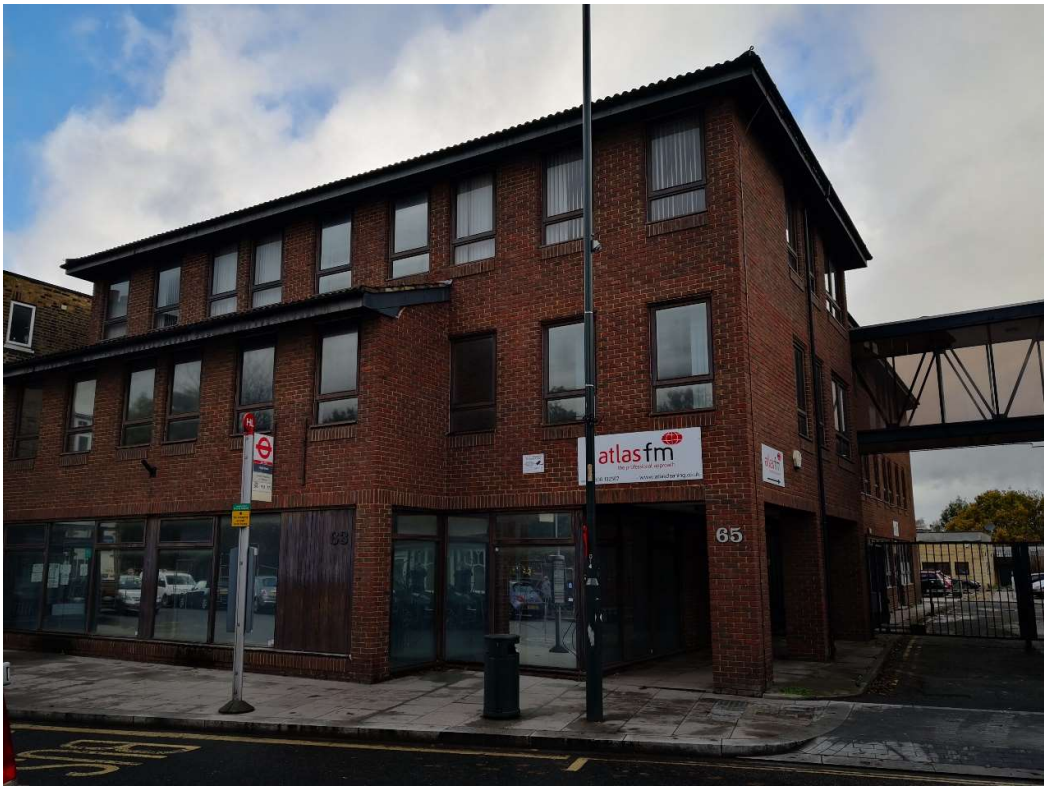
HBPW
CONSULTING ENGINEERS

# Geoenvironmental Assessment
# For
# Proposed Development
# at
# 63-71 High Street, Hampton Hill
# TW12 1NH




**REPORT PREPARED ON BEHALF OF**
**LEIGH AND GLENNIE LTD**

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**Report prepared by:**

**pp**

**Elin Griffiths - Geoenvironmental Engineer**
Bsc (Hons) Msc FGS

Date: 19th August 2016

**Approved by:**

**Jay Fox - Associate Geoenvironmental**
BEng (Hons) PGDWasteMgmt CGeol EurGeol CEnv MCIWM SiLC AIEMA FGS

Date: 19th August 2016

**Report Revised by:**

**Jon Oliver – Geotechnical Engineer**
Date: 12th November 2020

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## 1. INTRODUCTION

HBPW LLP (HBPW) was instructed by Leigh and Glennie Ltd (the Client) to undertake a Geoenvironmental Site Investigation at a site known as 63-71 High Street, Hampton Hill, TW12 1NH hereafter referred to as 'the site').

The proposed permitted development comprises the refurbishment and conversion of existing office buildings to residential apartments with associated areas of carparking and access. The development is not anticipated to include any areas of private garden or soft landscaping, beyond that is currently present.

This report describes an intrusive ground investigation carried out by HBPW LLP following completion of a Phase 1 Preliminary Risk Assessment by HBPW LLP (report reference SL06837-REP-01, August 2016 and revised September 2020). It is recommended that this report be read in conjunction with the Phase 1 report.

This Report considers the content of the Phase 1 report and includes a description and interpretation of a site investigation carried out to characterise the ground conditions at the site in order to complete a Conceptual Site Model (CSM) and to undertake a Risk Based Land Quality Assessment.

This report has been prepared in general accordance with Contaminated Land Report 11 (CLR) Model Procedures for the Management of Contaminated land (DEFRA and the Environment Agency) and BS10175:2011 (Investigation of Potentially Contaminated Sites – Code of Practice).

The objectives of the investigation are as follows:-

i) Undertake a site reconnaissance visit to inspect the site and determine appropriate ground investigation methods;

ii) Drill two exploratory boreholes using cable percussive methods to target depths of 15 m with the installation of monitoring wells to monitor potential ground gases and groundwater;

iii) Excavate up to six trial pits in order to obtain samples of near surface soils for geochemical and geotechnical analysis and to inspect ground stability;

iv) Carry out in-situ and geotechnical laboratory testing to obtain soil parameters for use in the design of the proposed scheme;

v) Carry out geochemical testing to determine the concentration of a range of common potential contaminants, as identified during the Phase 1 desk study;

vi) Return monitoring visit to record groundwater level and concentrations of ground gases; and

vii) Prepare an interpretative report providing an updated risk assessment and advice on the geoenvironmental and geotechnical aspects of the project.

The information and conclusions contained with this assessment have been made based upon information provided by the Client, QTS Environmental Laboratories (laboratory analysis results), Landmark Envirocheck (report reference 81953700_1_1) and from publicly available information published by the Environment Agency (EA), British Geological Survey (BGS), Ordnance Survey (OS), and others, where appropriate.

HBPW LLP cannot be held responsible for inaccuracies in the data supplied or published by any other party. In addition, no responsibility can be accepted by HBPW LLP for any variations in environmental liabilities which arise from information or reports not provided at the time of the assessment and where the presence of such information could not be foreseen.

This report is to be submitted as part of the documentation required to support an application for Prior Approval for the permitted development change of use of the existing B1 offices to C3 residential.

# 2 SITE SETTING

## 2.1 Site Location

The site address is 63-71 High Street, Hampton Hill, TW12 1NH. The subject site is located on the western side of High Street, and can be approximately located by National Grid Reference TQ 142 708.

## 2.2 Site Description

A site reconnaissance visit was undertaken as part of the Phase 1 report (May 2016) and found the site to be in the following condition:-

The site formed a rectangular piece of land measuring 68m in a northwest to south east orientation by 38 m in a northeast to southwest direction and was occupied primarily by three buildings. Two office buildings fronted onto High Street were joined by an enclosed overhead link walkway at first floor level. The third building was located in the southwest quadrant backing onto the access road to the St. Clare Business Park.

Vehicular access to the site was gained by metal gates located centrally between the frontage buildings with a pedestrian entrance along the western boundary, adjacent to the building in the southwest corner.

To the south of the site is a mixed office and residential terrace. To the north of the site, at the time of writing, a number of houses were under construction.

## 2.3 Phase 1 Report

A Phase 1 Preliminary Risk Assessment (reference SL06837-REP-01) was prepared for the Site. A brief summary of the report's findings are summarised below.

The site had been occupied by three residential buildings with associated gardens since at least 1869. From approximately 1959 to 1975 to 1985, the northern half of the site was in use as a builder's yard, whilst the southern half was labelled as 'Works'. After this, the site was occupied by present day developments.

Based on knowledge of the area and geological information provided by the British Geological Society, the site was anticipated to be underlain by superficial deposits of Taplow Gravel Formation (Sands and Gravel) to a depth of at least 8 m, overlain by a thin veneer of made ground. The underlying bedrock was anticipated to be London Clay Formation.

No ground stability hazards were recorded on site.

The nearest recorded surface water feature was Longford River, approximately 200m to the west of the site, flowing to the south.

BGS Groundwater Vulnerability Map Sheet 39, West London, indicated the site to be underlain by soils of a high leaching potential. Superficial deposits were recorded as a Principal Aquifer, considered to represent the Taplow Gravel Formation whilst the underlying London Clay Formation was recorded to be Unproductive Strata.

Potentially contaminative land uses were present within 250 m of the site including sheet metal workers, garages, printers and dry cleaners. A petrol filling station (PFS) was also present 240 m to the northeast of the site.

# 3 INITIAL CONCEPTUAL SITE MODEL

An initial Conceptual Site Model (CSM) was developed in the Phase 1 report, adopting the source-pathway-receptor approach.

The initial CSM is developed during the preliminary risk assessment stage and is then used to design the Phase 2 Intrusive Investigations.

For a risk from ground contamination to exist, a contaminant source, pathway for migration and viable receptor must exist. The presence of all three of these elements is known as a 'pollutant linkage'. The criteria used for risk assessment classifications in the table below are broadly based on those presented in Section 6.3 of CIRIA Report 552 "*Contaminated Land Risk Assessment: A Guide to Good Practice*".

- **Sources (S)** are potential or known contaminant sources e.g. soil contamination resulting from a former land use;
- **Pathways (P)** are environmental systems thorough which a contaminant could migrate e.g. air, groundwater;
- **Receptors (R)** are sensitive environmental receptors that could be adversely affected by a contaminant. e.g. Human End User (longer- term risks) or groundworkers (shorter-term risks), surface or groundwater resources and ecology.

A preliminary CSM detailing the pollutant linkages identified and the associated risks is detailed in Table 3.1 overleaf. The full methodology is presented in Appendix 1.

**Table 3.1 Preliminary Qualitative Risk Assessment**

| Potential Source | Potential Receptor | Potential Pathway | Consequence | Probability | Risk | Comments |
|---|---|---|---|---|---|---|
| **S1**: Potential for asbestos containing materials (ACMs) present in existing buildings and made ground | **R1**: Construction/ maintenance workers/end users | **P1**: Human uptake pathways (Inhalation of fibers). | Medium | Low likelihood | Low | There is a potential for asbestos to be present within buildings at the site and within the made ground. Inspection of existing asbestos register, if present or appropriate asbestos inspections of buildings prior to refurbishment followed by appropriate removal will mitigate risks. As a precautionary measure, asbestos screening of soils during Phase 2 Intrusive Investigations will be undertaken. |
| **S2**: Potential for contamination within any made ground at the site. | **R1**: Construction/ maintenance workers/end users. | **P1**: Human uptake pathways (inhalation, dermal, ingestion). | Medium | Low likelihood | Low/Very Low | Phase 2 Intrusive Site investigation works with appropriate testing will assess the presence and concentration of contamination in made ground. This will inform risk based assessment of contamination. The overall risk to human health is considered likely to be low as the existing buildings and infrastructure are anticipated to remain in-situ. |
| **S3:** Potential for on-Site groundwater contamination resulting from previous contaminative Site use | **R2**: Controlled waters (groundwater beneath the site)<br><br>**R4**: Construction Materials - Buried concrete and potable water supply pipes. | **P2**: Horizontal and vertical migration of contaminants through the unsaturated zone.<br><br>**P3**: Horizontal and vertical migration of contaminants within groundwater. | Medium | Low likelihood | Moderate/Low | Groundwater is thought to be located at the boundary between the Taplow Gravels and the London Clay at approximately 8m bgl. There is likely to be a thick unsaturated zone but mobile contaminants can migrate vertically relatively quickly. |
| **S4**: Potential off-site sources of hazardous ground gas. | **R1**: Construction/ maintenance workers/end users. | **P1**: Human uptake pathways (inhalation). | Medium | Low likelihood | Moderate/Low | There are no landfills close to the Site or natural Peat or other organic soils with the potential to generate ground gases. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **R5**: Buildings - Hazardous ground gas accumulation and explosion. | **P2**: Horizontal and vertical migration of contaminants through the unsaturated zone; | | | | Degradation of hydrocarbons may lead to the generation of hazardous ground gases, which will be assessed as part of the Phase 2 investigation. |
| **S5**: Potential for groundwater contamination from off-Site sources | **R1**: Construction/ maintenance workers/end users.<br><br>**R2**: Controlled waters (groundwater with Secondary Principal Aquifer);<br><br>**R4**: Construction Materials - Buried concrete and potable water supply pipes. | **P1**: Human uptake pathways (ingestion, dermal contact).<br><br>**P3**: Horizontal and vertical migration of contaminants within groundwater. | Medium | Low likelihood | Moderate/Low | There are a number of adjacent historical and on-going potentially contaminative Site uses that could have led to groundwater contamination. |

# 4 PHASE 2 GROUND INVESTIGATION WORKS

This section explains the rationale and techniques employed during field work.

## 4.1 Fieldwork

In order to provide a suitable level of assessment based on the information obtained at desk study stage and the requirements for structural and geotechnical design, the site investigation comprised the following:

- Drilling of two cable percussion boreholes (CP1) and (CP2) using a cable percussion rig to a maximum depth of 15.05 m to assess deeper ground conditions and included Standard Penetration Tests SPT and collection of U100 samples for the purposes of foundation design. Borehole CP1 was located in the northeastern area, whilst CP2 was located in the northwestern area. The works were undertaken by Kiwa CMT Limited
- Excavation of five trial pits using a JCB3cx backhoe excavator with hydraulic breaker (TP01 to TP05). The trial pits were located throughout the external areas of hardstanding, where access allowed to a maximum depth of 2.7 m to enable investigation of shallow soils.

The site work was carried out between 19th and 20th May 2016. An Exploratory Hole Location Plan is presented later in this report.

During the excavation of the trial pits on 19th May, a small water service pipe, not previously identified during service clearance, was struck within TP01 at 0.85m depth. The Client was informed and the pipe was sealed off and repaired on 20th May 2016.

Concrete hardstanding was located across the Site at approximately 150mm thickness and reinforced in TP01. Concrete obstructions were observed at approximately 1.2 m in TP02 and 1.8 m in TP04. Within TP3 an insitu brick footings or a wall were encountered at approximately 0.3 m depth.

The exploratory holes were logged by an engineer from HBPW LLP, who attended site full time to supervise the works.

Selected representative sub-samples were retrieved and sealed in suitable containers to prevent deterioration and moisture content loss. The samples were kept cool before and during transit to the laboratory.

Standard Penetration Tests (SPTs) were undertaken in CP1 and CP2 to assess relative density (N value). The results of the tests are recorded as 'N' values and given on the borehole logs.

In order to monitor ground gas emissions and groundwater levels, a 500 mm internal diameter well was installed in each of the boreholes to a depth of 6 m bgl. The details of the construction are shown on the borehole log. A protective cover was installed at ground level over the well.

The fieldwork and laboratory testing for the investigation were carried out generally in accordance with BS 5930: 1999 +A2: 2010, 'Code of Practice for Site Investigations' and BS 1377:1990, 'Methods of test for soils for civil engineering purposes', respectively.

Full details of the fieldwork and the ground conditions are shown in the logs later in this report, Appendix 2.

### 4.2 Laboratory Testing

The programme of laboratory testing was designed to obtain the following data:-

i) pH and water soluble sulphate
ii) concentrations of commonly occurring contaminants including inorganics, cyanide and heavy metals,
iii) speciated polycyclic aromatic hydrocarbons (PAH)
iv) total petroleum hydrocarbons (TPH) with CWG banding including BTEX and MTBE
v) screening for the presence of asbestos containing materials (ACM)
vi) Volatile Organic Compounds (VOC) and Semi-Volatile Organic Compounds (SVOC)
vii) Polychlorinated biphenyls (PCBs) and speciated phenols
viii) Waste Acceptance Criteria (WAC) testing

Geochemical analysis was carried out between 25th May and 1st June 2016 on selected samples by QTS Environmental Limited who hold MCERTS and UKAS accreditation. The results of the laboratory testing are presented at Appendix 3.

# 5 GROUND CONDITIONS

## 5.1 Geology

The British Geological Survey (BGS) online Geology of Britain Viewer and information provided in the Landmark Envirocheck report indicated the site to be underlain by the Taplow Gravel Formation overlying the London Clay Formation.

## 5.2 Ground Model

For full descriptions of the strata encountered please refer to the exploratory hole logs presented in Appendix 3.

**Table 5.2 Ground Model**

| Stratum | *Typical Description* | Typical depth m bgl |
|---|---|---|
| **Site Surface** | *Flexible surfacing over 150mm nominal unreinforced Concrete* | To 0.150m |
| **Made Ground** | *Made ground was identified within both the boreholes and the trial pits. Made ground within the boreholes ranged in thickness between 1.25 and 1.75 m and typically comprised of discontinuous layers of sandy matrix with gravel and cobbles of crushed stone, concrete, brick, ash.* | To between 1.3 and 1.8m |
| **Relic Topsoil** | *A relic topsoil and subsoil layer was encountered in all trial pits this representing the previous gardens to the historical residential developments.* | To between 0.8 and 1.2m |
| **Sand and Gravel – Taplow Gravel** | *Medium dense to dense Sand and Gravel* | To 5.6m |
| **London Clay** | *Very stiff bluish grey Clay was encountered within both boreholes and extended beyond the maximum depth of the investigation.* | In excess of 15.05m |

## 5.3 Groundwater

During drilling groundwater strikes were encountered at 4.5m within the Sands and Gravel of both boreholes CP1 and CP2 before rising to rest at 4.2m bgl.

## 5.4 Indications of Contamination

No obvious significant visual or olfactory evidence of contamination was recorded at ground level or during the intrusive investigation. Ash was noted in several exploratory hole locations. Made ground will most likely of been imported to Site or is formed from the demolition of previous structures at the Site.

# 6 ASSESSMENT OF CONTAMINATION

## 6.1 Introduction

This section describes the chemical contamination analyses carried out as part of the recent investigation and assesses the implications of any significant contamination found. The results of the chemical analyses have been reviewed against the appropriate guidelines in general use at the time of preparing this report.

A qualitative risk assessment has been carried out in terms of source-pathway-receptor analysis. The risk assessment analyses the significance of any contamination that has been identified on the proposed development and other identified site receptors.

## 6.2 Legislative Background

The legislative document regarding land contamination is the 1995 Environment Act. Forming Part 2A of the Environmental protection Act of 1990, this Act created the framework for the identification and remediation of contaminated land. It established the Environment Agency as the overall National Enforcement Agency with regional control provided by the Local Authorities.

The Act defines "contaminated land" as any land, which is deemed by the Local Authority to be "in such a condition, by reason of substances, in, on, or under the land that:-

i) significant harm is being caused or there is significant possibility of such harm being caused; or
ii) significant pollution of Controlled Waters is being caused, or there is significant possibility of such harm being caused".

In relation to Regulatory intervention (Part 2A) and 'voluntary' investigation (including redevelopment of the sites which may be affected by contamination), the Model Procedures (CLR-11, Environment Agency 2004), provide a generic framework indicating key technical activities applicable in each of these contexts. The management of land contamination broadly comprises three components which are identified as 'Risk Assessment', 'Options Appraisal' and 'Implementation'. These, in turn, determine if any unacceptable risks exist, ascertain the most appropriate remediation strategy for the site and demonstrate that the strategy will be effective.

In accordance with this and other current guidance, where a 'land quality' risk assessment is required each 'Relevant Pollutant Linkage' (formerly referred to as 'source – pathway – receptor' framework), is separately identified and a level of risk attached. The risk assessment takes account of the environment, end user behaviour and the nature of the development in relation to proven 'unacceptable' risk. This is the

approach supported by current guidance and therefore has been adopted in the assessment of this site.

The guidance requires a Phase 1 investigation or desk study to be undertaken as the first stage of the risk assessment. This identifies potential sources, pathways and receptors for the site taking into account the proposed end use. Potential pollutant linkages are then documented in the form of an 'Initial Conceptual Site Model'. This is then used to direct and target a Phase 2 or intrusive investigation. The outcome of the intrusive investigation and subsequent 'land quality' risk assessment is the establishment of plausible relevant pollutant linkages shown in the form of a 'Refined Conceptual Model'. This is used to determine the need for further investigation, or remediation to appropriately mitigate any determined unacceptable risks. In accordance with the Model Procedures and Regulatory preference, detailed remedial measures should be provided in a separate report to the investigation and risk assessment, generally referred to as a Remediation Method Statement (RMS).

### 6.3 Published Guidelines

In the absence of a complete published set of screening values, the results of chemical analysis from the recent investigation has been compared with the various published guidelines that are currently in use for land quality risk assessments. The following have been used in this assessment:-

- The LQM/CIEH Safe for Use Levels (S4ULs) for Human Health Risk Assessment. '*Copyright Land Quality Management Limited reproduced with permission Number S4UL3512. All rights reserved.'*

- Contaminated Land Exposure Assessment Model (CLEA) including the 2009 SGVs for certain determinands

- EIC/AGS/CL:AIRE – Soil Generic Assessment Criteria for Human Health Risk Assessment, 2010

- In house Generic Screening Values (HH-GSVs) derived by the Consultant and other non UK values where considered relevant.

- Category 4 Screening Levels (C4SLs), DEFRA, 2014

- Guidance For The Selection Of Water Supply Pipes To Be Used In Brownfield Sites, UK Water Industry Research (UKWIR) Ltd, Report Reference No. 10/WM/03/21, 2010

- Environment Agency Technical Advice to Third Parties on Pollution of Controlled Water for Part 2A

## 6.4 Generic Qualitative Risk Assessment

The following subsection reviews the results of the chemical analyses from the recent investigation, with respect to the potential receptors identified in subsection 4 of report number SL06837-Rep-01 dated May 2016 and revised September 2020.

In order to classify the anticipated risk associated with contamination identified on site, a classification system in Appendix 2 has been adopted.

The respective generic Tier 1 screening values used are presented in Appendix 3.

The proposed development is for the refurbishment and adaption of the existing office buildings into residential apartments with associated areas of hardstanding, carparking and access from High Street. As such, any areas of soft landscaping are considered likely to be limited, or comprise raised planters. Therefore, for the purposes of this assessment, the analytical results have been assessed against guidance values for a '*Residential without Plant Uptake'* land-use.

In cases where contaminants are present in one or more samples in a specific averaging area, above their respective Tier 1 GAC, the results are subject to statistical assessment in accordance with current best practice to establish if the true mean (upper 95$^{th}$ percentile) is above the screening criteria. It is also used to determine whether elevated concentrations are outliers from the general test result population and thus can be considered as discrete 'hotspots' of contamination that could be remediated independently, or whether the concentrations would be considered representative of site-wide contamination within the soils. If so, further consideration is given to the risk presented by the contaminant of concern. This may include further detailed quantitative risk assessment and/or further sampling and testing.

## 6.5 Analytical Test Results

Some screening values for organic determinands vary according to the soil organic matter (SOM). A conservative value of 1% has been used in the application of Tier 1 screening value for this site, based on measured values.

The full analytical results are presented in Appendix 5, at the back of this report.

### 6.5.1 Soils

*i) Inorganics*

Twelve samples of soil recorded concentrations of lead above the Tier 1 screening value of 310 mg/kg for a 'residential without plant uptake' end use. A statistical analysis was carried out on lead and summarized in Table 6.5.1.

**Table 6.5.1 Inorganic determinands assuming 'Residential without Plant Uptake' end use**

| | Concentration (mg/kg) | | | |
|---|---|---|---|---|
| **Determinand** | **Max** | **Mean** | **Tier 1 Screening Value** | **Number of results > T1SV** |
| Lead | 1520 | 350.1 | 310 | 4 |

The highest concentrations of lead were encountered in the made ground at 1.2 m depth in TP02 (1520 mg/kg) and at 0.85 m depth in TP04 (952 mg/kg). However, these values were considered statistically significant as even once they had been removed from the dataset, the upper confidence limit was still above the Tier 1 Screening Value. It is considered that there is a low to moderate risk from elevated concentrations of lead within the made ground. However, since these areas are considered likely to be covered by hard-standing or areas of car parking, the residual risk to end users is considered to be negligible.

All other inorganic results including total, free and complex cyanides, metals and metalloids were either below the limit of detection or below the respective Tier 1 Screening Value. Therefore, a negligible risk has been determined to end users from all of the other inorganic determinands analysed.

pH values ranged between 7.4 and 9.2, indicating a slightly alkaline soil.

*ii) Organics*

No visible staining or odours were observed within any of the exploratory holes whilst drilling.

A slightly elevated concentration of TPH was recorded at 1.2 m depth in TP02 of 1174 mg/kg. However, this does not exceed the T1 Screening Value based on a 'residential without plant uptake' end use.

All concentrations of PAH, phenols, BTEX &MTBE, VOCs and SVOCs and PCBs recorded were either below the limit of detection or did not exceed the respective Tier 1 Screening Values, as listed in Appendix 5.

*iii) Asbestos Containing Materials (ACM)*

Ten soil samples were screened for the presence of asbestos. However, the presence of asbestos was not positively identified. Therefore, a negligible risk is considered to end users from asbestos or asbestos containing materials within soil.

### 6.5.2 Ground Gas

The made ground beneath and adjacent to the site was considered a potential source of ground gas. Should any potential excavation be undertaken as part of the development process, by means of the installation of a basement, the potential for the lateral migration of ground gases was identified.

As a precautionary measure, wells were installed within CP1 and CP2 to allow the monitoring of ground gas and groundwater levels, where encountered and a return monitoring visit was undertaken on 16 June 2016.

The results of the ground gas monitoring from this investigation have been evaluated using latest guidance contained in BS8485:2015 which provides a classification system using the measured *ground gas concentrations* and the *borehole hazardous gas flow rates ($Q_{hg}$)* to calculate a gas screening value (GSV). The GSV is then used with professional judgement to define a *characteristic situation (CS)* for methane and carbon dioxide for the Site.

The GSV is calculated by multiplying $Q_{hg}$ (L/hr) by the measures gas concentration (% v/v), using the maximum recordable concentrations of methane and carbon dioxide and the maximum recordable positive gas flow rate, or the instrument limit of detection (typically 0.1L/hr) where no flow is recorded.

In the circumstance of a negative flow the instrument limit has been used and other monitoring events and site observations considered in making judgements on GSV derivation.

Once calculated, the GSV is used to determine the CS using Table 2 BS8485:2015.

A summary of the monitoring event is presented in Table 6.5.2. Full monitoring results are presented in Appendix 6.

**Table 6.5.2 Ground Gas Monitoring**

| Location ID | $CH_4$ % | $CO_2$ % | O2 % | Flow L/hr | GSV L/hr | CS |
|---|---|---|---|---|---|---|
| **CP1** | 0.0 | 5.5 | 11.2 | 15.4 | 0.847 | 3 |
| **CP2** | 0.0 | 4.8 | 15.1 | 15.4 | 0.739 | 3 |

Based on the readings, the worst case calculated GSV would place the site gas regime in CS3. The gas flow recorded at both locations was very high, but was considered erroneous as it remained constant on turning the monitor on and off and between boreholes, and so it is thought due to a fault with the gas monitor. The slightly elevated concentrations of $CO_2$ , which are considered to be as a result of materials within the made ground particularly the buried topsoil layer (maximum depth of 1.8 m) exceeded the trigger value of 5%, which would elevate the classification to CS2.

There are no landfills close to the Site but there are buried relic topsoil with the potential to generate ground gases. Should the end use of the proposed development change, it would be considered prudent to carry out further ground gas monitoring to clarify the ground gassing regime beneath the site.

### 6.5.3 Summary of End User Risk Assessment

A low to moderate risk has been determined to end users from elevated concentrations of lead within the made ground.

Concentrations of other determinands analysed within soil as part of the investigation were not considered to pose a significant risk to end users.

A negligible risk was determined to end users from asbestos containing materials. However, the inherent variability of made ground means that the potential for asbestos to be present cannot completely be dismissed. Asbestos containing materials may be present within existing buildings on the site and consequently a potential low risk associated with asbestos remains for end users.

A low risk to end users is considered from ground gas, however should the proposed development scheme change, it would be considered prudent to further categorise the gassing regime by means of further monitoring.

### 6.6 Controlled Waters

During drilling, groundwater was encountered at 4.2 m depth within the Taplow Gravel Formation.

A return visit on 16 June 2016 recorded groundwater within the boreholes to be standing at between 2.98 and 3.07 m bgl.

Based on the very low concentrations of contaminants recorded within the soils, chemical analysis of the groundwater was not considered necessary.

A negligible risk to Controlled Waters was considered from the site.

### 6.7 Construction Workers

Construction workers, are only likely to come into direct contact with the near surface soils during the formation of any new service trenches and remodelling of the existing carpark surfacing. The recorded concentrations of determinands within made ground/topsoil did not indicate a significant risk to construction workers. However there is always the potential for previously undiscovered contamination to be encountered. Overall a low risk was determined to ground workers.

Groundworkers should be made aware for the potential of contamination to be present within soils. Appropriate levels of personal protective equipment should be employed as a matter of course to prevent direct contact or inhalation, and damping down should be undertaken in periods of dry weather to prevent the generation of dust this to also prevent nuisance to neighbouring residential properties. Suitable welfare facilities should be established on site.

It is recommended that the buildings that are to be subjected to a 'Refurbishment' asbestos survey, unless this has already been carried out. Any asbestos containing materials identified prior to (and during) refurbishment should be appropriately managed or removed and disposed of by a specialist contractor following current statutory and best industry practice.

Groundworkers in confined spaces such as excavations may be at a low risk from elevated levels of carbon dioxide and depleted oxygen levels, and safe methods of working accounting for current Health and Safety regulations and best practice should be followed on a precautionary basis.

## 6.8 Other Development Considerations

### 6.8.1 Off-site Receptors

Neighbouring properties are considered to be at negligible risk from mobile and leachable contaminants migrating from the site, because of the generally low concentrations recorded within the soils and groundwater.

The general public could be subjected to nuisances from windblown dust and soil attached to the wheels of vehicles leaving the site. Precautions such as damping down during periods of dry weather to prevent the generation of dust and the use of wheel washes should be implemented as required during the site works. A low risk was determined to off-site receptors.

### 6.8.2 Potable Water Pipes

Organic contaminants can potentially taint drinking water if some types of plastic pipes are used. Based on the very low concentrations of PAH and TPH recorded during the investigation, it is anticipated that should new potable water supply infrastructure be required as part of the proposed development, that normal plastic pipework could be adopted.

Further assessments may be required to satisfy utility provider risk assessment procedures most of which are based upon UKWIR guidance. However, testing undertaken as part of this investigation should be suitable for this purpose.

### 6.8.3 Waste Disposal

The proposed development includes the refurbishment of the existing office buildings into residential apartments and as such, the amount of soil material produced as waste is thought to be minimal and relate only to any service trenches or hard standing remodeling.

Under the Waste Regulations, the main categories of waste are Inert, Non-Hazardous and Hazardous. The Inert category is a subgroup of Non-Hazardous.

As part of the analytical testing, one representative composite soil sample was analysed for Waste Acceptance Criteria.

Based on the results of the analytical testing, the shallow soils may be accepted as Non- Hazardous, as concentrations of Antimony exceeded the acceptance criteria limits for 'Inert'. Where it is proposed to discard soils from Site it is recommended that the chemical test results are forwarded to a waste disposal contractor or landfill operator to establish the waste classification, as they are the regulator in this regard.

All waste exported off site will need to be accompanied by waste transfer notes or consignment notes. Waste must be transported by a Licensed carrier. Copies of these waste transfer notes should be kept for inspection as necessary, as part of any validation/verification works. Details of the waste carriers and receiving treatment/landfill facilities must be clearly provided as evidence that waste removed off site has been disposed of appropriately under Duty of Care.

## 6.9 Refined Conceptual Site Model

The refined conceptual model shown in Table 6.9 represents the relevant pollutant linkages as defined by the interpretation of the intrusive investigation. Negligible and discounted risks have not been included.

| Table 6.9 Plausible Relevant Pollutant Linkages | | | | | | |
|---|---|---|---|---|---|---|
| **Potential Source** | **Potential Receptor** | **Potential Pathway** | **Consequence** | **Probability** | **Risk** | **Comments** |
| **S1**: Potential for asbestos containing materials (ACMs) present in existing buildings | **R1**: Construction/ maintenance workers/end users | **P1**: Human uptake pathways (inhalation). | Medium | Low | Low | There is a potential for asbestos to be present within buildings at the site If demolition or refurbishment is proposed, appropriate asbestos inspections and removal or management is required. |
| **S2**: Made ground as a source of ground gases | **R1**: Construction/ maintenance workers/end users.<br><br>**R2**: Buildings - Hazardous ground gas accumulation and explosion. | **P1**: Human uptake pathways (inhalation).<br><br>**P2**: Horizontal and vertical migration of contaminants through the unsaturated zone | Medium | Low likelihood | Moderate/Low | A low risk to end users is considered from ground gas, however should the proposed development scheme change, it would be considered prudent to further categorise the gassing regime by means of further monitoring. |

## 7 CONCLUSIONS

This report supports the Prior Approval submission in connection with the Permitted Development change of use and the office buildings at 63-71 High Street, Hampton Hill, TW12 1NH to residential apartments with areas of hardstanding, car parking and access from High Street.

Based on the results of the intrusive investigations and laboratory chemical analysis and other Site observations, the following conclusions are made.

i) Elevated concentrations of lead were encountered within the made ground across the site. However, as the area is to remain covered by either buildings or hardstanding, the pollutant linkage does not exist, and there is no significant risk to end users of the development.

ii) Whilst no asbestos containing materials were positively identified within the soils on site, asbestos containing materials may be present within existing buildings on site and consequently a potential low risk associated with ACM remains. It is recommended that any buildings that are to be refurbished, which may require demolition of existing internal partitions and structure, as part of this development should be subjected to a 'Refurbishment' asbestos survey, unless this has already been carried out. Any asbestos containing materials identified prior to (and during) refurbishment should be appropriately removed and disposed of by a specialist contractor following best industry practice.

iii) Notwithstanding the low levels of contamination detected to date a precautionary approach to any excavation and movement of soils is recommended;

All of the remediation recommendations made in this report will need to be approved by the Local Authority. As there is no identified risk to groundwater it is unlikely that the Environment Agency will be consulted by the LPA.

For the existing and proposed end use no remediation activity is considered to be required.

## 8 LIMITATIONS

This Report has been produced on behalf of The Client, as detailed in Section 1.0 of this Report, and no responsibility is accepted to any Third Party for all or any part.

This Report should not be relied upon or transferred to any other parties without the express written authorisation of HBPW LLP. If, as happens from time to time, any unauthorised Third Party comes into possession of this Report, they rely upon it at their own risk and HBPW LLP owes them no duty of care or skill.

Any other issues not listed in the scope of works, but subsequently identified during the completion of the Site investigation and reported herein (such as the potential presence of Schedule 2 Invasive Weeds, flood assessment studies or ecological surveys) are provided for information only and fall outside the scope of this Assessment. The Report does not constitute an archaeological or ecological assessment, nor does it constitute an 'asbestos inspection' or flood assessment.

HBPW LLP has based parts of the report on information sources detailed within the report text and believes them to be reliable, but cannot and does not guarantee the authenticity or reliability of this third party information. Advice and recommendations given in this report have been based on the findings of the investigation. It must be appreciated that not finding indicators does not mean that hazardous substances do not exist at the site. There is no warranty regarding the accuracy of the information provided to HBPW LLP who cannot accept liability for any opinions that have been expressed, or conclusions which it has reached in reliance upon information which is subsequently proven to be inaccurate.

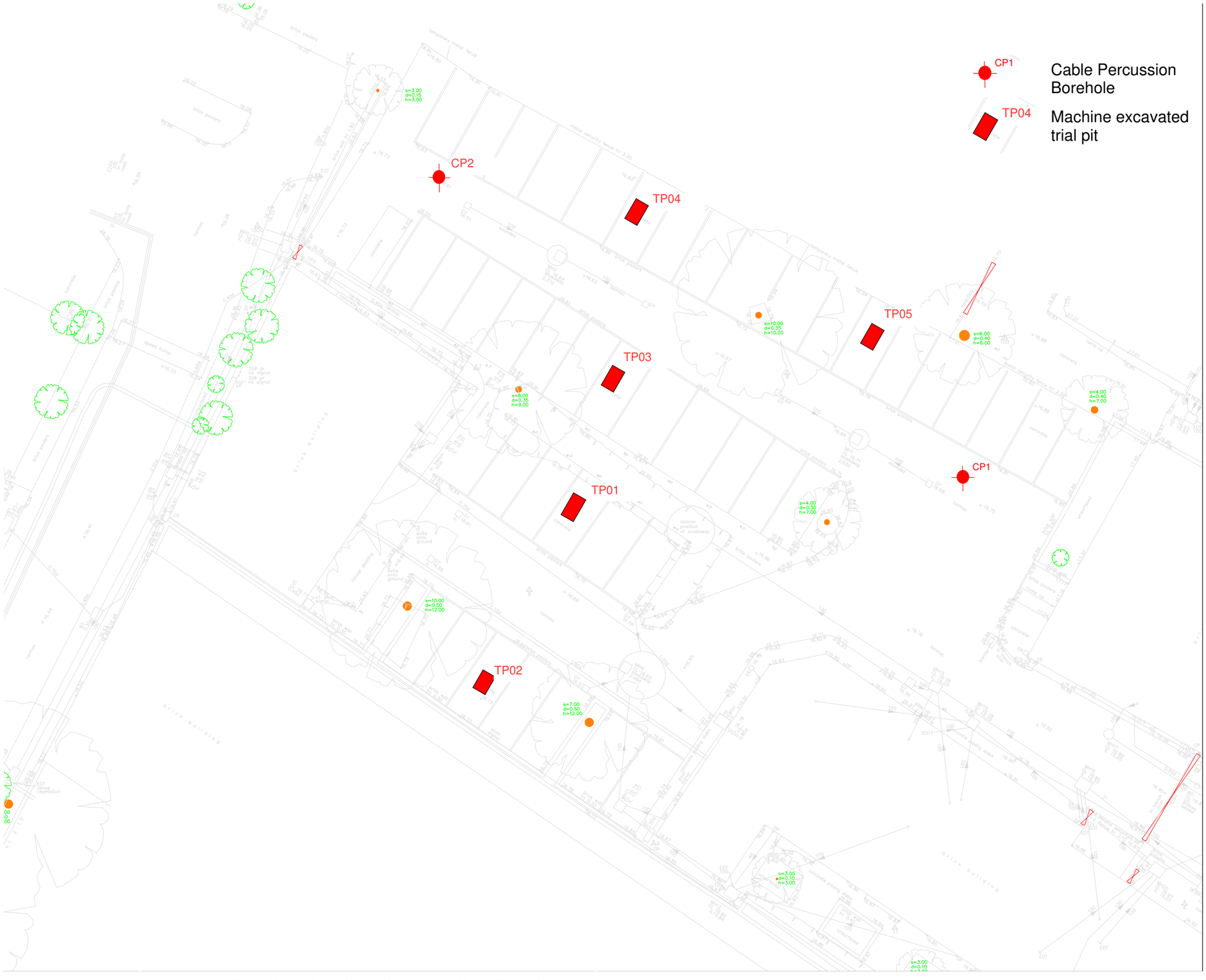
The locations of the exploratory holes were influenced by the proximity to buried services, practicable access and other existing site infrastructure.

Whilst this Report may express an opinion on the possible configuration of strata, contaminants or gases between or beyond exploratory hole positions or on the possible presence of features based on either visual, verbal (anecdotal) or published evidence, this is for guidance only and no liability is accepted for its accuracy.

Groundwater and gas conditions vary with time, season, climatic conditions and Site activities as such any observations are strictly based upon conditions at the time of the investigations.

# Drawings

DO NOT SCALE - IF IN DOUBT ASK




Cable Percussion Borehole

Machine excavated trial pit



A3

NOTES

1. DO NOT SCALE
2. This drawing is to be read in conjunction with all other relevant drawings.
3. Should there be any conflict between the details indicated on this drawing and those indicated on other drawings the Engineer should be informed PRIOR to construction on site.
4. Until technical approval has been obtained from the relevant Authority, it should be understood that all drawings and details issued are PRELIMINARY and NOT FOR CONSTRUCTION. Should the contractor commence site work prior to approval being given, it is entirely at his own risk.
5. All dimensions are in millimetres unless otherwise stated.

| DESCRIPTION | REV | DATE | BY | CHKD | APPR |
|---|---|---|---|---|---|
| FIRST ISSUE | A | 18/08/16 | EN | JF | APPR |

HBPW LLP
Civil & Structural Engineering Services
43 Bridgegate
Retford
Nottinghamshire
DN22 7UX
Tel: (01777) 869896
Fax: (01777) 862491

DRAWING STATUS

FOR INFORMATION

CLIENT

GREATPLANET LTD

PROJECT TITLE

63-71 HIGH STREET
HAMPTON HILL

DRAWING DETAIL

SITE INVESTIGATION
LOCATION PLAN

| | |
|---|---|
| DRAWN EN | DATE AUGUST 2016 |
| PROJECT ENGINEER JF | |
| CHECKED JF | SCALE AS SHOWN @ A3 |
| APPROVED JF | |

| DRAWING NUMBER | REVISION |
|---|---|
| SL05030/SK001 | A |

# Appendix 1

Risk Assessment Methodology

## Contaminated Land Risk Assessment Methodology

The following classification was published by the NHBC, EA, and CIEH (2008). This was developed from *DOE Guide to Risk Assessment and Risk Management for Environmental Protection and the Statutory Guidance on Contaminated Land* (Defra September 2006).

The methodology differs from that presented in *Contaminated Land Risk Assessment, A Guide to Good Practice* (CIRIA C552, 2001), particularly in terms of the definitions of classification of consequence, which includes consideration of immediacy of hazards. The risk assessment methodology is now better aligned with health and safety and geotechnical risk assessment processes.

The designation of risk is based upon the consideration of both:

- **the magnitude of the potential consequence (i.e. severity).**
  [takes into account both the potential severity of the hazard and the sensitivity of the receptor]
- **the magnitude of probability (i.e. likelihood).**
  [takes into account both the presence of the hazard and receptor and the integrity of the pathway]

The potential consequences of contamination risks occurring at this Site are classified in accordance with Table 1 below:

**Table 1: Classification of Consequence (Source: R&D 66:2008)**

| Classification | Definition of Consequence |
|---|---|
| **Severe** | Highly elevated concentrations **likely** to result in "significant harm" to human health as defined by the EPA 1990, Part 2A, if exposure occurs.<br>Equivalent to **EA Category 1** pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce.<br>Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population.<br>Catastrophic damage to crops, buildings or property. |
| **Medium** | Elevated concentrations which could result in "significant harm" to human health as defined by the EPA 1990, Part 2A if exposure occurs.<br>Equivalent to **EA Category 2** pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce.<br>Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population.<br>Significant damage to crops, buildings or property. |
| **Mild** | Exposure to human health unlikely to lead to "significant harm".<br>Equivalent to **EA Category 3** pollution incident including minimal or short lived effect on water quality; marginal effect on amenity value, agriculture or commerce.<br>Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long- term maintenance of the population.<br>Minor damage to crops, buildings or property. |
| **Minor** | No measurable effect on humans.<br>Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services. |

The probability of contamination risks occurring at this Site is classified in accordance with Table 2 below. Note: A pollution linkage must first be established before probability is classified. If there is no pollution linkage then there is no potential risk. If there is no pollution linkage then it follows that there is no need to apply tests for probability and consequence.

**Table 2: Classification of Probability**

| Classification | Definition of Probability |
|---|---|
| **High Likelihood** | There is pollutant linkage and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution. |
| **Likely** | There is pollutant linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term. |
| **Low Likelihood** | There is pollutant linkage and circumstances are possible under which an event could occur.<br>However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term. |
| **Unlikely** | There is a pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long-term. |

For each possible pollutant linkage (source-pathway-receptor) identified, the potential risk can be evaluated based upon the following probability x consequence matrix shown in Table 3 below.

**Table 3: Overall Contamination Risk Matrix**

| | | Consequence | | | |
|---|---|---|---|---|---|
| | | **Severe** | **Medium** | **Mild** | **Minor** |
| **Probability** | **High likelihood** | Very high risk | High risk | Moderate risk | Low risk |
| | **Likely** | High risk | Moderate risk | Moderate / Low risk | Low risk |
| | **Low likelihood** | Moderate risk | Moderate / Low risk | Low risk | Very low risk |
| | **Unlikely** | Moderate / Low risk | Low risk | Very low risk | Very low risk |

R&D 66:2008 presents definitions of the risk categories, together with the investigatory and remedial actions that are likely to be necessary for each outcome. These definitions are reproduced in Table 4. These risk categories apply to each pollutant linkage, i.e. not only to each hazard or receptor.

[Continued next page]

**Table 4: Definition of Risk Categories and Likely Actions Required**

| Risk Category | Definition and likely actions required |
|---|---|
| **Very high** | There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the Site without remediation action OR there is evidence that severe harm to a designated receptor is already occurring. Realisation of that risk is likely to present a substantial liability to be Site owner/or occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short-term. |
| **High** | Harm is likely to arise to a designated receptor from an identified hazard at the Site without remediation action. Realisation of the risk is likely to present a substantial liability to the Site owner/or occupier. Investigation is required as a matter of urgency to clarify the risk. Remediation works may be necessary in the short-term and are likely over the longer term. |
| **Moderate** | It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Further investigative work is normally required to clarify the risk and to determine the potential liability to Site owner/occupier. Some remediation works may be required in the longer term. |
| **Low** | It is possible that harm could arise to a designated receptor from identified hazard, but it is likely at worst, that this harm if realised would normally be mild. It is unlikely that the Site owner/or occupier would face substantial liabilities from such a risk. Further investigative work (which is likely to be limited) to clarify the risk may be required. Any subsequent remediation works are likely to be relatively limited. |
| **Very low** | It is a low possibility that harm could arise to a designated receptor, but it is likely at worst, that this harm if realised would normally be mild or minor. |
| **No potential risk** | There is no potential risk if no pollution linkage has been established. |

# Appendix 2
# Exploratory Hole Logs

# Borehole Log

Borehole No. **CP1** Sheet 1 of 2

| | | | |
|---|---|---|---|
| Project Name: Hampton Hill | Project No. 51831 | Co-ords: - | Hole Type CP |
| Location: Former offices and studios, 65b High Street, Hampton Hill, Hampton, Greater London | | Level: | Scale 1:50 |
| Client: HBPW LLP | | Dates: 19/05/2016 - 19/05/2016 | Logged By AJ |

| Well | Water Strikes | Samples and In Situ Testing: Depth (m) | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | 0.20 - 1.20 | B | | 0.05<br>0.20 | | | MADE GROUND (bituminous surfacing)<br>MADE GROUND (crushed stone)<br>MADE GROUND (crushed brick and concrete) |
| | | 1.20 | | N=43 (6,10/9,10,12,12) | 1.30 | | | Dense SAND and GRVEL |
| | | 1.20 - 2.00 | B | | | | | |
| | | 2.50 | | N=31 (5,7/8,7,7,9) | | | | |
| | | 4.00 | | N=37 (6,10/8,10,9,10) | | | | |
| | | 4.50 | B | | | | | |
| | | 5.50 | | N=22 (7,6/5,4,6,7) | 5.60 | | | |
| | | 5.60 - 6.00 | B | | | | | Very stiff bluish grey CLAY (London Clay) |
| | | 6.00 - 6.45 | U | | | | | |
| | | 7.50 | | N=42 (7,9/10,10,11,11) | | | | |
| | | 9.00 - 9.45 | U | | | | | |
| | | 9.45 - 9.60 | D | | | | | |

Continued on next sheet

Remarks
Waiting for access - 1.5 hours, hand excavated trial pit from 0.00m to 1.20m - 1 hour

# Borehole Log

Borehole No. **CP1** Sheet 2 of 2

| | | | |
|---|---|---|---|
| Project Name: Hampton Hill | Project No. 51831 | Co-ords: - | Hole Type CP |
| Location: Former offices and studios, 65b High Street, Hampton Hill, Hampton, Greater London | | Level: | Scale 1:50 |
| Client: HBPW LLP | | Dates: 19/05/2016 - 19/05/2016 | Logged By AJ |

| Well | Water Strikes | Samples and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 10.50 | | N=55 (9,12/12,13,14,16) | | | | |
| | | 12.00 - 12.60 | U | | | | | |
| | | 13.50 | | N=51 (11,11/11,13,13,14) | | | | |
| | | 14.60 | | N=60 (12,13/14,15,15,16) | | | | |
| | | | | | 15.05 | | | End of borehole at 15.05 m |

Remarks
Waiting for access - 1.5 hours, hand excavated trial pit from 0.00m to 1.20m - 1 hour

# Borehole Log

Borehole No. **CP2** Sheet 1 of 2

| | | | |
|---|---|---|---|
| Project Name: Hampton Hill | Project No. 51831 | Co-ords: - | Hole Type CP |
| Location: Former offices and studios, 65b High Street, Hampton Hill, Hampton, Greater London | | Level: | Scale 1:50 |
| Client: HBPW LLP | | Dates: 20/05/2016 - 20/05/2016 | Logged By AJ |

| Well | Water Strikes | Samples and In Situ Testing: Depth (m) | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | | | | 0.05 | | | MADE GROUND (Bituminous surface) |
| | | | | | 0.20 | | | MADE GROUND (Crushed Stone) |
| | | 0.40 - 1.20 | B | | 0.40 | | | MADE GROUND (Concrete) |
| | | | | | | | | MADE GROUND (Ash and Stone fill) |
| | | 1.20 | | N=5 (1,2/1,2,1,1) | | | | |
| | | | | | 1.80 | | | Medium dense becoming dense SAND and GRAVEL |
| | | 2.50 | | N=28 (6,7/7,6,8,7) | | | | |
| | | 2.50 - 3.50 | B | | | | | |
| | | 4.00 | | N=32 (5,6/8,7,9,8) | | | | |
| | | 5.50 | | N=23 (6,8/7,6,5,5) | | | | |
| | | 5.60 - 6.00 | B | | 5.60 | | | Very stiff bluish grey CLAY (London clay) |
| | | 6.00 - 6.45 | U | | | | | |
| | | 6.45 - 6.60 | D | | | | | |
| | | 7.00 - 7.45 | U | | | | | |
| | | 7.45 - 7.60 | D | | | | | |
| | | 8.50 | | N=37 (8,8/9,9,10,9) | | | | |
| | | 10.00 - 10.45 | U | | | | | |

Continued on next sheet

Remarks
Hand excavation - 1 Hr

# Borehole Log

Borehole No. **CP2** Sheet 2 of 2

| | | | |
|---|---|---|---|
| Project Name: Hampton Hill | Project No. 51831 | Co-ords: - | Hole Type CP |
| Location: Former offices and studios, 65b High Street, Hampton Hill, Hampton, Greater London | | Level: | Scale 1:50 |
| Client: HBPW LLP | | Dates: 20/05/2016 - 20/05/2016 | Logged By AJ |

| Well | Water Strikes | Samples and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 10.45 - 10.60 | D | | | | | |
| | | 11.50 | | N=43 (9,10/11,10,10,12) | | | | |
| | | 13.00 | | N=50 (8,9/10,12,13,15) | | | | |
| | | 14.00 - 14.60 | U | | | | | |
| | | 14.60 | | N=57 (10,12/13,14,14,16) | | | | |
| | | | | | 15.05 | | | End of borehole at 15.05 m |

Remarks
Hand excavation - 1 Hr

HBPW LLP — Civil and Structual Engineering Services

| Site | Trial Pit Number |
|---|---|
| Hampton Hill | TP01 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Trial Pit | | | Greatplanet Ltd | SL05030 |
| | **Location** | **Dates** 19/05/2016 | **Engineer** HBPW LLP | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.15) 0.15 | Reinforced Concrete. | | |
| | | | | | (1.05) | MADE GROUND. Brown / orange sandy gravel with brick rubble. Gravel is of medium coarse mixed lithology. | | |
| 1.00 | D1 | | | | 1.20 | Complete at 1.20m | | |

**Remarks**

Pot and Jar Taken for all Samples
Water Pipe at 0.85m
Pit Dry
Pit Stable

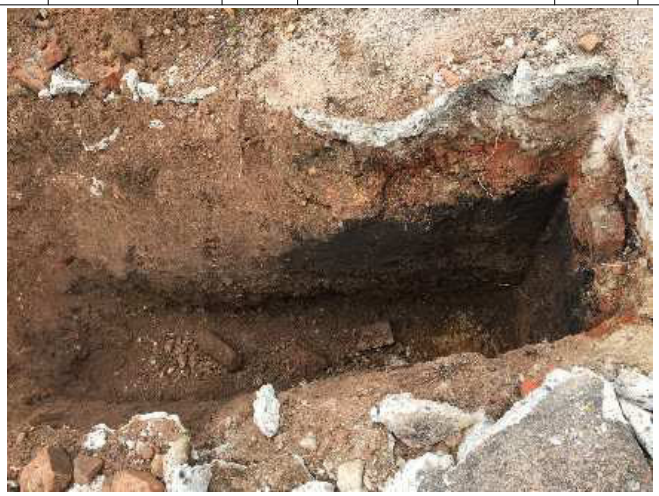
| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:20 | RB | SL05030.TP01 |

HBPW LLP — Civil and Structual Engineering Services

| Site | Trial Pit Number |
|---|---|
| Hampton Hill | TP02 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Trial Pit | | | Greatplanet Ltd | SL05030 |
| | **Location** | **Dates** 19/05/2016 | **Engineer** HBPW LLP | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.15) 0.15 | Unreinforced Concrete. | | |
| 0.20 | D1 | | | | (0.20) 0.35 | MADE GROUND. Orange / red gravelly sand. Gravel is of brick, sand matrix is of crushed brick. Possibly old brick pavement. | | |
| 0.60 | D2 | | | | (0.85) 1.20 | MADE GROUND. Dark brown silty sandy CLAY. Possibly relic top soil. | | |
| | | | | | | Complete at 1.20m | | |



**Remarks**

Pot and Jar Taken for all Samples and WAC Sample Taken at 0.8m
Concrete obstruction at 1.2m
Pit Dry
Pit Stable

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:20 | RB | SL05030.TP02 |

HBPW LLP — Civil and Structual Engineering Services

| Site | Trial Pit Number |
|---|---|
| Hampton Hill | TP03 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Trial Pit | | | Greatplanet Ltd | SL05030 |
| | **Location** | **Dates** 19/05/2016 | **Engineer** HBPW LLP | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.15) | Unreinforced concrete. | | |
| | | | | | 0.15 | | | |
| | | | | | (0.15) | MADE GROUND. Brick rubble. | | |
| | | | | | 0.30 | | | |
| | | | | | 0.35 | MADE GROUND. Buff to yellow lean mix concrete. | | |
| | | | | | (0.35) | MADE GROUND. Black and brown gravelly sand. Gravel is mixed of concrete, coal, brick, masonary and ash. | | |
| 0.60 | D1 | | | | | | | |
| | | | | | 0.70 | MADE GROUND. Dark brown sandy clay. Relic top soil. | | |
| | | | | | (0.50) | | | |
| 1.00 | D2 | | | | | | | |
| | | | | | 1.20 | Orange gravelly SAND. Gravel is medium coarse, rounded to subangular flint and chert. | | |
| | | | | | (1.50) | | | |
| 2.30 | D3 | | | | | | | |
| | | | | | 2.70 | Complete at 2.70m | | |

**Remarks**

Pot and Jar Taken for all Samples and WAC Sample Taken at 2.3m
Pit Dry
Pit Stable

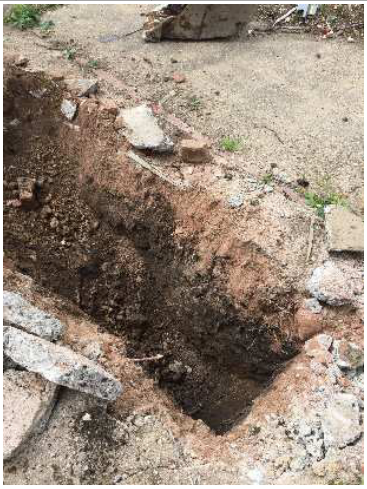
| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:20 | RB | SL05030.TP03 |

HBPW LLP — Civil and Structual Engineering Services

| Site | Trial Pit Number |
|---|---|
| Hampton Hill | TP04 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Trial Pit | | | Greatplanet Ltd | SL05030 |
| | **Location** | **Dates** 19/05/2016 | **Engineer** HBPW LLP | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.15) | Unreinforced concrete. | | |
| | | | | | 0.15 | | | |
| 0.20 | D1 | | | | (0.15) | MADE GROUND. Orange / red gravelly sand. Gravel is of medium to coarse brick. | | |
| | | | | | 0.30 | MADE GROUND. Dark brown sandy clay. Relic top soil. | | |
| | | | | | (0.55) | | | |
| 0.80 | D2 | | | | 0.85 | Orange gravelly SAND. Gravel is medium coarse, rounded to subangular flint and chert. | | |
| 1.30 | D3 | | | | (0.95) | | | |
| | | | | | 1.80 | Complete at 1.80m | | |



**Remarks**

Pit Stable
Pit Dry
Pot and Jar Taken for all Samples and WAC Sample Taken at 0.7m

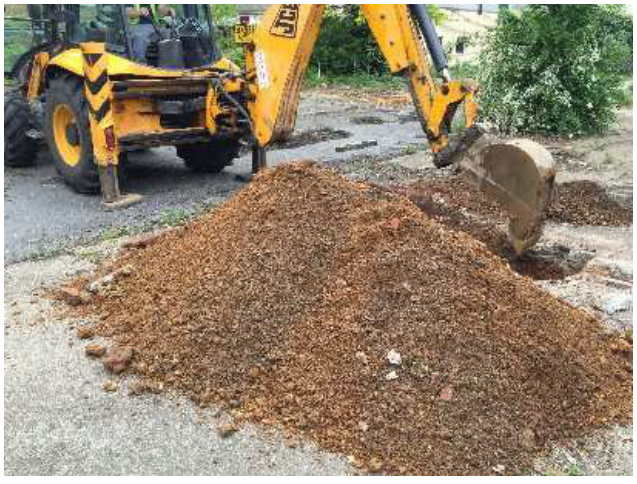
| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:20 | RB | SL05030.TP04 |

HBPW LLP — Civil and Structual Engineering Services

| Site | Trial Pit Number |
|---|---|
| Hampton Hill | TP05 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Trial Pit | | | Greatplanet Ltd | SL05030 |
| | **Location** | **Dates** 19/05/2016 | **Engineer** HBPW LLP | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.15) 0.15 | Unreinforced concrete. | | |
| | | | | | (0.20) 0.35 | MADE GROUND. Orange brown gravelly sand. Gravel is of medium to coarse chert and brick. | | |
| 0.30 | D1 | | | | | MADE GROUND. Dark brown silty sandy clay. Relic top soil. | | |
| | | | | | (0.75) 1.10 | | | |
| 0.90 | D2 | | | | | Ornage gravelly SAND. Gravel is of medium to coarse rounded to subangular flint and chert. | | |
| | | | | | (1.50) 2.60 | | | |
| 2.00 | D3 | | | | | Complete at 2.60m | | |



**Remarks**

Pot and Jar Taken for all Samples and WAC Sample Taken at 0.3m
Pit Dry
Pit Stable

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:20 | RB | SL05030.TP05 |

# Appendix 3

Tier 1 Screening Values – 'Residential without Plant Uptake' End Use

| Determinant | Tier 1 Screening Value (mg/kg |
|---|---|
| | |
| **Inorganics** | |
| Arsenic | **40** |
| Barium | **1300** |
| Beryllium | **1.7** |
| Cadmium | **85** |
| Chromium | **910** |
| Copper | **7100** |
| Lead | **310** |
| Mercury | **56** |
| Nickel | **180** |
| Selenium | **430** |
| Vanadium | **1200** |
| Water Soluble Boron | **11000** |
| Zinc | **40000** |
| phenol | **750** |
| cyanide | **34** |
| Chromium (VI) | **6** |
| **PAH** | |
| 2-Chloronaphthalene | nv |
| 2-Methylnaphthalene | nv |
| Naphthalene | **2.3** |
| Acenaphthylene | **2900 (86.1)** |
| Acenaphthene | **3000 (57)** |
| Fluorene | **2800 (30.9)** |
| Phenanthrene | **1300 (36)** |
| Anthracene | **31000 (1.17)** |
| Fluoranthene | **1500** |
| Pyrene | **37000** |
| Benzo(a)anthracene | **11** |
| Chrysene | **30** |
| Benzo(bk)fluoranthene | **nv** |
| Benzo(a)pyrene | **3.2** |
| Indeno(123cd)pyrene | **45** |
| Dibenzo(ah)anthracene | **0.31** |
| Benzo(ghi)perylene | **360** |
| Benzo(b)fluoranthene | **3.9** |
| Benzo(k)fluoranthene | **110** |

| *Tier 1 Screening Values Continued* | |
|---|---|
| **TPH** | |
| Aliphatics | |
| >C5-C6 | **42** |
| >C6-C8 | **100** |
| >C8-C10 | **27** |
| >C10-C12 | **130(48)** |
| >C12-C16 | **1100 (24)** |
| >C21-C35 | |
| >C35-C44 | **65001 (8.48)** |
| | |
| Aromatics | |
| >C5-EC7 (benzene) | **370** |
| >EC7-EC8 (toluene) | **860** |
| >EC8-EC10 | **47** |
| >EC10-EC12 | **250** |
| >EC12-EC16 | **1800** |
| >EC16-EC21 | **1900** |
| >EC21-EC35 | **1900** |
| >C35-C44 | **65001 (8.48)** |
| | |
| Basic | |
| EPH >C6-C8 | **100** |
| EPH >C8-C10 | **27** |
| EPH >C10-C12 | **130 (48)** |
| EPH >C12-C16 | **1100 (24)** |
| EPH >C16-C21 | **1900** |
| EPH >C21-C35 | |
| **BTEX** | |
| MTBE | **73** |
| Benzene | **0.38** |
| Toluene | **880 (869)** |
| Ethylbenzene | **83** |
| m/p-Xylene | **79** |
| o-Xylene | **88** |

| *Tier 1 Screening Values Continued* | |
|---|---|
| **SVOC/ VOC** | |
| Tetrachloroethene | **0.18** |
| Trichloroethene | **0.017** |
| Vinyl Chloride | **0.00077** |
| Trichloroethane (1,1,1) | **9** |
| Tetrachloroethane (1,1,1,2) | **1.5** |
| Tetrachloroethane (1,1,2,2) | **3.9** |
| Chlorobenzene | **0.46** |
| Phthalate, butylbenzyl | |
| Phthalate, bis (2-ethylhexyl) | |
| 1,2-Dichloroethane | **0.0092** |
| Carbon Tetrachloride | **0.026** |
| **OTHER** | |
| Antimony | **550** |
| Molybdenum | **670** |
| 1,1,2 Trichloroethane | **0.88** |
| 1,1-dichloroethane | **2.5** |
| 1,1-Dichloroethene | **0.23** |
| 1,2,4-Trimethylbenzene | **0.41** |
| 1,2-Dichloropropane | **0.024** |
| 1,3,5-Trimethylbenzene | **nv** |
| 1-Methylnaphthalene | **nv** |
| 2,4-Dimethylphenol | **210** |
| 2,4-Dinitrotoluene | **170** |
| 2,6-Dinitrotoluene | **78** |
| 2-Chloronaphthalene | **3.8** |
| 2-Methylnaphthalene | **nv** |
| 2-Methylphenol | **3700** |
| 3-Methylphenol | **3700** |
| 4-Methylphenol | **3700** |
| Biphenyl | **220** |
| Bis (2-ethylhexyl) phthalate | **2700** |
| Bromobenzene | **0.91** |
| Bromodichloromethane | **0.019** |
| Bromoform | **5.2** |
| Butyl benzyl phthalate | **42000** |
| Carbazole | **nv** |
| Chloroethane | **8.4** |
| Chloromethane | **0.0085** |
| Cis 1,2 Dichloroethene | **0.12** |
| Dichloromethane | **2.1** |
| Diethyl Phthalate | **1800** |
| Dimethyl phthalate | **nv** |

| *Tier 1 Screening Values Continued* | |
|---|---|
| Di-n-butyl phthalate | **450** |
| Di-n-octyl phthalate | **3400** |
| Hexachloroethane | **0.22** |
| Iso-propylbenzene | **12** |
| Isopropyltoluene | **nv** |
| Methyl tert-butyl ether | **73** |
| n butylbenzene | **nv** |
| Propylbenzene | **40** |
| sec butylbenzene | **nv** |
| Styrene | **35** |
| tert butylbenzene | **nv** |
| Trans 1,2 Dichloroethene | **0.34** |
| Tributyl tin oxide | **0.59** |

# Appendix 4
Analytical Results

Jay Fox
HBPW
43 Bridgegate
Retford
Nottinghamshire
DN22 7UX

**QTS Environmental Ltd**
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
**t:** 01622 850410
russell.jarvis@qtsenvironmental.com

# QTS Environmental Report No: 16-44642

| | |
|---|---|
| **Site Reference:** | High Street Hampton Hill |
| **Project / Job Ref:** | SL05030 |
| **Order No:** | 519 |
| **Sample Receipt Date:** | 25/05/2016 |
| **Sample Scheduled Date:** | 25/05/2016 |
| **Report Issue Number:** | 1 |
| **Reporting Date:** | 01/06/2016 |

**Authorised by:**

Russell Jarvis
Associate Director of Client Services
**On behalf of QTS Environmental Ltd**

**Authorised by:**

Kevin Old
Associate Director of Laboratory
**On behalf of QTS Environmental Ltd**

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | |
| HBPW | Time Sampled | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied | |
| Site Reference: High Street Hampton Hill | TP / BH No | TP01 | TP02 | TP02 | TP03 | TP03 | |
| Project / Job Ref: SL05030 | Additional Refs | 01 | 01 | 02 | 01 | 02 | |
| Order No: 519 | Depth (m) | 0.90 | 0.35 | 1.20 | 0.70 | 1.20 | |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208545 | 208546 | 208547 | 208548 | 208549 | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Asbestos Screen | N/a | N/a | ISO17025 | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected |
| pH | pH Units | N/a | MCERTS | 8.0 | 9.2 | 8.9 | 8.3 | 7.8 |
| Total Cyanide | mg/kg | < 2 | NONE | < 2 | < 2 | < 2 | < 2 | < 2 |
| Complex Cyanide | mg/kg | < 2 | NONE | < 2 | < 2 | | < 2 | |
| Free Cyanide | mg/kg | < 2 | NONE | < 2 | < 2 | | < 2 | |
| Total Sulphate as $SO_4$ | mg/kg | < 200 | NONE | 1366 | 415 | 5367 | 1774 | 781 |
| Total Sulphate as $SO_4$ | % | < 0.02 | NONE | 0.14 | 0.04 | 0.54 | 0.18 | 0.08 |
| W/S Sulphate as $SO_4$ (2:1) | mg/l | < 10 | MCERTS | 442 | 37 | | 132 | |
| W/S Sulphate as $SO_4$ (2:1) | g/l | < 0.01 | MCERTS | 0.44 | 0.04 | | 0.13 | |
| Elemental Sulphur | mg/kg | < 10 | NONE | < 10 | < 10 | | < 10 | |
| Sulphide | mg/kg | < 5 | NONE | < 5 | < 5 | < 5 | < 5 | < 5 |
| Organic Matter | % | < 0.1 | MCERTS | 1.8 | 0.5 | 1.4 | 1.5 | 1.9 |
| Total Organic Carbon (TOC) | % | < 0.1 | MCERTS | 1.1 | 0.3 | 0.8 | 0.9 | 1.1 |
| Fraction Organic Carbon (FOC) | Units | < 0.001 | MCERTS | 0.011 | 0.003 | | 0.009 | |
| Ammonium as $NH_4$ | mg/kg | < 0.5 | NONE | 45.4 | 25.8 | | 35.6 | |
| Ammonium as $NH_4$ | mg/l | < 0.05 | NONE | 4.54 | 2.58 | | 3.56 | |
| W/S Chloride (2:1) | mg/kg | < 1 | MCERTS | 18 | 9 | | 19 | |
| W/S Chloride (2:1) | mg/l | < 0.5 | MCERTS | 9.2 | 4.6 | | 9.6 | |
| Antimony (Sb) | mg/kg | < 1 | NONE | 3.1 | 1.2 | | 3.8 | |
| Arsenic (As) | mg/kg | < 2 | MCERTS | 21 | 9 | 15 | 18 | 13 |
| Barium (Ba) | mg/kg | < 5 | NONE | 171 | 21 | | 320 | |
| Beryllium (Be) | mg/kg | < 0.5 | NONE | 1 | < 0.5 | | 1 | |
| W/S Boron | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | < 1 | < 1 |
| Cadmium (Cd) | mg/kg | < 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (Cr) | mg/kg | < 2 | MCERTS | 23 | 11 | 38 | 28 | 21 |
| Chromium (hexavalent) | mg/kg | < 2 | NONE | < 2 | < 2 | | < 2 | |
| Cobalt (Co) | mg/kg | < 1 | NONE | 11 | 2.1 | | 10.2 | |
| Copper (Cu) | mg/kg | < 4 | MCERTS | 66 | < 4 | 133 | 38 | 26 |
| Lead (Pb) | mg/kg | < 3 | MCERTS | 183 | < 3 | 1520 | 378 | 213 |
| Manganese (Mn) | mg/kg | < 5 | NONE | 327 | 45.5 | | 219 | |
| Mercury (Hg) | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | < 1 | < 1 |
| Molybdenum (Mo) | mg/kg | < 1 | NONE | 1.8 | < 1 | | 1.6 | |
| Nickel (Ni) | mg/kg | < 3 | MCERTS | 21 | 4 | 14 | 20 | 12 |
| Selenium (Se) | mg/kg | < 3 | NONE | < 3 | < 3 | < 3 | < 3 | < 3 |
| Tin (Sn) | mg/kg | < 10 | NONE | < 10 | < 10 | | < 10 | |
| Vanadium (V) | mg/kg | < 2 | NONE | 46 | 19 | | 47 | |
| Zinc (Zn) | mg/kg | < 3 | MCERTS | 170 | 11 | 296 | 234 | 169 |
| Total Phenols (monohydric) | mg/kg | < 2 | NONE | | | < 2 | | < 2 |
| VPH (C6 - C10) | mg/kg | < 0.05 | NONE | < 0.05 | < 0.05 | | < 0.05 | |
| DRO (C10 - C24) | mg/kg | < 6 | MCERTS | < 6 | < 6 | | 68 | |
| EPH (C10 - C40) | mg/kg | < 6 | MCERTS | 7 | < 6 | 5770 | 157 | 130 |
| Mineral Oil (C10 - C40) | mg/kg | < 10 | MCERTS | < 10 | < 10 | | < 10 | |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C
Analysis carried out on the dried sample is corrected for the stone content
The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)
This report refers to samples as received, and QTS Environmental Ltd, takes no responsibility for the accuracy or competence of sampling by others.
The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.
Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.
Asbestos Analyst: Wioletta Goral
RL: Reporting Limit
Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).
Subcontracted analysis (S)

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 |
| HBPW | Time Sampled | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: High Street Hampton Hill | TP / BH No | TP03 | TP04 | TP04 | TP04 | TP05 |
| Project / Job Ref: SL05030 | Additional Refs | 03 | 01 | 02 | 03 | 01 |
| Order No: 519 | Depth (m) | 2.70 | 0.30 | 0.85 | 1.80 | 0.40 |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208550 | 208551 | 208552 | 208553 | 208554 |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Asbestos Screen | N/a | N/a | ISO17025 | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected |
| pH | pH Units | N/a | MCERTS | 7.7 | 7.5 | 7.6 | 7.9 | 8.1 |
| Total Cyanide | mg/kg | < 2 | NONE | < 2 | < 2 | < 2 | < 2 | < 2 |
| Complex Cyanide | mg/kg | < 2 | NONE | | < 2 | | | < 2 |
| Free Cyanide | mg/kg | < 2 | NONE | | < 2 | | | < 2 |
| Total Sulphate as $SO_4$ | mg/kg | < 200 | NONE | < 200 | 3149 | 1823 | 236 | 1445 |
| Total Sulphate as $SO_4$ | % | < 0.02 | NONE | < 0.02 | 0.31 | 0.18 | 0.02 | 0.14 |
| W/S Sulphate as $SO_4$ (2:1) | mg/l | < 10 | MCERTS | | 300 | | | 39 |
| W/S Sulphate as $SO_4$ (2:1) | g/l | < 0.01 | MCERTS | | 0.30 | | | 0.04 |
| Elemental Sulphur | mg/kg | < 10 | NONE | | < 10 | | | < 10 |
| Sulphide | mg/kg | < 5 | NONE | < 5 | < 5 | < 5 | < 5 | < 5 |
| Organic Matter | % | < 0.1 | MCERTS | 0.3 | 1.3 | 4.5 | 0.7 | 2.4 |
| Total Organic Carbon (TOC) | % | < 0.1 | MCERTS | 0.2 | 0.7 | 2.6 | 0.4 | 1.4 |
| Fraction Organic Carbon (FOC) | Units | < 0.001 | MCERTS | | 0.007 | | | 0.014 |
| Ammonium as $NH_4$ | mg/kg | < 0.5 | NONE | | 38.3 | | | 52.3 |
| Ammonium as $NH_4$ | mg/l | < 0.05 | NONE | | 3.83 | | | 5.23 |
| W/S Chloride (2:1) | mg/kg | < 1 | MCERTS | | 16 | | | 7 |
| W/S Chloride (2:1) | mg/l | < 0.5 | MCERTS | | 8.2 | | | 3.7 |
| Antimony (Sb) | mg/kg | < 1 | NONE | | 2.8 | | | 2.5 |
| Arsenic (As) | mg/kg | < 2 | MCERTS | 19 | 13 | 22 | 14 | 20 |
| Barium (Ba) | mg/kg | < 5 | NONE | | 218 | | | 295 |
| Beryllium (Be) | mg/kg | < 0.5 | NONE | | 0.8 | | | 1 |
| W/S Boron | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | < 1 | < 1 |
| Cadmium (Cd) | mg/kg | < 0.2 | MCERTS | < 0.2 | 0.3 | 0.6 | < 0.2 | 0.3 |
| Chromium (Cr) | mg/kg | < 2 | MCERTS | 24 | 26 | 25 | 19 | 26 |
| Chromium (hexavalent) | mg/kg | < 2 | NONE | | < 2 | | | < 2 |
| Cobalt (Co) | mg/kg | < 1 | NONE | | 5.7 | | | 8.3 |
| Copper (Cu) | mg/kg | < 4 | MCERTS | 8 | 50 | 67 | 17 | 411 |
| Lead (Pb) | mg/kg | < 3 | MCERTS | 20 | 209 | 952 | 72 | 475 |
| Manganese (Mn) | mg/kg | < 5 | NONE | | 264 | | | 278 |
| Mercury (Hg) | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | < 1 | < 1 |
| Molybdenum (Mo) | mg/kg | < 1 | NONE | | 1.4 | | | 1.7 |
| Nickel (Ni) | mg/kg | < 3 | MCERTS | 19 | 16 | 22 | 13 | 18 |
| Selenium (Se) | mg/kg | < 3 | NONE | < 3 | < 3 | < 3 | < 3 | < 3 |
| Tin (Sn) | mg/kg | < 10 | NONE | | < 10 | | | 309 |
| Vanadium (V) | mg/kg | < 2 | NONE | | 41 | | | 47 |
| Zinc (Zn) | mg/kg | < 3 | MCERTS | 40 | 266 | 535 | 70 | 256 |
| Total Phenols (monohydric) | mg/kg | < 2 | NONE | < 2 | | < 2 | < 2 | |
| VPH (C6 - C10) | mg/kg | < 0.05 | NONE | | < 0.05 | | | < 0.05 |
| DRO (C10 - C24) | mg/kg | < 6 | MCERTS | | < 6 | | | < 6 |
| EPH (C10 - C40) | mg/kg | < 6 | MCERTS | < 6 | 8 | 104 | < 6 | 19 |
| Mineral Oil (C10 - C40) | mg/kg | < 10 | MCERTS | | < 10 | | | < 10 |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C
Analysis carried out on the dried sample is corrected for the stone content
The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)
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The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.
Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.
Asbestos Analyst: Wioletta Goral
RL: Reporting Limit
Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).
Subcontracted analysis $^{(S)}$

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | | | | |
| HBPW | Time Sampled | None Supplied | None Supplied | | | | |
| Site Reference: High Street Hampton Hill | TP / BH No | TP05 | TP05 | | | | |
| Project / Job Ref: SL05030 | Additional Refs | 02 | 03 | | | | |
| Order No: 519 | Depth (m) | 1.10 | 2.60 | | | | |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208555 | 208556 | | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Asbestos Screen | N/a | N/a | ISO17025 | Not Detected | Not Detected | | | |
| pH | pH Units | N/a | MCERTS | 7.4 | 7.5 | | | |
| Total Cyanide | mg/kg | < 2 | NONE | < 2 | < 2 | | | |
| Complex Cyanide | mg/kg | < 2 | NONE | | < 2 | | | |
| Free Cyanide | mg/kg | < 2 | NONE | | < 2 | | | |
| Total Sulphate as $SO_4$ | mg/kg | < 200 | NONE | 297 | 208 | | | |
| Total Sulphate as $SO_4$ | % | < 0.02 | NONE | 0.03 | 0.02 | | | |
| W/S Sulphate as $SO_4$ (2:1) | mg/l | < 10 | MCERTS | | 23 | | | |
| W/S Sulphate as $SO_4$ (2:1) | g/l | < 0.01 | MCERTS | | 0.02 | | | |
| Elemental Sulphur | mg/kg | < 10 | NONE | | < 10 | | | |
| Sulphide | mg/kg | < 5 | NONE | < 5 | < 5 | | | |
| Organic Matter | % | < 0.1 | MCERTS | 2.1 | 0.6 | | | |
| Total Organic Carbon (TOC) | % | < 0.1 | MCERTS | 1.2 | 0.4 | | | |
| Fraction Organic Carbon (FOC) | Units | < 0.001 | MCERTS | | 0.004 | | | |
| Ammonium as $NH_4$ | mg/kg | < 0.5 | NONE | | 38.6 | | | |
| Ammonium as $NH_4$ | mg/l | < 0.05 | NONE | | 3.86 | | | |
| W/S Chloride (2:1) | mg/kg | < 1 | MCERTS | | 7 | | | |
| W/S Chloride (2:1) | mg/l | < 0.5 | MCERTS | | 3.3 | | | |
| Antimony (Sb) | mg/kg | < 1 | NONE | | 1.7 | | | |
| Arsenic (As) | mg/kg | < 2 | MCERTS | 13 | 16 | | | |
| Barium (Ba) | mg/kg | < 5 | NONE | | 48 | | | |
| Beryllium (Be) | mg/kg | < 0.5 | NONE | | 0.8 | | | |
| W/S Boron | mg/kg | < 1 | NONE | < 1 | < 1 | | | |
| Cadmium (Cd) | mg/kg | < 0.2 | MCERTS | < 0.2 | < 0.2 | | | |
| Chromium (Cr) | mg/kg | < 2 | MCERTS | 16 | 21 | | | |
| Chromium (hexavalent) | mg/kg | < 2 | NONE | | < 2 | | | |
| Cobalt (Co) | mg/kg | < 1 | NONE | | 10.2 | | | |
| Copper (Cu) | mg/kg | < 4 | MCERTS | 33 | 13 | | | |
| Lead (Pb) | mg/kg | < 3 | MCERTS | 143 | 36 | | | |
| Manganese (Mn) | mg/kg | < 5 | NONE | | 235 | | | |
| Mercury (Hg) | mg/kg | < 1 | NONE | < 1 | < 1 | | | |
| Molybdenum (Mo) | mg/kg | < 1 | NONE | | < 1 | | | |
| Nickel (Ni) | mg/kg | < 3 | MCERTS | 11 | 16 | | | |
| Selenium (Se) | mg/kg | < 3 | NONE | < 3 | < 3 | | | |
| Tin (Sn) | mg/kg | < 10 | NONE | | < 10 | | | |
| Vanadium (V) | mg/kg | < 2 | NONE | | 40 | | | |
| Zinc (Zn) | mg/kg | < 3 | MCERTS | 86 | 42 | | | |
| Total Phenols (monohydric) | mg/kg | < 2 | NONE | < 2 | | | | |
| VPH (C6 - C10) | mg/kg | < 0.05 | NONE | | < 0.05 | | | |
| DRO (C10 - C24) | mg/kg | < 6 | MCERTS | | < 6 | | | |
| EPH (C10 - C40) | mg/kg | < 6 | MCERTS | < 6 | < 6 | | | |
| Mineral Oil (C10 - C40) | mg/kg | < 10 | MCERTS | | < 10 | | | |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C
Analysis carried out on the dried sample is corrected for the stone content
The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)
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Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.
Asbestos Analyst: Wioletta Goral
RL: Reporting Limit
Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).
Subcontracted analysis (S)

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - Speciated PAHs | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 |
| HBPW | Time Sampled | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: High Street Hampton Hill | TP / BH No | TP01 | TP02 | TP02 | TP03 | TP03 |
| Project / Job Ref: SL05030 | Additional Refs | 01 | 01 | 02 | 01 | 02 |
| Order No: 519 | Depth (m) | 0.90 | 0.35 | 1.20 | 0.70 | 1.20 |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208545 | 208546 | 208547 | 208548 | 208549 |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Acenaphthylene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Acenaphthene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Fluorene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Phenanthrene | mg/kg | < 0.1 | MCERTS | 0.15 | < 0.1 | 0.21 | 0.64 | 1.43 |
| Anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | 0.13 | 0.12 |
| Fluoranthene | mg/kg | < 0.1 | MCERTS | 0.44 | < 0.1 | 0.40 | 1.66 | 2.43 |
| Pyrene | mg/kg | < 0.1 | MCERTS | 0.41 | < 0.1 | 0.41 | 1.76 | 2.08 |
| Benzo(a)anthracene | mg/kg | < 0.1 | MCERTS | 0.21 | < 0.1 | 0.17 | 0.73 | 0.75 |
| Chrysene | mg/kg | < 0.1 | MCERTS | 0.23 | < 0.1 | 0.23 | 0.86 | 0.94 |
| Benzo(b)fluoranthene | mg/kg | < 0.1 | MCERTS | 0.33 | < 0.1 | 0.26 | 0.94 | 1.16 |
| Benzo(k)fluoranthene | mg/kg | < 0.1 | MCERTS | 0.15 | < 0.1 | < 0.1 | 0.34 | 0.40 |
| Benzo(a)pyrene | mg/kg | < 0.1 | MCERTS | 0.23 | < 0.1 | 0.17 | 0.74 | 0.79 |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS | 0.17 | < 0.1 | 0.13 | 0.39 | 0.46 |
| Dibenz(a,h)anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(ghi)perylene | mg/kg | < 0.1 | MCERTS | 0.19 | < 0.1 | 0.11 | 0.38 | 0.41 |
| Total EPA-16 PAHs | mg/kg | < 1.6 | MCERTS | 2.5 | < 1.6 | 2.1 | 8.6 | 11 |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

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Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

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| Soil Analysis Certificate - Speciated PAHs | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 |
| HBPW | Time Sampled | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: High Street Hampton Hill | TP / BH No | TP03 | TP04 | TP04 | TP04 | TP05 |
| Project / Job Ref: SL05030 | Additional Refs | 03 | 01 | 02 | 03 | 01 |
| Order No: 519 | Depth (m) | 2.70 | 0.30 | 0.85 | 1.80 | 0.40 |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208550 | 208551 | 208552 | 208553 | 208554 |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Acenaphthylene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | 0.14 | < 0.1 | < 0.1 |
| Acenaphthene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Fluorene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Phenanthrene | mg/kg | < 0.1 | MCERTS | < 0.1 | 0.32 | 1.54 | 0.15 | 0.24 |
| Anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | 0.32 | < 0.1 | < 0.1 |
| Fluoranthene | mg/kg | < 0.1 | MCERTS | < 0.1 | 0.75 | 4.82 | 0.31 | 0.78 |
| Pyrene | mg/kg | < 0.1 | MCERTS | < 0.1 | 0.67 | 4.28 | 0.27 | 0.71 |
| Benzo(a)anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | 0.37 | 2.27 | 0.12 | 0.39 |
| Chrysene | mg/kg | < 0.1 | MCERTS | < 0.1 | 0.37 | 2.47 | 0.15 | 0.44 |
| Benzo(b)fluoranthene | mg/kg | < 0.1 | MCERTS | < 0.1 | 0.51 | 3.51 | 0.19 | 0.70 |
| Benzo(k)fluoranthene | mg/kg | < 0.1 | MCERTS | < 0.1 | 0.20 | 1.16 | < 0.1 | 0.24 |
| Benzo(a)pyrene | mg/kg | < 0.1 | MCERTS | < 0.1 | 0.36 | 2.54 | 0.13 | 0.46 |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS | < 0.1 | 0.21 | 1.60 | < 0.1 | 0.33 |
| Dibenz(a,h)anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | 0.23 | < 0.1 | < 0.1 |
| Benzo(ghi)perylene | mg/kg | < 0.1 | MCERTS | < 0.1 | 0.20 | 1.42 | < 0.1 | 0.30 |
| Total EPA-16 PAHs | mg/kg | < 1.6 | MCERTS | < 1.6 | 4 | 26.3 | < 1.6 | 4.6 |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

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| Soil Analysis Certificate - Speciated PAHs | | | | | | | |
|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 16-44642** | **Date Sampled** | 19/05/16 | 19/05/16 | | | |
| **HBPW** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: High Street Hampton Hill** | **TP / BH No** | TP05 | TP05 | | | |
| **Project / Job Ref: SL05030** | **Additional Refs** | 02 | 03 | | | |
| **Order No: 519** | **Depth (m)** | 1.10 | 2.60 | | | |
| **Reporting Date: 01/06/2016** | **QTSE Sample No** | 208555 | 208556 | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | | | |
| Acenaphthylene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | | | |
| Acenaphthene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | | | |
| Fluorene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | | | |
| Phenanthrene | mg/kg | < 0.1 | MCERTS | 0.21 | < 0.1 | | | |
| Anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | | | |
| Fluoranthene | mg/kg | < 0.1 | MCERTS | 0.57 | 0.12 | | | |
| Pyrene | mg/kg | < 0.1 | MCERTS | 0.48 | < 0.1 | | | |
| Benzo(a)anthracene | mg/kg | < 0.1 | MCERTS | 0.26 | < 0.1 | | | |
| Chrysene | mg/kg | < 0.1 | MCERTS | 0.33 | < 0.1 | | | |
| Benzo(b)fluoranthene | mg/kg | < 0.1 | MCERTS | 0.45 | < 0.1 | | | |
| Benzo(k)fluoranthene | mg/kg | < 0.1 | MCERTS | 0.15 | < 0.1 | | | |
| Benzo(a)pyrene | mg/kg | < 0.1 | MCERTS | 0.29 | < 0.1 | | | |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS | 0.17 | < 0.1 | | | |
| Dibenz(a,h)anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | | | |
| Benzo(ghi)perylene | mg/kg | < 0.1 | MCERTS | 0.15 | < 0.1 | | | |
| Total EPA-16 PAHs | mg/kg | < 1.6 | MCERTS | 3.1 | < 1.6 | | | |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

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Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

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| Soil Analysis Certificate - TPH CWG Banded | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 |
| HBPW | Time Sampled | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: High Street Hampton Hill | TP / BH No | TP01 | TP02 | TP02 | TP03 | TP03 |
| Project / Job Ref: SL05030 | Additional Refs | 01 | 01 | 02 | 01 | 02 |
| Order No: 519 | Depth (m) | 0.90 | 0.35 | 1.20 | 0.70 | 1.20 |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208545 | 208546 | 208547 | 208548 | 208549 |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aliphatic >C5 - C6 | mg/kg | < 0.01 | NONE | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Aliphatic >C6 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Aliphatic >C8 - C10 | mg/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Aliphatic >C10 - C12 | mg/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Aliphatic >C12 - C16 | mg/kg | < 3 | MCERTS | < 3 | < 3 | 7 | < 3 | < 3 |
| Aliphatic >C16 - C21 | mg/kg | < 3 | MCERTS | < 3 | < 3 | 207 | < 3 | < 3 |
| Aliphatic >C21 - C34 | mg/kg | < 10 | MCERTS | < 10 | < 10 | 648 | < 10 | < 10 |
| Aliphatic (C5 - C34) | mg/kg | < 21 | NONE | < 21 | < 21 | 861 | < 21 | < 21 |
| Aromatic >C5 - C7 | mg/kg | < 0.01 | NONE | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Aromatic >C7 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Aromatic >C8 - C10 | mg/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Aromatic >C10 - C12 | mg/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Aromatic >C12 - C16 | mg/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Aromatic >C16 - C21 | mg/kg | < 3 | MCERTS | 6 | < 3 | 69 | < 3 | 6 |
| Aromatic >C21 - C35 | mg/kg | < 10 | MCERTS | < 10 | < 10 | 244 | < 10 | 14 |
| Aromatic (C5 - C35) | mg/kg | < 21 | NONE | < 21 | < 21 | 313 | < 21 | < 21 |
| Total >C5 - C35 | mg/kg | < 42 | NONE | < 42 | < 42 | 1174 | < 42 | < 42 |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

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Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

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| Soil Analysis Certificate - TPH CWG Banded | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 |
| HBPW | Time Sampled | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: High Street Hampton Hill | TP / BH No | TP03 | TP04 | TP04 | TP04 | TP05 |
| Project / Job Ref: SL05030 | Additional Refs | 03 | 01 | 02 | 03 | 01 |
| Order No: 519 | Depth (m) | 2.70 | 0.30 | 0.85 | 1.80 | 0.40 |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208550 | 208551 | 208552 | 208553 | 208554 |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aliphatic >C5 - C6 | mg/kg | < 0.01 | NONE | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Aliphatic >C6 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Aliphatic >C8 - C10 | mg/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Aliphatic >C10 - C12 | mg/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Aliphatic >C12 - C16 | mg/kg | < 3 | MCERTS | < 3 | < 3 | < 3 | < 3 | < 3 |
| Aliphatic >C16 - C21 | mg/kg | < 3 | MCERTS | < 3 | < 3 | < 3 | < 3 | < 3 |
| Aliphatic >C21 - C34 | mg/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | < 10 | < 10 |
| Aliphatic (C5 - C34) | mg/kg | < 21 | NONE | < 21 | < 21 | < 21 | < 21 | < 21 |
| Aromatic >C5 - C7 | mg/kg | < 0.01 | NONE | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Aromatic >C7 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Aromatic >C8 - C10 | mg/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Aromatic >C10 - C12 | mg/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Aromatic >C12 - C16 | mg/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Aromatic >C16 - C21 | mg/kg | < 3 | MCERTS | < 3 | < 3 | 10 | < 3 | < 3 |
| Aromatic >C21 - C35 | mg/kg | < 10 | MCERTS | < 10 | < 10 | 42 | < 10 | < 10 |
| Aromatic (C5 - C35) | mg/kg | < 21 | NONE | < 21 | < 21 | 52 | < 21 | < 21 |
| Total >C5 - C35 | mg/kg | < 42 | NONE | < 42 | < 42 | 52 | < 42 | < 42 |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - TPH CWG Banded | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | | | | |
| HBPW | Time Sampled | None Supplied | None Supplied | | | | |
| Site Reference: High Street Hampton Hill | TP / BH No | TP05 | TP05 | | | | |
| Project / Job Ref: SL05030 | Additional Refs | 02 | 03 | | | | |
| Order No: 519 | Depth (m) | 1.10 | 2.60 | | | | |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208555 | 208556 | | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aliphatic >C5 - C6 | mg/kg | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Aliphatic >C6 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | < 0.05 | | | |
| Aliphatic >C8 - C10 | mg/kg | < 2 | MCERTS | < 2 | < 2 | | | |
| Aliphatic >C10 - C12 | mg/kg | < 2 | MCERTS | < 2 | < 2 | | | |
| Aliphatic >C12 - C16 | mg/kg | < 3 | MCERTS | < 3 | < 3 | | | |
| Aliphatic >C16 - C21 | mg/kg | < 3 | MCERTS | < 3 | < 3 | | | |
| Aliphatic >C21 - C34 | mg/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| Aliphatic (C5 - C34) | mg/kg | < 21 | NONE | < 21 | < 21 | | | |
| Aromatic >C5 - C7 | mg/kg | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Aromatic >C7 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | < 0.05 | | | |
| Aromatic >C8 - C10 | mg/kg | < 2 | MCERTS | < 2 | < 2 | | | |
| Aromatic >C10 - C12 | mg/kg | < 2 | MCERTS | < 2 | < 2 | | | |
| Aromatic >C12 - C16 | mg/kg | < 2 | MCERTS | < 2 | < 2 | | | |
| Aromatic >C16 - C21 | mg/kg | < 3 | MCERTS | < 3 | < 3 | | | |
| Aromatic >C21 - C35 | mg/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| Aromatic (C5 - C35) | mg/kg | < 21 | NONE | < 21 | < 21 | | | |
| Total >C5 - C35 | mg/kg | < 42 | NONE | < 42 | < 42 | | | |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

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Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - BTEX / MTBE | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 |
| HBPW | Time Sampled | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: High Street Hampton Hill | TP / BH No | TP01 | TP02 | TP02 | TP03 | TP03 |
| Project / Job Ref: SL05030 | Additional Refs | 01 | 01 | 02 | 01 | 02 |
| Order No: 519 | Depth (m) | 0.90 | 0.35 | 1.20 | 0.70 | 1.20 |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208545 | 208546 | 208547 | 208548 | 208549 |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Toluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Ethylbenzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| p & m-xylene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| o-xylene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| MTBE | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

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Lenham Heath
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Kent ME17 2JN
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4480

| Soil Analysis Certificate - BTEX / MTBE | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 |
| HBPW | Time Sampled | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: High Street Hampton Hill | TP / BH No | TP03 | TP04 | TP04 | TP04 | TP05 |
| Project / Job Ref: SL05030 | Additional Refs | 03 | 01 | 02 | 03 | 01 |
| Order No: 519 | Depth (m) | 2.70 | 0.30 | 0.85 | 1.80 | 0.40 |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208550 | 208551 | 208552 | 208553 | 208554 |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Toluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Ethylbenzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| p & m-xylene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| o-xylene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| MTBE | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

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Maidstone
Kent ME17 2JN
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4480

| Soil Analysis Certificate - BTEX / MTBE | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | | | |
| HBPW | Time Sampled | None Supplied | None Supplied | | | |
| Site Reference: High Street Hampton Hill | TP / BH No | TP05 | TP05 | | | |
| Project / Job Ref: SL05030 | Additional Refs | 02 | 03 | | | |
| Order No: 519 | Depth (m) | 1.10 | 2.60 | | | |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208555 | 208556 | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | | | |
| Toluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Ethylbenzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | | | |
| p & m-xylene | ug/kg | < 2 | MCERTS | < 2 | < 2 | | | |
| o-xylene | ug/kg | < 2 | MCERTS | < 2 | < 2 | | | |
| MTBE | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - Volatile Organic Compounds (VOC) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | | |
| HBPW | Time Sampled | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied | | |
| Site Reference: High Street Hampton Hill | TP / BH No | TP01 | TP02 | TP03 | TP04 | TP05 | | |
| Project / Job Ref: SL05030 | Additional Refs | 01 | 01 | 01 | 01 | 01 | | |
| Order No: 519 | Depth (m) | 0.90 | 0.35 | 0.70 | 0.30 | 0.40 | | |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208545 | 208546 | 208548 | 208551 | 208554 | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Vinyl Chloride | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Chloromethane | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | < 10 | < 10 |
| Chloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Bromomethane | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | < 10 | < 10 |
| Trichlorofluoromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,1-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| MTBE | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| trans-1,2-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,1-Dichloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| cis-1,2-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 2,2-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Chloroform | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Bromochloromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,1,1-Trichloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,1-Dichloropropene | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | < 10 | < 10 |
| Carbon Tetrachloride | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,2-Dichloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Benzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| 1,2-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Trichloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Bromodichloromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Dibromomethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| TAME | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| cis-1,3-Dichloropropene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Toluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| trans-1,3-Dichloropropene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,1,2-Trichloroethane | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | < 10 | < 10 |
| 1,3-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Tetrachloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Dibromochloromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,2-Dibromoethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Chlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,1,1,2-Tetrachloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Ethyl Benzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| m,p-Xylene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| o-Xylene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | < 2 | < 2 |
| Styrene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Bromoform | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | < 10 | < 10 |
| Isopropylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,1,2,2-Tetrachloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,2,3-Trichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| n-Propylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| Bromobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 2-Chlorotoluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,3,5-Trimethylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 4-Chlorotoluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| tert-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,2,4-Trimethylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| sec-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| p-Isopropyltoluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,3-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,4-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| n-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| 1,2-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |
| ,2-Dibromo-3-chloropropane | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | < 10 | < 10 |
| Hexachlorobutadiene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | < 5 | < 5 |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - Volatile Organic Compounds (VOC) | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | | | | | |
| HBPW | Time Sampled | None Supplied | | | | | |
| Site Reference: High Street Hampton Hill | TP / BH No | TP05 | | | | | |
| Project / Job Ref: SL05030 | Additional Refs | 03 | | | | | |
| Order No: 519 | Depth (m) | 2.60 | | | | | |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208556 | | | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Vinyl Chloride | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Chloromethane | ug/kg | < 10 | MCERTS | < 10 | | | | |
| Chloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Bromomethane | ug/kg | < 10 | MCERTS | < 10 | | | | |
| Trichlorofluoromethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| MTBE | ug/kg | < 5 | MCERTS | < 5 | | | | |
| trans-1,2-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1-Dichloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| cis-1,2-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 2,2-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Chloroform | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Bromochloromethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1,1-Trichloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1-Dichloropropene | ug/kg | < 10 | MCERTS | < 10 | | | | |
| Carbon Tetrachloride | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,2-Dichloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Benzene | ug/kg | < 2 | MCERTS | < 2 | | | | |
| 1,2-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Trichloroethene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Bromodichloromethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Dibromomethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| TAME | ug/kg | < 5 | MCERTS | < 5 | | | | |
| cis-1,3-Dichloropropene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Toluene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| trans-1,3-Dichloropropene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1,2-Trichloroethane | ug/kg | < 10 | MCERTS | < 10 | | | | |
| 1,3-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Tetrachloroethene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Dibromochloromethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,2-Dibromoethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Chlorobenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1,1,2-Tetrachloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Ethyl Benzene | ug/kg | < 2 | MCERTS | < 2 | | | | |
| m,p-Xylene | ug/kg | < 2 | MCERTS | < 2 | | | | |
| o-Xylene | ug/kg | < 2 | MCERTS | < 2 | | | | |
| Styrene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Bromoform | ug/kg | < 10 | MCERTS | < 10 | | | | |
| Isopropylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1,2,2-Tetrachloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,2,3-Trichloropropane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| n-Propylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Bromobenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 2-Chlorotoluene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,3,5-Trimethylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 4-Chlorotoluene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| tert-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,2,4-Trimethylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| sec-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| p-Isopropyltoluene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,3-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,4-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| n-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,2-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| ,2-Dibromo-3-chloropropane | ug/kg | < 10 | MCERTS | < 10 | | | | |
| Hexachlorobutadiene | ug/kg | < 5 | MCERTS | < 5 | | | | |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | | |
| HBPW | Time Sampled | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied | | |
| Site Reference: High Street Hampton Hill | TP / BH No | TP01 | TP02 | TP03 | TP04 | TP05 | | |
| Project / Job Ref: SL05030 | Additional Refs | 01 | 01 | 01 | 01 | 01 | | |
| Order No: 519 | Depth (m) | 0.90 | 0.35 | 0.70 | 0.30 | 0.40 | | |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208545 | 208546 | 208548 | 208551 | 208554 | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Phenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 1,2,4-Trichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2-Nitrophenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nitrobenzene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 0-Cresol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| bis(2-chloroethoxy)methane | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| bis(2-chloroethyl)ether | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2,4-Dichlorophenol | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2-Chlorophenol | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 1,3-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 1,4-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 1,2-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2,4-Dimethylphenol | mg/kg | < 0.15 | ISO17025 | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 |
| Isophorone | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Hexachloroethane | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| p-Cresol | mg/kg | < 0.15 | MCERTS | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 |
| 2,4,6-Trichlorophenol | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2,4,5-Trichlorophenol | mg/kg | < 0.15 | MCERTS | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 |
| 2-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4-Chloro-3-methylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2-Methylnaphthalene | mg/kg | < 0.1 | MCERTS | 0.1 | < 0.1 | 0.1 | < 0.1 | 0.1 |
| Hexachlorocyclopentadiene | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Hexachlorobutadiene | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2,6-Dinitrotoluene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dimethyl phthalate | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2-Chloronaphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4-Chloroanaline | mg/kg | < 0.15 | NONE | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 |
| 4-Nitrophenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4-Chlorophenyl phenyl ether | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 3-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4-Bromophenyl phenyl ether | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Hexachlorobenzene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2,4-Dinitrotoluene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Diethyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibenzofuran | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Azobenzene | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibutyl phthalate | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Carbazole | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| bis(2-ethylhexyl)phthalate | mg/kg | < 0.15 | MCERTS | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 |
| Benzyl butyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Di-n-octyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

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Rose Lane
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Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC) | | | | | | | |
|---|---|---|---|---|---|---|---|
| QTS Environmental Report No: 16-44642 | Date Sampled | 19/05/16 | | | | | |
| HBPW | Time Sampled | None Supplied | | | | | |
| Site Reference: High Street Hampton Hill | TP / BH No | TP05 | | | | | |
| Project / Job Ref: SL05030 | Additional Refs | 03 | | | | | |
| Order No: 519 | Depth (m) | 2.60 | | | | | |
| Reporting Date: 01/06/2016 | QTSE Sample No | 208556 | | | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Phenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 2-Nitrophenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| Nitrobenzene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 0-Cresol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| bis(2-chloroethoxy)methane | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| bis(2-chloroethyl)ether | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 2,4-Dichlorophenol | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 2-Chlorophenol | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 1,3-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 1,4-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 1,2-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 2,4-Dimethylphenol | mg/kg | < 0.15 | ISO17025 | < 0.15 | | | | |
| Isophorone | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| Hexachloroethane | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| p-Cresol | mg/kg | < 0.15 | MCERTS | < 0.15 | | | | |
| 2,4,6-Trichlorophenol | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 2,4,5-Trichlorophenol | mg/kg | < 0.15 | MCERTS | < 0.15 | | | | |
| 2-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 4-Chloro-3-methylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2-Methylnaphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Hexachlorocyclopentadiene | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| Hexachlorobutadiene | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 2,6-Dinitrotoluene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Dimethyl phthalate | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2-Chloronaphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 4-Chloroanaline | mg/kg | < 0.15 | NONE | < 0.15 | | | | |
| 4-Nitrophenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 4-Chlorophenyl phenyl ether | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 3-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 4-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 4-Bromophenyl phenyl ether | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Hexachlorobenzene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 2,4-Dinitrotoluene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Diethyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Dibenzofuran | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Azobenzene | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| Dibutyl phthalate | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| Carbazole | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| bis(2-ethylhexyl)phthalate | mg/kg | < 0.15 | MCERTS | < 0.15 | | | | |
| Benzyl butyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Di-n-octyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| **Soil Analysis Certificate - PCB (7 Congeners)** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 16-44642** | **Date Sampled** | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 |
| **HBPW** | **Time Sampled** | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Site Reference: High Street Hampton Hill** | **TP / BH No** | TP01 | TP02 | TP03 | TP04 | TP05 |
| **Project / Job Ref: SL05030** | **Additional Refs** | 01 | 01 | 01 | 01 | 01 |
| **Order No: 519** | **Depth (m)** | 0.90 | 0.35 | 0.70 | 0.30 | 0.40 |
| **Reporting Date: 01/06/2016** | **QTSE Sample No** | 208545 | 208546 | 208548 | 208551 | 208554 |

| **Determinand** | **Unit** | **RL** | **Accreditation** | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congener 28 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | < 0.008 | < 0.008 | < 0.008 |
| PCB Congener 52 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | < 0.008 | < 0.008 | < 0.008 |
| PCB Congener 101 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | < 0.008 | < 0.008 | < 0.008 |
| PCB Congener 118 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | < 0.008 | < 0.008 | < 0.008 |
| PCB Congener 138 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | < 0.008 | < 0.008 | < 0.008 |
| PCB Congener 153 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | < 0.008 | < 0.008 | < 0.008 |
| PCB Congener 180 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | < 0.008 | < 0.008 | < 0.008 |
| Total PCB (7 Congeners) | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| **Soil Analysis Certificate - PCB (7 Congeners)** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 16-44642** | **Date Sampled** | 19/05/16 | | | | | |
| **HBPW** | **Time Sampled** | None Supplied | | | | | |
| **Site Reference: High Street Hampton Hill** | **TP / BH No** | TP05 | | | | | |
| **Project / Job Ref: SL05030** | **Additional Refs** | 03 | | | | | |
| **Order No: 519** | **Depth (m)** | 2.60 | | | | | |
| **Reporting Date: 01/06/2016** | **QTSE Sample No** | 208556 | | | | | |

| **Determinand** | **Unit** | **RL** | **Accreditation** | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congener 28 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 52 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 101 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 118 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 138 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 153 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 180 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| Total PCB (7 Congeners) | mg/kg | < 0.1 | NONE | < 0.1 | | | | |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

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**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| **Soil Analysis Certificate - Speciated Phenols** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 16-44642** | **Date Sampled** | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 | 19/05/16 |
| **HBPW** | **Time Sampled** | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Site Reference: High Street Hampton Hill** | **TP / BH No** | TP01 | TP02 | TP03 | TP04 | TP05 |
| **Project / Job Ref: SL05030** | **Additional Refs** | 01 | 01 | 01 | 01 | 01 |
| **Order No: 519** | **Depth (m)** | 0.90 | 0.35 | 0.70 | 0.30 | 0.40 |
| **Reporting Date: 01/06/2016** | **QTSE Sample No** | 208545 | 208546 | 208548 | 208551 | 208554 |

| **Determinand** | **Unit** | **RL** | **Accreditation** | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2, 3, 5-trimethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2, 3, 6-trimethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2, 3-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2, 4, 6-trimethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2, 4-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2, 5-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2, 6-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2-ethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 2-isopropylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 3, 4, 5-trimethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 3, 4-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 3, 5-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 3-ethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 3-isopropylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4-ethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4-isopropylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| m-cresol (3-methylphenol) | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| o-cresol (2-methylphenol) | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| p-cresol (4-methylphenol) | mg/kg | < 0.15 | NONE | < 0.15 | < 0.15 | < 0.15 | < 0.15 | < 0.15 |
| phenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30$^{O}$C

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**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Speciated Phenols | | | | | | | |
|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 16-44642** | **Date Sampled** | 19/05/16 | | | | | |
| **HBPW** | **Time Sampled** | None Supplied | | | | | |
| **Site Reference: High Street Hampton Hill** | **TP / BH No** | TP05 | | | | | |
| **Project / Job Ref: SL05030** | **Additional Refs** | 03 | | | | | |
| **Order No: 519** | **Depth (m)** | 2.60 | | | | | |
| **Reporting Date: 01/06/2016** | **QTSE Sample No** | 208556 | | | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2, 3, 5-trimethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2, 3, 6-trimethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2, 3-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2, 4, 6-trimethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2, 4-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2, 5-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2, 6-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2-ethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2-isopropylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 3, 4, 5-trimethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 3, 4-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 3, 5-xylenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 3-ethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 3-isopropylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 4-ethylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 4-isopropylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| m-cresol (3-methylphenol) | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| o-cresol (2-methylphenol) | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| p-cresol (4-methylphenol) | mg/kg | < 0.15 | NONE | < 0.15 | | | | |
| phenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than $30^{O}C$

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING 4480

## Waste Acceptance Criteria Analytical Certificate - BS EN 12457/3

| | | | |
|---|---|---|---|
| **QTS Environmental Report No: 16-44642** | **Date Sampled** | 19/05/16 | |
| **HBPW** | **Time Sampled** | None Supplied | |
| **Site Reference: High Street Hampton Hill** | **TP / BH No** | WAC Composite | |
| **Project / Job Ref: SL05030** | **Additional Refs** | None Supplied | |
| **Order No: 519** | **Depth (m)** | None Supplied | |
| **Reporting Date: 01/06/2016** | **QTSE Sample No** | 208557 | |

| **Determinand** | **Unit** | **MDL** | | **Landfill Waste Acceptance Criteria Limits** | | |
|---|---|---|---|---|---|---|
| | | | | **Inert Waste Landfill** | **Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill** | **Hazardous Waste Landfill** |
| TOC[MU] | % | < 0.1 | 0.6 | 3% | 5% | 6% |
| Loss on Ignition | % | < 0.01 | 2 | -- | -- | 10% |
| BTEX[MU] | mg/kg | < 0.05 | < 0.05 | 6 | -- | -- |
| Sum of PCBs | mg/kg | < 0.1 | < 0.1 | 1 | -- | -- |
| Mineral Oil[MU] | mg/kg | < 10 | < 10 | 500 | -- | -- |
| Total PAH[MU] | mg/kg | < 1.7 | < 1.7 | 100 | -- | -- |
| pH[MU] | pH Units | N/a | 10.2 | -- | >6 | -- |
| Acid Neutralisation Capacity | mol/kg (+/-) | < 1 | 1.9 | -- | To be evaluated | To be evaluated |

| **Eluate Analysis** | **2:1 mg/l** | **8:1 mg/l** | | **Cumulative 10:1 mg/kg** | **Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)** | | |
|---|---|---|---|---|---|---|---|
| Arsenic[U] | < 0.01 | < 0.01 | | < 0.2 | 0.5 | 2 | 25 |
| Barium[U] | 0.09 | 0.02 | | 0.3 | 20 | 100 | 300 |
| Cadmium[U] | < 0.0005 | < 0.0005 | | < 0.02 | 0.04 | 1 | 5 |
| Chromium[U] | 0.049 | 0.010 | | < 0.20 | 0.5 | 10 | 70 |
| Copper[U] | 0.08 | < 0.01 | | < 0.5 | 2 | 50 | 100 |
| Mercury[U] | < 0.005 | < 0.005 | | < 0.01 | 0.01 | 0.2 | 2 |
| Molybdenum[U] | 0.011 | 0.002 | | < 0.1 | 0.5 | 10 | 30 |
| Nickel[U] | < 0.007 | < 0.007 | | < 0.2 | 0.4 | 10 | 40 |
| Lead[U] | < 0.005 | < 0.005 | | < 0.2 | 0.5 | 10 | 50 |
| Antimony[U] | 0.020 | 0.007 | | 0.09 | **0.06** | 0.7 | 5 |
| Selenium[U] | < 0.005 | < 0.005 | | < 0.1 | 0.1 | 0.5 | 7 |
| Zinc[U] | < 0.005 | < 0.005 | | < 0.2 | 4 | 50 | 200 |
| Chloride[U] | 4 | 1 | | 17 | 800 | 15000 | 25000 |
| Fluoride[U] | 0.6 | < 0.5 | | < 1 | 10 | 150 | 500 |
| Sulphate[U] | 257 | 25 | | 540 | 1000 | 20000 | 50000 |
| TDS | 369 | 92 | | 1271 | 4000 | 60000 | 100000 |
| Phenol Index | < 0.01 | < 0.01 | | < 0.5 | 1 | - | - |
| DOC | 17.6 | 4.4 | | 60.7 | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Sample Mass (kg) | 0.20 | | | | | | |
| Dry Matter (%) | 87.7 | | | | | | |
| Moisture (%) | 14 | | | | | | |
| **Stage 1** | | | | | | | |
| Volume Eluate L2 (litres) | 0.33 | | | | | | |
| Filtered Eluate VE1 (litres) | 0.22 | | | | | | |
| | | | | | | | |
| | | | | | | | |

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and QTS Environmental cannot be held responsible for any discrepencies with current legislation
M Denotes MCERTS accredited test
U Denotes ISO17025 accredited test

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - Sample Descriptions | |
|---|---|
| QTS Environmental Report No: 16-44642 | |
| HBPW | |
| Site Reference: High Street Hampton Hill | |
| Project / Job Ref: SL05030 | |
| Order No: 519 | |
| Reporting Date: 01/06/2016 | |

| QTSE Sample No | TP / BH No | Additional Refs | Depth (m) | Moisture Content (%) | Sample Matrix Description |
|---|---|---|---|---|---|
| 208545 | TP01 | 1 | 0.90 | 10.6 | Brown sandy gravel with stones |
| 208546 | TP02 | 1 | 0.35 | 9.6 | Orange sand with stones |
| 208547 | TP02 | 2 | 1.20 | 14.5 | Light brown sandy gravel with stones |
| 208548 | TP03 | 1 | 0.70 | 13.8 | Brown gravelly sand with stones |
| 208549 | TP03 | 2 | 1.20 | 15.2 | Brown gravelly clay with stones |
| 208550 | TP03 | 3 | 2.70 | 9.1 | Orange sand with stones |
| 208551 | TP04 | 1 | 0.30 | 12.9 | Light brown gravelly sand with stones |
| 208552 | TP04 | 2 | 0.85 | 13.7 | Brown gravelly clay with stones and vegetation |
| 208553 | TP04 | 3 | 1.80 | 7.3 | Orange sand with stones |
| 208554 | TP05 | 1 | 0.40 | 14.5 | Brown gravelly sand with stones |
| 208555 | TP05 | 2 | 1.10 | 14.3 | Light brown sand with stones |
| 208556 | TP05 | 3 | 2.60 | 8.8 | Light brown gravelly sand with stones |
| 208557 | WAC Composite | None Supplied | None Supplied | 12.3 | Light brown gravelly sand with rubble |

*Moisture content is part of procedure E003 & is not an accredited test*

Insufficient Sample I/S

Unsuitable Sample U/S

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - Methodology & Miscellaneous Information |
|---|
| QTS Environmental Report No: 16-44642 |
| HBPW |
| Site Reference: High Street Hampton Hill |
| Project / Job Ref: SL05030 |
| Order No: 519 |
| Reporting Date: 01/06/2016 |

| Matrix | Analysed On | Determinand | Brief Method Description | Method No |
|---|---|---|---|---|
| Soil | D | Boron - Water Soluble | Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES | E012 |
| Soil | AR | BTEX | Determination of BTEX by headspace GC-MS | E001 |
| Soil | D | Cations | Determination of cations in soil by aqua-regia digestion followed by ICP-OES | E002 |
| Soil | D | Chloride - Water Soluble (2:1) | Determination of chloride by extraction with water & analysed by ion chromatography | E009 |
| Soil | AR | Chromium - Hexavalent | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry | E016 |
| Soil | AR | Cyanide - Complex | Determination of complex cyanide by distillation followed by colorimetry | E015 |
| Soil | AR | Cyanide - Free | Determination of free cyanide by distillation followed by colorimetry | E015 |
| Soil | AR | Cyanide - Total | Determination of total cyanide by distillation followed by colorimetry | E015 |
| Soil | D | Cyclohexane Extractable Matter (CEM) | Gravimetrically determined through extraction with cyclohexane | E011 |
| Soil | AR | Diesel Range Organics (C10 - C24) | Determination of hexane/acetone extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | Electrical Conductivity | Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement | E022 |
| Soil | AR | Electrical Conductivity | Determination of electrical conductivity by addition of water followed by electrometric measurement | E023 |
| Soil | D | Elemental Sulphur | Determination of elemental sulphur by solvent extraction followed by GC-MS | E020 |
| Soil | AR | EPH (C10 – C40) | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | EPH Product ID | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40) | Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS | E004 |
| Soil | D | Fluoride - Water Soluble | Determination of Fluoride by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | FOC (Fraction Organic Carbon) | Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | D | Loss on Ignition @ 450oC | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace | E019 |
| Soil | D | Magnesium - Water Soluble | Determination of water soluble magnesium by extraction with water followed by ICP-OES | E025 |
| Soil | D | Metals | Determination of metals by aqua-regia digestion followed by ICP-OES | E002 |
| Soil | AR | Mineral Oil (C10 - C40) | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge | E004 |
| Soil | AR | Moisture Content | Moisture content; determined gravimetrically | E003 |
| Soil | D | Nitrate - Water Soluble (2:1) | Determination of nitrate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Organic Matter | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | AR | PAH - Speciated (EPA 16) | Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards | E005 |
| Soil | AR | PCB - 7 Congeners | Determination of PCB by extraction with acetone and hexane followed by GC-MS | E008 |
| Soil | D | Petroleum Ether Extract (PEE) | Gravimetrically determined through extraction with petroleum ether | E011 |
| Soil | AR | pH | Determination of pH by addition of water followed by electrometric measurement | E007 |
| Soil | AR | Phenols - Total (monohydric) | Determination of phenols by distillation followed by colorimetry | E021 |
| Soil | D | Phosphate - Water Soluble (2:1) | Determination of phosphate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Sulphate (as SO4) - Total | Determination of total sulphate by extraction with 10% HCl followed by ICP-OES | E013 |
| Soil | D | Sulphate (as SO4) - Water Soluble (2:1) | Determination of sulphate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Sulphate (as SO4) - Water Soluble (2:1) | Determination of water soluble sulphate by extraction with water followed by ICP-OES | E014 |
| Soil | AR | Sulphide | Determination of sulphide by distillation followed by colorimetry | E018 |
| Soil | D | Sulphur - Total | Determination of total sulphur by extraction with aqua-regia followed by ICP-OES | E024 |
| Soil | AR | SVOC | Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS | E006 |
| Soil | AR | Thiocyanate (as SCN) | Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry | E017 |
| Soil | D | Toluene Extractable Matter (TEM) | Gravimetrically determined through extraction with toluene | E011 |
| Soil | D | Total Organic Carbon (TOC) | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | AR | TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35) | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS | E004 |
| Soil | AR | TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10 C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44) | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS | E004 |
| Soil | AR | VOCs | Determination of volatile organic compounds by headspace GC-MS | E001 |
| Soil | AR | VPH (C6-C8 & C8-C10) | Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID | E001 |

**D Dried**
**AR As Received**

# Appendix 5

Gas Monitoring Results

# GROUNDWATER AND GROUND GAS MONITORING RECORD SHEET

**Sheet:** | **of**

| | | | |
|---|---|---|---|
| Project Name: | Hampton Hill | Weather Conditions: | overcast, dry |
| Project Number: | SL05030 | Gas Kit Model: | GA5000 |
| Personnel: | HBPW | Gas Kit Serial No: | GA03 |

**Date:** 16.06.16

| LOCATION | Flow Peak (L/hr) | Flow Steady (L/hr) | $CH_4$ Peak (%v/v) | $CH_4$ Steady (%v/v) | $CO_2$ Peak (%v/v) | $CO_2$ Steady (%v/v) | $O_2$ Min. (%v/v) | $O_2$ Steady (%v/v) | Atmospheric Pressure (mb) | PID (ppm) | Well I.D. (mm) | Depth to Product (DTP) (m) | Product Thickness (m) | Depth to Water (DTW) (m) | Depth to Base (DTB) (m) | Height of Water Column (m) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CP1 | | 15.4 | 0.0 | 0.0 | 5.5 | 5.5 | 11.2 | | 999 | | CP1 | | | 2.980 | | | |
| CP2 | | 15.4 | 0.0 | 0.0 | 4.8 | 4.8 | 15.1 | | 999 | | CP2 | | | 3.070 | | | |
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GUIDE TO PURGING VOLUMES

To calculate the number of litres to be purged from a well with a different diameter, use the formula $3\pi r^2 h$ (where $r$ = radius of the well and $h$ = height of the water column). Use the formula $\pi r^2 h$ to calculate the volume of a bailer. Please note that the standard bailers HBPW use are typically 0.95 m in length.

| Diameter of Casing (mm) | 19 | 35 | 50 | 50 | 75 | 100 |
|---|---|---|---|---|---|---|
| Diameter of Bailer (mm) | 18 | 19 | 19 | 38 | 38 | 38 |
| No. bails per m | 4 | 12 | 22 | 6 | 13 | 23 |