



**Phase 2
Mill Rythe Holiday Village
Hayling Island
Hampshire**

**Quantitative Ground Contamination
Risk Assessment Report**

Report Beneficiary:

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Project Reference: P15440

Report Reference: R15109

Document Control			
Issue No.	Status	Issue Date	Notes
1	Final	14 th January 2022	
2	Final	4 th March 2022	Updated planning reference
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EXECUTIVE SUMMARY

The following presents a summary of the main findings of the report. It is emphasised that no reliance should be placed on any individual point until the whole of the report has been read as other sections of the report may put into context the information contained herein.

It is proposed to develop the wider Mill Rythe Holiday Village site located at Havant Road, Hayling Island, Hampshire.

This report provides an assessment of the Phase 2 development area, which is to comprise a number of concrete bases for holiday caravans with associated areas of soft landscaping.

A preliminary ground contamination risk assessment report and proposed scope of intrusive investigation works for assessing the site had previously been submitted to the Local Authority for their comment and approval.

The ground investigation works undertaken in connection with Phase 2 comprised the excavation of thirty-three shallow hand dug pits and four boreholes with monitoring standpipes. Samples of the shallow topsoil, made ground and undisturbed natural soils were tested for a range of commonly occurring contaminants.

The results of the laboratory testing were compared to generic soil screening values comprising the 'Suitable For Use Levels' (S4UL) or, in lieu of an S4UL being developed for lead, the Category 4 Screening Level (C4SL) for the generic POS_{resi} land use.

None of the samples tested recorded concentrations of any contaminants above their respective SSV. No suspected asbestos containing materials were encountered within any exploratory hole and no asbestos materials were identified by laboratory screening.

No evidence of petroleum hydrocarbon or volatile contamination was identified by the testing within the deeper boreholes.

The soils within the Phase 2 development area are not considered to pose an unacceptable risk to future end users of the site.

The groundwater testing did not record any contaminants at concentrations considered to pose an unacceptable risk to controlled waters or ecological receptors.

It is recommended that this report is submitted to the Local Authority for approval. The conclusions drawn and recommendations given should be considered as provisional until such time as this report has been approved by the Local Authority and any associated planning conditions pertaining to the Phase 2 part of the development have been discharged.

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1. INTRODUCTION

It is proposed to develop the wider Mill Rythe Holiday Village site located at Havant Road, Hayling Island, Hampshire. The development is approved to proceed under Planning Application APP/20/01127. The development is understood to comprise construction of a number of concrete bases for holiday caravans, with associated areas of soft landscaping.

Ashdown Site Investigation Ltd. has previously produced a Preliminary Ground Contamination Risk Assessment Report¹. The report included proposals for a scope of intrusive investigation works at the site. A copy of the report was submitted to Mr. Jonathan Driver, Environmental Control Officer of Havant Borough Council. A copy of the Local Authority comments on the report is included as Appendix A.

The development is now proposed to be undertaken in phases, and Ashdown Site Investigation Ltd. has previously produced an assessment² for the Phase 1 area of the development.

Ashdown Site Investigation Ltd was subsequently instructed to undertake the ground contamination risk assessment for the Phase 2 area. The extent of the Phase 2 area in relation to the wider site area is shown on the site location plan included as Figure 1.

The scope of the ground investigation works carried out is based on that proposed within the preliminary assessment, taking into account the comments made by the Local Authority.

The scope of the works covered by this report, and the terms and conditions under which they were undertaken, were set out within the offer letter Q11292Rev1, dated 15th November 2021. The works were undertaken under purchase order ref: 43930/MLR/G1-32 provided on behalf of the client, Away Resorts Ltd.

The objectives of the works were to:

- a) Investigate the shallow ground and groundwater conditions in this area of the proposed development;
- b) Test for the presence of contaminants identified by the preliminary conceptual model; and
- c) Develop a quantitative conceptual model of the Phase 2 development area, refining the preliminary model to identify any remaining pollutant linkages.

This report should be read in conjunction with the previous report prepared for the site.

¹ Report No. R17-12377/ds, Revision 1.0, dated 14th February 2018.

² Ashdown Site Investigation Project No P14195 Report No. R13922, dated 8th November 2019.

2. SITE CONTEXT

2.1 Site Location

The Phase 2 development area comprises an irregular shaped plot of land located within the wider Mill Rythe Holiday Village and is centred on the approximate Ordnance Survey national grid reference SU 7326 0086. A site location plan and site plan are presented as Figure 1 and Figure 2, respectively.

2.2 Geological and Hydrogeological Information

A summary of geological and hydrogeological information pertaining to the site is presented below. More detailed information in this regard is presented within the preliminary ground contamination risk assessment report.

2.2.1 Expected Geology and Aquifer Designation

The stratigraphic succession that may be expected to underlie the site is presented in the following table.

Table 1. Expected Strata and Aquifer Designation

Type	Stratum	Aquifer Designation
Superficial	Raised Marine Deposits	Secondary Undifferentiated Aquifer
Bedrock	Bognor Sand Member (southern and western part of the site)	Secondary A Aquifer
	London Clay Formation	Unproductive Stratum

The Raised Marine Deposits comprises gravel (shingle), sand, silt and clay commonly charged with organic debris (plant and shell) and now above the level of the present shoreline, as a result of earth movement or a general fall in sea level.

The Bognor Sand Member, shown in the southern and western part of the site, comprises silty fine and medium grey-green and brown, glauconitic sand interbedded with sandy and silty clay which may in part be cemented. The base of the Member may be marked by a pebble bed, including rounded gravel of flint. It represents a relatively thin stratum, reaching a maximum thickness of some 10.0m.

The London Clay Formation comprises a blue grey silty clay, which tends to weather to brown near to the upper surface. With depth, the clay becomes very stiff/hard, is frequently fissured and can contain some inclusions and beds of weak mudstone and siltstone.

2.2.2 Groundwater Source Protection Zones

The site does not lie within an Environment Agency Source Protection Zone.

2.2.3 *Groundwater and Surface Water Abstraction Licences*

No groundwater abstraction licences are indicated within 1km of the site. The closest surface water abstraction licence is recorded to lie 647m to the south of the site. The abstraction is for spray irrigation.

2.2.4 *Surface Water Features*

A pond is located in the westernmost part of the wider Mill Rythe Holiday Village site with a second, larger pond located within the north easternmost part of the wider site. The larger pond received water from a drainage ditch running from west to north east inside the northern boundary of the site.

3. GROUND INVESTIGATION

3.1 Introduction

The ground investigation comprised the excavation of a series of dynamic sampler boreholes and hand dug trial pits. Groundwater monitoring standpipes were installed within the boreholes to allow groundwater samples to be obtained. The intrusive work was carried out between the 29th November and 2nd December 2021. The exploratory hole locations are shown on Figure 2.

Descriptions of the strata encountered and comments on groundwater conditions are shown on the exploratory hole records given in Appendix B, together with notes to assist in their interpretation.

3.2 Exploratory Holes

3.2.1 Dynamic Sampler Boreholes

Four boreholes, designated WS01 to WS04, were each drilled to a depth of 3.00m below ground level.

The boreholes were formed by a series of 1.0m long, open ended, hollow steel tubes of up to 100mm diameter, each containing a removable plastic liner. The tubes, progressively reducing in diameter, were driven into the ground by means of a track-mounted drop weight. Each tube was extracted from the ground using a hydraulically operated jack and the enclosed sample was recovered in its plastic liner.

The system enables sub-samples to be taken for detailed examination and laboratory testing.

3.2.2 Trial Pits

Thirty-three trial pits, designated TP101 to TP133, were dug using hand tools to a depth of 0.30m below ground level to enable sampling to be carried out.

3.3 Sampling

Disturbed samples of soil were taken at the depths shown in the exploratory hole records and were collected in plastic tubs or amber jars fitted with gas tight lids.

Water samples collected during the monitoring visits for contamination testing were collected in amber bottles with gas tight lids.

On collection the amber jars/bottles were stored in cool boxes with cooling blocks to maintain temperatures below 4°C until transferred to refrigerators upon return to the office and subsequently forwarded to the external accredited chemical testing laboratory.

3.4 Installations

Groundwater monitoring standpipes were installed to a depth of 2.00m in each of the boreholes WS01 to WS04. Descriptions of the installations are shown on the exploratory hole records in Appendix B.

Samples of groundwater were collected on three occasions between 7th December and 21st December 2021.

3.5 Laboratory Testing

Laboratory testing was scheduled by Ashdown Site Investigation Ltd. Chemical (contamination) testing of selected samples was undertaken by a laboratory with recognised (UKAS and MCERTS) accreditation for quality control. Results from the laboratory tests are provided in Appendix C.

4. GROUND CONDITIONS

4.1 Stratigraphy

4.1.1 Topsoil

No specific surfacing materials were recorded within exploratory holes, WS01, TP102, TP104, TP106, TP107, TP108, TP110, TP111, TP114-TP116, TP121, TP127, TP128 or TP131.

A surface cover of topsoil was encountered extending to the full depth (0.30m) of trial pits TP101, TP112, TP113, TP118, TP123 and TP133 and to depths of between 0.05m and 0.20m in thickness in the remaining exploratory holes.

4.1.2 Made Ground

Underlying the topsoil or directly from surface, made ground generally comprising gravelly sandy clay and locally sandy gravel was recorded to the full depth (0.30m) of trial pits TP106, TP110, TP114 and TP119, and to a depth of 0.60m within boreholes WS02 and WS03. The gravel fraction comprised variable quantities of brick, flint and charcoal-like material.

Made ground comprising sandy gravel of brick, concrete, wood and plastic was recorded within borehole WS01 to a depth of 0.20m below ground level. Within trial pit TP124 the made ground, which continued to the full depth of the pit, was recorded to be sandy gravel of flint.

Made ground was not encountered elsewhere within the Phase 2 development area.

4.1.3 Raised Marine Deposits

Underlying the topsoil/made ground (where present and penetrated) and from ground level within trial pits TP102, TP104, TP107, TP108, TP111, TP115, TP116, TP121, TP127, TP128 and TP131, the investigation encountered undisturbed sandy silty clay deposits. These soils were recorded to the full depth of the trial pits and to depths of between 1.00m and 1.10m within boreholes WS01 to WS04.

These soils are considered to represent the Raised Marine Deposits indicated on the published geological map.

4.1.4 Bognor Sand Member

Beneath the Raised Marine Deposits, the dynamic sampler boreholes encountered sand soils which continued to the full depth of the investigation of 3.00m.

These soils are considered to represent the Bognor Sand Member indicated on the published geological map.

4.2 Groundwater Conditions

The shallow pits were recorded to be dry during the short duration of the intrusive works. Groundwater was recorded at depths of between 0.30m and 1.58m below ground level within the boreholes during the intrusive works and subsequent monitoring visits.

4.3 Evidence of Contamination

No visual or olfactory evidence of suspected volatile contaminants was encountered within any of the exploratory holes excavated.

5. QUANTITATIVE CONTAMINATION ASSESSMENT

5.1 Introduction

The risk assessment for the site considers the sources of contamination identified, the receptors that may be present in view of the development proposals and the contaminant pathways by which these may be linked.

A complete pollutant linkage is only deemed to exist where all three are present and a site is considered suitable for use where no complete pollutant linkages are identified.

Where a complete pollutant linkage is considered to be present, an assessment of the level of risk associated with the pollutant linkage has been carried out in line with published guidance³.

The level of risk is determined using the risk matrix presented in the following table. Classifications of probability, consequence and risk are presented in Appendix D.

Table 2. Risk Assessment Matrix

		Probability			
		Very Low	Low	Moderate	High
Consequence	Very Minor	Negligible	Very Low	Low	Low/Moderate
	Minor	Very Low	Low	Low/Moderate	Moderate
	Moderate	Low	Low/Moderate	Moderate	High
	Severe	Low/Moderate	Moderate	High	Very High

5.2 Preliminary Conceptual Model

The preliminary conceptual model for the proposed development, generated as part of the desk study report, is presented in Appendix E.

5.3 Assessment Strategy

A non-targeted series of trial pits was excavated across the proposed Phase 2 development area. The density of sampling is considered sufficient to provide a robust assessment in line with the guidance presented within BS10175.

A series of dynamic boreholes was excavated along the south boundary in the western part of the site to assess the potential risk posed by the "Oil tank and boiler house" located at the eastern end of a row of buildings to the south of this part of the site.

5.4 Analysis of Soil Contamination Test Results

Comparison of the results of the laboratory testing has been made against the 'Suitable For Use Levels' (S4UL)⁴ or, in lieu of an S4UL being developed for lead, the Category 4 Screening Level

³ Contaminated Land Risk Assessment: A guide to good practice, CIRIA C552, 2001.

⁴ Nathanail, C.P, et al., The LQM/CIEH S4ULs for Human Health Risk Assessment, 2015, Land Quality Press, Nottingham. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3071.

(C4SL)⁵. These are collectively referred to as soil screening values (SSV). As agreed with the local authority, the SSV utilised in this assessment are those calculated for the generic 'Public Open Space near Residential Housing' (POS_{resi}) land use⁵ as these are considered to be suitably protective of proposed end users of the site.

5.4.1 Heavy Metals

The following table summarises the SSV along with the maximum and minimum concentrations of the heavy metals tested for.

Table 3. Summary of Test Results for Heavy Metals

Contaminant	SSV (mg/kg)	No. of Samples	Minimum Concentration (mg/kg)	Maximum concentration (mg/kg)	Limit of Detection (mg/kg)	No of exceedances
Arsenic	79	33	4.3	43.4	0	0
Cadmium	120	33	<LOD	0.6	0	0
Chromium	1500	33	11.6	28	0	0
Copper	12000	33	6.5	57.8	0	0
Lead	630	33	10.3	127	0	0
Mercury	120	33	<LOD	<LOD	0	0
Nickel	230	33	5.7	13.7	0	0
Selenium	1100	33	<LOD	2.7	0	0
Zinc	81000	33	20.4	120	0	0
Hexavalent Chromium	7.7	33	<LOD	<LOD	0	0
Water Soluble Boron	21000	33	1	29	0	0

None of the samples tested recorded concentrations of heavy metals above their respective SSV. With the exception of the concentrations of arsenic within one sample, all of the concentrations were also below the more conservative SSV for "residential without plant uptake".

The concentrations of heavy metals present within the shallow soils are not considered to pose an unacceptable risk to end users of the site or to controlled waters.

5.4.2 Asbestos

No suspected asbestos materials were noted within any of the exploratory holes undertaken at the site. None of the samples of shallow soils that were screened within the laboratory identified any asbestos materials to be present.

There is not considered to be a significant risk to end users from asbestos materials within soils. Due to the heterogeneity of made ground, there will always remain the potential for localised asbestos materials to be encountered during construction works, though the likelihood of this is considered to be very low. All workers at the site should be made aware of what actions to take in the event that suspected asbestos materials are identified at any time during the development works.

⁵ SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. Final Project Report, published by DEFRA, 2014.

An asbestos survey of existing structures and infrastructure⁶ was beyond the scope of this investigation. The potential for asbestos containing materials to be present within the fabric of buildings or infrastructure located on the site cannot be dismissed by reference to the soil test results contained within this report. It is recommended that relevant asbestos registers be inspected prior to commencing any demolition works at the site. Where asbestos is identified to be present within buildings or infrastructure, these materials should be appropriately removed by licensed contractors and asbestos materials disposed of in accordance with legal requirements prior to demolition to avoid contaminating soils at the site.

5.4.3 Polycyclic Aromatic Hydrocarbon (PAH) Compounds

The following table summarises the soil screening values, maximum and minimum concentrations for the PAH compounds tested for.

Table 4. Summary of Test Results for PAH Compounds

Contaminant	SSV (mg/kg)	No. of Samples	Minimum Concentration (mg/kg)	Maximum concentration (mg/kg)	Limit of Detection (mg/kg)	No of exceedances
Naphthalene	2.3	33	<LOD	<LOD	0	0
Acenaphthylene	2900	33	<LOD	<LOD	0	0
Acenaphthene	3000	33	<LOD	<LOD	0	0
Fluorene	2800	33	<LOD	<LOD	0	0
Phenanthrene	1300	33	<LOD	0.5	0	0
Anthracene	31000	33	<LOD	0.3	0	0
Fluoranthene	1500	33	<LOD	1.5	0	0
Pyrene	3700	33	<LOD	1.5	0	0
Benz(a)anthracene	11	33	<LOD	0.7	0	0
Chrysene	30	33	<LOD	0.8	0	0
Benzo(b)fluoranthene	3.9	33	<LOD	1.3	0	0
Benzo(k)fluoranthene	110	33	<LOD	1.3	0	0
Benzo(a)pyrene	3.2	33	<LOD	1.3	0	0
Indeno(123-cd)pyrene	45	33	<LOD	1	0	0
Dibenz(ah)anthracene	0.31	33	<LOD	0.3	0	0
Benzo(ghi)perylene	360	33	<LOD	1.1	0	0

None of the samples tested recorded concentrations of individual PAH compounds above their respective SSV. The concentrations of PAH compounds in each sample were also below the more conservative SSV for "residential without plant uptake".

5.4.4 Petroleum Hydrocarbons, BTEX compounds and Volatile Organic Compounds (VOC)

No evidence of staining or odours that may indicate the presence of petroleum hydrocarbon contamination was noted in any of the boreholes drilled along the westernmost southern boundary of the assessment site.

The following tables list the screening values for petroleum hydrocarbon equivalent carbon weight fractions and BTEX compounds calculated for 1% organic content.

⁶ As defined under Section 5(a) of the Control of Asbestos Regulations, 2012.

Table 5. SSV for petroleum hydrocarbons - POS_{resi}

Petroleum Hydrocarbon Fraction	SSV (mg/kg)	Petroleum Hydrocarbon Fraction	SSV (mg/kg)
Aliphatic EC 5-6	570000	Aromatic EC 5-7	56000
Aliphatic EC >6-8	600000	Aromatic EC >7-8	56000
Aliphatic EC >8-10	13000	Aromatic EC >8-10	5000
Aliphatic EC >10-12	13000	Aromatic EC >10-12	5000
Aliphatic EC >12-16	13000	Aromatic EC >12-16	5100
Aliphatic EC >16-35	250000	Aromatic EC >16-21	3800
Aliphatic EC >35-44	250000	Aromatic EC >21-35	3800
		Aromatic EC >35-44	3800

Table 6. SSV for petroleum hydrocarbons - Residential

Petroleum Hydrocarbon Fraction	SSV (mg/kg)	Petroleum Hydrocarbon Fraction	SSV (mg/kg)
Aliphatic EC 5-6	42	Aromatic EC 5-7	70
Aliphatic EC >6-8	100	Aromatic EC >7-8	130
Aliphatic EC >8-10	27	Aromatic EC >8-10	34
Aliphatic EC >10-12	130	Aromatic EC >10-12	74
Aliphatic EC >12-16	1100	Aromatic EC >12-16	140
Aliphatic EC >16-35	65000	Aromatic EC >16-21	260
Aliphatic EC >35-44	65000	Aromatic EC >21-35	1100
		Aromatic EC >35-44	1100

Table 7. SSV for BTEX Compounds – POS_{resi}

Compound	SSV (mg/kg)	Compound	SSV (mg/kg)
Benzene	72	Ethylbenzene	24000
Toluene	56000	<i>p</i> -Xylene ¹	41000

¹ Xylene has three structural isomers, the SSV presented is for *p*-Xylene, which has the most conservative SSV.

Table 8. SSV for BTEX Compounds - Residential

Compound	SSV (mg/kg)	Compound	SSV (mg/kg)
Benzene	0.087	Ethylbenzene	47
Toluene	130	<i>p</i> -Xylene ¹	56

¹ Xylene has three structural isomers, the SSV presented is for *p*-Xylene, which has the most conservative SSV.

The concentrations of petroleum hydrocarbons recorded were negligible. All were well below the SSV for both POS_{resi} and “residential without plant uptake” land uses.

None of the samples recorded any detectable concentrations of BTEX compounds.

None of the samples recorded any detectable concentrations of any of the VOC tested for.

The boiler room areas to the south of the site are not considered to pose an unacceptable risk to end users of the subject site.

5.5 Analysis of Groundwater Test Results

Samples of the groundwater present within the standpipes were collected on three occasions and tested for concentrations of heavy metals, PAH compounds and petroleum hydrocarbons.

With the exception of boron, no detectable concentrations of heavy metals were recorded. Boron, which is water soluble, was recorded at consistently very low concentrations in all of the samples, well below the Drinking Water Standard⁷ of 1000µg/ml.

There are two Drinking Water Standards for PAH compounds, a standard for benzo(a)pyrene and a standard for the sum of four PAH compounds: benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(ghi)perylene; and indeno(1,2,3-cd)pyrene.

The following table summarises the results of each groundwater sample against the two Drinking Water Standards (DWS).

Table 9. Summary of DWS and Test Results for PAH Compounds for each Groundwater Sample

		Concentration Recorded in Sample (µg/l)			
Contaminant	DWS (µg/l)	WS01	WS02	WS03	WS04
07/12/2021					
Benzo(a)pyrene	0.010	0.19	0.02	0.02	0.03
Sum of 4 PAH Compounds	0.10	0.60	0.08	0.07	0.09
13/12/2021					
Benzo(a)pyrene	0.010	0.03	0.07	0.03	<0.01
Sum of 4 PAH Compounds	0.10	0.08	0.2	0.09	<0.01
21/12/2021					
Benzo(a)pyrene	0.010	0.13	0.08	0.13	0.01
Sum of 4 PAH Compounds	0.10	0.44	0.26	0.4	0.04

The concentrations of benzo(a)pyrene and the combination of four PAH compounds were relatively consistent between the three rounds of monitoring and were generally present at around, or slightly above, the published DWS.

As the shallow groundwater is not being directly abstracted for potable use, these marginal exceedances of the highly conservative DWS are not considered to represent a significant risk to controlled waters or to ecological receptors, particularly given that the shallow soils have been recorded to contain largely negligible concentrations of PAH compounds.

No Drinking Water Standards are provided for petroleum hydrocarbons, and the only standards are produced by the WHO in "Petroleum Products in Drinking-water"⁸.

The document notes that:

"A number of the more soluble aromatic components, particularly the alkyl benzenes, have extremely low taste and odour thresholds in water and can render drinking-water unacceptable"

⁷ The Water Supply (Water Quality) Regulations 2016

⁸ WHO/SDEE/WSH/05.08/123, 2008

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to consumers at relatively low levels of contamination...Other components of petroleum products will also be detectable by odour and/or taste in drinking-water at concentrations of a few micrograms per litre."

The following table summarises the WHO guide values for petroleum hydrocarbons in fractions in drinking water.

Table 10. WHO Guidance Values for Petroleum Hydrocarbons Fractions in Drinking Water

Petroleum Hydrocarbon Fraction	Guidance Value (µg/l)	Petroleum Hydrocarbon Fraction	Guidance Value (µg/l)
Aliphatic EC 5-6	15,000	Aromatic EC 5-6 (Benzene)	10
Aliphatic EC >6-8	15,000	Aromatic EC >6-8 (Toluene)	700
Aliphatic EC >8-10	300	Aromatic EC >8-10	300 (ethylbenzene) 500 (xylenes)
Aliphatic EC >10-12	300	Aromatic EC >10-12	90
Aliphatic EC >12-16	300	Aromatic EC >12-16	90
Aliphatic EC >16-35	-	Aromatic EC >16-21	90
Aliphatic EC >35-44	-	Aromatic EC >21-35	90

The results of the petroleum hydrocarbon testing were not speciated into separate aromatic and aliphatic fractions. During the first and third rounds of monitoring, the concentrations of all equivalent weight fractions lay below the more conservative guidance value. During the second round of monitoring the concentrations in the EC21-EC35 were slightly above the guidance value for purely aromatic hydrocarbons.

Within the soils tested, where detectable concentrations of petroleum hydrocarbons were recorded to be present (albeit at very low concentrations) these were mostly found in the aliphatic fractions, with a ratio in excess of 3:1. As such, it is considered very unlikely that the concentrations of aromatic hydrocarbons within the shallow groundwater are above the conservative guidance value.

As with the concentrations of PAH compounds, as the shallow groundwater is not directly abstracted for potable use, and given the negligible concentrations of petroleum hydrocarbons recorded within the underlying soils, the concentrations present within the shallow groundwater are not considered to represent a significant risk to controlled waters or ecological receptors.

5.6 Quantitative Contamination Risk Assessment

5.6.1 Contamination Sources Identified

The intrusive investigation works have not identified any contaminants to be present at concentrations that may pose an unacceptable risk to end users, controlled waters or ecological receptors.

5.6.2 Quantitative Conceptual Model

The quantitative conceptual model for the proposed development is presented in Appendix F.

5.7 Risks to Other Potential Receptors

All construction workers must undertake their own risk assessment, based upon the works to be carried out and the proposed method by which this will be achieved, in accordance with current health and safety legislation. Their assessment should take into account all available information about the site, including that presented within this report.

Appropriate working procedures and PPE should be adopted to ensure the health and safety of the site operatives. Instruction should be given in the recognition of potentially hazardous materials. All site personnel should be appropriately briefed on the discovery strategy, presented below, and what actions they must take in the event that further evidence of contamination is identified or suspected.

5.8 Discovery Strategy

If, during the course of the site clearance and development works, any materials not previously identified by the investigation that are suspected of being 'contaminants' are encountered, then the following procedure should apply:

- All works in that area should cease and the site manager should be informed.
- Advice should be sought from suitably qualified and experienced personnel as to whether any further site inspection, sampling, testing and/or assessment is deemed necessary.
- If required, the conclusions of any assessment and any proposed remedial works (if required) should be agreed by the local authority.
- If necessary, full details of any remedial works should be included in a verification report for the site.

Suspected 'contamination' may take the following form, though it is noted that this list is not exhaustive and site operatives should ask if they are at all unsure of any findings:

- Soil or water looks oily and/or has an oily odour
- Soil or water has a solvent type of odour
- Significant quantities of man-made materials within fill such as paint cans, car parts, glass fragments
- Suspected asbestos containing materials (insulating boards, cement, loose fibres etc.)
- Significant volumes of clinker like or ashy material
- Sand bags, and/or subsurface concrete structures
- Animal carcasses or evidence of animal burial pits

6. REGULATORY APPROVAL

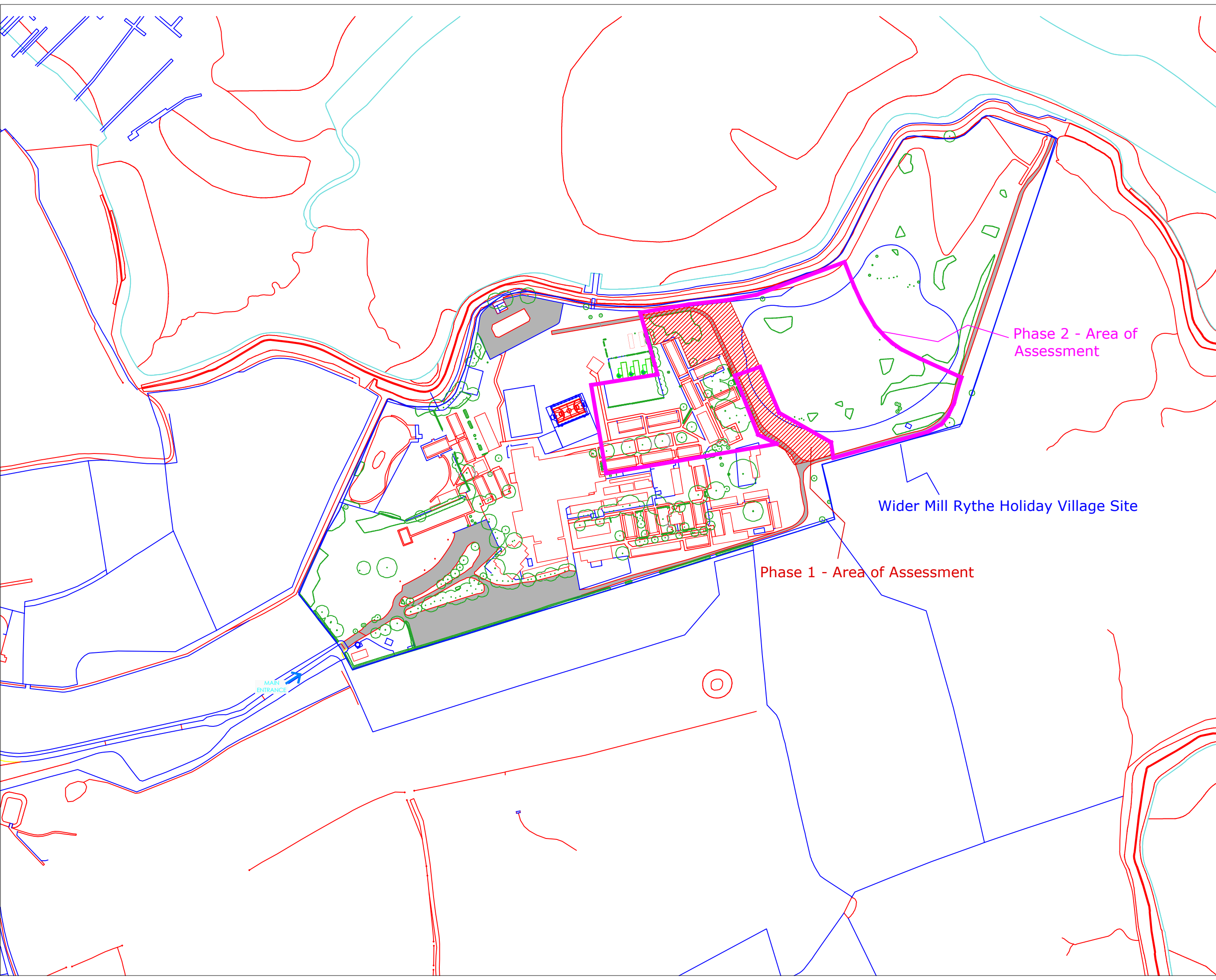
It is recommended that this report is submitted to the Local Authority for approval. The conclusions drawn and recommendations given should be considered as provisional until such time as this report has been approved by the Local Authority and any planning conditions pertaining to the Phase 2 part of the development have been discharged.

Ashdown Site Investigation Ltd.

FIGURES

Figure 1 Site Location Plan

Figure 2 Site Plan



Phase 2 - Area of Assessment

Wider Mill Rythe Holiday Village Site

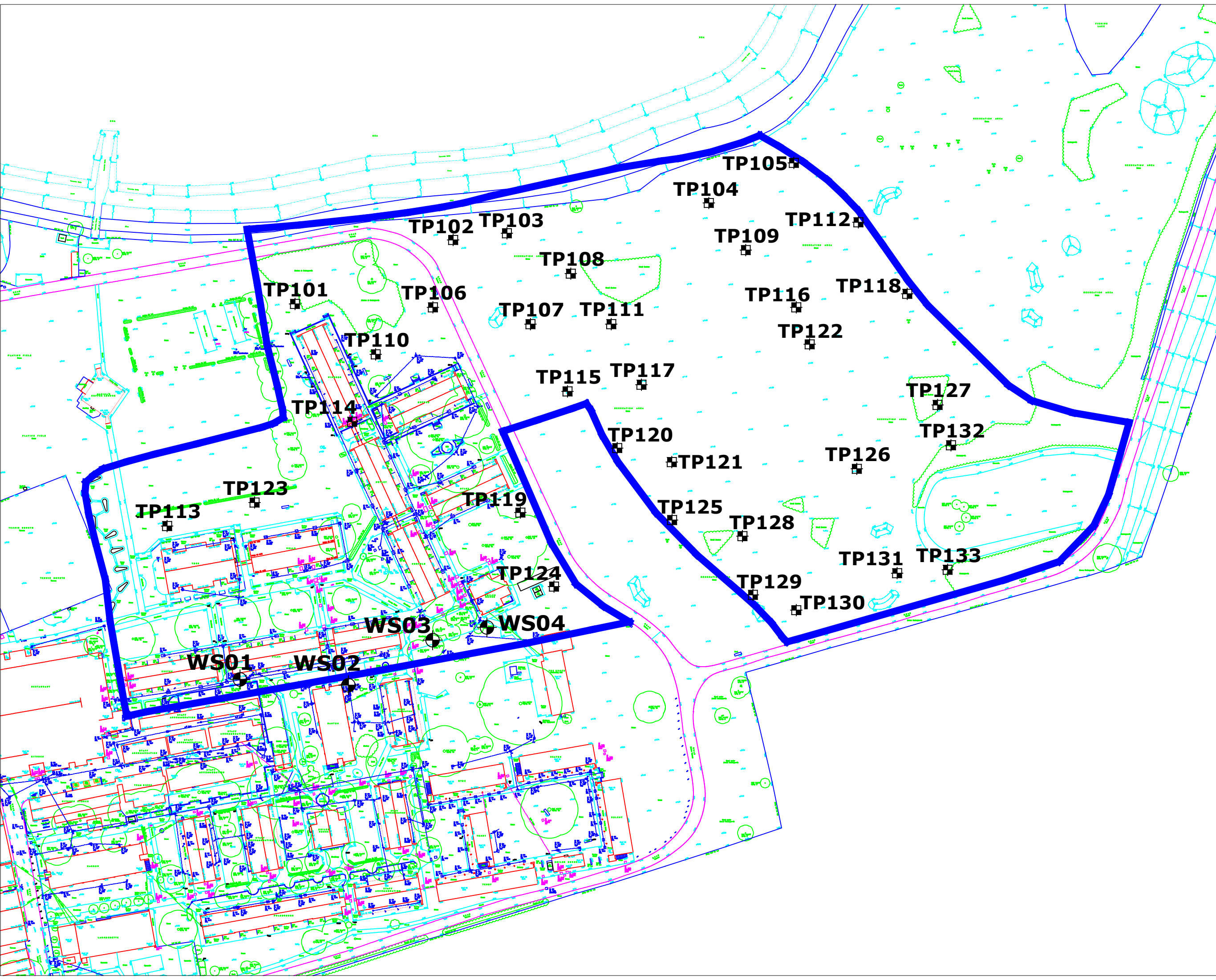
Phase 1 - Area of Assessment

MAIN
ENTRANCE

**ASHDOWN SITE
INVESTIGATION**
L · I · M · I · T · E · D

Unit 3
The Old Grain Store
Ditchling Common Business Park
Ditchling
West Sussex
BN6 8SG
01273 483119
contact@ashdownsi.co.uk

Site:
Phase 2 Mill Rythe Holiday Village Hayling Island Hampshire
Project Ref:
P15440
Figure No.
1
Drawing Title
Site Location Plan
Scale
NTS



ASHDOWN SITE INVESTIGATION

L · I · M · I · T · E · D

Unit 3
The Old Grain Store
Ditchling Common Business Park
Ditchling
East Sussex
BN6 8SG
01273 483119
contact@ashdownsi.co.uk

Site:

Phase 2
Mill Rythe Holiday Village
Hayling Island
Hampshire

Project Ref:

P15440

Figure No.

2

Drawing Title

Site Plan

Scale

1:1000

APPENDIX A

Local Authority Correspondence

HAVANT BOROUGH COUNCIL

Town & Country Planning Act 1990

Consultation on Planning Application

MEMORANDUM

From:	Environmental Health	To:	Development Control
Our Ref:	CONS/18/00313	Your Ref:	APP/16/01237
EH Case Officer Extn:	44 6677	Date:	13 March 2018
DC Case Officer:	Ms Ballam		
DC Case Officer Extn:			
Application Number:	APP/16/01237		
Site Address:	Mill Rythe Holiday Village 16 Havant Road, Hayling Island, PO11 0PB		
Proposed Development:	Demolition of 6,111 square metres of redundant chalets and facilities buildings, use of land for the siting of 203 holiday caravans including 5 caravans for use as staff accommodation, refurbishment of retained single and two storey holiday chalets to form 87 units of holiday accommodation, retain managers bungalow, sales area for 5 caravans, refurbishment of remainder of central facilities building, CCTV cameras, provision of new pedestrian concourse with terraces, splash and dry play areas, multi-games court, adventure golf course and outdoor theatre and new landscaping. Retaining existing pitch and putt golf course to the east of the site. (Approved 5.5.17). Request to discharge condition No. 15 (17.8.17). Request to Discharge Condition No.s 5, 6, 7, 9, 10, 11, 12, 13, 14 and 15 (19.10.2017). A request has been made to discharge the following condition(s) on the above application: Condition 7: (Details of external lighting) Condition 12: (Contamination Assessment) Condition 13: (Verification of Works to Reduce Contamination Risk)		

Observations / Comments:

I have reviewed the supporting information to this application insofar as it relates to the contamination conditions (12 & 13). One of my colleagues will also be reviewing this application and comment under separate cover with respect to condition 7. It is not entirely clear whether this consultation represents a fresh application to discharge conditions, or is a re-consultation on the 19/10/2017 application to which Environmental Health made a substantive response on 20/11/2017. I am working on the assumption that this consultation relates to the same application, seeking any additional comment arising from a review of the revised Ashdown Site Investigation Ltd. Report No. R17-12377/ds.

It is acknowledged that the revised Preliminary Ground Contamination Risk Assessment Report includes substantive changes, including a detailed proposed scope of investigation, which I will address below. This notwithstanding, my prior advice with respect to the discharge of conditions remains largely unchanged - i.e. it is inappropriate to discharge c.13 at this time, and it is only appropriate to discharge c.12 a) in the absence of the results from the proposed intrusive

investigation. This is not a reflection on the quality of the report submitted, rather it is simply a function of the condition requirements.

I note that despite the comprehensive scheme of intrusive works proposed within the report, further intrusive works are proposed to follow demolition. This corresponds with a (relative) paucity of proposed sample locations central to the site, where structures are to be demolished, and where additional investigation is likely to be envisaged. I note that c.12 has a "prior to commencement" clause that does not specifically exclude demolition, but that an "unless otherwise agreed by the LPA" clause is included. On the basis of the proposed scope of intrusive works, and subject to comments below relating to specific features of the sampling strategy; I would be comfortable for the applicant to be permitted to proceed with demolition to ground level, and removal of surface hardstandings in order to facilitate the undertaking of a comprehensive investigation to proceed in a single phase (should this be preferred by the applicant).

I acknowledge that this approach may not be in the applicant's interests, and there is an argument to be made for undertaking further investigation as an additional phase of works following consideration of the results from phase 2, obtained prior to demolition. For these reasons, I would be content with an approach of multiple phases of investigation, should this suit the applicant.

Scope of Intrusive Investigations (10.1)

It is noted that the ASI_R17-12377/ds/rev.1.0 report proposes a comprehensive sampling strategy comprising stratified / distributed & targeted sampling.

(10.1) Trial Pits:

Over 100 hand dug trial pits are proposed, up to a depth of 0.3m below existing ground level (BEGL). The purpose of these is to assess the presence of any made ground soils from historic demolition and development. It is suggested that only made ground soils will be tested, for a standard suite, and only where visual / olfactory evidence dictates, a broader suite will be specified as necessary.

I have no problem with the principle of tailoring the sample suite to site conditions observed 'on the ground', and I can similarly appreciate why the sample depth has been limited to 0.3m BEGL, as a product of both the exposure profile of site end-users and the sheer scale of the area which the investigation aims to cover.

However, I would highlight the risk that (in the event that soil conditions across the majority of the site have the appearance of topsoil, and do not obviously comprise made ground), the investigation may result in a substantial number of untested trial pits, thereby being heavily reliant upon visual / olfactory evidence. Hypothetically, where made ground (containing harmful contaminants) is present but covered by marginally more than 300mm topsoil, it will neither be visually inspected, nor chemically tested / subject to asbestos screening. Natural soil mixing by the action of roots, invertebrates, and other mechanical disturbance could nevertheless bring contaminants from the made ground to the topsoil layer, without affecting it's appearance. In this way, there would be potential exposure to contaminants, without necessarily direct exposure to made ground.

I have a concern (therefore) that the proposal to sample only made ground from the hand-dug trial pits will fail to adequately characterise the site, and I would strongly recommend that the (otherwise relatively comprehensive) distribution of trial pits include an element of 'general' (random) chemical testing of topsoil, irrespective of the presence of made ground. This will be particularly informative with respect to the distribution and concentration of Pb, as well as Asbestos fibres (neither of which will be exclusively coincident with made ground, and will

be present in general soils). If screening values and risk assessment principles are sensibly applied, such a strategy should not represent a risk of steering the assessment toward inappropriate conclusions.

As regards the distribution of what is a substantial number of proposed trial holes, I note the balance of locations is around 72 for the chalet / caravan / central complex area, and 35 located on the open land where no specific development is proposed.

The level of usage of open land in the eastern portion of the site is not entirely clear, in that I am not aware whether visitors might be expected to spend a significant proportion of time in this area of the site (or not). Asbestos & Pb risks associated with general topsoil might be expected to be greatest within the previously developed part of the site (around former/existing chalets), and this might also be expected to be where the exposure of visitors to soils might be greatest. It could be appropriate to adjust sampling density by reducing sampling in areas of the site where exposure might be expected to be lower, and increasing it in areas where contaminants might be expected to be more prevalent. Ultimately, this depends upon the use of the eastern portion of the site by visitors - it may be entirely appropriate to maintain the level of sampling effort described.

As is noted in the introductory section above, there is an area central to the site where demolition and replacement of existing structures is proposed, where no trial holes have been placed within the sampling strategy. For the reasons given in the paragraph above, I do regard this as an area where sampling is necessary. I appreciate the reasons why this area might have been omitted from the scope presented, and am comfortable with a flexible approach to the obtaining of empirical data from this area. I would not support this area remaining uninvestigated however.

(10.1) Targeted Sampling (Bonfires / Stockpiles):

It is difficult to determine the scale of construction & demolition waste stockpiles from the site walkover photographs, or indeed from the site plan whether the linear feature adjacent to the access track on the Eastern portion of the site comprises a contiguous deposit. It strikes me that the stockpiles appear in the photographs to be relatively consistent in nature, and that the sample allocation is (therefore) generous. As a guide, I would accept one sample per 50cu.m (approx) as being adequate for characterisation of material - if an individual stockpile is estimated as <75cu.m for example, one representative sample might be sufficient. It might similarly be appropriate for this specific purpose to analyse a composite sample.

I would also caution the taking of samples specifically from every area where there is evidence of burning - there is a risk that against the stratified sampling, this level of targeting might over-represent the risk from elevated PAH. In terms of exposure risks to site users, we are interested in the impact of burning (which may be campfires, or waste disposal, or both) in terms of its impact on the land over a reasonable averaging area, and not necessarily with the level of contamination within the ashy deposit left at the specific site of a small bonfire.

In general, I would not object to a scaling back of sampling of stockpiles, provided that characterisation of the material remains adequate. I would similarly support a broadening of the 'bonfire area' sampling to 'topsoils at and in the vicinity of...', as being representative of the impact of this activity. As above, tailoring sampling effort to conditions 'on the ground' is acceptable, and it is expected that the ASI personnel undertaking sampling will exercise their professional judgement in this respect.

(10.1) Boreholes:

A total of 25 boreholes are proposed, targeted to the vicinity of identified sources of bulk storage of mobile contaminants. The allocation and distribution is considered to be comprehensive, arguably generous, and certainly likely to identify any significant sources of contamination that exist within soils associated with the identified sources.

No mention is made of sampling groundwater however, and in terms of characterising risks to the environment, I would recommend that some groundwater samples are scheduled.

Given;

- i) the location & elevation of the site,
- ii) the bulk storage & piped transfer of liquid fuels,
- iii) the comparatively high human health screening criteria for hydrocarbons & PAH under the selected scenario,
- iv) the sensitivity & protection status of the local marine environment

...it is anticipated that the water table will be encountered, and that controlled waters / ecological receptors will prove to be the relevant risk driver for contamination associated with the kerosene and petroleum sources.

This might also apply to any TCE/PCE/VC contamination the might be identified in association with the laundry.

For these reasons, I would recommend that groundwater is not only inspected for visual and olfactory evidence of contamination, but that some samples are also scheduled for chemical analysis. In addition, it might well be appropriate to complete at least one borehole in the vicinity of each potential source as a well, to enable repeat sampling if results indicate that this might be necessary.

Given the generous allocation of trial holes, it may be appropriate to scale back the allocation if this facilitates the collection of the best possible quality data from the holes advanced.

(10.1) Environmental Sampling:

In general, I support the collection of samples directly from the site of environmental receptors, though I regard direct samples as a useful tool for developing an accurate conceptual site model, and not as a substitute for consideration of fate & transport of identified contaminants.

If I were to make any further comment / recommendation in this respect, it would be that several EQS (especially for metals) apply to concentrations within sediments within watercourses. Given the status of the fishing lake as being of 'principle importance', it might be appropriate to direct this type of sampling effort here at first round, and adjust sampling effort (media &/or locations) according to the initial results

Assessment Criteria (10.2)

It is acknowledged that the test site specific target levels (SSTL) returned values which ASI considered to be insufficiently conservative when considered against standard exposure scenarios (S4UL POSres_i).

The reasons given for selection of the generic values are acknowledged but I note that the test SSTL returned a lower screening value for B(a)P, indicating that adoption of S4UL POSres_i values for screening may understate the risks to end users. Screening values are just that, and I make no objection to the adoption of POSres_i values as an initial indicator.

As guidance to the applicant however, and as indicated above, I would anticipate that the risk driver for fuel contamination is likely to be ecological, to which the proposed GAC do not apply. I would also caution that any substantially elevated results (even below the proposed screening) might be considered actionable if they are within an area of the site where the POSresi exposure scenario criteria could be argued not to apply.

In this way, whilst reference to POSresi values is agreed, these values are not accepted as an 'absolute' threshold between 'acceptable' and 'unacceptable' risks. In the event that significant contamination impact is identified, I would expect the subsequent risk assessment to consider averaging areas and exposure scenarios specifically, and not to rely upon the generic criteria..

Asbestos Survey (Appendix J)

I note that the Asbestos survey confirms that the material was extensively used in chalets, but that no crocidolite is noted in association with heating equipment and plant houses. Proposals are to mark / manage where there is no need to disturb, and to remove the materials as part of soft strip where demolition or refurbishment requirements demand.

Asbestos within buildings is not regarded as a contaminant - it is a potential contaminant until it is released to soils. Intrusive works are proposed to follow demolition - there is potential value in this to confirm efficacy of asbestos controls during removal, but the process is so regulated as for it to be reasonable to expect that asbestos removal works as being unlikely to contribute further to the asbestos fibre / fragment loading in soils.

As indicated above, I would be comfortable with the applicant determining the appropriate timing of investigate within the central portion of the site, to suit the development schedule.

Conclusions

In general, the site investigation has comprehensive scope, more than adequate to address identified issues. Some trimming / tailoring possible, and some additional elements are highly recommended.

I am comfortable to agree commencement insofar as demolition of above ground structures and hardsurfacing in order to facilitate the investigation.

In so far as the elements of the relevant conditions that can be formally discharged, these are limited to 12 a) only. I object to the discharge of 12 b)-12 d) & 13, on the basis that the applicant has not yet made a relevant submission (it is not the appropriate time to discharge)

Mr. Jonathan Driver
Environmental Control Officer

APPENDIX B

Exploratory Hole Notes
Exploratory Hole Records

NOTES FOR THE INTERPRETATION OF EXPLORATORY HOLE RECORDS

1 Symbols and abbreviations

Samples

U	'Undisturbed' Sample: - 100mm diameter by 450mm long. The number of blows to drive in the sampling tube is shown after the test index letter in the SPT column.
U _o	Sample not obtained
U*	Full penetration of sample not obtained
Pi	Piston Sample: 'Undisturbed' sample 100mm diameter by 600mm long.
D	Disturbed Sample
R	Root Sample
B	Bulk Disturbed Sample
W	Water Sample
J	Jar Sample (sample taken in amber glass jar fitted with gas tight lid)
T	Tub Sample
Vi	Vial Sample

In situ Testing

S	Standard penetration test (SPT): Using the split spoon sampler.
C	Standard Penetration Test (SPT): using a solid cone instead of the sampler - conducted usually in coarse grained soils or weak rocks.
V	Shear Vane Test: Undrained shear strength (cohesion) (kN/m ²) shown within the Vane/Pen Test and N Value column.
H	Hand penetrometer Test: Undrained shear strength (cohesion) (kN/m ²) shown within the Vane/Pen Test and N Value column.
P	Perth Penetrometer Test: Number of blows for 300mm penetration shown under Vane/Pen Test and N Value column.

Excavation Method

CP	Cable Percussion Borehole
WLS	Dynamic Sampler Borehole using windowless sampler tubes
WS	Dynamic Sampler Borehole using window sampler tubes
TP	Trial Pit excavated using mechanic excavator
HDP	Trial Pit excavated using hand tools

2 Soil Description

Description and classification of soils has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of soil, Part 1 Identification and description (BS EN ISO 14688-1) and Part 2 Principles of classification (BS EN 14688-2) as well as the BS5930 code of Practice for Ground Investigations.

3 Rock Description

Description and classification of rocks has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of rock, Part 1 Identification and classification (BS EN ISO 14689-1) as well as the BS5930 code of Practice for Ground Investigations. TCR – Total Core Recovery, SCR – Solid Core Recovery, RQD – Rock Quality Designation, NI – Non Intact, If – indicative fracture spacing (min/ave/max), FI – Fracture Index.

4 Chalk Description

Chalk description is based on BS EN ISO 14688, BS EN ISO 14689 and BS5930. The classification of chalk generally follows the guidance offered by the Construction Industry Research and Information Association (CIRIA) C574, 'Engineering in Chalk'. This is based on assessment of chalk density, discontinuity and aperture spacing, and the proportion of intact chalk to silt of chalk.

Site Name: Phase 2, Mill Rythe Holiday Park, Hayling Island, Hampshire

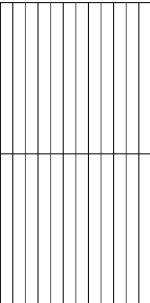
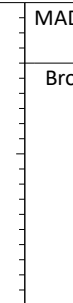
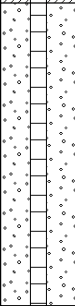
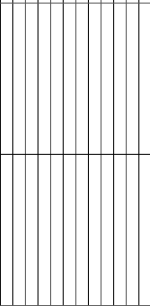
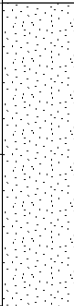
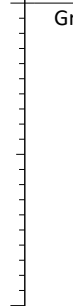
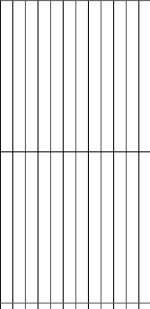
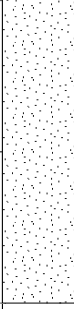
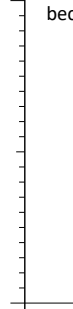
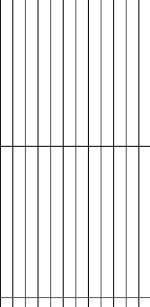
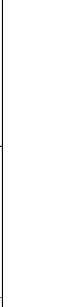
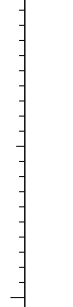
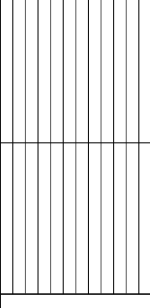
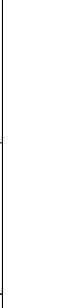
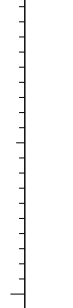
Job Number: P15440

Start Date: 29/11/2021

End Date: 29/11/2021

Borehole Number: **WS01**

Sheet 1 of 1

Samples and In Situ Testing			Dynamic Probe					Legend		Stratum Description			
Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	0	5	10	15	20	25	30	Depth	
	J T	0.10										0.00	MADE GROUND: Sandy subangular to subrounded fine to coarse gravel of brick, concrete, wood and plastic.
	J T	0.50											
	J T	1.10										1.00	Grey slightly gravelly fine to medium SAND. Gravel is subangular to subrounded fine to coarse flint. (Bognor Sand Member)
	J T	1.70											
	J T	2.10											becoming light brown mottled orange brown from 2.00m depth.
	J T	2.70											
												3.00	End of borehole at 3.00m
													

Remarks
Groundwater: Groundwater at 1.47m depth on completion.

Stability: Borehole cased to 2.60m depth. Borehole collapsed to 2.00m on completion.

Notes: Standpipe installed to 2.00m depth; 2.00m to 1.00m slotted pipe with gravel surround; 1.00m to ground level plain pipe with bentonite seal; completed with gas tap and security cover concreted flush with the ground surface.

Excavation Method: WLS

Borehole Diameter: Various

Made By: BA

ASHDOWN SITE INVESTIGATION L · I · M · I · T · E · D E-mail: contact@ashdownsi.co.uk Web: www.ashdownsi.co.uk Tel: 01273 483119		Site Name: Phase 2, Mill Rythe Holiday Park, Hayling Island, Hampshire													
		Job Number: P15440													
		Start Date: 29/11/2021					Borehole Number: WS02					Sheet 1 of 1			
		End Date: 29/11/2021													
Samples and In Situ Testing Dynamic Probe Legend Depth Stratum Description															
Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	0	5	10	15	20	25	30	0.00	Topsoil.		
	J T	0.10										0.20	MADE GROUND: Dark brown slightly sandy silty clay. Gravel is subangular to subrounded fine to coarse brick and flint.		
	J T	0.40										0.60	Brown mottled orange brown and grey slightly gravelly slightly sandy clay. Gravel is subangular to subrounded fine to coarse flint. (Raised Marine Deposits)		
	J T	0.80										1.10	Brown mottled grey slightly gravelly fine to medium SAND. Gravel is subangular to subrounded fine to coarse flint. (Bognor Sand Member)		
	J T	1.30													
	J T	1.80													
	J T	2.40											becoming mottled orange brown below 2.50m depth.		
	J T	2.80										3.00	End of borehole at 3.00m		
Remarks Groundwater: Groundwater at 1.58m depth on completion. Stability: Borehole collapsed to 2.00m depth on completion. Notes: Standpipe installed to 2.00m depth; 2.00m to 1.00m slotted pipe with gravel surround; 1.00m to ground level plain pipe with bentonite seal; completed with gas tap and security cover concreted flush with the ground surface.														Excavation Method: WLS	
														Borehole Diameter: Various	
														Made By: BA	

Site Name: Phase 2, Mill Rytte Holiday Park, Hayling Island, Hampshire

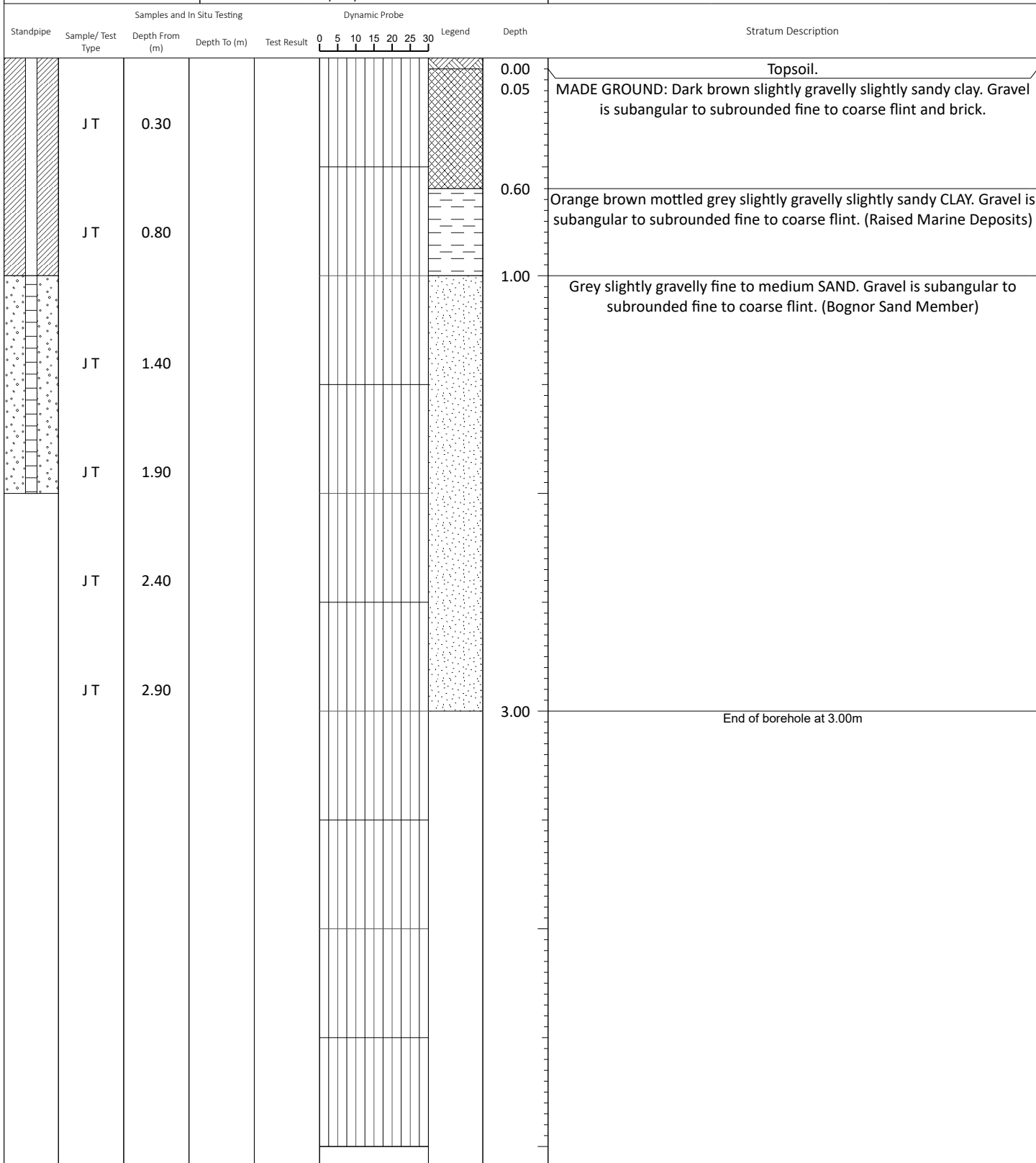
Job Number: P15440

Start Date: 29/11/2021

End Date: 29/11/2021

Borehole Number: **WS03**

Sheet 1 of 1



Remarks

Groundwater: Groundwater at 0.78m depth on completion.

Stability: Borehole collapsed to 2.00m depth.

Notes: Standpipe installed to 2.00m depth; 2.00m to 1.00m slotted pipe with gravel surround; 1.00m to ground level plain pipe with bentonite seal; completed with gas tap and security cover concreted flush with the ground surface.

Excavation Method: WLS

Borehole Diameter: Various

Made By: BA

ASHDOWN SITE INVESTIGATION L · I · M · I · T · E · D E-mail: contact@ashdownsi.co.uk Web: www.ashdownsi.co.uk Tel: 01273 483119	Site Name: Phase 2, Mill Rythe Holiday Park, Hayling Island, Hampshire													
	Job Number: P15440													
	Start Date: 29/11/2021					Borehole Number: WS04								
	End Date: 29/11/2021													
Sheet 1 of 1														
Samples and In Situ Testing Dynamic Probe Legend Depth Stratum Description														
Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	0 5 10 15 20 25 30					Depth	Stratum Description			
	J T	0.10								0.00	Topsoil.			
	J T	0.40								0.20	Grey mottled brown slightly sandy CLAY. (Raised Marine Deposits)			
	J T	0.90								1.00	Grey mottled brown slightly gravelly fine to medium SAND. Gravel is subangular to rounded fine to coarse flint. (Bognor Sand Member)			
	J T	1.50												
	J T	1.80												
J T	2.50									3.00	End of borehole at 3.00m			
Remarks														
Groundwater: Groundwater at 1.00m depth on completion.											Excavation Method: WLS			
Stability: Borehole cased to 3.00m depth.											Borehole Diameter: Various			
Notes: Standpipe installed to 2.00m depth; 2.00m to 1.00m slotted pipe with gravel surround; 1.00m to ground level plain pipe with bentonite seal; completed with gas tap and security cover concreted flush with the ground surface.											Made By: BA			

Made By: BA

Site Name: Phase 2, Mill Rythe Holiday Park, Hayling Island, Hampshire

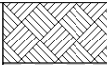
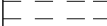
Job Number: P15440

Start Date: 02/12/2021

End Date: 02/12/2021

Trial Pit Number: TP109

Sheet 1 of 1

Samples and In Situ Testing					Stratum Description	
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Legend	Depth/ Reduced Level	
J T	0.05				0.00	Topsoil.
J T	0.25				0.20	Orange brown mottled grey CLAY. (Raised Marine Deposits)
					0.30	End of trial pit at 0.30m

Remarks	
---------	--

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: BA

End Date: 01/12/2021

Sheet 1 of 1

Samples and In Situ Testing				Stratum Description	
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Legend	Depth/ Reduced Level
J T	0.20				0.00
					0.30
					MADE GROUND: Brown mottled grey slightly gravelly slightly sandy clay. Gravel is fine to coarse flint, brick and charcoal-like material.
					End of trial pit at 0.30m

Remarks	
---------	--

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: BA

End Date: 02/12/2021

Sheet 1 of 1

Remarks Groundwater: Trial pit dry on completion. Stability: Trial pit stable on completion. Notes: n/a	Excavation Method: HDP
	Pit Length: n/a
	Pit Width: n/a
	Made By: BA

End Date: 01/12/2021

Sheet 1 of 1

Remarks Groundwater: Trial pit dry on completion. Stability: Trial pit stable on completion. Notes: n/a	Excavation Method: HDP
	Pit Length: n/a
	Pit Width: n/a
	Made By: BA

Site Name: Phase 2, Mill Rythe Holiday Park, Hayling Island, Hampshire

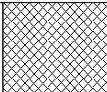
Job Number: P15440

Start Date: 01/12/2021

End Date: 01/12/2021

Trial Pit Number: TP114

Sheet 1 of 1

Samples and In Situ Testing				Stratum Description	
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Legend	Depth/ Reduced Level
J T	0.25				0.00
					0.30
					MADE GROUND: Brown slightly gravelly slightly sandy clay. Gravel is subangular to subrounded fine to coarse flint and brick.
					End of trial pit at 0.30m

Remarks	
---------	--

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: BA

End Date: 02/12/2021

Sheet 1 of 1

Remarks Groundwater: Trial pit dry on completion. Stability: Trial pit stable on completion. Notes: n/a	Excavation Method: HDP
	Pit Length: n/a
	Pit Width: n/a
	Made By: BA

Made By: BA

Site Name: Phase 2, Mill Rythe Holiday Park, Hayling Island, Hampshire

Job Number: P15440

Start Date: 01/12/2021

End Date: 01/12/2021

Trial Pit Number: **TP124**

Sheet 1 of 1

Samples and In Situ Testing				Stratum Description	
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Legend	Depth/ Reduced Level
J T	0.05				0.00
J T	0.20				0.08
					0.30
					Topsoil.
					MADE GROUND: Brown slightly clayey sandy subangular to subrounded fine to medium gravel of flint.
					End of trial pit at 0.30m

Remarks	
---------	--

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: BA

Site Name: Phase 2, Mill Rytte Holiday Park, Hayling Island, Hampshire

Job Number: P15440

Start Date: 01/12/2021

End Date: 01/12/2021

Trial Pit Number: TP125

Sheet 1 of 1

Samples and In Situ Testing					Stratum Description	
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Legend	Depth/ Reduced Level	
J T	0.05				0.00	Topsoil.
J T	0.25				0.10	Brown and grey mottled CLAY. (Raised Marine Deposits)
					0.30	End of trial pit at 0.30m

Remarks	
---------	--

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: BA

End Date: 02/12/2021

Sheet 1 of 1

Remarks Groundwater: Trial pit dry on completion. Stability: Trial pit stable on completion. Notes: n/a	Excavation Method: HDP
	Pit Length: n/a
	Pit Width: n/a
	Made By: BA

Made By: BA

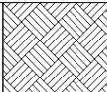
Site Name: Phase 2, Mill Rythe Holiday Park, Hayling Island, Hampshire

Job Number: P15440**Start Date:** 02/12/2021

End Date: 02/12/2021

Trial Pit Number: TP133

Sheet 1 of 1

Samples and In Situ Testing					Stratum Description	
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Legend	Depth/ Reduced Level	
J T	0.10				0.00	Topsoil.
					0.30	End of trial pit at 0.30m

Remarks	

Groundwater: Trial pit dry on completion.

Excavation Method: HDP

Stability: Trial pit stable on completion.

Pit Length: n/a

Notes: n/a

Pit Width: n/a

Made By: BA

APPENDIX C

Contamination Laboratory Test Results



Unit A2
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Ponswood Industrial Estate
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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 21-37426

Issue: 1

Date of Issue: 06/12/2021

Contact: Lab Results

Customer Details: Ashdown Site Investigation Ltd
Unit 3 The Grain Store
Ditchling Common Business Park
Ditchling Common
West Sussex BN6 8SG

Quotation No: Q15-00267

Order No: 9990

Customer Reference: P15440_00634

Date Received: 01/12/2021

Date Approved: 06/12/2021

Details: Mill Rythe Holiday Park, Hayling Island

Approved by:

Mike Varley, General Manager

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Sample Summary

Report No.: 21-37426, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
259610	WS01 0.50	29/11/2021	01/12/2021	Silty clayey loam	
259611	WS01 1.70	29/11/2021	01/12/2021	Sand	
259612	WS02 0.80	29/11/2021	01/12/2021	Clayey loam	
259613	WS03 0.80	29/11/2021	01/12/2021	Clayey loam	
259614	WS03 1.90	29/11/2021	01/12/2021	Sand	
259615	WS04 0.40	29/11/2021	01/12/2021	Silty loam	



Results Summary

Report No.: 21-37426, issue number 1

ELAB Reference	259610	259611	259612	259613	259614	259615
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS01	WS01	WS02	WS03	WS03	WS04
Sample Depth (m)	0.50	1.70	0.80	0.80	1.90	0.40
Sampling Date	29/11/2021	29/11/2021	29/11/2021	29/11/2021	29/11/2021	29/11/2021

Determinand	Codes	Units	LOD						
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH CWG									
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	5.6	< 1.0	4.5	10.3	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	1.7	< 1.0	1.4	3.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	8.1	< 1.0	6.3	14.1	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	2.5	< 1.0
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	1.8	< 1.0	1.5	3.9	< 1.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	< 1.0	9.9	< 1.0	7.8	18.0	< 1.0

Results Summary

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Report No.: 21-37426, issue number 1

ELAB Reference	259611	259612	259614	259615
Customer Reference				
Sample ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sample Location	WS01	WS02	WS03	WS04
Sample Depth (m)	1.70	0.80	1.90	0.40
Sampling Date	29/11/2021	29/11/2021	29/11/2021	29/11/2021

Determinand	Codes	Units	LOD				
VOC							
Heptane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Octane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Nonane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
m+p-xylene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
o-xylene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
cis-1,2-dichloroethene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,1-Dichloroethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Chloroform	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Tetrachloromethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,1,1-Trichloroethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Trichloroethylene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Tetrachloroethylene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,1,1,2-Tetrachloroethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,1,2,2-Tetrachloroetha	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Chlorobenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Bromobenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Bromodichloromethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Methylethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,1-Dichloro-1-propene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Trans - 1-2 -dichloroethylene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
2,2-Dichloropropane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Bromochloromethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2-Dichloroethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Dibromomethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2-Dichloropropane	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
cis-1,3-Dichloro-1-propene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
trans-1,3-Dichloro-1-propene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,1,2-Trichloroethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Dibromochloromethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,3-Dichloropropane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2-dibromoethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Styrene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Propylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
2-Chlorotoluene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2,4-Trimethylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
4-Chlorotoluene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
t-butylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,3,5-Trimethylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1-methylpropylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
p-cymene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,3-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Butylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2-Dibromo-3-chloropropane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Hexachlorobutadiene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1-2-3 - Trichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Naphthalene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1-2-4 - Trichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,4-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Bromoform	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0

Tests marked N are not UKAS accredited.

The Environmental Laboratory Ltd. Reg. No. 3882193

Method Summary

Report No.: 21-37426, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Low range Aliphatic hydrocarbons soil	N	As submitted sample	06/12/2021	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	06/12/2021	181	GC-MS
VOC in solids	M	As submitted sample	06/12/2021	181	GC-MS
BTEX in solids	M	As submitted sample	06/12/2021	181A	GC-MS
TPH CWG soil by gc-gc	M	As submitted sample	02/12/2021	271	

Tests marked N are not UKAS accredited

Report Information

Report No.: 21-37426, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination. Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed. ELAB are unable to provide an interpretation or opinion on the content of this report. The results relate only to the sample received. PCB congener results may include any coeluting PCBs Uncertainty of measurement for the determinands tested are available upon request Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
 All water samples will be retained for 7 days following the date of the test report
 Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 21-37478

Issue: 1

Date of Issue: 10/12/2021

Contact: Lab Results

Customer Details: Ashdown Site Investigation Ltd
Unit 3 The Grain Store
Ditchling Common Business Park
Ditchling Common
West Sussex BN6 8SG

Quotation No: Q15-00267

Order No: 9996

Customer Reference: P15440_00643

Date Received: 03/12/2021

Date Approved: 10/12/2021

Details: Mill Rythe Holiday Park

Approved by:

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)

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Sample Summary

Report No.: 21-37478, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
259929	TP101 0.25	01/12/2021	03/12/2021	Silty loam	
259930	TP102 0.20	01/12/2021	03/12/2021	Silty clayey loam	
259931	TP103 0.05	01/12/2021	03/12/2021	Silty loam	
259932	TP104 0.25	02/12/2021	03/12/2021	Silty clayey loam	
259933	TP105 0.05	02/12/2021	03/12/2021	Silty clayey loam	
259934	TP106 0.25	01/12/2021	03/12/2021	Silty loam	
259935	TP107 0.25	01/12/2021	03/12/2021	Silty clayey loam	
259936	TP108 0.20	01/12/2021	03/12/2021	Silty clayey loam	
259937	TP109 0.05	02/12/2021	03/12/2021	Silty loam	
259938	TP110 0.20	01/12/2021	03/12/2021	Silty clayey loam	
259939	TP111 0.20	01/12/2021	03/12/2021	Silty clayey loam	
259940	TP112 0.25	02/12/2021	03/12/2021	Silty clayey loam	
259941	TP113 0.10	01/12/2021	03/12/2021	Silty loam	
259942	TP114 0.25	01/12/2021	03/12/2021	Silty loam	
259943	TP115 0.20	01/12/2021	03/12/2021	Silty clayey loam	
259944	TP116 0.20	02/12/2021	03/12/2021	Silty clayey loam	
259945	TP117 0.05	01/12/2021	03/12/2021	Silty loam	
259946	TP119 0.05	01/12/2021	03/12/2021	Silty loam	
259947	TP120 0.05	01/12/2021	03/12/2021	Silty loam	
259948	TP121 0.20	01/12/2021	03/12/2021	Silty clayey loam	
259949	TP123 0.25	01/12/2021	03/12/2021	Silty loam	
259950	TP124 0.05	01/12/2021	03/12/2021	Silty loamy Sand	
259951	TP125 0.05	01/12/2021	03/12/2021	Silty loam	
259952	TP126 0.05	02/12/2021	03/12/2021	Silty loam	
259953	TP127 0.20	02/12/2021	03/12/2021	Silty clayey loam	
259954	TP128 0.20	01/12/2021	03/12/2021	Silty clayey loam	
259955	TP129 0.25	01/12/2021	03/12/2021	Silty clayey loam	
259956	TP130 0.05	02/12/2021	03/12/2021	Silty loam	
259957	TP131 0.20	02/12/2021	03/12/2021	Sandy clay	
259958	TP132 0.05	02/12/2021	03/12/2021	Silty loam	
259959	TP133 0.10	02/12/2021	03/12/2021	Silty loam	

Results Summary

Report No.: 21-37478, issue number 1

ELAB Reference				259929	259930	259931	259932	259933	259934
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP101	TP102	TP103	TP104	TP105	TP106
Sample Depth (m)				0.25	0.20	0.05	0.25	0.05	0.25
Sampling Date				01/12/2021	01/12/2021	01/12/2021	02/12/2021	02/12/2021	01/12/2021
Determinand	Codes	Units	LOD						
Soil sample preparation parameters									
Moisture Content	N	%	0.1	19.4	23.2	25.8	22.5	19.8	17.6
Material removed	N	%	0.1	21.2	< 0.1	< 0.1	< 0.1	< 0.1	15.5
Description of Inert material removed	N		0	Stones	None	None	None	None	Stones
Metals									
Arsenic	M	mg/kg	1	9.6	24.2	8.0	26.9	22.0	7.6
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	18.1	28.0	21.0	23.6	22.3	11.6
Copper	M	mg/kg	5	21.5	9.4	13.1	13.7	15.6	8.6
Lead	M	mg/kg	5	50.1	23.1	33.8	15.7	19.7	27.6
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	9.3	11.7	8.0	11.1	12.0	5.7
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	52.7	37.2	37.3	32.4	45.9	39.7
Inorganics									
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Water Soluble Boron	N	mg/kg	0.5	1.4	29	3.4	5.9	2.8	2.1

Results Summary

Report No.: 21-37478, issue number 1

ELAB Reference				259929	259930	259931	259932	259933	259934
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP101	TP102	TP103	TP104	TP105	TP106
Sample Depth (m)				0.25	0.20	0.05	0.25	0.05	0.25
Sampling Date				01/12/2021	01/12/2021	01/12/2021	02/12/2021	02/12/2021	01/12/2021
Determinand	Codes	Units	LOD						
Miscellaneous									
pH	M	pH units	0.1	7.5	7.4	7.0	7.2	6.8	7.5
Soil Organic Matter	U	%	0.1	4.3	3.2	8.5	2.3	3.4	5.4
Organics									
>C8-C10 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	n/t	< 1.0
>C10-C12 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	n/t	< 1.0
>C12-C16 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	n/t	< 1.0
>C16-C21 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	n/t	< 1.0
>C21-C35 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	n/t	1.3
>C35-C40 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	n/t	1.3
Total (>C8-C40) BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	n/t	2.6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3
Fluoranthene	M	mg/kg	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5
Benzo(a)anthracene	M	mg/kg	0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	0.7
Chrysene	M	mg/kg	0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	0.8
Benzo(b)fluoranthene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	1.3
Benzo(k)fluoranthene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	1.3
Benzo(a)pyrene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	1.3
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	0.5	< 0.1	< 0.1	< 0.1	< 0.1	1.0
Dibenzo(a,h)anthracene	M	mg/kg	0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Benzo[g,h,i]perylene	M	mg/kg	0.1	0.8	< 0.1	< 0.1	< 0.1	< 0.1	1.1
Total PAH(16)	M	mg/kg	0.4	3.3	< 0.4	< 0.4	< 0.4	< 0.4	11.6

Results Summary

Report No.: 21-37478, issue number 1

ELAB Reference				259935	259936	259937	259938	259939	259940
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP107	TP108	TP109	TP110	TP111	TP112
Sample Depth (m)				0.25	0.20	0.05	0.20	0.20	0.25
Sampling Date				01/12/2021	01/12/2021	02/12/2021	01/12/2021	01/12/2021	02/12/2021
Determinand	Codes	Units	LOD						
Soil sample preparation parameters									
Moisture Content	N	%	0.1	21.6	21.3	20.9	16.9	21.5	23.9
Material removed	N	%	0.1	< 0.1	< 0.1	< 0.1	27.6	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None	None	Stones	None	None
Metals									
Arsenic	M	mg/kg	1	13.3	21.5	12.8	9.9	43.4	24.8
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	20.1	27.1	21.9	18.7	27.1	22.4
Copper	M	mg/kg	5	10.1	15.2	17.5	12.7	13.1	17.7
Lead	M	mg/kg	5	16.9	20.2	29.3	74.1	27.3	44.9
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	9.1	12.9	9.2	9.8	13.6	13.5
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	29.4	47.8	44.9	91.0	50.7	120
Inorganics									
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Water Soluble Boron	N	mg/kg	0.5	3.9	4.3	2.1	2.1	3.1	2.1

Results Summary

Report No.: 21-37478, issue number 1

ELAB Reference				259935	259936	259937	259938	259939	259940
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP107	TP108	TP109	TP110	TP111	TP112
Sample Depth (m)				0.25	0.20	0.05	0.20	0.20	0.25
Sampling Date				01/12/2021	01/12/2021	02/12/2021	01/12/2021	01/12/2021	02/12/2021
Determinand	Codes	Units	LOD						
Miscellaneous									
pH	M	pH units	0.1	7.7	7.2	6.5	7.8	7.3	7.5
Soil Organic Matter	U	%	0.1	2.8	2.4	6.7	2.5	1.8	6.3
Organics									
>C8-C10 BCB (EH_1D_Total)	N	mg/kg	1	n/t	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C10-C12 BCB (EH_1D_Total)	N	mg/kg	1	n/t	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C12-C16 BCB (EH_1D_Total)	N	mg/kg	1	n/t	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C16-C21 BCB (EH_1D_Total)	N	mg/kg	1	n/t	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C21-C35 BCB (EH_1D_Total)	N	mg/kg	1	n/t	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C35-C40 BCB (EH_1D_Total)	N	mg/kg	1	n/t	< 1.0	< 1.0	< 1.0	n/t	< 1.0
Total (>C8-C40) BCB (EH_1D_Total)	N	mg/kg	1	n/t	< 1.0	< 1.0	< 1.0	n/t	< 1.0
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Benzo(a)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	< 0.4	1.4	< 0.4	< 0.4

Results Summary

Report No.: 21-37478, issue number 1

ELAB Reference				259941	259942	259943	259944	259945	259946
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP113	TP114	TP115	TP116	TP117	TP119
Sample Depth (m)				0.10	0.25	0.20	0.20	0.05	0.05
Sampling Date				01/12/2021	01/12/2021	01/12/2021	02/12/2021	01/12/2021	01/12/2021
Determinand	Codes	Units	LOD						
Soil sample preparation parameters									
Moisture Content	N	%	0.1	28.2	14.8	21.6	22.9	28.6	28.3
Material removed	N	%	0.1	< 0.1	7.8	< 0.1	< 0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	None	Stones,Brick	None	None	None	None
Metals									
Arsenic	M	mg/kg	1	6.6	9.9	16.3	27.9	13.8	6.7
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	17.5	17.9	23.5	25.7	24.5	17.6
Copper	M	mg/kg	5	15.7	6.5	12.8	14.8	17.2	13.3
Lead	M	mg/kg	5	31.3	20.8	18.3	20.9	32.9	30.7
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	9.0	8.0	9.5	12.3	9.5	9.7
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	2.7	< 1.0	< 1.0
Zinc	M	mg/kg	5	47.1	42.3	35.1	38.2	38.5	63.3
Inorganics									
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Water Soluble Boron	N	mg/kg	0.5	1.5	1.6	3.9	5.6	4.3	4.8

Results Summary

Report No.: 21-37478, issue number 1

ELAB Reference				259941	259942	259943	259944	259945	259946
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP113	TP114	TP115	TP116	TP117	TP119
Sample Depth (m)				0.10	0.25	0.20	0.20	0.05	0.05
Sampling Date				01/12/2021	01/12/2021	01/12/2021	02/12/2021	01/12/2021	01/12/2021
Determinand	Codes	Units	LOD						
Miscellaneous									
pH	M	pH units	0.1	6.9	7.6	6.7	6.7	6.3	6.4
Soil Organic Matter	U	%	0.1	7.1	1.3	2.4	2.8	7.0	7.3
Organics									
>C8-C10 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C10-C12 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C12-C16 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C16-C21 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	1.4	< 1.0	< 1.0
>C21-C35 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	2.1
>C35-C40 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
Total (>C8-C40) BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0	n/t	1.4	< 1.0	2.1
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Fluoranthene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	0.4
Pyrene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	0.3
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Chrysene	M	mg/kg	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Benzo(b)fluoranthene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Benzo(a)pyrene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	1.3	< 0.4	< 0.4	< 0.4	< 0.4	2.0

Results Summary

Report No.: 21-37478, issue number 1

ELAB Reference				259947	259948	259949	259950	259951	259952	259953
Customer Reference										
Sample ID										
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP120	TP121	TP123	TP124	TP125	TP126	TP127
Sample Depth (m)				0.05	0.20	0.25	0.05	0.05	0.05	0.20
Sampling Date				01/12/2021	01/12/2021	01/12/2021	01/12/2021	01/12/2021	02/12/2021	02/12/2021
Determinand	Codes	Units	LOD							
Soil sample preparation parameters										
Moisture Content	N	%	0.1	21.6	13.7	18.6	23.6	20.2	15.7	20.0
Material removed	N	%	0.1	38.2	< 0.1	36.3	34.5	< 0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	Stones	None	Stones	Stones,Root	None	None	None
Metals										
Arsenic	M	mg/kg	1	9.5	15.8	5.6	15.2	4.3	17.1	17.7
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	17.4	22.8	13.5	16.4	12.2	27.9	20.9
Copper	M	mg/kg	5	18.8	16.9	20.4	57.8	16.3	26.0	15.8
Lead	M	mg/kg	5	40.2	22.2	33.6	127	29.2	88.3	17.3
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	9.2	10.7	6.3	13.7	5.7	12.6	11.3
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	62.9	37.4	40.9	116	39.5	71.6	33.8
Inorganics										
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Water Soluble Boron	N	mg/kg	0.5	2.5	3.0	1.0	1.2	2.8	2.5	3.2

Results Summary

Report No.: 21-37478, issue number 1

ELAB Reference				259947	259948	259949	259950	259951	259952	259953
Customer Reference										
Sample ID										
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP120	TP121	TP123	TP124	TP125	TP126	TP127
Sample Depth (m)				0.05	0.20	0.25	0.05	0.05	0.05	0.20
Sampling Date				01/12/2021	01/12/2021	01/12/2021	01/12/2021	01/12/2021	02/12/2021	02/12/2021
Determinand	Codes	Units	LOD							
Miscellaneous										
pH	M	pH units	0.1	7.7	7.2	6.5	7.1	6.5	6.3	6.9
Soil Organic Matter	U	%	0.1	4.5	2.1	4.6	8.1	8.6	9.6	2.4
Organics										
>C8-C10 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	n/t	< 1.0	n/t
>C10-C12 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	n/t	< 1.0	n/t
>C12-C16 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	n/t	< 1.0	n/t
>C16-C21 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	n/t	< 1.0	n/t
>C21-C35 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	n/t	< 1.0	n/t
>C35-C40 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	n/t	< 1.0	n/t
Total (>C8-C40) BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	n/t	< 1.0	n/t
Polyaromatic hydrocarbons										
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.4	< 0.1	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	< 0.4	2.4	< 0.4	< 0.4	< 0.4

Results Summary

Report No.: 21-37478, issue number 1

ELAB Reference				259954	259955	259956	259957	259958	259959
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP128	TP129	TP130	TP131	TP132	TP133
Sample Depth (m)				0.20	0.25	0.05	0.20	0.05	0.10
Sampling Date				01/12/2021	01/12/2021	02/12/2021	02/12/2021	02/12/2021	02/12/2021
Determinand	Codes	Units	LOD						
Soil sample preparation parameters									
Moisture Content	N	%	0.1	14.8	20.9	43.2	13.3	24.9	13.8
Material removed	N	%	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.7
Description of Inert material removed	N		0	None	None	None	None	None	Stone
Metals									
Arsenic	M	mg/kg	1	9.0	16.7	14.1	6.8	6.1	6.2
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	16.2	23.3	21.3	12.5	18.5	15.6
Copper	M	mg/kg	5	13.8	34.3	9.5	17.5	53.9	20.7
Lead	M	mg/kg	5	11.9	45.7	44.3	10.3	21.5	34.2
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	7.6	13.2	9.6	5.7	8.3	7.4
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	28.6	64.0	49.3	20.4	76.2	52.1
Inorganics									
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Water Soluble Boron	N	mg/kg	0.5	4.2	9.6	2.7	8.7	3.5	4.2

Results Summary

Report No.: 21-37478, issue number 1

ELAB Reference				259954	259955	259956	259957	259958	259959
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP128	TP129	TP130	TP131	TP132	TP133
Sample Depth (m)				0.20	0.25	0.05	0.20	0.05	0.10
Sampling Date				01/12/2021	01/12/2021	02/12/2021	02/12/2021	02/12/2021	02/12/2021
Determinand	Codes	Units	LOD						
Miscellaneous									
pH	M	pH units	0.1	6.8	7.5	7.7	7.4	6.8	7.8
Soil Organic Matter	U	%	0.1	1.6	3.6	8.4	1.3	9.3	5.2
Organics									
>C8-C10 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	n/t	< 1.0	< 1.0	n/t
>C10-C12 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	n/t	< 1.0	< 1.0	n/t
>C12-C16 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	n/t	< 1.0	< 1.0	n/t
>C16-C21 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	n/t	< 1.0	< 1.0	n/t
>C21-C35 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	n/t	< 1.0	< 1.0	n/t
>C35-C40 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	n/t	< 1.0	< 1.0	n/t
Total (>C8-C40) BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	n/t	n/t	< 1.0	< 1.0	n/t
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1.0

Results Summary

Report No.: 21-37478, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
259929	0.25	TP101	Brown soil, sones	No asbestos detected	n/t	n/t	n/t	n/t
259930	0.20	TP102	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
259931	0.05	TP103	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
259932	0.25	TP104	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
259933	0.05	TP105	Brown Soil (Clay), Stones	No asbestos detected	n/t	n/t	n/t	n/t
259934	0.25	TP106	Brown Soil, Stones, Clinker, Plant Material	No asbestos detected	n/t	n/t	n/t	n/t
259935	0.25	TP107	Brown Soil (Clay)	No asbestos detected	n/t	n/t	n/t	n/t
259936	0.20	TP108	Brown Soil (Clay)	No asbestos detected	n/t	n/t	n/t	n/t
259937	0.05	TP109	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259938	0.20	TP110	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259939	0.20	TP111	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259940	0.25	TP112	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259941	0.10	TP113	Brown sandy Soil	No asbestos detected	n/t	n/t	n/t	n/t
259942	0.25	TP114	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259943	0.20	TP115	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t

Results Summary

Report No.: 21-37478, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
259944	0.20	TP116	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259945	0.05	TP117	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259946	0.05	TP119	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259947	0.05	TP120	Brown Sandy Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
259948	0.20	TP121	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259949	0.25	TP123	Brown Soil,Stones,Organic	No asbestos detected	n/t	n/t	n/t	n/t
259950	0.05	TP124	Brown Sandy Soil,Stones,Root	No asbestos detected	n/t	n/t	n/t	n/t
259951	0.05	TP125	Brown sandy Soil	No asbestos detected	n/t	n/t	n/t	n/t
259952	0.05	TP126	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259953	0.20	TP127	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259954	0.20	TP128	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259955	0.25	TP129	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
259956	0.05	TP130	Brown soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
259957	0.20	TP131	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
259958	0.05	TP132	Brown soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
259959	0.10	TP133	Brown soil, stones	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 21-37478, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Hexavalent chromium	N	As submitted sample	07/12/2021	110	Colorimetry
pH	M	Air dried sample	09/12/2021	113	Electromeric
Aqua regia extractable metals	M	Air dried sample	07/12/2021	118	ICPMS
PAH (GC-FID)	M	As submitted sample	07/12/2021	133	GC-FID
Water soluble boron	N	Air dried sample	07/12/2021	202	Colorimetry
Basic carbon banding in soil	N	As submitted sample	07/12/2021	218	GC-FID
Asbestos identification	U	Air dried sample	08/12/2021	280	Microscopy
Soil organic matter	U	Air dried sample	09/12/2021	BS1377:P3	Titrimetry

Tests marked N are not UKAS accredited

Report Information

Report No.: 21-37478, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination. Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed. ELAB are unable to provide an interpretation or opinion on the content of this report. The results relate only to the sample received. PCB congener results may include any coeluting PCBs Uncertainty of measurement for the determinands tested are available upon request Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
 All water samples will be retained for 7 days following the date of the test report
 Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 21-37584

Issue: 1

Date of Issue: 16/12/2021

Contact: Lab Results

Customer Details: Ashdown Site Investigation Ltd
Unit 3 The Grain Store
Ditchling Common Business Park
Ditchling Common
West Sussex BN6 8SG

Quotation No: Q15-00267

Order No: 10014

Customer Reference: P15440_00651

Date Received: 09/12/2021

Date Approved: 16/12/2021

Details: Mill Rythe Holiday Park, Hayling Island

Approved by:

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)

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Sample Summary

Report No.: 21-37584, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
260748	TP118 0.10	07/12/2021	09/12/2021	Silty loam	
260749	TP122 0.05	07/12/2021	09/12/2021	Silty loam	



Results Summary

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Report No.: 21-37584, issue number 1

ELAB Reference	260748	260749
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	TP118	TP122
Sample Depth (m)	0.10	0.05
Sampling Date	07/12/2021	07/12/2021

Determinand	Codes	Units	LOD		
Soil sample preparation parameters					
Moisture Content	N	%	0.1	33.2	29.4
Material removed	N	%	0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None
Metals					
Arsenic	M	mg/kg	1	14.6	21.6
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	21.8	23.0
Copper	M	mg/kg	5	15.0	10.9
Lead	M	mg/kg	5	40.9	28.3
Mercury	M	mg/kg	0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	10.8	11.1
Selenium	M	mg/kg	1	< 1.0	< 1.0
Zinc	M	mg/kg	5	59.8	51.0
Inorganics					
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8
Water Soluble Boron	N	mg/kg	0.5	1.4	2.9
Miscellaneous					
pH	M	pH units	0.1	6.8	6.2
Soil Organic Matter	U	%	0.1	12	5.1
Organics					
>C8-C10 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0
>C10-C12 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0
>C12-C16 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0
>C16-C21 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0
>C21-C35 BCB (EH_1D_Total)	N	mg/kg	1	3.0	< 1.0
>C35-C40 BCB (EH_1D_Total)	N	mg/kg	1	< 1.0	< 1.0
Total (>C8-C40) BCB (EH_1D_Total)	N	mg/kg	1	3.0	< 1.0
Polyaromatic hydrocarbons					
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1
Benzo(a)pyrene	M	mg/kg	0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4



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Results Summary

Report No.: 21-37584, issue number 1

Asbestos Results

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Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
260748	0.10	TP118	Brown Soil,Root	No asbestos detected	n/t	n/t	n/t	n/t
260749	0.05	TP122	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 21-37584, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Hexavalent chromium	N	As submitted sample	14/12/2021	110	Colorimetry
pH	M	Air dried sample	16/12/2021	113	Electromeric
Aqua regia extractable metals	M	Air dried sample	14/12/2021	118	ICPMS
PAH (GC-FID)	M	As submitted sample	14/12/2021	133	GC-FID
Water soluble boron	N	Air dried sample	14/12/2021	202	Colorimetry
Basic carbon banding in soil	N	As submitted sample	14/12/2021	218	GC-FID
Asbestos identification	U	Air dried sample	15/12/2021	280	Microscopy
Soil organic matter	U	Air dried sample	16/12/2021	BS1377:P3	Titrimetry

Tests marked N are not UKAS accredited

Report Information

Report No.: 21-37584, issue number 1

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n/t	Not tested
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b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

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EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 21-37586

Issue: 1

Date of Issue: 16/12/2021

Contact: Lab Results

Customer Details: Ashdown Site Investigation Ltd
Unit 3 The Grain Store
Ditchling Common Business Park
Ditchling Common
West Sussex BN6 8SG

Quotation No: Q15-00267

Order No: 10015

Customer Reference: P15440_00652

Date Received: 09/12/2021

Date Approved: 16/12/2021

Details: Mill Rythe Holiday Park

Approved by:

Mike Varley, General Manager

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Sample Summary

Report No.: 21-37586, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
260778	WS01	07/12/2021	09/12/2021		g
260779	WS02	07/12/2021	09/12/2021		g
260780	WS03	07/12/2021	09/12/2021		g
260781	WS04	07/12/2021	09/12/2021		g

Results Summary

Report No.: 21-37586, issue number 1

ELAB Reference	260778	260779	260780	260781
Customer Reference				
Sample ID				
Sample Type	WATER	WATER	WATER	WATER
Sample Location	WS01	WS02	WS03	WS04
Sample Depth (m)				
Sampling Date	07/12/2021	07/12/2021	07/12/2021	07/12/2021

Determinand	Codes	Units	LOD				
Dissolved Metals							
Arsenic	U	ug/l	5	< 5	< 5	< 5	< 5
Boron	N	ug/l	5	232	275	246	106
Cadmium	U	ug/l	1	< 1	< 1	< 1	< 1
Chromium	U	ug/l	5	< 5	< 5	< 5	< 5
Copper	U	ug/l	5	5.1	< 5.0	< 5.0	< 5.0
Mercury	U	ug/l	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	U	ug/l	5	< 5	< 5	< 5	< 5
Lead	U	ug/l	1	< 1	< 1	< 1	< 1
Selenium	U	ug/l	5	< 5	< 5	< 5	< 5
Zinc	U	ug/l	5	< 5	< 5	< 5	< 5
Inorganics							
Hexavalent Chromium	U	ug/l	100	< 100	< 100	< 100	< 100
Miscellaneous							
pH	U	pH units	0.1	g 7.6	g 7.1	g 7.3	g 7.6
Organics							
>C8-C10 BCB (EH_1D_Total)	N	ug/l	5	< 5.0	< 5.0	< 5.0	< 5.0
>C10-C12 BCB (EH_1D_Total)	N	ug/l	5	< 5.0	< 5.0	< 5.0	< 5.0
>C12-C16 BCB (EH_1D_Total)	N	ug/l	5	< 5.0	< 5.0	< 5.0	< 5.0
>C16-C21 BCB (EH_1D_Total)	N	ug/l	5	< 5.0	< 5.0	< 5.0	< 5.0
>C21-C35 BCB (EH_1D_Total)	N	ug/l	5	< 5.0	< 5.0	< 5.0	50.1
>C35-C40 BCB (EH_1D_Total)	N	ug/l	5	< 5.0	< 5.0	< 5.0	17.5
Total (>C8-C40) BCB (EH_1D_Total)	N	ug/l	5	< 5.0	< 5.0	< 5.0	67.6
Polyaromatic hydrocarbons							
Naphthalene GCMS	N	ug/l	0.01	0.05	0.09	0.03	0.03
Acenaphthylene GCMS	N	ug/l	0.01	0.03	0.02	< 0.01	< 0.01
Acenaphthene GCMS	N	ug/l	0.01	0.01	0.10	0.01	< 0.01
Fluorene GCMS	N	ug/l	0.01	0.02	0.18	0.02	< 0.01
Phenanthrene GCMS	N	ug/l	0.01	0.16	0.03	0.02	0.03
Anthracene GCMS	N	ug/l	0.01	0.06	0.02	< 0.01	< 0.01
Fluoranthene GCMS	N	ug/l	0.01	0.40	0.04	0.02	0.05
Pyrene GCMS	N	ug/l	0.01	0.34	0.05	0.03	0.05
Benzo (a) anthracene GCMS	N	ug/l	0.01	0.19	0.02	0.01	0.02
Chrysene GCMS	N	ug/l	0.01	0.18	0.02	0.01	0.03
Benzo (b) fluoranthene GCMS	N	ug/l	0.01	0.16	0.02	0.02	0.02
Benzo (k) fluoranthene GCMS	N	ug/l	0.01	0.15	0.02	0.02	0.03
Benzo (a) pyrene GCMS	N	ug/l	0.01	0.19	0.02	0.02	0.03
Indeno (1,2,3-cd) pyrene GCMS	N	ug/l	0.01	0.13	0.02	0.01	0.02
Dibenzo(a,h)anthracene GCMS	N	ug/l	0.01	0.05	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene GCMS	N	ug/l	0.01	0.16	0.02	0.02	0.02
Total PAH(16) GCMS	N	ug/l	0.01	2.28	0.66	0.26	0.36

Method Summary

Report No.: 21-37586, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Water					
Basic carbon banding in water	N		16/12/2021		GC-FID
Dissolved metals by ICP in waters	U		14/12/2021	101	ICPMS
pH of waters	U		15/12/2021	113	Electromeric
Chromium Hexavalent in waters	U		13/12/2021	123	Colorimetry
PAHs and/or PCBs in waters	N		14/12/2021	135	GC-MS

Tests marked N are not UKAS accredited

Report Information

Report No.: 21-37586, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination. Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed. ELAB are unable to provide an interpretation or opinion on the content of this report. The results relate only to the sample received. PCB congener results may include any coeluting PCBs Uncertainty of measurement for the determinands tested are available upon request Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
 All water samples will be retained for 7 days following the date of the test report
 Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 21-37664

Issue: 1

Date of Issue: 21/12/2021

Contact: Lab Results

Customer Details: Ashdown Site Investigation Ltd
Unit 3 The Grain Store
Ditchling Common Business Park
Ditchling Common
West Sussex BN6 8SG

Quotation No: Q15-00267

Order No: 10037

Customer Reference: P15440_00666

Date Received: 14/12/2021

Date Approved: 21/12/2021

Details: Mill Rythe Holiday Park, Hayling Island

Approved by:

Tim Reeve, Quality Officer

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Sample Summary

Report No.: 21-37664, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
261339	WS01	13/12/2021	14/12/2021		
261340	WS02	13/12/2021	14/12/2021		
261341	WS03	13/12/2021	14/12/2021		
261342	WS04	13/12/2021	14/12/2021		

Results Summary

Report No.: 21-37664, issue number 1

ELAB Reference	261339	261340	261341	261342
Customer Reference				
Sample ID				
Sample Type	WATER	WATER	WATER	WATER
Sample Location	WS01	WS02	WS03	WS04
Sample Depth (m)				
Sampling Date	13/12/2021	13/12/2021	13/12/2021	13/12/2021

Determinand	Codes	Units	LOD				
Dissolved Metals							
Arsenic	U	ug/l	5	< 5	< 5	< 5	< 5
Boron	N	ug/l	5	185	267	118	126
Cadmium	U	ug/l	1	< 1	< 1	< 1	< 1
Chromium	U	ug/l	5	< 5	< 5	< 5	< 5
Copper	U	ug/l	5	< 5.0	< 5.0	< 5.0	< 5.0
Mercury	U	ug/l	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	U	ug/l	5	< 5	< 5	< 5	< 5
Lead	U	ug/l	1	< 1	< 1	< 1	< 1
Selenium	U	ug/l	5	< 5	< 5	< 5	< 5
Zinc	U	ug/l	5	< 5	< 5	< 5	< 5
Inorganics							
Hexavalent Chromium	U	ug/l	100	< 100	< 100	< 100	< 100
Miscellaneous							
pH	U	pH units	0.1	7.1	7.0	7.3	7.3
Organics							
>C8-C10 BCB (EH_1D_Total)	N	ug/l	5	< 5.0	< 5.0	< 5.0	< 5.0
>C10-C12 BCB (EH_1D_Total)	N	ug/l	5	< 5.0	18.2	< 5.0	10.3
>C12-C16 BCB (EH_1D_Total)	N	ug/l	5	6.6	43.8	< 5.0	18.1
>C16-C21 BCB (EH_1D_Total)	N	ug/l	5	< 5.0	28.3	< 5.0	44.6
>C21-C35 BCB (EH_1D_Total)	N	ug/l	5	83.6	152	10.4	145
>C35-C40 BCB (EH_1D_Total)	N	ug/l	5	< 5.0	< 5.0	< 5.0	< 5.0
Total (>C8-C40) BCB (EH_1D_Total)	N	ug/l	5	90.1	242	10.4	218
Polyaromatic hydrocarbons							
Naphthalene GCMS	N	ug/l	0.01	0.38	0.35	0.11	0.11
Acenaphthylene GCMS	N	ug/l	0.01	0.02	0.20	0.02	< 0.01
Acenaphthene GCMS	N	ug/l	0.01	0.02	0.82	< 0.01	< 0.01
Fluorene GCMS	N	ug/l	0.01	0.10	1.90	0.03	0.02
Phenanthrene GCMS	N	ug/l	0.01	0.19	0.22	0.06	0.07
Anthracene GCMS	N	ug/l	0.01	0.04	0.10	0.02	0.02
Fluoranthene GCMS	N	ug/l	0.01	0.10	0.19	0.05	0.04
Pyrene GCMS	N	ug/l	0.01	0.09	0.21	0.06	0.04
Benzo (a) anthracene GCMS	N	ug/l	0.01	0.04	0.09	0.03	0.01
Chrysene GCMS	N	ug/l	0.01	0.06	0.12	0.04	0.02
Benzo (b) fluoranthene GCMS	N	ug/l	0.01	0.03	0.07	0.03	< 0.01
Benzo (k) fluoranthene GCMS	N	ug/l	0.01	0.03	0.08	0.04	< 0.01
Benzo (a) pyrene GCMS	N	ug/l	0.01	0.03	0.07	0.03	< 0.01
Indeno (1,2,3-cd) pyrene GCMS	N	ug/l	0.01	< 0.01	0.02	< 0.01	< 0.01
Dibenzo(a,h)anthracene GCMS	N	ug/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene GCMS	N	ug/l	0.01	0.02	0.03	0.02	< 0.01
Total PAH(16) GCMS	N	ug/l	0.01	1.16	4.50	0.55	0.38

Method Summary

Report No.: 21-37664, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Water					
Basic carbon banding in water	N		20/12/2021		GC-FID
Dissolved metals by ICP in waters	U		17/12/2021	101	ICPMS
pH of waters	U		18/12/2021	113	Electromeric
Chromium Hexavalent in waters	U		16/12/2021	123	Colorimetry
PAHs and/or PCBs in waters	N		17/12/2021	135	GC-MS

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TPH Classification - HWOL Acronym System

HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

APPENDIX D

Classification of Probability, Consequence and Risk

Probability of risk being realised	
Classification	Definition
High	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution.
Moderate	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. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place and is less likely in the shorter term.
Very Low	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Consequence of risk being realised		
Classification	Category	Definition
Severe	Human Health	Short term (acute) risk to human health likely to result in "significant harm" as defined by the Environment Protection Act 1990, Part IIA.
	Controlled Waters	Short term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource.
	Property	Catastrophic damage to buildings/property.
	Ecological Systems	A short term risk to a particular ecosystem or organisation forming part of such ecosystem.
Moderate	Human Health	Chronic damage to Human Health.
	Controlled Waters	Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution).
	Ecological System	A significant change in a particular ecosystem or organism forming part of such ecosystem.
Minor	Controlled Waters	Pollution of non-sensitive water resources.
	Property	Significant damage to crops, buildings, structures and services.
	Ecological Systems	Damage to sensitive buildings/structures/services or the environment.
Very Minor	Human Health	Non-permanent health effects to human health (easily prevented by means such as personal protective clothing, etc).
	Property	Easily repairable effects of damage to buildings, structures and services.
	Project	Harm, although not necessarily significant harm, which may result in a financial loss or expenditure to resolve.

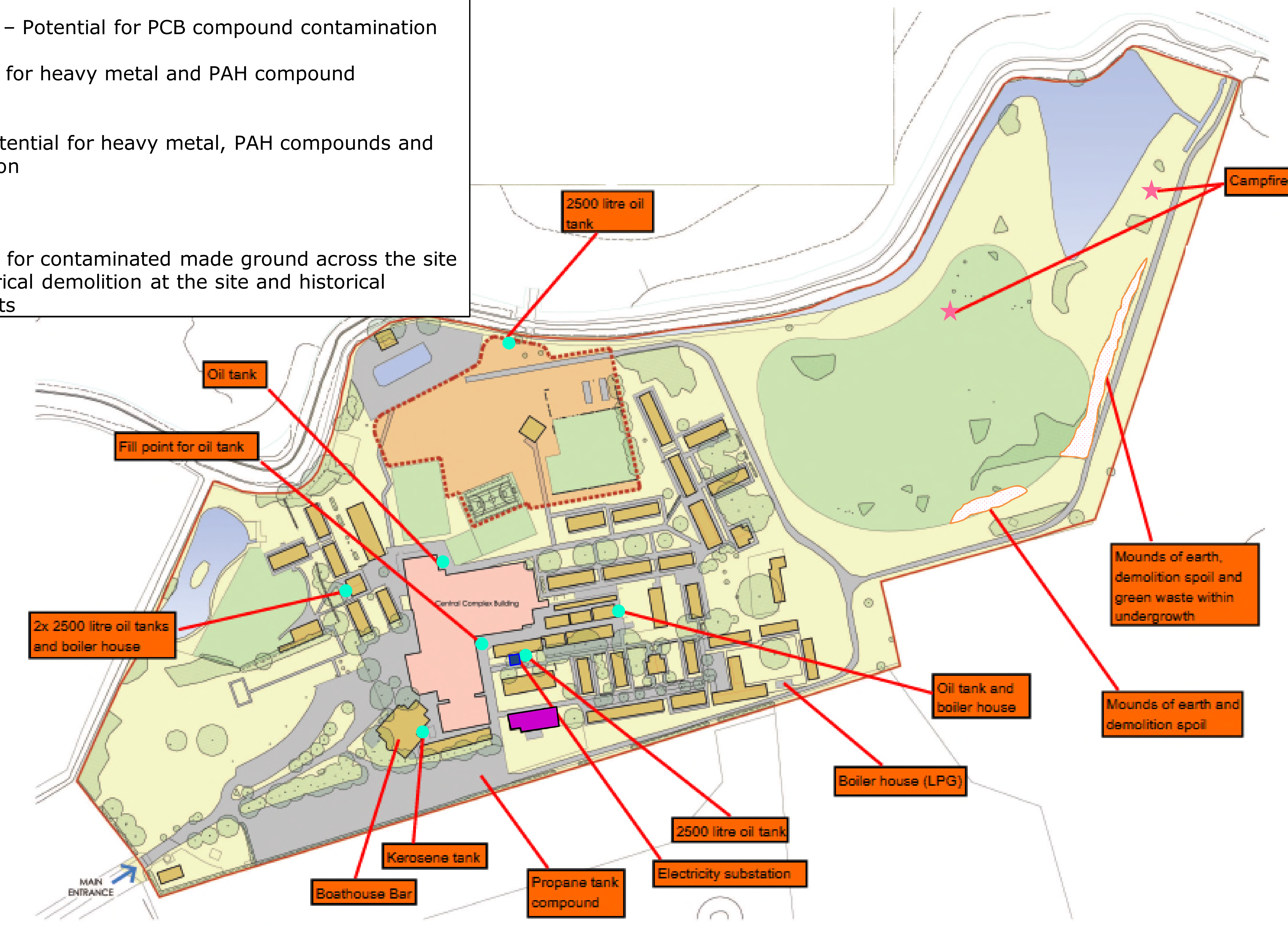
Risk classification definitions	
Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the long term.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from an identified hazard, but there is a low likelihood of this hazard occurring and if realised, harm would at worst normally be mild.
Very Low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

APPENDIX E

Preliminary Conceptual Model

Key

- Tank/Fill Point – Potential for petroleum hydrocarbon contamination
- Electricity Substation – Potential for PCB compound contamination
- ★ Campfires – Potential for heavy metal and PAH compound contamination
- Mounds of Earth – Potential for heavy metal, PAH compounds and asbestos contamination
- Laundry
- Elsewhere – Potential for contaminated made ground across the site associated with historical demolition at the site and historical maintenance of chalets



Potential Source	Potential Receptor	Potential Contaminants	Potential Pathway	Complete Linkage Present?	Probability	Consequence	Risk
Above ground tanks, tank fill points and oil fired boiler room.	End Users	Petroleum Hydrocarbons	Dermal contact with soil and dust (indoor & outdoor)	Yes	P1: Very Low	C3: Moderate	Low
			Ingestion of soil and indoor dust	Yes	P1: Very Low	C3: Moderate	Low
			Consumption of home-grown produce and attached soil	No private gardens proposed			N/A
			Inhalation of soil dust (indoor and outdoor)	Yes	P2: Low	C3: Moderate	Low/Moderate
			Inhalation of soil vapours	Yes	P1: Very Low	C3: Moderate	Low
			Inhalation of soil gases/ Risk of explosion	No potential gas source identified			N/A
	End Users (via Water Supply Pipework)	Petroleum Hydrocarbons	Contamination of incoming services	Yes	P2: Low	C3: Moderate	Low/Moderate
	Groundwater (inc ponds)	Petroleum Hydrocarbons	Migration to groundwater	Yes	P1: Very Low	C1: Very Minor	Negligible
Electricity Substation	End Users	PCB Compounds	Dermal contact with soil and dust (indoor & outdoor)	Yes	P1: Very Low	C2: Minor	Very Low
			Ingestion of soil and indoor dust	Yes	P1: Very Low	C2: Minor	Very Low
			Consumption of home-grown produce and attached soil	No private gardens proposed			N/A
			Inhalation of soil dust (indoor and outdoor)	Yes	P1: Very Low	C2: Minor	Very Low
			Inhalation of soil vapours	No potential contaminants identified			N/A
			Inhalation of soil gases/ Risk of explosion	No potential gas source identified			N/A
	End Users (via Water Supply Pipework)		Contamination of incoming services	No potential contaminants identified			N/A
	Groundwater (inc ponds)	PCB Compounds	Migration to groundwater	Yes	P1: Very Low	C1: Very Minor	Negligible

Campfires	End Users	Heavy Metals and PAH Compounds	Dermal contact with soil and dust (indoor & outdoor)	Yes	P1: Very Low	C2: Minor	Very Low
			Ingestion of soil and indoor dust	Yes	P1: Very Low	C2: Minor	Very Low
			Consumption of home-grown produce and attached soil	No private gardens proposed			N/A
			Inhalation of soil dust (indoor and outdoor)	Yes	P1: Very Low	C2: Minor	Very Low
			Inhalation of soil vapours	No potential contaminants identified			N/A
			Inhalation of soil gases/ Risk of explosion	No potential gas source identified			N/A
	End Users (via Water Supply Pipework)		Contamination of incoming services	No potential contaminants identified			N/A
	Groundwater (inc ponds)	Heavy Metals and PAH Compounds	Migration to groundwater	Yes	P1: Very Low	C1: Very Minor	Negligible
Mounds of Earth	End Users	Heavy Metals, PAH Compounds and Asbestos	Dermal contact with soil and dust (indoor & outdoor)	Yes	P1: Very Low	C3: Moderate	Low
			Ingestion of soil and indoor dust	Yes	P1: Very Low	C3: Moderate	Low
			Consumption of home-grown produce and attached soil	No private gardens proposed			N/A
			Inhalation of soil dust (indoor and outdoor)	Yes	P3: Moderate	C3: Moderate	Moderate
			Inhalation of soil vapours	No potential contaminants identified			N/A
			Inhalation of soil gases/ Risk of explosion	No potential gas source identified			N/A
	End Users (via Water Supply Pipework)		Contamination of incoming services	No potential contaminants identified			N/A
	Groundwater (inc ponds)	Heavy Metals and PAH Compounds	Migration to groundwater	Yes	P1: Very Low	C1: Very Minor	Negligible

Potential for contaminated made ground across the site from historical demolition at the site and historical maintenance of chalets	End Users	Asbestos, Heavy Metals and PAH Compounds	Dermal contact with soil and dust (indoor & outdoor)	Yes	P4: High	C2: Minor	Moderate
			Ingestion of soil and indoor dust	Yes	P4: High	C2: Minor	Moderate
			Consumption of home-grown produce and attached soil	No private gardens proposed			N/A
			Inhalation of soil dust (indoor and outdoor)	Yes	P4: High	C3: Moderate	High
			Inhalation of soil vapours	No potential contaminants identified			N/A
			Inhalation of soil gases/ Risk of explosion	No potential gas source identified			N/A
	End Users (via Water Supply Pipework)		Contamination of incoming services	No potential contaminants identified			N/A
	Groundwater (inc ponds)	Heavy Metals and PAH Compounds	Migration to groundwater	Yes	P2: Low	C1: Very Minor	Very Low
Laundrette in the southern part of the site	End Users	VOC Compounds	Dermal contact with soil and dust (indoor & outdoor)	Yes	P1: Very Low	C2: Minor	Very Low
			Ingestion of soil and indoor dust	Yes	P1: Very Low	C2: Minor	Very Low
			Consumption of home-grown produce and attached soil	No private gardens proposed			N/A
			Inhalation of soil dust (indoor and outdoor)	Yes	P1: Very Low	C3: Moderate	Low
			Inhalation of soil vapours	Yes	P1: Very Low	C2: Minor	Very Low
			Inhalation of soil gases/ Risk of explosion	No potential gas source identified			N/A
	End Users (via Water Supply Pipework)	VOC Compounds	Contamination of incoming services	Yes	P1: Very Low	C3: Moderate	Low
	Groundwater	VOC Compounds	Migration to groundwater	Yes	P1: Very Low	C2: Minor	Very Low

APPENDIX F

Quantitative Conceptual Model

Phase 1 - Mill Rythe Holiday Village, Hayling Island, Hampshire				Quantitative Conceptual Model		P15440	
Source	Receptor	Contaminants	Pathway	Complete Linkage Present?	Probability	Consequence	Risk
None Identified	End Users		Dermal contact with soil and dust (indoor & outdoor)	No contaminants present above SSVs			N/A
			Ingestion of soil and indoor dust	No contaminants present above SSVs			N/A
			Consumption of home-grown produce and attached soil	No private gardens proposed			N/A
			Inhalation of soil dust (indoor and outdoor)	No contaminants present above SSVs			N/A
			Inhalation of soil vapours	Only negligible concentrations of volatile contaminants present			N/A
			Inhalation of soil gases/ Risk of explosion	No potential gas source identified			N/A
	End Users (via Water Supply Pipework)		Contamination of incoming services	No contaminants present above screening criteria			N/A
	Groundwater (inc ponds)		Migration to groundwater	No contaminants present at concentrations posing risk to groundwater			N/A