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PHASE II ENVIRONMENTAL ASSESSMENT (INTRUSIVE SITE INVESTIGATION) REPORT

Site: The Estate Yard, Camp Hill, Chiddingstone Causeway, near Tonbridge, Kent TN11 8LE



Prepared for: The Trustees of The Redleaf Trust

Date: 4th October 2019

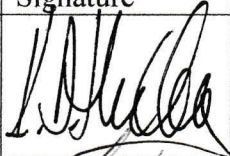



CLIENT: Trustees of The Redleaf Trust

SITE: The Estate Yard, Camp Hill, Chiddingstone Causeway, near Tonbridge,
Kent TN11 8LE

JOB NUMBER: 07538/23

DATE: 4th October 2019

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On behalf of Soiltec Laboratories Limited				

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Executive Summary

Soiltec Laboratories Limited was instructed by Warners Law LLP of behalf of The Trustees of The Redleaf Trust to carry out a Phase II Environmental Assessment (Site Investigation) of the site at:

The Estate Yard, Camp Hill, Chiddingstone Causeway, near Tonbridge, Kent TN11 8LE

A planning application has been submitted to and granted by Sevenoaks District Council (reference 19/00701/FUL). Soiltec carried out a desk study of the site during April and May 2017 and the report of the findings was issued on the 4th May 2017. The desk study concluded that the site posed a very low to moderate environmental risk and that a phase II intrusive investigation of the site was required.

The site covers an area of approximately 0.16ha (1600m²) and is on the south/southeast side of Camp Hill in the village of Chiddingstone Causeway, near Tonbridge.

The site is currently occupied by occupied by a former builder's yard and its associated outbuildings. It is proposed to redevelop the site with residential houses with off road parking and private gardens. It is proposed to convert the main building/barn that was used as offices, a store and carpenters workshop and convert an office and archiving store to residential dwellings as well as demolish the remaining outbuildings to construct a pair of semi detached houses.

The nature of the soils encountered was predominantly made ground that covered the site. The made ground was predominantly silty clay with brick and/or concrete, charcoal fragments, or clinker/roadstone. The depth of the made ground generally extended to depths between 0.4m and 0.7m below existing ground level. However, the made ground was at 0.15m at one location and extended to 2.8m at one other location.

The stratum encountered beneath the made ground was the expected natural strata of Weald Clay (firm to stiff silty clay with occasional angular stones and/or ironstone at some locations).

There are no chemical contaminants on the site within the soils analysed that are likely to impact human health on this proposed residential site and the risk to the end users on site is deemed to be very low in this regard.

However, there are asbestos fibres within the made ground at two locations that are proposed for private gardens. The made ground at these locations should be removed to a depth of at least 0.6m.

The risk to the existing and new buildings is deemed to be very low.

The risk to below ground services is deemed to be very low.

The risk to controlled waters now and following the development is deemed to be very low.

The findings of this report indicate that the site represents an overall **very low to low/moderate environmental risk** and that remediation work is required on the site.

1. Introduction

Soiltec Laboratories Limited was instructed by Warners Law LLP of behalf of The Trustees of The Redleaf Trust to carry out an intrusive site investigation at: The Estate Yard, Camp Hill, Chiddingstone Causeway, near Tonbridge, Kent TN11 8LE (grid reference at the site centre 551860 146813). The site is approximately 40 metres above ordnance datum (AOD) in the small village of Chiddingstone Causeway, Kent.

The site covers an area of approximately 0.16ha (1600m²) and is on the south/southeast side of Camp Hill in the village of Chiddingstone Causeway, near Tonbridge. Tonbridge town centre of is approximately six miles to the east.

The site is currently occupied by occupied by a former builder's yard and its associated outbuildings. It is proposed to redevelop the site with residential houses with off road parking and private gardens. It is proposed to convert the main building/barn that was used as offices, a store and carpenters workshop and convert an office and archiving store to residential dwellings as well as demolish the remaining outbuildings to construct a pair of semi detached houses.

Site plans showing the location, existing and proposed layouts and proposed layouts and elevations of three of the plots are shown in appendix 1, site plans (p1 to p4).

Soiltec carried out a desk study of the site during April 2017 and the report was issued on the 4th May 2017. The desk study concluded that the site posed a very low to moderate environmental risk and that a phase II intrusive investigation of the site was required.

A brief summary of the desk study is outlined below.

2. Summary of the Desk Study

2.1 The Site History

The site was developed with the main barn that is on the site from at least 1870. The additional outbuildings that are currently on the site were built between 1908 and the mid 1930's. The site has been a builder's yard since at least 1979 with some of the buildings used in association with the builder's business. The other buildings have more recently been used as a paper archiving store and domestic workshop. The southwest/west area of the site was part of a small orchard from at least 1870 until at least 1908. No timber treatment has been carried out on the site.

The immediate surrounding areas have been mainly farmland since at least 1870 to date. The adjacent houses Old Stable Cottages and Stonelake have also existed since at least 1870. The adjacent houses (Camp Hill Cottages) were built between 1908 and the mid 1930's.

2.2 Hydrology

There are no surface water features on, adjacent or near to the site.

2.3 Geology/ Hydrogeology

The Weald Clay Formation (mudstone) is the bedrock geology on the site of very low to low permeability with no drift deposits although there are drift deposits adjacent to the north/northeast of head deposits (clay, silt, sand and gravel).

The site overlies a non aquifer and is not within a groundwater source protection zone.

2.4 On-Site Contamination Impact

From the investigations carried out for the desk study it is possible that the site could have been impacted from its current/former uses.

There are no recorded pollution incidents on the site that could have impacted the site.

It is unlikely that landfill gases are impacting the site from on site sources.

2.5 Off-Site Contamination Impact

The findings of the desk study indicated that contamination impact to the site from the immediate surrounding areas is unlikely.

There are no recorded pollution incidents near the site that could have impacted the site.

It is unlikely that landfill gases are impacting the site from off site sources.

2.6 Conceptual Model

Using the Contaminated Land Exposure Assessment (CLEA) model and associated Contaminated Land Report (CLR11, Model Procedures for the Management of Land Contamination) framework to assess sites, a Source (contaminant) – Pathway – Receptor approach is used.

Source – (contaminant) “a substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters”

Pathway – e.g. via air, soil or water “route or means by which a receptor can be exposed to, or affected by, a contaminant”

Receptor – e.g. humans, buildings and services, groundwater or surface waters “in general terms, something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body”

If any of the above elements are missing i.e. there is no pollution linkage, then it is considered that there is no significant risk associated with contamination. If there is a pollution linkage the potential risks to the identified receptors need to be assessed.

2.6.1 Source(s)

Using the CLR framework, the potential sources of contamination on this site from the outcome of the desk study as outlined above could be:

Heavy metals (made ground, builder’s yard)

Polyaromatic hydrocarbons (made ground, builder’s yard)

Total petroleum hydrocarbons (made ground, builder’s yard)

BTEX compounds (made ground, builder’s yard, paint and paint thinners)

Asbestos (made ground, builder’s yard)

2.6.2 Pathway(s)

It is proposed to construct residential houses with off road parking and private gardens.

Using the CLEA model the potential pathways for this proposed residential site are:

Ingestion of soils

Ingestion of dusts and vapours (indoors and outdoors)

Dermal contact with soils

Ingestion of contaminated vegetables and or soils attached to vegetables (if applicable)

Leachate via infiltration and/or soakaways (if applicable)

2.6.3 Receptor(s)

The potential receptors and associated risks for this site are:

Construction staff – very low to moderate risk

Residents on site – very low to moderate risk

Residents off site – very low risk (no apparent current impact)

Buildings off site (existing houses appear to be not impacted) – very low risk

New dwellings and below ground services – very low to moderate risk

Groundwater (non aquifer not SPZ) – very low to moderate risk from leachable contaminants via infiltration/or soakaways (if applicable)

3. Objectives

3.1 Soils

The scope of this intrusive investigation work is to take samples of soils from different locations on the site i.e. location of the existing buildings (where possible), new dwellings, and proposed gardens.

Soil samples will be taken and the strata logged to assess the strata on the site.

The soils will be analysed for a general suite of determinands that should include heavy metals, polyaromatic hydrocarbons (PAH's), additional inorganic compounds (including cyanides), phenol, total petroleum hydrocarbons (TPH's C₅-C₃₅) fractions and BTEX compounds (benzene, toluene, ethylbenzene and xylenes) as well as MTBE (methyl tertiary butyl ether). BTEX and MTBE are found in petrol (BTEX to a lesser extent in diesel) and toluene and xylenes are also found in some paint thinners.

Soil samples from the proposed garden areas and soakaway(s) if applicable, should also be analysed for leachable contaminants. The suite of tests carried out on the prepared soil leachates should be those outlined above as a minimum.

Surface/near surface soils should also be screened for the presence of asbestos fibres.

These contaminants were those that could be on the site following outcome of the desk study.

3.2 General

Following the intrusive investigation work the conceptual model can be revised as appropriate.

4. Methodology

4.1 Soil Sampling

The site covers an area of approximately 0.16ha (1600m²). The existing and proposed site layout is shown on the site plan in appendix 1 (p5). The site investigation works will be carried out in accordance with BS10175:2011 (Investigation of potentially contaminated sites – Code of Practice).

It was decided by Soiltec to take the soil samples for chemical analysis using windowless sampler boreholes.

The borehole locations are shown on the site plan (p5) in appendix 1.

4.2 Chemical Analysis

The chemical analysis on the excavated soils is an analytical suite consisting of heavy metals, polyaromatic hydrocarbons (PAH's), additional inorganic compounds (including cyanides), phenol, total petroleum hydrocarbons, C₅-C₃₅ fractions, BTEX compounds (benzene, toluene, ethylbenzene, xylenes) and MTBE (methyl tertiary butyl ether).

Soil samples from the proposed gardens and from the possible location of a soakaway should also be analysed for leachable contaminants. The suite of tests carried out on the prepared soil leachate is those outlined above. The leachates are prepared to NRA leaching test methodology.

Near surface soils would also be analysed for the presence of asbestos fibres by polarising light microscopy and dispersion staining.

All chemical and physical analysis will be carried out by a UKAS/MCERTS accredited testing laboratory.

The above analytical suites on the soils would cover the contaminants that could be on the site. However, if contaminants outside these suites of tests were suspected during the excavation of the samples, additional analysis would be carried out.

5. Work Carried Out

The site was attended on the 3rd and 4th September 2019 to drill the boreholes to extract the soil samples for the chemical analysis as outlined above. At the time of the site attendance for the site investigation there had been no changes to the site since the desk study was carried out although the builder's yard activities had ceased and with the exception of one of the outbuildings all the buildings had been vacated.

Photographs of the site and the sampling locations are shown in appendix 2.

5.1 Boreholes

A total of twelve boreholes were used for soil sampling. The boreholes were drilled using a Premier 110 series drilling rig.

The locations of the boreholes are shown on the site plan in appendix 1 (p5).

Tabulated below are the borehole locations with the existing/past uses and proposed uses.

Borehole	Existing/Past Use	Proposed Use
BH1	Workshop/store building footprint	Private garden
BH2	Workshop/store building footprint	Private garden
BH3	Hard cover yard storage area	Footprint of dwelling
BH4	Hard cover yard storage area	Soft landscaping adjacent to vehicle access
BH5	Hard cover storage and access area	Private garden
BH6	Gravelled yard and vehicle access	Vehicle access area
BH7	Gravelled access and yard area	Private front garden
BH8	Gravelled yard and parking area	Parking area
BH9	Soft cover open storage area adjacent to above ground heating oil tank	Private garden
BH10	Soft cover open storage area	Private garden
BH11	Gravelled access and yard area	Private garden
BH12	Gravelled workshop access and parking area	Parking area

The strata encountered at each sampling location are found in the borehole logs in appendix 3, which also shows the sample type taken for analysis, sample depths, an outline of the analysis carried out and identification references.

5.2 Sampling and Analysis

All logging and soil sub-sampling from the boreholes was carried out at on site where the samples were placed in the appropriate glass jars, vials or bags and kept cool before being despatched to the UKAS/MCERTS accredited laboratories for the respective analysis.

The windowless sampler tubes used were of the closed type with disposable plastic insert liners thus eliminating the possibility of any onsite cross contamination during drilling and/or sub-sampling.

The chemical analysis carried out on each sample taken from the boreholes was a general suite of determinands that includes heavy metals, polyaromatic hydrocarbons (PAH's), additional inorganic compounds (including cyanides), phenol, total petroleum hydrocarbons (TPH's), C₅-C₃₅ fractions, BTEX compounds and MTBE.

A total of five samples were taken from the locations of the proposed gardens as well as from the possible location a surface water soakaway and analysed for leachable contaminants. The suite of tests carried out on the prepared soil leachate was those outlined above. It should be noted that the nature of the soils encountered (silty clay) indicate that soakaways are highly unlikely to work sufficiently (see borehole logs and section 6).

Shallow soil samples were taken from the boreholes and screened for asbestos fibres.

The depth of the samples taken for chemical analysis and the associated analysis results can be seen in appendix 4, chemical analysis results and certificates.

5.3 Groundwater/Perched Water

No groundwater or perched water was encountered at any of the borehole locations at the depths drilled (maximum 3.0m).

5.4 General

No contamination was observed or suspected during the drilling of the boreholes that required the need for chemical analysis in addition to the suites of analysis proposed.

6. Chemical Analysis Results

6.1 Chemical Analysis (soils)

All the chemical analysis results are shown in appendix 4, which also contains copies of the analysis certificates from the UKAS/MCERTS laboratory.

The nature of the soils encountered was predominantly made ground that covered the site. The made ground was predominantly silty clay with brick and/or concrete, charcoal fragments, or clinker/roadstone. The depth of the made ground generally extended to depths between 0.4m and 0.7m below existing ground level. However, the made ground was at 0.15m at one location (BH9) and extended to 2.8m at another location (BH5).

The stratum encountered beneath the made ground was the expected natural strata of Weald Clay (firm to stiff silty clay with occasional angular stones and/or ironstone at some locations).

6.1.1 Organic Content

The measured organic content (%) of the soils encountered is as follows:

The average organic content of the made ground tested was 1.7% (with a range of 0.8% to 2.8% of the six samples tested).

The average organic content of the natural ground tested was 0.5% (with a range of <0.1% to 1.6% of the seventeen samples tested).

The organic content results are corrected for the stone content i.e. the value reported is for the soil including the stone, if applicable. The organic content was determined in accordance with BS1377:Part 3:1990, dichromate oxidation.

6.2 Criteria for Assessment

The assessment of the chemical analysis results for the contaminants of concern (COC's) have been based on the published Land Quality Management (LQM)/Chartered Institute of Environmental Health (CIEH) suitable for use levels (S4UL's) using a soil organic matter level of 1.0%*.

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The S4UL values are based on a residential site with homegrown produce, a small terraced house, calculated using the contaminated land exposure assessment (CLEA) model and a sandy loam soil.

These parameters will give conservative SGV's.

However, if using the assessment criteria outlined the calculated levels are exceeded, a more detailed site specific assessment with further adjustments to the CLEA model may need to be carried out e.g. change the soil type, organic content and building details (area, living space height, floor crack area).

6.2.1 Published Human Health LQM/CIEH S4UL's for residential use with homegrown produce based on sandy loam soil with a 1.0% soil organic content.

TPH fraction aliphatic and aromatic – S4UL (mg/kg)

TPH Fraction	Sandy Loam Organic Content 1.0%
AROMATIC	
C ₅ -C ₇	70
C ₇ -C ₈	130
C ₈ -C ₁₀	34
C ₁₀ -C ₁₂	74
C ₁₂ -C ₁₆	140
C ₁₆ -C ₂₁	260
C ₂₁ -C ₃₅	1100
ALIPHATIC	
C ₅ -C ₆	42
C ₆ -C ₈	100
C ₈ -C ₁₀	27
C ₁₀ -C ₁₂	130 ^a
C ₁₂ -C ₁₆	100 ^b
C ₁₆ -C ₃₅	65000 ^c

a – Exceeds the soil vapour saturation limit of 48mg/kg.

b – Exceeds the soil solubility saturation limit of 24mg/kg.

c – Exceeds the soil solubility saturation limit of 8.5mg/kg.

BTEX Compounds – S4UL (mg/kg)

Compound	Sandy Loam Organic Content 1.0%
Benzene	0.087
Toluene	130
Ethylbenzene	47
o-Xylene	60
m-Xylene	59
p-Xylene	56

Sixteen most common PAH's – S4UL (mg/kg)

PAH	Sandy Loam Organic Content 1.0%
Naphthalene	2.3
Acenaphthylene	170
Acenaphthene	210
Fluorene	170
Phenanthrene	95
Anthracene	2400
Fluoranthene	280
Pyrene	620
Benz(a)anthracene	7.2
Chrysene	15
Benzo(b)fluoranthene	2.6
Benzo(k)fluoranthene	77
Benzo(a)pyrene	2.2
Indeno(123- cd)pyrene	27
Dibenz(ah)anthracene	0.24
Benzo(ghi)perylene	320

Metals – S4UL (mg/kg)

Arsenic – 37mg/kg

Cadmium – 11mg/kg

Mercury – 1.2mg/kg (elemental), 40mg/kg (inorganic) and 11mg/kg (methyl)

Nickel – 180mg/kg

Selenium – 250mg/kg

Phenol – 280mg/kg

Lead – 200mg/kg (C4SL 2014)

Chromium – 6mg/kg (based on hexavalent chromium)

Chromium – 910mg/kg (based on trivalent chromium)

Copper – 2400mg/kg

Zinc – 3700mg/kg

Boron – 290mg/kg

For Guidance (Plant Growth):

Copper – 200mg/kg (phytotoxic, pH>7, BS3882:2007 Topsoil Specification)

Zinc – 300mg/kg (phytotoxic, pH>7, BS3882:2007 Topsoil Specification)

Boron – UK average 4.7mg/kg – 21 mg/kg UKSHS report No7 (EA 2007)

6.2.2 Summary of Results

Compound	Residential with Homegrown Produce S4UL mg/kg	N ^o of Tests	Min	Max	N ^o Exceeding S4UL (HH)
METALS (zootoxic)					
Arsenic	37	23	<2	15	0
Cadmium	11	23	<0.2	0.4	0
Chromium (III)	910	23	9	41	0
Chromium (VI)	6	23	<2	<2	0
Lead	200	23	6	178	0
Mercury	1.2 (elemental)	23	<1	<1	0
Nickel	180	23	8	38	0
Selenium	250	23	<3	<3	0
METALS (zootoxic/phytotoxic)					
Copper	2400/200	23	13	61	0
Zinc	3700/300	23	23	158	0
Water soluble Boron	290/21	23	<1	<1	0
ORGANICS					
Phenol	280	23	<2	<2	0
Benzo(a)pyrene	2.2	23	<0.1	1.5	0
Aromatic TPH C ₅ -C ₇	70	23	<0.01	<0.01	0
Aromatic TPH C ₇ -C ₈	130	23	<0.05	<0.05	0
Aromatic TPH C ₈ -C ₁₀	34	23	<2	<2	0
Aromatic TPH C ₁₀ -C ₁₂	74	23	<2	<2	0
Aromatic TPH C ₁₂ -C ₁₆	140	23	<2	<2	0
Aromatic TPH C ₁₆ -C ₂₁	260	23	<3	12	0
Aromatic TPH C ₂₁ -C ₃₅	1100	23	<10	62	0
Aliphatic TPH C ₅ -C ₆	42	23	<0.01	<0.01	0
Aliphatic TPH C ₆ -C ₈	100	23	<0.05	<0.05	0
Aliphatic TPH C ₈ -C ₁₀	27	23	<2	<2	0
Aliphatic TPH C ₁₀ -C ₁₂	130	23	<2	<2	0
Aliphatic TPH C ₁₂ -C ₁₆	1000	23	<3	<3	0
Aliphatic TPH C ₁₆ -C ₃₅	65000	23	<13	<13	0

ORGANICS cont	Residential with Homegrown Produce S4UL mg/kg	N^o of Tests	Min	Max	N^o Exceeding S4UL
Benzene	0.087	23	<0.002	<0.002	0
Toluene	130	23	<0.005	<0.005	0
Ethylbenzene	47	23	<0.002	<0.002	0
Xylenes	56 (p)	23	<0.002	<0.002	0

6.2.3 Assessment of Risk

The assessment of the associated risk is based on the CIRIA (Construction Industry Research and Information Association) C552 methodology, contaminated land risk assessment, a guide to good practice (2001), tabulated below and overleaf.

(SH = Significant Harm, SPOSH = Significant Possibility of Significant Harm).

Classification of Consequence

Classification	Definition
Severe	<p>Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of unacceptable intake or contact. Highly elevated concentrations likely to result in ‘significant harm’ to human health as defined by the EPA 1990 Part 2A, if exposure occurs i.e. SH/SPOSH concentrations are high enough to cause acute (short term) effects.</p> <p>Equivalent to an EA category 1 pollution incident including persistent and/or extensive effects on water quality (controlled waters); leading to a closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce.</p> <p>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.</p> <p>Catastrophic damage to buildings or property.</p>
Medium	<p>Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of unacceptable intake or contact. Elevated concentrations which could result in ‘significant harm’ to human health as defined by the EPA 1990 Part 2A, if exposure occurs i.e. greater than SH/SPOSH</p> <p>Equivalent to an EA category 2 pollution incident including a significant effect on water quality (controlled waters); notification required to abstractors; reduction on amenity value or significant damage to agriculture or commerce.</p> <p>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.</p> <p>Significant damage to buildings or property.</p>

Classification of Consequence (cont)

Classification	Definition
Mild	<p>Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of no harm but not unacceptable intake or contact. Exposure to human health unlikely to lead to 'significant harm' i.e. concentrations are greater than SGV/GAC but less than SH/SPOSH.</p> <p>Equivalent to an EA category 3 pollution incident including minimal or short term effects on water quality (controlled waters); minor impact on amenity value, agriculture or commerce.</p> <p>Minor damage or short term 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 endangers the long term maintenance of the population.</p> <p>Minor damage to buildings or property.</p>
Minor	<p>Concentration of contaminants is likely to (or is known from previous data to) be less than that indicative of no harm. No measurable effect on humans i.e. less than SGV/GAC.</p> <p>Equivalent to an unsubstantial pollution incident with no observed effect on water quality (controlled waters); no reduction on amenity value or damage to agriculture or commerce.</p> <p>No observed effect to aquatic or other ecosystems.</p> <p>Repairable effects of damage to buildings or property.</p>

Classification of Probability

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

Matrix of Consequence against Probability to determine Risk Classification

Probability	Consequence			
	Severe	Medium	Mild	Minor
High Likelihood	Very High Risk	High Risk	Moderate Risk	Low Risk
Likely	High Risk	Moderate Risk	Low Risk	Very Low Risk
Low Likelihood	Moderate Risk	Low Risk	Low Risk	Very Low Risk
Unlikely	Low Risk	Very Low Risk	Very Low Risk	Very Low Risk

6.3 TPH Results

All the levels of TPH's found (aliphatic and aromatic) are all significantly below published LQM/CIEH S4UL's for residential use as shown above and are therefore unlikely to impact human health. Most of the levels determined are below the detection limit for the analytical procedure at <0.01mg/kg (C₅-C₇), <0.05mg/kg (C₆-C₈), <2mg/kg/<3mg/kg (C₈-C₁₆), <3mg/kg (C₁₆-C₂₁) and <10mg/kg for (C₂₁-C₃₅) fractions.

The maximum TPH found (total of all aliphatic and aromatic fractions C₅-C₃₅) was 73mg/kg.

6.4 PAH Results

All of the levels of PAH's found are below the published LQM/CIEH S4UL's for residential use as shown above and are therefore unlikely to impact human health.

The maximum BaP found was 1.5mg/kg (S4UL 2.2mg/kg) and the maximum total PAH (total of all sixteen determined) was 13.8mg/kg.

6.5 Heavy Metals, pH and Phenol

The chemical analysis results show that all of the determinands analysed in the soil samples taken are significantly below the published LQM/CIEH S4UL's for residential use as shown above, and are therefore unlikely to impact human health, the new buildings or below ground services.

A slightly acidic to slightly alkaline soil pH was determined ranging from 5.0 to 8.8. These levels are unlikely to impact human health, the new buildings or below ground services.

6.6 Asbestos Results

Twelve soil samples were analysed for asbestos (one from each borehole location). The results show that no asbestos fibres were found in ten of the twelve samples tested indicating that asbestos has not impacted the site from the former uses, former buildings, structures or other sources at these locations tested.

However, loose chrysotile (white asbestos) was found within the made ground at two locations, which could impact human health:

BH5 (0.18m to 0.25m), which was the made ground immediately beneath the concrete slab at this location. This type of material extended to a depth of 0.6m although made ground of a slightly differing type (see borehole logs) extended to a much deeper depth at this location (2.8m).

BH10 (GL to 0.2m), which was the made ground at this location that extended from existing ground level to a depth of 0.6m.

The concentration of asbestos fibres was determined in both samples at <0.001% in BH5 and 0.001% in BH10. The results indicate that from the assessment using the JIWG (Joint Industry Working Group) risk assessment template the combined hazard and exposure ranking risk is 'very low' to the construction personnel.

However, both of these borehole locations are within proposed private garden areas and therefore these areas must be remediated.

6.7 BTEX Compounds Results

All the levels of BTEX compounds found are all significantly below the published LQM/CIEH S4UL's for residential use as shown above and are therefore unlikely to impact human health, new buildings or below ground services. All the levels determined are below the detection limit for the analytical procedure at <0.002mg/kg to <0.005mg/kg.

6.8 Soil Leachate

Five soil samples were analysed for potential leachable contaminants. The samples analysed were from the location of boreholes 1, 5, 9, 10 and 11 at various depths, which are all proposed residential gardens.

6.8.1 Soil Leachate Assessment Criteria

The chemical analysis results from the prepared leachate were assessed against published drinking water inspectorate (DWI) threshold values, or former Environment Agency guidance values, or other published values as shown on the result sheets in appendix 4. The DWI threshold values are very conservative although the published values cover a wide range of common contaminants. Any exceedances will be further assessed using other published databases that may be more applicable e.g. river basin typology standards.

6.8.2 Soil Leachate Results

The results show that all the determinands analysed are below the published threshold values indicating that these compounds are unlikely to leach from the below ground strata and impact controlled waters at the locations tested.

7. Revised Conceptual Model

7.1 General

The outcome of this investigation has enabled the initial conceptual model, which is outlined in section 2.6 above, to be revised.

7.2 Source(s)

The contaminants (sources of contamination) that have been found to be present on this site following this investigation are:

Asbestos fibres (trace chrysotile in the made ground at two locations only)

7.3 Pathway(s)

The potential pathways for this site following this investigation are:

Ingestion of soils

Ingestion of dusts (indoors and outdoors)

Dermal contact with soils

Ingestion of contaminated vegetables and or soils attached to vegetables (if applicable)

Leachate via infiltration and/or soakaways (if applicable)

7.4 Receptor(s)

The potential receptors and associated risks for this site following this investigation are:

Construction staff – very low risk

Residents on site – very low to low/moderate risk

Residents off site – very low risk (no apparent current impact)

Buildings off site – very low risk

Existing buildings, new dwellings and below ground services – very low risk

Groundwater (non aquifer not SPZ) – very low risk from leachable contaminants via infiltration

A schematic diagram of the conceptual model for the site second edition dated 04/10/19 is shown in appendix 6, conceptual model.

8. Conclusions

8.1 Results and Recommendations

There are no chemical contaminants on the site within the soils analysed that are likely to impact human health on this proposed residential site and the risk to the end users on site is deemed to be very low in this regard.

However, there are asbestos fibres within the made ground at two locations that are proposed for private gardens. The made ground at these locations should be removed to a depth of at least 0.6m.

The aesthetic nature of the made ground within the proposed gardens areas would also deem it necessary to be removed from these garden areas.

The risk to the existing and new buildings is deemed to be very low.

The risk to below ground services is deemed to be very low.

The risk to controlled waters now and following the development is deemed to be very low.

The made ground could remain beneath permanent hard cover (roads and buildings).

Following the removal of the made ground at the areas of the location of boreholes 5 and 10, the soils must be validated for the presence or otherwise of asbestos fibres and a validation report submitted to the local authority.

8.2 Notes

During the groundworks including the excavation of made ground, dust suppression measures should be in place to protect the site personnel and adjacent public/residents.

If during the development works any unforeseen contamination is encountered analysis must be carried out to identify the type and extent of the contamination.

If no unforeseen contamination is encountered during the development works a statement to this effect must be submitted to the local authority by the main contractor on completion of the development. It would be prudent to have a watching brief in place should any unexpected contaminants be encountered during the development works. Should contamination be encountered the development works should cease and the watching brief (suitably qualified environmental consultant) contacted immediately.

During the construction work exposed soils should be protected from any accidental leakage or spillages from stored oils or chemicals used in the construction work, if any, to prevent any potential impact to the site or controlled waters.

8.2.1 Excavated Soils

Excavated soils that are produced as part of the construction work that are to be removed from the site to landfill, chemical analysis will be required to classify the 'waste' in conjunction with the EU Landfill Directive, which defines the criteria for the chemical analysis and classification of materials that are to be disposed to landfill.

Should soils need to be removed from the site to landfill, a European Landfill Directive Waste Acceptance Criteria (WAC) analysis will be required on the material to be disposed to be submitted to the proposed receiving tip before the soil is removed from the site.

8.2.2 Imported Soils

It must be noted that chemical analysis must be carried out on all imported soil used in the development works to confirm that it is suitable for use on this site.

8.2.3 Local Authority Approval

A copy of this report should be forwarded to Sevenoaks District Council or other regulators/insurers if applicable for their consideration and approval prior to the commencement of any further site works.

K.D.Huxley CSci CChem MRSC MIEnvSc RSoBRA

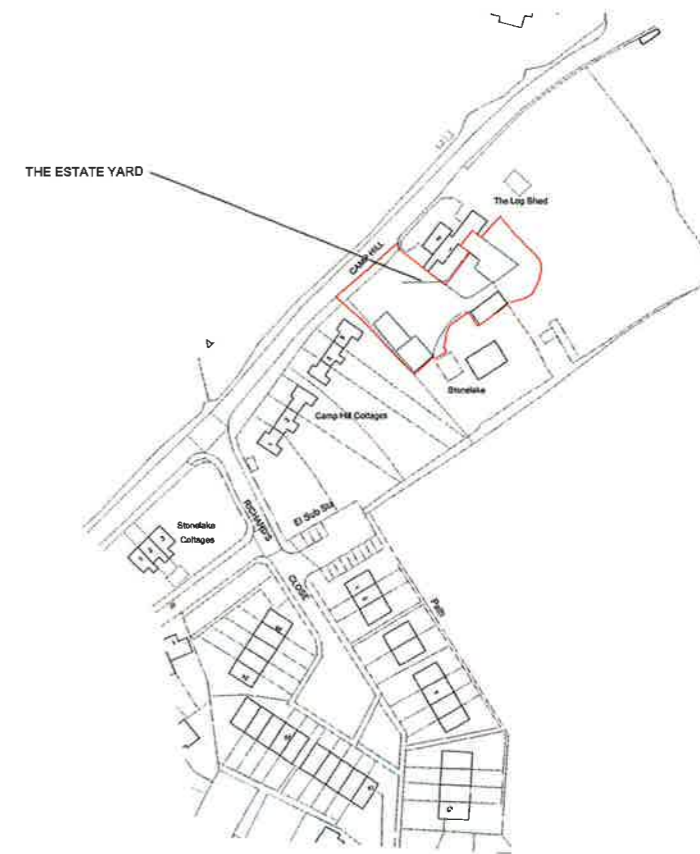
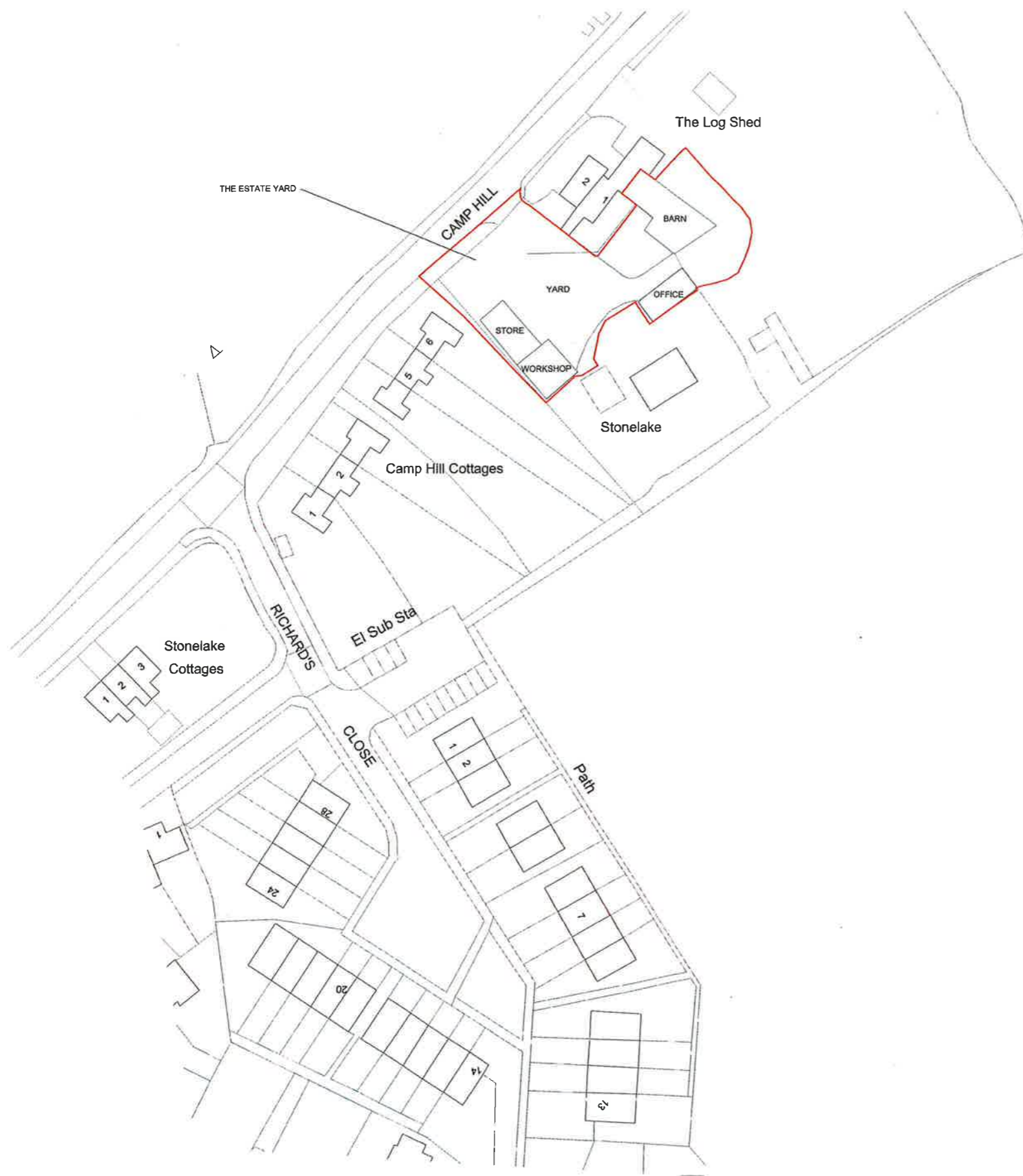
Date: 04/10/19

APPENDIX 1

SITE PLANS

Red for the Duration 15/06/17

EXISTING SITE PLAN



LOCATION PLAN 1:1250



SITE PLAN 1:500



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MARK SELDEN LTD TRADING AS MSD ARCHITECTS



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DESIGN STUDIO 111 HIGH STREET TONBRIDGE KENT

PROJECT:
NEW RESIDENTIAL DEVELOPMENT
THE ESTATE YARD
CAMP HILL
CHIDDINGSTONE CAUSEWAY
KENT
TN11 8LE

SCALE 1:500 & 1:1250@ A1
SITE PLAN AS EXISTING

PURPOSE: PLANNING
DATE: MAY 17 DWG NO. 1321 001

© MSD Architects do not scale from this drawing

THE ESTATE YARD CAMP HILL CHIDDINGSTONE CAUSEWAY KENT

Handwritten note: Hill Road with The Estate Yard scale of 1:2500 2 July 2018

PROPOSED SITE PLAN



LOCATION PLAN 1:1250



SITE PLAN 1:200



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10192 44093 E. info@prospectors.com
 THE ESTATE YARD CHIDDINGSTONE KENT TN11 8LE
 PROJECT: NEW RESIDENTIAL DEVELOPMENT THE ESTATE YARD
 CAMP HILL CHIDDINGSTONE CAUSEWAY TN11 8LE
 SCALE: 1:200 & 1:1250 @ A1
 DATE: JUNE 2018 DWG NO. 1321.P001A

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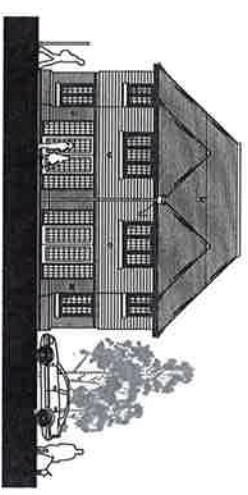
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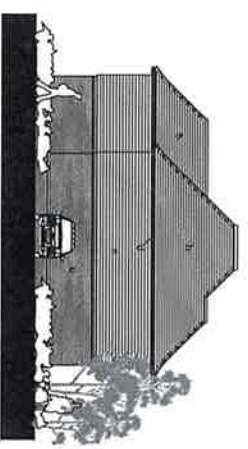
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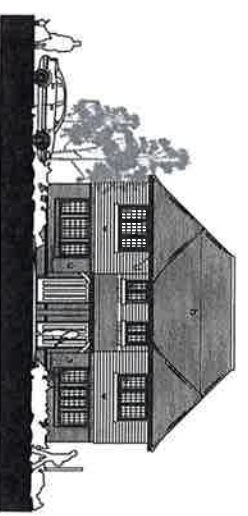
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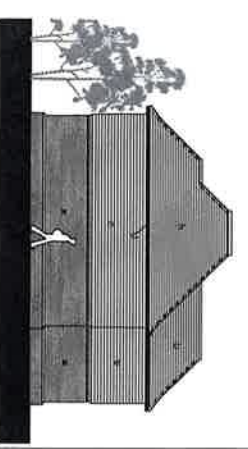
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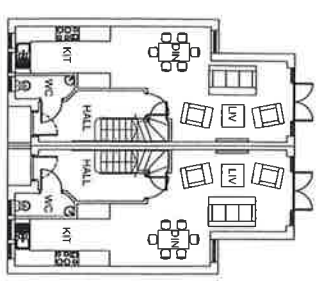
EAST ELEVATION 1:100



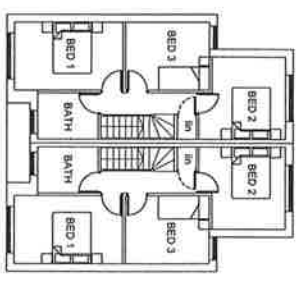
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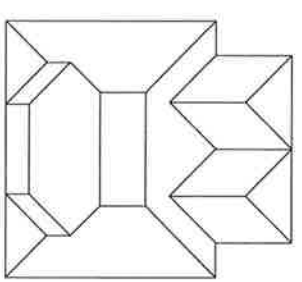
WEST ELEVATION 1:100



GROUND FLOOR PLAN 1:100



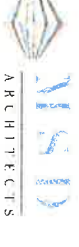
FIRST FLOOR PLAN 1:100



ROOF PLAN 1:100



SITE PLAN 1:500



ARCHITECTS

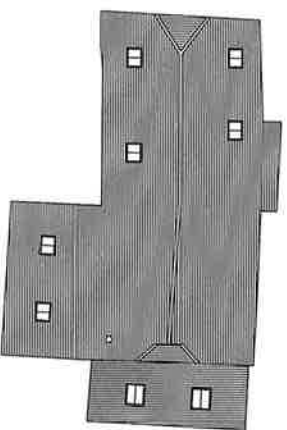
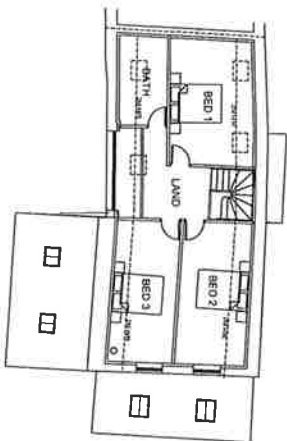
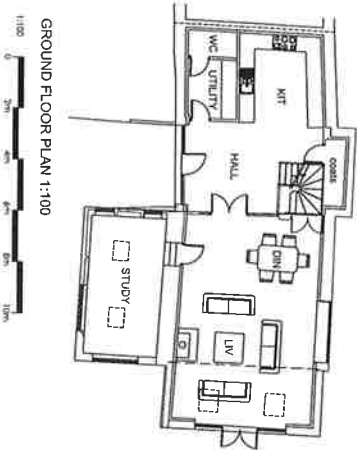
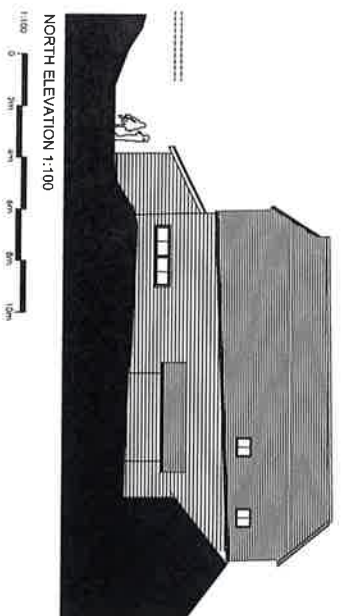
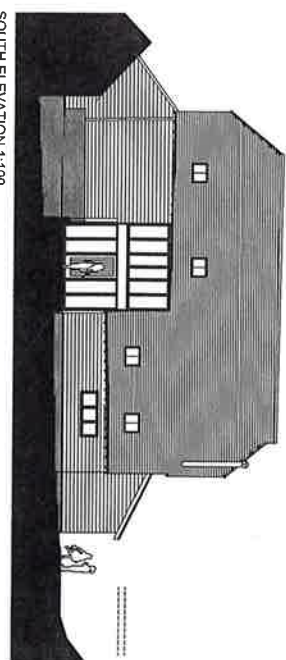
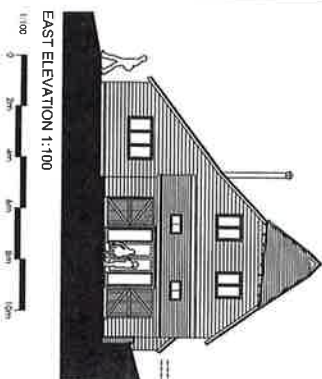
Lambert & Foster

PROJECT: NEW RESIDENTIAL DEVELOPMENT THE ESTATE YARD CAMP HILL CHIDDINGSTONE CAUSEWAY KENT TN11 1BL

SCALE 1:100 & 1:1250 @ A1 PLOTS 1 & 2 AS PROPOSED

PURPOSE: PLANNING

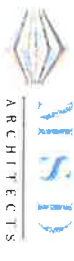
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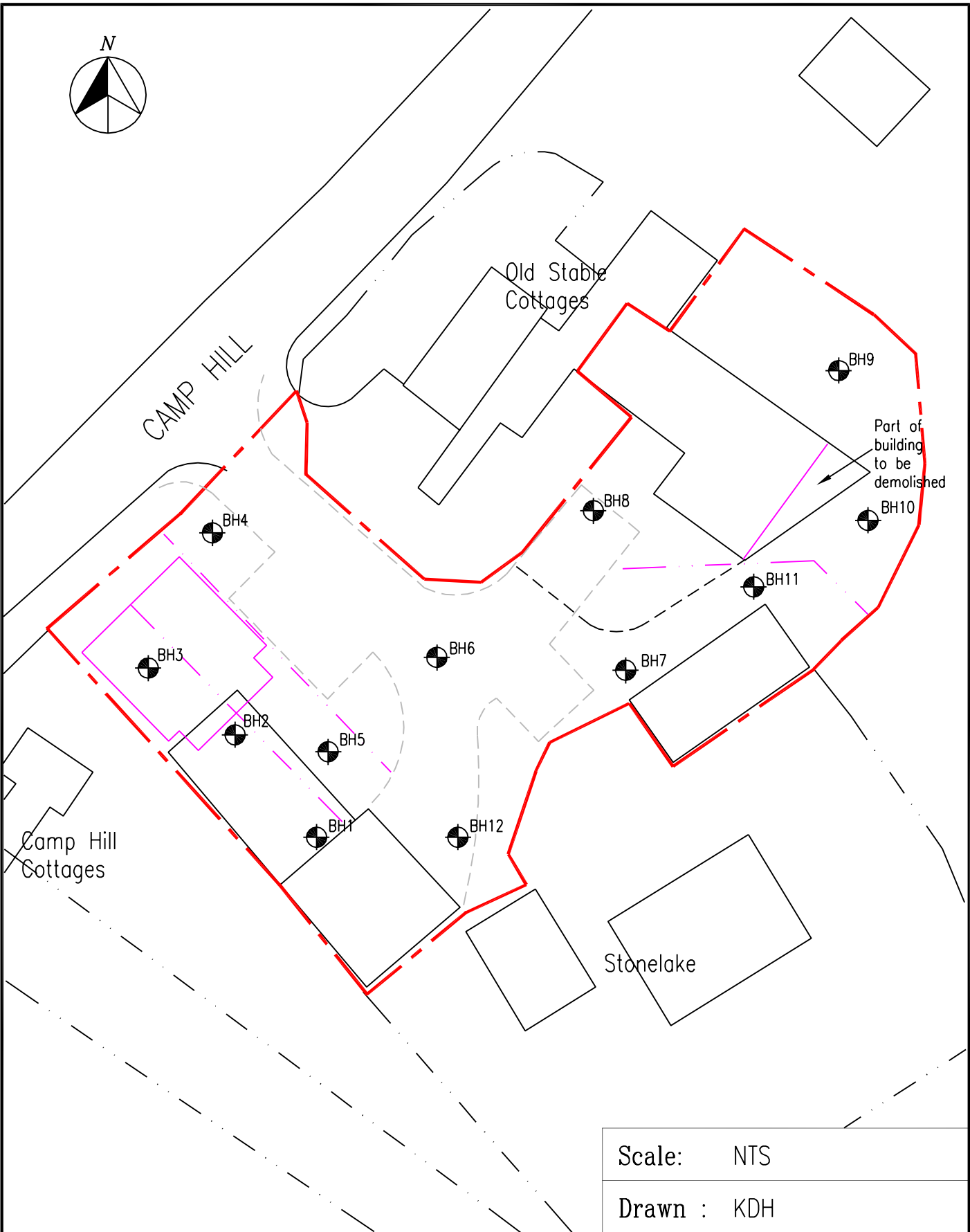
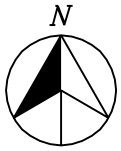


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NEW RESIDENTIAL DEVELOPMENT
THE ESTATE YARD
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CHIDDINGSTONE CAUSEWAY
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SCALE 1:100 & 1:1250@A1
PLOTS 1 & 2 AS PROPOSED
PURPOSE: PLANNING
DATE: JUNE 18 DWG NO. 1321 P003A





Scale: NTS

Drawn : KDH

Location : The Estate Yard, Camp Hill TN11 8LE

Report: 07538/23

Title : Site Plan

Fig. No.: 1

APPENDIX 2

PHOTOGRAPHS

PHOTOGRAPHS 1 & 2



Borehole 1

PHOTOGRAPHS 3 & 4



Borehole 2

PHOTOGRAPHS 5 & 6



Borehole 3

PHOTOGRAPHS 7 & 8



Borehole 4

PHOTOGRAPHS 9 & 10



Borehole 5

PHOTOGRAPHS 11 & 12



Borehole 6

PHOTOGRAPHS 13 & 14



Borehole 7

PHOTOGRAPHS 15 & 16



Borehole 8

PHOTOGRAPHS 17 & 18



Borehole 9

PHOTOGRAPHS 19 & 20



Borehole 10

PHOTOGRAPHS 21 & 22



Borehole 11

PHOTOGRAPHS 23 & 24



Borehole 12

APPENDIX 3

BOREHOLE LOGS


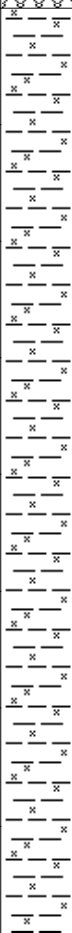
Client : The Trustees of The Redleaf Trust

Borehole No : 1

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 03/09/19

SUB-SURFACE PROFILE			SAMPLE			ANALYSIS CARRIED OUT	SPT/CPT					
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type		Depth (m)	Blows				
								10	20	30	40	50
		MADE GROUND Chipboard floor sheet and insulation board (0.08m) over concrete slab (0.15m) over soft brown silty clay with brick hardcore and gravel		CA1	D	0.23-0.4						
0.4												
		SILTY CLAY Firm to stiff brown occasionally mottled grey SILTY CLAY with occasional angular stones and ironstone fragments. Rootlets to 0.8m and mottled grey from 1.8m	-0.4	C1	D	0.4-0.5						
1				C2	D	0.9-1.0						
				CL1	D	1.8-2.0						
2			2									
		End of Log	-2									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1



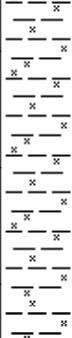
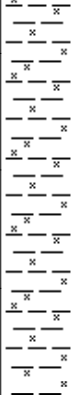
Client : The Trustees of The Redleaf Trust

Borehole No : 2

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 03/09/19

SUB-SURFACE PROFILE			SAMPLE			ANALYSIS CARRIED OUT	SPT/CPT					
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type		Depth (m)	Blows				
								10	20	30	40	50
		MADE GROUND Chipboard floor sheet and insulation board (0.08m) over concrete slab (0.16m) over soft brown silty clay with brick and concrete hardcore	0.4	CA2	D	0.24-0.4						
		MADE GROUND Soft brown occasionally mottled orangey brown SILTY CLAY with occasional angular stones and ironstone fragments and very occasional small brick and charcoal fragments	-0.4 0.7	C3	D	0.5-0.6						
1		SILTY CLAY Soft to firm brown becoming slightly mottled grey at 0.95m SILTY CLAY	-0.7 1.3	C4	D	1.1-1.2						
		SILTY CLAY Stiff brown mottled grey SILTY CLAY	-1.3									
2		End of Log	2 -2									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1


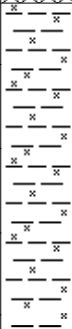

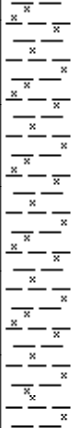

Client : The Trustees of The Redleaf Trust

Borehole No : 3

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 03/09/19

SUB-SURFACE PROFILE			SAMPLE			ANALYSIS CARRIED OUT	SPT/CPT					
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type		Depth (m)	Blows				
								10	20	30	40	50
		MADE GROUND Concrete slab (0.16m) over brick hardcore		CA3	D	0.16-0.3						
		SILTY CLAY Firm brown SILTY CLAY with occasional angular stones and ironstone becoming mottled grey from 0.65m	0.45 -0.45									
1		SILTY CLAY Firm to stiff brown mottled grey SILTY CLAY with occasional angular stones. Less mottled from 1.8m to 2.6m	1.25 -1.25	C5	D	1.2-1.3						
2				C6	D	1.8-2.0						
3		End of Log	3 -3									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1



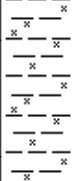

Client : The Trustees of The Redleaf Trust

Borehole No : 4

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 03/09/19

SUB-SURFACE PROFILE			SAMPLE			ANALYSIS CARRIED OUT	SPT/CPT					
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type		Depth (m)	Blows				
								10	20	30	40	50
		MADE GROUND Concrete slab (0.20m) over soft brown silty clay with abundant brick hardcore		CA4	D	0.2-0.35						
			0.45									
		MADE GROUND Firm grey silty clay with occasional angular stones and very occasional small charcoal fragments and brick fragments	-0.45	C7	D	0.5-0.6						
			0.65									
		SILTY CLAY Soft to firm brown SILTY CLAY with occasional angular stones and ironstone. Abundant angular stones from 0.85m to 1.05m	-0.65									
1			1.05									
		SILTY CLAY Firm to stiff brown mottled grey SILTY CLAY. Less mottled from 1.85m	-1.05	C8	D	1.1-1.2						
2		End of Log	2									
			-2									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1



Client : The Trustees of The Redleaf Trust

Borehole No : 5

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 03/09/19

SUB-SURFACE PROFILE			SAMPLE				ANALYSIS CARRIED OUT	SPT/CPT				
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type	Depth (m)		Blows				
								10	20	30	40	50
1		MADE GROUND Concrete slab (0.18m) over soft brown and grey silty clay with occasional angular stones, small concrete and brick lumps, very occasional charcoal fragments and fine roots. Abundant charcoal at 0.35m	0.6	CA5	D	0.18-0.25						
			-0.6	C9	D	0.35-0.5	Asbestos screen on sample CA5					
				C10	D	0.8-0.9	Heavy metals, sulphate, sulphide, cyanide, phenol, polyaromatic hydrocarbons, total petroleum hydrocarbons, BTEX compounds on samples C9 and C10					
				CL2	D	1.0-1.2	The above suite on the prepared soil leachate on sample CL2					
3		SILTY CLAY Firm to stiff brown mottled grey SILTY CLAY	2.8									
		End of Log	-2.8									
			3									
			-3									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1


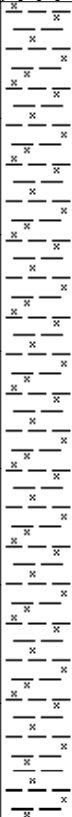
Client : The Trustees of The Redleaf Trust

Borehole No : 6

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 03/09/19

SUB-SURFACE PROFILE			SAMPLE			ANALYSIS CARRIED OUT	SPT/CPT					
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type		Depth (m)	Blows				
								10	20	30	40	50
		MADE GROUND Surface gravel over soft to firm brown silty clay with abundant gravel and occasional charcoal fragments. Abundant clinker/crushed roadstone at 0.1m, abundant brick from 0.3m to 0.35m and 0.5m to 0.6m		CA6	D	GL-0.2						
			0.6	C11	D	0.3-0.4						
		SILTY CLAY Firm to stiff brown mottled grey SILTY CLAY	-0.6									
1				C12	D	0.8-0.9						
2		End of Log	2 -2									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1


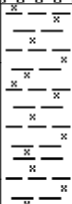
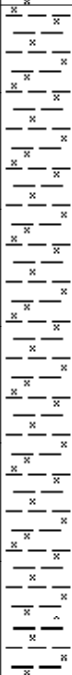
Client : The Trustees of The Redleaf Trust

Borehole No : 7

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 03/09/19

SUB-SURFACE PROFILE			SAMPLE			ANALYSIS CARRIED OUT	SPT/CPT					
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type		Depth (m)	Blows				
								10	20	30	40	50
		MADE GROUND Gravel to 0.15m with clinker/crushed roadstone to 0.2m over gravel and brick with occasional greyish brown silty clay	0.5	CA7	D	GL-0.2						
		SILTY CLAY Soft grey SILTY CLAY with occasional angular stones	-0.5	C13	D	0.5-0.6						
1		SILTY CLAY Firm to stiff brown slightly mottled grey SILTY CLAY with scattered ironstone to 1.05m	-0.85	C14	D	0.85-1.0						
2		End of Log	2 -2									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1
















Client : The Trustees of The Redleaf Trust

Borehole No : 8

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 03/09/19

SUB-SURFACE PROFILE			SAMPLE			ANALYSIS CARRIED OUT	SPT/CPT					
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type		Depth (m)	Blows				
								10	20	30	40	50
		MADE GROUND Rough grass and weeds over soft brown loamy silty clay with abundant roots, angular stones crushed brick and clinker/crushed roadstone	0.3	CA8	D	0.1-0.2						
		SILTY CLAY Soft brown SILTY CLAY with occasional angular stones	-0.3									
		SILTY CLAY Soft to firm very light brown SILTY CLAY with occasional angular stones	0.45	C15	D	0.45-0.6						
		SILTY CLAY Soft to firm very light brown SILTY CLAY with occasional angular stones	-0.45									
		SILTY CLAY Firm brown mottled grey SILTY CLAY. Less mottled from 1.1m	0.6	C16	D	0.7-0.8						
			-0.6									
1												
												
												
												
												
												
												
												
												
2		End of Log	2									
			-2									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1

Client : The Trustees of The Redleaf Trust

Borehole No : 9

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 04/09/19

SUB-SURFACE PROFILE			SAMPLE			ANALYSIS CARRIED OUT	SPT/CPT					
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type		Depth (m)	Blows				
								10	20	30	40	50
1		MADE GROUND Surface rough grass and brambles over soft brown silty clay with abundant gravel and occasional brick. Cloth membrane at 0.075m	0.15	CA9	D	GL-0.15	Asbestos screen on sample CA9 Heavy metals, sulphate, sulphide, cyanide, phenol, polyaromatic hydrocarbons, total petroleum hydrocarbons, BTEX compounds on samples C17 and C18 The above suite on the prepared soil leachate on sample CL3					
			-0.15	C17	D	0.2-0.3						
		SILTY CLAY Firm to stiff brown mottled grey SILTY CLAY with occasional roots. Abundant ironstone at 0.75m	0.75	C18	D	0.6-0.7						
		SILTY CLAY Stiff brown slightly mottled grey SILTY CLAY (laminated to 1.8m) with very occasional ironstone.	-0.75	CL3	D	0.8-0.9						
2												
3		End of Log	3									
			-3									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1



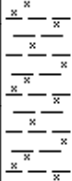
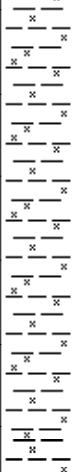
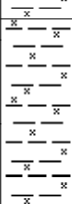


Client : The Trustees of The Redleaf Trust

Borehole No : 10

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 04/09/19

SUB-SURFACE PROFILE			SAMPLE				ANALYSIS CARRIED OUT	SPT/CPT				
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type	Depth (m)		Blows				
								10	20	30	40	50
		MADE GROUND Surface gravel over gravel, brick and concrete hardcore with occasional brown silty clay and crushed slate. Metal nail at 0.25m	0.6	CA10	D	GL-0.2	Asbestos screen on sample CA10					
		SILTY CLAY Stiff brown mottled grey slightly laminated SILTY CLAY. Scattered ironstone from 1.7m to 2.0m	-0.6	C19	D	0.6-0.7	Heavy metals, sulphate, sulphide, cyanide, phenol, polyaromatic hydrocarbons, total petroleum hydrocarbons, BTEX compounds on samples C19 and C20					
1				CL4	D	0.85-1.0	The above suite on the prepared soil leachate on sample CL4					
2				C20	D	1.4-1.5						
		SILTY CLAY Stiff grey mottled orangey brown SILTY CLAY. Mudstone lump at 2.85m	2.55									
			-2.55									
3			3									
		End of Log	-3									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1





















Client : The Trustees of The Redleaf Trust

Borehole No : 11

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 04/09/19

SUB-SURFACE PROFILE			SAMPLE			ANALYSIS CARRIED OUT	SPT/CPT					
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type		Depth (m)	Blows				
								10	20	30	40	50
		MADE GROUND Surface gravel and weeds over gravel of concrete and angular stones	0.2	CA11	D	GL-0.2						
		MADE GROUND Firm brown silty clay with scattered brick. Abundant brick lumps from 0.35 to 0.45m. Soft medium to fine sand and a piece of plastic from 0.5m to 0.6m	-0.2									
			0.6									
		SILTY CLAY Firm to stiff brown slightly mottled grey SILTY CLAY with occasional mudstone. Scattered ironstone from 0.65m to 0.85m	-0.6	C21	D	0.6-0.75						
			0.85									
		SILTY CLAY Stiff brown slightly mottled grey SILTY CLAY (slightly laminated from 0.85m to 1.5m and from 1.8m). Ironstone fragments at 1.5m	-0.85									
1				C22	D	1.0-1.1						
												
												
												
												
												
												
												
												
												
												
												
												
2			2									
		End of Log	-2									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1


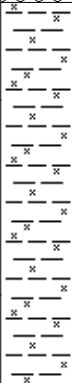
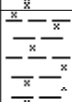
Client : The Trustees of The Redleaf Trust

Borehole No : 12

Project : The Estate Yard, Camp Hill TN11 8LE

Project No : 07538/23

Date : 04/09/19

SUB-SURFACE PROFILE			SAMPLE				ANALYSIS CARRIED OUT	SPT/CPT				
Depth (m)	Legend	Description	Depth (m)	Sample ID	Type	Depth (m)		Blows				
								10	20	30	40	50
1		MADE GROUND Rough grass over gravel of rounded and angular stones. Fabric membrane at 0.05m and brown silty clay with very occasional brick from 0.3m to 0.5m		CA12	D	GL-0.3						
			0.5	C23	D	0.4-0.5						
		SILTY CLAY Firm to stiff brown SILTY CLAY with scattered angular stones and occasional ironstone with rootlets to 0.7m	-0.5									
		SILTY CLAY Firm to stiff brown mottled grey SILTY CLAY	-0.9									
		End of Log	-1									

Water Strike : None

SOILTEC LABORATORIES LIMITED

Drill Method : Window Sampler

Water after 10mins : N/A

Sheet : 1 of 1

APPENDIX 4

CHEMICAL ANALYSIS RESULTS & CERTIFICATES

SOILTEC LABORATORIES LTD

CLIENT: The Trustees of The Redleaf Trust
 SITE: The Estate Yard, Camp Hill, Chiddingstone Causeway
 DATE SAMPLED: 03&04/09/19
 SAMPLE REF: 07538/23
 SAMPLED BY: Soiltec
 TESTED BY: DETS (UKAS/MCERTS 4480)

REPORT No: 07538/23
 REPORT DATE: 24/09/19
 SPEC: CLEA
 Results expressed as mg/kg
 dry mass unless stated.
>SGV

Sample ID	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
DETERMINAND	BH1	BH1	BH2	BH2	BH3	BH3	BH4	BH4	BH5	BH5
Depth (m)	0.4-0.5	0.9-1.0	0.5-0.6	1.0-1.2	1.2-1.3	1.8-2.0	0.5-0.6	1.1-1.2	0.35-0.5	0.8-0.9
Sample Type	WC	WC	MG	WC	WC	WC	MG	WC	MG	MG
TOTAL ARSENIC as As	8	9	13	15	14	8	10	7	12	8
TOTAL CADMIUM as Cd	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	0.4	<0.2	0.4	<0.2
TOTAL CHROMIUM as Cr	21	21	25	32	36	40	24	31	26	33
HEXAVALENT CHROMIUM as Cr	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
TOTAL LEAD as Pb	30	17	57	26	16	18	92	19	178	48
TOTAL MERCURY as Hg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
TOTAL SELENIUM as Se	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
TOTAL COPPER as Cu	35	13	29	29	25	34	24	29	61	54
TOTAL NICKEL as Ni	16	15	25	24	29	36	25	25	24	27
TOTAL ZINC as Zn	85	57	94	61	65	79	110	63	158	87
WATER SOLUBLE BORON as B	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
TOTAL SULPHATE as SO4 (%)	0.13	0.13	0.08	0.04	0.05	0.04	0.04	0.03	0.04	<0.02
ELEMENTAL SULPHUR	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SULPHIDE as S	<5	<5	<5	<5	<5	<5	7	<5	<5	<5
TOTAL CYANIDE as CN	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
FREE CYANIDE as CN	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
THIOCYANATE as SCN	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PHENOLS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
TOTAL POLYAROMATIC HYDROCARBONS	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated
pH (2.5:1 Water Extract)	5.1	5.6	7.1	7.2	6.8	5.6	6.8	7.1	7.3	7.9
TOTAL PETROLUUM HYDROCARBONS	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated

WC = Weald Clay, MG = Made Ground

Soiltec House
 Langley Park
 Sutton Road
 MAIDSTONE
 ME17 3NQ

SOILTEC LABORATORIES LTD

CLIENT: The Trustees of The Redleaf Trust
 SITE: The Estate Yard, Camp Hill, Chiddingstone Causeway
 DATE SAMPLED: 03&04/09/19
 SAMPLE REF: 07538/23
 SAMPLED BY: Soiltec
 TESTED BY: DETS (UKAS/MCERTS 4480)

REPORT No: 07538/23
 REPORT DATE: 24/09/19
 SPEC: CLEA
 Results expressed as mg/kg
 dry mass unless stated.
>SGV

Sample ID	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20
DETERMINAND	BH6	BH6	BH7	BH7	BH8	BH8	BH9	BH9	BH10	BH10
Depth (m)	0.3-0.4	0.8-0.9	0.5-0.6	0.85-1.0	0.45-0.6	0.7-0.8	0.2-0.3	0.6-0.7	0.6-0.7	1.4-1.5
Sample Type	MG	WC	WC	WC	WC	WC	WC	WC	WC	WC
TOTAL ARSENIC as As	10	4	7	12	3	3	4	<2	<2	7
TOTAL CADMIUM as Cd	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TOTAL CHROMIUM as Cr	21	41	27	35	9	24	36	36	36	26
HEXAVALENT CHROMIUM as Cr	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
TOTAL LEAD as Pb	71	32	24	26	6	15	19	11	17	15
TOTAL MERCURY as Hg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
TOTAL SELENIUM as Se	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
TOTAL COPPER as Cu	23	39	22	33	14	26	31	28	31	21
TOTAL NICKEL as Ni	16	38	16	43	8	23	16	14	28	20
TOTAL ZINC as Zn	55	104	59	115	23	60	48	60	76	47
WATER SOLUBLE BORON as B	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
TOTAL SULPHATE as SO4 (%)	0.03	<0.02	0.02	<0.02	0.03	<0.02	<0.02	0.03	0.03	<0.02
ELEMENTAL SULPHUR	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SULPHIDE as S	<5	<5	9	<5	<5	<5	<5	<5	<5	<5
TOTAL CYANIDE as CN	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
FREE CYANIDE as CN	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
THIOCYANATE as SCN	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PHENOLS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
TOTAL POLYAROMATIC HYDROCARBONS	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated
pH (2.5:1 Water Extract)	8.0	7.4	6.9	7.2	8.1	8.4	8.8	5.6	7.0	5.0
TOTAL PETROLUUM HYDROCARBONS	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated	Speciated

WC = Weald Clay, MG = Made Ground

Soiltec House
 Langley Park
 Sutton Road
 MAIDSTONE
 ME17 3NQ

SOILTEC LABORATORIES LTD

CLIENT: The Trustees of The Redleaf Trust
 SITE: The Estate Yard, Camp Hill, Chiddingstone Causeway
 DATE SAMPLED: 03&04/09/19
 SAMPLE REF: 07538/23
 SAMPLED BY: Soiltec
 TESTED BY: DETS (UKAS/MCERTS 4480)

REPORT No: 07538/23
 REPORT DATE: 24/09/19
 SPEC: CLEA
 Results expressed as mg/kg
 dry mass unless stated.
>SGV

Sample ID	C21	C22	C23
DETERMINAND	BH11	BH11	BH12
Depth (m)	0.6-0.75	1.0-1.1	0.4-0.5
Sample Type	WC	WC	MG
TOTAL ARSENIC as As	6	7	8
TOTAL CADMIUM as Cd	<0.2	<0.2	<0.2
TOTAL CHROMIUM as Cr	35	24	24
HEXAVALENT CHROMIUM as Cr	<2	<2	<2
TOTAL LEAD as Pb	24	15	56
TOTAL MERCURY as Hg	<1	<1	<1
TOTAL SELENIUM as Se	<3	<3	<3
TOTAL COPPER as Cu	32	22	24
TOTAL NICKEL as Ni	38	21	18
TOTAL ZINC as Zn	85	49	67
WATER SOLUBLE BORON as B	<1	<1	<1
TOTAL SULPHATE as SO4 (%)	<0.02	0.02	0.02
ELEMENTAL SULPHUR	<10	<10	<10
SULPHIDE as S	<5	<5	<5
TOTAL CYANIDE as CN	<2	<2	<2
FREE CYANIDE as CN	<2	<2	<2
THIOCYANATE as SCN	<3	<3	<3
PHENOLS	<2	<2	<2
TOTAL POLYAROMATIC HYDROCARBONS	Speciated	Speciated	Speciated
pH (2.5:1 Water Extract)	7.2	5.6	5.4
TOTAL PETROLUEM HYDROCARBONS	Speciated	Speciated	Speciated

WC = Weald Clay, MG = Made Ground

Soiltec House
 Langley Park
 Sutton Road
 MAIDSTONE
 ME17 3NQ

SOILTEC LABORATORIES LTD

Speciated Polyaromatic Hydrocarbons

CLIENT: The Trustees of The Redleaf Trust
SITE: The Estate Yard, Camp Hill, Chiddingstone C
DATE SAMPLED: 03&04/09/19
SAMPLE REF: 07538/23
SAMPLED BY: Soiltec
TESTED BY: DETS (UKAS/MCERTS 4480)

REPORT No: 07538/23
REPORT DATE: 24/09/19
SPEC: CLEA

SAMPLE Soil
Results expressed as mg/kg
dry mass unless stated.

RESULTS

Sample ID	C1	C2	C3	C4	C5	C6	S4UL
Sample Location	BH1	BH1	BH2	BH2	BH3	BH3	SOC
Sample Depth	0.4-0.5	0.9-1.0	0.5-0.6	1.0-1.2	1.2-1.3	1.8-2.0	1%
Naphthalene	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	2.3
Acenaphthylene	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	170
Acenaphthene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	210
Fluorene	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	170
Phenanthrene	1.7	1.1	<0.1	<0.1	<0.1	<0.1	95
Anthracene	0.2	0.1	<0.1	<0.1	<0.1	<0.1	2400
Fluoranthene	1.9	1.6	0.2	<0.1	<0.1	<0.1	280
Pyrene	1.4	1.2	<0.1	<0.1	0.1	<0.1	620
Benzo(a)anthracene	0.7	0.4	0.2	<0.1	<0.1	<0.1	7.2
Chrysene	0.7	0.6	0.2	<0.1	<0.1	<0.1	15
Benzo(b)fluoranthene	0.8	0.9	0.3	<0.1	<0.1	<0.1	2.6
Benzo(k)fluoranthene	0.3	0.3	<0.1	<0.1	<0.1	<0.1	77
Benzo(a)pyrene	0.6	0.6	<0.1	<0.1	<0.1	<0.1	2.2
Indeno(1,2,3-cd)pyrene	0.5	0.4	<0.1	<0.1	<0.1	<0.1	27
Dibenzo(ah)anthracene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.24
Benzo(ghi)perylene	0.3	0.3	<0.1	<0.1	0.1	<0.1	320
Total PAH's	9.4	7.5	0.9	0.0	0.2	0.4	

COMMENTS

See main report text
SOC = Soil Organic Content
Values in **RED** indicated that the respective SGV has been exceeded

SOILTEC LABORATORIES LTD

Speciated Polyaromatic Hydrocarbons

CLIENT: The Trustees of The Redleaf Trust	REPORT No: 07538/23
SITE: The Estate Yard, Camp Hill, Chiddingstone C	REPORT DATE: 24/09/19
DATE SAMPLED: 03&04/09/19	SPEC: CLEA
SAMPLE REF: 07538/23	
SAMPLED BY: Soiltec	SAMPLE Soil
TESTED BY: DETS (UKAS/MCERTS 4480)	Results expressed as mg/kg dry mass unless stated.

RESULTS

Sample ID	C7	C8	C9	C10	C11	C12	S4UL
Sample Location	BH4	BH4	BH5	BH5	BH6	BH6	SOC
Sample Depth	0.5-0.6	1.1-1.2	0.35-0.5	0.8-0.9	0.3-0.4	0.8-0.9	1%
Naphthalene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.3
Acenaphthylene	0.2	<0.1	0.2	<0.1	<0.1	<0.1	170
Acenaphthene	<0.1	0.9	<0.1	<0.1	<0.1	<0.1	210
Fluorene	<0.1	1.7	<0.1	<0.1	<0.1	<0.1	170
Phenanthrene	0.5	6.2	0.5	<0.1	0.2	<0.1	95
Anthracene	0.2	1.3	0.2	<0.1	<0.1	<0.1	2400
Fluoranthene	1.4	2.2	1.8	0.2	0.7	<0.1	280
Pyrene	1.5	1.5	1.7	0.2	0.6	<0.1	620
Benzo(a)anthracene	0.9	<0.1	1.0	<0.1	0.4	<0.1	7.2
Chrysene	0.9	<0.1	1.0	<0.1	0.4	<0.1	15
Benzo(b)fluoranthene	1.9	<0.1	2.0	0.2	0.6	<0.1	2.6
Benzo(k)fluoranthene	0.6	<0.1	0.6	<0.1	0.2	<0.1	77
Benzo(a)pyrene	1.4	<0.1	1.5	<0.1	0.5	<0.1	2.2
Indeno(1,2,3-cd)pyrene	1.7	<0.1	1.1	0.1	0.5	<0.1	27
Dibenzo(ah)anthracene	0.18	<0.1	0.16	<0.1	<0.1	<0.1	0.24
Benzo(ghi)perylene	1.4	<0.1	1.0	<0.1	0.4	<0.1	320
Total PAH's	12.8	13.8	12.8	0.7	4.5	0.0	

COMMENTS

See main report text
SOC = Soil Organic Content
Values in **RED** indicated that the respective SGV has been exceeded

SOILTEC LABORATORIES LTD

Speciated Polyaromatic Hydrocarbons

CLIENT: The Trustees of The Redleaf Trust
SITE: The Estate Yard, Camp Hill, Chiddingstone C
DATE SAMPLED: 03&04/09/19
SAMPLE REF: 07538/23
SAMPLED BY: Soiltec
TESTED BY: DETS (UKAS/MCERTS 4480)

REPORT No: 07538/23
REPORT DATE: 25/09/19
SPEC: CLEA

SAMPLE Soil
Results expressed as mg/kg
dry mass unless stated.

RESULTS

Sample ID	C13	C14	C15	C16	C17	C18	S4UL
Sample Location	BH7	BH7	BH8	BH8	BH9	BH9	SOC
Sample Depth	0.5-0.6	0.85-1.0	0.45-0.6	0.7-0.8	0.2-0.3	0.6-0.7	1%
Naphthalene	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	2.3
Acenaphthylene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	170
Acenaphthene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	210
Fluorene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	170
Phenanthrene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	95
Anthracene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2400
Fluoranthene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	280
Pyrene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	620
Benzo(a)anthracene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.2
Chrysene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	15
Benzo(b)fluoranthene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.6
Benzo(k)fluoranthene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	77
Benzo(a)pyrene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.2
Indeno(1,2,3-cd)pyrene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	27
Dibenzo(ah)anthracene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.24
Benzo(ghi)perylene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	320
Total PAH's	0.0	0.0	0.2	0.0	0.0	0.0	

COMMENTS

See main report text
SOC = Soil Organic Content
Values in **RED** indicated that the respective SGV has been exceeded

SOILTEC LABORATORIES LTD

Speciated Polyaromatic Hydrocarbons

CLIENT: The Trustees of The Redleaf Trust
SITE: The Estate Yard, Camp Hill, Chiddingstone C
DATE SAMPLED: 03&04/09/19
SAMPLE REF: 07538/23
SAMPLED BY: Soiltec
TESTED BY: DETS (UKAS/MCERTS 4480)

REPORT No: 07538/23
REPORT DATE: 25/09/19
SPEC: CLEA

SAMPLE Soil
Results expressed as mg/kg
dry mass unless stated.

RESULTS

Sample ID	C19	C20	C21	C22	C23	S4UL
Sample Location	BH10	BH10	BH11	BH11	BH12	SOC
Sample Depth	0.6-0.7	1.4-1.5	0.6-0.75	1.0-1.1	0.4-0.5	1%
Naphthalene	<0.1	<0.1	<0.1	<0.1	<0.1	2.3
Acenaphthylene	<0.1	<0.1	<0.1	<0.1	<0.1	170
Acenaphthene	<0.1	<0.1	<0.1	<0.1	<0.1	210
Fluorene	<0.1	<0.1	<0.1	<0.1	<0.1	170
Phenanthrene	<0.1	<0.1	<0.1	<0.1	<0.1	95
Anthracene	<0.1	<0.1	<0.1	<0.1	<0.1	2400
Fluoranthene	<0.1	<0.1	<0.1	<0.1	<0.1	280
Pyrene	<0.1	<0.1	<0.1	<0.1	<0.1	620
Benzo(a)anthracene	<0.1	<0.1	<0.1	<0.1	<0.1	7.2
Chrysene	<0.1	<0.1	<0.1	<0.1	<0.1	15
Benzo(b)fluoranthene	<0.1	<0.1	<0.1	<0.1	<0.1	2.6
Benzo(k)fluoranthene	<0.1	<0.1	<0.1	<0.1	<0.1	77
Benzo(a)pyrene	<0.1	<0.1	<0.1	<0.1	<0.1	2.2
Indeno(1,2,3-cd)pyrene	<0.1	<0.1	<0.1	<0.1	<0.1	27
Dibenzo(ah)anthracene	<0.1	<0.1	<0.1	<0.1	<0.1	0.24
Benzo(ghi)perylene	<0.1	<0.1	<0.1	<0.1	<0.1	320
Total PAH's	0.0	0.0	0.0	0.0	0.0	

COMMENTS

See main report text
SOC = Soil Organic Content
Values in **RED** indicated that the respective SGV has been exceeded

SOILTEC LABORATORIES LTD

Total Petroleum Hydrocarbons (aliphatic/aromatic split) & BTEX

CLIENT: The Trustees of The Redleaf Trust	REPORT No: 07538/23
SITE: The Estate Yard, Camp Hill, Chiddingstone C	REPORT DATE: 25/09/19
DATE SAMPLED: 03&04/09/19	
SAMPLE REF: 07538/23	SPEC: CLEA
SAMPLED BY: Soiltec	Results expressed as mg/kg
TESTED BY: DETS (UKAS/MCERTS 4480)	dry mass

RESULTS

Sample ID	C1	C2	C3	C4	C5	C6	S4UL
Sample Location	BH1	BH1	BH2	BH2	BH3	BH3	SOC
Sample Depth (m)	0.4-0.5	0.9-1.0	0.5-0.6	1.0-1.2	1.2-1.3	1.8-2.0	1%
Aromatic							
C ₅ -C ₇	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	70
C ₇ -C ₈	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	130
C ₈ -C ₁₀	<2	<2	<2	<2	<2	<2	34
C ₁₀ -C ₁₂	<2	<2	<2	<2	<2	<2	74
C ₁₂ -C ₁₆	<2	<2	<2	<2	<2	<2	140
C ₁₆ -C ₂₁	10	9	<3	<3	<3	<3	260
C ₂₁ -C ₃₅	15	11	<10	<10	<10	<10	1100
Total Aromatic TPH	25	20	0	0	0	0	
Aliphatic							
C ₅ -C ₆	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	42
C ₆ -C ₈	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	100
C ₈ -C ₁₀	<2	<2	<2	<2	<2	<2	27
C ₁₀ -C ₁₂	<2	<2	<2	<2	<2	<2	130
C ₁₂ -C ₁₆	<3	<3	<3	<3	<3	<3	1100
C ₁₆ -C ₂₁	<3	<3	<3	<3	<3	<3	65000*
C ₂₁ -C ₃₅	<10	<10	<10	<10	<10	<10	
Total Aliphatic TPH	0	0	0	0	0	0	
TOTAL TPH	25	20	0	0	0	0	
Benzene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.087
Toluene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	130
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	47
Xylene (m&p)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	56 (p)
Xylene (o)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	60

COMMENTS

S4UL = Residential with homegrown produce

* = C₁₆-C₃₅

Values in **RED** indicated that the respective SGV has been exceeded

SOILTEC LABORATORIES LTD

Total Petroleum Hydrocarbons (aliphatic/aromatic split) & BTEX

CLIENT: The Trustees of The Redleaf Trust	REPORT No: 07538/23
SITE: The Estate Yard, Camp Hill, Chiddingstone C	REPORT DATE: 25/09/19
DATE SAMPLED: 03&04/09/19	
SAMPLE REF: 07538/23	SPEC: CLEA
SAMPLED BY: Soiltec	Results expressed as mg/kg
TESTED BY: DETS (UKAS/MCERTS 4480)	dry mass

RESULTS

Sample ID	C7	C8	C9	C10	C11	C12	S4UL
Sample Location	BH4	BH4	BH5	BH5	BH6	BH6	SOC
Sample Depth (m)	0.5-0.6	1.1-1.2	0.35-0.5	0.8-0.9	0.3-0.4	0.8-0.9	1%
Aromatic							
C ₅ -C ₇	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	70
C ₇ -C ₈	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	130
C ₈ -C ₁₀	<2	<2	<2	<2	<2	<2	34
C ₁₀ -C ₁₂	<2	<2	<2	<2	<2	<2	74
C ₁₂ -C ₁₆	<2	<2	<2	<2	<2	<2	140
C ₁₆ -C ₂₁	11	12	<3	<3	<3	<3	260
C ₂₁ -C ₃₅	62	<10	<10	<10	<10	<10	1100
Total Aromatic TPH	73	12	0	0	0	0	
Aliphatic							
C ₅ -C ₆	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	42
C ₆ -C ₈	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	100
C ₈ -C ₁₀	<2	<2	<2	<2	<2	<2	27
C ₁₀ -C ₁₂	<2	<2	<2	<2	<2	<2	130
C ₁₂ -C ₁₆	<3	<3	<3	<3	<3	<3	1100
C ₁₆ -C ₂₁	<3	<3	<3	<3	<3	<3	65000*
C ₂₁ -C ₃₅	<10	<10	<10	<10	<10	<10	
Total Aliphatic TPH	0	0	0	0	0	0	
TOTAL TPH	73	12	0	0	0	0	
Benzene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.087
Toluene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	130
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	47
Xylene (m&p)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	56 (p)
Xylene (o)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	60

COMMENTS

S4UL = Residential with homegrown produce

* = C₁₆-C₃₅

Values in **RED** indicated that the respective SGV has been exceeded

Keith Huxley CSci CChem MRSC MIEnvSc RSoBRA

Date: 25/09/19

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Soiltec House~Langley Park~Sutton Road~Langley~Maidstone~Kent ME17 3NQ

SOILTEC LABORATORIES LTD

Total Petroleum Hydrocarbons (aliphatic/aromatic split) & BTEX

CLIENT: The Trustees of The Redleaf Trust	REPORT No: 07538/23
SITE: The Estate Yard, Camp Hill, Chiddingstone C	REPORT DATE: 25/09/19
DATE SAMPLED: 03&04/09/19	
SAMPLE REF: 07538/23	SPEC: CLEA
SAMPLED BY: Soiltec	Results expressed as mg/kg
TESTED BY: DETS (UKAS/MCERTS 4480)	dry mass

RESULTS

Sample ID	C13	C14	C15	C16	C17	C18	S4UL
Sample Location	BH7	BH7	BH8	BH8	BH9	BH9	SOC
Sample Depth (m)	0.5-0.6	0.85-1.0	0.45-0.6	0.7-0.8	0.2-0.3	0.6-0.7	1%
Aromatic							
C ₅ -C ₇	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	70
C ₇ -C ₈	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	130
C ₈ -C ₁₀	<2	<2	<2	<2	<2	<2	34
C ₁₀ -C ₁₂	<2	<2	<2	<2	<2	<2	74
C ₁₂ -C ₁₆	<2	<2	<2	<2	<2	<2	140
C ₁₆ -C ₂₁	<3	<3	<3	<3	<3	<3	260
C ₂₁ -C ₃₅	<10	<10	<10	<10	<10	<10	1100
Total Aromatic TPH	0	0	0	0	0	0	
Aliphatic							
C ₅ -C ₆	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	42
C ₆ -C ₈	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	100
C ₈ -C ₁₀	<2	<2	<2	<2	<2	<2	27
C ₁₀ -C ₁₂	<2	<2	<2	<2	<2	<2	130
C ₁₂ -C ₁₆	<3	<3	<3	<3	<3	<3	1100
C ₁₆ -C ₂₁	<3	<3	<3	<3	<3	<3	65000*
C ₂₁ -C ₃₅	<10	<10	<10	<10	<10	<10	
Total Aliphatic TPH	0	0	0	0	0	0	
TOTAL TPH	0	0	0	0	0	0	
Benzene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.087
Toluene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	130
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	47
Xylene (m&p)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	56 (p)
Xylene (o)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	60

COMMENTS

S4UL = Residential with homegrown produce

* = C₁₆-C₃₅

Values in **RED** indicated that the respective SGV has been exceeded

Keith Huxley CSci CChem MRSC MIEnvSc RSoBRA

Date: 25/09/19

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Soiltec House~Langley Park~Sutton Road~Langley~Maidstone~Kent ME17 3NQ

SOILTEC LABORATORIES LTD

Total Petroleum Hydrocarbons (aliphatic/aromatic split) & BTEX

CLIENT: The Trustees of The Redleaf Trust	REPORT No: 07538/23
SITE: The Estate Yard, Camp Hill, Chiddingstone C	REPORT DATE: 25/09/19
DATE SAMPLED: 03&04/09/19	
SAMPLE REF: 07538/23	SPEC: CLEA
SAMPLED BY: Soiltec	Results expressed as mg/kg
TESTED BY: DETS (UKAS/MCERTS 4480)	dry mass

RESULTS

Sample ID	C19	C20	C21	C22	C23	S4UL
Sample Location	BH10	BH10	BH11	BH11	BH12	SOC
Sample Depth (m)	0.6-0.7	1.4-1.5	0.6-0.75	1.0-1.1	0.4-0.5	1%
Aromatic						
C ₅ -C ₇	<0.01	<0.01	<0.01	<0.01	<0.01	70
C ₇ -C ₈	<0.05	<0.05	<0.05	<0.05	<0.05	130
C ₈ -C ₁₀	<2	<2	<2	<2	<2	34
C ₁₀ -C ₁₂	<2	<2	<2	<2	<2	74
C ₁₂ -C ₁₆	<2	<2	<2	<2	<2	140
C ₁₆ -C ₂₁	<3	<3	<3	<3	<3	260
C ₂₁ -C ₃₅	<10	<10	<10	<10	<10	1100
Total Aromatic TPH	0	0	0	0	0	
Aliphatic						
C ₅ -C ₆	<0.01	<0.01	<0.01	<0.01	<0.01	42
C ₆ -C ₈	<0.05	<0.05	<0.05	<0.05	<0.05	100
C ₈ -C ₁₀	<2	<2	<2	<2	<2	27
C ₁₀ -C ₁₂	<2	<2	<2	<2	<2	130
C ₁₂ -C ₁₆	<3	<3	<3	<3	<3	1100
C ₁₆ -C ₂₁	<3	<3	<3	<3	<3	65000*
C ₂₁ -C ₃₅	<10	<10	<10	<10	<10	
Total Aliphatic TPH	0	0	0	0	0	
TOTAL TPH	0	0	0	0	0	
Benzene	<0.002	<0.002	<0.002	<0.002	<0.002	0.087
Toluene	<0.005	<0.005	<0.005	<0.005	<0.005	130
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	<0.002	47
Xylene (m&p)	<0.002	<0.002	<0.002	<0.002	<0.002	56 (p)
Xylene (o)	<0.002	<0.002	<0.002	<0.002	<0.002	60

COMMENTS

S4UL = Residential with homegrown produce

* = C₁₆-C₃₅

Values in **RED** indicated that the respective SGV has been exceeded

SOILTEC LABORATORIES LTD

ASBESTOS

CLIENT: The Trustees of The Redleaf Trust
SITE: The Estate Yard, Camp Hill, Chiddingstone Causeway
DATE SAMPLED: 03&04/09/19
SAMPLE REF: 07538/23
SAMPLED BY: Soiltec
TESTED BY: DETS (UKAS/MCERTS 4480)

REPORT No: 07538/23
REPORT DATE: 04/10/19
SPEC: CLEA/HSE

RESULTS

Sample ID	Location	Depth (m)	Asbestos Type	Quantity (%)
CA1	BH1	0.23-0.4	NFD	n/a
CA2	BH2	0.24-0.4	NFD	n/a
CA3	BH3	0.16-0.3	NFD	n/a
CA4	BH4	0.2-0.35	NFD	n/a
CA5	BH5	0.18-0.25	Chrysotile Loose in Soil	<0.001
CA6	BH6	GL-0.2	NFD	n/a
CA7	BH7	GL-0.2	NFD	n/a
CA8	BH8	0.1-0.2	NFD	n/a
CA9	BH9	GL-0.15	NFD	n/a
CA10	BH10	GL-0.2	Chrysotile Loose in Soil	0.001
CA11	BH11	GL-0.2	NFD	n/a
CA12	BH12	GL-0.3	NFD	n/a

COMMENTS

NFD=No Fibres Detected

The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique - determination of asbestos in bulk materials, asbestos in soils/sediments (fibre screening and identification)

Keith Huxley CSci CChem MRSC MEnvSc RSoBRA
Date: 04/10/19

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Soiltec House~Langley Park~Sutton Road~Langley~Maidstone~Kent ME17 3NQ

SOILTEC LABORATORIES LTD

CHEMICAL ANALYSIS

Prepared Soil Leachate

CLIENT: The Trustees of The Redleaf Trust	REPORT No: 07538/23
SITE: The Estate Yard, Camp Hill TN11 8LE	REPORT DATE: 25/09/19
DATE SAMPLED: 03&04/09/19	SPEC: CLEA/DWI
SAMPLE REF: 07538/23	
SAMPLED BY: Soiltec	
TESTED BY: DETS (UKAS/MCERTS 4480)	

RESULTS

Sample ID	CL1	CL2	CL3	CL4	CL5	DWI
Sample Location	BH1	BH5	BH9	BH10	BH11	Threshold
Sample Depth (m)	1.8-2.0	1.0-1.2	0.8-0.9	0.85-1.0	1.6-1.7	Value
pH	8.7	8.1	6.5	6.3	7.2	5.5-9.5
Arsenic as As	<5	<5	<5	<5	<5	10
Cadmium as Cd	<0.4	<0.4	<0.4	<0.4	<0.4	5
Chromium as Cr	<5	<5	<5	<5	<5	50
Copper as Cu	<5	<5	<5	<5	<5	2000
Lead as Pb	<5	<5	<5	<5	<5	25
Mercury as Hg	<0.05	<0.05	<0.05	<0.05	<0.05	1
Nickel as Ni	<5	<5	<5	9	<5	20
Selenium as Se	<5	<5	<5	<5	<5	10
Zinc as Zn	2	<2	5	16	<2	(500)
Boron as B	8	27	12	7	7	1000
Total Cyanide as CN	<5	<5	<5	<5	<5	50
Sulphate as SO ₄ ²⁻ mg/l	8	1	11	31	8	250
Sulphide as S ²⁻ mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	(150)
Phenol	<10	<10	<10	<10	<10	>500*
PAH - Benzo(a)pyrene	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Total PAH (total of listed 4)	<0.038	<0.038	<0.038	<0.038	<0.038	0.1
Total PAH (total of 16)	0.57	2.07	0.76	0.73	1.70	

COMMENTS

Indicates the result exceeds the threshold value

Values in (parenthesis) are the former EA guidance values that there is current DWI (Drinking Water Inspectorate) value for.

Values in **bold italic** are non-mandatory indicator values, all other values are mandatory.

* Value for phenol is an estimation based on current oral tolerable daily intake value

4 Listed PAH's = Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene and indeno[123-cd]pyrene

All results are expressed as ug/l unless stated.

Keith Huxley CSci CChem MRSC MIEnvSc RSoBRA

Date: 25/09/19

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Soiltec House~Langley Park~Sutton Road~Langley~Maidstone~Kent ME17 3NQ

SOILTEC LABORATORIES LTD

CHEMICAL ANALYSIS

Prepared Soil Leachate

CLIENT: The Trustees of The Redleaf Trust	REPORT No: 07538/23
SITE: The Estate Yard, Camp Hill TN11 8LE	REPORT DATE: 25/09/19
DATE SAMPLED: 03&04/09/19	SPEC: CLEA/DWI
SAMPLE REF: 07538/23	
SAMPLED BY: Soiltec	
TESTED BY: DETS (UKAS/MCERTS 4480)	

RESULTS

Sample ID	CL1	CL2	CL3	CL4	CL5	DWI
Sample Location	BH1	BH5	BH9	BH10	BH11	Threshold
Sample Depth (m)	1.8-2.0	1.0-1.2	0.8-0.9	0.85-1.0	1.6-1.7	Value

Petroleum Hydrocarbon

Fraction:

C ₅ -C ₆ mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.01* #
C ₆ -C ₈ mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.7* #
C ₈ -C ₁₀ mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.3*
C ₁₀ -C ₁₂ mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.09*
C ₁₂ -C ₁₆ mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.09*
C ₁₆ -C ₂₁ mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.09*
C ₂₁ -C ₃₅ mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.09*
Total Petroleum Hydrocarbons (TPH)	0	0	0	0	0	

Benzene	<1	<1	<1	<1	<1	1 **
Toluene	<5	<5	<5	<5	<5	700*
Ethylbenzene	<5	<5	<5	<5	<5	300*
Xylene	<15	<15	<15	<15	<15	500*
MTBE	<10	<10	<10	<10	<10	15 ***

COMMENTS # Indicates the result exceeds the threshold value

DWI - Drinking Water Inspectorate

*WHO - World Health Organisation (2008) Worse case value for TPH's

C₅-C₆ as benzene, C₆-C₈ as toluene

DEP - Department of Environmental Protection

** England Private Water Supply Regs 2009

*** The value for MTBE is the odour threshold. There is no DWI threshold at present and experts indicate that the drinking water threshold is likely to be much higher.

All results are expressed as ug/l unless stated.

Keith Huxley CSci CChem MRSC MIEnvSc RSoBRA

Date: 25/09/19

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Soiltec House~Langley Park~Sutton Road~Langley~Maidstone~Kent ME17 3NQ



Keith Huxley
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DETS Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 19-12819

Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway

Project / Job Ref: 07538/23

Order No: LAB/4505/KH

Sample Receipt Date: 06/09/2019

Sample Scheduled Date: 06/09/2019

Report Issue Number: 1

Reporting Date: 13/09/2019

Authorised by:

Dave Ashworth
Technical Manager

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DETS Ltd
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Soil Analysis Certificate						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C1	C2	C3	C4	C5
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433023	433024	433025	433026	433027

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025					
Sample Matrix ^(S)	Material Type	N/a	NONE					
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	5.1	5.6	7.1	7.2	6.8
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Total Sulphate as SO ₄	mg/kg	< 200	NONE	1289	1274	844	389	501
Total Sulphate as SO ₄	%	< 0.02	NONE	0.13	0.13	0.08	0.04	0.05
Elemental Sulphur	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Organic Matter	%	< 0.1	MCERTS	1.6	0.6	1.8	0.5	0.3
Arsenic (As)	mg/kg	< 2	MCERTS	8	9	13	15	14
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	0.3	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	21	21	25	32	36
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	35	13	29	29	25
Lead (Pb)	mg/kg	< 3	MCERTS	30	17	57	26	16
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	16	15	25	24	29
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	85	57	94	61	65
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C

Subcontracted analysis (S)



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
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Soil Analysis Certificate						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C6	C7	C8	C9	C10
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433028	433029	433030	433031	433032

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025					
Sample Matrix ^(S)	Material Type	N/a	NONE					
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	5.6	6.8	7.1	7.3	7.9
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Total Sulphate as SO ₄	mg/kg	< 200	NONE	376	383	270	443	< 200
Total Sulphate as SO ₄	%	< 0.02	NONE	0.04	0.04	0.03	0.04	< 0.02
Elemental Sulphur	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Sulphide	mg/kg	< 5	NONE	< 5	7	< 5	< 5	< 5
Organic Matter	%	< 0.1	MCERTS	0.6	2.8	0.4	2.3	0.8
Arsenic (As)	mg/kg	< 2	MCERTS	8	10	7	12	8
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	0.4	< 0.2	0.4	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	40	24	31	26	33
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	34	24	29	61	54
Lead (Pb)	mg/kg	< 3	MCERTS	18	92	19	178	48
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	36	25	25	24	27
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	79	110	63	158	87
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C
 Subcontracted analysis (S)



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
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Soil Analysis Certificate						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C11	C12	C13	C14	C15
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433033	433034	433035	433036	433037

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025					
Sample Matrix ^(S)	Material Type	N/a	NONE					
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	8.0	7.4	6.9	7.2	8.1
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Total Sulphate as SO ₄	mg/kg	< 200	NONE	267	< 200	221	< 200	346
Total Sulphate as SO ₄	%	< 0.02	NONE	0.03	< 0.02	0.02	< 0.02	0.03
Elemental Sulphur	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Sulphide	mg/kg	< 5	NONE	< 5	< 5	9	< 5	< 5
Organic Matter	%	< 0.1	MCERTS	1	0.4	1	0.2	0.5
Arsenic (As)	mg/kg	< 2	MCERTS	10	4	7	12	3
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	0.3	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	21	41	27	35	9
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	23	39	22	33	14
Lead (Pb)	mg/kg	< 3	MCERTS	71	32	24	26	6
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	16	38	16	43	8
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	55	104	59	115	23
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C
 Subcontracted analysis (S)



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



Soil Analysis Certificate						
DETS Report No: 19-12819	Date Sampled	03/09/19	04/09/19	04/09/19	04/09/19	04/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C16	C17	C18	C19	C20
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433038	433039	433040	433041	433042

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025					
Sample Matrix ^(S)	Material Type	N/a	NONE					
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	8.4	8.8	5.6	7.0	5.0
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Total Sulphate as SO ₄	mg/kg	< 200	NONE	< 200	< 200	299	294	< 200
Total Sulphate as SO ₄	%	< 0.02	NONE	< 0.02	< 0.02	0.03	0.03	< 0.02
Elemental Sulphur	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Organic Matter	%	< 0.1	MCERTS	0.4	0.8	0.5	0.4	< 0.1
Arsenic (As)	mg/kg	< 2	MCERTS	3	4	< 2	< 2	7
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	24	36	36	36	26
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	26	31	28	31	21
Lead (Pb)	mg/kg	< 3	MCERTS	15	19	11	17	15
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	23	16	14	28	20
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	60	48	60	76	47
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C
 Subcontracted analysis (S)



DETS Ltd
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Soil Analysis Certificate						
DETS Report No: 19-12819	Date Sampled	04/09/19	04/09/19	04/09/19	04/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C21	C22	C23	CA1	CA2
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433043	433044	433045	433046	433047

Determinand	Unit	RL	Accreditation						
Asbestos Screen ^(S)	N/a	N/a	ISO17025					Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE						
Asbestos Type ^(S)	PLM Result	N/a	ISO17025						
pH	pH Units	N/a	MCERTS	7.2	5.6	5.4			
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2			
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2			
Thiocyanate as SCN	mg/kg	< 3	NONE	< 3	< 3	< 3			
Total Sulphate as SO ₄	mg/kg	< 200	NONE	< 200	242	220			
Total Sulphate as SO ₄	%	< 0.02	NONE	< 0.02	0.02	0.02			
Elemental Sulphur	mg/kg	< 10	NONE	< 10	< 10	< 10			
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5			
Organic Matter	%	< 0.1	MCERTS	0.4	0.2	1.7			
Arsenic (As)	mg/kg	< 2	MCERTS	6	7	8			
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1			
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2			
Chromium (Cr)	mg/kg	< 2	MCERTS	35	24	24			
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2			
Copper (Cu)	mg/kg	< 4	MCERTS	32	22	24			
Lead (Pb)	mg/kg	< 3	MCERTS	24	15	56			
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1			
Nickel (Ni)	mg/kg	< 3	MCERTS	38	21	18			
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3			
Zinc (Zn)	mg/kg	< 3	MCERTS	85	49	67			
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C

Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	CA3	CA4	CA5	CA6	CA7
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433048	433049	433050	433051	433052

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE			Loose Chrysotile in soil		
Asbestos Type ^(S)	PLM Result	N/a	ISO17025			Chrysotile		
pH	pH Units	N/a	MCERTS					
Total Cyanide	mg/kg	< 2	NONE					
Free Cyanide	mg/kg	< 2	NONE					
Thiocyanate as SCN	mg/kg	< 3	NONE					
Total Sulphate as SO ₄	mg/kg	< 200	NONE					
Total Sulphate as SO ₄	%	< 0.02	NONE					
Elemental Sulphur	mg/kg	< 10	NONE					
Sulphide	mg/kg	< 5	NONE					
Organic Matter	%	< 0.1	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS					
W/S Boron	mg/kg	< 1	NONE					
Cadmium (Cd)	mg/kg	< 0.2	MCERTS					
Chromium (Cr)	mg/kg	< 2	MCERTS					
Chromium (hexavalent)	mg/kg	< 2	NONE					
Copper (Cu)	mg/kg	< 4	MCERTS					
Lead (Pb)	mg/kg	< 3	MCERTS					
Mercury (Hg)	mg/kg	< 1	NONE					
Nickel (Ni)	mg/kg	< 3	MCERTS					
Selenium (Se)	mg/kg	< 3	NONE					
Zinc (Zn)	mg/kg	< 3	MCERTS					
Total Phenols (monohydric)	mg/kg	< 2	NONE					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C
 Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 19-12819	Date Sampled	03/09/19	04/09/19	04/09/19	04/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	CA8	CA9	CA10	CA11	CA12
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433053	433054	433055	433056	433057

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE			Loose in soil		
Asbestos Type ^(S)	PLM Result	N/a	ISO17025			Chrysotile		
pH	pH Units	N/a	MCERTS					
Total Cyanide	mg/kg	< 2	NONE					
Free Cyanide	mg/kg	< 2	NONE					
Thiocyanate as SCN	mg/kg	< 3	NONE					
Total Sulphate as SO ₄	mg/kg	< 200	NONE					
Total Sulphate as SO ₄	%	< 0.02	NONE					
Elemental Sulphur	mg/kg	< 10	NONE					
Sulphide	mg/kg	< 5	NONE					
Organic Matter	%	< 0.1	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS					
W/S Boron	mg/kg	< 1	NONE					
Cadmium (Cd)	mg/kg	< 0.2	MCERTS					
Chromium (Cr)	mg/kg	< 2	MCERTS					
Chromium (hexavalent)	mg/kg	< 2	NONE					
Copper (Cu)	mg/kg	< 4	MCERTS					
Lead (Pb)	mg/kg	< 3	MCERTS					
Mercury (Hg)	mg/kg	< 1	NONE					
Nickel (Ni)	mg/kg	< 3	MCERTS					
Selenium (Se)	mg/kg	< 3	NONE					
Zinc (Zn)	mg/kg	< 3	MCERTS					
Total Phenols (monohydric)	mg/kg	< 2	NONE					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C
 Subcontracted analysis (S)



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C1	C2	C3	C4	C5
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433023	433024	433025	433026	433027

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	0.12	< 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	0.20	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	1.66	1.11	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	0.22	0.13	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	1.86	1.55	0.15	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	1.44	1.21	< 0.1	< 0.1	0.14
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.70	0.42	0.15	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	0.73	0.63	0.15	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.84	0.85	0.27	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.28	0.31	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.59	0.60	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.45	0.37	< 0.1	< 0.1	< 0.1
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	0.33	0.27	< 0.1	< 0.1	0.14
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	9.4	7.5	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C6	C7	C8	C9	C10
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433028	433029	433030	433031	433032

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	0.42	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	0.18	< 0.1	0.20	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.94	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	1.68	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	0.53	6.19	0.49	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.15	1.31	0.17	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	1.42	2.21	1.76	0.15
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	1.46	1.50	1.71	0.15
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.88	< 0.1	0.96	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.93	< 0.1	0.97	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	1.91	< 0.1	2.01	0.15
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.57	< 0.1	0.61	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	1.43	< 0.1	1.48	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	1.65	< 0.1	1.14	0.12
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.18	< 0.1	0.16	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	1.37	< 0.1	0.95	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	12.7	13.8	12.6	< 1.6

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C11	C12	C13	C14	C15
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433033	433034	433035	433036	433037

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.22
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	0.23	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	0.65	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	0.57	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.36	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	0.44	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.61	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.20	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.51	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.51	< 0.1	< 0.1	< 0.1	< 0.1
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	0.39	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	4.5	< 1.6	< 1.6	< 1.6	< 1.6

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 19-12819	Date Sampled	03/09/19	04/09/19	04/09/19	04/09/19	04/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C16	C17	C18	C19	C20
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433038	433039	433040	433041	433042

Determinand	Unit	RL	Accreditation						
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 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	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 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	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 19-12819	Date Sampled	04/09/19	04/09/19	04/09/19		
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C21	C22	C23		
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied		
Reporting Date: 13/09/2019	DETS Sample No	433043	433044	433045		

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C



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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C1	C2	C3	C4	C5
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433023	433024	433025	433026	433027

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	10	9	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	15	11	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	25	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C6	C7	C8	C9	C10
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433028	433029	433030	433031	433032

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	11	12	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	62	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	73	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	73	< 42	< 42	< 42

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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C11	C12	C13	C14	C15
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433033	433034	433035	433036	433037

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	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C



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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 19-12819	Date Sampled	03/09/19	04/09/19	04/09/19	04/09/19	04/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C16	C17	C18	C19	C20
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433038	433039	433040	433041	433042

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	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 19-12819	Date Sampled	04/09/19	04/09/19	04/09/19		
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C21	C22	C23		
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied		
Reporting Date: 13/09/2019	DETS Sample No	433043	433044	433045		

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

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C1	C2	C3	C4	C5
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433023	433024	433025	433026	433027

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

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C6	C7	C8	C9	C10
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433028	433029	433030	433031	433032

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

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C11	C12	C13	C14	C15
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433033	433034	433035	433036	433037

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°C



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 19-12819	Date Sampled	03/09/19	04/09/19	04/09/19	04/09/19	04/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C16	C17	C18	C19	C20
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433038	433039	433040	433041	433042

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°C



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 19-12819	Date Sampled	04/09/19	04/09/19	04/09/19		
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	C21	C22	C23		
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied		
Reporting Date: 13/09/2019	DETS Sample No	433043	433044	433045		

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

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Leachate Analysis Certificate						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	04/09/19	04/09/19	04/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	CL1	CL2	CL3	CL4	CL5
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433058	433059	433060	433061	433062

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	ISO17025	8.7	8.1	6.5	6.3	7.2
Total Cyanide	ug/l	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Complex Cyanide	ug/l	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Free Cyanide	ug/l	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Thiocyanate as SCN	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Sulphate as SO ₄	mg/l	< 1	ISO17025	8	1	11	31	8
Sulphide	mg/l	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Organic Carbon (TOC)	mg/l	< 0.1	NONE	3.4	3	1.1	1.6	1.4
Arsenic	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Boron	ug/l	< 5	ISO17025	8	27	12	7	7
Cadmium	ug/l	< 0.4	ISO17025	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Chromium (hexavalent)	ug/l	< 20	NONE	< 20	< 20	< 20	< 20	< 20
Copper	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Lead	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Mercury	ug/l	< 0.05	ISO17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	ug/l	< 5	ISO17025	< 5	< 5	< 5	9	< 5
Selenium	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Zinc	ug/l	< 2	ISO17025	2	< 2	5	16	< 2
Total Phenols (monohydric)	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10

Subcontracted analysis⁽⁵⁾



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Leachate Analysis Certificate - Speciated PAH						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	04/09/19	04/09/19	04/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	CL1	CL2	CL3	CL4	CL5
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433058	433059	433060	433061	433062

Determinand	Unit	RL	Accreditation					
Naphthalene	ug/l	< 0.01	NONE	0.15	0.24	0.20	0.22	0.30
Acenaphthylene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	ug/l	< 0.01	NONE	0.08	0.23	0.08	0.08	0.17
Fluorene	ug/l	< 0.01	NONE	0.09	0.36	0.10	0.10	0.30
Phenanthrene	ug/l	< 0.01	NONE	0.13	0.80	0.18	0.20	0.57
Anthracene	ug/l	< 0.01	NONE	0.03	0.20	0.04	0.04	0.15
Fluoranthene	ug/l	< 0.01	NONE	0.05	0.16	0.10	0.06	0.14
Pyrene	ug/l	< 0.01	NONE	0.04	0.08	0.06	0.03	0.07
Benzo(a)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	ug/l	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
Total EPA-16 PAHs	ug/l	< 0.01	NONE	0.57	2.07	0.76	0.73	1.70



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Leachate Analysis Certificate - TPH CWG Banded						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	04/09/19	04/09/19	04/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	CL1	CL2	CL3	CL4	CL5
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433058	433059	433060	433061	433062

Determinand	Unit	RL	Accreditation						
Aliphatic >C5 - C6	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C6 - C8	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C8 - C10	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C10 - C12	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C12 - C16	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C16 - C21	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic >C21 - C34	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	ug/l	< 70	NONE	< 70	< 70	< 70	< 70	< 70	< 70
Aromatic >C5 - C7	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic >C7 - C8	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic >C8 - C10	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic >C10 - C12	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic >C12 - C16	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic >C16 - C21	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic >C21 - C35	ug/l	< 10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	ug/l	< 70	NONE	< 70	< 70	< 70	< 70	< 70	< 70
Total >C5 - C35	ug/l	< 140	NONE	< 140	< 140	< 140	< 140	< 140	< 140



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Leachate Analysis Certificate - BTEX / MTBE						
DETS Report No: 19-12819	Date Sampled	03/09/19	03/09/19	04/09/19	04/09/19	04/09/19
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	CL1	CL2	CL3	CL4	CL5
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/09/2019	DETS Sample No	433058	433059	433060	433061	433062

Determinand	Unit	RL	Accreditation					
Benzene	ug/l	< 1	ISO17025	< 1	< 1	< 1	< 1	< 1
Toluene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
p & m-xylene	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10
o-xylene	ug/l	< 5	ISO17025	< 5	< 5	< 5	< 5	< 5
MTBE	ug/l	< 10	ISO17025	< 10	< 10	< 10	< 10	< 10



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Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 19-12819	
Soiltec Laboratories Ltd	
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	
Project / Job Ref: 07538/23	
Order No: LAB/4505/KH	
Reporting Date: 13/09/2019	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
433023	C1	None Supplied	None Supplied	14	Brown sandy clay with stones
433024	C2	None Supplied	None Supplied	10.5	Brown sandy clay
433025	C3	None Supplied	None Supplied	18.5	Brown loamy sand
433026	C4	None Supplied	None Supplied	13.5	Brown loamy clay
433027	C5	None Supplied	None Supplied	11.9	Brown loamy sand with stones
433028	C6	None Supplied	None Supplied	13.3	Brown loamy sand
433029	C7	None Supplied	None Supplied	18.3	Brown loamy sand
433030	C8	None Supplied	None Supplied	15.8	Brown loamy sand
433031	C9	None Supplied	None Supplied	16.8	Brown loamy sand
433032	C10	None Supplied	None Supplied	15.8	Brown loamy sand
433033	C11	None Supplied	None Supplied	13.4	Brown sandy clay with stones
433034	C12	None Supplied	None Supplied	14.5	Brown sandy clay
433035	C13	None Supplied	None Supplied	16.9	Brown loamy sand with stones
433036	C14	None Supplied	None Supplied	10.8	Brown sandy clay
433037	C15	None Supplied	None Supplied	17.9	Beige clay
433038	C16	None Supplied	None Supplied	14	Brown sandy clay
433039	C17	None Supplied	None Supplied	14.3	Brown loamy sand
433040	C18	None Supplied	None Supplied	14.7	Brown loamy sand
433041	C19	None Supplied	None Supplied	12.4	Orange sandy clay
433042	C20	None Supplied	None Supplied	10.6	Orange sandy clay
433043	C21	None Supplied	None Supplied	12.8	Brown loamy sand
433044	C22	None Supplied	None Supplied	10.6	Brown sandy clay
433045	C23	None Supplied	None Supplied	12.8	Brown sandy clay

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

Insufficient Sample ^{1/S}

Unsuitable Sample ^{U/S}



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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 19-12819
Soiltec Laboratories Ltd
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway
Project / Job Ref: 07538/23
Order No: LAB/4505/KH
Reporting Date: 13/09/2019

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 diphénylcarbazine 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



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Wate Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 19-12819
Soiltec Laboratories Ltd
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway
Project / Job Ref: 07538/23
Order No: LAB/4505/KH
Reporting Date: 13/09/2019

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	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 liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	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 liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
 UF Unfiltered



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DETS Report No: 19-13782

Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway

Project / Job Ref: 07538/23

Order No: LAB/4505/KH

Sample Receipt Date: 26/09/2019

Sample Scheduled Date: 26/09/2019

Report Issue Number: 1

Reporting Date: 03/10/2019

Authorised by:

A handwritten signature in black ink that reads "Ela Mysiara".

Ela Mysiara
Quality Manager

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Soil Analysis Certificate					
DETS Report No: 19-13782	Date Sampled	03/09/19	03/09/19		
Soiltec Laboratories Ltd	Time Sampled	None Supplied	None Supplied		
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway	TP / BH No	CA5	CA10		
Project / Job Ref: 07538/23	Additional Refs	None Supplied	None Supplied		
Order No: LAB/4505/KH	Depth (m)	None Supplied	None Supplied		
Reporting Date: 03/10/2019	DETS Sample No	437546	437547		

Determinand	Unit	RL	Accreditation			
Asbestos Quantification ^(S)	%	< 0.001	ISO17025	< 0.001	0.001	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C
 Subcontracted analysis (S)



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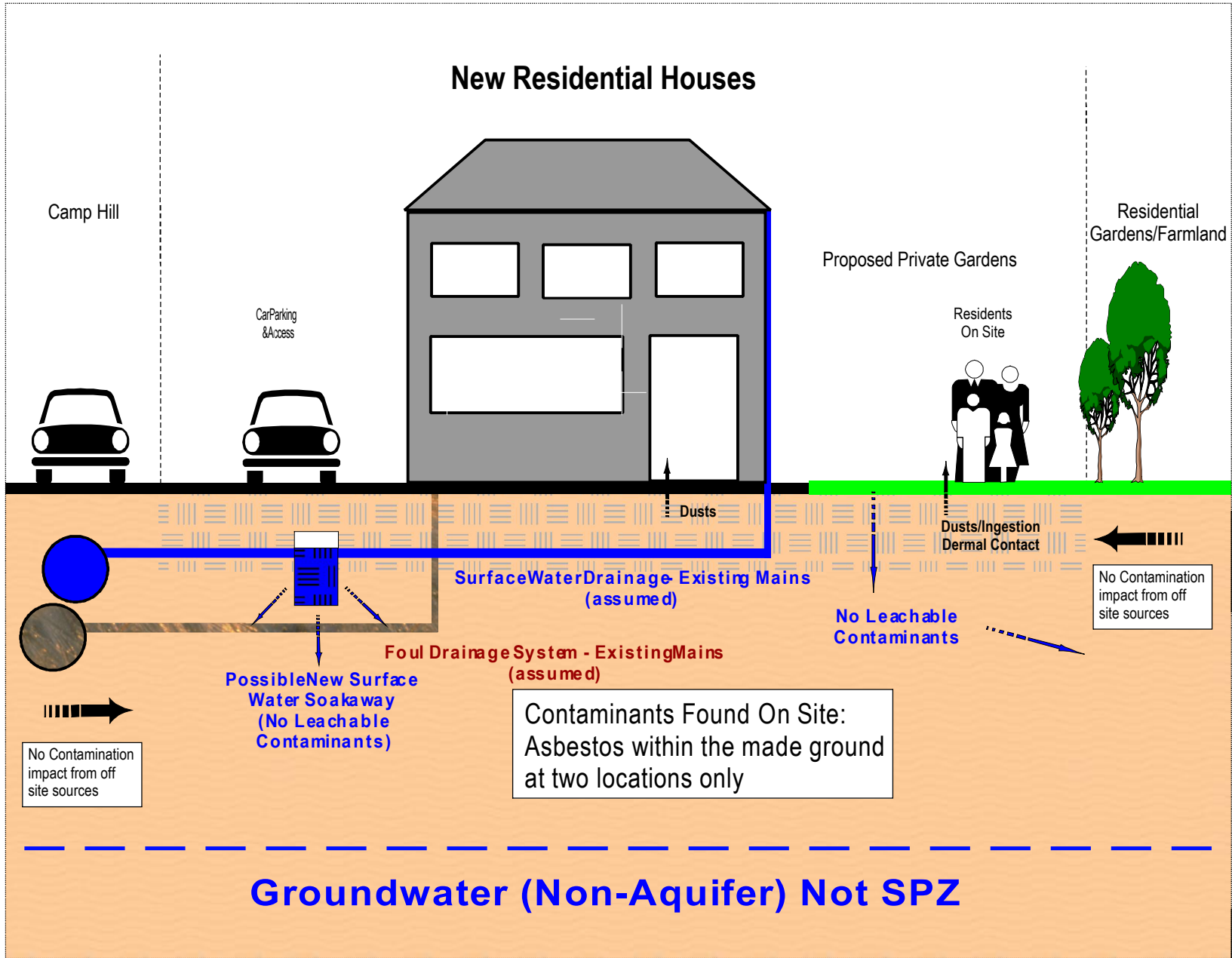
Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 19-13782
Soiltec Laboratories Ltd
Site Reference: The Estate Yard, Camp Hill, Chiddingstone Causeway
Project / Job Ref: 07538/23
Order No: LAB/4505/KH
Reporting Date: 03/10/2019

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

CONCEPTUAL MODEL



CONCEPTUAL MODEL

KEY :

-  Made Ground
-  Weald Clay (mudstone)
-  Hard Cover

Second edition following the Intrusive Site Investigation



CLIENT : The Trustees of the Redleaf Trust
 SITE : The Estate Yard
 Camp Hill
 Chiddingstone Causeway
 Near TONBRIDGE
 Kent TN11 8LE

Job No : 07538/23
 DATE : 04/10/19
 SCALE : N.T.S.

DRAWN : KDH

Contaminants Found On Site:
 Asbestos within the made ground
 at two locations only

Groundwater (Non-Aquifer) Not SPZ