

CONTAMINATED LAND RISK ASSESSMENT

Phase 2 Environmental Site Investigation Report

Site

18 Acton Street
London
WC1X 9ND

Client

Kofo Kuforiji
London Property Acquisition

Report Reference

PH2-2018-001032

Prepared by

STM Environmental Consultants Ltd

Date

09/11/2018



**CONSULTING GEO-ENVIRONMENTAL
ENGINEERS AND SCIENTISTS**

Phase 1 Contaminated Land Desk Studies, Geo-Environmental Site Investigations, Environmental Due Diligence, Flood Risk Assessments, Surface Water Management Strategies (SuDS), Ecology, Noise and Air Quality Assessments, Environmental Management Systems, GIS & Data Management Systems

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1 DOCUMENT CONTROL



CONTAMINATED LAND RISK ASSESSMENT PHASE 2 ENVIRONMENTAL SITE INVESTIGATION REPORT



| | |
|--------------------------|--|
| Site Address: | 18 Acton Street London WC1X 9ND |
| Site Coordinates: | 530731, 182777 |
| Report Reference: | PH2-2018-001032 |
| Version No: | 1.0 |
| Prepared for: | Kofo Kuforiji London Property Acquisition |
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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 is solely for use by Kofo Kuforiji - London Property Acquisition (Client).

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. Furthermore, STM accepts no liability whatsoever for any loss or damage arising from the interpretation or use of the information contained within this report. Any party using or placing reliance upon any information contained in this report, do so at their own risk.

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.

3 EXECUTIVE SUMMARY

| SECTION | SUMMARY |
|---|---|
| Site Location and Description | The site is located at 18 Acton Street, London, WC1X 9ND and is centred at national grid reference 530731, 182777. The site has an area of approximately 0.018 ha. |
| Proposed Development | The development proposal is for the change of use of the ground floor to a commercial office space and the first floor to a residential flat. It is understood that there are no proposals to include soft landscaping in the development. |
| Summary of Phase 1 Desk Study | <p>An analysis of Ordnance Survey historical maps indicated that the site and its vicinity has been subject to past potentially contaminative uses including garages, filling stations and railway land.</p> <p>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 is undertaken with the objective of determining the presence and extent of any soil contamination.</p> |
| Summary of Site Investigation | Site investigation works were carried out on the 08/10/18. 4no. soil samples were taken from 3no. boreholes at depths ranging from 0.3 - 2mbgl. The samples were submitted to an UKAS/MCERTS accredited laboratory for analysis of heavy metals, TPH, BTEX and PAHs and Asbestos. |
| Updated Contamination Assessment | A generic quantitative risk assessment was carried using the results of the soil sample analysis. Elevated concentrations above the adopted GAC (for the residential without plant uptake land use scenario) were identified for Lead as well as PAHs (Benzo(a)pyrene and Dibenzo(ah)anthracene) in soils from 1no. of the borehole locations. |
| Recommendations | The Conceptual Risk Model for the site was reassessed incorporating the results of the site investigation. Given that the proposed development will not introduce any soft landscaping, it was concluded that none of the potential pollutant linkages identified by the desk study have the potential to be significant. Therefore, no remedial action is considered to be required. |




4 INTRODUCTION

STM Environmental Consultants Limited were commissioned by London Property Acquisition Ltd to undertake a preliminary risk assessment at 18 Acton Street, London, WC1X 9ND (the site).

The report is required to support planning application for the “change of use of the ground floor and first floor from B1c to C3”. The proposed development plans are available in [Appendix 1](#).

4.1 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: PH1-2018-001050) produced for the site by STM Environmental Consultants in October 2018 which is summarised below.

5 SUMMARY OF DESK STUDY FINDINGS

5.1 Site History

An analysis of historic Ordnance Survey maps was undertaken in order to identify significant Potentially Contaminative Land Uses (PCLs) on and in the vicinity of the site. PCLs identified within a 50m radius of the site as well as any PCLs with high pollution migration potential within 250m of the site were considered to be of concern are summarised in Table 1 below. The site was most recently used as a Motorcycle Workshop. The site at present is being used as storage for cycles.

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) |
|---|---|------------------------------|------------------------|-----------|--------------------------------|
| Motor Repair Garage (Motopsycho) | Road Vehicles: Garages & Filling Stations | Unknown | Current (2018) | Onsite | 0 |
| Underground Railway Line | Railway Land | c. 1874 | Current (2018) | E | Adjacent |
| Lock Up Garages | Road Vehicles: Garages & Filling Stations | Unknown | Current (2018) | E | 31 |

5.2 Geology

The site is located on bedrock of London Clay Formation. No superficial deposits were identified in the search.

5.3 Hydrogeology

The site is underlain by a Secondary A Aquifer.



5.4 Previous Site Investigations

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

5.5 Qualitative Risk Assessment

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

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







-  Human health receptors (PPL1)
-  Property (PPL5)

Potential human health receptors included future site users; construction workers and onsite property receptors including onsite buildings and services.

The desk study recommended that an intrusive site investigation be carried out is undertaken with the objective of determining the presence and extent of any soil contamination.

6 ENVIRONMENTAL SITE INVESTIGATION

The site investigation works were carried out on the 8th of October 2018 and were undertaken in accordance with the following guidance:

-  CLR 11: Model procedures for the management of land contamination – DEFRA & Environment Agency;
-  BS 10175 - Code of practice for the Investigation of potentially contaminated sites British Standard Institution;
-  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

6.1.1 Soil Sampling Strategy

A non-targeted sampling strategy was used to select the locations of the exploratory boreholes which were generally spaced out across the site.

3no. sampling locations were excavated at the site and as the investigation was primarily focused on assessing the quality of near surface soils, environmental soil samples were collected at relatively shallow depths between 0.3 – 2 mbgl.

A map showing the locations of boreholes and the borehole logs are available in [Appendix 2](#).

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. Samples were taken from each borehole core within the made ground between 0.3 - 2 mbgl.

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 4no. soil samples were submitted to an 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, Dibenzo(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)

6.2 Site Investigation Findings

6.2.1 Ground Conditions

Boreholes were advanced to a maximum depth of 2.2 mbgl. The strata encountered in each borehole consisted of a concrete hardstanding and made ground comprising of dark brown silty clay and fragments of debris (i.e., brick, chalk, concrete, glass and plastic).

Photographs from some of the soils extracted from the boreholes are presented in [Appendix 3](#).

6.2.2 Visual and Olfactory Signs of Contamination

Visual indications of contamination of the made ground to depths of 2.2 mbgl were observed (i.e. building rubble and brick) across the site. No significant odours or PID readings were recorded during the investigation.

6.3 Laboratory Sample Analysis Results

The full results of the laboratory sample analysis can be seen in [Appendix 4](#).

7 GENERIC QUANTITATIVE RISK ASSESSMENT

A GQRA was conducted using the soil analytical results in order to further evaluate the significance of the potential pollutant linkages identified in the PRA.

7.1 Generic Assessment Criteria for Soils

The GAC used for the screening of the soils and their sources are outlined in the table in [Appendix 5](#). The GAC used are a combination of the Category 4 Screening Levels and the CIEH\LQM GAC for residential without plant uptake.

7.1.1 Soil Organic Matter Content

Sample results indicated that soils on the site have an average total organic carbon (TOC) content of 1.1%, which based on a conversion factor of 1.72, indicates a Soil Organic Matter (SOM) of around 1.89%. For reasons of conservatism, a soil organic matter content of 1% was assumed.

7.2 Statistical Test Methodology

The statistical analysis was carried out in accordance with the methodology laid out in the document “Guidance on comparing soil contamination data with a critical concentration” published by the Chartered Institute of Environmental Health and CLAIRE.

7.2.1 Test Scenario

The “Planning” scenario was used to undertake the statistical tests. Under this scenario, the Alternative Hypothesis is that “the true mean is lower than the critical concentration” and the Null hypothesis is that “the true mean is equal to or greater than the critical concentration”. The critical concentration was taken as the relevant GAC for each contaminant.

7.2.2 Non-Detects

For the purpose of the statistical tests, sample results where the contaminant concentrations were below the limit of detection were set to zero. Statistical tests were only carried out on datasets where at least one of the samples returned a contaminant concentration above the limit of detection.

7.2.3 Data Distribution

The Shapiro-Wilk normality test was used to assess whether datasets were normally or non-normally distributed.

7.3 Results of Statistical Analysis

7.3.1 Contaminants exceeding Generic Assessment Criteria

A summary of contaminants that were found to be present in concentrations that exceeded the mean GAC is shown Table 2 below.

Elevated concentrations exceeding the adopted GAC include Lead, Benzo(a)pyrene and Dibenzo(ah)anthracene. However, the only contaminant found to have exceeded its mean GAC was Lead.

Table 2: Contaminants exceeding GAC

| Contaminant | GAC (mg/kg) | No. of Exceedances | Measured Concentrations (mg/kg) | | Exceedance Borehole Locations |
|-----------------------|-------------|--------------------|---------------------------------|---------|-------------------------------|
| | | | Mean | Maximum | |
| Lead | 310 | 3 | 582.5 | 760 | BH01 |
| Benzo(a)pyrene | 2.5 | 1 | 0.83 | 2.9 | BH01 |
| Dibenzo(ah)anthracene | 0.31 | 1 | 0.15 | 0.6 | BH01 |

7.3.2 Statistical Analysis

The results of statistical analysis are presented in [Appendix 6](#).

7.3.3 Asbestos Containing Materials

Screening did not identify Asbestos containing materials in any of the samples.

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:

- Direct contact and inhalation risks to on-site human health receptors (PPL1a);
- Injury/Death of on-site human health receptors related to explosion due to accumulation of ground gas from on and off-site sources in confined spaces within dwellings (PPL1b);
- Direct contact and inhalation risks to off-site human health receptors as a result of contaminants migrating from the site (PPL2a);
- Injury/Death of off-site human health receptors related to explosion due to accumulation of ground gas from on-site sources in confined spaces within dwellings. (PPL2b);
- Derogation of groundwater quality resulting from the migration of contaminants into the aquifer (PPL3);
- Derogation of surface water quality resulting from the migration of contaminants into surface water receptor (PPL4);
- Damage to buildings and services resulting from on-site contaminants (PPL5a);
- Damage to property related to explosion due to accumulation of ground gas from on and off-site sources in confined spaces within buildings (PPL5b).

The Desk Study concluded that PPL1, and PPL5 had the potential to be significant. All of the PPLs were re-assessed for the residential land use without plant uptake scenario 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 7](#).

Table 3: Results of Qualitative Risk Assessment.

| CRITERIA | POTENTIAL POLLUTANT LINKAGES | | | | | | | |
|--------------------------|------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | PPL1a | PPL1b | PPL2a | PPL2b | PPL3 | PPL4 | PPL5a | PPL5b |
| SEVERITY | Major (4) | Major (4) | Major (4) | Moderate (4) | Moderate (3) | Moderate (3) | Moderate (3) | Major (4) |
| LIKELIHOOD | 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) | Very Low (3) | Very Low (3) | Very Low (3) | Low (4) |
| POTENTIALLY SIGNIFICANT? | NO | NO | NO | NO | NO | NO | NO | NO |

8.1.1 Potential Risks to On-Site Human Health

PPL1a was considered unlikely to have the potential to be significant. Although exceedances of the GAC were identified for Lead, Benzo(a)pyrene and Dibenzo(ah)anthracene, it is understood that the proposal does not include gardens or soft landscaping (i.e. the entire site will be completely encapsulated by hardstanding). Therefore, there will be no direct contact pathways present in relation to the future occupiers. Additionally, with regard to inhalation related risks, although made ground was identified at the site, no significant PID readings or olfactory evidence of vapours were observed.

With regard to construction workers, given the levels of contamination encountered, the use of general health and safety measures should be sufficient to ensure that they are not subjected to any significant risks.

PPL1b was considered unlikely to have the potential to be significant as no significant PID readings or olfactory evidence of vapours were observed during the site investigation.

8.1.2 Potential Risks to Off-Site Human Health

PPL2a was considered unlikely to have the potential to be significant. The concentrations of contaminants identified in soils are not considered to be sufficient to migrate off site and impact upon off-site human health receptors.

PPL2b was considered unlikely to have the potential to be significant as no potential sources of explosive ground gases (i.e. landfills) were identified in the vicinity of the site.

8.1.3 Potential Risks to Groundwater Receptors

PPL3 was considered unlikely to have the potential to be significant. Although the site is underlain by a Secondary A Aquifer, it is considered unlikely that any contaminants present at the site would be of sufficient magnitude to significantly impact groundwater receptors.

8.1.4 Potential Risks to Surface Water Receptors

PPL4 was considered unlikely to have the potential to be significant as no surface water bodies were identified within 250m of the site.

8.1.5 Potential Risks to Property Receptors

PPL5a was considered unlikely to have the potential to be significant as no significantly elevated concentrations of aggressive chemicals (i.e. Sulphates) that can attack building materials and services were identified in the soil samples.

PPL5b was considered unlikely to have the potential to be significant no significant PID readings or olfactory evidence of vapours were observed.

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 8th of October 2018. 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 were excavated of which 1no. was advanced to a maximum depth of 2.2 m bgl. A total of 4no. samples from varying depths were collected and sent to a UKAS/MCERTS accredited laboratory for analysis of a suite of commonly found contaminants including heavy metals, TPH, BTEX and PAHs and Asbestos. No significant PID readings or olfactory evidence of vapours were observed during the site investigation.






A generic quantitative risk assessment was carried using the results of the soil sample analysis. Elevated concentrations (i.e. above the adopted GAC) were identified for Lead as well as PAHs in soils from 1no. of the borehole locations.

The Conceptual Risk Model for the site was reassessed incorporating the results of the site investigation. Given that the proposed development will not introduce any soft landscaping, it was concluded that none of the potential pollutant linkages identified by the desk study have the potential to be significant. Therefore, no remedial action is considered to be required.

10 RECOMMENDATIONS

10.1 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.

10.2 Health and Safety

Given that contaminants have been identified on the site, 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".

10.3 Waste Disposal

Groundworks at the site are likely to give rise to waste soils. These will require classification before removal from site. The Environment Agency's Hazardous Waste Technical Guidance document (WM3) outlines the methodology for classifying wastes. Once classified the waste can be removed to an appropriately licensed facility for treatment or final disposal. The contractor will need to keep a full documentary record of these 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.

10.4 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.

It is recommended that all services, and in particular potable water, should be supplied using materials that are resistant to attack and degradation to chemical attack. Reference should be made to the document '*Selection of Water Supply Pipes to be used in Brownfield Sites*', issued in January 2011 by the UK Water Industry Research.

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

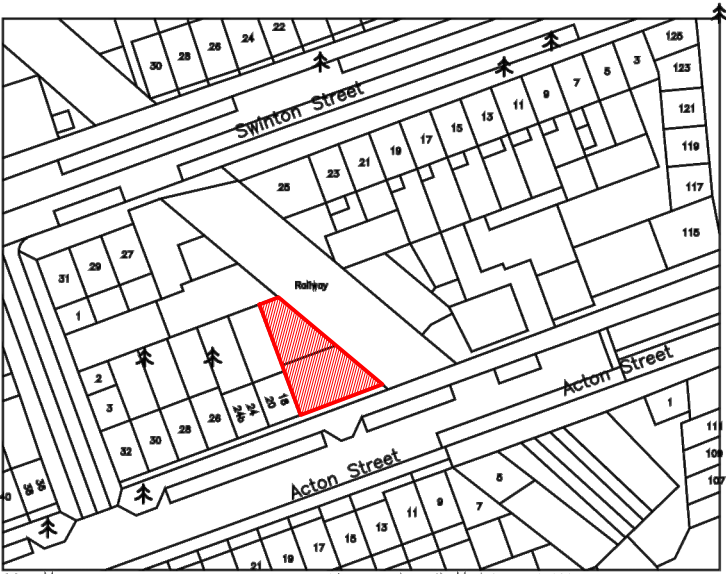
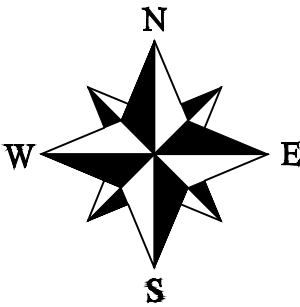
investigation, it is nonetheless possible that (as with any site investigation) there may be locations which were not sampled where localised pockets of contamination exist.

- The site investigation and risk assessment were designed to investigate only the most likely contaminants associated with the former industrial use. The presence of additional unknown contaminants cannot be discounted.

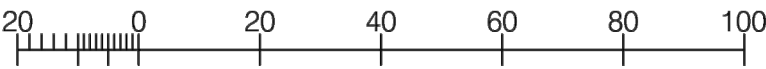
These uncertainties will need to be reviewed along with the Conceptual Site Risk Model should further information come to light in the future.

12 APPENDICES

12.1 Appendix 1 – Proposed Development Plans



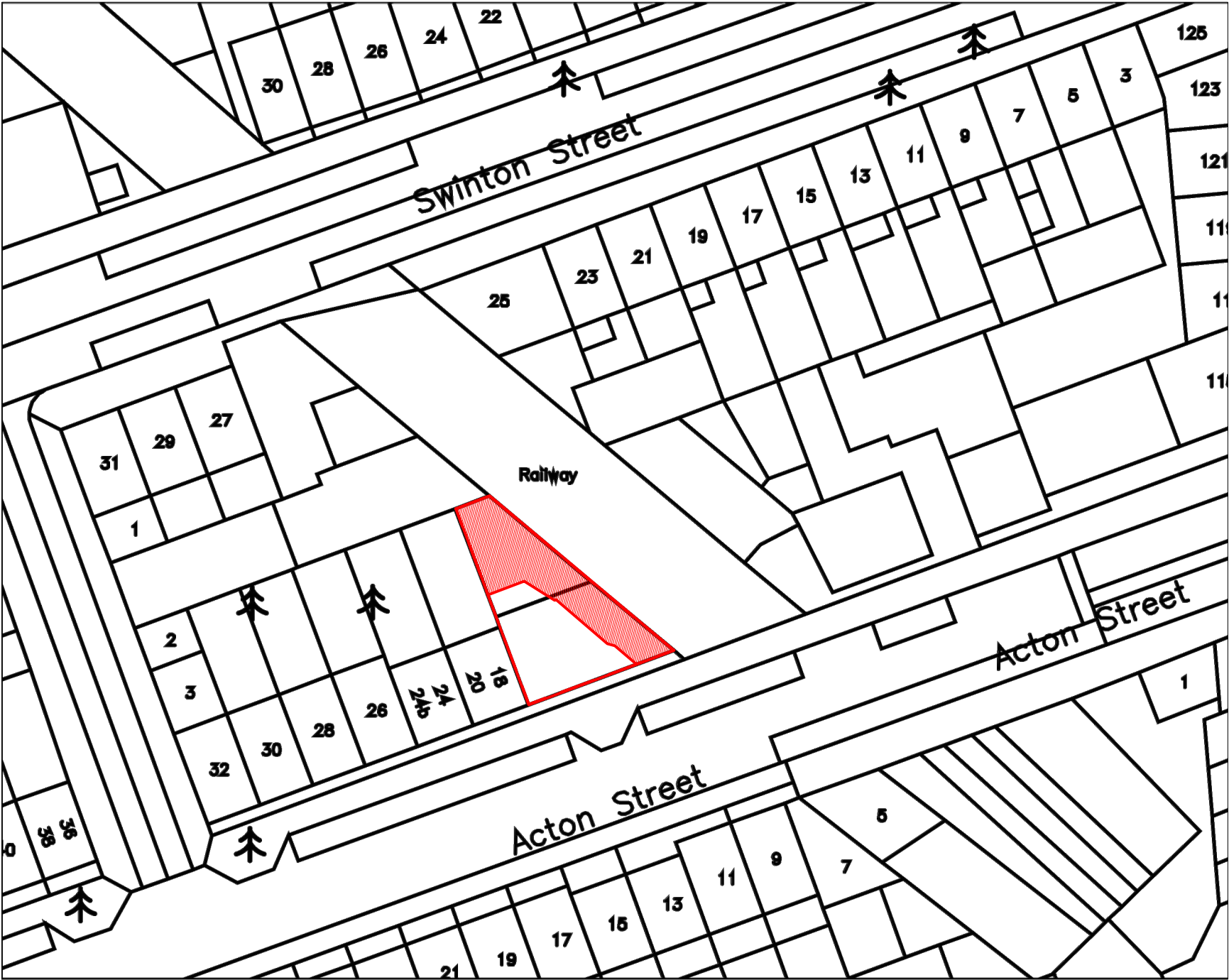
(c) UKMap Copyright. The GeoInformation Group 2014 Licence No. LANDMLON100003121118



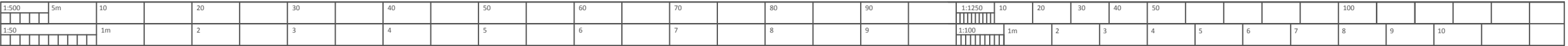
Location Plan
Scale 1:1250



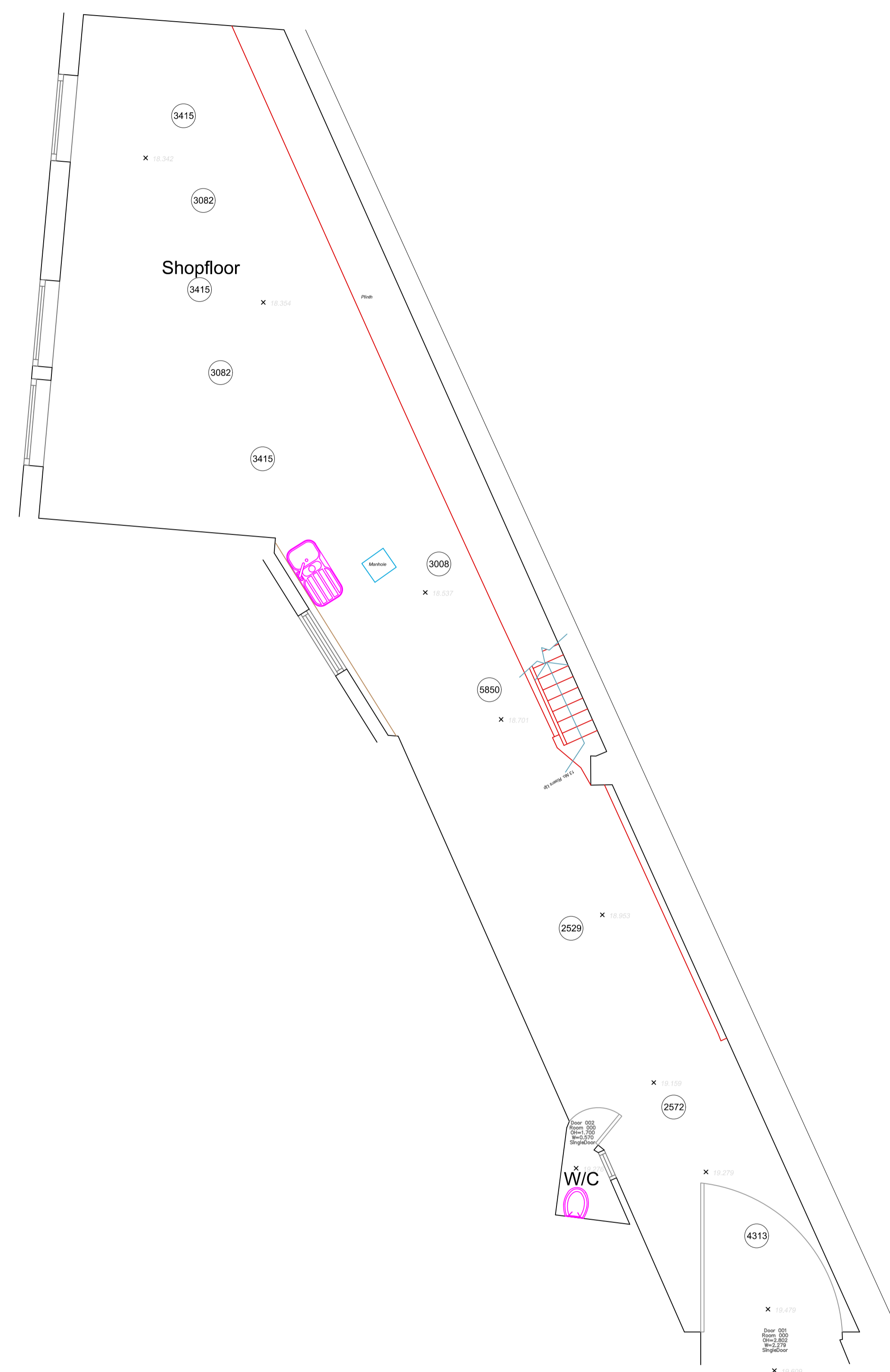
1. Ordnance Survey Map
Scale 1:1250



2. Site map
Scale 1:500



| REV. | DESCRIPTION | REVISED BY AND DATE | APPROVED BY AND DATE |
|--|-------------|---------------------|----------------------|
| CONTRACTOR | | | |
| | | | |
| 241A Kingston Vale London SW15 3PT United Kingdom T: +44 (0) 20 8547 1776 F: +44 (0) 20 8549 1256 E: omegagoldgroup@gmail.com W: www.omegagold.co.uk | | | |
| Status | | | |
| Planning Permission | | | |
| Contract | | | |
| Proposed development at 18 Acton Street, London WC1X9ND | | | |
| Title | | | |
| Ordnance Survey Plan | | | |
| JOB No. | SCALE | ORG. INITIATED BY | REVISIONS |
| 1-AS | VARIES@A3 | AMV | |
| DRAWING No. | DATE | ORG. CHECKED BY | |
| PP-101 | SEP_2014 | EA | |



1. Existing Ground Floor
Scale 1/50



2. Existing First Floor
Scale 1/50

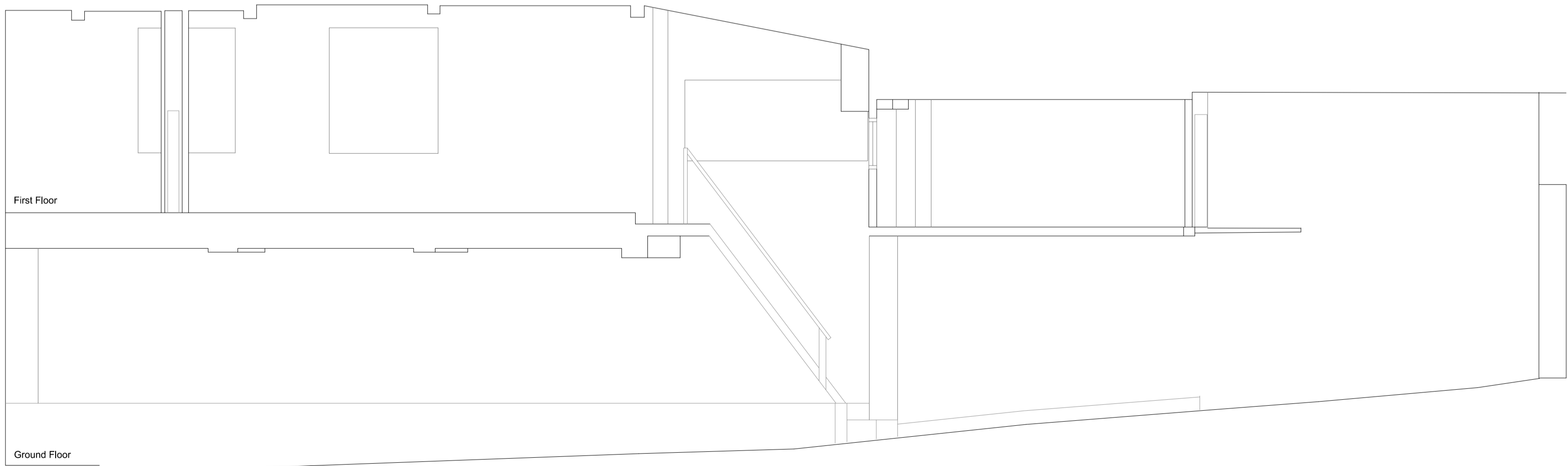
| | | | |
|---|-------------|-------------------|-------------|
| REV. | DESCRIPTION | REVISED BY | APPROVED BY |
| | | AND DATE | AND DATE |
| CONTRACTOR | | | |
|  <p>241A Kingston Vale London SW15 3PT United Kingdom T: +44 (0) 20 8547 1776 F: +44 (0) 20 8549 1256 E: omegagoldgroup@gmail.com W: www.omegagold.co.uk</p> | | | |
| Status | | | |
| Planning Permission | | | |
| Contract | | | |
| Proposed development at 18 Acton Street, London WC1X9ND | | | |
| Title | | | |
| Existing Floor Plans | | | |
| JOB No. | SCALE | DRG. INITIATED BY | REVISIONS |
| 1-AS | 1/50@A1 | AMV | 0 |
| DRAWING No. | DATE | DRG. CHECKED BY | |
| PP-102 | SEP_2014 | EA | |



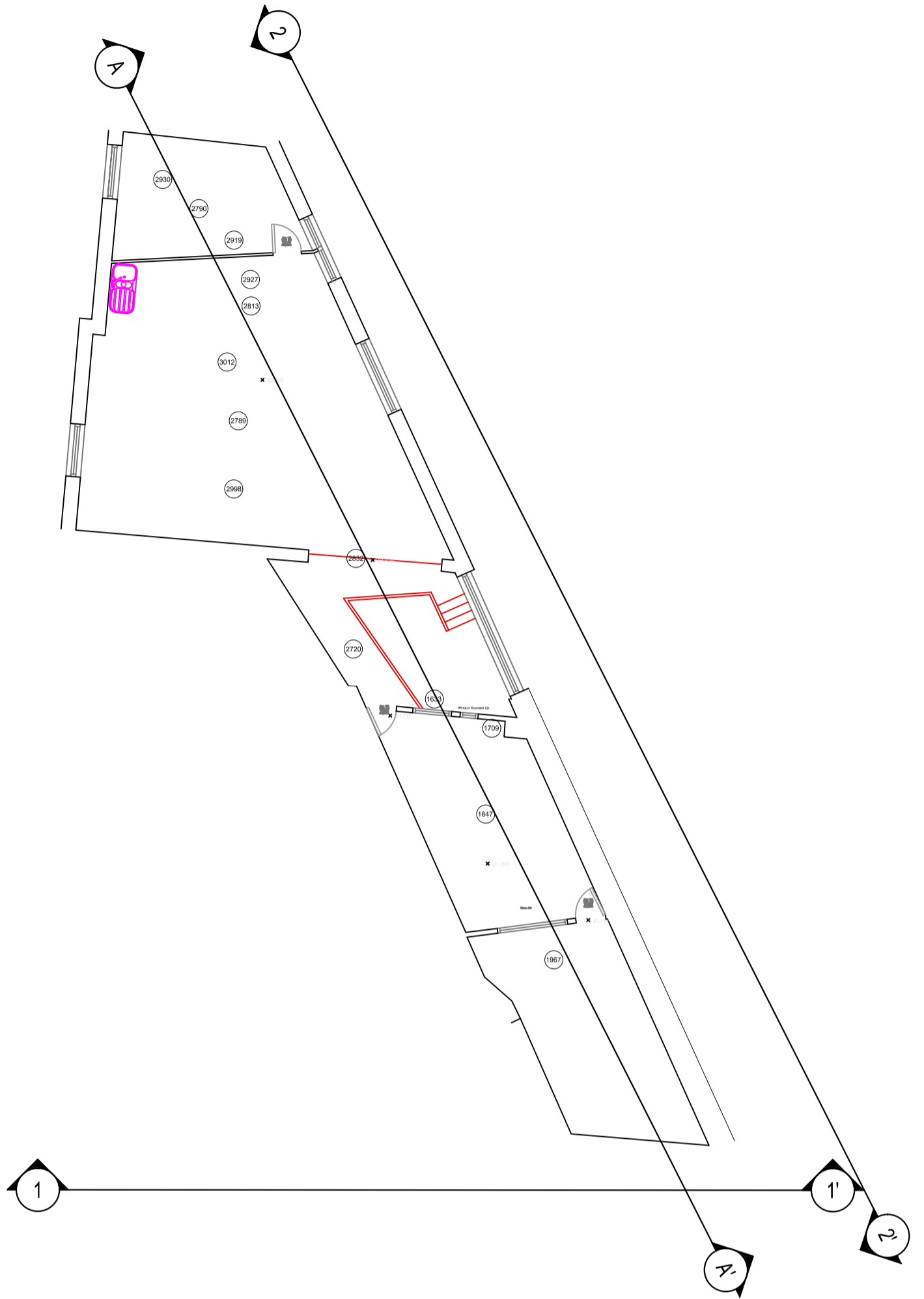
1. Front Facade 1-1'
Scale 1/50



2. East Facade 2-2'
Scale 1/50



3. Section A-A'
Scale 1/50



| REV. | DESCRIPTION | REVISED BY AND DATE | APPROVED BY AND DATE |
|--|-------------|------------------------|-------------------------|
| CONTRACTOR | | | |
| <div></div> | | | |
| 241A Kingston Vale London SW15 3PT United Kingdom T: +44 (0) 20 8547 1776 F: +44 (0) 20 8549 1256 E: omegagoldgroup@gmail.com W: www.omegagold.co.uk | | | |

| | | | |
|---------------------|--|--|--|
| Status | | | |
| Planning Permission | | | |

| | | | |
|--|----------|-------------------|-----------|
| Contract | | | |
| Proposed development at 18 Acton Street, London WC1X9ND | | | |
| Title | | | |
| Existing Facade & Sections | | | |
| JOB No. | SCALE | DRG. INITIATED BY | REVISIONS |
| 1-AS | 1/50@A1 | AMV | 0 |
| DRAWING No. | DATE | DRG. CHECKED BY | |
| PP-103 | SEP_2014 | EA | |
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Timber Sash Windows Painted White

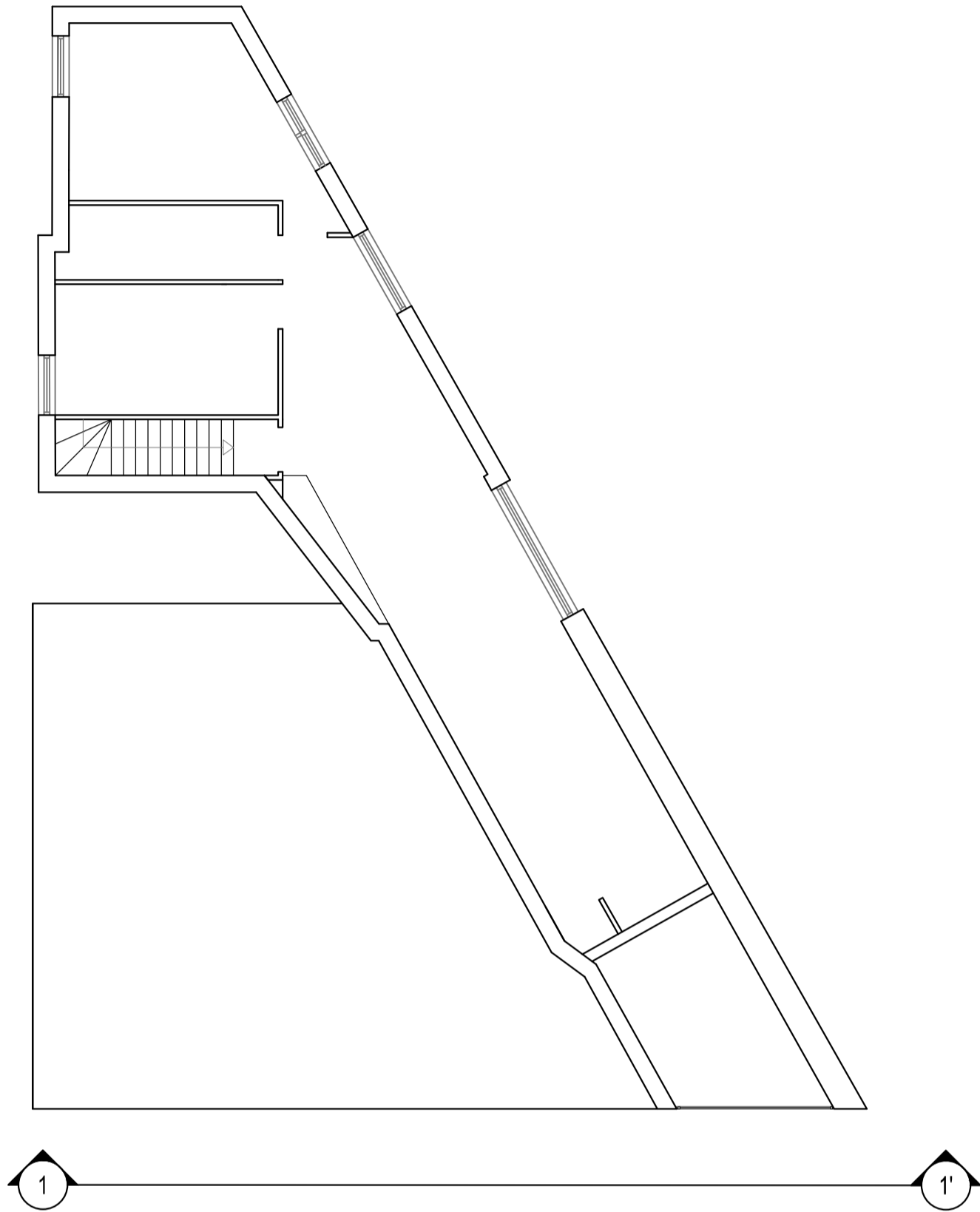
Brick



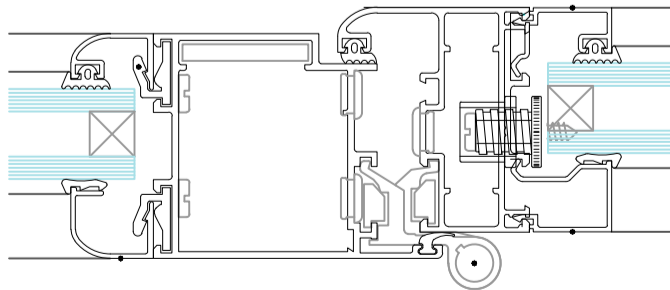
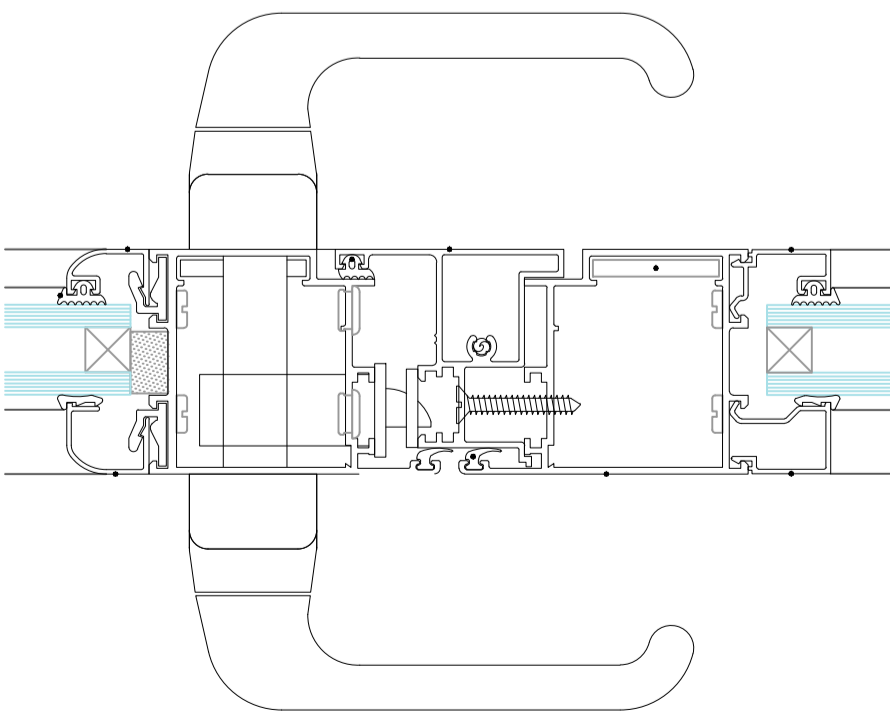
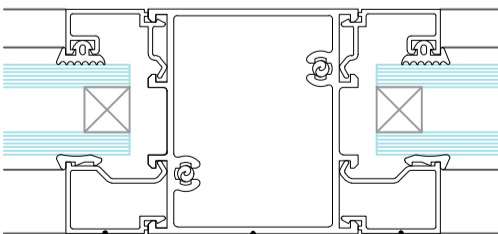
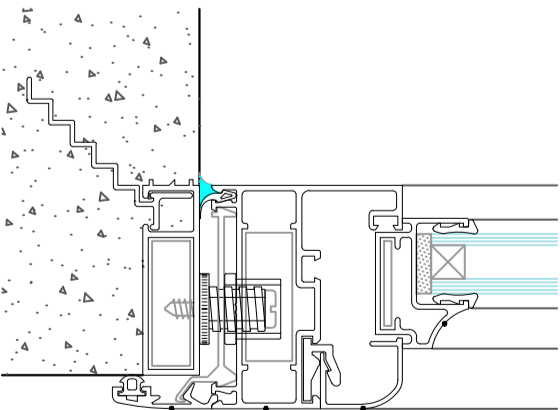
1. Front Facade 1-1'
Scale 1/100

Glass


PVC or Aluminium Joinery








2. Front Door
Scale 1/50



3.Detail Aluminium Glass Door
Scale 1/2

| REV. | DESCRIPTION | REVISED BY AND DATE | APPROVED BY AND DATE | | | | | | | | | | |
|---|-------------|--|--|---|--|--|--|--|--|--|--|--|--|
| CONTRACTOR | | | | | | | | | | | | | |
| <div> 241A Kingston Vale London SW15 3PT United Kingdom T: +44 (0) 20 8547 1776 F: +44 (0) 20 8549 1256 E: omegagoldgroup@gmail.com W: www.omegagold.co.uk</div> | | | | | | | | | | | | | |
| Status | | | | | | | | | | | | | |
| Planning Permission | | | | | | | | | | | | | |
| Contract | | Proposed development at 18 Acton Street, London WC1X9ND | | | | | | | | | | | |
| Title | | | | | | | | | | | | | |
| Proposed Front Facade | | | | | | | | | | | | | |
| JOB No. | SCALE | DRG. INITIATED BY | REVISIONS | | | | | | | | | | |
| 1-AS | 1/100@A1 | AMV | <table border="1"><tr><td>0</td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table> | 0 | | | | | | | | | |
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| | | | | | | | | | | | | | |
| DRAWING No. | DATE | DRG. CHECKED BY | | | | | | | | | | | |
| PP-106 | SEP_2014 | EA | <table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table> | | | | | | | | | | |
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12.2 Appendix 2 - Borehole Location Plan and Borehole Logs

|  | | | | | <h1>Borehole Log</h1> | | | Borehole No. BH01 Sheet 1 of 1 | | |
|--|---------------|-----------------------------|------|---------|--------------------------------|-----------|---|--|---|--|
| Project Name: 18 Acton Street | | | | | Project No. 18 Acton Street | | Co-ords: 530721.00 - 182784.00 | | Hole Type HA | |
| Location: 18 Acton Street London WC1X 9ND | | | | | Level: | | | Scale 1:50 | | |
| Client: Kofo Kuforiji | | | | | Dates: 08/10/2018 - 08/10/2018 | | | Logged By | | |
| Well | Water Strikes | Samples and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description | | |
| | | Depth (m) | Type | Results | | | | | | |
| | | 0.30 | ES | | 0.10 | |  | CONCRETE. Dark brown silty clay with an abundance of small brick rubble, with fragments of chalk and rare glass and plastic - MADE GROUND. | 1 | |
| | | 1.20 | ES | | 1.50 1.60 | | |  | Whole brick - MADE GROUND. Dark brown clayey soil mixed with brick rubble and small fragments of chalk - MADE GROUND. | 2 |
| | | 2.00 | ES | | 2.00 2.20 | | | |  | Light brown mottled white silty clayey soil with small fragments of chalk and brick - MADE GROUND. |
| | | | | | | | | End of borehole at 2.20 m | 4 | |
| | | | | | | | | | | 5 |
| | | | | | | | | | | 6 |
| | | | | | | | | | | 7 |
| | | | | | | | | | | 8 |
| | | | | | | | | | | 9 |
| | | | | | | | | | | 10 |
| Remarks Borehole left open for potential gas monitoring. | | | | | | | | |  | |



Borehole Log

Borehole No.

BH03

Sheet 1 of 1

Project Name: 18 Acton Street

Project No.
18 Acton Street

Co-ords: 530733.00 - 182778.00

Hole Type
WS

Location: 18 Acton Street London WC1X 9ND

Level:

Scale
1:50

Client: Kofo Kuforiji

Dates: 08/10/2018 -

Logged By

| Well | Water Strikes | Samples and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description | |
|------|---------------|-----------------------------|------|---------|-----------|-----------|--------|---|----|
| | | Depth (m) | Type | Results | | | | | |
| | | | | | 0.10 | | | CONCRETE. | |
| | | | | | 0.50 | | | Light brown pink sandy silty made ground with fragments of brick and concrete with sub-angular to rounded pebbles - MADE GROUND. End of borehole at 0.50 m | |
| | | | | | | | | | 1 |
| | | | | | | | | | 2 |
| | | | | | | | | | 3 |
| | | | | | | | | | 4 |
| | | | | | | | | | 5 |
| | | | | | | | | | 6 |
| | | | | | | | | | 7 |
| | | | | | | | | | 8 |
| | | | | | | | | | 9 |
| | | | | | | | | | 10 |

Remarks

Unable to penetrate deeper due to made ground material.

12.3 Appendix 3 – Photographs



Image 1: Front view of site facing north.



Image 2: Excavations at BH01.



Image 3: BH01 - 1st mbgl.



Image 3. BH1 - 2nd mbgl.



Image 4. BH1 - 2nd mbgl.



Image 5. Excavations at BH02.



Image 5. Excavations at BH03.

12.4 Appendix 4 – Laboratory Certification

**Simon Makoni**

STM ENVIRONMENTAL LTD
Unit 6 Crane Mews
32 Gould Road
Twickenham
TW2 6RS

i2 Analytical Ltd.
7 Woodshots Meadow,
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Watford,
Herts,
WD18 8YS

e: simon@stmenvironmental.co.uk

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 18-13602

| | | | |
|-----------------------------|-----------------|-------------------------------|------------|
| Project / Site name: | 18 Acton Street | Samples received on: | 10/10/2018 |
| Your job number: | | Samples instructed on: | 10/10/2018 |
| Your order number: | | Analysis completed by: | 18/10/2018 |
| Report Issue Number: | 1 | Report issued on: | 18/10/2018 |
| Samples Analysed: | 4 soil samples | | |

Signed

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

| | | |
|--|-----------|---------------------------|
| Standard sample disposal times, unless otherwise agreed with the laboratory, are : | soils | - 4 weeks from reporting |
| | leachates | - 2 weeks from reporting |
| | waters | - 2 weeks from reporting |
| | asbestos | - 6 months from reporting |

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 18-13602

Project / Site name: 18 Acton Street

| | | | | | | | | |
|---|-------|-----------------------|-------------------------|---------------|---------------|---------------|---------------|--|
| Lab Sample Number | | | | 1064312 | 1064313 | 1064314 | 1064315 | |
| Sample Reference | | | | BH01 | BH01 | BH01 | BH02 | |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | |
| Depth (m) | | | | 0.30 | 1.20 | 2.00 | 0.30-0.50 | |
| Date Sampled | | | | 08/10/2018 | 08/10/2018 | 08/10/2018 | 08/10/2018 | |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | |
| Moisture Content | % | N/A | NONE | 11 | 13 | 14 | 7.3 | |
| Total mass of sample received | kg | 0.001 | NONE | 1.2 | 1.1 | 1.1 | 1.3 | |

| | | | | | | | | |
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--|
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | |
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--|

General Inorganics

| | | | | | | | | |
|---|----------|---------|--------|------|------|------|------|--|
| pH - Automated | pH Units | N/A | MCERTS | 8.3 | 8.3 | 8.5 | 9.7 | |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1 | < 1 | < 1 | < 1 | |
| Water Soluble Sulphate as SO ₄ 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | 3400 | 810 | 3300 | 3500 | |
| Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | 1.7 | 0.41 | 1.7 | 1.8 | |
| Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | 1680 | 407 | 1650 | 1750 | |
| Sulphide | mg/kg | 1 | MCERTS | 3.4 | 9.7 | 6.4 | 7.7 | |
| Total Organic Carbon (TOC) | % | 0.1 | MCERTS | 1.0 | 1.3 | 1.6 | 0.5 | |

Total Phenols

| | | | | | | | | |
|----------------------------|-------|---|--------|-------|-------|-------|-------|--|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | |
|----------------------------|-------|---|--------|-------|-------|-------|-------|--|

Speciated PAHs

| | | | | | | | | |
|------------------------|-------|------|--------|--------|--------|--------|--------|--|
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.34 | |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.24 | |
| Fluorene | mg/kg | 0.05 | MCERTS | 0.22 | < 0.05 | < 0.05 | < 0.05 | |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 2.2 | < 0.05 | < 0.05 | 1.5 | |
| Anthracene | mg/kg | 0.05 | MCERTS | 0.76 | < 0.05 | < 0.05 | < 0.05 | |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 2.9 | < 0.05 | < 0.05 | 1.2 | |
| Pyrene | mg/kg | 0.05 | MCERTS | 2.4 | < 0.05 | < 0.05 | 1.0 | |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 2.9 | < 0.05 | < 0.05 | 0.55 | |
| Chrysene | mg/kg | 0.05 | MCERTS | 2.1 | < 0.05 | < 0.05 | 0.46 | |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | 3.3 | < 0.05 | < 0.05 | 0.54 | |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | 1.1 | < 0.05 | < 0.05 | 0.26 | |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 2.9 | < 0.05 | < 0.05 | 0.41 | |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 1.4 | < 0.05 | < 0.05 | 0.21 | |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.60 | < 0.05 | < 0.05 | < 0.05 | |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 1.5 | < 0.05 | < 0.05 | 0.27 | |

Total PAH

| | | | | | | | | |
|-----------------------------|-------|-----|--------|------|--------|--------|------|--|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 24.3 | < 0.80 | < 0.80 | 6.97 | |
|-----------------------------|-------|-----|--------|------|--------|--------|------|--|

Analytical Report Number: 18-13602

Project / Site name: 18 Acton Street

| | | | | | |
|---|---------------|-----------------------|-------------------------|---------------|--|
| Lab Sample Number | 1064312 | 1064313 | 1064314 | 1064315 | |
| Sample Reference | BH01 | BH01 | BH01 | BH02 | |
| Sample Number | None Supplied | None Supplied | None Supplied | None Supplied | |
| Depth (m) | 0.30 | 1.20 | 2.00 | 0.30-0.50 | |
| Date Sampled | 08/10/2018 | 08/10/2018 | 08/10/2018 | 08/10/2018 | |
| Time Taken | None Supplied | None Supplied | None Supplied | None Supplied | |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status | | |

Heavy Metals / Metalloids

| | | | | | | | | |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|--|
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 16 | 19 | 19 | 15 | |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 2.2 | 1.7 | 2.8 | 1.7 | |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 19 | 16 | 20 | 19 | |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 170 | 170 | 180 | 47 | |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 760 | 700 | 700 | 170 | |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | 2.7 | 3.1 | 3.1 | 0.9 | |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 20 | 18 | 18 | 15 | |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | 1.8 | 1.3 | 1.4 | 1.2 | |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 130 | 130 | 230 | |

Monoaromatics

| | | | | | | | | |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|--|
| Benzene | ug/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | |
| Toluene | ug/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | |
| Ethylbenzene | ug/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | |
| p & m-xylene | ug/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | |
| o-xylene | ug/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | |
| MTBE (Methyl Tertiary Butyl Ether) | ug/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | |

Petroleum Hydrocarbons

| | | | | | | | | |
|---|-------|-------|--------|---------|---------|---------|---------|--|
| TPH-CWG - Aliphatic >EC5 - EC6 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | |
| TPH-CWG - Aliphatic >EC6 - EC8 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | |
| TPH-CWG - Aliphatic >EC8 - EC10 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | < 2.0 | < 2.0 | |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8 | MCERTS | 9.0 | < 8.0 | < 8.0 | < 8.0 | |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8 | MCERTS | 250 | < 8.0 | 300 | 46 | |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10 | MCERTS | 260 | < 10 | 310 | 50 | |

| | | | | | | | | |
|--|-------|-------|--------|---------|---------|---------|---------|--|
| TPH-CWG - Aromatic >EC5 - EC7 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | |
| TPH-CWG - Aromatic >EC7 - EC8 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | |
| TPH-CWG - Aromatic >EC8 - EC10 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | < 2.0 | < 2.0 | |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10 | MCERTS | 12 | < 10 | < 10 | < 10 | |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10 | MCERTS | 110 | < 10 | 59 | 17 | |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10 | MCERTS | 130 | < 10 | 65 | 22 | |



Analytical Report Number : 18-13602

Project / Site name: 18 Acton Street

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|-------------------|------------------|---------------|-----------|--|
| 1064312 | BH01 | None Supplied | 0.30 | Brown loam and clay with rubble and brick. |
| 1064313 | BH01 | None Supplied | 1.20 | Brown clay and sand with rubble and brick. |
| 1064314 | BH01 | None Supplied | 2.00 | Brown clay and sand with rubble and brick. |
| 1064315 | BH02 | None Supplied | 0.30-0.50 | Brown sand with brick and rubble. |

Analytical Report Number : 18-13602

Project / Site name: 18 Acton Street

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|--|--|---|---------------|--------------------|----------------------|
| Asbestos identification in soil | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques. | In house method based on HSG 248 | A001-PL | D | ISO 17025 |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| BTEX and MTBE in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. | In-house method based on USEPA8260 | L073B-PL | W | MCERTS |
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. | In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests | L019-UK/PL | W | NONE |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests | L099-PL | D | MCERTS |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES. | L038-PL | D | MCERTS |
| Sulphide in soil | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method | L010-PL | D | MCERTS |
| Total cyanide in soil | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests"" | L009-PL | D | MCERTS |
| TPHCWG (Soil) | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. | In-house method | L088/76-PL | W | MCERTS |

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

12.5 Appendix 5 – Adopted Generic Assessment Criteria

| Contaminant | Concentration (mg/kg) | GAC Literature Source |
|------------------------|-----------------------|--|
| Arsenic | 40 | Category 4 Screening Levels - Residential (with homegrown produce) |
| Cadmium | 85 | LQM SULs - RWOPU |
| Chromium | 910 | LQM SULs - RWOPU |
| Chromium - Hexavalent | 6 | LQM SULs - RWOPU |
| Copper | 7100 | LQM SULs - RWOPU |
| Cyanide | 800 | LQM SULs - RWOPU |
| Lead | 310 | LQM SULs - RWOPU |
| Mercury | 56 | LQM SULs - RWOPU |
| Nickel | 180 | LQM SULs - RWOPU |
| Selenium | 430 | LQM SULs - RWOPU |
| Zinc | 40000 | LQM SULs - RWOPU |
| Toluene | 860 | LQM SULs - RWOPU (1% OM) |
| Benzene | 1.4 | Category 4 Screening Levels - Residential (with homegrown produce) |
| Ethylbenzene | 83 | LQM SULs - RWOPU (1% OM) |
| m,p xylenes | 79 | LQM SULs - RWOPU (1% OM) |
| Acenaphthylene | 2900 | LQM SULs - RWOPU (1% OM) |
| Acenaphthene | 3000 | LQM SULs - RWOPU (1% OM) |
| Fluorene | 2800 | LQM SULs - RWOPU (1% OM) |
| Phenanthrene | 1300 | LQM SULs - RWOPU (1% OM) |
| Anthracene | 31000 | LQM SULs - RWOPU (1% OM) |
| Fluoranthene | 1500 | LQM SULs - RWOPU (1% OM) |
| Pyrene | 3700 | LQM SULs - RWOPU (1% OM) |
| Benzo(a)anthracene | 11 | LQM SULs - RWOPU (1% OM) |
| Chrysene | 30 | LQM SULs - RWOPU (1% OM) |
| Benzo (b) fluoranthene | 3.9 | LQM SULs - RWOPU (1% OM) |
| Benzo(k)fluoranthene | 110 | LQM SULs - RWOPU (1% OM) |
| Benzo(a)pyrene | 2.5 | LQM SULs - RWOPU (1% OM) |
| Dibenz-a-h-anthracene | 0.31 | LQM SULs - RWOPU (1% OM) |
| Indeno(1,2,3-cd)pyrene | 45 | LQM SULs - RWOPU (1% OM) |
| Benzo (g,h,i) perylene | 360 | LQM SULs - RWOPU (1% OM) |
| Aliphatics >C5-6 | 42 | LQM SULs - RWOPU (1% OM) |
| Aliphatics >C6-8 | 100 | LQM SULs - RWOPU (1% OM) |
| Aliphatics >C8-10 | 27 | LQM SULs - RWOPU (1% OM) |
| Aliphatics >C10-12 | 130 | LQM SULs - RWOPU (1% OM) |
| Aliphatics >C12-16 | 1100 | LQM SULs - RWOPU (1% OM) |
| Aliphatics >C16-C35 | 65000 | LQM SULs - RWOPU (1% OM) |
| Aliphatics >C21-35 | 1900 | LQM SULs - RWOPU (1% OM) |
| Aliphatics >C35-44 | 65000 | LQM SULs - RWOPU (1% OM) |

| Contaminant | Concentration (mg/kg) | GAC Literature Source |
|-----------------------------|-----------------------|--------------------------|
| Aromatics >C5-7 | 0.38 | LQM SULs - RWOPU (1% OM) |
| Aromatics >C8-10 | 47 | LQM SULs - RWOPU (1% OM) |
| Aromatics >C10-12 | 250 | LQM SULs - RWOPU (1% OM) |
| Aromatics >C12-16 | 1800 | LQM SULs - RWOPU (1% OM) |
| Aromatics >C16-21 | 1900 | LQM SULs - RWOPU (1% OM) |
| Aromatics >C35-44 | 1900 | LQM SULs - RWOPU (1% OM) |
| Napthalene | 2.3 | LQM SULs - RWOPU (1% OM) |
| Phenol | 440 | LQM SULs - RWOPU (1% OM) |

LQM SULs – RWOPU: LQM Suitable for Use Levels - Residential (Without Plant Uptake - 1% Organic Matter)
 LQM SULs - RWOPU (1% OM): LQM Suitable for Use Levels - Residential (Without Plant Uptake - 1% Organic Matter)
 The LQM values quoted are copyright Land Quality Management Limited reproduced with permission; publication number S4UL3637. All rights reserved.

12.6 Appendix 6 – Statistical Analysis Summary

| Parameter | GAC | No. Samples | Mean | Maximum | Outliers Excluded | Max. Value Location | Mean Exceedence | Std Deviation | Non-Detects | W_Shapiro-Wilk | W_Critical | Distribution | T Statistic | Upper 95th percentile (US95) | Mean Value Test Result | Max Value Test Result | One Sample T Test - T0 | One Sample T Test - Tn | One Sample T Test Result | Test - Evidence Level (%) | Kcrit-Chebyshev | UCL95-Chebyshev | K0-Chebyshev | Chebyshev Test Result | Chebyshev - Evidence Level (%) |
|--------------------------|-------|-------------|-------|---------|-------------------|---------------------|-----------------|---------------|-------------|----------------|------------|--------------|-------------|------------------------------|------------------------|------------------------|------------------------|------------------------|---------------------------------------|---------------------------|-----------------|-----------------|--------------|-------------------------------|--------------------------------|
| Arsenic | 40 | 4 | 17.25 | 19 | 0 | BH01 | No | 2.06 | 0 | 0.8295 | 0.748 | Normal | 2.353 | 19.6754 | PASSED | Max. Value NOT Outlier | -22.071 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 21.7441851 | -22.07074188 | Reject H0 (k0 < kcrit) | 99 |
| Cadmium | 85 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.8599 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 99.5 | 4.36 | 0 | -22.07074188 | Reject H0 (k0 < kcrit) | 99 |
| Chromium | 910 | 4 | 18.5 | 20 | 0 | BH01 | No | 1.73 | 0 | 0.8391 | 0.748 | Normal | 2.353 | 20.5378 | PASSED | Max. Value NOT Outlier | -1029.416 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 22.2758708 | -1029.41553 | Reject H0 (k0 < kcrit) | 99 |
| Copper | 7100 | 4 | 141.8 | 180 | 0 | BH01 | No | 63.34 | 0 | 0.6936 | 0.748 | Non-Normal | 2.353 | 216.2722 | PASSED | Max. Value NOT Outlier | -219.703 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 279.836266 | -219.7030222 | Reject H0 (k0 < kcrit) | 99 |
| Mercury | 56 | 4 | 2.45 | 3.1 | 0 | BH01 | No | 1.05 | 0 | 0.7529 | 0.748 | Normal | 2.353 | 3.6858 | PASSED | Max. Value NOT Outlier | -101.961 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 4.73986492 | -101.9614731 | Reject H0 (k0 < kcrit) | 99 |
| Nickel | 180 | 4 | 17.75 | 20 | 0 | BH01 | No | 2.06 | 0 | 0.9254 | 0.748 | Normal | 2.353 | 20.1754 | PASSED | Max. Value NOT Outlier | -157.406 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 22.2441851 | -157.4056206 | Reject H0 (k0 < kcrit) | 99 |
| Lead | 310 | 4 | 582.5 | 760 | 0 | BH01 | YES | 276.45 | 0 | 0.7166 | 0.748 | Non-Normal | 2.353 | 907.7443 | FAILED | Max. Value NOT Outlier | 1.971 | -2.132 | DO NOT reject H0 (t0 > t(n -1, 0.95)) | 51 | 4.36 | 1185.16257 | 1.971418277 | DO NOT Reject H0 (k0 > kcrit) | 0 |
| Selenium | 430 | 4 | 1.43 | 1.8 | 0 | BH01 | No | 0.26 | 0 | 0.8869 | 0.748 | Normal | 2.353 | 1.7344 | PASSED | Max. Value is Outlier | -3259.18 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 1.99833033 | -3259.180448 | Reject H0 (k0 < kcrit) | 99 |
| Cyanide | 800 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.6885 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 99.5 | 4.36 | 0 | -3259.180448 | Reject H0 (k0 < kcrit) | 99 |
| Zinc | 40000 | 4 | 150 | 230 | 0 | BH02 | No | 54.16 | 0 | 0.7723 | 0.748 | Normal | 2.353 | 213.7195 | PASSED | Max. Value is Outlier | -1471.559 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 268.069358 | -1471.558775 | Reject H0 (k0 < kcrit) | 99 |
| Benzene | 1.4 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.7723 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 99.5 | 4.36 | 0 | -1471.558775 | Reject H0 (k0 < kcrit) | 99 |
| Ethylbenzene | 83 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.7723 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 99.5 | 4.36 | 0 | -1471.558775 | Reject H0 (k0 < kcrit) | 99 |
| m & p - Xylene | 79 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.7723 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 99.5 | 4.36 | 0 | -1471.558775 | Reject H0 (k0 < kcrit) | 99 |
| Toluene | 860 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.7723 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 99.5 | 4.36 | 0 | -1471.558775 | Reject H0 (k0 < kcrit) | 99 |
| Naphthalene | 2.3 | 4 | 0.09 | 0.34 | 0 | BH02 | No | 0.17 | 3 | 0.6293 | 0.748 | Non-Normal | 2.353 | 0.285 | PASSED | Max. Value is Outlier | -26.059 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 0.4556 | -26.05882353 | Reject H0 (k0 < kcrit) | 99 |
| Phenanthrene | 1300 | 4 | 0.93 | 2.2 | 0 | BH01 | No | 1.11 | 2 | 0.8479 | 0.748 | Normal | 2.353 | 2.2258 | PASSED | Max. Value NOT Outlier | -2349.848 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 3.33535454 | -2349.848087 | Reject H0 (k0 < kcrit) | 99 |
| Anthracene | 31000 | 4 | 0.19 | 0.76 | 0 | BH01 | No | 0.38 | 3 | 0.6293 | 0.748 | Non-Normal | 2.353 | 0.6371 | PASSED | Max. Value is Outlier | -163156.9 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 1.0184 | -163156.8947 | Reject H0 (k0 < kcrit) | 99 |
| Fluoranthene | 1500 | 4 | 1.03 | 2.9 | 0 | BH01 | No | 1.37 | 2 | 0.8523 | 0.748 | Normal | 2.353 | 2.6392 | PASSED | Max. Value NOT Outlier | -2185.027 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 4.01605216 | -2185.027428 | Reject H0 (k0 < kcrit) | 99 |
| Benzo (a) anthracene | 11 | 4 | 0.86 | 2.9 | 0 | BH01 | No | 1.38 | 2 | 0.7576 | 0.748 | Normal | 2.353 | 2.4894 | PASSED | Max. Value is Outlier | -14.662 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 3.87712683 | -14.66168203 | Reject H0 (k0 < kcrit) | 99 |
| Chrysene | 30 | 4 | 0.64 | 2.1 | 0 | BH01 | No | 1 | 2 | 0.7744 | 0.748 | Normal | 2.353 | 1.8132 | PASSED | Max. Value is Outlier | -58.885 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 2.81388743 | -58.88510979 | Reject H0 (k0 < kcrit) | 99 |
| Benzo (k) fluoranthene | 110 | 4 | 0.34 | 1.1 | 0 | BH01 | No | 0.52 | 2 | 0.7839 | 0.748 | Normal | 2.353 | 0.9533 | PASSED | Max. Value is Outlier | -420.733 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 1.47639143 | -420.7331957 | Reject H0 (k0 < kcrit) | 99 |
| Benzo (a) pyrene | 2.5 | 4 | 0.83 | 2.9 | 0 | BH01 | No | 1.4 | 2 | 0.7276 | 0.748 | Non-Normal | 2.353 | 2.4689 | PASSED | Max. Value is Outlier | -2.398 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 95 | 4.36 | 3.86886044 | -2.397644126 | DO NOT Reject H0 (k0 > kcrit) | 85 |
| Indeno (1,2,3-cd) pyrene | 45 | 4 | 0.4 | 1.4 | 0 | BH01 | No | 0.67 | 2 | 0.7331 | 0.748 | Non-Normal | 2.353 | 1.1935 | PASSED | Max. Value is Outlier | -132.666 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 1.86817514 | -132.6658923 | Reject H0 (k0 < kcrit) | 99 |
| Benzo (ghi) perylene | 360 | 4 | 0.44 | 1.5 | 0 | BH01 | No | 0.72 | 2 | 0.7518 | 0.748 | Normal | 2.353 | 1.2853 | PASSED | Max. Value is Outlier | -1003.794 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 2.00424597 | -1003.793655 | Reject H0 (k0 < kcrit) | 99 |
| Acenaphthylene | 2900 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.7518 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 99.5 | 4.36 | 0 | -1003.793655 | Reject H0 (k0 < kcrit) | 99 |
| Acenaphthene | 3000 | 4 | 0.06 | 0.24 | 0 | BH02 | No | 0.12 | 3 | 0.6293 | 0.748 | Non-Normal | 2.353 | 0.2012 | PASSED | Max. Value is Outlier | -49999 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 0.3216 | -49999 | Reject H0 (k0 < kcrit) | 99 |
| Fluorene | 2800 | 4 | 0.06 | 0.22 | 0 | BH01 | No | 0.11 | 3 | 0.6293 | 0.748 | Non-Normal | 2.353 | 0.1844 | PASSED | Max. Value is Outlier | -50908.091 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 0.2948 | -50908.09091 | Reject H0 (k0 < kcrit) | 99 |
| Pyrene | 3700 | 4 | 0.85 | 2.4 | 0 | BH01 | No | 1.14 | 2 | 0.8529 | 0.748 | Normal | 2.353 | 2.1862 | PASSED | Max. Value NOT Outlier | -6513.84 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 3.32600404 | -6513.83994 | Reject H0 (k0 < kcrit) | 99 |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|------|---|------|-----|---|------|----|--------|---|--------|-------|------------|-------|----------|--------|------------------------|----------|--------|--------------------------------------|------|------|------------|--------------|-------------------------------|----|
| Benzo (b) fluoranthene | 3.9 | 4 | 0.96 | 3.3 | 0 | BH01 | No | 1.58 | 2 | 0.7417 | 0.748 | Non-Normal | 2.353 | 2.8196 | PASSED | Max. Value is Outlier | -3.72 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99 | 4.36 | 4.40577947 | -3.720029128 | DO NOT Reject H0 (k0 > kcrit) | 93 |
| Dibenzo (ah) anthracene | 0.31 | 4 | 0.15 | 0.6 | 0 | BH01 | No | 0.3 | 3 | 0.6293 | 0.748 | Non-Normal | 2.353 | 0.503 | FAILED | Max. Value is Outlier | -1.067 | -2.132 | DO NOT reject H0 (t0 > t(n -1, 0.95) | 85 | 4.36 | 0.804 | -1.066666667 | DO NOT Reject H0 (k0 > kcrit) | 53 |
| Aliphatic C5-C6 | 42 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.6293 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 85 | 4.36 | 0 | -1.066666667 | DO NOT Reject H0 (k0 > kcrit) | 53 |
| Aliphatic >C6-C8 | 100 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.6293 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 85 | 4.36 | 0 | -1.066666667 | DO NOT Reject H0 (k0 > kcrit) | 53 |
| Aliphatic >C8-C10 | 27 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.6293 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 85 | 4.36 | 0 | -1.066666667 | DO NOT Reject H0 (k0 > kcrit) | 53 |
| Aliphatic >C10-C12 | 130 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.6293 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 85 | 4.36 | 0 | -1.066666667 | DO NOT Reject H0 (k0 > kcrit) | 53 |
| Aliphatic >C12-C16 | 1100 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.6293 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 85 | 4.36 | 0 | -1.066666667 | DO NOT Reject H0 (k0 > kcrit) | 53 |
| Aliphatic >C21-C35 | 1900 | 4 | 149 | 300 | 0 | BH01 | No | 148.11 | 1 | 0.8779 | 0.748 | Normal | 2.353 | 323.2544 | PASSED | Max. Value NOT Outlier | -23.644 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 471.885402 | -23.64417824 | Reject H0 (k0 < kcrit) | 99 |
| Aromatic >C8-C10 | 47 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.8791 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 99.5 | 4.36 | 0 | -23.64417824 | Reject H0 (k0 < kcrit) | 99 |
| Aromatic >C10-C12 | 250 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.8791 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 99.5 | 4.36 | 0 | -23.64417824 | Reject H0 (k0 < kcrit) | 99 |
| Aromatic >C12-C16 | 1800 | 4 | 0 | 0 | 0 | N/A | No | 0 | 4 | 0.8791 | 0.748 | N/A | 2.353 | 0 | N/A | N/A | N/A | N/A | N/A | 99.5 | 4.36 | 0 | -23.64417824 | Reject H0 (k0 < kcrit) | 99 |
| Aromatic >C16-C21 | 1900 | 4 | 3 | 12 | 0 | BH01 | No | 6 | 3 | 0.6293 | 0.748 | Non-Normal | 2.353 | 10.059 | PASSED | Max. Value is Outlier | -632.333 | -2.132 | Reject H0 t0 < t(n -1, 0.95) | 99.5 | 4.36 | 16.08 | -632.3333333 | Reject H0 (k0 < kcrit) | 99 |

12.7 Appendix 7 - Risk 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:

$$\text{RISK} = \text{LIKELIHOOD} \times \text{SEVERITY}$$

The matrix given in Table 6 provides a means of calculating the overall risk; while Table 7 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 | Very Low |
| | Probable = 4 | High | High | Moderate | Low | Very Low |
| | Possible = 3 | Moderate | Moderate | Moderate | Low | Very Low |
| | Remote = 2 | Low | Low | Low | Low | Very Low |
| | Improbable = 1 | Very Low | Very Low | Very Low | Very Low | Very Low |

Table 5: Assessment description for risk scores

| Risk Score | Risk Assessment |
|------------|-----------------|
| 1-5 | Very Low to 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 to Low | The presence of an identified hazard does not give rise to the potential to cause significant harm to a designated receptor. 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 |
| 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 |
| PCL | Potentially Contaminative Land Use |
| PPL | Potential Pollutant Linkage |
| PSPPL | Potentially Significant Potential Pollutant Linkage |
| 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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