STM environmental

ENVIRONMENTAL CONSULTING , SOFTWARE & TRAINING

CONTAMINATED LAND RISK ASSESSMENT

Phase 2 Environmental Site Investigation Report

Site
96A George V Avenue
Worthing
BN11 5RP

Client
Envision Contracting Ltd

Report Reference
PH2-2023-000040

Prepared by
STM Environmental Consultants Ltd

Date
04/12/2023



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1 DOCUMENT CONTROL

CONTAMINATED LAND RISK ASSESSMENT
PHASE 2 ENVIRONMENTAL SITE INVESTIGATION REPORT

Site Address:	96A George V Avenue, Worthing, BN11 5RP
Site Coordinates:	512565, 102689
Prepared for:	Envision Contracting Ltd
Report Reference:	PH2-2023-000040
Version No:	1.0
Date:	04/12/2023
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2 DISCLAIMERS

This report and any information or advice which it contains, is provided by STM Environmental Consultants Ltd (STM) and can only be used and relied upon by Envision Contracting Ltd (Client). Any party other than the Client using or placing reliance upon any information contained in this report, do so at their own risk.

STM has exercised such professional skill, care and diligence as may reasonably be expected of a properly qualified and competent consultant when undertaking works of this nature. However, STM gives no warranty, representation or assurance as to the accuracy or completeness of any information, assessments or evaluations presented within this report.

This report excludes consideration of potential hazards arising from any activities at the Site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities.

It should be noted that this report has been produced for environmental purposes only. It should not in any way be construed to be or used to replace a geotechnical survey, structural survey, asbestos survey, buried services survey, unexploded ordnance survey or invasive plant survey.

All coordinates and ground levels stated within the report are approximated based on OS mapping and LIDAR data. It is recommended that a topographic survey is undertaken if more accurate estimates are required.

3 EXECUTIVE SUMMARY

SECTION	SUMMARY
Site Location and Description	The site is located at 96A George V Avenue, Worthing, BN11 5RP and is centred at national grid reference 512570, 102690. The site has an area of approximately 0.03 ha.
Proposed Development	The development proposal for the conversion of the ground floor into a studio flat. It is understood that there are no proposals to include soft landscaping in the development.
Summary of Phase 1 Desk Study	A Phase 1 Desk Study was carried out by STM in August 2022 which indicated that the site had not been subject to past Potentially Contaminative Land Uses (PCLUs). Off site PCLUs include Dry Cleaners (23m NE) and Garages (30m E). A conceptual risk site model was constructed and a qualitative risk assessment carried out. This identified potentially significant Potential Pollutant Linkages with respect to human health and property receptors. The Desk Study recommended that an intrusive site investigation be carried out with the objective of determining the presence and extent of any soil contamination at the site.
Summary of Site Investigation	Site investigation works were carried out on the 19th October 2023. A total of 3no. boreholes (BH01 – BH03) were excavated to a maximum depth of 1.6mbgl using a hand auger. A total of 6no. soil samples were collected from depths ranging between 0.3 – 1.2mbgl and submitted to a UKAS/MCERTS accredited laboratory for analysis of Heavy Metals, TPH, BTEX, PAHs, SVOCs and Asbestos.
Updated Contamination Assessment	Tarmac underlain by Made Ground comprising clayey Sand and sandy, slightly gravelly Silt was encountered to a maximum depth of 0.3mbgl. This was underlain by Clay becoming gravelly Clay to 1.6mbgl, the maximum depth of the boreholes. Visual indications of contamination of the Made Ground were observed (i.e. fragments of brick, ceramic, concrete and glass) generally across the site. No significant odours or PID readings were recorded during the investigation. A Generic Quantitative Risk Assessment was carried out where the results of the soil sample analysis were compared to Generic Assessment Criteria (GAC) for a residential housing with home-grown produce land use scenario. None of the contaminants analysed were present in concentrations that exceeded the GAC for the residential with homegrown produce land use scenario in any of the borehole locations.

SECTION	SUMMARY
	The Conceptual Risk Model for the site was reassessed incorporating the results of the site investigation. None of the PPLs were considered to have the potential to be significant.
Conclusions and Recommendations	Given that none of the PPLs were considered to have the potential to be significant, no remedial action is considered to be required. It is recommended that a “watching brief” is kept at all times during the development. Should any unexpected contamination be encountered then the discovery strategy outlined in this document should be followed.

4 INTRODUCTION

STM Environmental Consultants Limited were commissioned by Envision Contracting Ltd to undertake a preliminary risk assessment at 96A George V Avenue, Worthing, BN11 5RP (the site).

4.1 Development Proposal

The report was produced to support the discharge of Condition 2(3) attached to the planning application NOTICE/0024/22 for the '*change of use from use Class E at ground floor to 1no. one-bedroom flat (use Class C3)*'. It is understood that there are no proposals to include soft landscaping in the development.

Condition 2(part 2) was discharged on the 25th October 2023.

The decision notice and proposed development plans are available in Appendix 1.

4.2 Report Objectives

The main objectives of the study were to:

- Provide information for a generic quantitative risk assessment (GQRA) to be undertaken;
- Refine the Conceptual Site Risk Model using the findings of the GQRA;
- Inform the need for and scope of any remedial works that may be required.

A summary of the findings of the site investigation and GQRA are detailed within this report.

This report should be read in conjunction with the Desk Study Report (Ref: PH1-2021-000084) produced for the site by STM Environmental Consultants in August 2022 which is summarised below.

5 SUMMARY OF DESK STUDY FINDINGS

5.1 Site Location

The site is located at 96A George V Avenue, Worthing, BN11 5RP and is centred at national grid reference 512570, 102690. The site has an area of approximately 0.03 ha.

The site lies within the jurisdiction of Adur & Worthing Borough Council in terms of the planning process. Maps showing the location of the site are shown in the figure below.

5.2 Current Site and Surrounding Land Uses

The site currently comprises a former estate agents, with associated parking. The surrounding area comprises of residential properties in all directions, and commercial properties N and W.

5.3 Site History

Examination of Ordnance Survey historic maps revealed that the site was open undeveloped land until c.1932-33 when 1no. unspecified building was developed, matching the present day layout.

5.4 Previous Site Investigations

A search of relevant information on Adur & Worthing Borough Council's planning portal did not identify any records of previous contaminated land site investigations undertaken at or in the vicinity of the site.

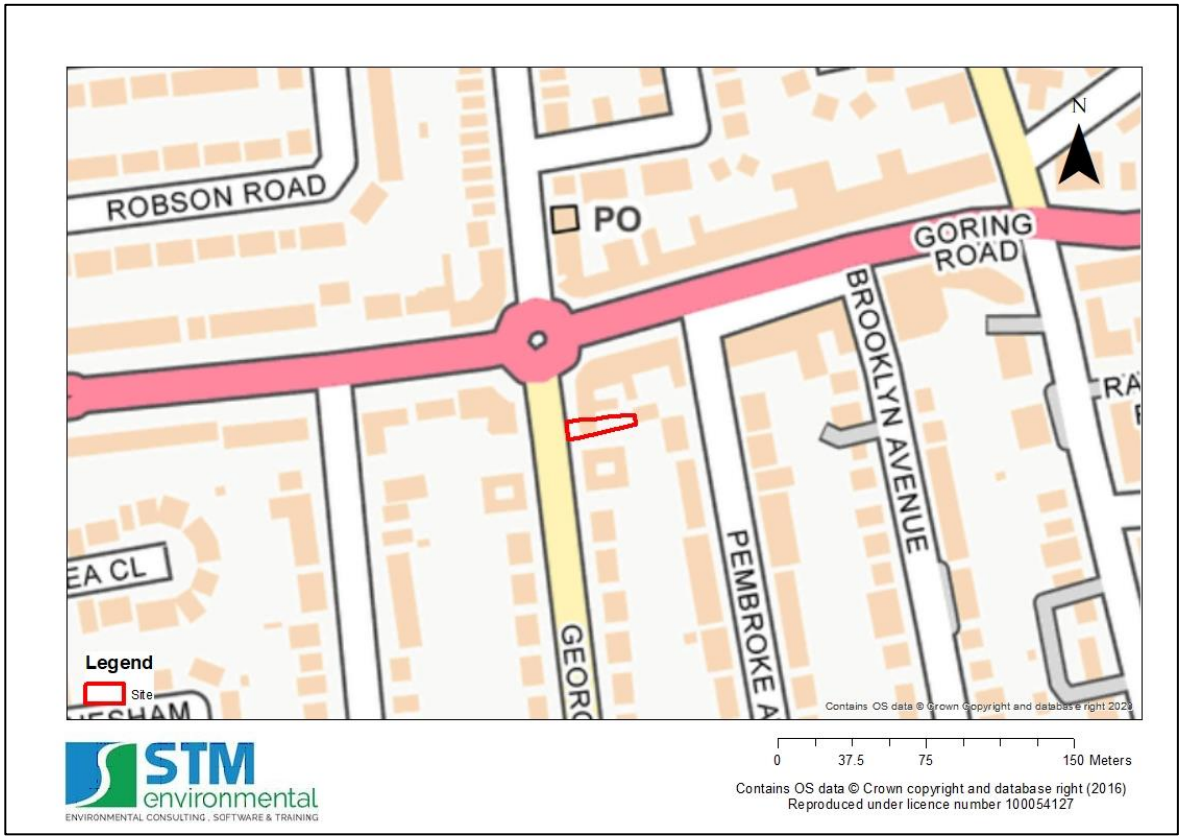



Figure 1: Site Location and Aerial Maps

5.5 Qualitative Risk Assessment

A qualitative risk assessment was undertaken in order to assess the magnitude of the potential risks identified in the Phase 1 Report.

5.5.1 Potential Sources

Any Potentially Contaminative Land Uses (PCLUs) within a 50m radius of the site as well as any PCLUs with high pollution migration potential within 250m of the site were considered to be of concern and were included within the assessment.

A summary is provided in the table below.

Table 1: Summary of potential contamination sources, period of operation and distance from site.

Site Name	Industrial Profile	Approx. Year Use Established	Approx. Year Use Ended	Direction	Approx. Distance from Site (m)
Johnson Cleaners UK Ltd	Dry Cleaners	Unknown	Unknown	NE	23
Garages	Road vehicles: Garages and filling stations	c.1953	c.1964-66	E	30

5.5.2 Potential Receptors

Potential human health receptors were considered to include future site users, construction workers and neighbours. Property receptors were considered to include onsite buildings and services.

Data from the BGS indicates that the site is underlain by superficial deposits consisting of River Terrace Deposits (Undifferentiated – Sand, Silt and Clay) which are classified as a Secondary B Aquifer. The bedrock consists of New Pit Chalk Formation (Chalk) and is classified as a Principal Aquifer. The site does not lie within a Source Protection Zone and there are no recorded water abstractions within 1000m of the site.

No surface water receptors were identified onsite or within 250m of the site.

No designated ecological receptors were identified onsite or within 250m of the site.

5.5.3 Conceptual Site Risk Model

A preliminary conceptual site risk model (CSM) was constructed in order to assess potential pollutant linkages.

Potentially significant potential pollutant linkages (PPLs) were identified with respect to:

- Human health receptors (PPL1a)
- Property (PPL6a)

The desk study recommended that an intrusive site investigation be carried out to determine the presence and extent of any soil contamination at the site.

6 SITE INVESTIGATION

The site investigation works were carried out on the 19th October 2023 and were undertaken in general accordance with the following guidance:

- Land contamination risk management (LCRM) guidance - DEFRA;
- BS 10175 - Code of practice for the Investigation of potentially contaminated sites British Standard Institution;
- BS 10176:2020 - Taking soil samples for determination of volatile organic compounds (VOCs);
- BS5930:2015 Code of Practice for Ground Investigation
- BS 8485: 2015 - Code of practice for the Characterisation and remediation from Ground Gas in Affected Developments. British Standard Institution;
- BS8576:2013, Guidance on investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOCs);
- C665, 2007 - Assessing Risks posed by Hazardous Ground Gases to Buildings CIRIA.

6.1 Strategy and Scope of the Site Investigation and Risk Assessment

As per Condition 2(2), the extent and methodology of the site investigation was approved by the Pollution Officer at Adur & Worthing Borough Council in a Proposed Phase 2 Site Investigation Strategy. No significant deviations from the strategy occurred.

6.1.1 Sampling Strategy

The strategy for selecting the locations of the exploratory positions was based on the conceptual source, pathway and receptor model and potentially contaminating activities identified by the Conceptual Site Model.

A total of 3no. sampling locations (BH01 – BH03) were excavated to a maximum depth of 1.6mbgl for contamination assessment purposes. A semi-targeted sampling strategy was used to select the locations of the exploratory positions, with boreholes being generally equally spaced out across the site.

As the investigation was primarily focused on assessing the quality of near surface soils, samples were collected at depths between 0.3 – 1.2mbgl.

A map showing the locations of boreholes and the borehole logs are available in Appendix 2 and Appendix 3 respectively.

6.1.2 On-site Screening of Volatile Organic Compounds

Soil from each borehole was screened on site for Volatile Organic Compounds (VOCs) using a hand held Minirae Photo-Ionisation Detector (PID) which has a detection limit of 0.1 parts per billion (ppb). The PID was calibrated in the field prior to use using a gas of known concentration (isobutylene gas – 100ppm).

Soil vapour readings were taken using the headspace method, which involved placing the soil sample into a sealed plastic bag and then taking a reading by placing the PID filter into the bag.

6.1.3 Sample Collection and Transport

All samples were put into sample containers (jars and tubs) that were tightly sealed with minimal headspace. The sample containers were put into a cooler box immediately on collection and kept cool until analysis was undertaken at the laboratory.

6.1.4 Laboratory Analysis

A total of 6no. soil samples were submitted to a UKAS\MCERTs accredited laboratory for analysis of the following:

- Heavy Metals – Arsenic, Boron, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Zinc;
- Petroleum Hydrocarbons (TPHCWG);
- Total Phenols - Total Phenols (Monohydric);
- Monoaromatics – Benzene, Toluene, Ethylbenzene, p & m-xylene, o-xylene, MTBE (Methyl Tertiary Butyl Ether);
- Speciated PAHs – Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(ghi)perylene;
- Total PAHs - Speciated Total EPA-16 PAHs;
- Asbestos Screening and Quantification;
- Inorganics - pH – Automated, Total Cyanide, Water Soluble Sulphate, Sulphide, Total Organic Carbon (TOC);
- SVOCs.

6.1.5 Groundwater, Ground Gas and Vapour Monitoring

Groundwater, ground gas or vapour monitoring was not carried out as part of the site investigation as no potential pollutant linkages in this respect were identified by the Desk Study. Additionally, observations (i.e. visual assessments of contamination and PID readings) and the findings of the site investigation did not indicate the need for ground gas or groundwater monitoring.

6.2 Site Investigation Findings

6.2.1 Ground Conditions

Tarmac underlain by Made Ground comprising clayey Sand and sandy slightly gravelly Silt was encountered to a maximum depth of 0.3mbgl. This was underlain by Clay becoming gravelly Clay to 1.6mbgl, the maximum depth of the boreholes.

The borehole logs are shown in Appendix 3 and photographs from some of the soils extracted from the boreholes are presented in Appendix 4.

6.2.2 Groundwater

Groundwater was not encountered during the site investigation.

6.2.3 Visual and Olfactory Signs of Contamination

Visual indications of contamination of the Made Ground were observed (i.e. fragments of brick, ceramic, concrete and glass) generally across the site. No significant odours or PID readings were recorded during the investigation. The PID readings can be seen in the borehole logs shown in Appendix 3.

6.3 Laboratory Sample Analysis Results

A total of 6no. soil samples were submitted for analysis. The full results of the laboratory sample analysis can be seen in Appendix 5.

7 RISK ASSESSMENT

7.1 Generic Quantitative Risk Assessment (Human Health)

A Generic Quantitative Risk Assessment (GQRA) was conducted using the soil analytical results in order to further evaluate the significance of the potential pollutant linkages identified in the Preliminary Risk Assessment in the Desk Study.

7.1.1 Generic Assessment Criteria for Soils

The GAC used for the screening of the soils and their sources are outlined in the table in Appendix 6. Even though soft landscaping is not proposed, for prudency, the GAC used were a combination of the DEFRA's Category 4 Screening Levels and the CIEH\LQM GAC for the residential *with* homegrown produce land use scenario.

7.1.2 Soil Organic Matter Content

Sample results indicated that soils on the site have an average Total Organic Carbon (TOC) content of 0.71%, which based on a conversion factor of 1.72, indicates a Soil Organic Matter (SOM) of around 1.22%. Therefore, a soil organic matter content of 1% was assumed.

7.1.3 Contaminants Exceeding Generic Assessment Criteria

No exceedances were identified when the soil results were compared to LQM Suitable for Use Levels for the residential with homegrown produce land use.

7.1.4 Statistical Analysis

The results of statistical analysis are presented in Appendix 7. None of the samples had means that exceeded their relevant GAC.

7.2 Asbestos

Asbestos was not detected in any of the samples analysed.

8 RE-ASSESSMENT OF POTENTIAL POLLUTANT LINKAGES

The Potential Pollutant Linkages (PPLs) identified as being plausible in the Desk Study are concerned with the following risks:

- Risk of direct contact (ingestion and absorption) with and inhalation of contaminants to on-site human health receptors (PPL1a – Future Occupiers and PPL1c – Construction Workers);
- Risk of injury/death of on-site human health receptors as a result of explosion due to accumulation of ground gas from on and off-site sources in confined spaces within on-site dwellings. (PPL1b- – Future Occupiers and PPL1d - Construction Workers);
- Risk of direct contact with (ingestion and absorption) and inhalation of contaminants to off-site human health receptors as a result of on-site contaminants migrating off-site (PPL2a);
- Risk of injury/death to off-site human health receptors as a result of explosion due to migration of on-site ground gas and subsequent accumulation in confined spaces in off-site buildings. (PPL2b);
- Risk of deterioration of groundwater quality resulting from the migration of on-site contaminants into the underlying aquifer (PPL3);
- Risk of deterioration of surface water quality resulting from the migration and entry of on-site contaminants into the surface water receptor (PPL4);
- Risk of deterioration of ecological quality resulting from the migration and entry of on-site contaminants to the ecological receptor during development and after completion (PPL5);
- Risk of damage to buildings and services from on and off-site contaminants (PPL6a);

- Risk of damage to property as a result of explosion due to accumulation of ground gas from on and off-site sources in confined spaces within buildings (PPL6b).

The Desk Study concluded that PPL1a and PPL6a had the potential to be significant. All of the PPLs were re-assessed considering the soil analytical results obtained from site investigation. The table below presents the results of the re-assessment.

A detailed explanation of the risk assessment methodology is available in Appendix 8.

Table 2: Results of Qualitative Risk Assessment.

CRITERIA	POTENTIAL POLLUTANT LINKAGES										
	PPL1a	PPL1b	PPL1c	PPL1d	PPL2a	PPL2b	PPL3	PPL4	PPL5	PPL6a	PPL6b
POTENTIAL PATHWAY/ RECEPTOR	Contact/ Inhalation - Human Health (Future Occupiers)	Explosion - Human Health (Future Occupiers)	Contact/ Inhalation - Human Health (Construction Workers)	Explosion - Human Health (Construction Workers)	Contact/ Inhalation - Offsite Human Health Receptors	Explosion - Human Health Receptors	Contact - Groundwater	Contact - Surface Water	Contact - Ecology	Contact - On & Off-Site Property	Explosion - On & Off-Site Property
SEVERITY	Major (4)	Major (4)	Major (4)	Major (4)	Major (4)	Major (4)	Moderate (3)	Moderate (3)	Moderate (3)	Moderate (3)	Moderate (3)
LIKELIHOOD	Improbable (1)	Improbable (1)	Improbable (1)	Improbable (1)	Improbable (1)	Improbable (1)	Improbable (1)	Improbable (1)	Improbable (1)	Improbable (1)	Improbable (1)
RISK	Low (4)	Low (4)	Low (4)	Low (4)	Low (4)	Low (4)	Very Low (3)	Very Low (3)	Very Low (3)	Very Low (3)	Very Low (3)
POTENTIALLY SIGNIFCANT?	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

8.1 Potential Risks to On-Site Human Health

PPL1a and PPL1c are concerned with the risk of direct contact (ingestion and dermal absorption) with and inhalation of on and off-site contaminants by on site human health receptors. PPL1a and PPL1c are considered unlikely to have the potential to be significant as no contaminants exceeding the relevant GAC for residential with homegrown produce land use scenario were identified.

PPL1b and PPL1d are concerned with the risk of injury/death of on-site human health receptors as a result of explosion due to the potential accumulation of ground gases and vapours from on and off-site sources. PPL1b and PPL1d are considered unlikely to have the potential to be significant as no potential sources of explosive ground gases (i.e. landfills) were identified on or in the vicinity of the site.

8.2 Potential Risks to Off-Site Human Health

PPL2a is concerned with the risk of direct contact and inhalation of contaminants originating from the site by off-site human health receptors. PPL2a is considered unlikely to have the potential to be significant as no contaminants exceeding the relevant GAC were identified.

PPL2b is concerned with the risk of injury/death of on-site human health receptors as a result of explosion due to accumulation of ground gases from on-site sources. PPL2b is considered unlikely to be significant for the same reasons as PPL1b.

8.3 Potential Risks to Groundwater Receptors

PPL3 is concerned with the risk of deterioration of groundwater quality resulting from the migration of on-site contaminants into the underlying aquifer. PPL3 is considered unlikely to have the potential to be significant as no contaminants exceeding the relevant GAC were identified.

8.4 Potential Risks to Surface Water Receptors

PPL4 is concerned with the risk of negative impacts on surface water quality resulting from the migration and entry of on-site contaminants into surface water receptors. PPL4 is considered unlikely to have the potential to be significant as no surface water bodies were identified within the vicinity of the site.

8.5 Potential Risks to Ecological Receptors

PPL5 is concerned with the risk of negative ecological impacts resulting from potential on-site contaminants. PPL5 is considered unlikely to have the potential to be significant given that no designated ecological receptors were identified onsite or within 250m of the site.

8.6 Potential Risks to Property Receptors

PPL6a is concerned with the risk of damage to on site buildings and services from on and off-site contaminants. If contaminated, the soil may contain aggressive chemicals (i.e. Sulphates, VOCs) that can attack building materials and services. PPL6a is considered unlikely to have the potential to be significant as no contaminants exceeding the relevant GAC were identified.

PPL6b is concerned with the risk of damage to property as a result of explosion due to migration of on and off-site ground gases and vapours and their subsequent accumulation in confined spaces in on-site buildings. PPL6b is considered unlikely to be significant for the same reasons as PPL1b.

9 CONCLUSIONS

In response to the findings of the Desk Study carried out for the site by STM Environmental Consultants, an environmental site investigation was carried out on the 19th October 2023. The objective of the investigation was to determine the presence and extent of potential contamination at the site in order to further inform the risk assessment process.

A total of 3no. boreholes (BH01 – BH03) were advanced to a maximum depth of 1.6mbgl for the purposes of environmental soil sampling. 6no. soil samples were taken from depths ranging from 0.3 – 1.2mbgl. The samples were submitted to a UKAS/MCERTS accredited laboratory for analysis of Heavy Metals, TPH, BTEX, PAHs, SVOCs and Asbestos.

A Generic Quantitative Risk Assessment was carried out where the results of the soil sample analysis were compared to Generic Assessment Criteria (GAC) for a residential housing with home-grown produce land use scenario.

None of the contaminants analysed were present in concentrations that exceeded the GAC in any of the borehole locations.

The Conceptual Risk Model for the site was reassessed incorporating the results of the site investigation. None of the PPLs were considered to have the potential to be significant.

The revised conceptual site risk model is summarised in Table 3 below.

Table 3: Summary of revised conceptual site risk model

Potential Receptor	Potential Pathway	Potential Hazard	PSPPL?	Risk
On-Site Human Health (Future Occupiers & Groundworkers)	Ingestion/Absorption Inhalation	Adverse health Injury/Death	**No**	**Low**
	Build-up of Methane/ VOCs in confined spaces	Explosion/ Fire Injury/Death	**No**	**Low**
Off-Site Human Health	Ingestion/Absorption Inhalation	Adverse health Injury/Death	**No**	**Low**
	Build-up of Methane/ VOCs in confined spaces	Explosion/ Fire Injury/Death	**No**	**Low**
Groundwater	Percolation/Leaching	Adverse groundwater quality	**No**	**Very Low**
Surface Water	Lateral Migration Groundwater baseflow	Adverse Surface water quality	**No**	**Very Low**
Ecology	Ingestion/Absorption	Adverse health Injury/Death	**No**	**Very Low**
Property	Physical Contact/Absorption	Damage to building and services	**No**	**Very Low**
	Build-up of Methane/ VOCs in confined spaces	Explosion/ Fire Damage to building	**No**	**Very Low**

10 RECOMMENDATIONS

10.1 Remedial Action

Given that none of the PPLs were considered to have the potential to be significant, no remedial action is considered to be required.

10.2 Watching Brief and Discovery Strategy

It is recommended that a "watching brief" is kept at all times during the development. Should any unexpected contamination be encountered then the discovery strategy outlined below should be followed.

- Works should be halted if any suspicious ground conditions are identified by groundworkers;
- The Contractor should assess the need for any immediate health and safety or environmental management control measures. If control measures are considered to be required, they should be implemented;
- The Contractor should notify the Client's Environmental Consultant and the Local Planning Authority;
- The Environmental Consultant should attend the site to record the extent of 'contamination' and if necessary, to collect samples;
- If remedial action is considered necessary then the proposed works should be agreed with the Local Planning Authority prior to implementation;
- Once remediation is complete, the Environmental Consultant should collate evidence of work carried out for inclusion in a Remediation Verification Report which should be submitted to the Local Planning Authority.

10.3 Health and Safety

Although no contaminants were identified during the site investigation, measures will be necessary to protect the health and safety of site workers during the site works. The following measures are suggested to provide a minimum level of protection.

- Provision of appropriate Personal Protective Equipment (PPE) including protective clothing, footwear, gloves and dust masks to all groundworkers on-site. These should not be removed from site, and advice should be given on when and how they are to be used;
- Great care should be taken to minimise the amount of dust and mud generated on-site;
- Good practices relating to personal hygiene (i.e. washing and changing procedures) should be adhered to on-site, i.e. food and drink should only be consumed within designated areas on the site and smoking should be prohibited in all working areas;
- Availability of site welfare;
- Daily safety briefings.

All site works should be carried out in accordance with Health and Safety Executive regulations and guidelines and the Contractor's Construction Health and Safety Plan. Particular should be made to the Health and Safety Executive (HSE) document "Protection of Workers and the General Public during the Development of Contaminated Land".

10.4 Waste Disposal

Groundworks at the site are likely to give rise to waste soils. These may require classification before removal from site to an appropriately licensed facility for treatment or final disposal. The Environment Agency's Hazardous Waste Technical Guidance document (WM3) outlines the methodology for classifying wastes.

The contractor will need to keep a full documentary record of the waste disposal works in line with Duty of Care requirements. The record will include waste transfer notes and details of the receiving site. Copies of all relevant documents should be provided to the Client's Environmental Consultant for inclusion in the remediation verification report.

10.5 Services

The Statutory Water Undertaker for the area should be contacted in relation to new services that are to be installed as part of the proposed development in order to determine their specification for the type of pipework/conduits that should be used on this site.

11 INFORMATION GAPS AND UNCERTAINTIES

Assumptions have been made regarding the nature and scale of the activities that took place on the site and the types of potential contaminants that may have resulted. There are therefore a number of uncertainties associated with the investigation which include, but are not limited to, the following:

- This report is based on data obtained from the chosen sampling locations only. Although efforts have been made to ensure adequate coverage of the site when designing the investigation, it is nonetheless possible that (as with any site investigation) there may be locations which were not sampled where localised pockets of contamination exist.
- The site investigation and risk assessment were designed to investigate only the most likely contaminants associated with the potential sources of contamination identified in the Desk Study. The presence of additional unknown contaminants cannot be discounted.

These uncertainties will need to be reviewed along with the Conceptual Site Risk Model should further information come to light in the future.

12 APPENDICES

12.1 Appendix 1 – Decision Notice and Proposed Development Plans

WORTHING BOROUGH COUNCIL

Miss Victoria Bennion
Rapleys
66 St James's Street
London
SW1A 1NE

PLANNING PERMISSION

TOWN AND COUNTRY PLANNING ACT 1990
TOWN AND COUNTRY PLANNING (GENERAL PERMITTED DEVELOPMENT) (AMENDMENT) (ENGLAND) ORDER 2015
Schedule 2, Part 3 Class MA

APPLICATION NUMBER: NOTICE/0024/22

Details of Development
APPLICATION FOR PERMITTED DEVELOPMENT FOR PRIOR APPROVAL FOR CHANGE OF USE FROM USE CLASS E AT GROUND FLOOR TO 1NO. ONE-BEDROOM FLAT (USE CLASS C3).

Location of Development
96 GEORGE V AVENUE WORTHING WEST SUSSEX BN11 5RP

In pursuance of their powers under the above-mentioned Act and Order the Council hereby notify that PRIOR APPROVAL IS REQUIRED for the above development from the Local Planning Authority and hereby GRANTED, in accordance with the application and information registered on 6th September 2022.

This is subject to compliance with the conditions specified overleaf.

G Peck

Gary Peck
Planning Services Manager
15/11/2022

Worthing Borough Council, Development Management, Economy Directorate,
Portland House, 44 Richmond Road, Worthing, West Sussex, BN11 1HS
Tel: 01903 221065 Email: planning@adur-worthing.gov.uk
Web: www.adur-worthing.gov.uk

SCHEDULE

Conditions

01. The development hereby permitted shall be carried out in accordance with the following approved plans unless specified otherwise in a subsequent condition imposed on this decision notice:-

Reference/Drawing Number	Version	Date Rec
BLOCK PLAN	BP01a	06.09.2022
EXISTING & PROPOSED ELEVATIONS	EP03a	06.09.2022
EXISTING & PROPOSED SOUTH ELEVATIONS	EP04a	06.09.2022
EXISTING & PROPOSED NORTH ELEVATIONS	EP05a	06.09.2022
SITE LOCATION PLAN	SLP01a	06.09.2022
TECHNICAL NOTE		06.09.2022
EXISTING & PROPOSED GROUND FLOOR PLANS	EP01b	11.10.2022
EXISTING & PROPOSED WEST ELEVATION	EP02b	11.10.2022

Reason: *For the avoidance of doubt and in the interests of proper planning.*

02. Prior to the commencement of development works (or such other date or stage in development as may be agreed in writing with the Local Planning Authority), the following components of a scheme to deal with the risks associated with contamination of the site shall each be submitted to and approved in writing by the Local Planning Authority:-

(1) A preliminary risk assessment which has identified:-

- all previous uses;
- potential contaminants associated with those uses;
- a conceptual model of the site indicating sources, pathways and receptors; and
- potentially unacceptable risks arising from contamination at the site.

(2) A site investigation scheme, based on (1) above to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.

(3) The site investigation results and the detailed risk assessment (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.

/Contd …

(4) A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

Any changes to these components require the express consent of the Local Planning Authority.

The scheme shall be implemented as approved above and, prior to commencement of any construction work (or such other date or stage in development as may be agreed in writing with the Local Planning Authority), a Verification Report demonstrating completion of the works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved in writing by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. It shall also include any plan (a 'long-term monitoring and maintenance plan') for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan, and for the reporting of this to the Local Planning Authority.

Reason: *To prevent pollution of groundwater and in the interests of environmental protection and public health and safety, in compliance with the National Planning Policy Framework and saved policy RES9 of the Worthing Local Plan and policy DM22 of the Submission Draft Worthing Local Plan (as modified).*

03. Details of the siting of provision for storage of refuse and re-cycling shall be submitted to and approved in writing by the Local Planning Authority and shall thereafter be provided prior to first occupation of the residential accommodation hereby approved.

Reason: *In the interests of amenity and the environment having regard to policy 16 of the Worthing Core Strategy and policy DM5 of the Submission Draft Worthing Local Plan (as modified).*

04. Details of the siting of the proposed Sheffield cycle stand within the rear external area shall be submitted to and approved in writing by the Local Planning Authority and shall thereafter be provided prior to first occupation of the residential accommodation hereby approved.

Reason: *Having regard to the traffic impacts of the development and to comply with the submitted Technical Note Ref: 2021/5995/TN01 Dated June 2021.*

/Contd …

Informatives / Notes to Applicant

01. SOUTHERN WATER ADVICE

Southern Water has supplied an extract from records showing the approximate position of a SW sewer in the vicinity of the development site. SW advise that the exact position of the public asset(s) must be determined on site by the Applicant in consultation with Southern Water before the layout of the proposed development is finalised. The Applicant is advised:-

- The public foul sewer requires a clearance of 3 metres on either side of the public foul sewer to protect it from construction works and to allow for future maintenance access.
- No new development or tree planting should be carried out within 3 metres of the external edge of the public foul sewer without consent from Southern Water.
- No new soakaways, swales, ponds, watercourses or any other surface water retaining or conveying features should be located within 5 metres of a public foul sewer.
- All existing infrastructure should be protected during the course of construction works.

It is possible that a sewer now deemed to be public could be crossing the development site. Therefore, should any sewer be found during construction works, an investigation of the sewer will be required to ascertain its ownership before any further works commence on site.

Southern Water requires a formal application for a connection to the public foul and surface water sewer to be made by the applicant or developer.

In situations where surface water is being considered for discharge to the SW network Southern Water require the below hierarchy to be followed which is reflected in Part H3 of Building Regulations. Whilst reuse does not strictly form part of this hierarchy Southern Water would encourage the consideration of reuse for new developments:-

- Reuse
- Infiltration
- Watercourse
- Storm Sewer
- Combined Sewer.

02. The Applicant is advised as follows:-

Works of construction or demolition, including the use of plant and machinery, necessary for implementation of this prior approval should be limited to the following times:
Monday - Friday 08:00 - 18:00 Hours
Saturday 09:00 - 13:00 Hours
Sundays and Bank Holidays no work permitted.

/Contd …

This is in order to safeguard the amenities of the occupiers of neighbouring properties having regard to saved policy RES7 of the Worthing Local Plan and policy DM22 of the Submission Draft Worthing Local Plan (as modified).

Ref: NOTICE/0024/22

TOWN AND COUNTRY PLANNING ACT 1990
TOWN AND COUNTRY PLANNING (GENERAL PERMITTED DEVELOPMENT) (AMENDMENT) (ENGLAND) ORDER 2015 Schedule 2, Part 3, Class MA

YOUR ATTENTION IS DIRECTED TO THE FOLLOWING NOTES FROM THE ABOVE ORDER. THEY ARE FOR INFORMATION ONLY AND DO NOT PRETEND TO SET OUT THE WHOLE OF THE LAW ON THE SUBJECT. IT WOULD BE WELL FOR YOU TO CONSULT YOUR SOLICITOR IF YOU ARE IN ANY DOUBT

Appeals to the Secretary of State

1. If you are aggrieved by the decision of your local planning authority to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the Secretary of State under section 78 of the Town and Country Planning Act 1990.

2. If the decision relates to a householder application, and you want to appeal, then you must do so within 12 weeks of the date of this notice. If the decision relates to a non-householder application, an appeal must be lodged within 6 months of the date of the decision notice. Appeals must be made using a form which you can get from the Secretary of State at Temple Quay House, 2 The Square, Temple Quay, Bristol BS1 6PN (Tel: 0303 444 5000) or online at https://acp.planninginspectorate.gov.uk.

3. The Secretary of State can allow a longer period for giving notice of an appeal, but he will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal.

4. The Secretary of State need not consider an appeal if it seems to him that the local planning authority could not have granted planning permission for the proposed development or could not have granted it without the conditions they imposed, having regard to the statutory requirements to the provisions of any development order and to any directions given under a development order.

5. In practice, the Secretary of State does not refuse to consider appeals solely because the local planning authority based their decision on a direction given by him.

Purchase Notices

6. If either the local planning authority or the Secretary of State refuses permission to develop land or grants it subject to conditions, the owner may claim that he can neither put the land to a reasonably beneficial use in its existing state nor render the land capable of a reasonably beneficial use by the carrying out of any development which has been or would be permitted. In these circumstances, the owner may serve a purchase notice on the District Council in whose area the land is situated. This notice will require the Council to purchase his interest in the land in accordance with the provisions of Part VI of the Town and Planning Act 1990.

7. Where this notice conveys approval or permission, conditional or unconditional, please note that the decision given does not purport to convey any consent or approval which may be required under the Building Act and Building Regulations, or any other legislation.

Reduced time for making a planning appeal where enforcement action is being taken

Where an enforcement notice has been served on the same, or substantially the same, development as in the householder application within 2 years of the date the application was made, the period for receiving an appeal is within 28 days of the date on the decision notice or of the date by which the LPA should have decided the application. Where an enforcement notice was served after the decision notice was issued or after the end of the period the LPA had to determine the application, the period for receiving an appeal is within 28 days of the date the enforcement notice was served (unless this extends the normal 12 weeks deadline).

HM Land Registry
Current title plan

Title number **WSX272474**
Ordnance Survey map reference **TQ1202NE**
Scale **1:1250**
Administrative area **West Sussex : Worthing**



This is a copy of the title plan on 1 AUG 2017 at 13:55:50. This copy does not take account of any application made after that time even if still pending in HM Land Registry when this copy was issued.

This copy is not an 'Official Copy' of the title plan. An official copy of the title plan is admissible in evidence in a court to the same extent as the original. A person is entitled to be indemnified by the registrar if he or she suffers loss by reason of a mistake in an official copy. If you want to obtain an official copy, the HM Land Registry web site explains how to do this.

HM Land Registry endeavours to maintain high quality and scale accuracy of title plan images.The quality and accuracy of any print will depend on your printer, your computer and its print settings.This title plan shows the general position, not the exact line, of the boundaries. It may be subject to distortions in scale. Measurements scaled from this plan may not match measurements between the same points on the ground.

This title is dealt with by HM Land Registry, Durham Office.

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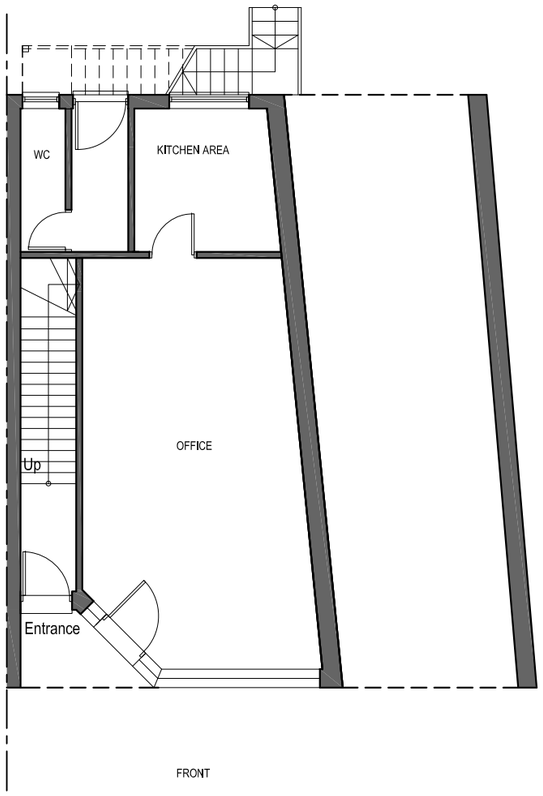
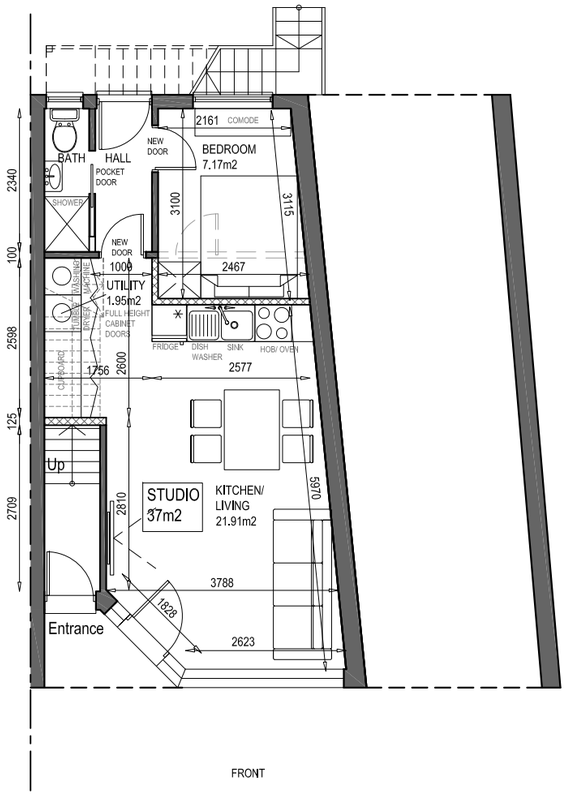
REAR



EXISTING GROUND FLOOR

REAR



PROPOSED GROUND FLOOR

0 2 4 6 8 10

1:100 SCALE in METRES

STAAC ©

Studio1, The Hub
3 Drove Road
Newhaven, East Sussex, BN9 0AD

t: 01323 325354
t: 0808 1699964 /free/
e: support@staac.co.uk

NOTES:

This drawing is to be read in conjunction with all relevant Architects and Engineers drawings
Only figured dimensions are to be used for construction
All dimensions are to be verified on site prior to work commencing

No.	Description	Date

Client:	Envision
Address:	96A George V Avenue, Worthing, BN11 5RP
Project:	Conversion Office Into Studio Flat
Drawing title:	Existing and Proposed Plans
Project No	18034
Date	09-06-22
Drawn by	IA
Drawing No	EP01
Scale	1:100@A3



EXISTING WEST ELEVATION
/EXISTING FRONT ELEVATION/



PROPOSED WEST ELEVATION
/PROPOSED FRONT ELEVATION/
UNCHANGED

0 2 4 6 8 10
1:100 SCALE in METRES

STAAC ©

Studio1, The Hub
3 Drove Road
Newhaven, East Sussex, BN9 0AD

t: 01323 325354
t: 0808 1699964 /free/
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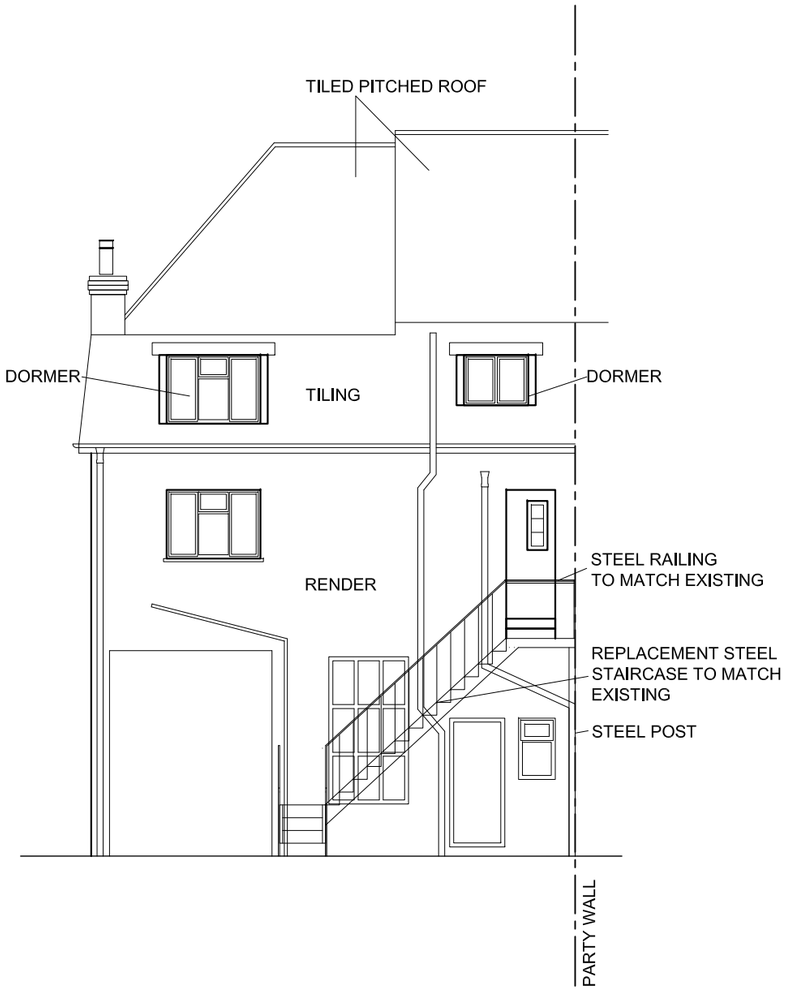
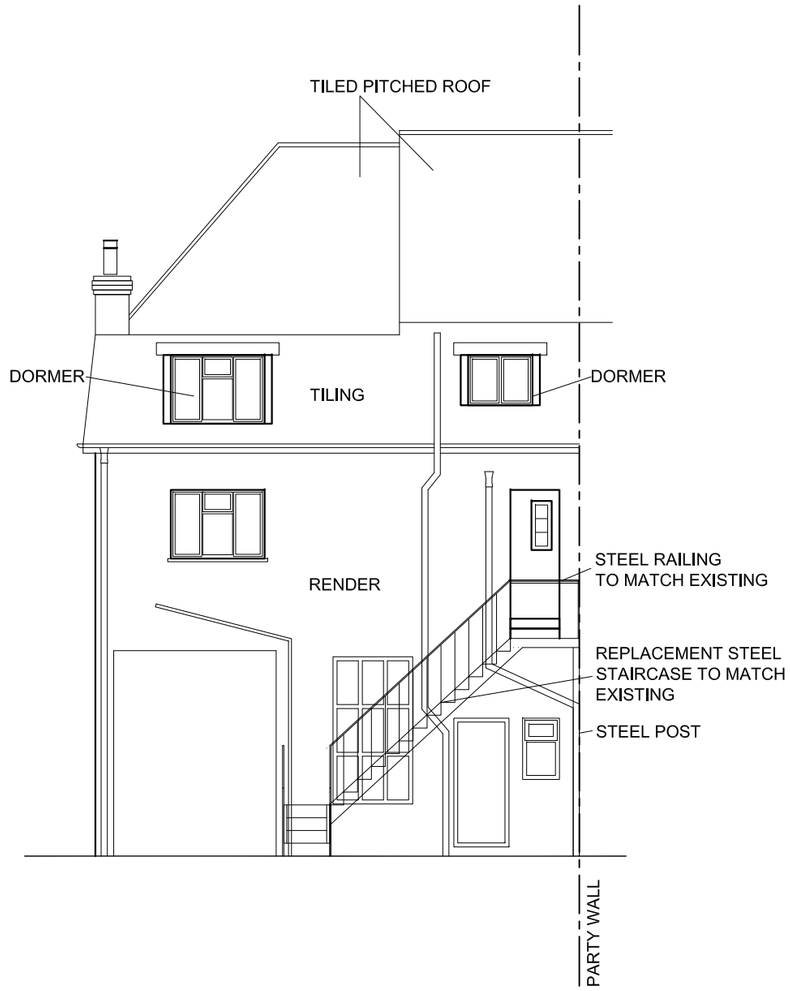
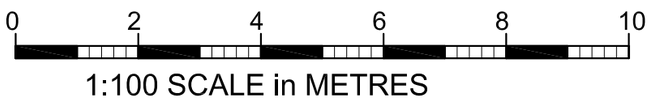
Client:	Envision
Address:	96A George V Avenue, Worthing, BN11 5RP
Project:	Conversion Office Into Studio Flat
Drawing title:	Existing and Proposed Elevations
Project No	18034
Date	09-06-22
Drawn by	IA
Drawing No	EP02
Scale	1:100@A3



EXISTING EAST ELEVATION
/EXISTING REAR ELEVATION/



PROPOSED EAST ELEVATION
/PROPOSED REAR ELEVATION/
UNCHANGED



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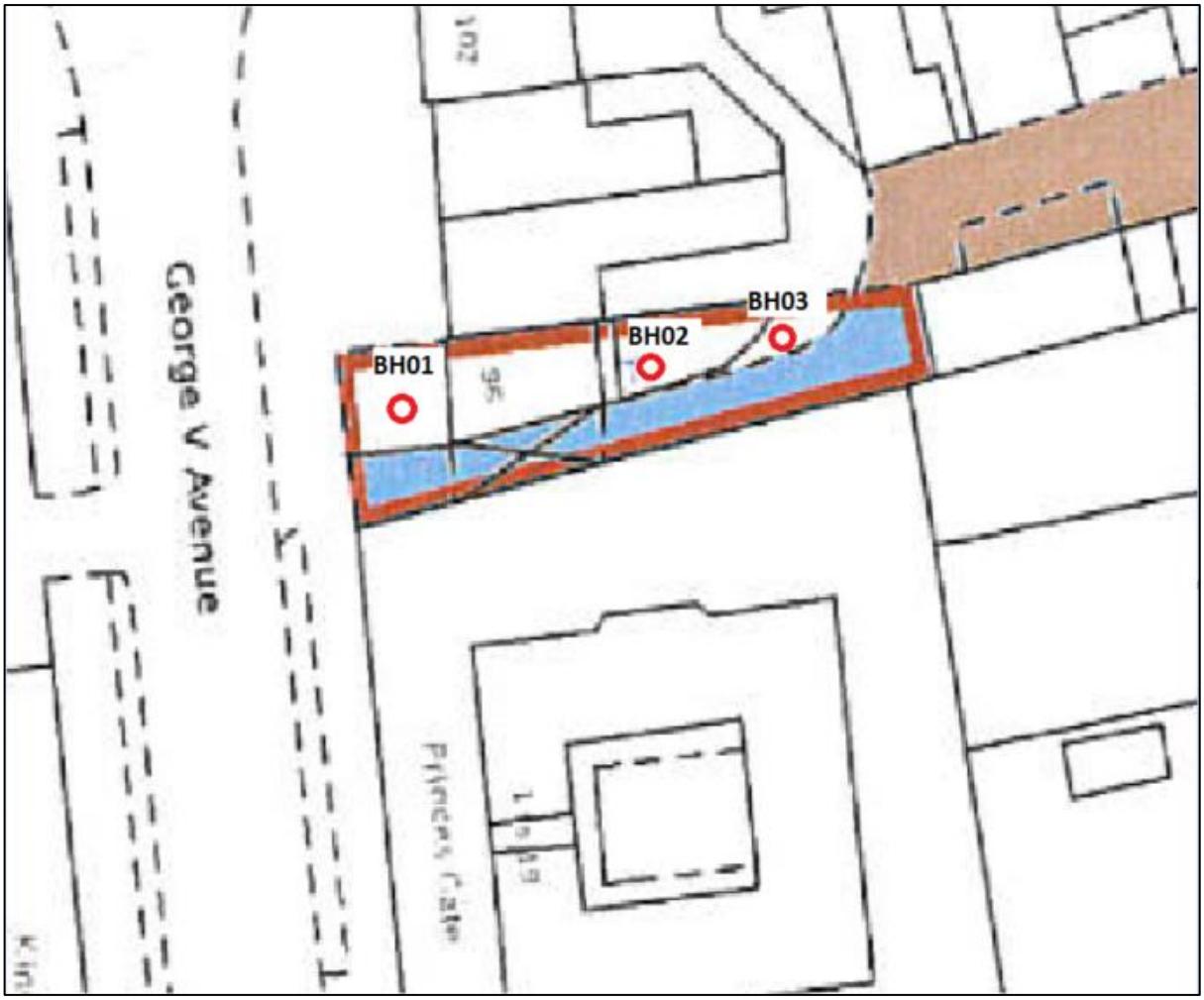
No.	Description	Date

Client:	Envision
Address:	96A George V Avenue, Worthing, BN11 5RP
Project:	Conversion Office Into Studio Flat
Drawing title:	Existing and Proposed Elevations
Project No	18034
Date	09-06-22
Drawn by	IA
Drawing No	EP03
Scale	1:100@A3

12.2 Appendix 2 - Borehole Location Plan



12.3 Appendix 3 - Borehole Logs

Borehole Log

STM environmental			Borehole No. **BH01** Sheet 1 of 1
Project Name: 96A George V Avenue	Project No. PH2-2023-000040	Co-ords: -	Hole Type HA
Location: 96A George V Avenue, Worthing, BN11 5RP		Level:	Scale 1:50
Client: Envision Contracting Ltd		Dates: 19/10/2023 - 19/10/2023	Logged By A. Akanu/ Z. Price

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30	ES	PID=0	0.10 0.20			Tarmac overlying concrete hardstand Made Ground - Dark brown pinkish clayey SAND with rare fragments of brick and concrete Dark brown CLAY
		1.00	ES	PID=0	1.00			Light brown and orange CLAY becoming gravelly CLAY at base
					1.50			End of borehole at 1.50 m

Remarks
Borehole advanced to a maximum depth of 1.5mbgl. No groundwater encountered. Elevation levels and borehole location grid references are approximated based on LiDAR data.

AGS

Borehole Log

			Borehole No. **BH02** Sheet 1 of 1
Project Name: 96A George V Avenue	Project No. PH2-2023-000040	Co-ords: -	Hole Type HA
Location: 96A George V Avenue, Worthing, BN11 5RP		Level:	Scale 1:50
Client: Envision Contracting Ltd		Dates: 19/10/2023 - 19/10/2023	Logged By A. Akanu/ Z. Price

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50	ES	PID=0	0.30			Made Ground - Dark brown and black sandy SILT with an abundance of brick, ceramic and glass fragments
		1.20	ES	PID=0	1.20			Dark brown CLAY
								End of borehole at 1.20 m

1 2 3 4 5 6 7 8 9 10

Remarks
Borehole advanced to a maximum depth of 1.2mbgl. No groundwater encountered. Elevation levels and borehole location grid references are approximated based on LiDAR data.

Borehole Log

Borehole No. **BH03** Sheet 1 of 1		
Project Name: 96A George V Avenue	Project No. PH2-2023-000040	Co-ords: -
Hole Type HA		
Location: 96A George V Avenue, Worthing, BN11 5RP	Level:	Scale 1:50
Client: Envision Contracting Ltd	Dates: 19/10/2023 - 19/10/2023	Logged By A. Akanu/ Z. Price

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10			Tarmac
					0.30			Made Ground - Brown and black slightly gravelly SILT with rare fragments of brick and concrete
		0.40	ES	PID=0				Brown and orange CLAY becoming gravelly CLAY at base
		0.80	ES	PID=0				
					1.50			End of borehole at 1.60 m

Remarks
Borehole advanced to a maximum depth of 1.6mbgl. No groundwater encountered. Elevation levels and borehole location grid references are approximated based on LiDAR data.

12.4 Appendix 4 - Photographs



General overview of the site





Soils encountered in BH01 and BH02





Soils encountered in BH03

12.5 Appendix 5 – Laboratory Certification

SOCOTEC

Environmental Chemistry

Certificate of Analysis

Client: STM Environmental Consultants

Project: 23103012

Quote: BEC230228809 V4.1

Project Ref: 9A George V Avenue Worthing

Site: 9A George V Avenue Worthing

Contact: Parminder Bhatia

Address: Unit 6, Crane Mews
32 Gould Road
Twickenham
London
TW2 6RS

E-Mail: Parminder@stmenvironmental.co.uk

Phone: 07760469516

No. Samples Received: 6

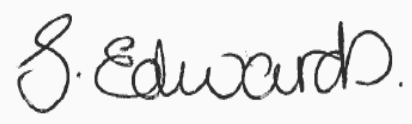
Date Received: 27/10/2023

Analysis Date: 08/11/2023

Date Issued: 08/11/2023

Report Type: Final Version 01

This report supersedes any versions previously issued by the laboratory



Reported by Customer Service Co-Ordinator
Samantha Edwards

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

Samples Analysed

Text ID	Sample Reference	Sampling Date	Sample Type	Sample Description
23103012-001	BH01/1-0-ES-0.30-0.30	19/10/2023 00:00:00	SOLID	Soil Sample
23103012-002	BH01/2-0-ES-1.00-1.00	19/10/2023 00:00:00	SOLID	Soil Sample
23103012-003	BH02/1-0-ES-0.50-0.50	19/10/2023 00:00:00	SOLID	Soil Sample
23103012-004	BH02/2-0-ES-1.20-1.20	19/10/2023 00:00:00	SOLID	Soil Sample
23103012-005	BH03/1-0-ES-0.40-0.40	19/10/2023 00:00:00	SOLID	Soil Sample
23103012-006	BH03/2-0-ES-0.80-0.80	19/10/2023 00:00:00	SOLID	Soil Sample

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

1252

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	001	002	003	004	005	006
Sample ID					001	002	003	004	005	006
Customer ID					BH01/1-0-ES-0.30-0.30	BH01/2-0-ES-1.00-1.00	BH02/1-0-ES-0.50-0.50	BH02/2-0-ES-1.20-1.20	BH03/1-0-ES-0.40-0.40	BH03/2-0-ES-0.80-0.80
Sample Type					SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Sampling Date					19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023
>C6-C8 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg^	UM	<0.248	<0.244	<0.246	<0.241	<0.240	<0.244
>C7-C8 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg^	UM	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
>C8-C10 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg^	UM	<0.248	<0.244	<0.246	<0.241	<0.240	<0.244
>C8-C10 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.04	mg/kg^	UM	<0.05	<0.049	<0.049	<0.048	<0.048	<0.049
C5-C6 Aliphatic HS_1D_AL	GROHSA/BTEXHSA	0.2	mg/kg^	UM	<0.248	<0.244	<0.246	<0.241	<0.240	<0.244
C5-C7 Aromatic HS_1D_AR	GROHSA/BTEXHSA	0.01	mg/kg^	UM	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Total GRO C5-C10 HS_1D_Total	GROHSA/BTEXHSA	0.2	mg/kg^	UM	<0.248	<0.244	<0.246	<0.241	<0.240	<0.244
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM	7.9	7.9	7.5	7.8	7.8	7.8
Phenol Index	SFAPI	0.5	mg/kg^	U	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Sulphide as S	SFAPI	0.5	mg/kg^	N	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Total Cyanide	SFAPI	0.5	mg/kg^	UM	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Total Organic Carbon	WSLM59	0.02	% m/m^	U	0.73	0.52	0.68	0.52	0.75	1.05
Arsenic as As	ICPMSS	0.3	mg/kg^	UM	7.0	9.0	6.6	6.3	8.9	8.2
Cadmium as Cd	ICPMSS	0.2	mg/kg^	UM	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper as Cu	ICPMSS	1.6	mg/kg^	UM	11.3	14.4	13.4	14.1	16.1	13.3
Lead as Pb	ICPMSS	0.7	mg/kg^	UM	19.6	13.4	24.1	14.6	33.5	22.6
Mercury as Hg	ICPMSS	0.5	mg/kg^	UM	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel as Ni	ICPMSS	2	mg/kg^	UM	13.8	20.3	14.8	15.0	19.5	17.2
Selenium as Se	ICPMSS	0.5	mg/kg^	UM	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

UKAS TESTING 1252

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	001	002	003	004	005	006
Sample ID					001	002	003	004	005	006
Customer ID					BH01/1-0-ES-0.30-0.30	BH01/2-0-ES-1.00-1.00	BH02/1-0-ES-0.50-0.50	BH02/2-0-ES-1.20-1.20	BH03/1-0-ES-0.40-0.40	BH03/2-0-ES-0.80-0.80
Sample Type					SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Sampling Date					19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023
Total Chromium as Cr	ICPMSS	1.2	mg/kg^	UM	18.5	26.3	19.8	20.2	22.9	21.2
Zinc as Zn	ICPMSS	16	mg/kg^	UM	47.0	53.9	60.5	62.6	69.0	60.0
Boron as B	ICPBOR	0.5	mg/kg^	UM	0.9	0.6	0.8	1.1	0.9	0.9
Acid Soluble Sulphate as SO4	ICPACIDS	20	mg/kg^	UM	2170	271	210	171	313	226
Benzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	<12	<12	<12	<12	<12	<12
Ethylbenzene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	<12	<12	<12	<12	<12	<12
m/p-Xylene HS_1D_AR	BTEXHSA	20	µg/kg^	UM	<25	<24	<25	<24	<24	<24
o-Xylene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	<12	<12	<12	<12	<12	<12
Toluene HS_1D_AR	BTEXHSA	10	µg/kg^	UM	<12	<12	<12	<12	<12	<12
Acenaphthene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Acenaphthylene	PAHMSUS	0.08	mg/kg^	U	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Anthracene	PAHMSUS	0.08	mg/kg^	U	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo[a]anthracene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo[a]pyrene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	0.14
Benzo[b]fluoranthene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	0.17
Benzo[g,h,i]perylene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	0.14
Benzo[k]fluoranthene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	0.11
Dibenzo[a,h]anthracene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

1252

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	001	002	003	004	005	006
Sample ID					001	002	003	004	005	006
Customer ID					BH01/1-0-ES-0.30-0.30	BH01/2-0-ES-1.00-1.00	BH02/1-0-ES-0.50-0.50	BH02/2-0-ES-1.20-1.20	BH03/1-0-ES-0.40-0.40	BH03/2-0-ES-0.80-0.80
Sample Type					SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Sampling Date					19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023
Fluoranthene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	0.14
Fluorene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Indeno[1,2,3-cd]pyrene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	0.13
Naphthalene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Pyrene	PAHMSUS	0.08	mg/kg^	UM	<0.10	<0.10	<0.10	<0.10	<0.10	0.17
Total PAH 16	PAHMSUS	1.28	mg/kg^	U	<1.58	<1.56	<1.58	<1.54	<1.54	1.89
1,2,4-Trichlorobenzene	SVOCSW	0.1	mg/kg^	N	<0.1		<0.1		<0.1	
1,2-Dichlorobenzene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
1,3-Dichlorobenzene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
1,4-Dichlorobenzene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
1-Methylnaphthalene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
2,4,5-Trichlorophenol	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
2,4,6-Trichlorophenol	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
2,4-Dichlorophenol	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
2,4-Dimethylphenol	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
2,4-Dinitrophenol	SVOCSW	0.5	mg/kg^	N	<0.6		<0.6		<0.6	
2,4-Dinitrotoluene	SVOCSW	0.2	mg/kg^	U	<0.2		<0.2		<0.2	
2,6-Dinitrotoluene	SVOCSW	0.5	mg/kg^	U	<0.6		<0.6		<0.6	

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

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Analysis Results

					Sample ID	001	002	003	004	005	006
					Customer ID	BH01/1-0-ES-0.30-0.30	BH01/2-0-ES-1.00-1.00	BH02/1-0-ES-0.50-0.50	BH02/2-0-ES-1.20-1.20	BH03/1-0-ES-0.40-0.40	BH03/2-0-ES-0.80-0.80
					Sample Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
					Sampling Date	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023
Analysis	**Method Code**	**MDL**	**Units**	**Accred.**							
2-Chloronaphthalene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
2-Chlorophenol	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
2-Methylnaphthalene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
2-Methylphenol	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
2-Nitroaniline	SVOCSW	0.5	mg/kg^	N	<0.6		<0.6		<0.6	
2-Nitrophenol	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
3- & 4-Methylphenol	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
3-Nitroaniline	SVOCSW	0.5	mg/kg^	N	<0.6		<0.6		<0.6	
4,6-Dinitro-2-methylphenol	SVOCSW	0.2	mg/kg^	N	<0.2		<0.2		<0.2	
4-Bromophenyl-phenylether	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
4-Chloro-3-methylphenol	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
4-Chloroaniline	SVOCSW	0.5	mg/kg^	N	<0.6		<0.6		<0.6	
4-Chlorophenol	SVOCSW	0.5	mg/kg^	U	<0.6		<0.6		<0.6	
4-Chlorophenyl-phenylether	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
4-Nitroaniline	SVOCSW	0.6	mg/kg^	N	<0.7		<0.7		<0.7	
4-Nitrophenol	SVOCSW	0.5	mg/kg^	N	<0.6		<0.6		<0.6	
Acenaphthene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
Acenaphthylene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
Anthracene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

UKAS TESTING 1252

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

Analysis Results

					Sample ID	001	002	003	004	005	006
					Customer ID	BH01/1-0-ES-0.30-0.30	BH01/2-0-ES-1.00-1.00	BH02/1-0-ES-0.50-0.50	BH02/2-0-ES-1.20-1.20	BH03/1-0-ES-0.40-0.40	BH03/2-0-ES-0.80-0.80
					Sample Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
					Sampling Date	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023
Analysis	Method Code	MDL	Units	Accred.							
Azobenzene	SVOCSW	0.3	mg/kg^	N		<0.4		<0.4		<0.4	
Benzo[a]anthracene	SVOCSW	0.2	mg/kg^	U		<0.2		<0.2		<0.2	
Benzo[a]pyrene	SVOCSW	0.2	mg/kg^	U		<0.2		<0.2		<0.2	
Benzo[b]fluoranthene	SVOCSW	0.2	mg/kg^	U		<0.2		<0.2		<0.2	
Benzo[g,h,i]perylene	SVOCSW	0.5	mg/kg^	U		<0.6		<0.6		<0.6	
Benzo[k]fluoranthene	SVOCSW	0.2	mg/kg^	U		<0.2		<0.2		<0.2	
Benzoic Acid	SVOCSW	0.5	mg/kg^	N		<0.6		<0.6		<0.6	
Benzyl alcohol	SVOCSW	0.5	mg/kg^	U		<0.6		<0.6		<0.6	
Biphenyl	SVOCSW	0.1	mg/kg^	U		<0.1		<0.1		<0.1	
bis(2-Chloroethoxy)methane	SVOCSW	0.1	mg/kg^	U		<0.1		<0.1		<0.1	
bis(2-Chloroethyl)ether	SVOCSW	0.1	mg/kg^	U		<0.1		<0.1		<0.1	
bis(2-Chloroisopropyl)ether	SVOCSW	0.5	mg/kg^	U		<0.6		<0.6		<0.6	
bis(2-Ethylhexyl)phthalate	SVOCSW	0.2	mg/kg^	U		<0.2		<0.2		<0.2	
Butylbenzylphthalate	SVOCSW	0.2	mg/kg^	U		<0.2		<0.2		<0.2	
Carbazole	SVOCSW	0.3	mg/kg^	N		<0.4		<0.4		<0.4	
Chrysene	SVOCSW	0.2	mg/kg^	U		<0.2		<0.2		<0.2	
Coronene	SVOCSW	0.3	mg/kg^	N		<0.4		<0.4		<0.4	
Dibenzo[a,h]anthracene	SVOCSW	0.5	mg/kg^	U		<0.6		<0.6		<0.6	
Dibenzofuran	SVOCSW	0.1	mg/kg^	U		<0.1		<0.1		<0.1	

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

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Analysis Results

					Sample ID	001	002	003	004	005	006
					Customer ID	BH01/1-0-ES-0.30-0.30	BH01/2-0-ES-1.00-1.00	BH02/1-0-ES-0.50-0.50	BH02/2-0-ES-1.20-1.20	BH03/1-0-ES-0.40-0.40	BH03/2-0-ES-0.80-0.80
					Sample Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
					Sampling Date	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023
Analysis	Method Code	MDL	Units	Accred.							
Diethylphthalate	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
Dimethylphthalate	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
Di-n-butylphthalate	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
Di-n-octylphthalate	SVOCSW	0.2	mg/kg^	U	<0.2		<0.2		<0.2	
Diphenyl ether	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
Fluoranthene	SVOCSW	0.2	mg/kg^	U	<0.2		<0.2		<0.2	
Fluorene	SVOCSW	0.2	mg/kg^	U	<0.2		<0.2		<0.2	
Hexachlorobenzene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
Hexachlorobutadiene	SVOCSW	0.1	mg/kg^	N	<0.1		<0.1		<0.1	
Hexachlorocyclopentadiene	SVOCSW	0.1	mg/kg^	N	<0.1		<0.1		<0.1	
Hexachloroethane	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
Indeno[1,2,3-cd]pyrene	SVOCSW	0.5	mg/kg^	U	<0.6		<0.6		<0.6	
Isophorone	SVOCSW	0.1	mg/kg^	N	<0.1		<0.1		<0.1	
Naphthalene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
Nitrobenzene	SVOCSW	0.5	mg/kg^	U	<0.6		<0.6		<0.6	
N-Nitroso-di-n-propylamine	SVOCSW	0.9	mg/kg^	N	<1.1		<1.1		<1.1	
N-Nitrosodiphenylamine	SVOCSW	0.1	mg/kg^	N	<0.1		<0.1		<0.1	
Pentachlorophenol	SVOCSW	0.5	mg/kg^	N	<0.6		<0.6		<0.6	
Phenanthrene	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

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Analysis Results

Analysis	Method Code	MDL	Units	Accred.	001	002	003	004	005	006
Sample ID					001	002	003	004	005	006
Customer ID					BH01/1-0-ES-0.30-0.30	BH01/2-0-ES-1.00-1.00	BH02/1-0-ES-0.50-0.50	BH02/2-0-ES-1.20-1.20	BH03/1-0-ES-0.40-0.40	BH03/2-0-ES-0.80-0.80
Sample Type					SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Sampling Date					19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023
Phenol	SVOCSW	0.1	mg/kg^	U	<0.1		<0.1		<0.1	
Pyrene	SVOCSW	0.2	mg/kg^	U	<0.2		<0.2		<0.2	
>C10-C12 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^	U	<4.95	<4.88	<4.93	<4.82	<4.80	<4.88
>C12-C16 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^	U	<4.95	<4.88	6.92	<4.82	<4.80	<4.88
>C16-C21 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	4	mg/kg^	U	<4.95	<4.88	5.16	<4.82	<4.80	<4.88
>C21-C35 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	10	mg/kg^	U	<12.4	<12.2	13.8	<12.0	<12.0	<12.2
>C35-C44 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	6	mg/kg^	N	8.90	11.4	12.5	<7.23	<7.20	7.95
Total TPH >C8-C40 (Aliphatic) EH_CU_1D_AL	TPHFIDUS (Aliphatic)	20	mg/kg^	U	<24.8	29.3	37.5	<24.1	<24.0	<24.4
>C10-C12 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^	U	5.80	8.52	8.84	5.90	5.92	6.39
>C12-C16 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^	U	9.43	12.4	16.1	9.52	9.36	10.6
>C16-C21 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	4	mg/kg^	U	10.0	13.3	13.2	10.6	8.94	10.9
>C21-C35 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	10	mg/kg^	U	21.5	27.6	27.9	22.6	22.3	30.8
>C35-C44 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	6	mg/kg^	N	<7.43	16.1	18.0	9.22	7.85	7.93
Total TPH >C8-C40 (Aromatic) EH_CU_1D_AR	TPHFIDUS (Aromatic)	20	mg/kg^	U	51.5	76.8	83.1	53.6	50.7	63.4
Total Moisture at 35°C	CLANDPREP	0.1	%	N	19.2	18.1	18.8	17.0	16.7	18.0
Colour of Material	CLANDPREP		-	N	Brown	Brown	Brown	Brown	Brown	Brown
Major Constituents	CLANDPREP		-	N	CLAY	CLAY	SILT	SILT	CLAY	CLAY
Minor Constituents	CLANDPREP		-	N	Silt	Silt	None	None	Silt	Silt
Miscellaneous Constituents	CLANDPREP		-	N	Gravel	Gravel	na	na	Gravel	Gravel

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

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Analysis Results

			Sample ID		001	002	003	004	005	006
			Customer ID		BH01/1-0-ES-0.30-0.30	BH01/2-0-ES-1.00-1.00	BH02/1-0-ES-0.50-0.50	BH02/2-0-ES-1.20-1.20	BH03/1-0-ES-0.40-0.40	BH03/2-0-ES-0.80-0.80
			Sample Type		SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
			Sampling Date		19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023
Analysis	Method Code	MDL	Units	Accred.						
Asbestos Identification	SUB002		-	N	NAIIS	NAIIS	NAIIS	NAIIS	NAIIS	NAIIS

ASBESTOS ANALYSIS RESULTS

SOCOTEC Asbestos Limited Certificate of Analysis for Asbestos in Soils, Sediments and Aggregates

UKAS TESTING
1089

Detection limit of Method SCI-ASB-020 is 0.001%

Sampling has been carried out by a third party

SOCOTEC

Client:	SOCOTEC Environmental Chemistry	**Page 1 of 1**	
Address:	Etwall House, Bretby Business Park, Ashby Road, Burton upon Trent	**Report No:**	**ANO-0503-29217**
For the attention of:	SOCOTEC Environmental Chemistry	**Report Date:**	**03/11/2023**
Site Address:	9A George V Avenue Worthing	**Project Number:**	**23103012**

Sample Number	Sample Date	Sample Location & Matrix	Test Date	Total Sample Dry Weight (g)	Weight of <10mm Fraction (g)	Asbestos(g) in >10mm	Asbestos(g) in < 10mm	% Asbestos by weight of Total Dried Sample	Moisture Content	Asbestos Fibre Types Identified
1	19/10/23	BH01/1-0-ES-0.30-0.30 Soils	03/11/2023	704.9	681.9	0.00000	0.00000			NADIS - Stage 1
2	19/10/23	BH01/2-0-ES-1.00-1.00 Soils	03/11/2023	617.7	617.7	0.00000	0.00000			NADIS - Stage 1
3	19/10/23	BH02/1-0-ES-0.50-0.50 Soils	03/11/2023	572.4	572.4	0.00000	0.00000			NADIS - Stage 1
4	19/10/23	BH02/2-0-ES-1.20-1.20 Soils	03/11/2023	572.0	572.0	0.00000	0.00000			NADIS - Stage 1
5	19/10/23	BH03/1-0-ES-0.40-0.40 Soils	03/11/2023	843.3	843.1	0.00000	0.00000			NADIS - Stage 1
6	19/10/23	BH03/2-0-ES-0.80-0.80 Soils	03/11/2023	1123.1	1111.3	0.00000	0.00000			NADIS - Stage 1

Keys

NAACR = Not Analysed at Clients Request

NAIIS = No Asbestos Identified in Sample (Identification Only)

*** visible to naked eye**

NADIS = No Asbestos Detected in Sample (ID & Quant Only)

Name:	Joshua Turner	Authorised Signatory:
Position:	Lab Technician	

The sample analysis for the above results was carried out using the procedures detailed in SOCOTEC Asbestos Limited in house method (SCI-ASB-020) based on EA document Quantification of asbestos in soil and associated materials - Draft 2017. Fibre identification was carried out using SOCOTEC Asbestos Limited in house method of transmitted/polarised light microscopy and centre stop dispersion staining (SCI-ASB-007), and fibre counting during sedimentation test, where applicable, was carried out using SOCOTEC Asbestos Ltd in house method (SCI/ASB/003) based on HSE's HSG 248. The sedimentation test does not discriminate non-asbestos fibres. Uncertainty of Measurement (UoM) estimate is +/- 29% for full quantitative analysis based on reproducibility analysis at 0.1%. Sampling is outside the UoM estimate. Recommended sample weight is 1kg-2kg, samples less than 1kg are classified as deviating samples. Any opinions or interpretations are outside the scope of our UKAS accreditation.

SOCOTEC Asbestos Limited is a wholly owned subsidiary of SOCOTEC UK Limited, registered in England and Wales, registered company 04951688.

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

Deviating Sample Report

Sample Reference	Text ID	Method Code	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
BH01/1-0-ES-0.30-0.30	23103012-001	**BTEXHSA**						✓
BH01/1-0-ES-0.30-0.30	23103012-001	**GROHSA/BTEXHSA**						✓
BH01/1-0-ES-0.30-0.30	23103012-001	**PHSOIL**						✓
BH01/2-0-ES-1.00-1.00	23103012-002	**BTEXHSA**						✓
BH01/2-0-ES-1.00-1.00	23103012-002	**GROHSA/BTEXHSA**						✓
BH01/2-0-ES-1.00-1.00	23103012-002	**PHSOIL**						✓
BH02/1-0-ES-0.50-0.50	23103012-003	**BTEXHSA**						✓
BH02/1-0-ES-0.50-0.50	23103012-003	**GROHSA/BTEXHSA**						✓
BH02/1-0-ES-0.50-0.50	23103012-003	**PHSOIL**						✓
BH02/2-0-ES-1.20-1.20	23103012-004	**BTEXHSA**						✓
BH02/2-0-ES-1.20-1.20	23103012-004	**GROHSA/BTEXHSA**						✓
BH02/2-0-ES-1.20-1.20	23103012-004	**PHSOIL**						✓
BH03/1-0-ES-0.40-0.40	23103012-005	**BTEXHSA**						✓
BH03/1-0-ES-0.40-0.40	23103012-005	**GROHSA/BTEXHSA**						✓
BH03/1-0-ES-0.40-0.40	23103012-005	**PHSOIL**						✓
BH03/2-0-ES-0.80-0.80	23103012-006	**BTEXHSA**						✓
BH03/2-0-ES-0.80-0.80	23103012-006	**GROHSA/BTEXHSA**						✓
BH03/2-0-ES-0.80-0.80	23103012-006	**PHSOIL**						✓

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

Analysis Method

Method Code	Method Description	Analysis Method
BTEXHSA	BTEX by GCFID	As Received
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
CLANDPREP	Solid Material Description	As Received
GROHSA/BTEXHSA	GRO CWG UK (C5-C10) Ali/Aro Split	As Received
ICPACIDS	Sulphate as SO4 (Acid Soluble)	Air Dried & Ground
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried & Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried & Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried & Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried & Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried & Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried & Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried & Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried & Ground
PAHMSUS	16 PAHs by GCMS	As Received
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Total) by SFA	As Received
SFAPI	Phenol Index (Total) by SFA	As Received
SFAPI	Sulphide by SFA	As Received
SUB002	Asbestos Stage 1 (with Stage 2 Trigger)	
SVOCSW	SVOCs (Target List) by GCMS	As Received
TPHFIDUS (Aliphatic)	TPH (CWG UK) Aliphatic Split with Carbon Banding	As Received
TPHFIDUS (Aromatic)	TPH (CWG UK) Aromatic Split with Carbon Banding	As Received
WSLM59	TOC: Total Organic Carbon	Air Dried & Ground

Result Report Notes

Letters alongside results signify that the result has associated report notes.
The report notes are as follows:

Letter	Note
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference, the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to the parameter value being beyond our calibration range (and following the maximum size of dilution allowed, where applicable), the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.

F Based on the sample history, appearance and smell a dilution was applied prior to testing . Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.

G The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

Acronym	Description
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total

Client: STM Environmental Consultants
Project Name: 9A George V Avenue Worthing-9A George V Avenue Worthing
Project No: 23103012
Date Issued: 08/11/2023

Additional Information

This report refers to samples as received. SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

The accreditation codes are as follows:

U = UKAS accredited analysis
M = MCERT accredited analysis
N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35°C.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35°C.

This report shall not be reproduced except in full, without written approval of the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

IS = Insufficient Sample to complete analysis
NA = Sample is not amenable for the required analysis
ND = Results cannot be determined

Items listed with a 'SUB' method code prefix have been carried out by an external subcontracted laboratory.

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the subcontracted lab for information regarding any deviancies for this analysis.

Summaries of analysis methods are available upon request.

End of Certificate of Analysis

12.6 Appendix 6 – Chosen Generic Assessment Criteria

12.6.1 Soils Criteria

Contaminant	Concentration (mg/kg)	GAC Literature Source
Arsenic	37	Category 4 Screening Levels - Residential (with Home-grown Produce) LQM SULs - RWHP (1% SOM)
Cadmium	11	LQM SULs - RWHP
Chromium	910	LQM SULs - RWHP
Chromium - Hexavalent	6	LQM SULs - RWHP
Copper	2400	LQM SULs - RWHP
Lead	200	LQM SULs - RWHP
Mercury	40	LQM SULs - RWHP
Nickel	180	LQM SULs - RWHP
Selenium	250	LQM SULs - RWHP
Zinc	3700	LQM SULs - RWHP
Toluene	130	LQM SULs - RWHP (1% SOM)
Benzene	0.087	LQM SULs - RWHP (1% SOM)
Ethylbenzene	47	LQM SULs - RWHP (1% SOM)
m,p xylenes	56	LQM SULs - RWHP (1% SOM)
Acenaphthylene	170	LQM SULs - RWHP (1% SOM)
Acenaphthene	210	LQM SULs - RWHP (1% SOM)
Fluorene	170	LQM SULs - RWHP (1% SOM)
Phenanthrene	95	LQM SULs - RWHP (1% SOM)
Anthracene	2400	LQM SULs - RWHP (1% SOM)
Fluoranthene	280	LQM SULs - RWHP (1% SOM)
Pyrene	620	LQM SULs - RWHP (1% SOM)
Benzo(a)anthracene	7.2	LQM SULs - RWHP (1% SOM)
Chrysene	15	LQM SULs - RWHP (1% SOM)
Benzo (b) fluoranthene	2.6	LQM SULs - RWHP (1% SOM)
Benzo(k)fluoranthene	77	LQM SULs - RWHP (1% SOM)
Benzo(a)pyrene	2.2	LQM SULs - RWHP (1% SOM)
Dibenz-a-h-anthracene	0.24	LQM SULs - RWHP (1% SOM)
Indeno(1,2,3-cd) pyrene	27	LQM SULs - RWHP (1% SOM)
Benzo (g,h,i) perylene	320	LQM SULs - RWHP (1% SOM)
Aliphatics >C5-6	42	LQM SULs - RWHP (1% SOM)
Aliphatics >C6-8	100	LQM SULs - RWHP (1% SOM)
Aliphatics >C8-10	27	LQM SULs - RWHP (1% SOM)
Aliphatics >C10-12	130	LQM SULs - RWHP (1% SOM)
Aliphatics >C12-16	1100	LQM SULs - RWHP (1% SOM)
Aliphatics >C16-C35	65000	LQM SULs - RWHP (1% SOM)
Aliphatics >C21-35	1100	LQM SULs - RWHP (1% SOM)
Aliphatics >C35-44	65000	LQM SULs - RWHP (1% SOM)

Contaminant	Concentration (mg/kg)	GAC Literature Source
Aromatics >C5-7	70	LQM SULs - RWHP (1% SOM)
Aromatics >C8-10	34	LQM SULs - RWHP (1% SOM)
Aromatics >C10-12	74	LQM SULs - RWHP (1% SOM)
Aromatics >C12-16	140	LQM SULs - RWHP (1% SOM)
Aromatics >C16-21	260	LQM SULs - RWHP (1% SOM)
Aromatics >C21-35	1100	LQM SULs - RWHP (1% SOM)
Aromatics >C35-44	1100	LQM SULs - RWHP (1% SOM)
Naphthalene	2.3	LQM SULs - RWHP (1% SOM)
Phenol	120	LQM SULs - RWHP (1% SOM)

LQM S4ULs – RWHP: LQM Suitable for Use Levels - Residential (With Home-grown Produce - 1% Soil Organic Matter)
LQM S4ULs - RWHP (1% SSOM): LQM Suitable for Use Levels - Residential (With Home-grown Produce - 1% Organic Matter)
The LQM values quoted are copyright Land Quality Management Limited reproduced with permission; publication number S4UL3637. All rights reserved.

12.7 Appendix 7 – Statistical Analysis Summary

Parameter	GAC	GAC Source	No. Samples	Mean	Maximum	Outliers Excluded	Max. Value Location	Mean Exceedence	Std Deviation	Non-Detects	W_Shapiro-Wilk	W_Critical	Distribution	TStatistic	Upper 95th percentile (UB95)	Mean Value Test Result	Max Value Test Result	One Sample T Test - T0	One Sample T Test - Tn	One Sample T Test Result	One Sample T Test - Evidence Level (%)	Kcrit-Chebychev	UCL95-Chebychev	K0-Chebychev	Chebychev Test Result	Chebychev - Evidence Level (%)
Aliphatics>C6-8	100	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	0	0	0	N/A	No	0	6	0	0	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	51	4.36	0	0	Reject H0 (k0 < kcrit)	0
Aliphatics>C8-10	27	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	0	0	0	N/A	No	0	6	0	0	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	51	4.36	0	0	Reject H0 (k0 < kcrit)	0
Aromatics>C8-10	34	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	0	0	0	N/A	No	0	6	0	0	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	51	4.36	0	0	Reject H0 (k0 < kcrit)	0
Aliphatics>C5-6	42	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	0	0	0	N/A	No	0	6	0	0	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	51	4.36	0	0	Reject H0 (k0 < kcrit)	0
Aromatics>C5-7	70	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	0	0	0	N/A	No	0	6	0	0	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	51	4.36	0	0	Reject H0 (k0 < kcrit)	0
Arsenic	37	Category 4 Screening Levels - Residential (with homegrown produce)	6	7.67	9	0	BH01/2	No	1.19	0	0.8801	0.788	Normal	2.015	8.6423	PASSED	Max. Value NOT Outlier	-60.582	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	9.77775527	-60.581698	Reject H0 (k0 < kcrit)	99
Cadmium	11	LQM Suitable for Use Levels - Residential (With Plant Uptake)	6	0	0	0	N/A	No	0	6	0.8801	0.788	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-60.581698	Reject H0 (k0 < kcrit)	99
Copper	2400	LQM Suitable for Use Levels - Residential (With Plant Uptake)	6	13.77	16.1	0	BH03/1	No	1.57	0	0.9644	0.788	Normal	2.015	15.0618	PASSED	Max. Value NOT Outlier	-3712.611	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	16.5690009	-3712.6112	Reject H0 (k0 < kcrit)	99
Lead	200	LQM Suitable for Use Levels - Residential (With Plant Uptake)	6	21.3	33.5	0	BH03/1	No	7.33	0	0.9364	0.788	Normal	2.015	27.3289	PASSED	Max. Value NOT Outlier	-59.726	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	34.3450734	-59.726149	Reject H0 (k0 < kcrit)	99
Mercury	40	LQM Suitable for Use Levels - Residential (With Plant Uptake)	6	0	0	0	N/A	No	0	6	0.9364	0.788	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-59.726149	Reject H0 (k0 < kcrit)	99
Nickel	130	LQM Suitable for Use Levels - Residential (With Plant Uptake)	6	16.77	20.3	0	BH01/2	No	2.68	0	0.9022	0.788	Normal	2.015	18.9719	PASSED	Max. Value NOT Outlier	-103.463	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	21.538383	-103.46326	Reject H0 (k0 < kcrit)	99
Selenium	250	LQM Suitable for Use Levels - Residential (With Plant Uptake)	6	0	0	0	N/A	No	0	6	0.9022	0.788	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-103.46326	Reject H0 (k0 < kcrit)	99
Chromium	910	LQM Suitable for Use Levels - Residential (With Plant Uptake)	6	21.48	26.3	0	BH01/2	No	2.78	0	0.9231	0.788	Normal	2.015	23.771	PASSED	Max. Value is Outlier	-782.616	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	26.433315	-782.61556	Reject H0 (k0 < kcrit)	99
Zinc	3700	LQM Suitable for Use Levels - Residential (With Plant Uptake)	6	58.83	69	0	BH03/1	No	7.56	0	0.9673	0.788	Normal	2.015	65.0554	PASSED	Max. Value NOT Outlier	-1179.173	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	72.2965665	-1179.1734	Reject H0 (k0 < kcrit)	99
Benzene	0.087	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	0	0	0	N/A	No	0	6	0.5566	0.788	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-1179.1734	Reject H0 (k0 < kcrit)	99
Ethylbenzene	47	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	0	0	0	N/A	No	0	6	0.5566	0.788	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-1179.1734	Reject H0 (k0 < kcrit)	99
m,p-xylenes	56	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	0	0	0	N/A	No	0	6	0.5566	0.788	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-1179.1734	Reject H0 (k0 < kcrit)	99
Toluene	130	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	0	0	0	N/A	No	0	6	0.5566	0.788	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-1179.1734	Reject H0 (k0 < kcrit)	99
Acenaphthene	210	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0	0	0	N/A	No	0	9	0.5566	0.788	N/A	1.86	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-1179.1734	Reject H0 (k0 < kcrit)	99
Acenaphthylene	170	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0	0	0	N/A	No	0	9	0.5566	0.788	N/A	1.86	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-1179.1734	Reject H0 (k0 < kcrit)	99
Anthracene	2400	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0	0	0	N/A	No	0	9	0.5566	0.788	N/A	1.86	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-1179.1734	Reject H0 (k0 < kcrit)	99
Benzo(a)anthracene	7.2	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0	0	0	N/A	No	0	9	0.5566	0.788	N/A	1.86	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-1179.1734	Reject H0 (k0 < kcrit)	99
Benzo(a)pyrene	2.2	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0.02	0.14	0	BH03/2	No	0.05	8	0.3903	0.829	Non-Normal	1.86	0.0445	PASSED	Max. Value is Outlier	-140.429	-1.833	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	0.08337778	-140.42857	Reject H0 (k0 < kcrit)	99
Benzo(b)fluoranthene	2.6	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0.02	0.17	0	BH03/2	No	0.06	8	0.3903	0.829	Non-Normal	1.86	0.054	PASSED	Max. Value is Outlier	-136.647	-1.833	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	0.10124444	-136.64706	Reject H0 (k0 < kcrit)	99
Benzo (g,h,i) perylene	320	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0.02	0.14	0	BH03/2	No	0.05	8	0.3903	0.829	Non-Normal	1.86	0.0445	PASSED	Max. Value is Outlier	-20570.429	-1.833	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	0.08337778	-20570.429	Reject H0 (k0 < kcrit)	99
Benzo(k)fluoranthene	77	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0	0	0	N/A	No	0	9	0.3903	0.829	N/A	1.86	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-20570.429	Reject H0 (k0 < kcrit)	99
Chrysene	15	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0.01	0.11	0	BH03/2	No	0.04	8	0.3903	0.829	Non-Normal	1.86	0.035	PASSED	Max. Value is Outlier	-1226.273	-1.833	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	0.06551111	-1226.2727	Reject H0 (k0 < kcrit)	99
Dibenz-a-h-anthracene	0.24	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0	0	0	N/A	No	0	9	0.3903	0.829	N/A	1.86	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-1226.2727	Reject H0 (k0 < kcrit)	99
Fluoranthene	280	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0.02	0.14	0	BH03/2	No	0.05	8	0.3903	0.829	Non-Normal	1.86	0.0445	PASSED	Max. Value is Outlier	-17999	-1.833	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	0.08337778	-17999	Reject H0 (k0 < kcrit)	99
Fluorene	170	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0	0	0	N/A	No	0	9	0.3903	0.829	N/A	1.86	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-17999	Reject H0 (k0 < kcrit)	99
Indeno(1,2,3-cd)pyrene	27	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0.01	0.13	0	BH03/2	No	0.04	8	0.3903	0.829	Non-Normal	1.86	0.0413	PASSED	Max. Value is Outlier	-1868.231	-1.833	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	0.07742222	-1868.2308	Reject H0 (k0 < kcrit)	99
Naphthalene	2.3	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0	0	0	N/A	No	0	9	0.3903	0.829	N/A	1.86	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-1868.2308	Reject H0 (k0 < kcrit)	99
Phenanthrene	95	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0	0	0	N/A	No	0	9	0.3903	0.829	N/A	1.86	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-1868.2308	Reject H0 (k0 < kcrit)	99
Pyrene	620	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	9	0.02	0.17	0	BH03/2	No	0.06	8	0.3903	0.829	Non-Normal	1.86	0.054	PASSED	Max. Value is Outlier	-32822.529	-1.833	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	0.10124444	-32822.529	Reject H0 (k0 < kcrit)	99
Phenol	120	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	3	0	0	0	N/A	No	0	3	0.4961	0.788	N/A	2.92	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-32822.529	Reject H0 (k0 < kcrit)	99
Aliphatics>C10-12	130	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	0	0	0	N/A	No	0	6	0.4961	0.788	N/A	2.015	0	N/A	N/A	N/A	N/A	N/A	99.5	4.36	0	-32822.529	Reject H0 (k0 < kcrit)	99
Aliphatics>C12-16	1100	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	1.15	6.92	0	BH02/1	No	2.83	5	0.4961	0.788	Non-Normal	2.015	3.4773	PASSED	Max. Value is Outlier	-952.757	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	6.18186667	-952.75723	Reject H0 (k0 < kcrit)	99
Aliphatics>C21-35	1100	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	2.3	13.8	0	BH02/1	No	5.63	5	0.4961	0.788	Non-Normal	2.015	6.9345	PASSED	Max. Value is Outlier	-477.261	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	12.328	-477.26087	Reject H0 (k0 < kcrit)	99
Aliphatics>C35-44	65000	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	6.79	12.5	0	BH02/1	No	5.51	2	0.8445	0.788	Normal	2.015	11.3252	PASSED	Max. Value NOT Outlier	-28887.099	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	16.6012495	-28887.099	Reject H0 (k0 < kcrit)	99
Aromatics>C10-12	74	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	6.9	8.84	0	BH02/1	No	1.4	0	0.7604	0.788	Non-Normal	2.015	8.0477	PASSED	Max. Value NOT Outlier	-117.3	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	9.3892795	-117.29952	Reject H0 (k0 < kcrit)	99
Aromatics>C12-16	140	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	11.24	16.1	0	BH02/1	No	2.65	0	0.7883	0.788	Normal	2.015	13.4159	PASSED	Max. Value is Outlier	-118.97	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	15.9539859	-118.9695	Reject H0 (k0 < kcrit)	99
Aromatics>C16-21	260	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	11.16	13.3	0	BH01/2	No	1.75	0	0.9032	0.788	Normal	2.015	12.6002	PASSED	Max. Value NOT Outlier	-347.359	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	14.2801164	-347.35854	Reject H0 (k0 < kcrit)	99
Aromatics>C21-35	1100	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	25.45	30.8	0	BH03/2	No	3.82	0	0.8765	0.788	Normal	2.015	28.591	PASSED	Max. Value NOT Outlier	-689.348	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	32.2463343	-689.34779	Reject H0 (k0 < kcrit)	99
Aromatics>C35-44	1100	LQM Suitable for Use Levels - Residential (With Plant Uptake - 1% Organic Matter)	6	9.85	18	0	BH02/1	No	6.49	1	0.9315	0.788	Normal	2.015	15.1887	PASSED	Max. Value NOT Outlier	-411.46	-1.943	Reject H0 t0 < t(n - 1, 0.95)	99.5	4.36	21.4016909	-411.45959	Reject H0 (k0 < kcrit)	99

12.8 Appendix 8 - Assessment Methodology

- Severity considers the potential impact of the linkage on the receptors if the linkage was active. Categories range from slight/superficial to fatal.
- Likelihood considers the chances of the linkage occurring and is classified into categories from improbable to frequent.

By assigning scores with each of the above categories, the risk assessment can be undertaken using the formula:

RISK = LIKELIHOOD × SEVERITY

The matrix given in Table 4 provides a means of calculating the overall risk; while Table 5 provides the qualitative assessment based on the risk score.

Table 4: Contamination Risk Matrix

		Potential Severity				
		Fatal 5	Major 4	Moderate 3	Minor 2	Slight 1
Probable Likelihood	Frequent 5	Very High	High	Moderate	Low - Moderate	Low
	Probable 4	High	High	Moderate	Low - Moderate	Low
	Possible 3	Moderate	Moderate	Low - Moderate	Low - Moderate	Very Low
	Remote 2	Low - Moderate	Low - Moderate	Low - Moderate	Low	Very Low
	Improbable 1	Low	Low	Very Low	Very Low	Very Low

Table 5: Assessment description for risk scores

Risk Score	Risk Assessment
1-3	**Very Low**
4-5	**Low**
6-10	**Low to Moderate**
11-15	**Moderate**
16-20	**High**
21-25	**Very High**

Table 6: Risk Classification System

Risk Term	Description
Very Low	The presence of an identified hazard does not give rise to the potential to cause significant harm to groundwater, surface water, ecological and/or property receptors. In the event of such harm being realized, it is not likely to be Severe.
Low	The presence of an identified hazard does not give rise to the potential to cause significant harm to human health receptors. In the event of such harm being realized, it is not likely to be Severe.
Low to Moderate	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realized, would at worst normally be mild.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that 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.
High	Harm is likely to arise to a designated receptor from an identified hazard at the site without appropriate remedial action. Investigation is required and remedial works may be necessary in the short term and are likely over the longer term.
Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, or, there is an evidence that severe harm to a designated receptor is currently happening. Urgent investigation and remediation are likely to be required.

13 ABBREVIATIONS

Abbreviation	Description
BTEX	Benzene, Tolulene, Ethylene and Xylene
c.	Circa
CLRA	Contaminated Land Risk Assessment
CSM	Conceptual Site Risk Model
EA	Environment Agency
GAC	Generic Assessment Criteria
IPC	Integrated Pollution Control
LAPC	Local Authority Pollution Control
LQM S4ULs	Land Quality Management Suitable for Use Levels
NPPF	National Planning Policy Framework
OS	Ordnance Survey
PAHs	Polycyclic aromatic hydrocarbons
Part IIA	Part IIA of the Environmental Protection. Act 1990
PID	Photoionization Detector
PCB	Polychlorinated Biphenyl
PCLU	Potentially Contaminative Land Use
PPL	Potential Pollutant Linkage
PRA	Preliminary Risk Assessment
PSPPL	Potentially Significant Potential Pollutant Linkage
RWHP	Residential with Home-grown Produce
SI	Site Investigation
SOM	Soil Organic Matter
SPOSH	Significant Possibility of Significant Harm
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons
TPHCWG	Total Petroleum Hydrocarbon Criteria Working Group
UXO	Unexploded Ordnance

14 REFERENCES

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