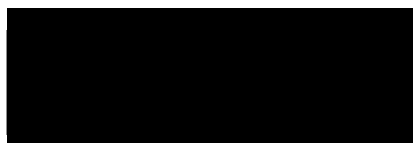
Date Started 09-Nov-16

Date Completed 02-Dec-16

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081355	1081356	1081357	1081358	1081359	1081360
Sample ID	TP11	TP10	TP12	TP15	TP16	TP17
Depth	0.40	0.50	0.20	0.35	0.20	0.15
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Subcon to CSL	\$	0							
CSL Subcon Prep	\$	0							
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	6.6	4.9	4.7	6.8	4.7	5.8
Barium	DETSC 2301#	1.5	mg/kg	190	32	93	46	38	74
Beryllium	DETSC 2301#	0.2	mg/kg	0.5	0.5	0.3	0.5	0.4	0.4
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	0.7	0.4	1.7	0.8	0.6	0.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.4	0.4	0.1	0.1	0.3
Chromium	DETSC 2301#	0.15	mg/kg	13	22	12	22	16	12
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	19	7.2	13	10	26	14
Lead	DETSC 2301#	0.3	mg/kg	45	17	35	23	47	84
Mercury	DETSC 2325#	0.05	mg/kg	0.08	< 0.05	< 0.05	< 0.05	< 0.05	0.10
Nickel	DETSC 2301#	1	mg/kg	9.5	10	6.5	12	6.0	8.3
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301	0.8	mg/kg	16	23	14	30	25	17
Zinc	DETSC 2301#	1	mg/kg	110	34	190	47	38	62
Inorganics									
pH	DETSC 2008#			7.6	6.2	7.5	5.3	5.6	6.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	0.6	0.7	0.4	0.7	0.5
Organic matter	DETSC 2002#	0.1	%	3.6	1.3	4.2	1.5	3.8	3.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l						
Sulphur as S, Total	DETSC 2320	0.01	%						
Sulphate as SO4, Total	DETSC 2321#	0.01	%						
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.04	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.06	< 0.03	0.05	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03	0.06	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	0.06	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.24	< 0.10	0.20	< 0.10	< 0.10	< 0.10

Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081355	1081356	1081357	1081358	1081359	1081360
Sample ID	TP11	TP10	TP12	TP15	TP16	TP17
Depth	0.40	0.50	0.20	0.35	0.20	0.15
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.5	< 0.3	0.4	< 0.3	0.8	0.8

Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081361	1081362	1081363	1081364	1081365	1081366
Sample ID	TP18	TP19	TP21	TP3	TP5	TP6
Depth	0.40	0.45	0.10	0.10	0.20	0.15
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Subcon to CSL	\$	0							
CSL Subcon Prep	\$	0							
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	5.5	3.0	4.0	3.0	4.3	5.1
Barium	DETSC 2301#	1.5	mg/kg	35	24	43	100	110	79
Beryllium	DETSC 2301#	0.2	mg/kg	0.6	0.5	0.3	< 0.2	0.4	0.4
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	0.8	0.5	0.5	0.2	0.6	0.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	< 0.1	0.1	0.3	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	18	12	12	4.6	11	14
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	10	6.9	11	5.8	16	13
Lead	DETSC 2301#	0.3	mg/kg	46	14	39	16	54	48
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	0.16	< 0.05
Nickel	DETSC 2301#	1	mg/kg	7.2	6.5	5.4	2.7	6.9	6.9
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301	0.8	mg/kg	22	15	17	6.0	13	17
Zinc	DETSC 2301#	1	mg/kg	40	22	34	29	46	43
Inorganics									
pH	DETSC 2008#			4.9	5.5	5.0	8.1	6.1	6.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.0	0.2	0.6	< 0.1	0.6	0.9
Organic matter	DETSC 2002#	0.1	%	2.9	1.2	2.6	1.0	4.2	5.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l						
Sulphur as S, Total	DETSC 2320	0.01	%						
Sulphate as SO4, Total	DETSC 2321#	0.01	%						
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.05	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081361	1081362	1081363	1081364	1081365	1081366
Sample ID	TP18	TP19	TP21	TP3	TP5	TP6
Depth	0.40	0.45	0.10	0.10	0.20	0.15
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.5	< 0.3	0.6	< 0.3	0.5	0.7

Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081367	1081368	1081369	1081370	1081371	1081372
Sample ID	TP7	TP8	TP9	WS1	WS4	WS8
Depth	0.40	0.45	0.10	0.60	0.50	0.20
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Subcon to CSL	\$	0							Y
CSL Subcon Prep	\$	0							Y
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	2.5	4.6	3.8	5.7	3.4	3.9
Barium	DETSC 2301#	1.5	mg/kg	24	37	42	120	21	45
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	0.4	0.4	1.5	0.4	0.3
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	0.3	0.7	0.7	1.1	< 0.2	0.8
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.1	0.2	0.2	< 0.1	0.1
Chromium	DETSC 2301#	0.15	mg/kg	14	15	14	22	13	8.7
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	6.0	11	9.5	35	5.1	8.4
Lead	DETSC 2301#	0.3	mg/kg	11	110	44	59	10	37
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.06	0.09	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	7.6	6.4	6.7	26	6.9	5.3
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301	0.8	mg/kg	14	18	16	35	16	12
Zinc	DETSC 2301#	1	mg/kg	28	44	38	48	20	49
Inorganics									
pH	DETSC 2008#			6.5	4.8	5.6	6.4	5.9	7.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	0.6	0.6	0.5	0.2	0.3
Organic matter	DETSC 2002#	0.1	%	0.7	3.0	3.8	3.9	0.7	2.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l						
Sulphur as S, Total	DETSC 2320	0.01	%						
Sulphate as SO4, Total	DETSC 2321#	0.01	%						
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.07
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.06
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.07
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.20

Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081367	1081368	1081369	1081370	1081371	1081372
Sample ID	TP7	TP8	TP9	WS1	WS4	WS8
Depth	0.40	0.45	0.10	0.60	0.50	0.20
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.8	0.4	0.5	0.4	0.4	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081373	1081374	1081375	1081376	1081377	1081378
Sample ID	SP1	SP2	SP3	WS6	TP21	TP18
Depth					1.00	1.10
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Subcon to CSL	\$	0		Y	Y	Y	Y		
CSL Subcon Prep	\$	0		Y	Y	Y	Y		
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg						
Barium	DETSC 2301#	1.5	mg/kg						
Beryllium	DETSC 2301#	0.2	mg/kg						
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg						
Cadmium	DETSC 2301#	0.1	mg/kg						
Chromium	DETSC 2301#	0.15	mg/kg						
Chromium, Hexavalent	DETSC 2204*	1	mg/kg						
Copper	DETSC 2301#	0.2	mg/kg						
Lead	DETSC 2301#	0.3	mg/kg						
Mercury	DETSC 2325#	0.05	mg/kg						
Nickel	DETSC 2301#	1	mg/kg						
Selenium	DETSC 2301#	0.5	mg/kg						
Vanadium	DETSC 2301	0.8	mg/kg						
Zinc	DETSC 2301#	1	mg/kg						
Inorganics									
pH	DETSC 2008#							6.5	7.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg						
Organic matter	DETSC 2002#	0.1	%						
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l					< 10	< 10
Sulphur as S, Total	DETSC 2320	0.01	%					< 0.01	< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%					0.02	0.01
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg						
Acenaphthylene	DETSC 3303#	0.03	mg/kg						
Anthracene	DETSC 3303	0.03	mg/kg						
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg						
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg						
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg						
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg						
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg						
Chrysene	DETSC 3303	0.03	mg/kg						
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg						
Fluoranthene	DETSC 3303#	0.03	mg/kg						
Fluorene	DETSC 3303	0.03	mg/kg						
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg						
Naphthalene	DETSC 3303#	0.03	mg/kg						
Phenanthrene	DETSC 3303#	0.03	mg/kg						
Pyrene	DETSC 3303#	0.03	mg/kg						
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081373	1081374	1081375	1081376	1081377	1081378
Sample ID	SP1	SP2	SP3	WS6	TP21	TP18
Depth					1.00	1.10
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081379	1081380	1081381	1081382	1081383	1081384
Sample ID	TP14	TP12	TP10	TP9	TP6	WS1
Depth	1.10	1.20	1.70	1.00	1.60	2.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Subcon to CSL	\$	0							
CSL Subcon Prep	\$	0							
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg						
Barium	DETSC 2301#	1.5	mg/kg						
Beryllium	DETSC 2301#	0.2	mg/kg						
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg						
Cadmium	DETSC 2301#	0.1	mg/kg						
Chromium	DETSC 2301#	0.15	mg/kg						
Chromium, Hexavalent	DETSC 2204*	1	mg/kg						
Copper	DETSC 2301#	0.2	mg/kg						
Lead	DETSC 2301#	0.3	mg/kg						
Mercury	DETSC 2325#	0.05	mg/kg						
Nickel	DETSC 2301#	1	mg/kg						
Selenium	DETSC 2301#	0.5	mg/kg						
Vanadium	DETSC 2301	0.8	mg/kg						
Zinc	DETSC 2301#	1	mg/kg						
Inorganics									
pH	DETSC 2008#			6.9	8.0	6.3	6.6	7.8	8.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg						
Organic matter	DETSC 2002#	0.1	%						
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	< 10	< 10	< 10	< 10	< 10
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	< 0.01	0.02	< 0.01	0.02	0.02	0.05
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg						
Acenaphthylene	DETSC 3303#	0.03	mg/kg						
Anthracene	DETSC 3303	0.03	mg/kg						
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg						
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg						
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg						
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg						
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg						
Chrysene	DETSC 3303	0.03	mg/kg						
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg						
Fluoranthene	DETSC 3303#	0.03	mg/kg						
Fluorene	DETSC 3303	0.03	mg/kg						
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg						
Naphthalene	DETSC 3303#	0.03	mg/kg						
Phenanthrene	DETSC 3303#	0.03	mg/kg						
Pyrene	DETSC 3303#	0.03	mg/kg						
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081379	1081380	1081381	1081382	1081383	1081384
Sample ID	TP14	TP12	TP10	TP9	TP6	WS1
Depth	1.10	1.20	1.70	1.00	1.60	2.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081385	1081386	1082298	1082299
Sample ID	TP5	WS3	BH7	TP9
Depth	1.90	2.00	1.50	1.70
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Subcon to CSL	\$	0					
CSL Subcon Prep	\$	0					
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg				
Barium	DETSC 2301#	1.5	mg/kg				
Beryllium	DETSC 2301#	0.2	mg/kg				
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg				
Cadmium	DETSC 2301#	0.1	mg/kg				
Chromium	DETSC 2301#	0.15	mg/kg				
Chromium, Hexavalent	DETSC 2204*	1	mg/kg				
Copper	DETSC 2301#	0.2	mg/kg				
Lead	DETSC 2301#	0.3	mg/kg				
Mercury	DETSC 2325#	0.05	mg/kg				
Nickel	DETSC 2301#	1	mg/kg				
Selenium	DETSC 2301#	0.5	mg/kg				
Vanadium	DETSC 2301	0.8	mg/kg				
Zinc	DETSC 2301#	1	mg/kg				
Inorganics							
pH	DETSC 2008#			6.9	8.5	6.8	7.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg				
Organic matter	DETSC 2002#	0.1	%				
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	13	< 10	31
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	0.02	0.02	< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.04	0.04	0.03	0.03
PAHs							
Acenaphthene	DETSC 3303#	0.03	mg/kg				
Acenaphthylene	DETSC 3303#	0.03	mg/kg				
Anthracene	DETSC 3303	0.03	mg/kg				
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg				
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg				
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg				
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg				
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg				
Chrysene	DETSC 3303	0.03	mg/kg				
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg				
Fluoranthene	DETSC 3303#	0.03	mg/kg				
Fluorene	DETSC 3303	0.03	mg/kg				
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg				
Naphthalene	DETSC 3303#	0.03	mg/kg				
Phenanthrene	DETSC 3303#	0.03	mg/kg				
Pyrene	DETSC 3303#	0.03	mg/kg				
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg				

Summary of Chemical Analysis

Soil Samples

Our Ref 16-83470a
 Client Ref 6271T
 Contract Title Warminster

Lab No	1081385	1081386	1082298	1082299
Sample ID	TP5	WS3	BH7	TP9
Depth	1.90	2.00	1.50	1.70
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/10/16	19/10/16	19/10/16	19/10/16
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg				

Summary of Asbestos Analysis

Soil Samples

Our Ref 16-83470a

Client Ref 6271T

Contract Title Warminster

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1081355	TP11 0.40	SOIL	NAD	none	Michael Kay
1081356	TP10 0.50	SOIL	NAD	none	Michael Kay
1081357	TP12 0.20	SOIL	NAD	none	Michael Kay
1081358	TP15 0.35	SOIL	NAD	none	Michael Kay
1081359	TP16 0.20	SOIL	NAD	none	Michael Kay
1081360	TP17 0.15	SOIL	NAD	none	Michael Kay
1081361	TP18 0.40	SOIL	NAD	none	Michael Kay
1081362	TP19 0.45	SOIL	NAD	none	Michael Kay
1081363	TP21 0.10	SOIL	NAD	none	Michael Kay
1081364	TP3 0.10	SOIL	NAD	none	Michael Kay
1081365	TP5 0.20	SOIL	NAD	none	Michael Kay
1081366	TP6 0.15	SOIL	NAD	none	Michael Kay
1081367	TP7 0.40	SOIL	NAD	none	Michael Kay
1081368	TP8 0.45	SOIL	NAD	none	Michael Kay
1081369	TP9 0.10	SOIL	NAD	none	Michael Kay
1081370	WS1 0.60	SOIL	NAD	none	Michael Kay
1081371	WS4 0.50	SOIL	NAD	none	Michael Kay
1081372	WS8 0.20	SOIL	NAD	none	Michael Kay

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 16-83470a
 Client Ref 6271T
 Contract Warminster

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1081355	TP11 0.40 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081356	TP10 0.50 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081357	TP12 0.20 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081358	TP15 0.35 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081359	TP16 0.20 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081360	TP17 0.15 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081361	TP18 0.40 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081362	TP19 0.45 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081363	TP21 0.10 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081364	TP3 0.10 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081365	TP5 0.20 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081366	TP6 0.15 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081367	TP7 0.40 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081368	TP8 0.45 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081369	TP9 0.10 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081370	WS1 0.60 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	

Information in Support of the Analytical Results

Our Ref 16-83470a
Client Ref 6271T
Contract Warminster

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1081371	WS4 0.50 SOIL	19/10/16	GJ 250ml, PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	
1081372	WS8 0.20 SOIL	19/10/16	PT 1L	Naphthalene (14 days), PAH MS (14 days), pH + Conductivity (7 days)	Naphthalene, PAH MS
1081373	SP1 SOIL	19/10/16	PT 1L		
1081374	SP2 SOIL	19/10/16	PT 1L		
1081375	SP3 SOIL	19/10/16	PT 1L		
1081376	WS6 SOIL	19/10/16	PT 1L		
1081377	TP21 1.00 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	
1081378	TP18 1.10 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	
1081379	TP14 1.10 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	
1081380	TP12 1.20 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	
1081381	TP10 1.70 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	
1081382	TP9 1.00 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	
1081383	TP6 1.60 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	
1081384	WS1 2.00 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	
1081385	TP5 1.90 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	
1081386	WS3 2.00 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	
1082298	BH7 1.50 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	
1082299	TP9 1.70 SOIL	19/10/16	PT 1L	pH + Conductivity (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

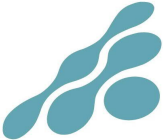
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix L



DETS

Certificate of Analysis

Certificate Number 21-16377

Issued: 07-Sep-21

Client Earth Science Partnership
33 Cardiff Road
Taffs Well
Cardiff
CF15 7RB

Our Reference 21-16377

Client Reference ESP.6271t.02

Order No 9995

Contract Title WARMINSTER SOUTH

Description 15 Soil samples, 9 Leachate samples.

Date Received 04-Aug-21

Date Started 04-Aug-21

Date Completed 07-Sep-21

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 21-16377

Client Ref ESP.6271t.02

Contract Title WARMINSTER SOUTH

Lab No	1885427	1885428	1885429	1885430	1885431	1885432
Sample ID	WS201	WS201	WS202	WS202	WS205	WS206
Depth	0.25	1.30	0.50	0.85	0.30	0.55
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	2.9		3.0	6.1	8.0	7.0
Barium	DETSC 2301#	1.5	mg/kg	33		110	42	69	46
Beryllium	DETSC 2301#	0.2	mg/kg	0.3		0.2	1.1	0.2	0.9
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.5		0.5	0.3	0.4	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1		0.3	0.2	0.7	0.1
Chromium	DETSC 2301#	0.15	mg/kg	9.7		9.5	27	7.4	28
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	9.1		12	9.8	6.5	10
Lead	DETSC 2301#	0.3	mg/kg	15		21	15	36	17
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	5.5		6.9	15	4.5	14
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5		0.9	< 0.5	0.8	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	12		12	33	9.3	36
Zinc	DETSC 2301#	1	mg/kg	28		79	40	77	85
Inorganics									
pH	DETSC 2008#		pH	8.2	7.3	7.6	7.5	8.8	7.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3		0.8	0.2	0.3	0.2
Organic matter	DETSC 2002#	0.1	%	0.5		4.4	0.9	1.7	0.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	29	380		62	90	
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	0.03		0.02	0.04	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.03	0.11		0.04	0.08	
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5					< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2					< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5					< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4					< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10					< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9					< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5					< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6					< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4					< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10					< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10					< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01					< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01					< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 21-16377

Client Ref ESP.6271t.02

Contract Title WARMINSTER SOUTH

Lab No	1885427	1885428	1885429	1885430	1885431	1885432
Sample ID	WS201	WS201	WS202	WS202	WS205	WS206
Depth	0.25	1.30	0.50	0.85	0.30	0.55
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01					< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01					< 0.01
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03		0.39	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03		0.08	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		0.53	0.48	0.43	0.46
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.51	< 0.03	0.28	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.50	0.14	0.13	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03		0.17	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.17	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03		0.35	0.22	0.20	0.21
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.64	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.14	< 0.03	< 0.03	< 0.03
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.34	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.59	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10		4.4	0.84	1.0	0.67
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.8		0.6	< 0.3	< 0.3	< 0.3
Subcontracted Analysis									
E. coli	\$*	10	cfu/g						
Total coliforms	\$*	10	cfu/g						
Faecal coliforms	\$*	10	cfu/g						

Summary of Chemical Analysis

Soil Samples

Our Ref 21-16377

Client Ref ESP.6271t.02

Contract Title WARMINSTER SOUTH

Lab No	1885433	1885434	1885435	1885436	1885437	1885438
.Sample ID	WS206	WS207	WS207	WS208	WS208	WS208
Depth	1.20	0.55	1.00	0.45	1.30	2.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg		6.8		8.2		
Barium	DETSC 2301#	1.5	mg/kg		150		120		
Beryllium	DETSC 2301#	0.2	mg/kg		0.4		0.3		
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg		0.7		0.3		
Cadmium	DETSC 2301#	0.1	mg/kg		0.4		0.4		
Chromium	DETSC 2301#	0.15	mg/kg		11		14		
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0		< 1.0		
Copper	DETSC 2301#	0.2	mg/kg		15		13		
Lead	DETSC 2301#	0.3	mg/kg		310		22		
Mercury	DETSC 2325#	0.05	mg/kg		0.08		< 0.05		
Nickel	DETSC 2301#	1	mg/kg		12		9.6		
Selenium	DETSC 2301#	0.5	mg/kg		1.0		1.2		
Vanadium	DETSC 2301#	0.8	mg/kg		14		28		
Zinc	DETSC 2301#	1	mg/kg		100		110		
Inorganics									
pH	DETSC 2008#		pH	8.0	10.0	8.5	8.7	8.2	7.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg		0.4		0.1		
Organic matter	DETSC 2002#	0.1	%		6.7		5.8		
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	13		37		26	16
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01		0.01		0.03	0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.02		0.03		0.05	0.04
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01		
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		< 1.5		< 1.5		
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		< 1.2		< 1.2		
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		< 1.5		2.3		
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		< 3.4		79		
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		< 10		82		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01		
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01		
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		< 0.9		1.2		
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		< 0.5		3.5		
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		< 0.6		21		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		< 1.4		320		
Aromatic C5-C35	DETSC 3072*	10	mg/kg		< 10		350		
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg		< 10		430		
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01		< 0.01		
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01		< 0.01		

Summary of Chemical Analysis

Soil Samples

Our Ref 21-16377

Client Ref ESP.6271t.02

Contract Title WARMINSTER SOUTH

Lab No	1885433	1885434	1885435	1885436	1885437	1885438
.Sample ID	WS206	WS207	WS207	WS208	WS208	WS208
Depth	1.20	0.55	1.00	0.45	1.30	2.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01		< 0.01		
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01		< 0.01		
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg		0.04		0.15		
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03		0.57		
Anthracene	DETSC 3303	0.03	mg/kg		< 0.03		0.59		
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		0.07		5.8		
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		0.03		8.8		
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		0.08		11		
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		0.17		4.8		
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03		4.9		
Chrysene	DETSC 3303	0.03	mg/kg		0.07		4.6		
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03		0.94		
Fluoranthene	DETSC 3303#	0.03	mg/kg		0.17		8.4		
Fluorene	DETSC 3303	0.03	mg/kg		0.06		0.12		
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		< 0.03		3.4		
Naphthalene	DETSC 3303#	0.03	mg/kg		< 0.03		0.03		
Phenanthrene	DETSC 3303#	0.03	mg/kg		0.22		1.7		
Pyrene	DETSC 3303#	0.03	mg/kg		0.20		8.9		
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		1.1		64		
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3		< 0.3		
Subcontracted Analysis									
E. coli	\$*	10	cfu/g						
Total coliforms	\$*	10	cfu/g						
Faecal coliforms	\$*	10	cfu/g						

Summary of Chemical Analysis

Soil Samples

Our Ref 21-16377

Client Ref ESP.6271t.02

Contract Title WARMINSTER SOUTH

Lab No	1885439	1885440	1885441
.Sample ID	HDP01	HDP02	HDP03
Depth	0.30	0.40	0.35
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	30/07/2021	30/07/2021	30/07/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	17	4.0	3.4
Barium	DETSC 2301#	1.5	mg/kg	76	19	60
Beryllium	DETSC 2301#	0.2	mg/kg	0.5	1.1	0.5
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.3	0.4	1.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	< 0.1	0.2
Chromium	DETSC 2301#	0.15	mg/kg	22	24	13
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	21	4.3	15
Lead	DETSC 2301#	0.3	mg/kg	1700	15	160
Mercury	DETSC 2325#	0.05	mg/kg	0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	12	11	8.1
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	25	30	16
Zinc	DETSC 2301#	1	mg/kg	110	31	86
Inorganics						
pH	DETSC 2008#		pH	7.1	7.4	7.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.9	0.3	0.9
Organic matter	DETSC 2002#	0.1	%	4.8	1.0	5.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l			
Sulphur as S, Total	DETSC 2320	0.01	%			
Sulphate as SO4, Total	DETSC 2321#	0.01	%			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg			
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg			
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg			
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg			
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg			
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg			
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg			
Aliphatic C5-C35	DETSC 3072*	10	mg/kg			
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg			
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg			
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg			
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg			
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg			
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg			
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg			
Aromatic C5-C35	DETSC 3072*	10	mg/kg			
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg			
Benzene	DETSC 3321#	0.01	mg/kg			
Ethylbenzene	DETSC 3321#	0.01	mg/kg			

Summary of Chemical Analysis

Soil Samples

Our Ref 21-16377

Client Ref ESP.6271t.02

Contract Title WARMINSTER SOUTH

Lab No	1885439	1885440	1885441
Sample ID	HDP01	HDP02	HDP03
Depth	0.30	0.40	0.35
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	30/07/2021	30/07/2021	30/07/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Toluene	DETSC 3321#	0.01	mg/kg			
Xylene	DETSC 3321#	0.01	mg/kg			
PAHs						
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.43	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.05	< 0.03	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.58	0.45	0.46
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.42	0.26	0.27
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.40	0.14	0.19
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	0.08
Chrysene	DETSC 3303	0.03	mg/kg	0.36	0.21	0.24
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.54	< 0.03	0.10
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	< 0.03
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.61	< 0.03	0.10
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	3.7	1.1	1.4
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.5	< 0.3	0.9
Subcontracted Analysis						
E. coli	\$*	10	cfu/g	90	<10	240
Total coliforms	\$*	10	cfu/g	90	<10	740
Faecal coliforms	\$*	10	cfu/g	90	<10	240

Summary of Chemical Analysis

Leachate Samples

Our Ref 21-16377

Client Ref ESP.6271t.02

Contract Title WARMINSTER SOUTH

Lab No	1885442	1885443	1885444	1885445	1885446	1885447
Sample ID	WS201	WS202	WS205	WS206	WS207	WS208
Depth	0.25	0.85	0.30	0.55	0.55	0.45
Other ID						
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
BS EN 12457 10:1	DETSC 1009*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.1	1.6	6.4	2.1	18	1.3
Barium, Dissolved	DETSC 2306	0.26	ug/l	3.8	3.0	7.7	3.9	12	10
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	< 12	< 12	18	< 12	150	< 12
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	0.04	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	< 0.25	< 0.25	1.6	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.1	1.1	1.5	0.9	6.6	2.9
Iron, Dissolved	DETSC 2306	5.5	ug/l	48	87	15	98	720	34
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.19	0.15	0.36	0.21	3.6	0.29
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	2.0	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	< 0.25	< 0.25	0.71	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	0.9	1.6	3.1	2.2	14	3.0
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3	44	8.9	14	2.8
Inorganics									
pH	DETSC 2008		pH	6.7	6.7	6.7	6.9	7.3	6.8
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	< 40
Phenol - Monohydric	DETSC 2131	1.5	ug/l	< 1.5	< 1.5	< 1.5	< 1.5	1.5	< 1.5
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1			< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1			< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1			< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0			< 1.0	6.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0			< 1.0	10	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0			< 1.0	21	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0			< 1.0	29	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10			< 10	67	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1			< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1			< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1			< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0			< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0			< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0			< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0			< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10			< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l	< 10			< 10	67	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0			< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0			< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0			< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 21-16377

Client Ref ESP.6271t.02

Contract Title WARMINSTER SOUTH

Lab No	1885442	1885443	1885444	1885445	1885446	1885447
Sample ID	WS201	WS202	WS205	WS206	WS207	WS208
Depth	0.25	0.85	0.30	0.55	0.55	0.45
Other ID						
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Xylene	DETSC 3322	1	ug/l	< 1.0			< 1.0	< 1.0	< 1.0
PAHs									
Acenaphthene	DETSC 3304	0.01	ug/l	0.01	0.01	0.01	< 0.01	0.02	0.01
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.04
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.22
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.30
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.42
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.32
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.15
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.20
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.10
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.17
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.42
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	DETSC 3304	0.01	ug/l	0.01	0.01	< 0.01	< 0.01	0.05	0.03
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.18
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	2.6

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 21-16377
Client Ref ESP.6271t.02
Contract Title WARMINSTER SOUTH
Sample Id HDP01 0.30

Sample Numbers 1885439 1885448
Date Analysed 07/09/2021

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	4.5
DETSC 2003# Loss On Ignition	%	8.2
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	< 10
DETSC 3301 PAHs	mg/kg	< 1.6
DETSC 2008# pH	pH Units	7.1
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	1.1	0.011
DETSC 2306 Barium as Ba	7.4	< 0.1
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	2.8	0.028
DETSC 2306 Mercury as Hg	< 0.010	< 0.002
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1
DETSC 2306 Nickel as Ni	0.69	< 0.1
DETSC 2306 Lead as Pb	0.49	< 0.05
DETSC 2306 Antimony as Sb	< 0.17	< 0.05
DETSC 2306 Selenium as Se	< 0.25	< 0.03
DETSC 2306 Zinc as Zn	6.4	0.064
DETSC 2055 Chloride as Cl	690	< 100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	2500	< 100
DETSC 2009* Total Dissolved Solids	36000	360
DETSC 2130 Phenol Index	< 100	< 1
DETSC 2085 Dissolved Organic Carbon	2300	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	6.8
DETSC 2009 Conductivity uS/cm	51.7
* Temperature*	21.0

Mass of Sample Kg*	0.130
Mass of dry Sample Kg*	0.102

Stage 1

Volume of Leachant L2*	0.996
Volume of Eluate VE1*	0.93

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 21-16377
Client Ref ESP.6271t.02
Contract Title WARMINSTER SOUTH
Sample Id HDP02 0.40

Sample Numbers 1885440 1885449
Date Analysed 07/09/2021

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	0.9
DETSC 2003# Loss On Ignition	%	4.3
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	< 10
DETSC 3301 PAHs	mg/kg	< 1.6
DETSC 2008# pH	pH Units	7.4
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	0.97	< 0.01
DETSC 2306 Barium as Ba	1.4	< 0.1
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	1.8	< 0.02
DETSC 2306 Mercury as Hg	< 0.010	< 0.002
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1
DETSC 2306 Nickel as Ni	0.61	< 0.1
DETSC 2306 Lead as Pb	0.37	< 0.05
DETSC 2306 Antimony as Sb	< 0.17	< 0.05
DETSC 2306 Selenium as Se	< 0.25	< 0.03
DETSC 2306 Zinc as Zn	2	0.02
DETSC 2055 Chloride as Cl	650	< 100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	970	< 100
DETSC 2009* Total Dissolved Solids	15000	150
DETSC 2130 Phenol Index	< 100	< 1
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	7.0
DETSC 2009 Conductivity uS/cm	21.1
* Temperature*	21.0

Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.098

Stage 1

Volume of Leachant L2*	0.956
Volume of Eluate VE1*	0.91

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 21-16377
Client Ref ESP.6271t.02
Contract Title WARMINSTER SOUTH
Sample Id HDP03 0.35

Sample Numbers 1885441 1885450
Date Analysed 07/09/2021

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	4.5
DETSC 2003# Loss On Ignition	%	12.0
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	< 10
DETSC 3301 PAHs	mg/kg	< 1.6
DETSC 2008# pH	pH Units	7.1
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	0.36	< 0.01
DETSC 2306 Barium as Ba	3.2	< 0.1
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	1.7	< 0.02
DETSC 2306 Mercury as Hg	< 0.010	< 0.002
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1
DETSC 2306 Nickel as Ni	< 0.50	< 0.1
DETSC 2306 Lead as Pb	0.17	< 0.05
DETSC 2306 Antimony as Sb	< 0.17	< 0.05
DETSC 2306 Selenium as Se	< 0.25	< 0.03
DETSC 2306 Zinc as Zn	1.6	0.016
DETSC 2055 Chloride as Cl	540	< 100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	940	< 100
DETSC 2009* Total Dissolved Solids	19000	190
DETSC 2130 Phenol Index	< 100	< 1
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	27.5
* Temperature*	21.0

Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.098

Stage 1

Volume of Leachant L2*	0.955
Volume of Eluate VE1*	0.91

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis Soil Samples

Our Ref 21-16377
 Client Ref ESP.6271t.02
 Contract Title WARMINSTER SOUTH

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1885427	WS201 0.25	SOIL	NAD	none	Jordan Farley
1885429	WS202 0.50	SOIL	NAD	none	Jordan Farley
1885430	WS202 0.85	SOIL	NAD	none	Jordan Farley
1885431	WS205 0.30	SOIL	NAD	none	Jordan Farley
1885432	WS206 0.55	SOIL	NAD	none	Jordan Farley
1885434	WS207 0.55	SOIL	Chrysotile	Chrysotile present in visible cement and loose bundles	Jordan Farley
1885436	WS208 0.45	SOIL	Chrysotile	Loose bundles of Chrysotile	Jordan Farley
1885439	HDP01 0.30	SOIL	NAD	none	Jordan Farley
1885440	HDP02 0.40	SOIL	NAD	none	Jordan Farley
1885441	HDP03 0.35	SOIL	NAD	none	Jordan Farley

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 21-16377
 Client Ref ESP.6271t.02
 Contract WARMINSTER SOUTH

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1885427	WS01 0.25 SOIL	30/07/21	PT 1L		Aliphatics/Aromatics, BTEX, Naphthalene, PAH MS
1885428	WS201 1.30 SOIL	30/07/21	PT 1L		
1885429	WS202 0.50 SOIL	30/07/21	GJ 250ml x2, PT 1L x2		
1885430	WS202 0.85 SOIL	30/07/21	GJ 250ml, PT 1L		
1885431	WS205 0.30 SOIL	30/07/21	GJ 60ml x2, PT 1L		
1885432	WS206 0.55 SOIL	30/07/21	GJ 60ml x4, PT 1L x2		
1885433	WS206 1.20 SOIL	30/07/21	GJ 60ml x2, PT 1L		
1885434	WS207 0.55 SOIL	30/07/21	GJ 60ml x4, PT 1L x2		
1885435	WS207 1.00 SOIL	30/07/21	GJ 60ml x2, PT 1L		
1885436	WS208 0.45 SOIL	30/07/21	GJ 60ml x6, PT 1L x2		
1885437	WS208 1.30 SOIL	30/07/21	GJ 60ml x4, PT 1L x2		
1885438	WS208 2.00 SOIL	30/07/21	GJ 60ml x2, PT 1L		
1885439	HDP01 0.30 SOIL	30/07/21	GJ 250ml, PT 1L		
1885440	HDP02 0.40 SOIL	30/07/21	GJ 250ml, PT 1L		
1885441	HDP03 0.35 SOIL	30/07/21	GJ 250ml, PT 1L		
1885442	WS201 0.25 LEACHATE	30/07/21	PT 1L		
1885443	WS202 0.85 LEACHATE	30/07/21	GJ 250ml, PT 1L		
1885444	WS205 0.30 LEACHATE	30/07/21	GJ 60ml x2, PT 1L		
1885445	WS206 0.55 LEACHATE	30/07/21	GJ 60ml x4, PT 1L x2		
1885446	WS207 0.55 LEACHATE	30/07/21	GJ 60ml x4, PT 1L x2		
1885447	WS208 0.45 LEACHATE	30/07/21	GJ 60ml x6, PT 1L x2		
1885448	HDP01 0.30 LEACHATE	30/07/21	GJ 250ml, PT 1L		
1885449	HDP02 0.40 LEACHATE	30/07/21	GJ 250ml, PT 1L		
1885450	HDP03 0.35 LEACHATE	30/07/21	GJ 250ml, PT 1L		

Key: P-Plastic T-Tub G-Glass J-Jar

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Appendix M



Certificate of Analysis

Certificate Number 24-11934

Issued: 19-Jun-24

Client Earth Science Partnership
33 Cardiff Road
Taffs Well
Cardiff
CF15 7RB

Our Reference 24-11934

Client Reference ~ 8917

Order No ~ 12579

Contract Title ~ Bugley Farm, Warminster

Description 9 Soil samples, 2 Leachate prepared by DETS samples.

Date Received 11-Jun-24

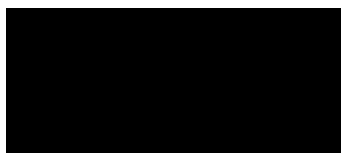
Date Started 11-Jun-24

Date Completed 19-Jun-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-11934

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2349601	2349602	2349603	2349604	2349605	2349606	2349607
Sample ID ~	CP01	CP01	CP02	CP02	CP03	CP03	CP03
Depth ~	0.50	1.20-1.70	0.30	1.20-2.00	0.20	2.00-2.50	4.00-4.50
Other ID ~							
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	29/05/2024	29/05/2024	29/05/2024	29/05/2024	30/05/2024	30/05/2024	30/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	2.9		9.6		3.6		
Beryllium	DETSC 2301#	0.2	mg/kg	0.3		0.7		0.4		
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2		1.3		< 0.2		
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1		1.4		< 0.1		
Chromium	DETSC 2301#	0.15	mg/kg	11		18		13		
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0		< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	5.7		110		8.3		
Lead	DETSC 2301#	0.3	mg/kg	9.8		210		23		
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		0.66		< 0.05		
Nickel	DETSC 2301#	1	mg/kg	5.2		15		6.5		
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5		< 0.5		< 0.5		
Vanadium	DETSC 2301#	0.8	mg/kg	11		22		16		
Zinc	DETSC 2301#	1	mg/kg	30		470		45		
Inorganics										
pH	DETSC 2008#		pH	7.6	8.4	7.6	7.9	8.8	8.6	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2		0.9		0.3		
Organic matter	DETSC 2002#	0.1	%	0.4		8.0		1.2		
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076#	10	mg/l		12		17		< 10	< 10
Sulphur as S, Total	DETSC 2320	0.01	%		0.02		0.02		< 0.01	< 0.01
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%		0.05		0.03		0.03	0.01
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg			< 0.01		< 0.01		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg			< 0.01		< 0.01		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01		< 0.01		
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg			< 1.5		< 1.5		
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg			5.7		< 1.2		
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg			18		< 1.5		
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg			69		< 3.4		
Aliphatic C5-C35	DETSC 3072*	10	mg/kg			92		< 10		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg			< 0.01		< 0.01		
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg			< 0.01		< 0.01		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01		< 0.01		
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg			< 0.9		< 0.9		
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg			< 0.5		< 0.5		
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg			5.6		< 0.6		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg			110		< 1.4		
Aromatic C5-C35	DETSC 3072*	10	mg/kg			120		< 10		
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg			210		< 10		
Benzene	DETSC 3321#	0.01	mg/kg			< 0.01		< 0.01		
Ethylbenzene	DETSC 3321#	0.01	mg/kg			< 0.01		< 0.01		
Toluene	DETSC 3321#	0.01	mg/kg			< 0.01		< 0.01		

Summary of Chemical Analysis

Soil Samples

Our Ref 24-11934

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2349601	2349602	2349603	2349604	2349605	2349606	2349607
Sample ID ~	CP01	CP01	CP02	CP02	CP03	CP03	CP03
Depth ~	0.50	1.20-1.70	0.30	1.20-2.00	0.20	2.00-2.50	4.00-4.50
Other ID ~							
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	29/05/2024	29/05/2024	29/05/2024	29/05/2024	30/05/2024	30/05/2024	30/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Xylene	DETSC 3321#	0.01	mg/kg			< 0.01		< 0.01	
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03		< 0.03	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03		< 0.03	
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03		0.05		< 0.03	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		0.22		< 0.03	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.35		< 0.03	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.45		< 0.03	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03		0.31		< 0.03	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.16		< 0.03	
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03		0.20		< 0.03	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		0.06		< 0.03	
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03		0.38		< 0.03	
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03		< 0.03		< 0.03	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.21		< 0.03	
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03		< 0.03	
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.12		< 0.03	
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03		0.38		< 0.03	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10		2.9		< 0.10	
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3		< 0.3	

Summary of Chemical Analysis

Soil Samples

Our Ref 24-11934

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2349608	2349609
Sample ID ~	CP05	CP05
Depth ~	0.60	5.00-5.50
Other ID ~		
Sample Type ~	SOIL	SOIL
Sampling Date ~	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	3.3	
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	
Chromium	DETSC 2301#	0.15	mg/kg	14	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	8.4	
Lead	DETSC 2301#	0.3	mg/kg	23	
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	
Nickel	DETSC 2301#	1	mg/kg	6.1	
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	
Vanadium	DETSC 2301#	0.8	mg/kg	16	
Zinc	DETSC 2301#	1	mg/kg	34	
Inorganics					
pH	DETSC 2008#		pH	7.1	8.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.4	
Organic matter	DETSC 2002#	0.1	%	2.0	
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076#	10	mg/l		< 10
Sulphur as S, Total	DETSC 2320	0.01	%		0.01
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%		0.01
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		
Aromatic C5-C35	DETSC 3072*	10	mg/kg		
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg		
Benzene	DETSC 3321#	0.01	mg/kg		
Ethylbenzene	DETSC 3321#	0.01	mg/kg		
Toluene	DETSC 3321#	0.01	mg/kg		

Summary of Chemical Analysis

Soil Samples

Our Ref 24-11934

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2349608	2349609
Sample ID ~	CP05	CP05
Depth ~	0.60	5.00-5.50
Other ID ~		
Sample Type ~	SOIL	SOIL
Sampling Date ~	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Xylene	DETSC 3321#	0.01	mg/kg		
PAHs					
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11934

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2349610	2349611
Sample ID ~	CP02	CP03
Depth ~	0.30	0.20
Other ID ~		
Sample Type ~	LEACHATE	LEACHATE
Sampling Date ~	29/05/2024	30/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Preparation					
BS EN 12457 10:1	DETSC 1009*			Y	Y
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.8	0.51
Barium, Dissolved	DETSC 2306	0.26	ug/l	10	4.3
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	34	< 12
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	7.8	1.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	41	110
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.2	0.50
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	4.2	0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.51	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	6.4	0.9
Zinc, Dissolved	DETSC 2306	1.3	ug/l	15	2.1
Inorganics					
pH	DETSC 2008		pH	8.0	7.0
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	0.3	0.7
Phenol - Monohydric Low Level	DETSC 2131	1.5	ug/l	< 1.5	< 1.5
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	1.4	3.1
Aliphatic C16-C21	DETSC 3072*	1	ug/l	19	13
Aliphatic C21-C35	DETSC 3072*	1	ug/l	12	18
Aliphatic C5-C35	DETSC 3072*	10	ug/l	32	36
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l	33	36
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11934

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2349610	2349611
Sample ID ~	CP02	CP03
Depth ~	0.30	0.20
Other ID ~		
Sample Type ~	LEACHATE	LEACHATE
Sampling Date ~	29/05/2024	30/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0
PAHs					
Acenaphthene	DETSC 3304	0.01	ug/l	0.06	0.04
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Anthracene	DETSC 3304	0.01	ug/l	0.03	0.02
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.02	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.03	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.04	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.03	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.02	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	0.02	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.08	0.05
Fluorene	DETSC 3304	0.01	ug/l	0.05	0.05
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.03	< 0.01
Naphthalene	DETSC 3304	0.05	ug/l	0.12	0.10
Phenanthrene	DETSC 3304	0.01	ug/l	0.06	0.06
Pyrene	DETSC 3304	0.01	ug/l	0.07	0.04
PAH Total	DETSC 3304	0.2	ug/l	0.65	0.36

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11934

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2349610	2349611
Sample ID ~	CP02	CP03
Depth ~	0.30	0.20
Other ID ~		
Sample Type ~	LEACHATE	LEACHATE
Sampling Date ~	29/05/2024	30/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 270	< 2700
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11934

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2349610	2349611
Sample ID ~	CP02	CP03
Depth ~	0.30	0.20
Other ID ~		
Sample Type ~	LEACHATE	LEACHATE
Sampling Date ~	29/05/2024	30/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1
SVOCs					
Phenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Aniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4-Dimethylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4-Dichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11934

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2349610	2349611
Sample ID ~	CP02	CP03
Depth ~	0.30	0.20
Other ID ~		
Sample Type ~	LEACHATE	LEACHATE
Sampling Date ~	29/05/2024	30/05/2024
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0

Summary of Asbestos Analysis Soil Samples

Our Ref 24-11934

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2349601	CP01 0.50	SOIL	NAD	none	Darryl Fletcher
2349603	CP02 0.30	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
2349605	CP03 0.20	SOIL	NAD	none	Darryl Fletcher
2349608	CP05 0.60	SOIL	NAD	none	Darryl Fletcher

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-11934
 Client Ref ~ 8917
 Contract ~ Bugley Farm, Warminster

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2349601	CP01 0.50 SOIL	29/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2349602	CP01 1.20-1.70 SOIL	29/05/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2349603	CP02 0.30 SOIL	29/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2349604	CP02 1.20-2.00 SOIL	29/05/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2349605	CP03 0.20 SOIL	30/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2349606	CP03 2.00-2.50 SOIL	30/05/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2349607	CP03 4.00-4.50 SOIL	30/05/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2349608	CP05 0.60 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2349609	CP05 5.00-5.50 SOIL	31/05/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2349610	CP02 0.30 LEACHATE	29/05/24	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (4 days), pH/Cond (1 days), PAH MS (4 days), SVOC (7 days)	VOC
2349611	CP03 0.20 LEACHATE	30/05/24	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (4 days), pH/Cond (1 days), PAH MS (4 days), SVOC (7 days)	VOC

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

Information in Support of the Analytical Results

Our Ref 24-11934

Client Ref ~ 8917

Contract ~ Bugley Farm, Warminster

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



Certificate of Analysis

Certificate Number 24-12083

Issued: 20-Jun-24

Client Earth Science Partnership
33 Cardiff Road
Taffs Well
Cardiff
CF15 7RB

Our Reference 24-12083

Client Reference ~ 8917

Order No ~ 12626

Contract Title ~ BUGLEY FARM

Description 19 Soil samples, 3 Leachate prepared by DETS samples.

Date Received 13-Jun-24

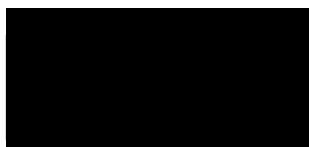
Date Started 13-Jun-24

Date Completed 20-Jun-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350624	2350625	2350626	2350627	2350628	2350629
Sample ID ~	R01	R02	WS01	WS03	WS03	WS04
Depth ~	0.60	0.30	0.30	0.60	3.60	2.60
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	04/06/2024	04/06/2024	04/06/2024	06/06/2024	06/06/2024	06/06/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	22	5.3	4.8	3.9		
Beryllium	DETSC 2301#	0.2	mg/kg	0.2	0.6	0.6	0.3		
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	0.5	0.5	< 0.2		
Cadmium	DETSC 2301#	0.1	mg/kg	1.3	0.3	0.2	< 0.1		
Chromium	DETSC 2301#	0.15	mg/kg	11	18	16	13		
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	15	15	9.4	3.7		
Lead	DETSC 2301#	0.3	mg/kg	65	27	22	7.4		
Mercury	DETSC 2325#	0.05	mg/kg	0.07	< 0.05	< 0.05	< 0.05		
Nickel	DETSC 2301#	1	mg/kg	4.7	8.9	8.3	6.1		
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5		
Vanadium	DETSC 2301#	0.8	mg/kg	8.8	21	20	19		
Zinc	DETSC 2301#	1	mg/kg	160	190	110	40		
Inorganics									
pH	DETSC 2008#		pH	8.2	7.6	10.5	7.6	8.9	8.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	0.3	0.2	< 0.1		
Organic matter	DETSC 2002#	0.1	%	2.3	1.9	1.4	0.2		
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	19		100	13	16	13
Sulphur as S, Total	DETSC 2320	0.01	%	0.06		0.03	< 0.01	0.02	0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.11		0.07	0.01	0.05	0.04
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01			
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01			
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01			
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5		2.4			
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		75			
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		170			
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		53			
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		300			
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01			
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01			
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01			
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9		3.2			
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		95			
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		190			
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		56			
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		340			
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10		640			
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01			
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01			
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01			

Summary of Chemical Analysis

Soil Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350624	2350625	2350626	2350627	2350628	2350629
Sample ID ~	R01	R02	WS01	WS03	WS03	WS04
Depth ~	0.60	0.30	0.30	0.60	3.60	2.60
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	04/06/2024	04/06/2024	04/06/2024	06/06/2024	06/06/2024	06/06/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01			
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.12	< 0.03		
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	< 0.03		
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.04	< 0.03		
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.13	< 0.03	< 0.03		
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.14	< 0.03	< 0.03		
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	0.19	< 0.03	< 0.03		
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.09	< 0.03	< 0.03		
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	< 0.03	< 0.03		
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.11	< 0.03	< 0.03		
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.25	0.06	< 0.03		
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.33	< 0.03		
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04	0.08	< 0.03	< 0.03		
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.08	0.88	< 0.03		
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.28	0.29	< 0.03		
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	1.4	1.8	< 0.10		
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4	< 0.3	< 0.3	< 0.3		

Summary of Chemical Analysis

Soil Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350630	2350631	2350632	2350633	2350634	2350635
Sample ID ~	WS05	WS06	WS06	WS07	WS08	WS09
Depth ~	1.60	1.00	2.20	1.00	2.00	1.00
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	06/06/2024	06/06/2024	06/06/2024	05/06/2024	05/06/2024	05/06/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg						
Beryllium	DETSC 2301#	0.2	mg/kg						
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg						
Cadmium	DETSC 2301#	0.1	mg/kg						
Chromium	DETSC 2301#	0.15	mg/kg						
Chromium, Hexavalent	DETSC 2204*	1	mg/kg						
Copper	DETSC 2301#	0.2	mg/kg						
Lead	DETSC 2301#	0.3	mg/kg						
Mercury	DETSC 2325#	0.05	mg/kg						
Nickel	DETSC 2301#	1	mg/kg						
Selenium	DETSC 2301#	0.5	mg/kg						
Vanadium	DETSC 2301#	0.8	mg/kg						
Zinc	DETSC 2301#	1	mg/kg						
Inorganics									
pH	DETSC 2008#		pH	7.8	7.8	7.5	6.6	6.7	6.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg						
Organic matter	DETSC 2002#	0.1	%						
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	< 10	12	10	12	18	18
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.02	0.02	0.03	0.04	0.01	0.02
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg						
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg						
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg						
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg						
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg						
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg						
Aliphatic C5-C35	DETSC 3072*	10	mg/kg						
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg						
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg						
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg						
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg						
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg						
Aromatic C5-C35	DETSC 3072*	10	mg/kg						
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg						
Benzene	DETSC 3321#	0.01	mg/kg						
Ethylbenzene	DETSC 3321#	0.01	mg/kg						
Toluene	DETSC 3321#	0.01	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350630	2350631	2350632	2350633	2350634	2350635
Sample ID ~	WS05	WS06	WS06	WS07	WS08	WS09
Depth ~	1.60	1.00	2.20	1.00	2.00	1.00
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	06/06/2024	06/06/2024	06/06/2024	05/06/2024	05/06/2024	05/06/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Xylene	DETSC 3321#	0.01	mg/kg						
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg						
Acenaphthylene	DETSC 3303#	0.03	mg/kg						
Anthracene	DETSC 3303	0.03	mg/kg						
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg						
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg						
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg						
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg						
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg						
Chrysene	DETSC 3303	0.03	mg/kg						
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg						
Fluoranthene	DETSC 3303#	0.03	mg/kg						
Fluorene	DETSC 3303	0.03	mg/kg						
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg						
Naphthalene	DETSC 3303#	0.03	mg/kg						
Phenanthrene	DETSC 3303#	0.03	mg/kg						
Pyrene	DETSC 3303#	0.03	mg/kg						
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350636	2350637	2350638	2350639	2350640	2350641
Sample ID ~	WS10	WS10	WS11	WS11	WS12	WS12
Depth ~	0.60	2.50	0.60	1.00	0.60	1.00
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	05/06/2024	05/06/2024	05/06/2024	05/06/2024	05/06/2024	05/06/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg						
Beryllium	DETSC 2301#	0.2	mg/kg						
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg						
Cadmium	DETSC 2301#	0.1	mg/kg						
Chromium	DETSC 2301#	0.15	mg/kg						
Chromium, Hexavalent	DETSC 2204*	1	mg/kg						
Copper	DETSC 2301#	0.2	mg/kg						
Lead	DETSC 2301#	0.3	mg/kg						
Mercury	DETSC 2325#	0.05	mg/kg						
Nickel	DETSC 2301#	1	mg/kg						
Selenium	DETSC 2301#	0.5	mg/kg						
Vanadium	DETSC 2301#	0.8	mg/kg						
Zinc	DETSC 2301#	1	mg/kg						
Inorganics									
pH	DETSC 2008#		pH	6.0	6.9	6.1	6.2	5.7	6.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg						
Organic matter	DETSC 2002#	0.1	%						
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	14	15	11	11	15	13
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.02	< 0.01	0.02	0.01	0.04	0.02
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg						
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg						
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg						
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg						
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg						
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg						
Aliphatic C5-C35	DETSC 3072*	10	mg/kg						
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg						
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg						
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg						
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg						
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg						
Aromatic C5-C35	DETSC 3072*	10	mg/kg						
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg						
Benzene	DETSC 3321#	0.01	mg/kg						
Ethylbenzene	DETSC 3321#	0.01	mg/kg						
Toluene	DETSC 3321#	0.01	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350636	2350637	2350638	2350639	2350640	2350641
Sample ID ~	WS10	WS10	WS11	WS11	WS12	WS12
Depth ~	0.60	2.50	0.60	1.00	0.60	1.00
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	05/06/2024	05/06/2024	05/06/2024	05/06/2024	05/06/2024	05/06/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Xylene	DETSC 3321#	0.01	mg/kg						
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg						
Acenaphthylene	DETSC 3303#	0.03	mg/kg						
Anthracene	DETSC 3303	0.03	mg/kg						
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg						
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg						
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg						
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg						
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg						
Chrysene	DETSC 3303	0.03	mg/kg						
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg						
Fluoranthene	DETSC 3303#	0.03	mg/kg						
Fluorene	DETSC 3303	0.03	mg/kg						
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg						
Naphthalene	DETSC 3303#	0.03	mg/kg						
Phenanthrene	DETSC 3303#	0.03	mg/kg						
Pyrene	DETSC 3303#	0.03	mg/kg						
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350642
Sample ID ~	WS12
Depth ~	2.10
Other ID ~	
Sample Type ~	SOIL
Sampling Date ~	05/06/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Metals				
Arsenic	DETSC 2301#	0.2	mg/kg	
Beryllium	DETSC 2301#	0.2	mg/kg	
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	
Cadmium	DETSC 2301#	0.1	mg/kg	
Chromium	DETSC 2301#	0.15	mg/kg	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	
Copper	DETSC 2301#	0.2	mg/kg	
Lead	DETSC 2301#	0.3	mg/kg	
Mercury	DETSC 2325#	0.05	mg/kg	
Nickel	DETSC 2301#	1	mg/kg	
Selenium	DETSC 2301#	0.5	mg/kg	
Vanadium	DETSC 2301#	0.8	mg/kg	
Zinc	DETSC 2301#	1	mg/kg	
Inorganics				
pH	DETSC 2008#		pH	6.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	
Organic matter	DETSC 2002#	0.1	%	
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076#	10	mg/l	13
Sulphur as S, Total	DETSC 2320	0.01	%	< 0.01
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.02
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	
Benzene	DETSC 3321#	0.01	mg/kg	
Ethylbenzene	DETSC 3321#	0.01	mg/kg	
Toluene	DETSC 3321#	0.01	mg/kg	

Summary of Chemical Analysis

Soil Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350642
Sample ID ~	WS12
Depth ~	2.10
Other ID ~	
Sample Type ~	SOIL
Sampling Date ~	05/06/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Xylene	DETSC 3321#	0.01	mg/kg	
PAHs				
Acenaphthene	DETSC 3303#	0.03	mg/kg	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	
Anthracene	DETSC 3303	0.03	mg/kg	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	
Chrysene	DETSC 3303	0.03	mg/kg	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	
Fluoranthene	DETSC 3303#	0.03	mg/kg	
Fluorene	DETSC 3303	0.03	mg/kg	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	
Naphthalene	DETSC 3303#	0.03	mg/kg	
Phenanthrene	DETSC 3303#	0.03	mg/kg	
Pyrene	DETSC 3303#	0.03	mg/kg	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350643	2350644	2350645
Sample ID ~	R01	WS01	WS03
Depth ~	0.60	0.30	0.60
Other ID ~			
Sample Type ~	LEACHATE	LEACHATE	LEACHATE
Sampling Date ~	04/06/2024	04/06/2024	06/06/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Preparation						
BS EN 12457 10:1	DETSC 1009*			Y	Y	Y
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	3.0	6.4	0.42
Barium, Dissolved	DETSC 2306	0.26	ug/l	18	11	0.60
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	< 12	< 12	< 12
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.41	0.56	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.2	2.8	0.5
Iron, Dissolved	DETSC 2306	5.5	ug/l	77	19	410
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.94	0.12	0.27
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.70	< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.2	11	0.9
Zinc, Dissolved	DETSC 2306	1.3	ug/l	3.6	< 1.3	1.5
Inorganics						
pH	DETSC 2008		pH	6.4	8.3	8.1
Cyanide, Total Low Level	DETSC 2131	0.1	ug/l	0.2	< 0.1	0.3
Phenol - Monohydric Low Level	DETSC 2131	1.5	ug/l	< 1.5	< 1.5	< 1.5
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350643	2350644	2350645
Sample ID ~	R01	WS01	WS03
Depth ~	0.60	0.30	0.60
Other ID ~			
Sample Type ~	LEACHATE	LEACHATE	LEACHATE
Sampling Date ~	04/06/2024	04/06/2024	06/06/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
PAHs						
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.03	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.03	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 0.01
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05
Phenanthrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	< 0.20	< 0.20

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350643	2350644	2350645
Sample ID ~	R01	WS01	WS03
Depth ~	0.60	0.30	0.60
Other ID ~			
Sample Type ~	LEACHATE	LEACHATE	LEACHATE
Sampling Date ~	04/06/2024	04/06/2024	06/06/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350643	2350644	2350645
Sample ID ~	R01	WS01	WS03
Depth ~	0.60	0.30	0.60
Other ID ~			
Sample Type ~	LEACHATE	LEACHATE	LEACHATE
Sampling Date ~	04/06/2024	04/06/2024	06/06/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1	< 1
SVOCs						
Phenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Aniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	2350643	2350644	2350645
Sample ID ~	R01	WS01	WS03
Depth ~	0.60	0.30	0.60
Other ID ~			
Sample Type ~	LEACHATE	LEACHATE	LEACHATE
Sampling Date ~	04/06/2024	04/06/2024	06/06/2024
Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-12083

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2350624	R01 0.60	SOIL	NAD	none	Vicky Convery
2350625	R02 0.30	SOIL	NAD	none	Vicky Convery
2350626	WS01 0.30	SOIL	NAD	none	Vicky Convery
2350627	WS03 0.60	SOIL	NAD	none	Vicky Convery

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-12083
 Client Ref ~ 8917
 Contract ~ BUGLEY FARM

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2350624	R01 0.60 SOIL	04/06/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	Aliphatics/Aromatics, BTEX / C5-C10, Naphthalene, PAH MS
2350625	R02 0.30 SOIL	04/06/24	GJ 250ml, PT 1L	pH + Conductivity (7 days)	
2350626	WS01 0.30 SOIL	04/06/24	GJ 250ml, GJ 60ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2350627	WS03 0.60 SOIL	06/06/24	GJ 250ml, GJ 60ml, PT 1L		
2350628	WS03 3.60 SOIL	06/06/24	PT 1L		
2350629	WS04 2.60 SOIL	06/06/24	PT 1L		
2350630	WS05 1.60 SOIL	06/06/24	PT 1L		
2350631	WS06 1.00 SOIL	06/06/24	GJ 250ml, GJ 60ml, PT 1L		
2350632	WS06 2.20 SOIL	06/06/24	PT 1L		
2350633	WS07 1.00 SOIL	05/06/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2350634	WS08 2.00 SOIL	05/06/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2350635	WS09 1.00 SOIL	05/06/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2350636	WS10 0.60 SOIL	05/06/24	GJ 60ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2350637	WS10 2.50 SOIL	05/06/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2350638	WS11 0.60 SOIL	05/06/24	GJ 250ml, GJ 60ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2350639	WS11 1.00 SOIL	05/06/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2350640	WS12 0.60 SOIL	05/06/24	GJ 250ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2350641	WS12 1.00 SOIL	05/06/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2350642	WS12 2.10 SOIL	05/06/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2350643	R01 0.60 LEACHATE	04/06/24	PT 1L	Aliphatics/Aromatics (4 days), pH/Cond (1 days), PAH MS (4 days), SVOC (7 days)	Aliphatics/Aromatics, BTEX / C5-C10, Metals (Soluble) ICPMS, Naphthalene, PAH MS, SVOC
2350644	WS01 0.30 LEACHATE	04/06/24	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (4 days), pH/Cond (1 days), PAH MS (4 days), SVOC (7 days)	VOC
2350645	WS03 0.60 LEACHATE	06/06/24	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (4 days), pH/Cond (1 days), PAH MS (4 days)	VOC

Information in Support of the Analytical Results

Our Ref 24-12083

Client Ref ~ 8917

Contract ~ BUGLEY FARM

Key: P-Plastic T-Tub G-Glass J-Jar

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

Appendix N



Certificate of Analysis

Certificate Number 24-13232

Issued: 04-Jul-24

Client Earth Science Partnership
33 Cardiff Road
Taffs Well
Cardiff
CF15 7RB

Our Reference 24-13232

Client Reference ~ 8917

Order No ~ 12679

Contract Title ~ Bugley Farm, Warminster

Description 6 Water No Information Supplied samples.

Date Received 28-Jun-24

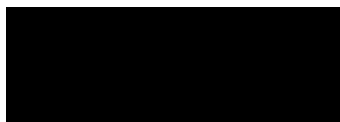
Date Started 28-Jun-24

Date Completed 04-Jul-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Water Samples

Our Ref 24-13232

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2357373	2357374	2357375	2357376	2357377	2357378
Sample ID ~	R001	R002	R003	WS02	CP03	CP05
Depth ~						
Other ID ~						
Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
Sampling Date ~	24/06/2024	24/06/2024	25/06/2024	25/06/2024	24/06/2024	25/06/2024
Sampling Time ~	00PM	00PM	00PM	00PM	00PM	00PM

Test	Method	LOD	Units						
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	4.5	0.51	0.49	4.8	1.3	1.4
Barium, Dissolved	DETSC 2306	0.26	ug/l	99	47	38	190	46	120
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	50	41	33	63	26	57
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	0.04	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.63	0.38	0.36	< 0.25	< 0.25	0.30
Copper, Dissolved	DETSC 2306	0.4	ug/l	4.5	2.5	2.1	1.2	1.4	3.5
Iron, Dissolved	DETSC 2306	5.5	ug/l	33	14	11	12	15	40
Iron, Total	DETSC 2306*	5.5	ug/l	2200	74000	1900	470000	27000	8200
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.49	0.19	< 0.09	0.13	0.16	0.27
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	4.1	1.6	2.2	7.6	5.7	4.2
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.1	0.41	0.35	0.40	< 0.25	0.40
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.5	< 0.6	< 0.6	< 0.6	< 0.6	1.7
Zinc, Dissolved	DETSC 2306	1.3	ug/l	97	14	17	95	16	100
Inorganics									
pH	DETSC 2008		pH	6.9	6.9	7.0	6.8	6.9	7.0
Cyanide, Free Low Level	DETSC 2131	0.1	ug/l	0.3	0.2	0.2	0.5	0.3	0.5
Phenol - Monohydric Low Level	DETSC 2131	1.5	ug/l	2.6	3.1	2.6	4.1	3.9	3.6
Sulphate as SO4	DETSC 2055	100	ug/l	7500	17000	14000	34000	17000	16000
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 24-13232

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2357373	2357374	2357375	2357376	2357377	2357378
Sample ID ~	R001	R002	R003	WS02	CP03	CP05
Depth ~						
Other ID ~						
Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
Sampling Date ~	24/06/2024	24/06/2024	25/06/2024	25/06/2024	24/06/2024	25/06/2024
Sampling Time ~	00PM	00PM	00PM	00PM	00PM	00PM

Test	Method	LOD	Units						
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
PAHs									
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01	0.01	< 0.01	0.13	0.02
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.24	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.35	0.02
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.31	0.02
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 0.01	< 0.01	0.14	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.01	< 0.01	0.14	0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.01	< 0.01	0.02	< 0.01	0.24	0.03
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.02	< 0.01	0.32	0.02
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05	0.07	< 0.50	< 0.05
Phenanthrene	DETSC 3304	0.01	ug/l	0.02	< 0.01	0.01	0.01	0.24	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	0.02	< 0.01	0.03	< 0.01	0.30	0.03
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	< 0.20	< 0.20	< 0.20	2.4	< 0.20

Summary of Chemical Analysis

Water Samples

Our Ref 24-13232

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2357373	2357374	2357375	2357376	2357377	2357378
Sample ID ~	R001	R002	R003	WS02	CP03	CP05
Depth ~						
Other ID ~						
Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
Sampling Date ~	24/06/2024	24/06/2024	25/06/2024	25/06/2024	24/06/2024	25/06/2024
Sampling Time ~	00PM	00PM	00PM	00PM	00PM	00PM

Test	Method	LOD	Units						
VOCs									
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27	< 27	< 27	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Summary of Chemical Analysis

Water Samples

Our Ref 24-13232

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2357373	2357374	2357375	2357376	2357377	2357378
Sample ID ~	R001	R002	R003	WS02	CP03	CP05
Depth ~						
Other ID ~						
Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
Sampling Date ~	24/06/2024	24/06/2024	25/06/2024	25/06/2024	24/06/2024	25/06/2024
Sampling Time ~	00PM	00PM	00PM	00PM	00PM	00PM

Test	Method	LOD	Units						
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

SVOCs									
Phenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Aniline	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2,4-Dimethylphenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2,4-Dichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 24-13232

Client Ref ~ 8917

Contract Title ~ Bugley Farm, Warminster

Lab No	2357373	2357374	2357375	2357376	2357377	2357378
Sample ID ~	R001	R002	R003	WS02	CP03	CP05
Depth ~						
Other ID ~						
Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
Sampling Date ~	24/06/2024	24/06/2024	25/06/2024	25/06/2024	24/06/2024	25/06/2024
Sampling Time ~	00PM	00PM	00PM	00PM	00PM	00PM

Test	Method	LOD	Units						
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0

2357373, 2357374, 2357375, 2357376, 2357377,
2357378 - WATER UNKNOWN testing is not
accredited

Information in Support of the Analytical Results

Our Ref 24-13232
 Client Ref ~ 8917
 Contract ~ Bugley Farm, Warminster

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2357373	R001 WATER	24/06/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2357374	R002 WATER	24/06/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2357375	R003 WATER	25/06/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2357376	WS02 WATER	25/06/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2357377	CP03 WATER	24/06/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2357378	CP05 WATER	25/06/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	

Key: G-Glass P-Plastic B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



Certificate of Analysis

Certificate Number 24-14443

Issued: 18-Jul-24

Client Earth Science Partnership
33 Cardiff Road
Taffs Well
Cardiff
CF15 7RB

Our Reference 24-14443

Client Reference ~ 8917

Order No ~ 12721

Contract Title ~ BUGLEY FARM , WARMINISTER

Description 6 Other Water samples.

Date Received 12-Jul-24

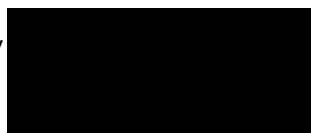
Date Started 12-Jul-24

Date Completed 18-Jul-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 7

Summary of Chemical Analysis

Water Samples

Our Ref 24-14443

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM , WARMINISTER

Lab No	2363769	2363770	2363771	2363772	2363773	2363774
Sample ID ~	R003	WS02	CP05	R002	CP03	R001
Depth ~	4.00	2.00	4.20	4.00	4.00	6.50
Other ID ~						
Sample Type ~	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER
Sampling Date ~	10/07/2024	10/07/2024	10/07/2024	10/07/2024	10/07/2024	10/07/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.47	4.6	1.5	0.56	0.77	4.8
Barium, Dissolved	DETSC 2306	0.26	ug/l	150	140	190	56	50	28
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	51	60	58	44	33	33
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.28	< 0.25	0.42	0.39	< 0.25	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.9	< 0.4	4.3	2.8	1.9	3.5
Iron, Dissolved	DETSC 2306	5.5	ug/l	14	14	200	120	42	51
Iron, Total	DETSC 2306*	5.5	ug/l	750	22000	530	3700	370	110
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.18	< 0.09	0.62	0.60	< 0.09	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	2.6	6.7	4.6	2.1	5.0	3.8
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.31	0.33	0.33	< 0.25	< 0.25	0.58
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	< 0.6	< 0.6	2.1	< 0.6	< 0.6	1.2
Zinc, Dissolved	DETSC 2306	1.3	ug/l	110	32	140	25	13	18
Inorganics									
pH	DETSC 2008		pH	6.9	6.8	6.6	6.9	6.8	7.1
Cyanide, Free Low Level	DETSC 2131	0.1	ug/l	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0
Phenol - Monohydric Low Level	DETSC 2131	1.5	ug/l	< 100.0	< 100.0	< 100.0	< 100.0	< 100.0	< 100.0
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 24-14443

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM , WARMINISTER

Lab No	2363769	2363770	2363771	2363772	2363773	2363774
Sample ID ~	R003	WS02	CP05	R002	CP03	R001
Depth ~	4.00	2.00	4.20	4.00	4.00	6.50
Other ID ~						
Sample Type ~	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER
Sampling Date ~	10/07/2024	10/07/2024	10/07/2024	10/07/2024	10/07/2024	10/07/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	0.07	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	DETSC 3304	0.01	ug/l	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20



Summary of Chemical Analysis

Water Samples

Our Ref 24-14443

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM , WARMINISTER

Lab No	2363769	2363770	2363771	2363772	2363773	2363774
Sample ID ~	R003	WS02	CP05	R002	CP03	R001
Depth ~	4.00	2.00	4.20	4.00	4.00	6.50
Other ID ~						
Sample Type ~	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER
Sampling Date ~	10/07/2024	10/07/2024	10/07/2024	10/07/2024	10/07/2024	10/07/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
VOCs									
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27	< 27	< 27	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Symbol key at end of report
General

Summary of Chemical Analysis

Water Samples

Our Ref 24-14443

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM , WARMINISTER

Lab No	2363769	2363770	2363771	2363772	2363773	2363774
Sample ID ~	R003	WS02	CP05	R002	CP03	R001
Depth ~	4.00	2.00	4.20	4.00	4.00	6.50
Other ID ~						
Sample Type ~	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER
Sampling Date ~	10/07/2024	10/07/2024	10/07/2024	10/07/2024	10/07/2024	10/07/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
SVOCs									
Phenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 24-14443

Client Ref ~ 8917

Contract Title ~ BUGLEY FARM , WARMINISTER

Lab No	2363769	2363770	2363771	2363772	2363773	2363774
Sample ID ~	R003	WS02	CP05	R002	CP03	R001
Depth ~	4.00	2.00	4.20	4.00	4.00	6.50
Other ID ~						
Sample Type ~	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER	WATER OTHER
Sampling Date ~	10/07/2024	10/07/2024	10/07/2024	10/07/2024	10/07/2024	10/07/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

2363769, 2363770, 2363771, 2363772, 2363773,
2363774 - WATER OTHER testing is not accredited

Information in Support of the Analytical Results

Our Ref 24-14443
 Client Ref ~ 8917
 Contract ~ BUGLEY FARM , WARMINISTER

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2363769	R003 4.00 WATER	10/07/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2363770	WS02 2.00 WATER	10/07/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2363771	CP05 4.20 WATER	10/07/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2363772	R002 4.00 WATER	10/07/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2363773	CP03 4.00 WATER	10/07/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2363774	R001 6.50 WATER	10/07/24	GB 1L, GV, PB 1L	pH/Cond (1 days)	

Key: G-Glass P-Plastic B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

General Notes

GENERAL NOTES

1. Earth Science Partnership (ESP) believes that providing information about limitations is essential to help clients identify and therefore manage their risks. These risks can be mitigated through further investigation or research, but they cannot be eliminated. This report may not be used for any purpose other than that for which it was commissioned.
2. This report includes available factual data for the site as obtained only from the sources described in the text. The data are related to the site on the basis of the site location and boundary information provided by the client. The findings and opinions conveyed in this assessment are based on the information obtained from a variety of sources as detailed in the report, which ESP believe are reliable. Nevertheless, ESP cannot and does not guarantee the authenticity or reliability of the information it has relied on. It is possible that the assessment failed to indicate the existence of further sources of information on the site. Assuming such sources do exist, their information could not have been considered in the formulation of the opinions and findings in this report. It should be recognised that different conditions on site may have existed between and subsequent to the various map surveys.
3. In preparing this report it has been assumed that all past and present occupants of the site have provided all relevant and other information, especially relating to known or potential hazards. This report is not required to identify insufficiencies or mistakes in the information provided by the user/owner or from any other source, but has sought to compensate for these where obvious in the light of other information.
4. Reports are normally prepared and written in the context of a stated purpose, and should not, therefore be used in a different context. Furthermore, new information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission.
5. The opinions presented in this report are based on the findings derived from a site inspection, investigations and a review of historical and other records. The report details any indicators that may suggest that hazardous substances exist at the site at levels likely to warrant mitigation. Not finding such indicators does not mean that hazardous substances do not exist at the site. The most recent site inspection was undertaken as detailed within the report. Circumstances on sites are subject to change and certain indicators of the presence of hazardous substances that may have been latent at the time of this inspection may subsequently have become observable.
6. The work carried out for the assessment can only investigate a small portion of the subsurface conditions. Certain indicators or evidence of hazardous substances may have been outside the limited portion of the subsurface investigated, latent at the time of the work or only partially intercepted by the works, and thus their full significance could not be appreciated. In this regard, groundwater levels are particularly susceptible to variation and it should be noted that groundwater levels are subject to diurnal, seasonal, and climatic changes and are solely dependent on the time the ground investigation was carried out and the weather before and during the investigation.
7. Accordingly, it is possible that the assessment failed to indicate the presence or significance of hazardous substances. Assuming such substances exist, their presence could not have been considered in the formulation of the report's findings and opinions. The conclusions resulting from this study and contained in this report are not necessarily indicative of future conditions or operating practices at or adjacent to the site. Where differing ground conditions or suspect materials are encountered during future site works, additional specialist advice should be sought to assess whether the new information will materially affect the recommendations currently provided herein and whether further consideration is required. Any limiting factors should be assessed by an appropriately qualified specialist.
8. The assessment was prepared for the sole internal use and reliance of the Client. The report shall not be relied upon by or transferred to other parties without the express written authorisation of the Earth Science Partnership. If an unauthorised party comes into possession of the report, they rely on it at their peril and the authors owe them no duty of care and skill.
9. The copyright in this report and other plans and documents prepared by the ESP is owned by them and no such report, plan or document may be reproduced, published or adapted without their consent. Complete copies of this report may, however, be made and distributed by the Client as an expedient in dealing with matters related to its commission.

General Construction Advice

GENERAL GEOTECHNICAL CONSTRUCTION ADVICE

1. The locations of all buried services should be accurately determined prior to detailed design in order that zones of influence, easements, diversions etc. can be considered. Care should be undertaken that any field drains encountered are carefully and satisfactorily blocked to prevent water seeping through the drains and into any excavations.
2. A site strip should be undertaken with all surface vegetation and topsoil either stockpiled for future re-use or disposed at a suitable licensed facility. In particular, all areas of Japanese Knotweed should be excavated and disposed in accordance with published guidelines.
3. All areas of hardstandings or old foundations, basements or other substructures should be broken out and either processed for re-use on site or disposed of at a suitable licensed landfill facility.
4. For all spread foundation options, formations should be cleaned, and subsequently inspected by a suitably qualified engineer prior to placing concrete. Should any soft, compressible or otherwise unsuitable materials be encountered they should be removed and replaced by lean mix concrete or suitable compacted granular material. A blinding layer of concrete should be placed after excavation and inspection in order to protect the formation against softening and disturbance.
5. Generally, all foundations should be placed wholly within the same material type, unless specific geotechnical inspection and assessment has been undertaken.
6. The location of the exploratory holes undertaken as part of this report should be accurately surveyed in order that their precise location is known and that appropriate precautions can be taken when building over or near to these locations.
7. Appropriate precautions should be adopted to prevent the disturbance of foundations or services by roots associated with trees or hedges where shallow foundations are considered within the influence zone of such trees and hedges. Any such roots should be removed from foundation excavations and the foundations located below such disturbance strata. Where the natural soil bounded by the foundations could increase in volume greater than that outside the foundations (e.g. where a shallow foundation is sited over a previous tree or severed major roots) a compressible material / loose backfill should be placed on the faces of the footing.
8. Where the distance from foundations to existing trees/hedgerows is less than twice the foundation depth, as determined by NHBC Practice Note 3 (1985), a compressible material or loose backfill shall be placed on the outside of the foundation to absorb potential forces.