55 Vastern Road, Reading

Environmental Impact Assessment Scoping Report

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BARTON WILLMORE
PLANNING / DESIGN / DELIVERY

55 Vastern Road, Reading

Environmental Impact Assessment Scoping Report

Prepared on behalf of Berkeley Homes (Western) Ltd

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1 INTRODUCTION

1.1 This report has been prepared by Barton Willmore, IEMA qualified assessors, on behalf of Berkeley Homes (Western) Ltd. The report accompanies a request for an Environmental Impact Assessment (EIA) Scoping Opinion from Reading Borough Council (RBC) in accordance with Regulation 15 of the *Town and Country Planning (Environmental Impact Assessment) Regulations 2017* (as amended)[1] (the "EIA Regulations").

1.2 In accordance with the EIA Regulations, a person who is minded to make an EIA application may ask the relevant planning authority to state in writing their opinion as to the information to be provided in the Environmental Statement (a "scoping opinion").

1.3 Regulation 15 (2) states that a scoping request must be accompanied by:

(i) a plan sufficient to identify the land;
(ii) a brief description of the nature and purpose of the development, including its location and technical capacity;
(iii) an explanation of the likely significant effects of the development on the environment; and
(iv) such other information or representations as the person making the request may wish to provide or make.

The Site

Site Context

1.4 The site (see location plan at Appendix 1) is located in an urban area in the centre of Reading between the A329 Vastern Road and the River Thames. Reading Railway Station is located approximately 150m to the south of the site.

1.5 The site is bounded by the A329 Vastern Road to the south with a retail park and Reading Station multi-storey car park beyond; Lynmouth Road and residential dwellings to the west; the River Thames and Towing Path and Christchurch pedestrian bridge to the north; and essential retained SSE (formerly Scottish and Southern Energy plc) Apparatus, Thames Court Apartments and Sovereign Court Offices to the east.

[1] SI 2017/571 as amended by SI 2018/695

1.6 The SSE infrastructure to the east of the site represents a very important element in the power transmission network for Reading and the wider Thames Valley and includes substantial cabling, transformers and substations.

1.7 The site is not subject to any ecological, heritage or landscape designations. The nearest statutory historic designation is Reading Abbey: a Cluniac and Benedictine monastery and Civil War earthwork Scheduled Monument, which is located approximately 430m to the south-east of the site. There is also the Main Building of Reading General Station Grade II Listed Building, located approximately 240m to the south and Kings Meadow Swimming Pool Grade II Listed Building located approximately 400m to the east of the site.

1.8 There are no Special Protection Areas (SPAs), Ramsar or Sites of Special Scientific Interest (SSSIs) within 10km of the site. The nearest statutory nature conservation designation is Lodge Wood & Sandford Mill SSSI which is located approximately 6.4km to the east of the site. Lousehill Copse Local Nature Reserve (LNR) is located approximately 3km to the south-west of the site.

1.9 According to the Gov.UK website, the central area of the site is located within Flood Zone 1 while the edges of the site are in Flood Zone 2 associated with the adjacent River Thames. The central area is therefore at low probability of flooding while the edges are at medium probability of flooding. The site is located within an Air Quality Management Area (AQMA) which encompasses Reading Town Centre, areas along the major radial road routes into Reading (including J11 of the M4) and along the railway lines where they pass through built-up areas, due to exceedances of nitrogen dioxide thresholds.

Site Description

1.10 The site extends to approximately 0.73 hectares (ha) and is irregular in shape, orientated approximately north-east to south-west. Within the southern part of the site are existing SSE office buildings (2 storey), which face onto Vastern Road. Within the southeast of the site is No. 55 Vastern Road, which on the List of Locally Important Buildings and Structures. The remainder of the site comprises hardstanding and car parking (approximately 150 spaces).

1.11 The site is dominated by buildings and hard-standing, with a very small area of poor semi-improved grassland, hedges and scrub and two mid-aged whitebeam trees located to the north of the site.

1.12 The site is accessed from the A329 Vastern Road, on the southern boundary.

The Proposed Development

1.13 The proposed development will comprise demolition of a number of structures on the site and the erection of a new residential scheme (up to 210 units), with a max height of 11 storeys (up to 36m above ground level) including a new north south pedestrian link, connecting Christchurch Bridge to Vastern Road towards the station as well as drainage infrastructure and landscaping.

1.14 Vehicular access to the proposed development will be via the A329 Vastern Road and will accommodate two-way vehicle movements. Approximately 40 parking spaces will be included a part of the Proposed Development.

1.1 Pedestrians and cyclists will be able to gain access from A329 Vastern Road or Lynmouth Road, as well as the tow path and Christchurch Bridge over the River Thames. The Proposed Development will incorporate a permeable layout, thus promoting walking opportunities for new and existing residents and users of the area.

1.2 The existing SSE infrastructure located to the immediate east of the site will be retained as the proposed development progresses.

2 SCOPING

2.1 This scoping exercise has been informed by desk-based research, professional judgement and other information available for the site. Table 1 provides a summary of the scoping exercise.

Table 1: EIA Scoping Summary

Topics	Potential Construction Phase Effects	Potential Operational Phase Effects	Likely Significant Effects (Pre-Mitigation)	Comments
Townscape and Visual Effects	✓ - T	✓ - P	✓	Topic scoped in to the ES.
Air Quality	✓ - T	✓ - P	✓	
Noise	✓ - T	✓ - P	✓	
Daylight, Sunlight and Overshadowing	✓ - T	✓ - P	✓	
Wind Microclimate	✓ - T	✓ - P	✓	
Population and Human Health	x	x	x	Topic scoped out of the ES.
Cultural Heritage	x	x	x	
Transport & Access	x	x	x	
Land Contamination	x	x	x	
Water Resources and Flood Risk	x	x	x	
Biodiversity	x	x	x	
Agricultural Land	x	x	x	
Lighting	x	x	x	
Vibration	x	x	x	
Waste	x	x	x	
Climate Change and Greenhouse Gases	x	x	x	
Accidents and Disasters	x	x	x	

Key: ✓ Likely Significant Effect / x No Likely Significant Effect.
T – Temporary Effect / P – Permanent Effect

Environmental Disciplines Scoped Out

2.2 Further information on the topics scoped out of the EIA in Table 1 is set out in the following sections.

Population and Human Health

2.3 The proposed development will provide housing and construction employment opportunities, as well as health benefits with direct access to the Thames Towpath. No significant effects on population and human health are anticipated and on this basis this topic has been scoped out of the Environmental Statement.

Cultural Heritage

2.4 The site is located to the north of Reading town centre and is not subject to any statutory heritage designations, i.e. there are no World Heritage Sites, Scheduled Monuments, Listed Buildings or Historic Battlefield sites. As noted above, the nearest statutory historic designation is Reading Abbey: a Cluniac and Benedictine monastery and Civil War earthwork Scheduled Monument which is 430m to the south-east. There is also the Main Building of Reading General Station Grade II Listed Building which is approximately 240m to the south and Kings Meadow Swimming Pool Grade II Listed Building approximately 400m to the east of the site. No. 55 Vastern Road adjacent to the site is on the List of Locally Important Buildings and Structures. The statutory historic designations and their settings are separated from the site by intervening buildings of varying heights and most of them by the railway and will not be significantly affected by the proposed development. A Heritage Statement will be submitted as part of the planning application which will consider the impact of the proposed development on No. 55 Vastern Road.

2.5 In archaeological terms, given the developed nature of the site, it is likely that any potential archaeology would have previously been removed from the site or destroyed by existing foundation. Therefore the potentially for significant effects on archaeology is very unlikely. An Archaeological desk-based assessment (DBA) will be undertaken and submitted in support of the planning application.

Transport and Access

2.6 Demolition and construction will change traffic movements (e.g. use of HGVs) on Vastern Road and the local highway network. As noted above, the proposed development will have circa 40 parking spaces compared to circa 150 currently on the site. The existing carparking spaces are fully occupied by SSE staff through the working day. Car moments as a result on the operational development will therefore significantly reduce with around a quarter of the current amount of parking being provided as part of the proposed development. Traffic flow as a result of the proposed development is not therefore anticipated to significantly affect the flow of traffic on the surrounding roads. A Transport Assessment and Framework Travel Plan will be submitted in support of the planning application. In view of the proximity of Reading town centre and the railway station, it is considered likely that future residents will make use of non-car based transport modes and the Framework Travel Plan would encourage this. In terms of the construction traffic, a Construction Traffic Management Plan (CTMP) would also be prepared for the proposed development. Based on the above, this topic has been scoped out of the ES.

Land Contamination

2.7 A Phase I-II Geo-Environmental Site Assessment (ref: 29228-R01-(00)) has been undertaken for the site (refer to Appendix 2). The Assessment identified some elevated levels of contamination in near surface samples and groundwater samples. A Remediation Method Statement has also been undertaken which stipulates a number of mitigation measures which would be required to mitigate the risks identified by the Geo-Environmental Site Assessment. Prior to construction of the proposed development, mitigation measures, including soil capping, installation of vapour and gas membranes within buildings and removal of contamination hotspots on the site, will be undertaken to ensure that the site is suitable for residential use. The land uses proposed are not highly contaminative and it is not expected that there will be a high risk of contaminants being released into the environment. The nature of the contamination and the proposed remediation measures are also considered to be plain and uncontroversial and can be used to screen out significant effects.

Water Resources and Flood Risk

2.8 The central area of the site is within Flood Zone 1 while the edges of the site are in Flood Zone 2 associated with the adjacent River Thames. The central area is therefore at low probability of flooding while the edges are at medium probability of flooding. A Flood Risk Assessment and drainage strategy will be submitted in support of the planning application. Sustainable Drainage Systems will be incorporated into the design of the proposed development to prevent a risk of flooding on the site or elsewhere because of the proposed development, such that these effects are not considered to be significant.

Biodiversity

2.9 There are no statutory or non-statutory nature conservation sites on or near to the site. An extended Phase 1 Habitat Survey has been undertaken for the site (refer to Appendix 3). As stated above, the site is dominated by buildings and hard-standing, with a very small area of poor semi-improved grassland, hedges and scrub (which are dominated by *Buddleja*) and two mid-aged whitebeam trees. A daytime bat inspection survey has been undertaken at the site which concluded none of the buildings and trees are likely to support roosting bats. A net biodiversity gain will be achieved through habitat creation and the inclusion of bird and bat boxes, all of which will be detailed on the Landscape Plan which will be provided as part of the planning application. Based on the above, likely significant effects relating to biodiversity are not expected, and this topic has been scoped out of the ES.

Agricultural Land

2.10 The site has previously been developed and there will be no loss of agricultural land.

Lighting

2.11 The site lies within an existing urbanised area that is considered to lie within the Environmental Zone E3 (suburban), as defined by the Institute of Lighting Professionals. The proposals are not anticipated to generate a significant lighting impact due to the nature of the proposed development and its context. A lighting strategy will however be submitted as part of the planning application which will detail appropriate lighting design to be included within the proposed development. The lighting strategy will also demonstrate how the design of the lighting will minimise impacts in terms of biodiversity.

Vibration

2.12 Due to the nature of the proposed development, there are not expected to be any significant sources of vibration, and therefore we would propose to scope this topic out of the ES. The site is not subject to any existing sources of vibration that could have amenity implications. Furthermore, augured piling will be used during the construction of the proposed development so the risk from vibration during construction is likely to be minimal. Nevertheless, good site practice during construction would also be undertaken in line with the Construction Environmental Management Plan (CEMP).

Waste

2.13 The proposals are not anticipated to produce significant amounts of waste during construction and operational waste will be managed in accordance with RBC requirements. Material produced from the demolition of the buildings on the site will also be recycled where possible. Waste as a separate topic has therefore been scoped out of the ES.

Climate Change and Greenhouse Gases

2.14 Climate change and greenhouse gases, as a separate chapter, has been scoped out of the ES. The introductory chapters will, however, summarise the findings of the ES relevant to climate change and the climate change adaptations integrated into the proposed development. This will draw upon technical chapters and reports, including the Flood Risk Assessment and Air Quality Assessment, and summarise the sustainability and energy provisions included within the proposed development. For a development of this scale and nature this is considered a

suitably proportionate approach.

Accidents and Disasters

2.15 The proposed development is residential in nature and does not include uses which are considered to be hazardous, nor is the site in a location which is at risk of disasters such as flooding, land instability or earthquakes. As noted above, a Flood Risk Assessment will also be submitted as part of the planning application.

2.16 During construction, which is considered the only element which could be considered as hazardous, all applicable health and safety legislation will be complied with. This topic has been scoped out of the ES.

Environmental Disciplines Scoped In

2.17 For each of the topics scoped into the assessment further information on the details to be included in the assessment and the methodology to be employed are set out in the following sections.

3 TOWNSCAPE AND VISUAL EFFECTS

3.1 An assessment will be undertaken of the likely significant effects of the proposed development on townscape and views (a Townscape and Visual Impact Assessment (TVIA)).

Baseline

3.2 The Site is located in the northern part of Reading town centre, between the River Thames to the north and Vastern Road to the south. The Site adjoins the link across the Thames provided by Christchurch Bridge and the Thames Path National Trail. On the opposite side of the River Thames lies open space at Christchurch Meadows. The Site lies on the intended route of a new strategic pedestrian and cycle link between Reading town centre and Caversham, to the north.

Approach

3.3 The assessment would be undertaken in accordance with Landscape Institute and Institute of Environmental Management and Assessment, 'Guidelines for Landscape and Visual Impact Assessment' (Third Edition, 2013) and will provide a review of the existing landscape planning policy context, published sources of townscape character assessment, visual appraisal of the study area and an assessment of the potential townscape and visual effects of the Proposed Development, both at the construction and operational phases.

3.4 Baseline information for the study area will be collated, which will include topography, landscape planning policy designations, published sources of townscape character, woodland/structural vegetation and other relevant information.

3.5 Assessments will be made at the baseline year 2019; during construction; on completion; and 15 years thereafter, accounting for growth of planting within the Proposed Development. The assessment of visual effects will primarily consider winter conditions in which the scheme will be most visible without leaves on deciduous trees.

3.6 A list of representative viewpoints for assessment has been provided separately for agreement with the RBC landscape officer. These include publicly-accessible views from public open spaces, footways on streets and public rights of way; and includes viewpoints identified in RBC planning policy and guidance. The list includes a number of views to be represented in verifiable photomontage imagery to be submitted as part of the TVIA.

3.7 In summary the assessment will:

- Define the study area for the TVIA and identify representative viewpoints;
- Assess the sensitivity of the townscape and visual receptors (the receiving environment);
- Assess the magnitude of townscape and visual effects;
- Assess the significance of townscape and visual effects; and
- Identify requirements for any mitigation measures.

Summary

3.8 Table 2 summarises the townscape and visual receptors identified for inclusion in the assessment.

Table 2: Townscape and Views

Receptor	Effects	Scoped In
Views from publicly accessible locations, including roads, footpaths and public open spaces	Visual effects on users	✓
Landscape/townscape features, including existing vegetation	Townscape effects on the townscape resource	✓
Townscape Character	Effects on townscape character areas	✓

4 AIR QUALITY

4.1 An assessment will be undertaken of the likely significant impacts of the proposed development on local air quality, including dust. This will consider both the potential impacts of existing sources of pollution on the proposed development as well as the impact of the proposed development on existing local air quality.

Baseline

4.2 As noted above, the site is located within an AQMA which encompasses Reading Town Centre, areas along the major radial road routes into Reading (including J11 of the M4) and along the railway lines where they pass through built-up areas due to exceedances of nitrogen dioxide thresholds.

4.3 There are no designated ecological sites of relevance to the site in relation to air quality impacts and therefore this topic has been scoped out of the ES.

Approach

4.4 The assessment will include the following:

- Review of relevant local air quality monitoring data and Defra's background pollutant maps;
- Risk based assessment of the potential impacts during construction using the approach provided in IAQM guidance;
- Detailed air quality dispersion modelling of emissions from the traffic associated with the proposed development to identify the impact on existing communities;
- Detailed air quality dispersion modelling of air quality within the site to identify whether air quality for future residents is suitable; and
- The cumulative impacts with other development will also be assessed, during both construction and operation.

4.5 The aim of the risk assessment of the construction impacts on dust and particulate matter (PM_{10}) concentrations is to identify appropriate mitigation measures to be included in a CEMP.

4.6 The air quality impact assessment will predict concentrations of nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$) as these are the pollutants of concern from road traffic.

4.7 The modelling of the traffic emissions will be undertaken for three different scenarios, as

follows:

- Baseline year;
- Opening year without the proposed development; and
- Opening year with the proposed development.

4.8 The modelling exercise will utilise Annual Average Daily Traffic flows for all affected roads from the TA produced for the site. The model will predict the annual mean concentrations for comparison with the relevant UK air quality objectives and the results will be verified using monitoring data.

4.9 Mitigation measures will be recommended based on the best practice guidance produced by the local authority. The most recent version available at the time of the assessment will be used.

Summary

4.10 Table 3 summarises the air quality effects to be included for detailed assessment in the ES.

Table 3: Air Quality Effects

Receptor	Effects	Scoped In
Existing residents	Potential exposure to increased pollution levels during both construction and operation.	✓
	Potential exposure to unacceptable dust and particulate matter during construction.	✓
Future residents and visitors to the proposed development	Potential exposure to unacceptable air quality (i.e. levels above the national objectives) during operation.	✓

5 NOISE

5.1 An assessment of potential effects of the proposed development with respect to noise will be undertaken. This will include the construction phase (temporary) and operational phase (permanent) effects.

5.2 The key considerations in relation to the noise assessment is as follows:

- Identification of existing noise sensitive receptors adjacent to the site and relevant highways;
- The baseline noise conditions in the study area;
- Identification of the significant sources of noise within the vicinity of the study area;
- Acoustic modelling of noise sources to predict likely noise levels across the site;
- Assessment of the predicted noise levels against relevant standards and guidance including British Standard (BS) 8233[1], BS 4142[2] and World Health Organisation (WHO) Community Noise[3];
- The assessment under the above standards and guidance will determine the significance of any effect; and
- Suitability of the site for proposed noise sensitive uses.

Baseline

5.3 Environmental noise surveys will be undertaken to establish the source strength of existing noise sources in the vicinity of the site and prevailing noise levels at the site. Baseline traffic data for relevant highways will be obtained from the appointed transport consultant.

Approach

5.4 Design Manual for Roads and Bridges Volume 11 Section 3 Part 7 – HD213/11 Noise and Vibration[2] states that around a 25% increase or decrease in traffic flow leads to a 1 dB increase or decrease in noise levels. A negligible magnitude of change for the short-term impact of road traffic emissions would be less than 1 dB $L_{A10,18hr}$ and for the long-term impact less than 3 dB $L_{A10,18hr}$.

5.5 Given that car movements as a result of the operational development will significantly reduce with around a quarter of the current amount of parking being provided as part of the proposed

[2] Design Manual for Roads and Bridges – Part 7 HD 213/11, 2011

development, it is highly unlikely that the traffic impact would result in higher than negligible impact and therefore this element of the assessment has been scoped out.

5.6 The effects on noise and vibration during construction will also be assessed qualitatively in accordance with the British Standard 5228: 2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Parts 1: Noise and 2: Vibration. The focus will be on mitigation measures to be included in a CEMP.

5.7 Site suitability for residential development will be assessed in accordance with the NPPF, and the associated PPG and the Noise Policy Statement for England. British Standard 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings' is the appropriate standard for the design of new dwellings.

Summary

5.8 Table 4 summarises the noise effects to be included for detailed assessment in the ES.

Table 4: Noise Effects

Receptor	Effects	Scoped In
Existing residential receptors and community uses	Temporary noise effects during construction and need for control/mitigation measures.	✓
Existing noise sensitive receptors	Permanent noise effects of change in traffic flows associated with development.	✓
Proposed noise sensitive receptors	Permanent noise effects from existing noise sources in the vicinity of the development.	✓

6 DAYLIGHT, SUNLIGHT AND OVERSHADOWING

6.1 Existing residential properties and amenity spaces in the vicinity of the site may be affected by changes in accessibility to daylight and sunlight and/or overshadowing. Accordingly, the assessment will consider the potential impact of the proposed development on daylight, sunlight and overshadowing on existing, neighbouring and consented buildings in the surrounding area, if any, residential properties within the proposed development itself and the surrounding area, as well as, open space and public amenity areas. The approach to the assessment will adopt the principles set out in the BRE Guidelines (Littlefair P., (2011) Site Layout Planning for Daylight and Sunlight: A guide to good practice (2nd Edition), Building Research Establishment Trust, HIS BRE Press) as well as BS 8206-2:2008 Lighting for buildings: Code of practice for daylighting.

Approach

6.2 The baseline condition comprises all existing buildings on the site. Technical analysis of existing daylight and sunlight conditions around the site will be completed as part of the assessment.

6.3 The numerical values quoted in the BRE Guidelines are purely advisory. Different values may be used depending on the type of development earmarked and calculation methods are flexible in this respect. Appendix F of the BRE Guidelines provides the guidelines for setting alternative daylight values of skylight and sunlight access. In addition, 'mirror-image' analysis may be undertaken, where a 'mirror image' of neighbouring properties on the site is adopted when setting reasonable alternative values in environments that are significantly different from the low-density suburban housing model from which the general targets within the BRE Guidelines have been derived.

6.4 The assessment will focus on adjoining domestic buildings where the occupants have a reasonable expectation of daylight and sunlight. Commercial properties that have continuous artificial lighting, such as offices, will not be assessed. Overshadowing of public amenity areas for both existing and proposed spaces will also be assessed. Baseline conditions, and mirror image scenarios described above, including any cumulative impacts with surrounding future developments, and the potential direct and indirect impacts of the proposed development on its surrounds, will be assessed. Mitigation measures required to prevent, reduce or offset those impacts and the residual impacts remaining following mitigation will be considered.

6.5 Internal daylight and sunlight analysis of residential units within the proposed development

will be undertaken, where there may be daylight and sunlight levels beneath the recommended BRE Guidelines.

Summary

6.6 Table 5 summarises the likely effects in relation to daylight, sunlight and overshadowing identified for inclusion in the assessment against the existing baseline conditions.

Table 5: Daylight, Sunlight and Overshadowing Effects

Receptor	Effects	Scoped In
Neighbouring Residential properties	Effects on daylight and sunlight levels and changes to overshadowing.	✓
Neighbouring public/private amenity spaces		✓
Future residents of the proposed development		✓

7 WIND MICROCLIMATE

7.1 An assessment will be undertaken of the likely significant effects of the proposed development on the environment within the site and in the surrounding areas with respect to wind microclimate. The wind assessment will take into account the effect of the surrounding context and will consider wind effects in open amenity spaces, building entrances and pedestrian routes to determine the level of compliance with the recommended standards.

7.2 The likely significant effects of the proposed development on the local wind environment will be assessed against best practice criteria for pedestrian comfort and safety. Where appropriate, this chapter will identify mitigation measures to prevent, minimise or control likely adverse effects arising from the proposed development.

Approach

7.3 The methodology that will be adopted for the assessment combines the use of computational fluid dynamics (CFD) to predict air flow patterns and wind velocities around the site, the use of wind data from the nearest suitable meteorological station and the recommended comfort and safety standards (the Lawson Criteria, Ref. I). This will include the construction of a 3D computer model of the site and the surrounding area that will be run for 18 wind directions, spaced at 20° intervals, to represent all directions.

7.4 The study will take into account the following factors:

- The effect of the geometry, height and massing of the proposed development and existing surroundings on local wind speed and direction;
- The wind speed as a function of the local environment as topography, ground roughness and nearby obstructions (buildings, bridges, etc.);
- Orientation of the buildings relative to the prevailing wind direction; and
- The pedestrian activity to be expected (sitting, standing, strolling and fast walking).

7.5 It should be noted that effects on pedestrian comfort and safety will be only considered externally to the building.

7.6 The results of the assessment will be presented, showing the categorisation of the various external spaces (at pedestrian height of 1.5m) in terms of the Lawson Criteria (LDDC) for pedestrian comfort, combined with professional judgement regarding the likelihood of wind safety issues.

7.7 The wind analysis will focus on the likely variation of the wind velocities from the reference wind data arising as a result of the proposed development. The assessment of the effects will be undertaken based on a comparison of the wind modelling results between the baseline conditions, the proposed development and the cumulative scenario.

7.8 The assessment of wind effects will consider pedestrian-level winds, which are those expected to be experienced at ground level. These will be carried out utilising summer and winter data so as to analyse the seasons of the year during which more people are expected to be outdoors and during which higher wind speeds are recorded.

The Site and Study Area

7.9 A 3D model including the built area within a radius of approximately 400m from the site will be constructed to account for the influence of the surrounding context on the incoming winds as they reach the site. Furthermore, the model will exclude both soft and hard landscaping (trees, street furniture etc.), to represent the worst-case scenario since landscaping will generally improve the wind environment.

Wind Climate Analysis

7.10 Twenty years of wind data (1997-2017) from a suitable weather station (London Heathrow Airport) adapted with site specific roughness factors will be used assess the local wind conditions surrounding the site. In order to adapt the data from the weather station to the site and account for the difference in topography and terrain, a procedure to 'transpose' the wind data from the weather station onto the site will be undertaken.

Criteria for Pedestrian Safety and Comfort

7.11 The Lawson Criteria will then be applied to determine the acceptability of wind conditions for pedestrian safety and comfort. As Table 6 and 7 illustrate, the Lawson Criteria stipulates that for the comfort and safety assessment of wind effects, it is not only the velocity of wind that is considered but also the frequency of occurrence of these velocities as an indicator of the likely duration of certain wind speeds. As short duration gust occurrences cannot be modelled with accuracy within the CFD assessment methodology, the assessment of safety conditions will be undertaken using the results of the CFD assessment supplemented by professional engineering judgement.

7.12 The Lawson Comfort Criteria (LCC) provides wind speed thresholds that should not be exceeded for more than 5% of the time in a season to be acceptable for the stated pedestrian

activity. The Lawson Safety Criteria (LSC) identifies areas where someone could find walking difficult, or even stumble and fall. This criterion provides wind speed thresholds that should not be exceeded for more than 0.025%.

Table 6: Lawson's Comfort Assessment Criteria

Comfort Category	5% Exceedance Threshold	Description
Sitting	4 m/s	Light breezes desired for outdoor restaurants and seating areas where one can read a paper or comfortably sit for long periods.
Pedestrian Standing	6 m/s	Gentle breezes suitable for main building entrances, pick-up/drop-off points and bus stops.
Pedestrian Leisure Walk	8 m/s	Moderate breezes that would be appropriate for strolling along a city/town centre street, plaza or park.
Business Walk	10 m/s	Relatively high speeds that can be tolerated if one's objective is to walk, run or cycle without lingering.
Uncomfortable	>10 m/s	Winds of this magnitude are considered a nuisance for most activities, and wind mitigation is typically recommended.

Table 7: Lawson's Pedestrian Safety Criteria

Safety Rating	Threshold Mean-hourly Wind Speed Exceeded Once Per Annum (0.025%)	Potential effects	Development Constraints
Unsuitable for the general public (S15)	>15 m/s	Less able and cyclists find conditions physically difficult.	Threshold not to be exceeded in areas accessible to the general public: sitting areas, standing areas, leisure walking areas.
Unsuitable for able-bodies (S20)	>20 m/s	Able-bodied persons find conditions difficult. Physically impossible to remain standing during gusts.	Threshold not to be exceeded in areas with limited public access e.g. maintenance areas, motorways.

Summary

7.13 Table 8 summarises the wind effects to be included for detailed assessment within the ES.

Table 8: Wind Effects

Receptor	Effects	Scoped In
Existing residential receptors – Building entrances Pedestrian circulation areas, open amenity spaces.	Changes to wind microclimate conditions	✓
Residents and users of the proposed development – Building entrances, Pedestrian circulation areas, open amenity spaces, the Thames towpath.	Changes to wind microclimate conditions	✓

8 CUMULATIVE EFFECTS AND CONSULTATION

8.1 The ES will consider the potential for likely significant effects on the environment resulting from committed developments in the area. PPG[i] identifies that:

> *"...There are occasions where other existing or approved development may be relevant in determining whether significant effects are likely as a consequence of a proposed development..."*

8.2 Table 9 sets out the committed schemes which have been identified for the assessment of likely significant cumulative effects on the environment. It is considered appropriate to include major schemes within 2km of the site that either have planning permission or are in the process of being implemented, as well as major planning applications which have been submitted but not yet determined.

Table 9: Cumulative Schemes

Scheme Name & Application Number	Scheme Details	Planning Status	Approximate Distance from the site
Thames Quarter Kings Meadow Road, Reading, RG1 8DQ (Ref. 182196)	Erection of a part 13-storey, part 23 storey building comprising 338 apartments in a mix of studio, one-bedroom, two-bedroom and three-bedroom units, residents' lounges, tech hub, dining room, and cinema room, various rooftop outdoor amenity spaces, concierge/reception with coffee meeting area, gym, residents' storage facilities, post room, ancillary back-of-house facilities, 338 secure cycle parking spaces, car parking spaces, landscaping, associated works (revision to planning permission 162166 dated 23/11/2017) (Part Retrospective).	Awaiting decision	300m south-east of site.
Former Cooper Reading BMW Kings Meadow Road, Reading, RG1 8BN (Ref. 162166)	Erection of a part 12 storey, part 23 storey building comprising 315 apartments in a mix of studio, one-bedroom, two-bedroom and 3-bedroom units; residents' lounges, tech-hub, dining room, and cinema room, various rooftop outdoor amenity spaces, concierge/reception with coffee meeting area, residents' storage facilities, post room, ancillary back-of-house facilities, 315 secure cycle parking spaces, 49 car parking spaces, landscaping, and associated works. Demolition of existing multi-storey car park.	Application permitted 23rd November 2017	400m east of site.
29 Station Road, Reading, RG1 1LG (Ref. 181930)	Demolition of the existing vacant 6-storey retail and office building and erection of a replacement basement and part 4, part 22 (with rooftop plant above) storey building to provide flexible retail (Class A1, A2, A3, A4 or A5) use at part ground floor level, a 135 bedroom hotel (Class C1) at 1st to 16th floors and offices (Class B1a) at 17th to 21st floors, associated servicing from Garrard Street and other associated works.	Awaiting decision	400m south of site.

Scheme Name & Application Number	Scheme Details	Planning Status	Approximate Distance from the site
52-55 Friar Street, Reading and 12 Greyfriars Road (Ref: 162210)	Demolition of existing building and structures (Class A1) and erection of 3 new buildings ranging between 6 - 12 (and basement) storeys in height to provide 135 (1xstudio, 54x1, 73x2 & 7x3-bed) residential units (Class C3), a flexible Class A1-A5 use at ground floor level fronting onto Friar St, a flexible Class A1-5, B1(a) or D2 (gym only) use at ground floor level fronting onto Greyfriars Rd, with associated access, parking, servicing, landscaping and engineering works.	Application permitted 20th March 2018	500m south-east of the site.
Plot E & Telecom House Land Friar Street / Garrard Street Station, RG1 1DX (Ref. 151426)	Outline application with all matters reserved for mixed use redevelopment of Plot E of the Station Hill site and neighbouring Telecom House site (48 to 51 Friar Street & 4 to 20 Garrard Street) to comprise the demolition of existing buildings and erection of new buildings/ structures to provide residential units, a range of town centre uses including retail and related uses (Use Class A1 - A5), associated infrastructure, public realm works and ancillary works.	Application permitted (26th July 2016)	600m south-west of site.
Bristol and West Arcade Market Place, Reading, RG1 1JL (Ref. 180358)	Demolition of vacant former Bristol & West Arcade (173 – 175 Friar Street) and erection of an eight storey mixed –use building (plus basement) to provide 35 residential units, 4,208 sqm of B1 office floorspace, and 5 retail units (A1/A2/A3), demolition of rear parts of 29 – 31 and 32 Market Place, the change of use of the retained units at 27 – 28, 29 - 31 Market Place at first, second and third floors to provide 8 residential units, change of use at ground and basement level of 32 Market Place from A2 to flexible retail use (A1/A2/A3), retention of 260.4 sqm of A4 use at ground and basement at29-31 Market Place.	Application permitted 9th January 2019	650m south of the site.
20 Hosier Street, Reading, RG1 7JL (Ref. 182054)	Demolition of all existing structures, erection of a part 7, part 8 storey building for use as 101 bed hotel (Class C1 Use) at ground – 8th Floor and Restaurant/Bar (Class A3/A4 Use) at ground floor, with means of access, servicing and associated works.	Awaiting decision	800m south of site.
Kings Point, 120 Kings Road, Reading, RG1 3DA (Ref. 162087)	Demolition of existing building and the erection of a part seven, part nine, part eleven, part twelve and part seventeen storey building comprising 103 residential units and 351.5 sqm GIA of commercial (A1/A3) floorspace at ground and mezzanine floor level together with parking and associated landscaping (without complying with conditions (2, 7, 8, 9, 18, 19, 28 of planning permission 150019) to allow the removal of sub-basement, enlargement of basement level and internal and external alterations at the basement, ground and mezzanine levels (amended description).	Application permitted 9th February 2017	900m south of site.
Kenavon Drive, Reading, RG1 3HS (Ref. 170509)	Demolition of the two existing retail (Homebase and former Toys R Us) structures and the erection of new buildings ranging between 2 and 11 storeys in height, providing 765 (18 x studio, 302x1, 409x2 and 36x3- bed) residential units (Class C3), 5 commercial units (1x flexible Class A1-A4, B1 or D1-D2, 1x flexible D1 or D2, 1x flexible Class A1- A5, 1x flexible Class A3 or A4,	Application permitted 10th October 2018	950m south-east of site.

Scheme Name & Application Number	Scheme Details	Planning Status	Approximate Distance from the site
	1x flexible A1-A5 or D1-D2 uses), various works to the public realm, including a new riverside square, landscaping, accesses, parking and associated works. This application is accompanied by an Environmental Statement.		
13-21 Crown Street and 22 Silver Street, Reading, RG1 2SE (Ref. 170794)	Residential development consisting of 80 dwellings (Class C3) with associated access and landscaping works. Demolition of existing buildings.	Application permitted 12th October 2017	1.2km south of site.
Alexander House 205-207 Kings Road, Reading, RG1 4LS (Ref. 190160)	Demolition of existing office building and construction of new 182 bed student accommodation development, over 7 storeys of accommodation plus lower ground floor, together with ancillary landscaping, parking and amenity space.	Awaiting decision	1.6km south-east of site.

8.3 Guidance is sought from RBC as to whether any other committed developments should be considered for the potential to lead to likely significant cumulative effects on the environment with the proposed development.

Consultation

8.4 The following statutory and other consultees will be consulted through the EIA process:

- Highways England;
- Environment Agency;
- Natural England;
- Historic England;
- Thames Water;
- RBC (various departments); and
- any other stakeholder that RBC nominates.

8.5 Public consultation will be undertaken during the preparation of the planning application. The feedback received through the consultation will be summarised in the ES and written up in full in the Statement of Community Involvement submitted in support of the planning application.

9 ENVIRONMENTAL STATEMENT STRUCTURE

9.1 The ES will contain three main volumes as set out in Table 10 below.

Table 10: Environmental Statement Structure

Volume 1: ES Main Text and Figures		
Chapter No.	Chapter Title	Description
1	Introduction	Introduction to the ES, EIA requirements, details of project team, ES organisation and availability.
2	EIA Methodology	Methods used to prepare each chapter, description of ES structure and content, generic significance criteria, scoping and consultation and details of schemes included in the assessment of cumulative effects.
3	Site and Development Description	Site description and details of the proposed development.
4	Alternatives and Design Evolution	Outline of the main alternatives considered by the Applicant.
5	Construction Methodology and Phasing	Details of anticipated programme for development and construction methodology.
6	Townscape and Visual Effects	Effects of the proposed development on townscape character and visual amenity. This will include the consideration of night time light effects.
7	Air Quality	Assessment of the effects of the proposed development on air quality as a result of construction activities and vehicle movements.
8	Noise	Assessment of the effects of the proposed development on noise.
9	Daylight, Sunlight and Overshadowing	Effects relating to daylight, sunlight and overshadowing.
10	Wind Microclimate	Effects from the operation of the proposed development relating to wind microclimate.
11	Summary and Residual Effects	Summary of the residual and interactive effects of the proposed development.
Volume 2		
Technical Appendices		Technical data and reports to support the chapters in Volume 1.
Standalone Document		
Non-Technical Summary		Summary of the ES in non-technical language.

9.2 The first five chapters of the ES would be introductory and provide essential information for the subsequent technical chapters. Further information on these chapters is set out below.

Introduction

9.3 This chapter will provide background to the EIA, describe the structure of the ES and identify the project team.

EIA Methodology

9.4 This chapter will set out the methodology used in the EIA, state the assumptions applicable

to all disciplines, summarise the EIA Scoping process undertaken and summarise the public consultation process. Bespoke methodologies, limitations and assumptions will be contained in the technical chapters of the ES where required.

9.5 The significance of an environmental effect is determined by the interaction of magnitude and sensitivity, whereby the effects can be positive or negative. Generic criteria to be used in carrying out this process are detailed below. Some technical chapters will use discipline-specific criteria with their own terms for magnitude, sensitivity and significance. This will be explained in the relevant chapter.

Prediction of Impact Magnitude

9.6 The methodology for determining the scale or magnitude of impact is set out below.

Table 11: Methodology for Assessing Magnitude

Magnitude of Impact	Criteria for assessing impact
Major	Total loss or major/substantial alteration to key elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed.
Moderate	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character/composition/attributes of the baseline will be materially changed.
Minor	A minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible/detectable but not material. The underlying character/composition/attributes of the baseline condition will be similar to the pre-development circumstances/situation.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation.

9.7 The sensitivity of a receptor is based on the relative importance of the receptor using the scale set out below.

Table 12: Methodology for Determining Sensitivity

Sensitivity	Examples of Receptor
High	The receptor/resource has little ability to absorb change without fundamentally altering its present character or is of international or national importance.
Moderate	The receptor/resource has moderate capacity to absorb change without significantly altering its present character or is of high importance.
Low	The receptor/resource is tolerant of change without detriment to its character, is of low or local importance.

Assessment of Effect Significance

9.8 Effect significance will be calculated using the matrix in Table 13. This illustrates the interaction between impact magnitude and receptor sensitivity.

Table 13: Effect Significance Matrix

Magnitude	Sensitivity		
	High	Moderate	Low
Major	Major Adverse/Beneficial	Major - Moderate Adverse/Beneficial	Moderate - Minor Adverse/Beneficial
Moderate	Major - Moderate Adverse/Beneficial	Moderate – Minor Adverse/Beneficial	Minor Adverse/Beneficial
Minor	Moderate - Minor Adverse/Beneficial	Minor Adverse/Beneficial	Minor Adverse/Beneficial - Negligible
Negligible	Negligible	Negligible	Negligible

Site and Development Description

9.9 This chapter will describe the setting of the site and the existing conditions on the site, as well as explaining the proposed development and setting out the development plans.

Alternatives

9.10 This chapter would describe the evolution of the proposed development based on environmental constraints.

Construction Methodology and Phasing

9.11 This chapter will outline the anticipated construction programme, phasing and methodology and explain the assumptions made. This chapter will form the basis of the construction phase assumptions documented in each of the technical chapters of the ES.

Technical Assessments

9.12 Each ES chapter will follow the headings set out below to ensure the final document is transparent, consistent and accessible.

- Introduction;
- Planning Policy Context;
- Assessment Methodology;
- Baseline Conditions;
- Likely Significant Effects;
- Mitigation Measures;
- Residual Effects;
- Cumulative Effects; and

- Summary.

9.13 Each chapter sub-heading is explained in further detail below.

Table 14: Technical Chapter Format and Content

Sub-Heading	Content
Introduction	• This section will introduce the assessment discipline and the purpose for which it is being undertaken.
Planning Policy Context	• This section will include a summary of national, regional and local policies of relevance to the environmental discipline and assessment. Where applicable, relevant legislation will also be summarised.
Assessment Methodology	• This section will provide an explanation of methods used in undertaking the technical study with reference to published standards, guidelines and best practice. The application of significance criteria will also be discussed. • It will also outline any difficulties encountered in compiling the required information.
Baseline Conditions	• This will include a description of the environment as it is currently (2019) and as it is expected to change given the project were not to proceed (i.e. 'do-nothing' scenario). The method used to obtain baseline information will be clearly identified. Baseline data will be collected in such a way that the importance of the particular subject area to be affected can be placed in its context and surroundings so that the effects of the proposed changes can be predicted.
Likely Significant Effects	• This section will identify the likely significant effects on the environment resulting from the construction and operational phases of the proposed development.
Mitigation Measures	• Adverse effects will be considered for mitigation and specific mitigation measures put forward, where practicable. Mitigation measures considered may include modification of the project, compensation and the provision of alternative solutions (including alternative technology) as well as pollution control, where appropriate. • The extent of the mitigation measures and how these will be effective will be discussed. Where the effectiveness is uncertain or depends upon assumptions about operating procedures, data will be introduced to justify the acceptance of these assumptions. • Clear details of when and how the mitigation measures will be carried out will be given. When certainty of impact magnitude and/or effectiveness of mitigation over time exists, monitoring programmes will be proposed to enable subsequent adjustment of mitigation measures, as necessary. • The opportunity for enhancement measures will also be considered, where appropriate. • Information will be included on the mechanism by which the mitigation will be secured (e.g. by planning condition) with outline arrangements for monitoring and responsibilities for doing so, where necessary.
Residual Effects	• The residual effects, i.e. the effects of the proposed development assuming implementation of proposed mitigation, will be determined. The residual effects represent the overall likely significant effect of the proposed development on the environment having taken account of practicable/available mitigation measures.
Cumulative Effects	• The cumulative effects of the proposed development and the identified committed developments will be assessed.
Summary	• A summary of the assessment and conclusions will be provided at the end of each technical chapter.

Summary and Residual Effects

9.14 The residual effects of the proposed development will be summarised in one table at the end of the ES setting out the overall beneficial and adverse effects of the proposed development.

This chapter will also identify any interactive effects that could result from the proposed development. i.e. multiple effects impacting on a single receptor.

APPENDIX 1

SITE LOCATION PLAN

Contractors and consultants are not to scale dimensions from this drawing

N

Red line application boundary

25m 0 25 50 75
1:1250

Revision	Date	Description
--	YY-MM-DD	--

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Client
Berkeley Homes Western

Project
SSE Site,
Vastern Road, Reading

Description
Location Plan

Status
PRELIMINARY

Scale	Drawn By	Date
1:1250@A1	jc	Aug '18
Job Number	Drawing Number	Revision
33440	A-01-000	--

Original size 100mm @ A1 Copyright Broadway Malyan Limited

17.12.2018 - James Cook U:\33440\Sheets\01-Masterplans\33440-A-01-000.dwg

APPENDIX 2

PHASE I-II GEO-ENVIRONMENTAL SITE ASSESSMENT

Phase I-II Geo-Environmental Site Assessment & DQRA

55 Vastern Road
Reading
Berkshire
RG1 8BU

Prepared for

SSE Services PLC
Southern Electric Power Distribution PLC
and
Berkeley Homes (Western) Ltd
200 Longwater Avenue
Green Park
Reading
Berkshire
RG2 6GB

Omnia ref: A10967/1.1 Final
April 2018

Quality Assurance

Remarks	Draft	Final
Date	April 2018	April 2018
Phase I-II Report Prepared by	K. Duggan	K. Duggan
Signature		
DQRA Prepared By	A.King	A.King
Signature		
Checked by	T.Mitchell	T.Mitchell
Signature		
Authorised by	L.McDonald	L.McDonald
Signature		
Project number	A10967/1.0	A10967/1.1

www.omnia-consulting.co.uk

Omnia Environmental Consulting
10 Manor Court
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PO15 5TH

Executive Summary	
Site Address	55 Vastern Road, Reading, Berkshire, RG1 8BU
National Grid Reference	471566, 174120
Site Area	1.19ha
Current Site Use	The site is located within Reading Town centre, approximately 1km north of Reading Train Station. The site comprises a single two storey building within the southern section, electricity power distribution infrastructure within the central section and parking within the northern section of the site.
Site History	The site forms part of an open field until mapping dated 1900 when the site is developed to an electrical works with an ice rink built 1912. The site was then redeveloped during the 1970s to its current configuration.
Geology, Hydrology & Hydrogeology	Soils underlying the site are classified as Unproductive Strata, attributed to the clay and silt of the Langley Silt Member. This unit is underlain by a Principal Aquifer, the chalk of the Seaford Chalk and Newhaven Chalk Formation. Four (4no.) groundwater abstraction and three(3no.) potable groundwater abstractions are noted within 1km of the site. The closest surface water feature is located 4m to the north east of the site. The ground investigations encountered the following sequence: Made Ground (MG) was found to be predominantly granular in nature and generally ranged from 1.10m to 1.90m in thickness with thicker Made Ground ranging from 1.95 – 3.50m, as encountered in the central part of the site around the main transformer compound. Immediately underlying MG was a sequence of cohesive deposits comprising clayey and sandy SILT attributed to the Langley Silt Member (LSM). The top of the LSM was encountered at depths ranging from 0.60 – 3.50m bgl (37.57 – 35.26mAOD). Immediately underlying the LSM were sands and gravels attributed to the Kempton Park Gravel Formation (KPG), which ranged from loose to dense grey variably silty and sandy GRAVEL. The KPG ranged from 5.00 – 9.20m in thickness with an average thickness of 6.58m. Chalk bedrock was encountered immediately beneath the KPG at depths ranging from 8.10 – 12.50m bgl (30.21 - 26.21mAOD) and was proven to a maximum depth of 35.00m bgl. the Chalk was recovered as a variably sandy and silty angular to subangular GRAVEL (Grade Dc) suggesting an absence of “Putty Chalk” (Grade Dm).
Landfill Sites & Ground Gases	The Groundsure Report identified one (1no.) Environment Agency historic landfill site within 1km of the site, 587m to the north west. No further landfills or waste treatment site are recoded within 250m of the site.
Radon	With reference to the HPA Radon Atlas for England and Wales, less than 1% of properties are above the action level. At this level BRE publication BR211 indicates that no radon protective measures are required in the construction of new extensions or dwellings.
Revised Conceptual Site Model (RCSM)	
Following the completion of the risk assessment, including Tier 1 Human Health assessment and Tier 2 Controlled Waters Assessment (DQRA) a series of active pollution pathways have been identified by the RCSM. These relate to elevated metals, PAH, TPH and asbestos concentrations in the near surface and TPH within groundwater samples.	

Recommendations

In order to mitigate this risk identified in the RCSM remediation works are required, which are likely to include:

- Emplacement of soil capping system within areas of proposed soft landscaping;
- Provision of Vapour and Ground Gas Membranes within buildings;
- Removal of free phase hydrocarbon product (TPH Aromatic C_{12}-C_{16} and C_{16}-C_{21}) from the area set out on Figure 4, predominantly limited to the area of the substation.
- Hotspot removal of impact in area of WS1002 and TP1007.

Mitigation measures should be set out within a standalone Remediation Method Statement and agreed with the Regulator ahead of commencement on site.

Near surface soils at the site are likely to be classified as Hazardous for disposal purposes due to asbestos content >0.1% in five of 47 samples across the proposed residential portion of the site.

If during works any previously unidentified impact is encountered during development works, activities should be halted and contact made with a suitably qualified Environmental Consultant in order to further investigation identified materials. As determined appropriate by the Consultant further investigation and sampling may be required to determine appropriate actions. Upon completion contact should be made with the regulator to achieve sign off of the works.

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1.0 INTRODUCTION

1.1 Background

Omnia Environmental Consulting (OEC) have been commissioned by Berkeley Homes (Western) Ltd (BHW) to undertake an Environmental Site Assessment, including Detailed Quantitative Risk Assessment (DQRA) at the site comprising 55 Vastern Road, Reading, Berkshire, RG1 8BU (Figure 1.0). This work has been commissioned as part of the due diligence phase prior to the purchase and redevelopment of the site.

The site is situated in Reading Town centre, directly adjacent to the River Thames and is understood to be currently owned and occupied by SSE with an office building located on the southern third of the site and associated parking and infrastructure towards the north. A significant proportion of the site, predominantly the eastern third, is utilised by SSE for electricity distribution, with a range of plant and structures in place including below ground oil-filled pipes.

It is understood that BHW intend to acquire the site in full but redevelop only an approximate 70% of the site, with SSE retaining the area it currently utilises for electricity distribution. The development itself is to comprise the construction of up to 5 new residential apartment blocks along with associated infrastructure and communal green space as indicated on the provided plans.

It is understood that a pollution incident occurred at the site during July 2017 when an estimated 8,000 litres of cooling oil was released from a ruptured underground High Voltage (HV) cable run. The site is understood to have undergone two (2no.) previous phases of investigation, an initial investigation undertaken in October 2017 by Adler & Allan Ltd to identify the source of the leakage and facilitate a repair, with a subsequent phase of investigation and monitoring undertaken by Peter Brett Associates (PBA) between January - April 2018.

Whilst final reports have not yet been made available to BHW, a preliminary assessment has been issued by PBA together with a draft factual site investigation report undertaken by CCL Ground Investigations, which indicates that as a result of historic activities and contemporary land use on site (previous power station use and historic hydrocarbon infrastructure potentially both ASTs USTs) and due to a rupture of an oil pipe in 2017, that there are environmental risks to both Human and Environmental receptors that will need to be dealt with as part of the development process.

This report assesses the factual information provided by PBA and Adler & Allan and as a result, this DQRA should be read in conjunction with the previously stated reports.

1.2 Proposed Development

It is understood that the proposed development consists of the construction of five (5no.) new residential apartment blocks along with associated infrastructure and communal green space on approximately 70% of the site with the central and eastern part of the site, which contains SSE Electrical Distribution Infrastructure, being retained by SSE.

A site location map is presented as Figure 1.0, and the proposed layout is as detailed on Figure 2.0. Figures are presented within Appendix III.

1.3 Objectives

The objectives of the Geo-Environmental Site Assessment are to:

- Undertake a site walkover and inspection including interviews with key site representatives if available;
- Review historical plans, geology, hydrogeology, site sensitivity, flood-plain issues, mining records and any local authority information available in order to complete a Desk Study in line with Environment Agency (EA) document Model Procedures for the Management of Contaminated Land (Contaminated Land Report 11 (CLR11));
- Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to the future use and in relation to off-site receptors;
- Undertake a limited assessment of the near surface through restricted intrusive site investigation;
- Provide a factual and interpretative report relating to the site and provide recommendations on any potential development issues with particular consideration of Residential, Construction Worker and Environmental receptors; and,
- Undertake a DQRA through the development of a P20 Remedial Targets Methodology (RTM) model to determine whether the site presents a significant risk to identified receptors

1.4 Sources of Information

Background information was sought from the following sources:

- Groundsure Environmental Database Search (GS-4876555);
- Historical Ordnance Survey Mapping (1859 – 2014);
- CC Ground Investigation Ltd Factual Report (report ref: 'C5925/01'dated March 2018);
- PBA Peter Brett Technical Note (report ref: 'Tn002/Rev0' dated March 2018);
- Environment Agency Groundwater Quality Review: Thames Valley Gravels, Thames Region. Report Ref: 6441R8, February 2005;
- Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 3, Selection of Representative TPH Fractions Based on Fate & Transport Considerations, July 1997;
- Environment Agency, The Effects of Contaminant Concentration on the Potential for Natural Attenuation; R&D Technical Report P2-228/TR, 2002;
- and,
- British Geological Survey Map Sheet 268, Reading, Solid & Drift Edition at a scale of 1:50,000.

1.5 Limitations

The limitations of this report are presented in Appendix I.

1.6 Confidentiality

OEC has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from OEC; a charge may be levied against such approval.

2.0 SITE SETTING

2.1 Site Details

Site Address	55 Vastern Road, Reading, Berkshire, RG1 8BU
National Grid Reference	471566, 174120

All acronyms used within this report are defined in the Glossary presented in Appendix II.

2.2 Current Site Use

Site Description

The area of investigation is located within Reading town centre, approximately 1km north of Reading train station on a roughly rectangular shaped parcel of land approximately 1.0 hectares in size. The site is located north of Vastern Road with the long axis aligned north east to south west. The site was accessed via a security gate located just north of Vastern Road.

At the time of the walkover, the site was vacant and comprised of a single two-storey building occupying the southern area. Electricity power distribution infrastructure was located within the central section of the site and along the eastern boundary. Within the central eastern and northern section of the site the area was utilised for parking associated with the vacant SSE building. However it is understood that SSE employees still have site access and at the time of the walkover noted to park their vehicles on site.

The two-storey building within the southern section of the site was aligned alongside Vastern Road in an approximate east west orientation, with the building fronting onto Vastern Road. The majority of the building was clad with white plastering, although it is assumed that the building is brick built. The building appeared to be in a relatively good state of repair, with the building utilised for the storage of office furniture.

Approximately 1/3 of the site area contained electrical distribution plant including electricity substations and transformers with a number of oil cooled high voltage underground power lines understood to run approximately north-northwest to south-southeast in the eastern part of the site. The infrastructure appeared to be in a good state of repair with a gravel cover present across the area and enclosed by a 2m tall security fence.

Within the north eastern corner of the site a small area of soft landscaping was present, containing a double garage, a smoking area and an electrical substation. The area was a good state of repair was grass cover across the area, with the substation enclosed by 1.5m wooden fencing.

The site was observed to be generally flat, with a previous topographic survey indicating an elevation of approximately 38.50m AOD.

Hazardous Materials Storage

No hazardous material storage other than that associated with the substation infrastructure was observed during the site walkover.

Waste Storage

Waste storage was noted during the walkover, in the form of one (1no.) large skip, which was located at the rear of the building, on the western site boundary.

Potential Asbestos Containing Material (PACM)

During the site walkover, no visible PACM was observed, however given that the on site structure was built before the year 2000 there is the potential for asbestos containing material to be present within the building fabric. Given this, an asbestos survey should be undertaken ahead of any refurbishment or demolition works in line with best practice.

2.3 Surrounding Area

The surrounding land uses are summarised below:

Direction	Land Use
North	River Thames with Christchurch Playing Fields beyond.
East	Commercial/Industrial.
South	Commercial/Industrial with Railway Station beyond.
West	Residential Properties with private gardens.

3.0 SITE HISTORY

3.1 On-Site Historical Development

A review of historical maps pertinent to the site and within a 250m radius is summarised in Table 3.1 below. Historical maps are included within the Groundsure report presented within Appendix IV.

Table 3.1 Summary of Potentially Contaminative Historical Land Uses.

Map Edition	Historical Land Use	
	On Site	**Off Site**
1877 (1:2,500) Partial map coverage	The site area comprises open land with a tree line running along the northern edge.	Surrounding area comprises of open land with a body of water adjacent to the northern boundary running north west to south east.
1881 (1:2,500)	No significant change.	Great Western Rail Works ~ 75m south, south west of the site Goods train station situated ~200m south, south west of the site.
1889-1900 (1:2,500)	Building situated within the northern section of the site identified as electrical works.	Body of water running adjacent identified as the River Thames. Significant housing development adjacent to the western boundary. Thamesbank ironworks ~100m east Coal depot ~100m west, south west Saw mill situated ~150m north west Boat houses ~175m and ~250m east, south east and ~250m north west.
1912-1913 (1:2,500)	Building situated within the southern section of the site identified as a Skating Rink.	Ice factory and cold stores adjacent to western boundary. Iron foundry ~30m east, south east. Thamesbank ironworks ~ 100 west now identified as ironworks Timber yard ~175m north west of site Boat houses ~70m north and ~175m north west. Foundry (iron and brass) ~250m east.
1931-1932 (1:2,500)	No significant change. The buildings on site are now unidentified.	Ironworks ~ 100m east replaced by paint works ~50m east and Timber yard ~100m east Christchurch playing fields situated ~65m north east of site including tennis courts and a paddling pond.
1936 (1:2,500) Partial map coverage	Southern building now identified as a depository.	Iron foundry ~20m east of site. Overhead crane associated with saw mill ~120m west.

Map Edition	Historical Land Use	
	On Site	Off Site
1956-1957 (1:2,500)	Electrical works building within the northern section of the site is no longer present. Depository no longer identified.	Garage ~50m east. Well situated on the southern edge of fry's island ~60m north. Engineering works ~70m north west. Electrical substation situated ~120m north west. Great Western Railway works now defined as works situated ~130m south west. Boat house situated ~130m north of the site Two tennis courts and a bowling green situated on Fray's island ~180m north, north west of site. Warehouse situated ~190m south east. Unidentified works building ~250m east.
1959-1961 (1:2,500)	No significant change.	Ice factory and cold stores ~ adjacent western boundary identified as factory. Timber yard situated ~175m north west now defined as depot. Engineering works ~70m north west now identified as works. Saw mill ~150m north west now identified as mill.
1957-1962 (1:1,250)	No significant change.	No significant change
1969-1972 (1:1,250)	Building within the southern section of the site is now identified as an electricity depot. Electricity distribution infrastructure identified within the central section of the site. Three (3no.) electrical substations identified. One within the north western point, and two (2no.) along the north western section of the electricity depot.	Factory ~ adjacent to western boundary now identified as Ice factory and cold stores. Engineering works ~10m east. Engineering works situated ~50m north west. Tank ~60m east. Tank ~ 70m east Great Western Rail works (Works) ~ 100m south now identified as Railway Works. River conservancy depot ~125m east. Club situated ~130m north west. Electricity substation situated ~175m north west. Boat house ~175m north west now identified as store. Coal yard ~180m south east.
1979- 1982 (1:1,250) Partial map coverage	Poor mapping coverage.	Two warehouses ~135m north west of the site.
1984-1988 (1:1,250) Partial map coverage	Poor mapping coverage.	Northernmost warehouse ~ 135m west identified as offices.

Map Edition	Historical Land Use	
	On Site	Off Site
1984-1989 (1:1,250)	Building with the northern section of the site.	No significant change.
1988-1993 (1:1,250)	Electrical substation within the south eastern section of the site.	Engineering works ~10m east now identified as works
1994 (1:10,000)	No significant change apparent from mapping.	Car park situated ~70m south east.
2002 (1:10,000)	No significant change apparent from mapping.	No significant change.
2010 (1:10,000)	No significant change apparent from mapping.	No significant change.
2014 (1:10,000)	No significant change apparent from mapping.	No significant change.

3.2 Historical Tank Database

The Groundsure Report identified twenty-three (23no.) historical tanks within a 250m radius of the subject site based on analysis of historical ordnance survey mapping. A total of six (6no.) were identified as being located on site, with dates ranging between 1913 to 1932. Entries within a 250m radius of the site have been summarised below:

- 38m south east, Unspecified Tank, dating 1972-1989 (2 entries);
- 66m south east, Unspecified Tank, dating 1972-1989 (2 entries);
- 161m south, Unspecified Tank, dated 1879;
- 173m south west, Tank or Trough, dated 1879;
- 181m south west, Tank or Trough, dated1879;
- 188m south west, Tank or Trough, dated 1879 (2 entries);
- 216m south east, Unspecified Tank, dated 1956-1962 (4 entries);
- 220m south east, Unspecified Tank, dated 1912-1931 (2 entries);
- 240m north, Unspecified Tank, dated 1972; and,
- 250m north, Unspecified Tank, dated 1972.

3.3 Planning History

OEC has undertaken a review of on-line planning records held by Reading Council. Seven (7no.) applications were identified relating to the site. Of these the following record was considered to be environmentally pertinent:

Application Ref: 050335: Change of use from ground floor warehouse with first floor extension to form additional B1 (office) floor space (Dated January 2005).

4.0 ENVIRONMENTAL SETTING

4.1 Geology & Hydrogeology

The British Geological Survey (BGS) map for the site (Reading, Sheet 268, Solid and Drift Edition at a scale of 1:50,000) indicates that the site is underlain by the following geological sequence:

Geological Unit	Classification	Description	Aquifer Classification
Superficial	Alluvium (Northernmost Area Only)	Clay, Silt, Sand & Gravel	Secondary (A) Aquifer
	Langley Silt Member	Clay and Silt	Unproductive Strata
	Kempton Park Gravels (Underlying Langley Silt)	Sand & Gravel	Secondary (A) Aquifer
Bedrock	Seaford Chalk Formation & Newhaven Chalk Formation	Chalk	Principal Aquifer

Review of the Groundsure environmental database indicates that the site is not located within a groundwater Source Protection Zone (SPZ). A Source Protection Zone 3 (SPZ3), Total Catchment, was identified approximately 28m southeast of the site and from communication with the EA is understood to be associated with a groundwater abstraction at Reading University. No potable water abstraction licences or public water supplies were identified within 250m of the site. The closest groundwater abstraction licence is located 371m northeast and is designated for Laundry Use.

A review of Environment Agency report Ref: 6441R8, regarding groundwater within the Thames Valley Gravels suggests that groundwater flow within the gravels is influenced by river flow direction and generally flows obliquely away the river at times of high flow level and obliquely towards the river during times of low flow level. A review of local topography and surface water features suggests that shallow groundwater, if present, is likely to flow in a north-easterly direction towards the River Thames.

Groundwater vulnerability data indicates the site is underlain by soils classified as a Major Aquifer with a high leaching potential, which is considered to be attributed to the Superficial geology.

4.2 Hydrology

There are six (6no.) surface water abstractions within 1km of the site. The closest entry is located 264m north west and relates to an abstraction from the River Thames, for 'Transfer between sources', attributed to Reading Borough Council.

Data obtained via the Groundsure report identified sixty (60no.) records of surface watercourses within a 250m radius of the subject site. These records have been attributed to the River Thames (closest entry is 5m north east) and an unnamed culverted watercourse located approximately 85m south.

The Groundsure Report identified eight (8no.) surface water features within influencing distance of the site. The closest of which is located approximately 4m to the north east.

The site is partially classified as both a Zone 2 and a Zone 3 floodplain with a Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating of High. The Zone 3 entry is attributed to the north eastern

and north western boundary of the site, closest to the Thames.

The site is located on a British Geological Survey groundwater flooding susceptibility area, which is associated with clearwater flooding from superficial deposits at surface.

4.3 Geotechnical Data

Geotechnical Data presented within the Groundsure report identifies the following ground conditions:

Hazard	Designation
Shrink-Swell Clay	Very Low
Landslides	Very Low
Ground Dissolution	Very Low
Compressible Ground	Moderate
Collapsible Deposits	Very Low
Running Sand	Low

4.4 Mining & Ground Workings

The site is not located within an area that is affected by coal mining and therefore no Coal Authority coal mining report was obtained for the purposes of this report. The Groundsure report also indicated that the site is not affected by any other mining activities.

4.5 Radon Risk Potential

The Groundsure report indicates that the site is not located within a Radon Affected Area, as less than 1% of properties are above the action level. At this level BRE publication BR211 indicates that no radon protective measures are required in the construction of new extensions or dwellings.

4.6 Industrial Land Uses

The Groundsure Report identified twenty-three (23no.) industrial land uses within a 250m radius of the subject site. Out of these sixteen (16no.) were considered to be potentially contaminative, and are summarised below:

- Container and storage depot, located onsite;
- Three (3no.) Electrical Sub Stations, located onsite;
- Electrical Sub Station, located 47m southeast, 100m southwest, 164m west, 200m northwest, 211m north west, 212m northwest
- Bus and Coach stations, Depots and Companies, located 210m south
- Electrical Sub Station, located 211m northwest;
- Vehicle repair, testing and servicing, located 218m west, 239m west;
- Container and storage, located 220m west;
- Railway stations, junctions and halts, located 236m southwest;
- General construction supplies, located 244m west; and
- Unspecified works or factories, located 248m west.

The Groundsure report did not identify any current or historic petrol filling stations within a 250m radius of the site. The closest is located 428m north east of the site.

4.7 Sensitive Land Uses

The site is located within an area identified as being classified as a Nitrate Vulnerable Zone (NVZ). No other sensitive land uses were identified within a 250m radius of the site.

4.8 Site Sensitivity Assessment

The site is considered to be located within a High sensitivity setting due to the following reasons:

- On-site pollution incident involving the leakage of 8,000 litres of cooling oil in July 2017;
- River Thames is located approximately 5m north;
- Site is underlain by Chalk Bedrock classified as a Principal Aquifer;
- Contemporary and historic potentially contaminative land uses on-site;
- Superficial deposits classified as unproductive strata;
- The site is located within a NVZ; and,
- Surrounding area includes residential dwellings with private gardens.

5.0 CONSULTATIONS

5.1 Contaminated Land Officer

An information request was submitted to Reading Borough Council (RBC) on 12/04/2018 enquiring whether RBC held any information associated with the pollution incident that occurred at the site in July 2017. To date, no response to the information request has been received. Once a response has been received, and if environmentally pertinent an addendum to this report will be produced.

5.2 Environment Agency

Contact was made with the Environment Agency on the 11/04/2018 regarding the pollution incident set out in Section 1.1 involving the leakage of 8,000 litres of cooling oil on site. A response was received via email on the 12/04/18 as follows:

"Given the location of the cable oil leak in close proximity of the River Thames, Scottish and Southern Electricity were instructed to investigate and remediate. Subsequently Adler and Allan were met on site with their consultants, who carried out an investigation. They had located the leak and made a repair but the final report of the site wide monitoring has yet to be seen. They had also been monitoring the surface water in the Thames but had not detected any hydrocarbons."

OEC made further contact on 12/04/2018 requesting confirmation of the EA's considered principal receptor. A further response was received on 12/04/2018 as follows:

"Given the proximity of the River Thames, it would be considered the principal receptor. Also, the Langley Silt, dependant on the depth of the cable, might act as a barrier to downward infiltration. The Chalk here is close to an SPZ3 for the University Abstraction. However, they have recently revoked their licence so not aware of any other abstractions. The oils used on high-voltage cables these days tend to be linear Alkyl Benzene with a low environmental impact and which do not contain PCBs. However, there is the possibility for older oil residues to remain within the cables."

5.3 Landfill & Waste Treatment Sites

The Groundsure Report identified one (1no.) Environment Agency historic landfill sites within 1km radius of the subject site.

- 587m north west, Richfield Avenue, Reading, Berkshire - Site Ref: RDG11, TP0122, Waste Type: Commercial, Household and liquid sludge;

The Groundsure Report did not identify any historic local authority landfill entries within influencing distance of the site. Furthermore no further landfills or waste treatment site entries are recorded within 250m of the site.

5.4 Potentially Infilled Land Sites

The Groundsure Report identified eight (8no.) potentially infilled land sites within a 500m radius of the subject site. There are five (5no.) records of potentially infilled land up to 250m from the site, all of which relate to a single pond, the details of which are summarised below:

- 100m north east, Pond, dated 1994, 1971, 1989, 1962 and 1967.

5.5 Regulatory Database

The following information has been obtained from a commercially available environmental database. The summary table only includes records not otherwise detailed in the report.

Table 5.1 Summary of Groundsure Data

	0-249m	250-500m	Details
Contaminated Land Register Entries and Notices	0	0	N/A
Authorised industrial processes (IPC/IPPC/LAPPC).	0	1	406m north east -Shell (UK) Limited, Thames Valley Service Station, George Street, Caversham, Reading, RG4 8DH Process: Unloading of petrol into storage at service stations. Permit type: Part B
Fuel Stations Entries	0	1	406m north east - Shell (UK) Limited, Thames Valley Service Station, George Street, Caversham, Reading, RG4 8DH
Licensed radioactive substances	0	0	N/A
Enforcements, prohibitions or prosecutions	0	0	N/A
Discharge Consents	5	5	54m north west – Effluent Type: Miscellaneous Discharges- Surface Water Receiving Water: River Thames 158m south east, Effluent Type: Trade Discharges Unspecified (Two (2no.) entries) Permit Number: CAWM.0103 Receiving Water: To the Vastern Ditch 199m south east, Effluent Type: Trade Discharges, Process Effluent, Water Company - Receiving Water: Thames (Two (2no.) entries) 258m east, Effluent type: Miscellaneous Discharges – Surface water Receiving Water – River Thames 392m east, Effluent type: Sewage Discharges, final/treated effluent – not water company 414m north west, effluent type: miscellaneous Discharges: Surface Water 432m north west – Effluent type: Miscellaneous Discharges: Surface water
Pollution Incidents	5	6	151m west – dated 17/09/2002 – Oils and fuels – no impact (Two (2no.) entries) 168m south west – dated 12/09/2001 – General biodegradable materials and waste – no impact 200m south west – dated 14/05/2003 – oils and fuel – Minor land impact.

	0-249m	250-500m	Details
			235m south east – dated 19/11/2001 – Oils and fuel – Minor water impact 258m south west – dated 26/04/2002 – Oils and fuel – Minor land impact 269m north west – dated 22/08/2001 – General biodegradable materials and waste – No impact 357m south east – dated 24/01/2002 – general biodegradable materials and waste - Minor water impact 365m south east – dated 22/04/2006 – pollutant not identified – major water impact 368m south east – dated 15/04/2002 – oils and fuel – minor water impact 406m south east – dated 12/03/2003 – oils and fuel – minor water impact
Consents issued under the Planning (Hazardous Substances) Act 1990	0	0	N/A
Control of Major Accident Hazard (COMAH) sites	0	0	N/A

6.0 PREVIOUS INVESTIGATION

The following documents have been made available to OEC during the appraisal of the site:

- Peter Brett Associates (PBA) Technical Note Tn002/Rev0 – Preliminary Summary of Ground Investigation – SSE Site, Vastern Road, Reading, dated 20th March 2018.
- CC Ground Investigations (CCGI) Report C5925/01 – Draft Factual Report – SSE Site, Vastern Road, Reading, dated 12th March 2018.
- Email communication between SSE and their consultant Adler & Allan regarding the findings of the preliminary investigation to identify the location of the leakage – Dated October 2017.

Due to the factual nature of the reports provided no conclusions were drawn with regards to the risks posed to Human Health or the Environment except that it was considered that some remediation would likely be required by the Environment Agency to remove free product.

7.0 CONCEPTUAL SITE MODEL (CSM)

7.1 Initial CSM

In accordance with Environment Agency, CLR 11 (2004) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), Omnia Environmental Consulting have developed an initial CSM to identify potential contamination sources, migration pathways and receptors within the study area. A residential end use has been adopted, given the proposed site development.

Contaminant Sources

On-site Potential Sources

Contemporary

- Pollution Incident (July 2017) involving the leakage of cooling oil from subsurface oil-cooled high voltage infrastructure;
- Made Ground associated with development of the site;
- Current land use as electricity distribution centre;
- Presence of underground oil cooled electrical cables and;
- Presence of electrical substations and transformers on site.

Historic

- Historic land use as a Power Station (Electrical Works);
- Historic Tanks; and,
- Historic land use as a skating rink.

Off-site Potential Sources

Contemporary

- Garage situated ~50m east;
- Electrical Substation 99m south west, 137m north west, 170m, 176m and 179m west, and 191m north west;
- Warehouse situated ~190m south east; and,
- Electricity substation situated ~175m north west of site and ~190m north west.

Historic

- Historic ice factory and cold stores adjacent to western boundary;
- Historic engineering works ~10m east of the site, ~50m north west of site and ~70m north west;
- Historic Iron foundry situated ~20-30m east;
- Historic Tanks, 38m, 66m, 216m, 220m, south east, 161m south, 173m, 181m and 188m south west, 240m and 250m north;
- Historic Paint works situated ~50m east;
- Great Western Rail Works ~ 75m south, south west;
- Historic Coal depot ~100m west, south west;
- Historic Thamesbank ironworks ~100m east
- Historic saw mill situated ~150m north west;
- Historic timber yard situated ~100m east and ~175m north west;
- Historic coal yard situated ~180m south east;
- Foundry (iron and brass) ~250m east, south east;

Potential Pathways

- Ingestion of impacted soils & vegetables;
- Dermal contact with impacted soil;
- Vertical and lateral migration;
- Inhalation of vapours;
- Inhalation of fibres; and,
- Migration of ground gas into confined spaces.

Potential Receptors

- Future Site Users; and,
- Controlled Waters.

Construction workers are not considered to be a plausible receptor due to management of their exposure through the use of suitable PPE and hygienic working practices as required under HSE/CDM regulations. Furthermore, the length of any exposure is considered to be very short in comparison to the criteria for which the adopted end use has been derived.

An Initial Conceptual Site Model has been prepared for the site and is presented overleaf within Table 7.1.

Table 7.1 Initial Conceptual Site Model

Source	Contaminant	Potential migration pathway	Potential Receptors	Likelihood of Occurrence	Magnitude of Occurrence	Overall Risk Rating	Active/Inactive
On Site							
July 2017 Pollution Incident – Leakage of cooling oil	Total Petroleum Hydrocarbons (TPH) PRO/DRO inc Linear Alkyl Benzene	Ingestion Dermal Contact Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	**Potentially Active –** Further investigation required.
		Vertical and Lateral Migration	Controlled Waters	Moderate	Moderate	Moderate	
	Volatile Organic Compounds (VOCs)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	
		Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Moderate	Minor	Low/Moderate	
	PCBs	Ingestion Dermal Contact Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Moderate	Moderate	Moderate	
Made Ground associated with development of the site.	Metals (As, Cd, Cr, Pb, Hg, Se, Ni)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	**Potentially Active –** Further investigation required.
		Vertical and Lateral Migration	Controlled Waters	Low	Minor	Low	
	Polycyclic Aromatic Hydrocarbons (PAH)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Low	Minor	Low	
	Total Petroleum Hydrocarbons (TPH)	Ingestion Dermal Contact Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Moderate	Moderate	Moderate	
	Asbestos Fibres	Inhalation of fibres	Future Site Users	Moderate	Moderate	Moderate	

Source	Contaminant	Potential migration pathway	Potential Receptors	Likelihood of Occurrence	Magnitude of Occurrence	Overall Risk Rating	Active/Inactive
	Ground Gas (CO_2 and CH_4)	Vertical and Lateral Migration	Future Sites Users	Moderate	Severe	High	
Current and Historic Land Use as Power Station (Electrical Works)	Metals (As, Cd, Cr, Pb, Hg, Se, Ni)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	**Potentially Active –** Further investigation required.
		Vertical and Lateral Migration	Controlled Waters	Low	Minor	Low	
	Polycyclic Aromatic Hydrocarbons (PAH)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Low	Minor	Low	
	Total Petroleum Hydrocarbons (TPH)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	
		Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Moderate	Minor	Low	
	Volatile Organic Compounds (VOC)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	
		Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	
		Vertical & Lateral Migration	Controlled Waters	Moderate	Minor	Low/Moderate	
	Asbestos Fibres	Inhalation of fibres	Future Site Users	Moderate	Moderate	Moderate	
	Polychlorinated Biphenyls (PCB)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Moderate	Minor	Low/Moderate	
Presence of underground oil cooled electrical cables	Total Petroleum Hydrocarbons (TPH) PRO/DRO inc Linear Alkyl Benzene	Ingestion Dermal Contact Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	**Potentially Active –** Further investigation required.
		Vertical and Lateral Migration	Controlled Waters	Moderate	Moderate	Moderate	
	Volatile Organic Compounds (VOCs)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	

Source	Contaminant	Potential migration pathway	Potential Receptors	Likelihood of Occurrence	Magnitude of Occurrence	Overall Risk Rating	Active/Inactive
		Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Moderate	Minor	Low/Moderate	
	PCBs	Ingestion Dermal Contact Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Moderate	Moderate	Moderate	
Electrical substations, transformers and associated infrastructure	Polychlorinated Biphenyls (PCB)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	**Potentially Active –** Further investigation required.
		Vertical and Lateral Migration	Controlled Waters	Moderate	Minor	Low/Moderate	
	TPH	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	
		Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Moderate	Minor	Low/Moderate	
Historical Tanks	Total Petroleum Hydrocarbons (TPH)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	**Potentially Active –** Further investigation required.
		Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Moderate	Minor	Low	
Historic Skating Southern section of the site.	Polycyclic Aromatic Hydrocarbons (PAH)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	**Potentially Active –** Further investigation required.
		Vertical and Lateral Migration	Controlled Waters	Low	Minor	Low	
	Total Petroleum Hydrocarbons (TPH)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	
		Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Moderate	Minor	Low/Moderate	

Source	Contaminant	Potential migration pathway	Potential Receptors	Likelihood of Occurrence	Magnitude of Occurrence	Overall Risk Rating	Active/Inactive
	Volatile Organic Compounds (VOC)	Ingestion Dermal Contact	Future Site Users	Moderate	Moderate	Moderate	
		Inhalation of Vapours	Future Site Users	Moderate	Moderate	Moderate	
		Vertical and Lateral Migration	Controlled Waters	Moderate	Minor	Low/Moderate	
Off Site							
Historic Ice Factory and Cold Storage adjacent to western boundary	Polycyclic Aromatic Hydrocarbons (PAH)	Lateral Migration	Future Site Users	Moderate	Moderate	Moderate	**Potentially Active –** Further investigation required.
	Total Petroleum Hydrocarbons (TPH)	Lateral Migration	Future Site Users	Moderate	Moderate	Moderate	
	Volatile Organic Compounds (VOC)	Lateral Migration	Future Site Users	Moderate	Moderate	Moderate	
Historic engineering works ~ 10m east	Metals (As, Cd, Cr, Pb, Hg, Se, Ni)	Lateral Migration	Future Site Users	Low	Moderate	Low/Moderate	**Potentially Active –** Further investigation required.
	Polycyclic Aromatic Hydrocarbons (PAH)	Lateral Migration	Future Site Users	Low	Moderate	Low/Moderate	
	Total Petroleum Hydrocarbons (TPH)	Lateral Migration	Future Site Users	Moderate	Moderate	Moderate	
Historic Iron Foundry ~ 20 and 30m east	Metals (As, Cd, Cr, Pb, Hg, Se, Ni)	Lateral Migration	Future Site Users	Low	Moderate	Low/Moderate	**Inactive-** Given the anticipated shallow groundwater flow direction towards the east, it is considered unlikely that this source has the potential to impact the site.
	Polycyclic Aromatic Hydrocarbons (PAH)	Lateral Migration	Future Site Users	Low	Moderate	Low/Moderate	
Tanks ~38m and 66m south east	Total Petroleum Hydrocarbons (TPH)	Lateral Migration	Future Site Users	Low	Moderate	Low	**Inactive-** Given the anticipated shallow groundwater flow direction towards the east, it is considered unlikely that this source has the potential to impact the site.

Source	Contaminant	Potential migration pathway	Potential Receptors	Likelihood of Occurrence	Magnitude of Occurrence	Overall Risk Rating	Active/Inactive
Garage ~50m east	Polycyclic Aromatic Hydrocarbons (PAH)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	**Inactive-** Given the anticipated shallow groundwater flow direction towards the east, it is considered unlikely that this source has the potential to impact the site.
	Total Petroleum Hydrocarbons (TPH)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	
Historic Paint Works ~ 50m east	Metals (As, Cd, Cr, Pb, Hg, Se, Ni)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	**Inactive-** Given the anticipated shallow groundwater flow direction towards the east, it is considered unlikely that this source has the potential to impact the site.
	Volatile Organic Compounds (VOC)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	
	Semi-volatile Organic Compounds (SVOC)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	
Historic Rail Works ~ 75m south	Polycyclic Aromatic Hydrocarbons (PAH)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	**Inactive-** Given the anticipated shallow groundwater flow direction towards the east, it is considered unlikely that this source has the potential to impact the site.
	Total Petroleum Hydrocarbons (TPH)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	
Electrical substation 99m south west, 137m north west, 170m, 176m and 179m west and 191m north west	Polychlorinated Biphenyls (PCB)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	**Inactive –**Due to the very limited mobility of PCB's and the distance between sources and the subject site It is considered unlikely that this source has the potential to impact the subject site.
Historic Coal Depot ~ 100m west	Polycyclic Aromatic Hydrocarbons (PAH)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	**Inactive-** Given the limited solubility and mobility of PAHs together with the distance from the site it is considered unlikely that this source has the potential to impact the subject site.
Historic Thamesbank Ironworks ~ 100m	Metals (As, Cd, Cr, Pb, Hg, Se, Ni)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	**Inactive-** Given the limited solubility and mobility of metals and PAHs

Source	Contaminant	Potential migration pathway	Potential Receptors	Likelihood of Occurrence	Magnitude of Occurrence	Overall Risk Rating	Active/Inactive
east	Polycyclic Aromatic Hydrocarbons (PAH)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	together with the distance from the site it is considered unlikely that this source has the potential to impact the subject site.
Historic Timber Yard ~ 100m east and 175m north west	Metals (As, Cd, Cr, Pb, Hg, Se, Ni)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	**Inactive-** Given the limited solubility and mobility of metals and PAHs together with the distance from the site it is considered unlikely that this source has the potential to impact the subject site
	Polycyclic Aromatic Hydrocarbons (PAH)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	
Historic Saw Mill ~ 150m north west	Metals (As, Cd, Cr, Pb, Hg, Se, Ni)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	**Inactive-** Given the limited solubility and mobility of metals and PAHs together with the distance from the site it is considered unlikely that this source has the potential to impact the subject site.
	Polycyclic Aromatic Hydrocarbons (PAH)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	
Historic Coal Yard ~ 180m south east	Polycyclic Aromatic Hydrocarbons (PAH)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	**Inactive-** Given the limited solubility and mobility of PAHs together with the distance from the site it is considered unlikely that this source has the potential to impact the subject site.
Warehouse ~ 190m south east	Total Petroleum Hydrocarbons (TPH)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	**Inactive-** Given the distance from site and the anticipated shallow groundwater flow direction, it is considered unlikely that this source has the potential to impact the subject site.
Foundry ~ 250m east	Metals (As, Cd, Cr, Pb, Hg, Se, Ni)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	**Inactive-** Given the limited solubility and mobility of PAHs together with the distance from the site it is considered unlikely that this source has the potential to impact the subject site.
	Polycyclic Aromatic Hydrocarbons (PAH)	Lateral Migration	Future Site Users	Very Low	Moderate	Low	

8.0 SITE INVESTIGATION

8.1 General

A ground investigation was designed based on the findings of the Phase I Desk Top Study, the Phase II Ground Investigations conducted by CC Ground Investigation Ltd on behalf of PBA and the proposed development as shown in Figure 2.0 (Appendix III).

Exploratory fieldwork was conducted over the course of four (4no.) days from 13th to 18th April 2018 and comprised the following:

Table 8.1 Summary of Fieldwork

Potential Source/Rationale	Location Hole	Type	Maximum Depth (m bgl)
General spread within the southern building footprint to investigate for potential contamination*. Installation of ground gas and ground water monitoring wells.	WS101-WS106	Window Sample	2.40
Targeting contamination previously identified within WS1002, set out in PBA Tech note ref 'Tn002/Rev0'. Installation of ground gas and ground water monitoring wells.	WS107-WS108	Window Sample	2.50
General spread across the site for assessment of potential contamination.	WS109	Window Sample	1.00

*A suspended floor was present within the southern building on site, limiting locations to outside of this area, however still within the building footprint.

The exploratory hole locations are illustrated on Figure 3.0 (Appendix III).

8.2 Laboratory Analysis

Selected soil and water samples were submitted for a range of chemical analysis including, asbestos fibres in soil, CLEA Metals, Polycyclic Aromatic Hydrocarbons (PAHs), Speciated Total Petroleum Hydrocarbons (TPH CWG), pH, Phenol, Total Cyanide, Total Organic Carbon, Water-Soluble Sulphate (2:1 extract), Volatile Organic Compounds (VOCs) and Polychlorinated biphenyls (PCB)

Exova Jones Environmental Laboratory of Deeside undertook the analytical work in accordance with UKAS accreditation where applicable with all test certificates included in Appendix V and discussed in Section 10.0.

9.0 GROUND AND GROUNDWATER CONDITIONS

9.1 Ground Conditions

9.1.1 Summary of Ground Conditions

The summary below is based on all available data from the sources of information made available to OEC for review. The ground conditions encountered are indicated on the exploratory hole logs, which are provided in Appendix VI.

Review of all available exploratory hole logs for the site indicates that the underlying geological succession consists of Made Ground up to 3.50m thick overlying cohesive strata of the Langley Silt Member, overlying granular strata of the Kempton Park Gravel Formation which immediately overlies bedrock of the Upper Chalk at depth.

Made Ground (MG) was found to be predominantly granular in nature, to contain variable amounts of anthropogenic material and generally ranged from 1.10m to 1.90m in thickness with thicker MG ranging from 1.95 – 3.50m encountered in the central part of the site in the vicinity of the main transformer compound.

Immediately underlying MG was a sequence of cohesive deposits comprising clayey and sandy SILT attributed to the Langley Silt Member (LSM). The top of the LSM was encountered at depths ranging from 0.60 – 3.50m bgl (37.57 – 35.26mAOD). The unit ranged from 0.60 – 3.40m in thickness with an average thickness of 1.68m. The base of the LSM was encountered at depths ranging from 2.30 – 4.10m bgl (36.08 – 34.11m AOD).

Immediately underlying the LSM were sands and gravels attributed to the Kempton Park Gravel Formation (KPG), which ranged from loose to dense grey variably silty and sandy GRAVEL. The KPG ranged from 5.00 – 9.20m in thickness with an average thickness of 6.58m. The base of the KPG was encountered at depths ranging from 8.10 to 12.50m bgl (30.21 – 26.21mAOD).

Chalk bedrock was encountered immediately beneath the KPG at depths ranging from 8.10 – 12.50m bgl (30.21 - 26.21mAOD) and was proven to a maximum depth of 35.00m bgl at locations BH1002C (3.40m AOD), BH1003E (3.71m AOD) and BH1004 (3.31mAOD) although the base of the Upper Chalk was not proven within any of the intrusive locations. A review of the geological logs indicated that the Chalk was recovered as a variably sandy and silty angular to subangular GRAVEL (Grade Dc) suggesting an absence of “Putty Chalk” (Grade Dm) from beneath the site.

9.2 In-Situ Testing

9.2.1 On-Site VOC Screening

On-site screening for VOCs was undertaken using a Photoionisation Detector (PID) during intrusive site works, with samples screened via headspace monitoring. Where PID readings were recorded at concentrations above the equipment Limit of Detection (LOD) of 0.1ppm, values are summarised in Table 9.1. Reference should also be made to the PID results from the previous investigation, as set out on the exploratory logs within CC Ground Investigation Ltd Factual Report, Ref C5925/01.

Table 9.1 Summary of PID readings within soils.

Location	Strata	Depth (m bgl)	PID Reading (ppm)	Proposed Development Area
WS101	MG	0.40	3.5	Commercial
	MG	0.45	3.7	Commercial
	MG	0.80	4.2	
	MG	1.00	9.5	
	MG	1.30	8.9	
	LSM	1.50	8.1	
	LSM	1.70	5.5	
WS102	MG	0.40	4.1	Residential
	MG	0.60	4.3	
	MG	0.95	7.3	
	LSM	1.50	9.1	
	LSM	2.00	10.0	
WS103	MG	0.40	4.8	Residential
	MG	1.20	3.5	
	LSM	1.60	5.6	
	LSM	1.70	3.1	
WS104	MG	0.3	3.2	Residential
	MG	0.70	13.2	
	MG	1.55	1933.0	
	LSM	1.75	367.8	
WS105	MG	0.60	4.0	Residential
	MG	0.90	3.6	
	MG	1.70	8.5	
	LSM	2.00	2.9	
WS107	MG	1.20	0.8	Residential
WS108	MG	0.10	0.3	Residential
	MG	1.20	3.3	
	LSM	1.50	5.6	
WS109	MG	0.10	6.1	Residential
	MG	0.30	1.9	

9.3 Groundwater Conditions

The depths to groundwater strikes and resting water level encountered during the previous investigations are summarised in Table 9.2 below.

Table 9.2 Summary of Groundwater Strikes encountered during drilling.

Location	Ground Level (mAOD)	Borehole Response Zone (m bgl)	Drilling Phase			
			Water Strike 1 (m bgl)	Strata	Water Strike 2 (m bgl)	Strata
BH1001	38.39	1.00 - 7.00	4.00	LSM/KPG	8.00	KPG
BH1002C	38.40	2.00 - 7.00	4.00	KPG	8.00	KPG
BH1003E	38.71	1.00 - 6.00	4.00	KPG	8.00	KPG
BH1005	38.69	3.00 - 7.00	None Recorded – Water Added to Aid Drilling			
BH2001	38.42	3.00 - 4.00	None Recorded Prior to Adding Water Flush			

Location	Ground Level (mAOD)	Borehole Response Zone (m bgl)	Drilling Phase			
			Water Strike 1 (m bgl)	Strata	Water Strike 2 (m bgl)	Strata
BH2002	38.37	3.00 - 4.00	None Recorded Prior to Adding Water Flush			
BH2003	38.56	3.00 - 4.00	None Recorded Prior to Adding Water Flush			
BH2004	38.76	3.30 - 3.80	None Recorded Prior to Adding Water Flush			
BH2005	38.65	1.00 - 3.00	None Recorded Prior to Adding Water Flush			
BH2006	38.49	1.00 - 2.00	None Recorded Prior to Adding Water Flush			
WS105	-	1.30-2.30	2.00	LSM	N/A	-
WS1002	38.26	N/A	1.70	MG	N/A	-
WS1003	38.21	3.00 - 5.00	3.89	LSM/KPG	N/A	-
WS1004	38.37	3.00 - 5.00	3.71	KPG	N/A	-
WS1005A	38.17	1.00 - 2.00	2.76	LSM	N/A	-
WS1006	38.19	3.00 - 5.00	3.36	KPG	N/A	-
WS1007	36.38	1.00 - 2.00	1.10	MG	N/A	-
WS1019	38.32	2.00 - 5.00	2.48	KPG	N/A	-
TP1002	38.36	N/A	4.00	LSM/KPG	N/A	-
TP1004	38.29	N/A	3.90	LSM	N/A	-
TP1006	38.44	N/A	2.40	LSM	N/A	-

Table 9.3 Summary of Average Groundwater Levels Recorded During Monitoring (22/02/2018 – 19/04/2018).

Location	Ground Level (mAOD)	Borehole Response Zone (m bgl)	22/02/2018 – 19/04/2018	
			Average Groundwater Level (m bgl)	Average Groundwater Level (mAOD)
BH1001	38.39	1.00 - 7.00	2.27	36.13
BH1002C	38.40	2.00 - 7.00	2.35	36.06
BH1003E	38.71	1.00 - 6.00	2.58	36.13
BH1005	38.69	3.00 - 7.00	2.53	36.17
BH2001	38.42	3.00 - 4.00	2.35	36.08
BH2002	38.37	3.00 - 4.00	2.31	36.07
BH2003	38.56	3.00 - 4.00	2.41	36.15
BH2004	38.76	3.30 - 3.80	2.47	36.29
BH2005	38.65	1.00 - 3.00	2.30	36.35
BH2006	38.49	1.00 - 2.00	1.59	36.90
WS1003	38.21	3.00 - 5.00	2.10	36.11
WS1004	38.37	3.00 - 5.00	2.27	36.10
WS1005A	38.17	1.00 - 2.00	1.44	36.73
WS1006	38.19	3.00 - 5.00	1.88	36.32
WS1007	36.38	1.00 - 2.00	1.04	35.34
WS1019	38.32	2.00 - 5.00	2.24	36.09
BH1004	38.31	1.00 - 7.00	2.13	36.18

Location	Ground Level (mAOD)	Borehole Response Zone (m bgl)	22/02/2018 – 19/04/2018	
			Average Groundwater Level (m bgl)	Average Groundwater Level (mAOD)
WS1002	38.26	N/A	N/A	N/A

Detailed commentary of the groundwater conditions below the site including presentation of continuous groundwater monitoring is presented within the Conceptual Hydrogeological Model, set out in Section 12.0.

9.3.1 Ground Gas & Groundwater Monitoring

The maximum concentrations recorded during ground gas monitoring undertaken by others over 5 monitoring visits have been summarised in Table 9.4 overleaf. Reference should be made to the full set of data available in report ref C5925/01, which is reproduced in Appendix VII.

Table 9.4 Summary of Ground Gas and Groundwater Monitoring Results

Well	CH_4 Peak %v/v	CH_4 Steady %v/v	CH_4 GSV l/hr	CO_2 Peak %v/v	CO_2 Steady %v/v	CO_2 GSV l/hr	O_2 %v/v	PID (ppm)	Flow (l/hr)
BH1001	0.2	0.2	0.0002	1.0	1.0	0.0010	17.6	2.9	<0.1
BH1002C	1.6	1.6	0.0032	0.4	0.4	0.0008	9.0	4.1	0.2
BH1003E	0.2	0.2	0.0002	0.6	0.6	0.0006	18.9	2.6	0.1
BH1004	3.0	3.0	0.009	4.0	4.0	0.012	6.5	4.5	0.3
BH1005	0.2	0.2	0.0228	1.3	1.3	0.1482	19.9	2.6	11.4
BH2001	0.1	0.1	0.0011	1.0	1.0	0.112	19.7	3.2	11.2
BH2002	0.3	0.3	0.0003	0.6	0.6	0.0006	19.6	4.2	0.1
BH2003	0.3	0.3	0.0339	0.6	0.6	0.0678	19.7	3.9	11.3
BH2004	0.3	0.3	0.0003	0.6	0.6	0.0006	20.6	2.4	0.1
BH2005	0.2	0.2	0.0012	6.8	6.8	0.0048	6.5	6.4	0.6
BH2006	0.1	0.1	0.0001	1.9	1.9	0.0019	0.1	5.6	0.1
WS1003	0.2	0.2	0.0002	1.0	1.0	0.0010	19.2	4.6	0.1
WS1004	0.2	0.2	0.0002	1.8	1.8	0.0018	19.2	5.3	0.1
WS1005A	0.2	0.2	0.0016	0.3	0.3	0.0024	9.6	3.3	0.8
WS1006	0.2	0.2	0.0002	0.6	0.6	0.0006	19.1	3.3	0.1
WS1007	0.3	0.3	0.0105	0.6	0.6	0.0210	19.5	10.3	3.5
WS1019	0.2	0.2	0.0002	2.0	2.0	0.0020	17.8	4.6	0.1

10.0 TIER 1 QUALITATIVE CONTAMINATED LAND RISK ASSESSMENT - SOILS

OEC has undertaken a Tier 1 qualitative risk assessment to determine if any potential contaminants within the underlying soils pose an unacceptable level of risk to the identified receptors.

10.1 Human Health Risk Assessment

At a Tier 1 stage the long term (chronic) human health toxicity of the soil has been assessed by comparing the on-site concentrations of organic and inorganic compounds with reference values published by the EA (Contaminated Land Exposure Assessment (CLEA) Soil Guideline Values (SGV)) and where absent, Generic Assessment Criteria (GACs) published by LQM/CIEH Suitable for Use Levels (S4UL) 2015.

As set out in Section 1.2, the proposed use of the site is split between a residential end use (without Homegrown Produce) and a continued commercial end use across the area to be retained by SSE. Given this a separate Tier 1 risk assessment has been undertaken for each end use, as detailed in Table 10.1 and Table 10.2.

The origin of the GAC values are presented within Appendix VIII.

Table 10.1 Summary of Inorganic and Hydrocarbon Toxicity Assessment for a Residential End Use without Home Grown Produce

Determinant	Units	GAC	n	MC	Loc. of Ex	Pathway	Assessment
Inorganic							
Arsenic	mg/kg	40	46	200	TP1003 (0.30m bgl) WS1002 (0.50m bgl) WS1003 (1.00m bgl)	1	**Further Assessment**
Cadmium	mg/kg	85	46	4	N/A	1	No Further Action
Chromium (III)	mg/kg	910	46	54	N/A	1	No Further Action
Chromium (VI)	mg/kg	6	46	<1.2	N/A	1	No Further Action
Copper	mg/kg	7100	46	540	N/A	1	No Further Action
Lead	mg/kg	310	46	2,019	BH1001 (0.50m bgl) BH1003C (0.45m bgl) BH1004 (0.60m bgl) TP1001 (0.50m bgl) TP1005 (0.30m bgl) TP1005 (0.70m bgl) WS103 (0.40-0.70m bgl) WS1002 (0.50m bgl) WS1003 (1.00m bgl) WS1004 (0.20m bgl)	1	**Further Assessment**
Mercury	mg/kg	56	46	17	N/A	2	No Further Action
Nickel	mg/kg	180	46	280	WS1003 (1.00m bgl)	1	**Further Assessment**
Selenium	mg/kg	430	46	1.3	N/A	1	No Further Action

Determinant	Units	GAC	n	MC	Loc. of Ex	Pathway	Assessment
Zinc	mg/kg	40000	46	1200	N/A	1	No Further Action
Asbestos	-	N.D[iv]	46	D	BH1001 (0.50m bgl) BH1002A (0.50m bgl) BH1002C (1.00m bgl) BH1003C (0.45m bgl) BH1003 (0.80m bgl) BH1004 (0.60m bgl) TP1001 (0.50m bgl) TP1002 (0.80m bgl) TP1003 (0.30m bgl) TP1005 (0.30m bgl) TP1005 (0.70m bgl) TP1007 (0.20m bgl) WS103 (0.40-0.70m bgl) WS105 (0.60-0.90m bgl) WS1001 (0.20m bgl) WS1001 (1.00m bgl) WS1002 (0.50m bgl) WS1002 (1.70m bgl) WS1003 (1.00m bgl) WS1004 (0.20m bgl) WS1004 (1.00m bgl) WS1006 (0.50m bgl) WS1009 (0.20m bgl) WS1013 (0.60m bgl)	2	**Further Assessment**
PAH							
Naphthalene	mg/kg	2.3	46	5.5	TP1007 (0.2m bgl) WS1002 (1.70m bgl) WS1008 (0.45m bgl)	2	**Further Assessment**
Acenaphthylene	mg/kg	2900[sol]	46	1.0	N/A	3	No Further Action
Acenaphthene	mg/kg	3000[sol]	46	14	N/A	1	No Further Action
Fluorene	mg/kg	2800[sol]	46	10	N/A	1	No Further Action
Phenanthrene	mg/kg	1300[sol]	46	140	N/A	3	No Further Action
Anthracene	mg/kg	31000[vap]	46	37	N/A	3	No Further Action
Fluoranthene	mg/kg	1500	46	160	N/A	3	No Further Action
Pyrene	mg/kg	3700	46	150	N/A	3	No Further Action
Benzo(a)Anthracene	mg/kg	11	46	88	WS1002 (1.70m bgl) TP1007 (0.20m bgl)	3	**Further Assessment**
Chrysene	mg/kg	30	46	71	WS1002 (1.70m bgl)	3	**Further Assessment**

Determinant	Units	GAC	n	MC	Loc. of Ex	Pathway	Assessment
Benzo(b)Fluoranthene[i]	mg/kg	3.9	46	74	BH1002C (1.00m bgl) BH1001 (0.50m bgl) BH1004 (0.60m bgl) BH1004 (2.00m bgl) TP1003 (0.30m bgl) TP1005 (0.70m bgl) TP1005 (0.30m bgl) TP1007 (0.20m bgl) WS1013 (0.60m bgl) WS1002 (1.70m bgl) WS103 (0.40-0.70m bgl)	3	**Further Assessment**
Benzo(k)Fluoranthene[i]	mg/kg	110	46	40	N/A	3	No Further Action
Benzo(a)Pyrene	mg/kg	3.2	46	81	BH1001 (0.50m bgl) BH1002C (1.00m bgl) BH1004 (0.60m bgl) BH1004 (2.00m bgl) WS103 (0.40-0.70m bgl) WS1002 (1.70m bgl) WS1013 (0.60m bgl) TP1003 (0.30m bgl) TP1005 (0.30m bgl) TP1007 (0.20m bgl)	3	**Further Assessment**
Indeno(123-cd)Pyrene	mg/kg	45	46	33	N/A	3	No Further Action
Dibenzo(a,h)Anthracene	mg/kg	0.31	46	8.2	BH1004 (0.60m bgl) BH1004 (2.00m bgl) BH1002C (1.00m bgl) WS1002 (0.50m bgl) WS1007 (0.15m bgl) WS103 (0.40-0.70m bgl) WS1002 (1.70m bgl) WS1013 (0.60m bgl) TP1003 (0.30m bgl) TP1005 (0.30m bgl) TP1005 (0.70m bgl) TP1007 (0.20m bgl)	3	**Further Assessment**
Benzo(ghi)Perylene	mg/kg	360	46	44	N/A	3	No Further Action
BTEX							
Benzene	mg/kg	0.38	53	<0.005	N/A	2	No Further Action
Toluene	mg/kg	869	53	<0.001	N/A	2	No Further Action
Ethylbenzene	mg/kg	83	53	0.012	N/A	2	No Further Action
Xylenes	mg/kg	79	53	0.055	N/A	2	No Further Action
TPH Aliphatic							
TPH C_5-C_6	mg/kg	42	53	<0.1	N/A	2	No Further Action
TPH C_6-C_8	mg/kg	100	53	0.3	N/A	2	No Further Action
TPH C_8-C_{10}	mg/kg	27	53	2.9	N/A	2	No Further Action

Determinant	Units	GAC	n	MC	Loc. of Ex	Pathway	Assessment
TPH C_{10}-C_{12}	mg/kg	130(vap)	53	101	N/A	2	No Further Action
TPH C_{12}-C_{16}	mg/kg	1,100(sol)	53	1,113	WS104 (1.55-1.75m bgl)	2	**Further Assessment**
TPH C_{16}-C_{21}	mg/kg	65,000(sol)	53	2,336	N/A	1,4	No Further Action
TPH C_{21}-C_{35}	mg/kg	65,000(sol)	53	11,000	N/A	1,4	No Further Action
TPH Aromatic							
TPH C_5-C_6	mg/kg	370	53	<0.1	N/A	2	No Further Action
TPH C_6-C_8	mg/kg	860	53	<0.1	N/A	2	No Further Action
TPH C_8-C_{10}	mg/kg	47	53	<0.1	N/A	2	No Further Action
TPH C_{10}-C_{12}	mg/kg	250	53	28	N/A	2	No Further Action
TPH C_{12}-C_{16}	mg/kg	1,800	53	790	N/A	1,4	No Further Action
TPH C_{16}-C_{21}	mg/kg	1,900	53	1,900	N/A	1,4	No Further Action
TPH C_{21}-C_{35}	mg/kg	1,900	53	8,200	WS1002 (1.70m bgl)	1,4	**Further Assessment**
PCBs	mg/kg	0.23	13	<0.005	N/A	1	No Further Action

Notes
Main Exposure Pathways: 1 = Soil Ingestion, 2 = Vapour Inhalation (indoor), 3 = Dermal Contact & Ingestion, 4 = Dust Inhalation.
Abbreviations: GAC = General Assessment Criteria, n = number of samples, MC = Maximum Concentration; Loc of Ex = Location of Exceedance.
* The Tier 1 GAC for the hydrocarbon fraction is derived from the CIEH/S4UL assessment for petroleum hydrocarbons Criteria Working Group (CWG) for both aliphatic and aromatic compounds.

Table 10.2 Summary of Inorganic and Hydrocarbon Toxicity Assessment for a Commercial End Use

Determinant	Units	GAC	n	MC	Loc. of Ex	Pathway	Assessment
Inorganic							
Arsenic	mg/kg	640	14	34	N/A	1	No Further Action
Cadmium	mg/kg	190	14	0.8	N/A	1	No Further Action
Chromium (III)	mg/kg	8600	14	63	N/A	1	No Further Action
Chromium (VI)	mg/kg	33	14	<1.2	N/A	1	No Further Action
Copper	mg/kg	2300	14	190	N/A	1	No Further Action
Lead	mg/kg	1100	14	730	N/A	1	No Further Action
Mercury	mg/kg	980	14	100	N/A	2	No Further Action

Determinant	Units	GAC	n	MC	Loc. of Ex	Pathway	Assessment
Nickel	mg/kg	12000	14	53	N/A	1	No Further Action
Selenium	mg/kg	68000	14	1.4	N/A	1	No Further Action
Zinc	mg/kg	730000	14	220	N/A	1	No Further Action
Asbestos	-	N.D[iv]	14	D	WS1006 (0.50m bgl) WS1005 (0.50m bgl) WS101 (0.45-0.80m bgl)	2	**Further Assessment**
PAH							
Naphthalene	mg/kg	190[Sol]	14	0.31	N/A	2	No Further Action
Acenaphthylene	mg/kg	83,000[Sol]	14	0.83	N/A	3	No Further Action
Acenaphthene	mg/kg	84,000[Sol]	14	0.21	N/A	1	No Further Action
Fluorene	mg/kg	63,000[Sol]	14	0.21	N/A	1	No Further Action
Phenanthrene	mg/kg	22,000	14	3.3	N/A	3	No Further Action
Anthracene	mg/kg	520,000	14	1.2	N/A	3	No Further Action
Fluoranthene	mg/kg	23,000	14	12	N/A	3	No Further Action
Pyrene	mg/kg	54,000	14	10	N/A	3	No Further Action
Benzo(a)Anthracene	mg/kg	170	14	8	N/A	3	No Further Action
Chrysene	mg/kg	350	14	5.1	N/A	3	No Further Action
Benzo(b)Fluoranthene[i]	mg/kg	44	14	9.8	N/A	3	No Further Action
Benzo(k)Fluoranthene[i]	mg/kg	1,200	14	4.7	N/A	3	No Further Action
Benzo(a)Pyrene	mg/kg	35	14	7.1	N/A	3	No Further Action
Indeno(123-cd)Pyrene	mg/kg	500	14	5.0	N/A	3	No Further Action
Dibenzo(a,h)Anthracene	mg/kg	3.5	14	1.2	N/A	3	No Further Action
Benzo(ghi)Perylene	mg/kg	3,900	14	4.5	N/A	3	No Further Action
BTEX							
Benzene	mg/kg	27	21	<0.005	N/A	2	No Further Action
Toluene	mg/kg	56,000[Vap]	21	<0.005	N/A	2	No Further Action
Ethylbenzene	mg/kg	5,700[Vap]	21	<0.005	N/A	2	No Further Action
Xylenes	mg/kg	5,900[Sol]	21	<0.005	N/A	2	No Further Action
TPH Aliphatic							
TPH C_5-C_6	mg/kg	3200	21	<0.1	N/A	2	No Further Action
TPH C_6-C_8	mg/kg	7800	21	<0.1	N/A	2	No Further Action

Determinant	Units	GAC	n	MC	Loc. of Ex	Pathway	Assessment
TPH C_8-C_{10}	mg/kg	2000	21	<0.1	N/A	2	No Further Action
TPH C_{10}-C_{12}	mg/kg	9700	21	16	N/A	1	No Further Action
TPH C_{12}-C_{16}	mg/kg	36000	21	1603	N/A	1	No Further Action
TPH C_{16}-C_{21}	mg/kg	1600000	21	12528	N/A	1,4	No Further Action
TPH C_{21}-C_{35}	mg/kg	1600000	21	180	N/A	1,4	No Further Action
TPH Aromatic							
TPH C_5-C_7	mg/kg	26,000(Sol)	21	<0.1	N/A	2	No Further Action
TPH C_7-C_8	mg/kg	56,000(Vap)	21	<0.1	N/A	2	No Further Action
TPH C_8-C_{10}	mg/kg	3,500(Vap)	21	<0.1	N/A	2	No Further Action
TPH C_{10}-C_{12}	mg/kg	16,000(Sol)	21	47	N/A	2	No Further Action
TPH C_{12}-C_{16}	mg/kg	36,000(Sol)	21	3600	N/A	2	No Further Action
TPH C_{16}-C_{21}	mg/kg	28,000	21	3900	N/A	1.4	No Further Action
TPH C_{21}-C_{35}	mg/kg	28,000	21	750	N/A	1.4	No Further Action

Notes
Main Exposure Pathways: 1 = Soil Ingestion, 2 = Vapour Inhalation (indoor), 3 = Dermal Contact & Ingestion, 4 = Dust Inhalation.
Abbreviations: GAC = General Assessment Criteria, n = number of samples, MC = Maximum Concentration; Loc of Ex = Location of Exceedance.

10.1.1 Discussion

10.1.1.2 Residential End Use

Referring to Table 10.1 the results of this direct comparison indicates that the Tier I screening criteria has been exceeded for a number of determinants, predominantly within near surface soils. Elevated determinants comprise:

- Arsenic
- Lead
- Nickel
- Naphthalene
- Benzo(a)Anthracene
- Benzo(b)Fluoranthene
- Benzo(a)pyrene
- Dibenzo(a,h)Anthracene

- Aliphatic C_{12}-C_{16}
- Aromatic C_{21}-C_{40}

- Asbestos:

Metals and PAHs:

Elevated metals and PAH concentrations were within near surface across the residential portion of the site. Review of the potential pollution linkage for the identified concentrations identifies that soil ingestion and dermal contact are the predominant pathways for metals and PAHs. This is with the exception of Naphthalene, which is predominantly associated with a vapour risk. Given this it is considered that the identified concentrations have the potential to present a significant risk to human health within areas of proposed soft landscaping, and in the case of the locations where Naphthalene was encountered, (TP1007 and WS1008) a risk to human health below building footprints.

Hydrocarbons:

Elevated Aliphatic C_{12}-C_{16} and Aromatic C_{21}-C_{40} concentrations were present on site that exceeded the adopted Tier 1 screening values were identified within WS104, 1.5m bgl and WS1002, 1.7m bgl. The main exposure pathway for both of Aliphatic C_{12}-C_{16} and Aromatic C_{21}-C_{40} is via soil ingestion. This pollution linkage would be limited between ground level and 0.6m bgl, and therefore given the depth at which these concentrations are present would not present a significant risk to human health. However, should site levels vary in the future the concentrations could potentially present a significant risk should the values be within 0.6m of the near surface. Given that final site levels are at this stage unknown a risk averse approach has been adopted and for risk assessment purposes the concentrations considered to have the potential to present a significant risk to human health.

Asbestos:

Asbestos fibres were detected within twenty-four (24no.) from the forty-six (46no.) scheduled for asbestos analysis.

The main exposure pathway for asbestos is via dust inhalation, and therefore the identified concentrations will have the potential to present a significant risk to future site users within areas of proposed soft landscaping. The presence of asbestos will also pose a risk to construction workers, therefore the presence of asbestos should be conveyed to all parties involved in development works across the site, such that appropriate mitigation measures can be put in place in line with guidance set out in line with current asbestos legislation (Control of Asbestos Regulations, 2012).

Consideration should also be given to the quantified result in view of disposal of any soil arisings as may be required in remedial works, and future construction works. A soil with a result greater than 0.1% asbestos content is considered a hazardous waste. Review of the soil results identified hazardous asbestos content within the following locations:

Location	Result
BH1001	1.3%
WS1002	0.44%
BH1002A	0.199%
TP1005	0.156%
WS1004	0.667%

WS1002C	0.09%*

* Marginal result

10.1.2 Commercial End Use

Referring to Table 10.2 the results of this direct comparison indicates that the Tier I screening criteria for the commercial end use has been exceeded for one determinant.

- Asbestos

Asbestos fibres were detected within three (3no.) from the fourteen (14no.) samples scheduled for asbestos analysis.

The pollution linkage for asbestos, as set out above relates to the inhalation of fibres. With reference to this it is understood that the area of the site is being retained in its current configuration with soils all below areas of hard landscaping. The presence of hardstanding will therefore act to sever the exposure pathway rendering the risk from asbestos to future site users inactive.

Notwithstanding this the asbestos content has the potential to pose a significant risk to construction works. Therefore a full assessment should be undertaken in line with current asbestos legislation (Control of Asbestos Regulations, 2012) ahead of commencement of any works, in order to assess the risk of exposure to asbestos for construction workers.

10.2 Ground Gas Assessment

The potential impact on the development from ground gases has been assessed with reference to standards and guidelines published in CIRIA Report C665 (*Assessing risks posed by hazardous ground gases to buildings*, 2007). However, it is recommended that the full ground gas assessment and any recommended protection measures are agreed with the local authority prior to adoption on site. Furthermore, the installation of any gas protection measures should be validated by a suitably qualified engineer.

The results of the ground gas monitoring and calculated Gas Screening Values (GSVs) are presented in Table 9.4.

Five (5no.) groundwater and ground gas monitoring visits have been undertaken at locations BH1001, BH1002C, BH1003E, BH1004, BH1005, BH2001, BH2002, BH2003, BH2004, BH2005, BH2006, WS1003, WS1004, WS1005A, WS1006, WS1007 and WS1019 with concentrations of methane (CH_4) recorded at a maximum of 3.0%v/v recorded within intrusive location BH1004 and Carbon Dioxide (CO_2) concentrations recorded to a maximum of 6.8% v/v within intrusive location BH2005.

Ground gas flow was measured with a maximum flow rate of 11.4(l/hr), recorded within intrusive location BH1005.

In accordance with the methodology outlined within the CIRIA publication C665, OEC have utilised the results of the ground gas monitoring surveys to calculate a worst case tentative Gas Screening Value (GSV), providing a GSV calculated for **methane of 0.342l/hr** and a GSV for **carbon dioxide of 0.7752l/hr**.

The calculated GSVs have been compared to the criteria outlined within CIRIA C665 to determine the level of risk posed to the proposed development and to ensure that the appropriate remedial options are incorporated into any future building design. Review of the proposed building type indicates a proposal for five (5no.) apartment blocks new residential apartment blocks along with associated infrastructure and communal green space. OEC have therefore classified the proposed development as a **Type B** building under BS 8485:2015 Table 3.

In accordance with the methodology outlined within BS8485:2015, OEC have utilised the results of the ground gas monitoring survey to calculate a tentative Gas Screening Value (GSV). The maximum GSV calculated for methane was 0.342l /hr whilst the maximum GSV for carbon dioxide was 0.7752l /hr which is considered a worst case approach. In accordance with best practice, where a GSV results greater than <0.7l/hr is recorded it is necessary to upgrade the gas classification to Characteristic Situation **(CS-3).**

As set out within BS8485:2015 Table 4, **Type B** buildings with a classification of **CS-3** would require a minimum gas protection score of **4.0** in order to mitigate the risk from ground gas. Further information on mitigation measures are provided in Table 3 & 4 of BS8485:2015.

11.0 TIER 1 QUALITATIVE TIER 1 CONTROLLED WATERS RISK ASSESSMENT

A initial Tier I risk assessment was undertaken with concentrations of determinants compared with the relevant Tier I screening values. OEC have utilised the analytical results of all groundwater samples collected by CC Ground Investigation Ltd under direction of PBA together with supplemental samples collected by OEC.

Laboratory test certificates for groundwater are presented in Appendix V.

For the purposes of the Tier 1 assessment all laboratory test data has been compared directly to the current UK Freshwater EQS (FW EQS), due the presence of the River Thames approximately 5m northeast of the northernmost site boundary, which is considered as the principal receptor. At the time of writing, there are no FW EQS values for Total Petroleum Hydrocarbons (TPH) and therefore the WHO Guideline Values for petroleum products in drinking water have been adopted in the absence of current UK specific water quality standards for TPH. However, in the case of aromatic TPH bandings of C_6-C_7, C_7-C_8 and C_8-C_{10} the more conservative UK specific DWS value for benzene (1µg/l) and freshwater EQS values for toluene (50µg/l) and ethylbenzene (20µg/l) have been selected as the Tier 1 screening criteria respectively.

In the absence of WHO Guideline Values for the TPH Aliphatic C_{16}-C_{21} and C_{21}-C_{35} bands, the guideline value for TPH Aliphatic C_8-C_{10} through to C_{12}-C_{16} of 300µg/l has been applied. This is considered to be a conservative approach due to the increased stability and lower volatility of the longer chain length aliphatic hydrocarbons. In order to adopt a conservative approach, OEC has also adopted this value for TPH Aliphatic C_5-C_6 and C_6-C_8, which have very high WHO guideline values of 15,000µg/l (15mg/l).

In order to simplify terminology, the screening levels adopted for the purposes of the DQRA are referred to as “EQS Values”, even though they may be ultimately derived from UK DWS or WHO DWS values.

The results of the direct comparison of groundwater laboratory results to the adopted EQS values are summarised in Table 11.1 overleaf.

Table 11.1: Comparison of Groundwater Analysis with Tier 1 EQS Screening Levels

Determinand	Units	UK Drinking Water Threshold	WHO DWS	FW EQS	n	MC	No of Ex	Loc of Ex	Assessment
Metals									
Arsenic	mg/l	-	-	0.05	36	0.00981	-	-	No Further Assessment
Cadmium	mg/l	-	-	0.00025	36	0.00012	-	-	No Further Assessment
Chromium	mg/l	0.05	0.05	-	36	0.0016	-	-	No Further Assessment
Copper	mg/l	-	-	0.028	36	0.011	-	-	No Further Assessment
Lead	mg/l	-	-	0.0072	36	0.0036	-	-	No Further Assessment
Mercury	mg/l	-	-	0.0005**	36	0.00013	-	-	No Further Assessment
Nickel	mg/l	-	-	0.02	36	0.014	-	-	No Further Assessment
Selenium	mg/l	0.01	0.04	-	36	0.051	1	**WS1005**	**Further Assessment**
Zinc	mg/l	-	-	0.125	36	0.26 0.16	2	**BH2005**	**Further Assessment**
PAH									
Benzo(a)Pyrene	mg/l	-	-	0.000005**	36	<0.00001	36	**Due to LoD**	**Further Assessment**
Benzo(b)Fluoranthene	mg/l	-	-	0.00005**	36	<0.00001	-	-	No Further Assessment
Benzo(k)Fluoranthene	mg/l	-	-	0.00005**	36	<0.00001	-	-	No Further Assessment
Benzo(ghi)Perylene	mg/l	-	-	0.00005**	36	<0.00001	-	-	No Further Assessment
Indeno(123-cd)Pyrene	mg/l	-	-	0.00005**	36	<0.00001	-	-	No Further Assessment
BTEX									
Benzene	mg/l	0.001	-	-	43	<0.001	-	-	No Further Assessment
Toluene	mg/l	-	-	0.05	43	<0.001	-	-	No Further Assessment
Ethylbenzene	mg/l	-	-	0.02	43	<0.001	-	-	No Further Assessment
Xylenes	mg/l	-	-	0.03	43	<0.001	-	-	No Further Assessment
TPH Aliphatic									
Aliphatic C5-C6	mg/l	-	(0.30)*	-	43	<0.001	-	-	No Further Assessment
Aliphatic C6-C8	mg/l	-	(0.30)*	-	43	<0.001	-	-	No Further Assessment
Aliphatic C8-C10[(5)]	mg/l	-	0.30	-	43	<0.001	-	-	No Further Assessment
Aliphatic C10-C12	mg/l	-	0.30	-	43	<0.01	-		No Further Assessment

Aliphatic C12-C16	mg/l	-	0.30	-	43	<0.01	-	-	No Further Assessment
Aliphatic C16-C21	mg/l	-	(0.30)*	-	43	0.09	-	-	No Further Assessment
Aliphatic C21-C35	mg/l	-	(0.30)*	-	43	0.09	-	-	No Further Assessment
TPH Aromatic									
Aromatic C6-C7[5]	mg/l	0.001 (Benzene)	0.01 (Benzene)	-	43	<0.01	-	-	No Further Assessment
Aromatic C7-C8	mg/l	0.05 (Toluene)	0.70 (Toluene)	0.05	43	<0.01	-	-	No Further Assessment
Aromatic C8-C10[5]	mg/l	0.02 (Ethylbenzene)	0.30 (Ethylbenzene)	0.02	43	<0.01	-	- -	No Further Assessment
AromaticC10-C12[5]	mg/l	-	0.09	-	43	<0.01	-	- -	
Aromatic C12-C16[5]	mg/l	-	0.09	-	43	0.73	1	**BH2005**	**Further Assessment**
Aromatic C16-C21	mg/l	-	0.09	-	43	0.12 0.17 2.70	3	**BH1005** **BH2005 (04/04)** **(08/03)**	**Further Assessment**
Aromatic C21-C35	mg/l	-	0.09	-	43	<0.01	-	-	-

* In a conservative approach, OEC have adopted the lower WHO guideline value for aliphatic fractions inclusive of C_8-C_{16} (300µg/l).

For the purposes of the Tier 1 assessment OEC have compared the laboratory test data directly to the relevant Tier 1 threshold values for the protection of controlled waters. The results of this direct comparison indicates that the data exceeds the screening values for the following determinands:

- Selenium;
- Zinc;
- Benzo(a)Pyrene;
- TPH Aromatic C_{12}-C_{16}; and,
- TPH Aromatic C_{16}-C_{21}

Metals

In the case of selenium and zinc, OEC consider the fact that only one (1no.) marginal exceedance was detected in the case of selenium and only two (2no.) relatively minor exceedances in the case of selenium were detected out of a total of thirty-six (36no.) samples analysed suggest that metal concentrations do not present a significant risk to controlled waters.

PAHs

In the case of benzo(a)pyrene, all exceedances are the result of the laboratory LOD (0.00001mg/l) exceeding the Tier I screening value (0.000005mg/l). Given that no concentrations of PAHs greater than the laboratory LOD of 0.00001mg/l were recorded, OEC do not consider that PAHs and benzo(a)pyrene in particular at the site pose a significant risk to controlled waters.

TPH

The Tier I controlled waters risk assessment indicates that concentrations of TPH Aromatic C_{12}-C_{16} and C_{16}-C_{21} were detected at concentrations exceeding the adopted EQS values at locations BH1005 and BH2005. A review of laboratory data indicates that aliphatic and aromatic fractions of TPH C_5 – C_{12} were detected at concentrations of less than the LOD.

In the case of TPH Aromatic C_{12}-C_{16} and C_{16}-C_{21}, concentrations of greater than the LOD (>0.01mg/l) were recorded in only four (4no.) of a total of forty-three (43no.) samples analysed with the adopted EQS value exceeded in only three (3no.) samples.

Laboratory interpretation of the TPH results obtained from samples collected by OEC indicated that the TPH concentrations identified at locations BH1005, BH2005 and BH2006 are attributed to linear alkylbenzenes, which is consistent with the product lost during the documented leakage that occurred from the leaking oil filled service run set out in Section 1.1.

Given the documented pollution incident which occurred at the site together with the concentrations recorded within soils and the presence of concentrations exceeding the adopted EQS in groundwater, which are consistent with the product lost during the pollution incident, it was considered that a Tier 2 Risk Assessment (DQRA) was required to fully assess the risks posed to the identified receptor by the identified TPH Aromatic C_{12}-C_{16} and C_{16}-C_{21} concentrations.

In order to adopt a conservative approach, OEC have utilised all available laboratory data for soils and groundwater to determine the maximum detected concentrations for the purposes of the DQRA, as set out in Section 13.0 of this document.

In order to formulate a suitable Tier 2 Site Specific Risk Assessment OEC have prepared a Conceptual Hydrogeological Model ahead of undertaking RTM modelling, as required by the Environment Agency, and is set out in the subsequent sections of this report.

12.0 CONCEPTUAL HYDROGEOLOGICAL MODEL

Selected information from Section 9.0 has been reproduced below to allow a comprehensive overview of the site settings, as necessary for input into the DQRA in Section 13.0.

12.1 Geological Profile

Review of all available exploratory hole logs for the site indicates that the geological succession beneath the site comprises of Made Ground up to 3.50m thick overlying cohesive strata of the Langley Silt Member, overlying granular strata of the Kempton Park Gravel Formation which immediately overlies bedrock of the Upper Chalk at depth.

Made Ground (MG) was found to be predominantly granular in nature and generally ranged from 1.10m to 1.90m in thickness with thicker Made Ground ranging from 1.95 – 3.50m encountered in the central part of the site around the main transformer compound.

Immediately underlying MG was a sequence of cohesive deposits comprising clayey and sandy SILT attributed to the Langley Silt Member (LSM). The top of the LSM was encountered at depths ranging from 0.60 – 3.50m bgl (37.57 – 35.26mAOD). The unit ranged from 0.60 – 3.40m in thickness with an average thickness of 1.68m. The base of the LSM was encountered at depths ranging from 2.30 – 4.10m bgl (36.08 – 34.11m AOD).

Immediately underlying the LSM were sands and gravels attributed to the Kempton Park Gravel Formation (KPG), which ranged from loose to dense grey variably silty and sandy GRAVEL. The KPG ranged from 5.00 – 9.20m in thickness with an average thickness of 6.58m. The base of the KPG was encountered at depths ranging from 8.10 to 12.50m bgl (30.21 – 26.21mAOD).

Chalk bedrock was encountered immediately beneath the KPG at depths ranging from 8.10 – 12.50m bgl (30.21 - 26.21mAOD) and was proven to a maximum depth of 35.00m bgl at locations BH1002C (3.40m AOD), BH1003E (3.71m AOD) and BH1004 (3.31mAOD) although the base of the Upper Chalk was not proven within any of the intrusive locations. A review of the geological logs indicated that the Chalk was recovered as a variably sandy and silty angular to subangular GRAVEL (Grade Dc) suggesting an absence of “Putty Chalk” (Grade Dm).

12.2 Groundwater Strikes

A review of Table 9.2 and Table 9.3 indicates that groundwater strikes were generally recorded at the base of the LSM, close to the boundary with the underlying KPG or at the top of the KPG at depths ranging from 2.40 – 4.00m bgl (34.40 – 36.04m AOD). Only two water strikes were recorded within MG and are considered to represent locally perched water at locations WS1002 (1.70m bgl) and WS1007 (1.00m bgl). With the exception of groundwater at the very base of the LSM, groundwater was not generally recorded within the LSM supporting the interpretation of the LSM as an aquitard.

During return groundwater and ground gas monitoring, the average depth to groundwater, excluding perched water within Made Ground, was 2.20m bgl (36.24mAOD). The observed difference between the depth of groundwater strikes and standing water is considered to indicate that groundwater within the KPG is slightly confined by the overlying LSM causing water level to rise slightly under pressure once the confining LSM is breached.

12.3 Continuous Groundwater Monitoring

To assist with establishing an accurate depth to groundwater and determining groundwater flow direction, high-resolution continuous groundwater monitoring was undertaken at three (3no.) monitoring locations across the site (WS1003, WS1006 and BH2003) using X, Y & Z co-ordinates presented on geological logs from the CC Ground Investigations report prepared for PBA. Boreholes were selected for continuous groundwater ensuring that all had a similar response zone with similar resting water level to ensure that the groundwater level monitored was consistent between locations.

Three Solinst Leveloggers and a Solinst Barologger were deployed to continuously record groundwater level at hourly intervals and atmospheric pressure at fifteen minute intervals over the course of five (5no.) consecutive days between 20th and 25th April 2018.

The average groundwater elevation data is summarised in Table 12.1 below.

Table 12.1 Comparison of Continuous Groundwater Monitoring Levels to Resting Water Level Recorded During Groundwater & Ground Gas Monitoring.

Location	Ground Level (mAOD)	Borehole Response Zone (mAOD)	Continuous Monitoring	Groundwater Monitoring					Strata
			Average Resting Water Level (mAOD)	Resting Water Level (mAOD) 22/02/18	Resting Water Level (mAOD) 07/03/18	Resting Water Level (mAOD) 22/03/18	Resting Water Level (mAOD) 04/04/18	Resting Water Level (mAOD) 19/04/18	
WS1003	38.21	35.21 - 33.21	35.941	36.03	36.08	36.04	***36.30***	36.10	KPG
WS1006	38.19	35.19 – 33.19	35.999	35.97	36.03	***36.99***	36.27	36.03	KPG
BH2003	38.56	35.56 – 34.56	36.085	36.01	36.13	36.10	***36.35***	***34.03****	KPG

Notes:
Bold Italicised text indicates groundwater levels which vary significantly from other recorded values.
*Groundwater level recorded at a level 0.54m below the base of the monitoring installation and is considered to be incorrect.

Continuous groundwater monitoring data were subsequently corrected to mAOD to facilitate the construction of a groundwater equipotential plan. A review of Table 9.3 indicates that there is a good correlation between groundwater level monitored during five (5no.) rounds of groundwater and ground gas monitoring undertaken by others and the average groundwater level recorded during continuous monitoring undertaken between 20th and 25th April 2018.

12.4 Permeability of Kempton Park Gravel Formation

A review of soil descriptions for the KPG deposits underlying the site indicate that soils attributed to the KPG comprise a variably silty and sandy GRAVEL with variable clay content towards the top of the sequence. Given the variable nature of the KPG, OEC have adopted a conservative approach and have assumed that the soils of the KPG typically comprise a SAND & GRAVEL.

Literature values for the hydraulic conductivity of a SAND & GRAVEL range from 5.80 x 10^{-6}m/s (5.00m/day) to 1.16 x 10^{-3}m/s (100m/day) (BGS Guide to Permeability Indices, 2006). Based on field descriptions of the KPG which describe the unit as a variable sandy and silty GRAVEL OEC have adopted a value of 5.00m/day which is consistent with the upper range of a silty sand (Freeze and Cherry,

1979). OEC have therefore adopted the following hydraulic conductivity values for the strata encountered beneath the site:

Strata	Hydraulic Conductivity (m/s)	Hydraulic Conductivity (m/d)	Source
Kempton Park Gravel Formation	5.79×10^{-5}	5.00	Upper range literature value for a silty sand (Freeze and Cherry 1979)

12.5 Discussion of Hydrogeological Regime

A review of geological mapping for the site (BGS Sheet 268, Reading, 1:50,000, Solid & Drift Edition) indicates that granular KPG deposits are overlain by the cohesive strata attributed to the LSM and directly underlain by the Upper Chalk Subgroup. A review of geological logs for the site from the various phases of intrusive works confirm the published geological data.

For the purpose of the DQRA, it is considered that the LSM will act as a low-permeability aquitard and confining layer to the underlying KPG deposits, retarding or preventing downward migration of determinant concentrations.

As detailed above, the site investigation has identified groundwater bearing strata at elevations ranging from 2.30 – 4.10m bgl (36.08 - 34.11m AOD) within granular Kempton Park Gravel deposits, which rises slightly under pressure once the overlying LSM is breached.

A review of literature published by the EA regarding the Thames Valley Gravels suggests that the gravels are typically of a high permeability with groundwater flow direction being influenced by the river flow direction. The report also suggested that at times of high water groundwater flow would be away from the river, with groundwater flow towards the river at times of low water level.

A groundwater equipotential plan was constructed by OEC, and has been used to determine the groundwater flow direction and to calculate the hydraulic gradient (i) for the site. The hydraulic gradient, reported as a ratio, was calculated as 0.002677 and suggests that groundwater is generally flowing in a northeasterly direction towards the River Thames. However, information provided in the PBA Technical Note (Tn002/Rev0) indicates a flow direction towards the southeast. Given that a statement was made in the PBA report indicating a flow to the south east, together with information from the EA Thames Valley Gravels Report, and that the flow direction is noted to vary seasonally, OEC have assumed a net flow direction towards the east.

Groundwater monitoring data suggest that with the exception of locally perched water within Made Ground that groundwater is confined beneath the LSM within the KPG with the whole of the KPG saturated. It is assumed that groundwater within the KPG is in hydraulic continuity with the River Thames and the underlying Upper Chalk.

In order to assess the potential migration of contaminants of concern through the basic hydrogeological regime identified, it is necessary to model the migration behaviour of the identified contaminants.

13.0 TIER 2 DETAILED QUANTITATIVE RISK ASSESSMENT (DQRA)

13.1 Discussion

As detailed in Section 11.0 laboratory analyses were undertaken on a number of groundwater samples, with elevated concentrations of TPH recorded that exceeded the adopted EQS screening values.

Groundwater sampling was undertaken by CC Ground Investigations on 4th April 2018. OEC are not aware of the sampling methodology employed and given the presence of bailers within each environmental monitoring point observed at the time of inspection, OEC have assumed that samples were collected using bailers. Groundwater samples were collected from selected monitoring locations by OEC on 13th and 16th April 2018.

In order to ensure a comprehensive approach and assess the potential remediation requirements for a worst-case scenario, OEC has undertaken a Detailed Quantitative Risk Assessment (DQRA) of those compounds, which were found to exceed the adopted EQS in groundwater samples TPH Aromatic C_{12}-C_{16} and C_{16}-C_{21}.

To ensure a comprehensive approach to the DQRA it is necessary to determine the considered source of the elevated concentrations detected within groundwater. A review of the laboratory groundwater data indicates that concentrations of Contaminants of Potential Concern (CoPC) exceeding the EQS were recorded in groundwater samples from locations BH1005, BH2005 & BH2006. Laboratory interpretation of TPH-CWG analyses indicated the presence of Linear Alkylbenzenes, which is consistent with information provided by PBA with regards to the nature of the product spilled.

In order to allow a comprehensive review the source of impact on site, reference is made to available historic data, set out in detail in Section 3.0 and summarised as follows:

The northwestern area of the site formed one of two power stations operational in Reading and was identified as an “Electric Works” on historical mapping dated between c.1899 and c.1913, after which the building footprint remained but was no longer identified. The building facing Vastern Road was first indicated on mapping dated c.1912-1913 and identified as a “Skating Rink” before being identified as a “Depository” on mapping dated c.1936. The building footprint remains to the present day and has most recently been utilised as SSE Offices.

In addition a number of historic “Tanks” were identified within the northwestern corner of the site between c.1912 and c.1932 with a single tank identified on mapping dated c.1936. The Power Station were absent on mapping dated c.1956-1957 with the site shown in the current configuration from c.1969.

The previous site investigations have identified elevated concentrations of determinants consistent with the historic use of the site. The highest TPH concentrations were recorded at locations WS1002 (1.70m bgl), BH2003 (3.50m bgl), BH2005 (1.90m bgl) and TP1007 (0.50m bgl) where TPH concentrations ranging from 1,600 to 12,000mg/kg were recorded. High TPH concentrations were also recorded at locations BH1002A, BH1003C, BH1004, BH2003, BH2006, WS1002, WS1004, WS1008, WS1017, WS1018, WS1019, TP1003, TP1005 and TP1007 where TPH concentrations ranged from 200 – 890mg/kg.

A review of TPH-CWG data indicates that the highest TPH concentrations are associated with TPH C_{12}-C_{16}, C_{16}-C_{21} and C_{21}-C_{35} in both aliphatic and aromatic fractions, which is considered consistent with historic use of diesel fuel and mineral oils on site.

As stated in Section 1.1, it is understood that in July 2017 a leak of cable cooling oil was identified from a failed joint within the 132 kV circuit resulting in oil spillage in the 132 kV substation compound at the centre of the Site, where it was estimated that approximately 8,800 litres of oil escaped from the faulty joint with approximately 160 litres recovered during the repair works.

Source Area Selection

A review of laboratory data indicates that the highest concentrations of TPH within soils were generally detected within locations in and immediately around the transformer compound where the leakage was detected in July 2017. Consideration should also be given to location WS1002 in the northwestern corner where high concentrations of TPH and PAH were also recorded. Further consideration is given in point a) below.

The above overview of historical settings and the distribution of identified concentrations suggests the presence of three potential areas of concern.

a) In the northwest of the site at location WS1002 elevated concentrations of TPH C_{12}-C_{16}, C_{16}-C_{21} and C_{21}-C_{35} were detected.

This area in the vicinity of WS1002 has been considered as representing a historical incident associated with the presence of tanks during the operation of the power station, and therefore a localised hotspot of concentrations. It is therefore recommended that further investigation and likely remedial works will be required within this area with an aspect of source removal.

b) Adjacent to the western boundary of the site at location TP1007, a third area of elevated concentrations of TPH C_{16}-C_{21} and C_{21}-C_{35} were detected.

In the case of TP1007, although elevated concentrations of TPH C_{16}-C_{21} and C_{21}-C_{35} were identified in association with high concentrations of PAH, soil descriptions noted a moderate hydrocarbon odour from underlying strata. A low PID reading of 3.2ppm was recorded from soils at a depth of 0.20m bgl, which is consistent with TPH being primarily composed of longer chain lengths. Given this the risk associated with this impact warrants further assessment, and it is likely that remedial works will be required within this area with an aspect of source removal.

c) A large central area impacted by the cooling oil spillage where elevated concentrations of TPH C_{12}-C_{16} and C_{16}-C_{21} (Aromatic) have been detected within groundwater samples.

The central area impacted by the coolant spillage is considered a significant impact, and to represent a significant risk to controlled waters, as set out within the Tier 1 Controlled Waters Risk Assessment (Section 11.0). Laboratory interpretation of the hydrocarbon type recorded during the Adler and Allan investigation and return groundwater monitoring by OEC, attributed the elevated results to Linear Alkylbenzene, which is consistent with electrical cooling or insulating oil. Given this the large central area in the vicinity of the 2017 leakage has been set as the DQRA source area. This area measures ~52.0m (l) x ~40.0m (w) and covering approximately 2,080m^2.

Input Parameters

Various input parameters to the DQRA model are set out below:

As discussed in detail in Section 11.0, in the absence of Freshwater EQS values for TPH, OEC have adopted values reported in the WHO Petroleum Hydrocarbons in Drinking Water in a conservative approach.

For the purpose the DQRA, OEC have adopted the following geological model for the site and have assumed that the model is consistent across the site and extends away in all directions.

- Made Ground – Granular (Source) – Average Thickness 1.70m;
- Langley Silt Member – Cohesive (Aquitard) – Average Thickness 1.68m;
- Kempton Park Gravels – Granular (Aquifer) – Average Thickness 6.58m.

The River Thames is the closest surface watercourse with the southern extent of the river located approximately 5.00m north-northeast from the northern site boundary, which is 90 degrees to the anticipated groundwater flow direction. The River Thames has been adopted as the primary controlled waters receptor following consultation with the Environment Agency. There are no potable groundwater abstraction licences or public water supplies located within 500m of the site.

From evidence presented on the borehole logs, it has been assumed that groundwater is absent from Made Ground and the LSM, which acts to confine groundwater within the KPG. Following a review of information provided within published data from the EA regarding the Thames Valley Gravels, it is assumed that the KPG are in hydraulic continuity with the River Thames and that groundwater flows obliquely away from the river during times of high river levels and obliquely towards the river during times of low river levels. This assumes an approximately northeasterly flow direction during the summer months and a southeasterly flow direction during the winter months. Continuous groundwater monitoring has suggested a groundwater flow direction towards the northeast with information provided in the PBA Technical Note (Tn002/Rev0) indicating a flow direction towards the southeast. Given that two differing flow directions have been shown, together with information from the EA Thames Valley Gravels Report, OEC have therefore assumed a net flow direction towards the east.

Given the superficial cover of Made Ground and Langley Silt Member, OEC have assumed that the Kempton Park Gravels will be in hydraulic continuity with the River Thames near to the centre of the channel where the channel is deepest and have therefore adopted a compliance point located down gradient, approximately 90m east of the eastern limit of the modelled source area.

Hydrocarbons are hazardous substances as defined by the Groundwater Daughter Directive (enacted under EPR 2010) and their entry into groundwater should be prevented. Where existing groundwater contamination is present, the priority is to minimise further entry of hazardous substances into groundwater and take necessary and reasonable measures to limit any future expansion of a contaminant plume. As discussed above, OEC consider that the hydrocarbon concentrations with the defined source area are associated with the cooling oil leakage from a ruptured oil cooled HV service run.

For the sake of simplicity, and in order to develop the most conservative model, the highest detected soil and groundwater concentrations recorded across the site, within the modelled source area have been adopted for the purposes of groundwater modelling.

13.2 RTM Sensitivity Test

The basic RTM model parameters has been populated with characteristics derived from both site measurements and conservative estimates from relevant published sources (Appendix IX). The RTM model has therefore been subjected to a sensitivity analysis, whereby the effects of parameter variability is calculated. The sensitivity analysis pays particular focus on variables estimated from literature sources, rather than site derived values.

Parameters which have been identified to affect the assessment most significantly include:

- **Distance to compliance point (x) –** OEC have adopted a 90m compliance point from the eastern limit of the source area to the centre of the River Thames, where it is assumed that the River Thames is in hydraulic continuity with the KPG. This 90m compliance point equates to a distance approximately 85m from the eastern site boundary. The distance to the compliance point was changed as part of the sensitivity analysis and it was noted that changing the distance affected both the remedial target values. It was found that decreasing the distance to 50m from source resulted in an increase in modelled concentrations but did not change the number of predicted EQS exceedances. Decreasing the distance to 5m resulted in further increases in the modelled concentrations at the compliance point. Increasing the distance to the compliance point decreased the modelled concentrations, but did not result in a decrease in the number of EQS exceedances until the distance was increased to 276m, at which point the predicted groundwater concentration for Aromatic C_{12}-C_{16} becomes less than the EQS. The predicted groundwater concentrations for Aromatic C_{16}-C_{21} did not decrease to concentrations less than the EQS until a compliance point of 555m was input into the model. Therefore, whilst the model is sensitive to this parameter, OEC consider that the model is not sufficiently sensitive to the selected distance of 90m to present a significant issue.
- **Area of contaminant source (A), Length of Contaminant Source (L) and Width of Contaminant Source (w)**. The contamination source area has been estimated from the lateral distribution sampling locations which contain significantly elevated concentrations of Aromatic C_{12}-C_{16} and C_{16}-C_{21}. The source has been estimated to cover an area of approximately 52m (l) x 40m (w) with a source area of 2,080m^2. Taking groundwater flow into account, the maximum length of the contaminant source (L) has been estimated at 55m (E-W) and the maximum width (w) 43m (N-S). OEC consider that the most polluting concentrations will be limited to the soils immediately surrounding the leaking oil cooled HV pipe. It is considered that with continuing natural attenuation, that the lateral extent of impacted soils will gradually decrease. It was found that varying the dimensions and area of the source area did not result in any change to predicted concentrations at the compliance point. The source area was doubled to 5096m^2 and halved to 1004m^2, neither of which changed the predicted concentrations at the compliance point.
- **Hydraulic gradient (*i*)** has been calculated from site-specific measurements with groundwater triangulation indicating a groundwater level fall of 0.12m over a horizontal distance of 44.82m yielding a hydraulic gradient (*i*) of 2.68 x 10^{-4} (0.000268). The hydraulic gradient was changed as part of the sensitivity analysis and proved to be a sensitive parameter. Increasing *i* by one order of magnitude (2.68 x 10^{-3}) increased the predicted concentrations at the compliance point. Decreasing *i* by one order of magnitude (2.68 x 10^{-5}) resulted in a decrease in the modelled concentrations. A two magnitude decrease (2.68 x 10^{-6}) resulted in in modelled concentrations for both Aromatic C_{12} - C_{16} and C_{16} – C_{21} at the compliance point decreasing to concentrations of less than the adopted EQS. However, given that the value for *i* has been

derived from site-specific measurements obtained from groundwater dataloggers, it is considered that the adopted value of 2.68 x 10^{-4} provides a robust representation of the hydraulic gradient beneath the site.

- **Saturated aquifer thickness (*da*)** was taken to be the average thickness of the KPG (6.58m) which was determined by on-site observations, as discussed in Section 6.1. The saturated aquifer thickness (*da*) of 6.58m was reduced by 50% to 3.29m and by 75% to 1.65m and increased by 100% to 13.16m. Reducing the saturated aquifer thickness by 50% and 75% decreased the predicted groundwater concentrations at the compliance point, but did not decrease concentrations to levels below the adopted EQS. Increasing the saturated aquifer resulted in marginally increased predicted concentrations at the compliance point. However, given that the saturated aquifer thickness has been determined from on-site measurements, it is considered that the selected value satisfactorily represents the conditions present on site.
- The **fraction of organic carbon (*foc*)** was increased and decreased by two orders of magnitude from the adopted values of 1.82x10^{-2} (MG) and 2.90x10^{-3} (KPG) and proved not to be sensitive for modelled groundwater concentrations, but was a sensitive parameter for predicted soil concentrations. Increasing and decreasing *foc* by one order of magnitude within both MG and KPG did not result in changes in either of the predicted groundwater concentrations at the compliance point.
- The **hydraulic conductivity (*K*)** was increased to 100m/d (1.16x10^{-3}m/s) and decreased to 25m/d (2.89 x 10^{-4}m/s), 5m/d (5.79 x 10^{-5}) and 0.50m/d (5.79x10^{-6}m/s) from the selected value of 50m/d (5.79x10^{-4}m/s) and was found to be a sensitive parameter. It was observed that decreasing *K* by an order of magnitude resulted in a decrease in the predicted groundwater concentrations at the compliance point, but did not decrease concentrations to levels below the adopted EQS. Decreasing *K* to 0.50m/d (three orders of magnitude) did however result in no modelled concentrations exceeding the adopted EQS values. Given field descriptions and the results of PSD analyses from KPG deposits, OEC consider that the selected value for *K* of 50m/d (5.79x10^{-4}m/s) represents a mid-range value for the encountered soil type and is suitable for the site.

OEC considers that the RTM model has used conservative values to ensure that the parameters reflect the site at as close to site specific parameters as possible to ensure that remediation is not overlooked or miscalculated.

The results of the Remedial Targets Methodology (RTM) modelling used the R&D P20 worksheets developed for the Environment Agency (EA) is shown in Table 13.1 overleaf.

The model output sheets are included in Appendix X.

Table 13.1 **Summary of RTM Modelling for Level 3 Soil and Groundwater Migration**

Source	EQS Threshold	Maximum Detected Soil Concentration	Maximum Detected Groundwater Concentration	Predicted Soil Concentration at Compliance Point (90m from source area)	Predicted Groundwater Concentration at Compliance Point (90m from source area)	Predicted Exceedance of EQS at Compliance Point	
	mg/l	mg/kg	mg/l	mg/l	mg/l	L3 Soil (90m)	L3 Groundwater (90m)
Aromatic C_{12}-C_{16}	9.00E-02	3.60E+03	7.30E-01	1.54E+01	4.95E-01	Y	Y
Aromatic C_{16}-C_{21}	9.00E-02	3.90E+03	2.70E+00	5.52E+00	2.00E+00	Y	Y

No account of the potential for sorption between hydrocarbon compounds and clay particles has been utilised in the P20 model, further demonstrating the conservative nature of the risk assessment.

Referring to Table 13.1, the model shows that given the maximum concentrations of CoPC detected across site and assuming leaching from the soils, that there would be a breakthrough of concentrations exceeding the EQS threshold at the receptor located 90m from the site boundary for the modelled determinands summarised in Table 13.2 below:

Table 13.2 Summary of Modelled EQS Exceedances

Determinant	EQS Exceedance	
	Soil	Groundwater
Aromatic C_{12}-C_{16}	Y	Y
Aromatic C_{16}-C_{21}	Y	Y

13.3 Remedial Target Concentrations

Table 13.3 shows the remedial target values for the soil and groundwater for impact to controlled waters at 90m from the site boundary as derived from the P20 calculation.

Table 13.3 Remedial Target Concentrations

Determinant	Level 3 Soil Target Concentrations to be protective of the identified receptors. (mg/l)	Level 3 Controlled Waters Target Concentrations To be protective of the Underlying Aquifer (mg/l)
Aromatic C_{12}-C_{16}	2.31E-01	1.39E-01
Aromatic C_{16}-C_{21}	2.21E-01	1.22E-01

OEC have adopted the lower remedial target value for each carbon range from either L3 soil or L3 water in order to allow a conservative assessment.

A comparison of the detected maximum groundwater concentrations and groundwater remedial target values is shown in Table 13.4. This comparison has been undertaken based on the maximum groundwater concentration from the monitoring well installed within the KPG, BH1005, where the response zone was solely in the KPG (3.0-7.0m bgl). Whilst higher concentrations are present on site, and these form the basis of the P20 model, the result from BH1005 has been utilised to represent current conditions. It should be noted that this assessment for the KPG is based on data provided to OEC which is considered to be limited. Values originate from three rounds of groundwater monitoring on a single monitoring point installed within the KPG.

Table 13.4 Summary of Maximum Groundwater Concentration and Remedial Target Values.

Determinant	Groundwater		Exceedance of Remedial Target Values
	Maximum Concentration (mg/l)	Remedial Target Value (mg/l)	Groundwater (Y/N)
Aromatic C_{12}-C_{16}	4.70E-02	1.39E-01	N
Aromatic C_{16}-C_{21}	1.20E-01	1.22E-01	N

Referring to Table 13.4 it can be seen that water samples from below the LSM pass the remediation target values for groundwater. Given this it is considered that elevated concentrations are currently restricted by the presence of the LSM. It is considered that given the inherent variability of the LSM, with local gravel horizons, and significantly reduced thickness in part, that concentrations have the potential to present a significant risk to controlled waters over time. In order to mitigate this risk it is recommended that remedial works are undertaken on the impact area, which should involve removal of free product. This should be set out within a standalone Remediation Method Statement.

14.0 REVISED CONCEPTUAL SITE MODEL

Following the completion of the risk assessment an active pollution pathways have been identified as detailed in the Table 14.1 below:

Table 14.1 Revised Conceptual Site Model

Source	Exposure Pathway	Potential Receptor	Probability of Exposure	Discussion of Pollutant Linkage
Soils				
Elevated concentration of metals and PAHS within shallow soil samples across the proposed residential development.	Ingestion within areas of soft landscaping	Future Site Users	Likely	It is considered that the presence of elevated concentration of metals and PAH within shallow soil samples across the site have the potential to pose a significant risk to future site users. An RMS should be produced to set out mitigation measures which will likely involve a soil capping system.
Presence of Asbestos within shallow soils samples	Dust inhalation	Future Site Users and Construction workers	Likely	It is considered that the present of asbestos within shallow soil have to potential to present a significant to both future site users and construction workers. An Remedial Method Statement (RMS) should be produced to set out mitigation measures which will likely involve a soil capping system.
Elevated Naphthalene and TPH (C12-C16) Concentrations in the area of the proposed residential development.	Ingestion within areas of soft landscaping Vapour Inhalation	Future Site Users	Likely	It is considered that the presence of Naphthalene and TPH within shallow soil samples across the site have the potential to pose a significant risk to future site users both in areas of soft landscaping and inside of buildings. An RMS should be produced to set out mitigation measures, which will likely involve a soil capping system and vapour membranes inside of buildings.
Ground Gas (CH_4 and CO_2)	Migration into Confined Spaces	Future Site Users	Likely	Concentrations of CH_4 up to 3.0%v/v have been detected with GSV results of 0.1482(l/hr) have been calculates for the site. It is considered that the site has been classified as a CS-3 in line with the methodology outlined within

				BS8485:2015
Groundwater				
TPH Aromatic C_{12}-C_{16} and C_{16}-C_{21}	Vertical and lateral migration	Controlled Waters	Likely	Remedial works should be set out within an RMS, and should involve removal of product from the area set out on Figure 4, which is predominantly limited to the area of the substation.
Hotspot of concentrations in area of WS1002 and TP1007	Vertical and lateral migration	Controlled Waters	Likely	Remedial works should be set out within an RMS and will likely involve source removal.

15.0 CONCLUSIONS & RECOMMENDATIONS

Revised Conceptual Site Model (RCSM)
Following the completion of the risk assessment, including Tier 1 Human Health assessment and Tier 2 Controlled Waters Assessment (DQRA) a series of active pollution pathways have been identified by the RCSM. These relate to elevated metals, PAH, TPH and asbestos concentrations in the near surface and TPH within groundwater samples.
Recommendations
In order to mitigate this risk identified in the RCSM remediation works are required, which are likely to include: • Emplacement of soil capping system within areas of proposed soft landscaping; • Provision of Vapour and Ground Gas Membranes within buildings; • Removal of free phase hydrocarbon product (TPH Aromatic C_{12}-C_{16} and C_{16}-C_{21}) from the area set out on Figure 4, predominantly limited to the area of the substation. • Hotspot removal of impact in area of WS1002 and TP1007. Mitigation measures should be set out within a standalone Remediation Method Statement and agreed with the Regulator ahead of commencement on site. Near surface soils at the site are likely to be classified as Hazardous for disposal purposes due to asbestos content >0.1% in five of 47 samples across the proposed residential portion of the site. If during works any previously unidentified impact is encountered during development works, activities should be halted and contact made with a suitably qualified Environmental Consultant in order to further investigation identified materials. As determined appropriate by the Consultant further investigation and sampling may be required to determine appropriate actions. Upon completion contact should be made with the regulator to achieve sign off of the works.

APPENDIX I

LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between OE Ltd and the Client as indicated in Section 1.2.

2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information, it has been assumed it is correct. No attempt has been made to verify the information.

3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination, which are enforced, by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.

4. During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.

5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.

6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials this is for indicative purposes only and do not constitute or replace full and proper surveys.

8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.

9. OE cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by OE is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by OE in this connection without their explicit written agreement there to by OE.

10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

APPENDIX II

GLOSSARY

AST	ABOVE GROUND STORAGE TANK
BGS	BRITISH GEOLOGICAL SURVEY
BSI	BRITISH STANDARDS INSTITUTE
BTEX	BENZENE, TOLUENE, ETHYLBENZENE, XYLENES
CIEH	CHARTERED INSTITUTE OF ENVIRONMENTAL HEALTH
CIRIA	CONSTRUCTION INDUSTRY RESEARCH ASSOCIATION
CLEA	CONTAMINATED LAND EXPOSURE ASSESSMENT
CSM	CONCEPTUAL SITE MODEL
DNAPL	DENSE NON-AQUEOUS PHASE LIQUID (CHLORINATED SOLVENTS, PCB)
DWS	DRINKING WATER STANDARD
EA	ENVIRONMENT AGENCY
EQS	ENVIRONMENTAL QUALITY STANDARD
GAC	GENERAL ASSESSMENT CRITERIA
GL	GROUND LEVEL
GSV	GAS SCREENING VALUE
HCV	HEALTH CRITERIA VALUE
ICSM	INITIAL CONCEPTUAL SITE MODEL
LNAPL	LIGHT NON-AQUEOUS PHASE LIQUID (PETROL, DIESEL, KEROSENE)
ND	NOT DETECTED
LMRL	LOWER METHOD REPORTING LIMIT
NR	NOT RECORDED
PAH	POLY AROMATIC HYDROCARBON
PCB	POLY-CHLORINATED BIPHENYL
PID	PHOTO IONISATION DETECTOR
QA	QUALITY ASSURANCE
SGV	SOIL GUIDELINE VALUE
SPH	SEPARATE PHASE HYDROCARBON
SP.TPH (CWG)	TOTAL PETROLEUM HYDROCARBON (CRITERIA WORKING GROUP)
SPT	STANDARD PENETRATION TEST
SVOC	SEMI VOLATILE ORGANIC COMPOUND
UST	UNDERGROUND STORAGE TANK
VCCS	VIBRO CONCRETE COLUMNS
VOC	VOLATILE ORGANIC COMPOUND
WTE	WATER TABLE ELEVATION

UNITS

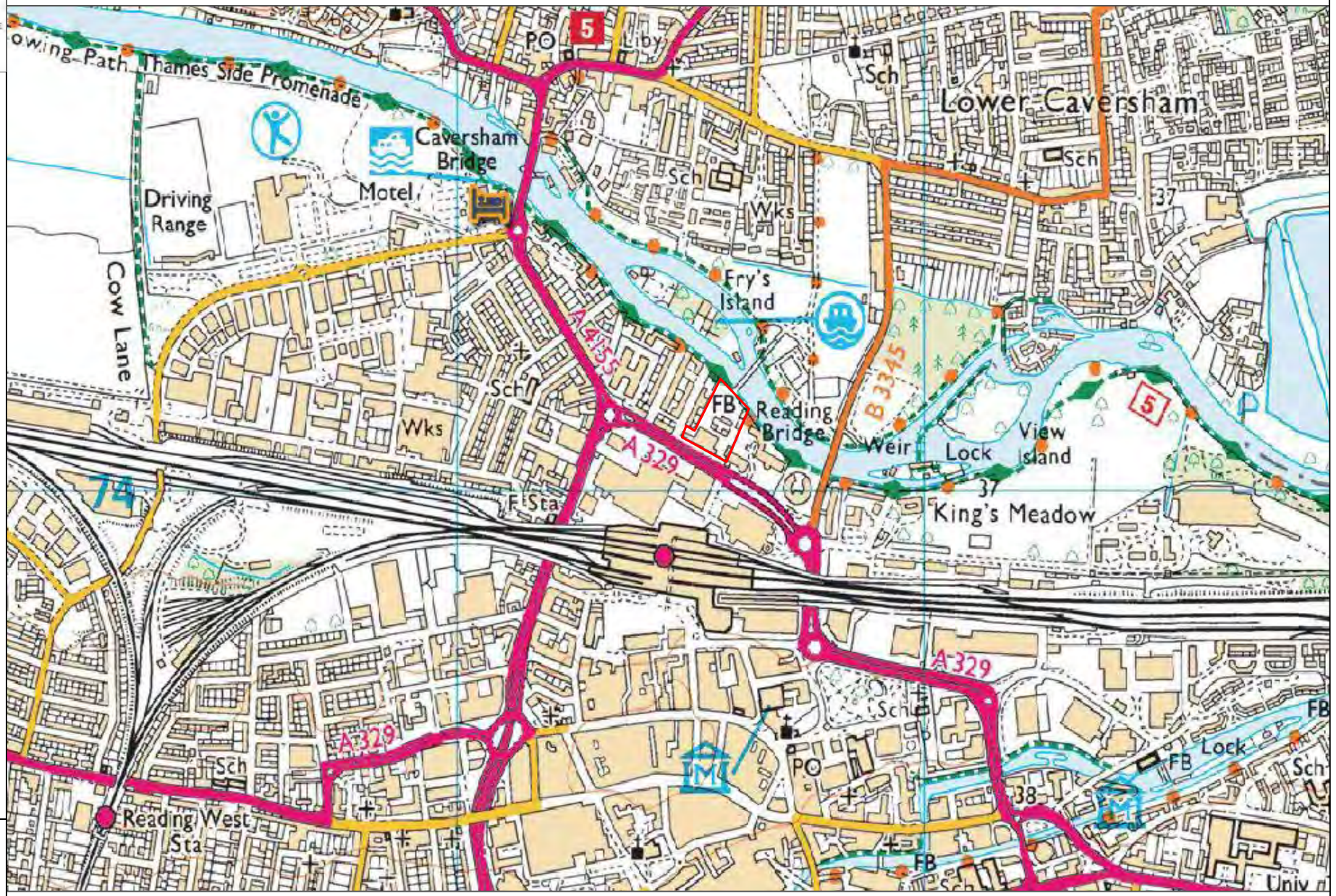
M	METRES
KM	KILOMETRES
%	PERCENT
%V/V	PERCENT VOLUME IN AIR
MB	MILLI BARS (ATMOSPHERIC PRESSURE)
L/HR	LITRES PER HOUR
µG/L	MICROGRAMS PER LITRE (PARTS PER BILLION)
PPB	PARTS PER BILLION
MG/KG	MILLIGRAMS PER KILOGRAM (PARTS PER MILLION)
PPM	PARTS PER MILLION
MG/M^3	MILLIGRAM PER METRE CUBED
M BGL	METRES BELOW GROUND LEVEL

M BCL	METRE BELOW COVER LEVEL
MAOD	METRES ABOVE ORDNANCE DATUM (SEA LEVEL)
KN/M^2	KILO NEWTONS PER METRE SQUARED
µM	MICRO METRE

APPENDIX III

FIGURES

Key



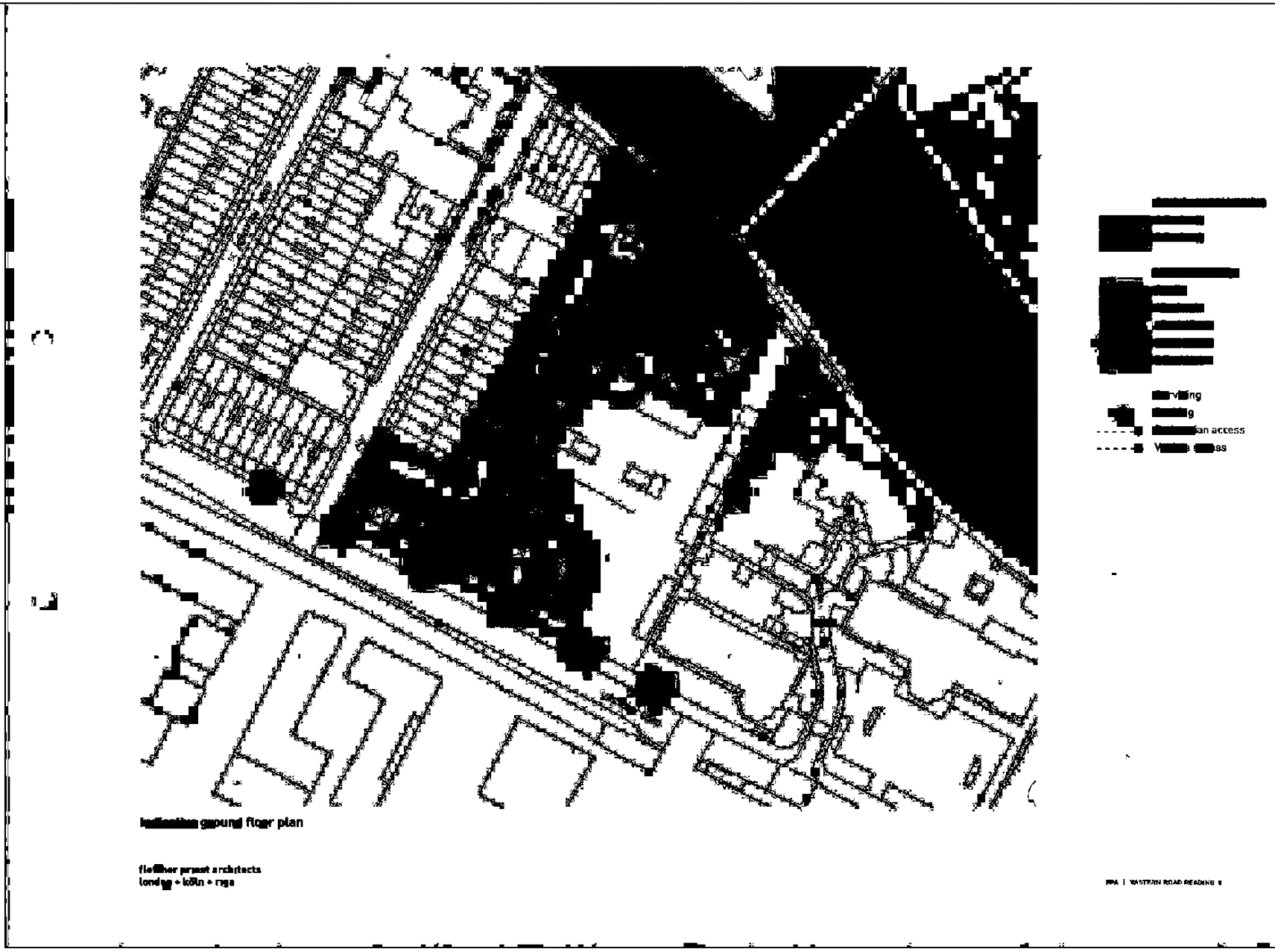
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Job Title:	Client:	Project No:	Date:	Drawing Title:
55 Vastern Road, Reading	Berkeley (Western) Homes	A10967	25/04/2018	Figure 1.0 - Site Location Plan
		Drawn By: K.Duggan	Authorised By: T.Mitchell	
		Scale:	Notes:	

Key



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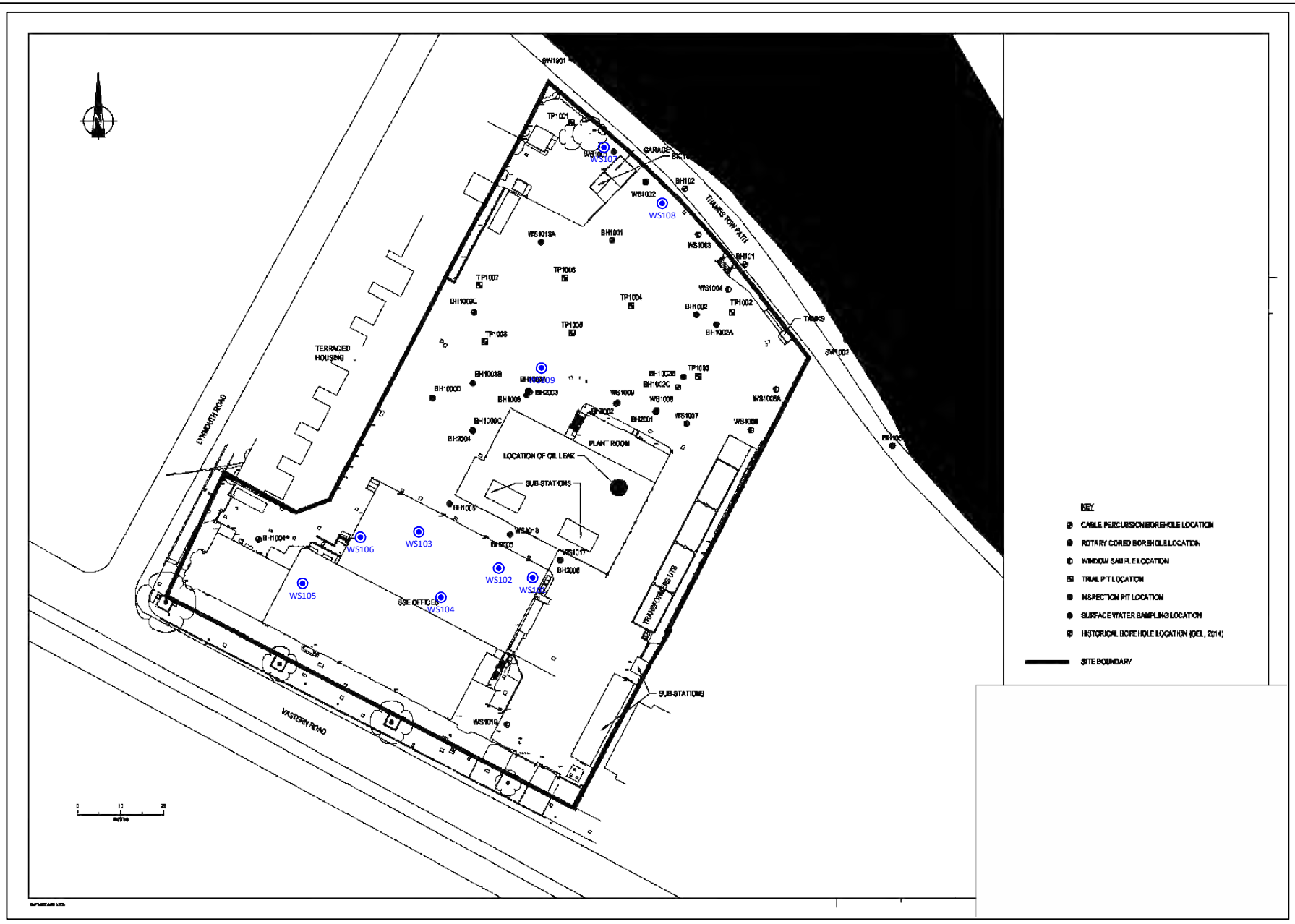
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Job Title:	Client:	Project No:	Date:	Drawing Title:
55 Vastern Road, Reading	Berkeley (Western) Homes	A10967	25/04/2018	Figure 2.0 - Proposed Development
		Drawn By: K.Duggan	Authorised By: T.Mitchell	
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Key

Approximate Window Sample
WS101 Probehole Location



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		Drawn By: K.Duggan	Authorised By: T.Mitchell
		Scale:	Notes:

Drawing Title: Figure 3.1 All Intrusive Locations

Key

WS101 — Approximate Window Sample Probehole Location

Approximate Source Area



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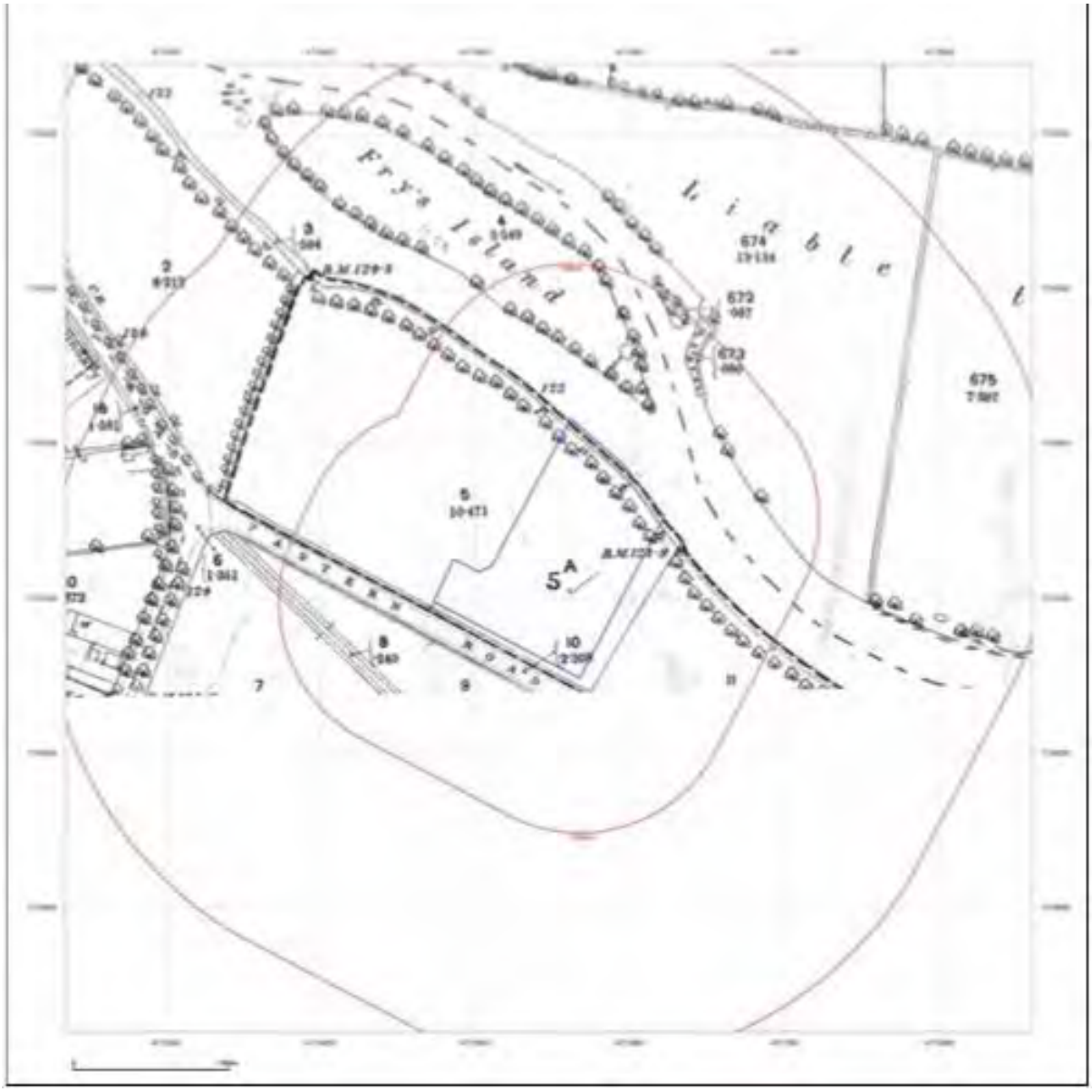
OMNIA ENVIRONMENTAL CONSULTING

Job Title: 55 Vastern Road, Reading	Client: Berkeley (Western) Homes	Project No: A10967	Date: 25/04/2018
		Drawn By: K.Duggan	Authorised By: T.Mitchell
		Scale:	Notes:

Drawing Title: Figure 4.0 - Modelled Source Area

APPENDIX IV

HISTORICAL MAPS



55 Vastern Road
Date: 1877
Scale: 1:2,500
Grid Ref: 471548, 174132

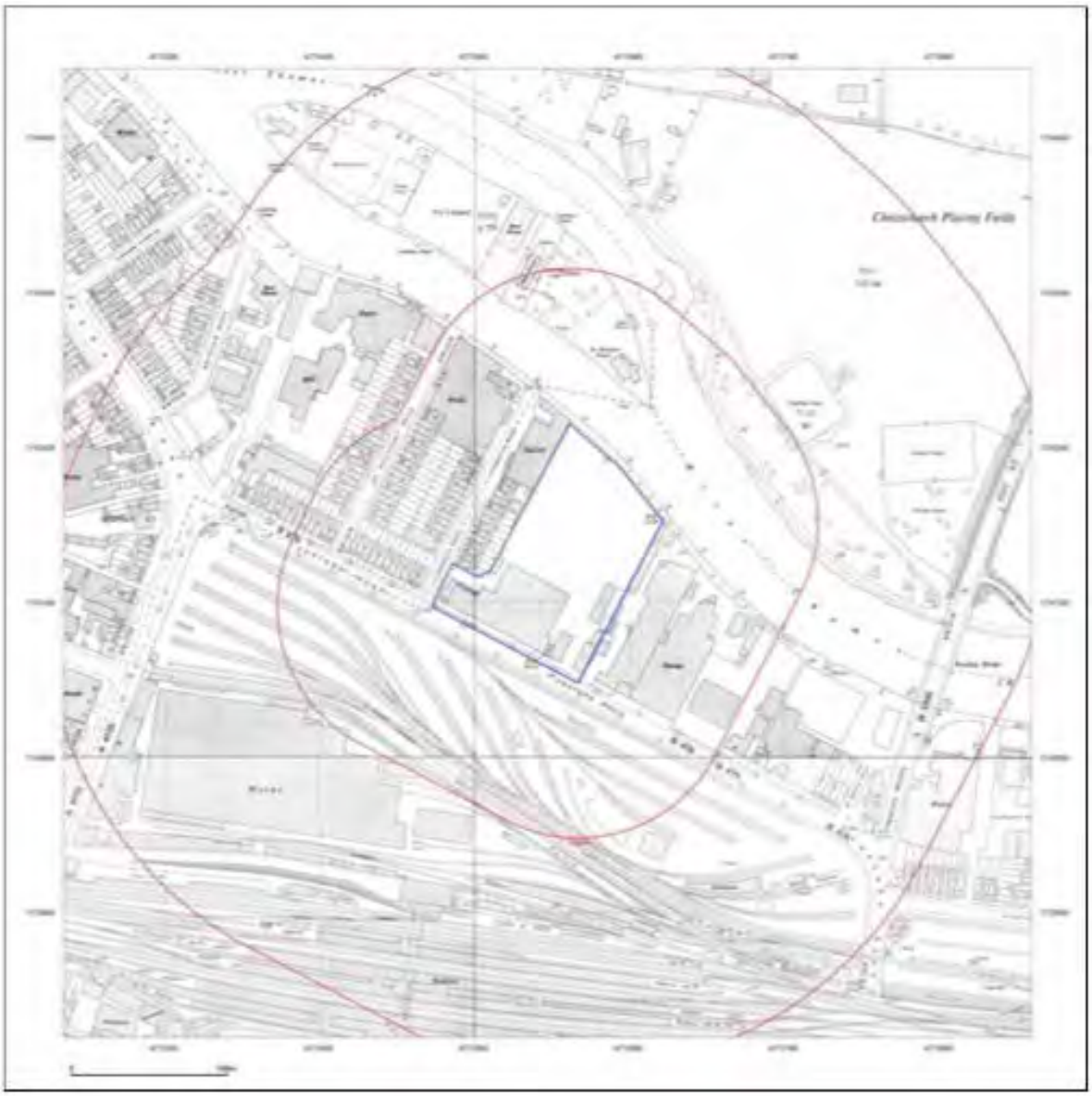


55 Vastern Road
Date: 1899-1900
Scale: 1:2,500
Grid Ref: 471548, 174132

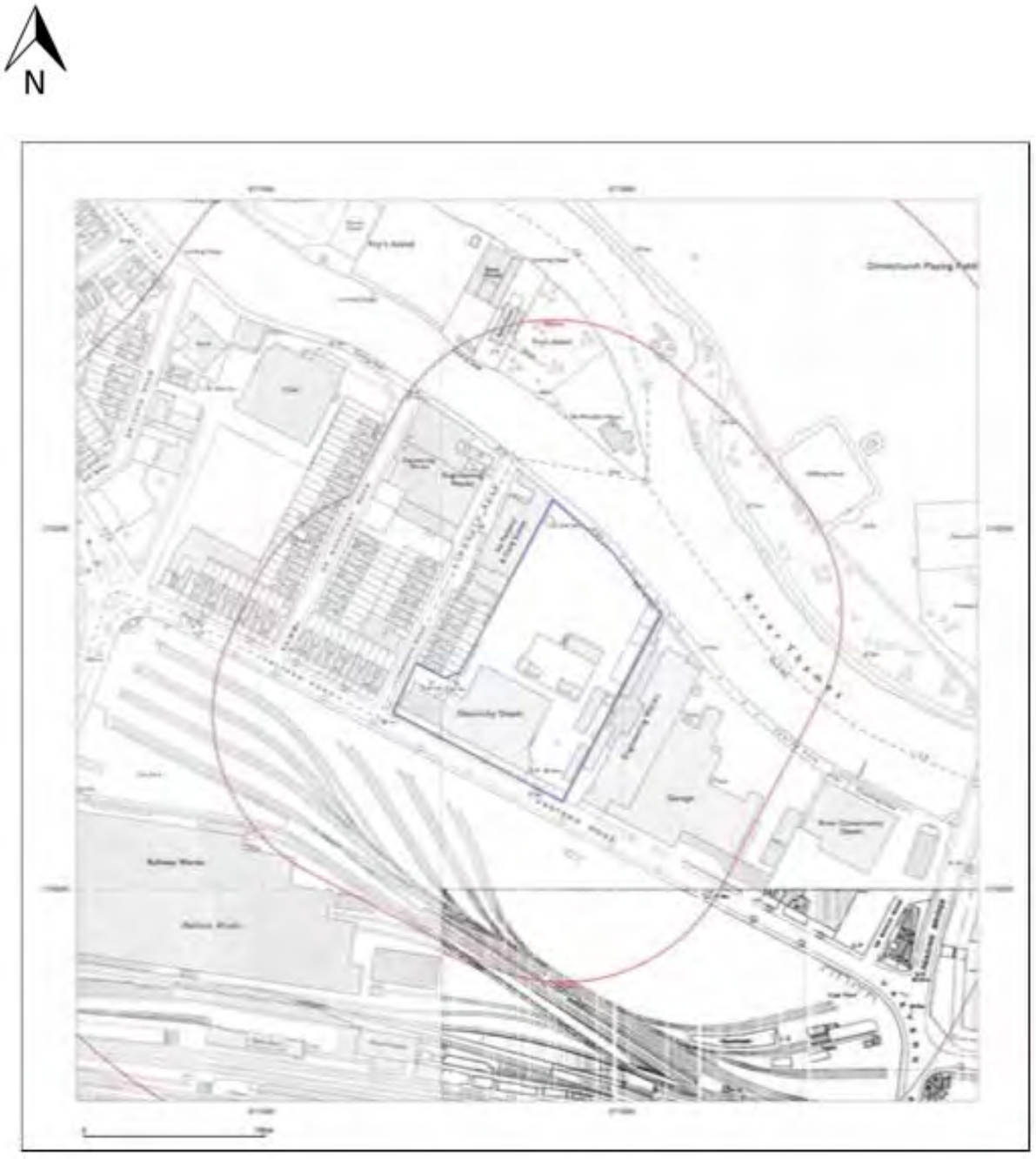


55 Vastern Road
Date: 1931-1932
Scale: 1:2,500
Grid Ref: 471548, 174132





55 Vastern Road
Date: 1956-1957
Scale: 1:2,500
Grid Ref: 471548, 174132



55 Vastern Road
Date: 1969-1972
Scale: 1:2,500
Grid Ref: 471548, 174132



55 Vastern Road
Date: 1989-1993
Scale: 1:2,500
Grid Ref: 471548, 174132



55 Vastern Road
Date: 2010
Scale: 1:10,000
Grid Ref: 471548, 174132



55 Vastern Road
Date: 2014
Scale: 1:10,000
Grid Ref: 471548, 174132

APPENDIX V

CHEMICAL LABORATORY RESULTS

Certificate of Analysis

Certificate Number 18-04338

27-Feb-18

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 18-04338

Client Reference PSL18/0791

Order No (not supplied)

Contract Title SSE Site, Vastern Road, Reading

Description 8 Soil samples.

Date Received 22-Feb-18

Date Started 22-Feb-18

Date Completed 27-Feb-18

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 18-04338
Client Ref PSL18/0791
Contract Title SSE Site, Vastern Road, Reading

				Lab No	1301877	1301878	1301879	1301880	1301881	1301882	1301883	1301884
				Sample ID	BH1001	BH1002C	BH1002C	BH1002C	BH1003E	BH1004	BH1004	BH1005
				Depth	4.00-4.45	0.65-1.10	7.00-7.50	23.50-24.00	1.30-1.40	2.00-2.40	8.50-9.00	5.00-5.50
				Other ID								
				Sample Type	B	B	B	B	B	B	B	B
				Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
				Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**									
Metals												
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	< 10	< 10	< 10	16	14	< 10	< 10
Inorganics												
pH	DETSC 2008#			7.9	8.1	8.4	8.5	8.6	7.4	8.5	8.6
Chloride Aqueous Extract	DETSC 2055	1	mg/l	10	300	5.4	17	110	160	8.8	7.7
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	< 1.0	3.0	< 1.0	< 1.0	3.1	< 1.0	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	34	31	36	25	22	80	25	11
Sulphur as S, Total	DETSC 2320	0.01	%	0.11	0.03	0.01	0.01	0.02	0.08	0.01	< 0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.08	0.06	0.04	0.05	0.05	0.13	0.05	0.02

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 18-04338
Client Ref PSL18/0791
Contract SSE Site, Vastern Road, Reading

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1301877	BH1001 4.00-4.45 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1301878	BH1002C 0.65-1.10 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1301879	BH1002C 7.00-7.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1301880	BH1002C 23.50-24.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1301881	BH1003E 1.30-1.40 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1301882	BH1004 2.00-2.40 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1301883	BH1004 8.50-9.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1301884	BH1005 5.00-5.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 18-04338
Client Ref PSL18/0791
Contract SSE Site, Vastern Road, Reading

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Jon Ind
CC Ground Investigation Ltd
Unit A2
Innsworth Tech Park
Innsworth Lane
Gloucester
GL3 1DL

t: 01452 739 165
f: 01452 739 220
e: jon@ccground.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

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

Combined Report : SSE Site, Vastern Road - Soil

Project / Site name:	SSE Site, Vastern Road, Reading	**Samples received on:**	01/02/2018
Your job number:	C5925	**Samples instructed on:**	02/02/2018
Your order number:	C5925	**Analysis completed by:**	13/02/2018
Report Issue Number:	1	**Report issued on:**	07/03/2018
Samples Analysed:	59 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.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				901082	901097	901098	901150	901151
Sample Reference				BH1003	BH1002A	BH1002C	BH1005	BH1005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.50	1.00	0.70	2.00
Date Sampled				01/02/2018	30/01/2018	30/01/2018	30/01/2018	31/01/2018
Time Taken				None Supplied	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	< 0.1
Moisture Content	%	N/A	NONE	12	9.8	22	12	30
Total mass of sample received	kg	0.001	NONE	1.0	1.3	0.96	0.99	0.80
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile & Crocidolite & Amosite	Chrysotile & Crocidolite	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	0.199	0.009	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	0.199	0.009	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	10.4	9.4	8.2	9.1	7.8
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	480	1900	85	73	84
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.24	0.96	0.042	0.037	0.042
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	241	955	42.4	36.6	41.8
Organic Matter	%	0.1	MCERTS	2.8	4.7	2.7	6.4	1.9
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.22	0.49	0.23	0.31	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.91	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.38	0.21	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.83	0.21	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.9	0.94	11	1.9	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.58	0.18	3.0	0.54	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	3.6	1.5	14	2.7	< 0.05
Pyrene	mg/kg	0.05	MCERTS	3.0	1.2	11	2.4	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.0	1.2	5.9	1.9	< 0.05
Chrysene	mg/kg	0.05	MCERTS	1.8	0.96	5.1	1.6	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.8	1.8	8.1	2.9	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.2	0.67	2.6	1.8	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.0	1.3	5.5	2.4	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.3	0.72	3.3	1.8	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.66	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.1	0.75	2.7	1.6	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	21.4	11.6	74.4	22.3	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	23	19	16	27
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	17	17	20	16	38
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	17	21	17	39
Copper (aqua regia extractable)	mg/kg	1	MCERTS	38	53	37	37	6.7
Lead (aqua regia extractable)	mg/kg	1	MCERTS	140	44	140	94	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.0	5.2	0.5	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	24	25	24	28
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.3	1.3	< 1.0	1.4
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	75	140	300	61	49
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	85000	56000	-	-

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The results included within the report are representative of the samples submitted for analysis.

Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				901082	901097	901098	901150	901151
Sample Reference				BH1003	BH1002A	BH1002C	BH1005	BH1005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.50	1.00	0.70	2.00
Date Sampled				01/02/2018	30/01/2018	30/01/2018	30/01/2018	31/01/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 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	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	1.4	1.2	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	3.4	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	37	97	32	71	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	42	110	45	74	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	2.4	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	2.2	3.4	9.4	5.9	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	13	16	45	30	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	82	320	51	160	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	98	340	110	190	< 10

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The results included within the report are representative of the samples submitted for analysis.

Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				901082	901097	901098	901150	901151
Sample Reference				BH1003	BH1002A	BH1002C	BH1005	BH1005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.50	1.00	0.70	2.00
Date Sampled				01/02/2018	30/01/2018	30/01/2018	30/01/2018	31/01/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				901082	901097	901098	901150	901151
Sample Reference				BH1003	BH1002A	BH1002C	BH1005	BH1005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.50	1.00	0.70	2.00
Date Sampled				01/02/2018	30/01/2018	30/01/2018	30/01/2018	31/01/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				901082	901097	901098	901150	901151
Sample Reference				BH1003	BH1002A	BH1002C	BH1005	BH1005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.50	1.00	0.70	2.00
Date Sampled				01/02/2018	30/01/2018	30/01/2018	30/01/2018	31/01/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				901281	901282	906407	906429	906430
Sample Reference				BH1001	BH1001	BH1003E	WS1003	WS1003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	2.00	1.30	1.00	1.70
Date Sampled				30/01/2018	30/01/2018	05/02/2018	06/02/2018	06/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	31	< 0.1	< 0.1	18	< 0.1
Moisture Content	%	N/A	NONE	9.6	30	12	23	26
Total mass of sample received	kg	0.001	NONE	1.7	1.3	2.0	0.35	1.1
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile & Amosite	-	-	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	1.311	-	-	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	1.31	-	-	< 0.001	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	10.1	7.8	8.7	8.3	8.3
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	330	73	37	230	55
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.17	0.037	0.018	0.12	0.028
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	167	36.7	18.3	116	27.6
Organic Matter	%	0.1	MCERTS	1.5	1.5	0.6	5.2	1.6
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	1.3	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.65	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.56	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	6.2	< 0.05	0.49	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	1.3	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	7.9	< 0.05	0.89	0.49	< 0.05
Pyrene	mg/kg	0.05	MCERTS	6.9	< 0.05	0.84	0.46	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	4.1	< 0.05	0.36	0.48	< 0.05
Chrysene	mg/kg	0.05	MCERTS	4.2	< 0.05	0.54	0.63	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	5.4	< 0.05	0.47	1.2	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	2.6	< 0.05	0.30	0.49	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	4.8	< 0.05	0.52	0.72	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.4	< 0.05	< 0.05	0.59	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.7	< 0.05	< 0.05	0.76	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	51.0	< 0.80	4.41	5.83	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.7	16	19	200	16
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	14	27	20	54	32
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	27	21	55	32
Copper (aqua regia extractable)	mg/kg	1	MCERTS	41	16	58	540	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	440	15	100	510	36
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	24	25	280	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	42	81	330	59
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				901281	901282	906407	906429	906430
Sample Reference				BH1001	BH1001	BH1003E	WS1003	WS1003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	2.00	1.30	1.00	1.70
Date Sampled				30/01/2018	30/01/2018	05/02/2018	06/02/2018	06/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 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	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 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	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	16	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	16	< 10	< 10	10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	6.9	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	6.5	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	29	< 10	11	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	88	< 10	14	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	130	< 10	28	16	< 10

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				901281	901282	906407	906429	906430
Sample Reference				BH1001	BH1001	BH1003E	WS1003	WS1003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	2.00	1.30	1.00	1.70
Date Sampled				30/01/2018	30/01/2018	05/02/2018	06/02/2018	06/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				901281	901282	906407	906429	906430
Sample Reference				BH1001	BH1001	BH1003E	WS1003	WS1003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	2.00	1.30	1.00	1.70
Date Sampled				30/01/2018	30/01/2018	05/02/2018	06/02/2018	06/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

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The results included within the report are representative of the samples submitted for analysis.

Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				901281	901282	906407	906429	906430
Sample Reference				BH1001	BH1001	BH1003E	WS1003	WS1003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	2.00	1.30	1.00	1.70
Date Sampled				30/01/2018	30/01/2018	05/02/2018	06/02/2018	06/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906563	906567	906568	906569	906570
Sample Reference				WS1009	WS1008	BH1003C	TP1003	WS1018
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.45	0.45	0.30	0.15
Date Sampled				05/02/2018	05/02/2018	05/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	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	9.2	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	9.4	12	10	11	2.9
Total mass of sample received	kg	0.001	NONE	1.6	1.3	1.5	2.0	1.1
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	Chrysotile	Chrysotile & Amosite	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	0.009	0.033	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	0.009	0.033	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	10.3	10.4	9.4	10.3	9.3
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	450	820	160	650	190
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.22	0.41	0.078	0.33	0.095
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	224	409	77.7	326	95.2
Organic Matter	%	0.1	MCERTS	0.6	7.4	3.4	2.3	10
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	2.9	< 0.05	0.69	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.59
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	1.4	< 0.05	0.90	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	1.2	< 0.05	1.0	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	6.3	3.4	7.2	1.1
Anthracene	mg/kg	0.05	MCERTS	< 0.05	1.2	0.80	2.0	0.55
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	5.6	4.8	13	4.5
Pyrene	mg/kg	0.05	MCERTS	< 0.05	4.6	3.9	12	4.5
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	3.3	2.7	9.1	4.7
Chrysene	mg/kg	0.05	MCERTS	< 0.05	2.4	1.9	5.7	3.6
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	3.3	2.7	11	7.5
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.9	1.4	4.8	3.2
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	2.6	1.8	8.0	5.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.7	1.6	5.9	3.6
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.4	0.88
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	1.3	1.1	4.3	4.5
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	39.6	26.0	86.7	44.4
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	37	11	21	48	5.0
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.0	< 0.2	< 0.2	1.9	0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	10	17	14	18	4.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	10	17	14	18	4.5
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	34	100	41	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	66	41	380	150	14
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	16	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	32	23	22	6.9
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	210	110	110	550	49
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906563	906567	906568	906569	906570
Sample Reference				WS1009	WS1008	BH1003C	TP1003	WS1018
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.45	0.45	0.30	0.15
Date Sampled				05/02/2018	05/02/2018	05/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 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	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	6.3	< 1.0	1.8	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	14	140	< 2.0	110	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	49	390	16	300	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	68	350	100	200	180
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	130	890	120	610	190

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	1.8	7.3	< 1.0	1.6	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	20	51	9.2	65	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	51	150	46	220	19
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	80	210	180	260	750
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	150	420	240	540	770

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906563	906567	906568	906569	906570
Sample Reference				WS1009	WS1008	BH1003C	TP1003	WS1018
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.45	0.45	0.30	0.15
Date Sampled				05/02/2018	05/02/2018	05/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Chloroethane	µg/kg	1	NONE	-	-	< 1.0	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	< 1.0	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-	-
Benzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Styrene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Tribromomethane	µg/kg	1	NONE	-	-	< 1.0	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906563	906567	906568	906569	906570
Sample Reference				WS1009	WS1008	BH1003C	TP1003	WS1018
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.45	0.45	0.30	0.15
Date Sampled				05/02/2018	05/02/2018	05/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	< 0.1	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	0.4	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	< 0.3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	3.4	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	0.80	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	0.6	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	0.8	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	4.8	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	3.9	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	< 0.3	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	2.7	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	1.9	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	2.7	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	1.4	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	1.8	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	1.6	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	1.1	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906563	906567	906568	906569	906570
Sample Reference				WS1009	WS1008	BH1003C	TP1003	WS1018
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.45	0.45	0.30	0.15
Date Sampled				05/02/2018	05/02/2018	05/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-	-	< 0.007	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906571	906572	906573	906574	906578
Sample Reference				WS1007	WS1007	WS1002	WS017	WS1006
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	1.00	0.50	0.20	0.50
Date Sampled				05/02/2018	05/02/2018	07/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	16	< 0.1	< 0.1	19	42
Moisture Content	%	N/A	NONE	7.5	13	16	6.5	4.5
Total mass of sample received	kg	0.001	NONE	1.3	1.5	0.92	1.4	1.6
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile & Amosite & Crocidolite	Chrysotile	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	0.440	< 0.001	0.002
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	0.440	< 0.001	0.002
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	9.2	8.7	8.5	11.3	10.4
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	330	54	170	200	240
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.17	0.027	0.085	0.10	0.12
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	167	26.9	84.6	101	119
Organic Matter	%	0.1	MCERTS	1.0	0.5	6.5	4.1	1.0
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.40	0.44	0.29
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.44	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.21	0.27	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.20	0.33	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.46	< 0.05	3.1	4.5	1.8
Anthracene	mg/kg	0.05	MCERTS	0.18	< 0.05	0.59	1.2	0.40
Fluoranthene	mg/kg	0.05	MCERTS	1.4	< 0.05	4.7	11	2.8
Pyrene	mg/kg	0.05	MCERTS	1.5	< 0.05	6.3	9.2	2.6
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.5	< 0.05	3.8	8.2	1.8
Chrysene	mg/kg	0.05	MCERTS	1.4	< 0.05	2.6	5.7	0.97
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	3.6	< 0.05	3.6	11	1.9
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.2	< 0.05	1.7	5.0	0.80
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.2	< 0.05	2.9	7.7	1.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.6	< 0.05	1.6	6.1	0.82
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.51	< 0.05	0.48	1.6	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.2	< 0.05	1.4	3.8	0.74
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	16.8	< 0.80	33.5	77.3	16.3
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.8	9.7	47	12	10
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	1.3	0.3	0.5
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	20	8.2	41	17	7.6
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	8.3	41	17	7.6
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	15	250	180	25
Lead (aqua regia extractable)	mg/kg	1	MCERTS	33	44	500	96	310
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.9	11	98	29	7.8
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	42	36	470	130	140
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906571	906572	906573	906574	906578
Sample Reference				WS1007	WS1007	WS1002	WS017	WS1006
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	1.00	0.50	0.20	0.50
Date Sampled				05/02/2018	05/02/2018	07/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 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	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	8.9	3.4	2.1
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	12	< 8.0	120	46	20
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	33	< 8.0	240	94	49
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	45	< 10	370	140	73

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 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	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	13	8.0	5.7
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	19	< 10	210	61	25
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	110	< 10	440	180	100
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	130	< 10	660	250	130

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906571	906572	906573	906574	906578
Sample Reference				WS1007	WS1007	WS1002	WS017	WS1006
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	1.00	0.50	0.20	0.50
Date Sampled				05/02/2018	05/02/2018	07/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Chloroethane	µg/kg	1	NONE	< 1.0	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	-
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Styrene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Tribromomethane	µg/kg	1	NONE	< 1.0	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906571	906572	906573	906574	906578
Sample Reference				WS1007	WS1007	WS1002	WS017	WS1006
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	1.00	0.50	0.20	0.50
Date Sampled				05/02/2018	05/02/2018	07/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	0.46	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	0.18	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	1.4	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	1.5	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.5	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	1.4	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	3.6	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.2	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.2	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.6	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.51	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.2	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906571	906572	906573	906574	906578
Sample Reference				WS1007	WS1007	WS1002	WS017	WS1006
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	1.00	0.50	0.20	0.50
Date Sampled				05/02/2018	05/02/2018	07/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	< 0.007	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906579	906580	906581	906587	906588
Sample Reference				TP1005	BH1004	BH1004	WS1019	WS1019
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.60	2.00	0.50	1.80
Date Sampled				09/02/2018	05/02/2018	05/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	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	< 0.1
Moisture Content	%	N/A	NONE	12	22	38	13	41
Total mass of sample received	kg	0.001	NONE	2.0	1.1	2.0	1.7	0.93
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile & Amosite & Crocidolite	Chrysotile	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.156	< 0.001	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	0.156	< 0.001	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	9.6	8.4	7.7	10.4	7.9
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	450	110	170	270	410
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.23	0.053	0.084	0.13	0.20
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	227	53.2	83.9	133	203
Organic Matter	%	0.1	MCERTS	1.2	6.3	4.7	2.9	5.7
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.47	0.31	0.41	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.42	0.63	0.83	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.37	0.12	0.71	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.42	0.23	1.7	0.19	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	4.1	3.2	12	3.3	0.96
Anthracene	mg/kg	0.05	MCERTS	1.0	0.73	2.4	1.2	0.24
Fluoranthene	mg/kg	0.05	MCERTS	6.3	7.5	12	12	1.0
Pyrene	mg/kg	0.05	MCERTS	5.6	6.3	8.7	10	0.92
Benzo(a)anthracene	mg/kg	0.05	MCERTS	4.6	5.0	5.8	8.0	0.55
Chrysene	mg/kg	0.05	MCERTS	2.4	3.0	3.2	5.1	0.38
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	5.7	6.3	5.5	9.8	0.61
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.8	2.4	2.1	4.7	0.16
Benzo(a)pyrene	mg/kg	0.05	MCERTS	4.2	4.3	3.9	7.1	0.37
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.8	3.0	1.9	5.0	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.60	0.78	0.54	1.2	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.9	2.4	1.6	3.6	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	42.3	46.1	62.1	72.1	5.20
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	27	16	21	17
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	21	21	43	22	47
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	21	43	23	47
Copper (aqua regia extractable)	mg/kg	1	MCERTS	37	340	20	96	36
Lead (aqua regia extractable)	mg/kg	1	MCERTS	1100	1800	95	470	80
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.9	14	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	34	27	25	30
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	480	330	79	170	85
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906579	906580	906581	906587	906588
Sample Reference				TP1005	BH1004	BH1004	WS1019	WS1019
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.60	2.00	0.50	1.80
Date Sampled				09/02/2018	05/02/2018	05/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 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	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	1.4	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	5.8	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	24	< 8.0	< 8.0	8.4	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	90	22	< 8.0	35	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	120	23	< 10	44	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	1.9	3.6	2.1	< 1.0	1.5
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	12	11	18	5.1	6.2
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	50	64	120	67	15
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	180	120	190	170	40
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	240	200	330	250	62

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906579	906580	906581	906587	906588
Sample Reference				TP1005	BH1004	BH1004	WS1019	WS1019
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.60	2.00	0.50	1.80
Date Sampled				09/02/2018	05/02/2018	05/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
Chloroethane	µg/kg	1	NONE	-	-	< 1.0	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	-	-	< 1.0	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	< 1.0	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	< 1.0	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	< 1.0	< 1.0	-
Benzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	-	-	< 1.0	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Styrene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Tribromomethane	µg/kg	1	NONE	-	-	< 1.0	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	< 1.0	< 1.0	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906579	906580	906581	906587	906588
Sample Reference				TP1005	BH1004	BH1004	WS1019	WS1019
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.60	2.00	0.50	1.80
Date Sampled				09/02/2018	05/02/2018	05/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	< 0.1	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	< 0.3	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2	< 0.2	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	0.41	< 0.05	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	< 0.2	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	0.5	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	0.63	0.83	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	0.71	< 0.05	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	< 0.2	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	1.0	< 0.2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	< 0.3	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	< 0.2	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	< 0.2	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	-	-	1.7	0.19	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	12	3.3	-
Anthracene	mg/kg	0.05	MCERTS	-	-	2.4	1.2	-
Carbazole	mg/kg	0.3	MCERTS	-	-	1.3	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	< 0.2	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	1.7	< 0.3	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	12	12	-
Pyrene	mg/kg	0.05	MCERTS	-	-	8.7	10	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	< 0.3	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	5.8	8.0	-
Chrysene	mg/kg	0.05	MCERTS	-	-	3.2	5.1	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	5.5	9.8	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	2.1	4.7	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	3.9	7.1	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	1.9	5.0	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	0.54	1.2	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	1.6	3.6	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906579	906580	906581	906587	906588
Sample Reference				TP1005	BH1004	BH1004	WS1019	WS1019
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.60	2.00	0.50	1.80
Date Sampled				09/02/2018	05/02/2018	05/02/2018	07/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-	-	< 0.007	< 0.007	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906589	906590	906591	906592	906623
Sample Reference				TP1001	WS1004	WS1005	WS1005	TP1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.20	0.30	0.50	1.50
Date Sampled				05/02/2018	06/02/2018	08/02/2018	08/02/2018	07/02/2018
Time Taken				None Supplied	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	23	44	30	< 0.1
Moisture Content	%	N/A	NONE	22	12	2.0	4.5	31
Total mass of sample received	kg	0.001	NONE	2.0	0.88	2.0	1.6	1.9
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile & Crocidolite	-	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	0.667	-	0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	0.667	-	0.001	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.4	10.9	9.1	9.2	7.3
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	55	570	82	91	830
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.028	0.28	0.041	0.046	0.42
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	27.5	283	40.9	45.7	417
Organic Matter	%	0.1	MCERTS	1.4	3.1	0.4	1.0	5.4
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.20	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.54	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.20	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	1.3	< 0.05	2.4	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.39	< 0.05	0.67	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	3.5	< 0.05	4.6	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	4.2	< 0.05	3.9	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	2.7	< 0.05	2.7	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	1.7	< 0.05	1.8	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	2.9	< 0.05	3.0	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.2	< 0.05	1.3	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	2.3	< 0.05	2.3	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.4	< 0.05	1.4	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	1.1	< 0.05	1.1	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	23.2	< 0.80	25.5	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.7	33	6.4	9.8	17
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	1.4	0.8	0.8	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	23	28	4.4	9.1	32
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	29	4.4	9.2	33
Copper (aqua regia extractable)	mg/kg	1	MCERTS	10	71	14	31	25
Lead (aqua regia extractable)	mg/kg	1	MCERTS	37	380	25	100	120
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	36	4.6	10	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	56	750	130	170	66
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906589	906590	906591	906592	906623
Sample Reference				TP1001	WS1004	WS1005	WS1005	TP1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.20	0.30	0.50	1.50
Date Sampled				05/02/2018	06/02/2018	08/02/2018	08/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 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	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	1.7	< 1.0	3.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	2.3	< 2.0	4.6	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	9.0	< 8.0	69	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	65	< 8.0	110	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	78	< 10	180	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	1.6	< 1.0	1.2	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	8.8	< 2.0	9.8	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	38	< 10	52	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	170	< 10	120	16
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	220	< 10	190	20

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906589	906590	906591	906592	906623
Sample Reference				TP1001	WS1004	WS1005	WS1005	TP1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.20	0.30	0.50	1.50
Date Sampled				05/02/2018	06/02/2018	08/02/2018	08/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906589	906590	906591	906592	906623
Sample Reference				TP1001	WS1004	WS1005	WS1005	TP1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.20	0.30	0.50	1.50
Date Sampled				05/02/2018	06/02/2018	08/02/2018	08/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906589	906590	906591	906592	906623
Sample Reference				TP1001	WS1004	WS1005	WS1005	TP1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.20	0.30	0.50	1.50
Date Sampled				05/02/2018	06/02/2018	08/02/2018	08/02/2018	07/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906626	906627	906634	908320	908321
Sample Reference				WS013	TP1007	TP1008	TP1002	TP1002
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.20	1.50	0.80	1.70
Date Sampled				08/02/2018	09/02/2018	09/02/2018	12/02/2018	12/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	63	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	4.3	11	13	7.6	27
Total mass of sample received	kg	0.001	NONE	1.7	2.0	2.0	2.0	1.9
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile & Amosite	-	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	< 0.001	-	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	< 0.001	-	< 0.001	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	11.3	9.6	8.8	8.6	7.9
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	290	140	28	1200	370
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.14	0.072	0.014	0.58	0.18
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	143	72.2	14.2	582	184
Organic Matter	%	0.1	MCERTS	1.7	2.6	0.7	2.7	4.4
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.33	5.5	< 0.05	0.29	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	1.0	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.42	3.6	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.37	4.1	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	5.8	28	< 0.05	0.50	< 0.05
Anthracene	mg/kg	0.05	MCERTS	1.5	11	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	11	36	< 0.05	0.74	< 0.05
Pyrene	mg/kg	0.05	MCERTS	9.0	33	< 0.05	0.69	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	6.3	43	< 0.05	0.41	< 0.05
Chrysene	mg/kg	0.05	MCERTS	4.4	23	< 0.05	0.49	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	8.6	67	< 0.05	0.67	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	2.4	14	< 0.05	0.31	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	6.0	44	< 0.05	0.57	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	3.5	29	< 0.05	0.32	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.1	7.9	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.7	20	< 0.05	0.47	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	63.1	370	< 0.80	5.46	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	8.7	17	14	12
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.3	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	21	12	24	15	30
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	12	24	15	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	49	30	29	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	23	130	180	64	43
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	2.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20	14	26	23	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	200	77	160	65
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906626	906627	906634	908320	908321
Sample Reference				WS013	TP1007	TP1008	TP1002	TP1002
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.20	1.50	0.80	1.70
Date Sampled				08/02/2018	09/02/2018	09/02/2018	12/02/2018	12/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 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	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	6.7	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	21	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	9.6	110	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	120	290	< 8.0	57	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	130	420	< 10	65	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	4.1	6.7	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	17	44	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	89	410	< 10	11	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	480	1200	< 10	87	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	590	1600	< 10	100	< 10

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906626	906627	906634	908320	908321
Sample Reference				WS013	TP1007	TP1008	TP1002	TP1002
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.20	1.50	0.80	1.70
Date Sampled				08/02/2018	09/02/2018	09/02/2018	12/02/2018	12/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Chloroethane	µg/kg	1	NONE	< 1.0	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	-
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Styrene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Tribromomethane	µg/kg	1	NONE	< 1.0	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906626	906627	906634	908320	908321
Sample Reference				WS013	TP1007	TP1008	TP1002	TP1002
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.20	1.50	0.80	1.70
Date Sampled				08/02/2018	09/02/2018	09/02/2018	12/02/2018	12/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	0.33	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	0.5	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	0.42	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	0.9	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	0.37	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	5.8	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	1.5	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	1.5	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	11	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	9.0	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	6.3	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	4.4	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	8.6	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	2.4	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	6.0	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	3.5	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.1	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.7	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				906626	906627	906634	908320	908321
Sample Reference				WS013	TP1007	TP1008	TP1002	TP1002
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.20	1.50	0.80	1.70
Date Sampled				08/02/2018	09/02/2018	09/02/2018	12/02/2018	12/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	< 0.007	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908408	908409	908422	908442	908443
Sample Reference				TP1005	WS1002	WS1006	TP1008	W1001
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	1.70	1.90	0.40	0.20
Date Sampled				09/02/2018	07/02/2018	08/02/2018	09/02/2018	08/02/2018
Time Taken				None Supplied	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	< 0.1
Moisture Content	%	N/A	NONE	11	22	28	12	14
Total mass of sample received	kg	0.001	NONE	1.9	0.97	1.2	1.8	1.3
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile & Amosite	Chrysotile	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Not-detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.013	< 0.001	-	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	0.013	< 0.001	-	-	< 0.001
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	10.2	7.0	7.8	11.2	8.3
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	480	760	580	250	38
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.24	0.38	0.29	0.12	0.019
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	241	381	288	124	18.9
Organic Matter	%	0.1	MCERTS	1.2	13	2.4	0.8	5.1
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	1.2	3.0	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.36	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.97	14	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.98	10	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	11	140	0.45	< 0.05	1.4
Anthracene	mg/kg	0.05	MCERTS	2.5	37	< 0.05	< 0.05	0.27
Fluoranthene	mg/kg	0.05	MCERTS	15	160	0.60	0.33	2.6
Pyrene	mg/kg	0.05	MCERTS	13	150	0.55	0.31	2.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	8.3	88	0.24	< 0.05	1.3
Chrysene	mg/kg	0.05	MCERTS	6.9	71	0.28	< 0.05	1.5
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	7.6	74	0.39	< 0.05	1.7
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	5.1	40	0.50	< 0.05	0.65
Benzo(a)pyrene	mg/kg	0.05	MCERTS	8.2	81	0.26	< 0.05	1.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	4.8	33	0.14	< 0.05	0.82
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.3	8.2	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	5.6	44	0.18	< 0.05	1.1
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	92.3	962	3.59	< 0.80	15.2
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.1	28	11	12	34
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.0	< 0.2	< 0.2	< 0.2	4.0
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	14	17	23	11	28
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	17	23	11	29
Copper (aqua regia extractable)	mg/kg	1	MCERTS	170	94	17	54	140
Lead (aqua regia extractable)	mg/kg	1	MCERTS	330	180	24	240	240
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	7.6	< 0.3	< 0.3	< 0.3	17
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12	37	20	15	97
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.1	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	180	130	58	38	1200
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908408	908409	908422	908442	908443
Sample Reference				TP1005	WS1002	WS1006	TP1008	W1001
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	1.70	1.90	0.40	0.20
Date Sampled				09/02/2018	07/02/2018	08/02/2018	09/02/2018	08/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 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	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	1.1	46	< 1.0	1.8	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	28	89	< 2.0	7.2	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	120	1000	< 8.0	36	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	360	11000	< 8.0	150	9.2
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	500	12000	< 10	200	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	8.6	28	1.1	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	34	280	4.7	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	210	1900	14	< 10	13
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	560	8200	110	62	27
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	810	10000	130	71	41

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908408	908409	908422	908442	908443
Sample Reference				TP1005	WS1002	WS1006	TP1008	W1001
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	1.70	1.90	0.40	0.20
Date Sampled				09/02/2018	07/02/2018	08/02/2018	09/02/2018	08/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908408	908409	908422	908442	908443
Sample Reference				TP1005	WS1002	WS1006	TP1008	W1001
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	1.70	1.90	0.40	0.20
Date Sampled				09/02/2018	07/02/2018	08/02/2018	09/02/2018	08/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	-	-
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
Naphthalene	mg/kg	0.05	MCERTS	1.2	3.0	< 0.05	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	0.5	6.5	< 0.1	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.36	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	0.97	14	< 0.05	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	0.6	7.5	< 0.2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
Fluorene	mg/kg	0.05	MCERTS	0.98	10	< 0.05	-	-
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
Phenanthrene	mg/kg	0.05	MCERTS	11	140	0.45	-	-
Anthracene	mg/kg	0.05	MCERTS	2.5	37	< 0.05	-	-
Carbazole	mg/kg	0.3	MCERTS	1.1	4.1	< 0.3	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	11	< 0.3	-	-
Fluoranthene	mg/kg	0.05	MCERTS	15	160	0.60	-	-
Pyrene	mg/kg	0.05	MCERTS	13	150	0.55	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	8.3	88	0.24	-	-
Chrysene	mg/kg	0.05	MCERTS	6.9	71	0.28	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	7.6	74	0.39	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	5.1	40	0.50	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	8.2	81	0.26	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	4.8	33	0.14	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.3	8.2	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	5.6	44	0.18	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908408	908409	908422	908442	908443
Sample Reference				TP1005	WS1002	WS1006	TP1008	W1001
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	1.70	1.90	0.40	0.20
Date Sampled				09/02/2018	07/02/2018	08/02/2018	09/02/2018	08/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	< 0.007	< 0.007	< 0.007	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908444	908445	908458	908459	908460
Sample Reference				W1001	TP1001	BH2003	BH2003	BH2003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.50	2.40	3.50	4.20
Date Sampled				08/02/2018	07/02/2018	13/02/2018	13/02/2018	13/02/2018
Time Taken				None Supplied	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	43	< 0.1
Moisture Content	%	N/A	NONE	17	8.5	32	6.5	3.5
Total mass of sample received	kg	0.001	NONE	1.4	1.8	2.0	2.0	2.0
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile & Amosite & Crocidolite	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	0.001	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	0.001	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.3	10.1	8.3	8.0	7.6
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	65	660	110	130	19
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.032	0.33	0.053	0.064	0.0096
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	32.3	329	53.2	63.8	9.6
Organic Matter	%	0.1	MCERTS	2.5	3.5	2.2	1.0	0.3
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.75	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.56	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.31	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	4.1	1.6	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.88	0.36	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	3.8	2.3	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	3.3	2.1	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.6	1.0	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	1.7	1.2	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.4	1.4	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.92	0.55	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.6	1.3	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.66	0.66	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.93	0.89	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	22.4	13.4	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	20	18	30	38
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.5	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	22	20	33	32	26
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	21	33	32	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	61	59	8.9	5.0	3.5
Lead (aqua regia extractable)	mg/kg	1	MCERTS	90	400	15	14	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	29	25	41	34
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	83	390	63	56	45
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908444	908445	908458	908459	908460
Sample Reference				W1001	TP1001	BH2003	BH2003	BH2003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.50	2.40	3.50	4.20
Date Sampled				08/02/2018	07/02/2018	13/02/2018	13/02/2018	13/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 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	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	2.4	2.3	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	100	140	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	370	960	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	15	71	32	60	11
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	18	75	510	1200	15

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	1.3	< 1.0	4.1	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	7.5	2.2	450	790	5.4
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	26	18	370	730	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	38	77	19	41	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	73	97	850	1600	13

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908444	908445	908458	908459	908460
Sample Reference				W1001	TP1001	BH2003	BH2003	BH2003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.50	2.40	3.50	4.20
Date Sampled				08/02/2018	07/02/2018	13/02/2018	13/02/2018	13/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Chloroethane	µg/kg	1	NONE	-	-	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	-
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Styrene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Tribromomethane	µg/kg	1	NONE	-	-	-	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908444	908445	908458	908459	908460
Sample Reference				W1001	TP1001	BH2003	BH2003	BH2003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.50	2.40	3.50	4.20
Date Sampled				08/02/2018	07/02/2018	13/02/2018	13/02/2018	13/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908444	908445	908458	908459	908460
Sample Reference				W1001	TP1001	BH2003	BH2003	BH2003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.50	2.40	3.50	4.20
Date Sampled				08/02/2018	07/02/2018	13/02/2018	13/02/2018	13/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	< 0.007	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908464	908465	908508	908650	908667
Sample Reference				BH2001	BH2001	BH2004	BH1003E	W1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	4.00	0.60	1.00
Date Sampled				13/02/2017	13/02/2017	13/02/2018	05/02/2018	06/02/2018
Time Taken				None Supplied	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	53	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	26	35	3.5	10	12
Total mass of sample received	kg	0.001	NONE	2.0	1.9	2.0	2.0	1.0
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	< 0.001
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.4	8.0	8.8	9.3	8.5
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	34	260	41	210	120
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.017	0.13	0.021	0.11	0.062
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	16.9	132	20.6	106	62.4
Organic Matter	%	0.1	MCERTS	1.6	3.3	0.2	1.0	1.7
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.48	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.53	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	4.7	0.47
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.3	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	5.1	0.75
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	4.3	0.67
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	2.4	0.34
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	2.3	0.37
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	2.4	0.47
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.2	0.21
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	2.4	0.37
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.1	0.24
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.27	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.2	0.26
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	29.5	4.15
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	14	15	26	24
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	26	35	17	20	21
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	26	35	17	20	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	20	19	34	29
Lead (aqua regia extractable)	mg/kg	1	MCERTS	24	38	12	190	75
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	25	21	24	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	50	63	23	100	700
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908464	908465	908508	908650	908667
Sample Reference				BH2001	BH2001	BH2004	BH1003E	W1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	4.00	0.60	1.00
Date Sampled				13/02/2017	13/02/2017	13/02/2018	05/02/2018	06/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 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	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 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	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	19	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	21	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 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	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	24	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	55	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	82	< 10

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908464	908465	908508	908650	908667
Sample Reference				BH2001	BH2001	BH2004	BH1003E	W1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	4.00	0.60	1.00
Date Sampled				13/02/2017	13/02/2017	13/02/2018	05/02/2018	06/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
Chloroethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Styrene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Tribromomethane	µg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	< 1.0	-	< 1.0

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908464	908465	908508	908650	908667
Sample Reference				BH2001	BH2001	BH2004	BH1003E	W1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	4.00	0.60	1.00
Date Sampled				13/02/2017	13/02/2017	13/02/2018	05/02/2018	06/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2	< 0.2	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2	< 0.2	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1	< 0.1	-	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0.3	< 0.3	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	0.47
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	< 0.05
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	0.75
Pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	0.67
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0.3	< 0.3	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	0.34
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	0.37
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	0.47
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	0.21
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	0.37
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	0.24
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	0.26

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908464	908465	908508	908650	908667
Sample Reference				BH2001	BH2001	BH2004	BH1003E	W1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	4.00	0.60	1.00
Date Sampled				13/02/2017	13/02/2017	13/02/2018	05/02/2018	06/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	< 0.001
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-	< 0.007	< 0.007	-	< 0.007

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908686	908687	908688	909146	909147
Sample Reference				BH2002	BH2002	BH2002	BH2005	BH2005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	2.20	1.75	1.90
Date Sampled				12/02/2018	12/02/2018	12/02/2018	14/02/2018	14/02/2018
Time Taken				None Supplied	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	< 0.1
Moisture Content	%	N/A	NONE	20	34	29	29	23
Total mass of sample received	kg	0.001	NONE	1.9	2.0	1.6	1.7	1.8
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.9	8.2	8.0	7.9	7.8
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	130	70	170	160	110
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.065	0.035	0.084	0.081	0.057
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	64.9	34.8	83.6	81.1	56.6
Organic Matter	%	0.1	MCERTS	0.3	1.6	2.3	2.9	5.5
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.27	< 0.05	< 0.05	0.45	0.29
Pyrene	mg/kg	0.05	MCERTS	0.29	< 0.05	< 0.05	0.45	0.27
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.33	0.17
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.41	0.26
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.66	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.22	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.50	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.30	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.33	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	3.65	0.99
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.6	17	11	17	21
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	0.3
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	3.2	26	32	27	14
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	3.6	26	32	27	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	50	11	15	47	190
Lead (aqua regia extractable)	mg/kg	1	MCERTS	43	16	16	140	730
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	21	24	29	37
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	36	54	55	78	200
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	-

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908686	908687	908688	909146	909147
Sample Reference				BH2002	BH2002	BH2002	BH2005	BH2005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	2.20	1.75	1.90
Date Sampled				12/02/2018	12/02/2018	12/02/2018	14/02/2018	14/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 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	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	4.0	< 1.0	< 1.0	16
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	10	60	< 2.0	< 2.0	860
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	14	66	< 8.0	< 8.0	2200
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	9.9	8.3	< 8.0	< 8.0	97
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	34	140	< 10	< 10	3200

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 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	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	5.4	< 1.0	< 1.0	47
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	31	< 2.0	53	3600
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	52	< 10	110	3900
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	13	< 10	< 10	91
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	100	< 10	160	7600

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Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908686	908687	908688	909146	909147
Sample Reference				BH2002	BH2002	BH2002	BH2005	BH2005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	2.20	1.75	1.90
Date Sampled				12/02/2018	12/02/2018	12/02/2018	14/02/2018	14/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908686	908687	908688	909146	909147
Sample Reference				BH2002	BH2002	BH2002	BH2005	BH2005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	2.20	1.75	1.90
Date Sampled				12/02/2018	12/02/2018	12/02/2018	14/02/2018	14/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	-	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	-	-	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	0.27	-	-	-	0.29
Pyrene	mg/kg	0.05	MCERTS	0.29	-	-	-	0.27
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	-	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	0.17
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	0.26
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				908686	908687	908688	909146	909147
Sample Reference				BH2002	BH2002	BH2002	BH2005	BH2005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.50	2.20	1.75	1.90
Date Sampled				12/02/2018	12/02/2018	12/02/2018	14/02/2018	14/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	< 0.007	-	-	-	< 0.007

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				909148	909199	909200	909201	
Sample Reference				BH2005	BH2006	BH2006	BH2006	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				2.40	1.40	1.80	2.40	
Date Sampled				14/02/2018	14/02/2018	14/02/2018	14/02/2018	
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	40	40	28	35	
Total mass of sample received	kg	0.001	NONE	1.8	1.4	2.0	1.8	
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.9	7.7	8.0	7.7	
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	610	190	130	350	
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.30	0.097	0.066	0.18	
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	305	96.9	65.6	176	
Organic Matter	%	0.1	MCERTS	3.4	1.8	4.7	3.2	
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	< 0.05	
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	< 0.05	
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.89	< 0.05	
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.73	< 0.05	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.94	< 0.05	
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.90	< 0.05	
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.40	< 0.05	
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.35	< 0.05	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.29	< 0.05	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	4.50	< 0.80	
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	31	34	17	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	
Chromium (III)	mg/kg	1	NONE	63	30	50	38	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	63	30	51	38	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	11	130	10	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	40	41	560	31	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	1.6	100	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	39	37	53	30	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	96	92	220	64	
Calcium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	-	

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				909148	909199	909200	909201	
Sample Reference				BH2005	BH2006	BH2006	BH2006	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				2.40	1.40	1.80	2.40	
Date Sampled				14/02/2018	14/02/2018	14/02/2018	14/02/2018	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
MTBE (Methyl Tertiary Butyl Ether)	µg/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	1.9	< 1.0	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	2.5	37	< 2.0	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	88	< 8.0	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	35	< 8.0	
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	17	160	< 10	

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	30	20	180	8.7	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	42	24	160	11	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	16	< 10	
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	74	48	360	28	

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				909148	909199	909200	909201	
Sample Reference				BH2005	BH2006	BH2006	BH2006	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				2.40	1.40	1.80	2.40	
Date Sampled				14/02/2018	14/02/2018	14/02/2018	14/02/2018	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Chloroethane	µg/kg	1	NONE	-	-	< 1.0	-	
Bromomethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Vinyl Chloride	µg/kg	1	NONE	-	-	< 1.0	-	
Trichlorofluoromethane	µg/kg	1	NONE	-	-	< 1.0	-	
1,1-Dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-	
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Trichloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-	
Benzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Tetrachloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Trichloroethene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Dibromomethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Bromodichloromethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Tetrachloroethene	µg/kg	1	NONE	-	-	< 1.0	-	
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
Chlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
p & m-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Styrene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Tribromomethane	µg/kg	1	NONE	-	-	< 1.0	-	
o-Xylene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	< 1.0	-	
Isopropylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Bromobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	< 1.0	-	
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	< 1.0	-	
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Butylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	< 1.0	-	
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	< 1.0	-	
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	< 1.0	-	
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	< 1.0	-	

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				909148	909199	909200	909201	
Sample Reference				BH2005	BH2006	BH2006	BH2006	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				2.40	1.40	1.80	2.40	
Date Sampled				14/02/2018	14/02/2018	14/02/2018	14/02/2018	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	< 0.1	-	
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2	-	
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	-	
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	-	
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	-	
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	< 0.1	-	
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	< 0.3	-	
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Azobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Phenanthrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Carbazole	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	
Anthraquinone	mg/kg	0.3	MCERTS	-	-	< 0.3	-	
Fluoranthene	mg/kg	0.05	MCERTS	-	-	0.89	-	
Pyrene	mg/kg	0.05	MCERTS	-	-	0.73	-	
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	< 0.3	-	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	0.94	-	
Chrysene	mg/kg	0.05	MCERTS	-	-	0.90	-	
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	0.40	-	
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	0.35	-	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	0.29	-	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Lab Sample Number				909148	909199	909200	909201	
Sample Reference				BH2005	BH2006	BH2006	BH2006	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				2.40	1.40	1.80	2.40	
Date Sampled				14/02/2018	14/02/2018	14/02/2018	14/02/2018	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	< 0.001	-	
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-	-	< 0.007	-	

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Combined Report SSE Site, Vastern Road - Soil
Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
901082	BH1003	0.80	164	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
901097	BH1002A	0.50	142	Loose Fibrous Debris & Rope & Loose Fibres & Hard/Cement Type Material	**Chrysotile & Crocidolite & Amosite**	0.199	**0.199**
901098	BH1002C	1.00	130	Loose Fibres	**Chrysotile & Crocidolite**	0.009	**0.009**
901281	BH1001	0.50	152	Loose Fibrous Debris	**Chrysotile & Amosite**	1.311	**1.31**
906429	WS1003	1.00	112	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
906563	WS1009	0.20	149	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
906568	BH1003C	0.45	147	Loose Fibres & Loose Fibrous Debris	**Chrysotile**	0.009	**0.009**
906569	TP1003	0.30	173	Loose Fibrous Debris & Loose Fibres	**Chrysotile & Amosite**	0.033	**0.033**
906573	WS1002	0.50	130	Loose Fibrous Debris	**Chrysotile & Amosite & Crocidolite**	0.440	**0.440**
906574	WS017	0.20	147	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
906578	WS1006	0.50	145	Loose Fibres	**Chrysotile**	0.002	**0.002**
906579	TP1005	0.70	140	Loose Fibres & Loose Fibrous Debris	**Chrysotile & Amosite & Crocidolite**	0.156	**0.156**
906580	BH1004	0.60	122	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

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The results included within the report are representative of the samples submitted for analysis.

Combined Report	**SSE Site, Vastern Road - Soil**
Project / Site name:	**SSE Site, Vastern Road, Reading**
Your Order No:	**C5925**

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
906590	WS1004	0.20	139	Hard/Cement Type Material & Bitumen & Loose Fibrous Debris & Loose Fibres	**Chrysotile & Crocidolite**	0.667	**0.667**
906592	WS1005	0.50	157	Loose Fibrous Debris	**Chrysotile**	0.001	**0.001**
906626	WS013	0.60	170	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

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The results included within the report are representative of the samples submitted for analysis.

Combined Report SSE Site, Vastern Road - Soil
Project / Site name: SSE Site, Vastern Road, Reading
Your Order No: C5925

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
906627	TP1007	0.20	151	Loose Fibres	**Chrysotile & Amosite**	< 0.001	**< 0.001**
908408	TP1005	0.30	157	Loose Fibres & Hard/Cement Type Material	**Chrysotile & Amosite**	0.013	**0.013**
908409	WS1002	1.70	110	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
908443	W1001	0.20	142	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
908444	W1001	1.00	123	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
908667	W1004	1.00	163	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading

* 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 *
901082	BH1003	None Supplied	0.80	Brown gravelly sand with rubble.
901097	BH1002A	None Supplied	0.50	Grey gravelly sand with rubble.
901098	BH1002C	None Supplied	1.00	Brown clay and sand with rubble and gravel
901150	BH1005	None Supplied	0.70	Brown sand with gravel and rubble.
901151	BH1005	None Supplied	2.00	Light brown clay and sand.
901281	BH1001	None Supplied	0.50	Brown gravelly sand with rubble and stones.
901282	BH1001	None Supplied	2.00	Grey clay with gravel.
906407	BH1003E	None Supplied	1.30	Brown clay and sand with rubble and gravel
906429	WS1003	None Supplied	1.00	Brown gravelly sand with stones.
906430	WS1003	None Supplied	1.70	Brown clay.
906563	WS1009	None Supplied	0.20	Light brown sandy gravel with brick.
906567	WS1008	None Supplied	0.45	Black gravelly sand with stones.
906568	BH1003C	None Supplied	0.45	Brown gravelly sand.
906569	TP1003	None Supplied	0.30	Brown gravelly loam with brick.
906570	WS1018	None Supplied	0.15	Black gravelly sand with clinker.
906571	WS1007	None Supplied	0.15	Light brown gravelly loam with stones.
906572	WS1007	None Supplied	1.00	Brown clay with chalk and gravel
906573	WS1002	None Supplied	0.50	Black sandy loam with gravel.
906574	WS017	None Supplied	0.20	Grey sand with gravel and stones.
906578	WS1006	None Supplied	0.50	Brown gravelly clay with stones.
906579	TP1005	None Supplied	0.70	Brown gravelly sand with brick.
906580	BH1004	None Supplied	0.60	Black gravelly clay.
906581	BH1004	None Supplied	2.00	Grey clay and sand.
906587	WS1019	None Supplied	0.50	Brown gravelly clay with brick.
906588	WS1019	None Supplied	1.80	Grey clay and sand.
906589	TP1001	None Supplied	1.00	Brown loam and clay with gravel.
906590	WS1004	None Supplied	0.20	Brown gravelly loam with stones.
906591	WS1005	None Supplied	0.30	Brown gravel with stones.
906592	WS1005	None Supplied	0.50	Brown gravel with stones.
906623	TP1004	None Supplied	1.50	Grey sandy clay with gravel.
906626	WS013	None Supplied	0.60	Grey gravelly sand with stones and rubble.
906627	TP1007	None Supplied	0.20	Brown sand with gravel.
906634	TP1008	None Supplied	1.50	Brown clay and gravel.
908320	TP1002	None Supplied	0.80	Brown clay and sand with rubble and tar.
908321	TP1002	None Supplied	1.70	Brown clay and sand.
908408	TP1005	None Supplied	0.30	Brown sand with brick and rubble.
908409	WS1002	None Supplied	1.70	Grey clay and sand with gravel.
908422	WS1006	None Supplied	1.90	Light brown clay and sand.
908442	TP1008	None Supplied	0.40	Light brown clay and sand with chalk and rubble.
908443	W1001	None Supplied	0.20	Brown loam and clay with rubble and vegetation.
908444	W1001	None Supplied	1.00	Brown clay and sand with gravel.
908445	TP1001	None Supplied	0.50	Brown loam and sand with brick and rubble.
908458	BH2003	None Supplied	2.40	Grey clay.
908459	BH2003	None Supplied	3.50	Light brown clay and sand with stones and gravel.
908460	BH2003	None Supplied	4.20	Light brown gravelly sand.
908464	BH2001	None Supplied	1.00	Brown clay.
908465	BH2001	None Supplied	1.50	Grey clay and sand.
908508	BH2004	None Supplied	4.00	Light brown sandy gravel with stones.
908650	BH1003E	None Supplied	0.60	Light brown clay and sand with rubble and brick.
908667	W1004	None Supplied	1.00	Light brown clay and sand with gravel and rubble.
908686	BH2002	None Supplied	1.00	White chalk with gravel. **
908687	BH2002	None Supplied	1.50	Light brown clay and sand.
908688	BH2002	None Supplied	2.20	Light brown clay and sand.
909146	BH2005	None Supplied	1.75	Light brown clay and sand.
909147	BH2005	None Supplied	1.90	Grey clay and sand with gravel and chalk.
909148	BH2005	None Supplied	2.40	Brown clay.
909199	BH2006	None Supplied	1.40	Brown clay.
909200	BH2006	None Supplied	1.80	Brown clay and sand with gravel.
909201	BH2006	None Supplied	2.40	Grey clay.

**Non MCERTS matrix.

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading

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
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
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
Cations in soil by ICP-OES	Determination of cations 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	ISO 17025
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-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
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	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
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-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

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Combined Report : SSE Site, Vastern Road - Soil

Project / Site name: SSE Site, Vastern Road, Reading

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
TPH Chromatogram	TPH Chromatogram.	In-house method	L064-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

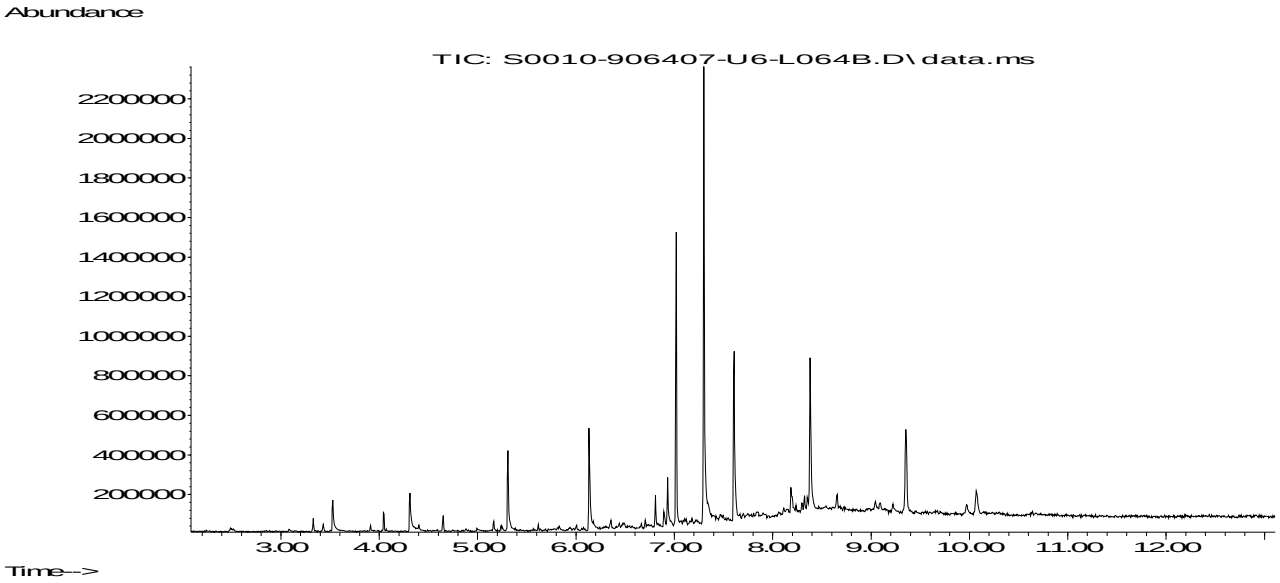
For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received 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.

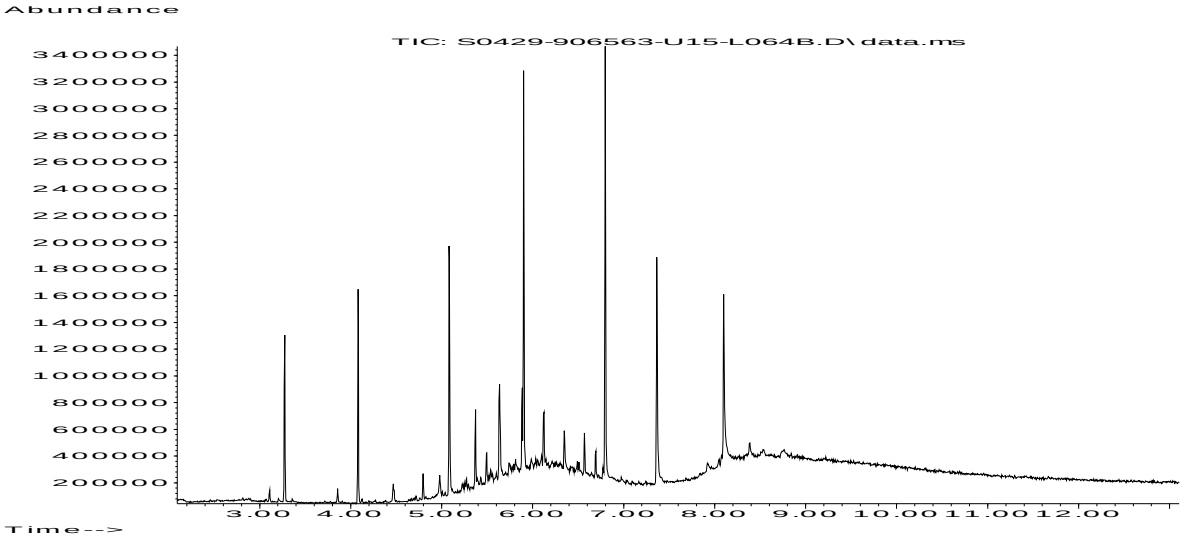
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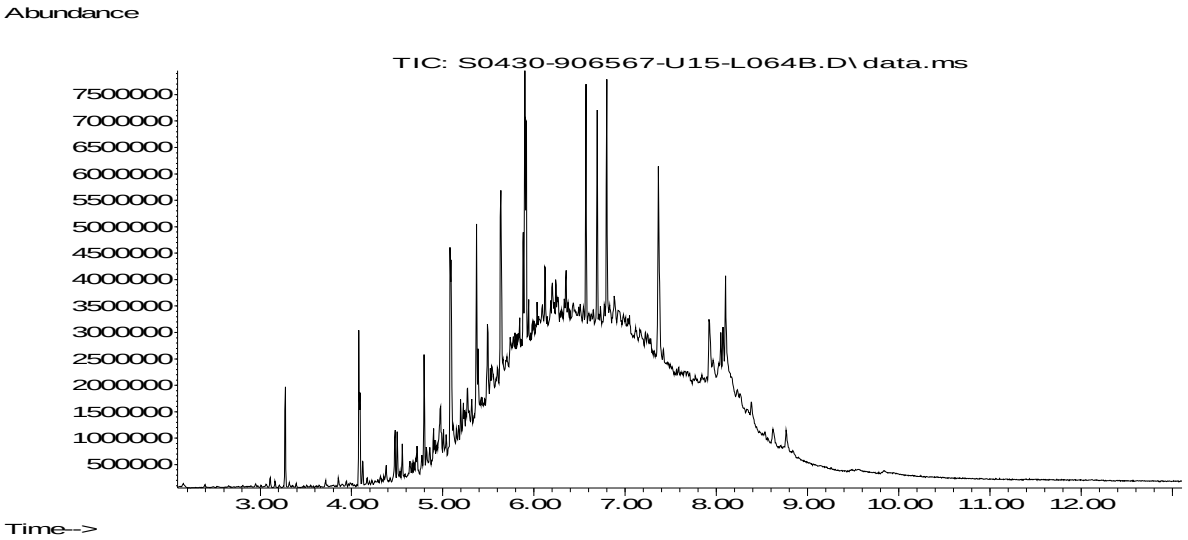
Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WS1018		S	18-75799	906570	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
WS1018		S	18-75799	906570	b	Monohydric phenols in soil	L080-PL	b
WS1018		S	18-75799	906570	b	Speciated EPA-16 PAHs in soil	L064-PL	b
WS1018		S	18-75799	906570	b	TPH Chromatogram	L064-PL	b
WS1018		S	18-75799	906570	b	TPHCWG (Soil)	L088/76-PL	b

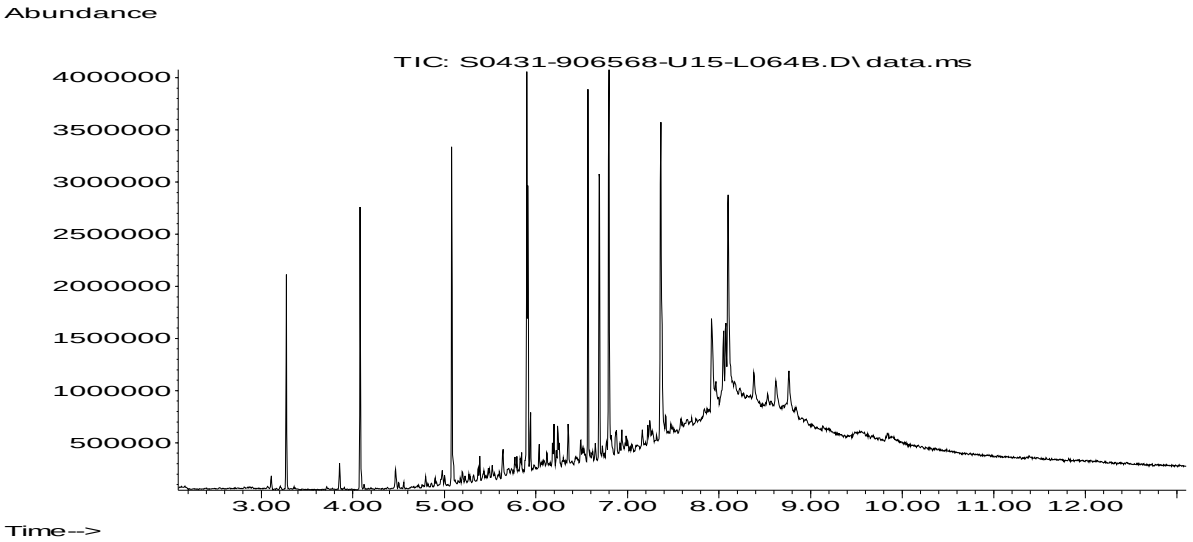
Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

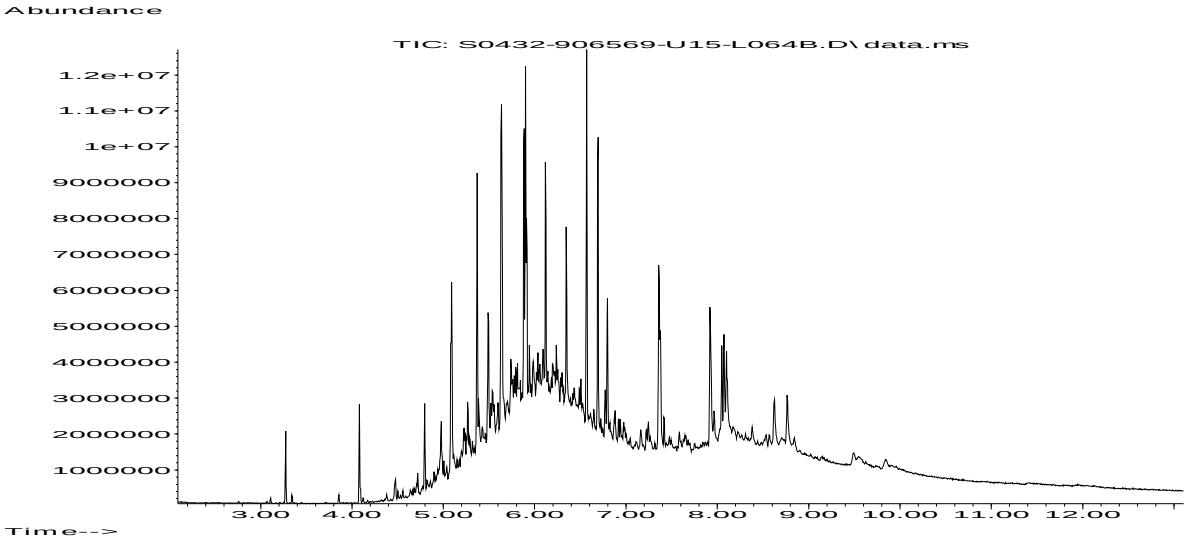
Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
BH2001		S	18-76104	908464	c	Hexavalent chromium in soil (Lower Level)	L080-PL	c
BH2001		S	18-76104	908464	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH2001		S	18-76104	908464	c	Cr (III) in soil	L080-PL	c
BH2001		S	18-76104	908464	c	Monohydric phenols in soil	L080-PL	c
BH2001		S	18-76104	908464	c	Organic matter (Automated) in soil	L009-PL	c
BH2001		S	18-76104	908464	c	Speciated EPA-16 PAHs in soil	L064-PL	c
BH2001		S	18-76104	908464	c	TPH Chromatogram	L064-PL	c
BH2001		S	18-76104	908464	c	TPHCWG (Soil)	L088/76-PL	c
BH2001		S	18-76104	908464	c	pH in soil (automated)	L099-PL	c
BH2001		S	18-76104	908465	c	Hexavalent chromium in soil (Lower Level)	L080-PL	c
BH2001		S	18-76104	908465	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH2001		S	18-76104	908465	c	Cr (III) in soil	L080-PL	c
BH2001		S	18-76104	908465	c	Monohydric phenols in soil	L080-PL	c
BH2001		S	18-76104	908465	c	Organic matter (Automated) in soil	L009-PL	c
BH2001		S	18-76104	908465	c	PCB's By GC-MS in soil	L027-PL	c
BH2001		S	18-76104	908465	c	Semi-volatile organic compounds in soil	L064-PL	c
BH2001		S	18-76104	908465	c	Speciated EPA-16 PAHs in soil	L064-PL	c
BH2001		S	18-76104	908465	c	TPH Chromatogram	L064-PL	c
BH2001		S	18-76104	908465	c	TPHCWG (Soil)	L088/76-PL	c
BH2001		S	18-76104	908465	c	Volatile organic compounds in soil	L073B-PL	c
BH2001		S	18-76104	908465	c	pH in soil (automated)	L099-PL	c

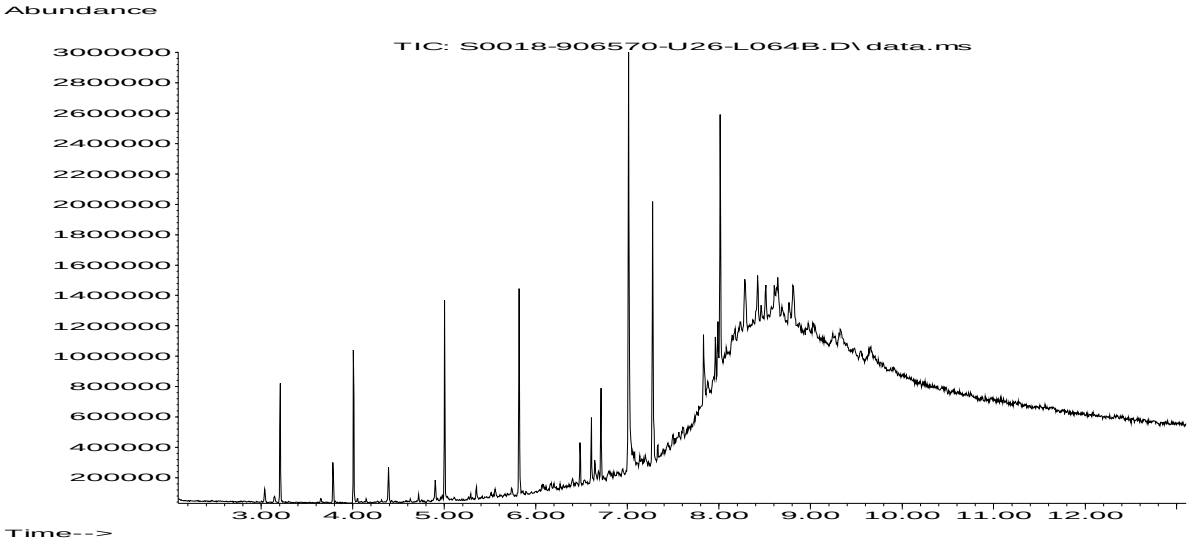

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Time-->

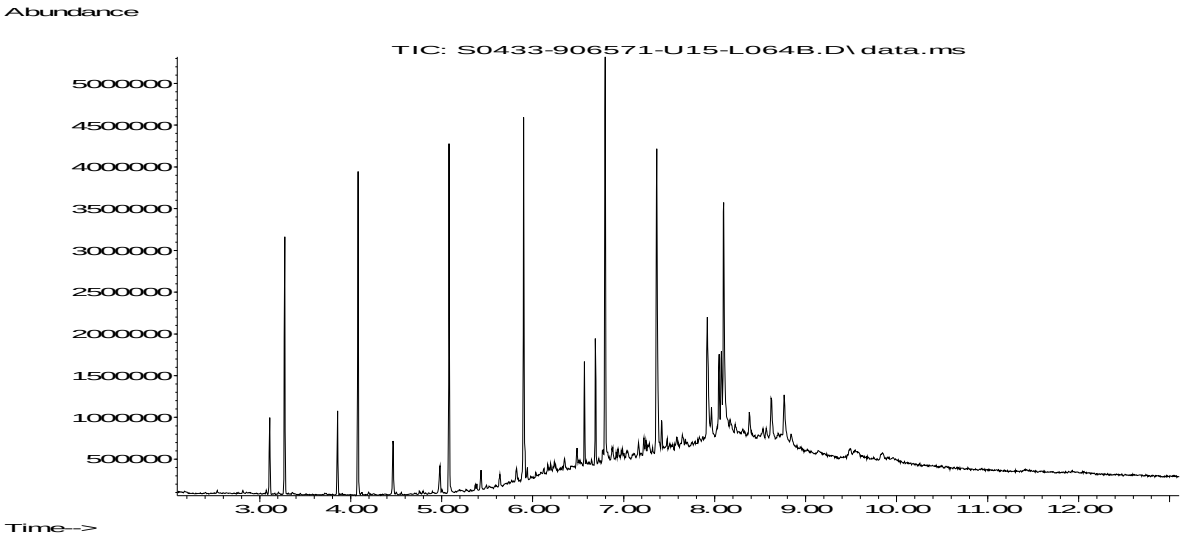

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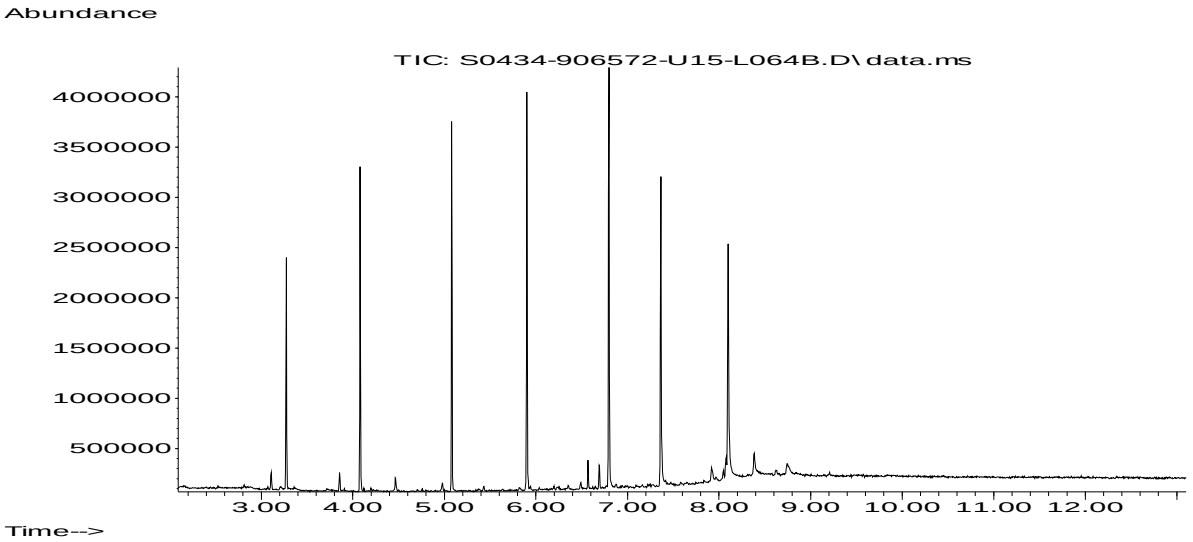

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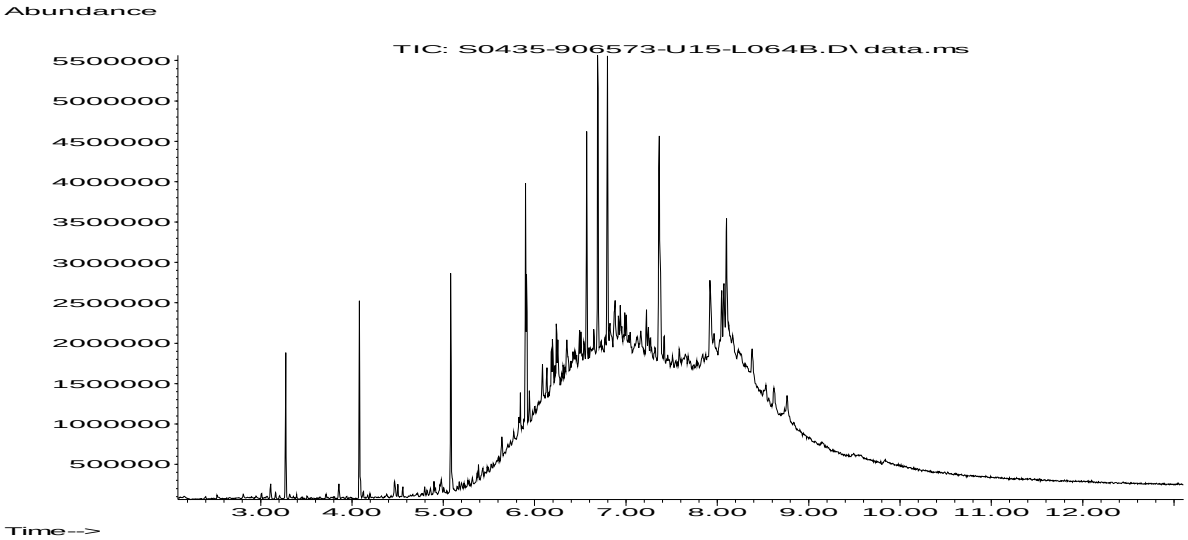

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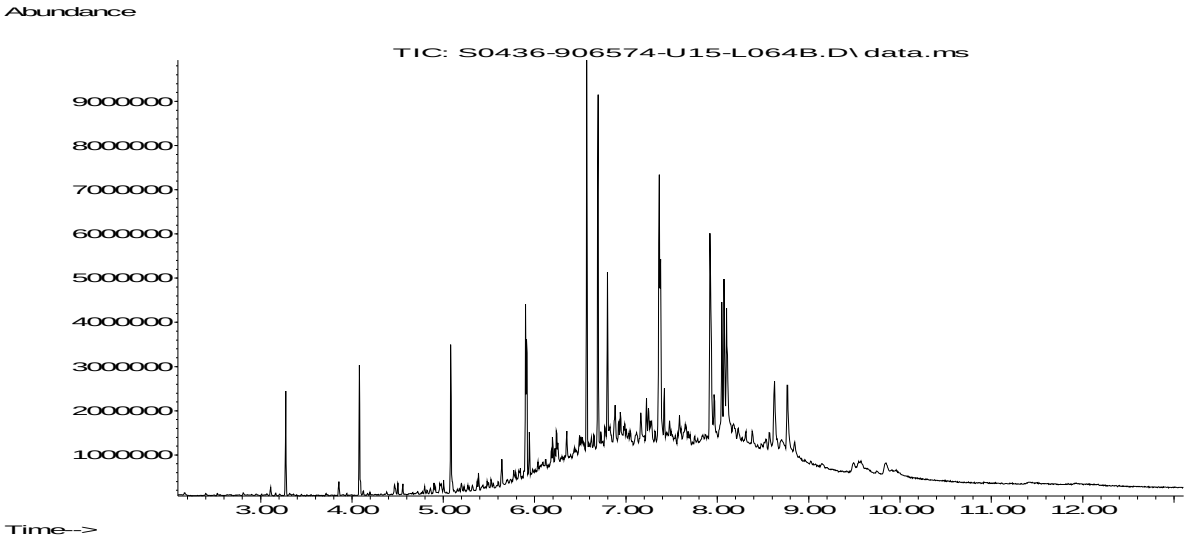

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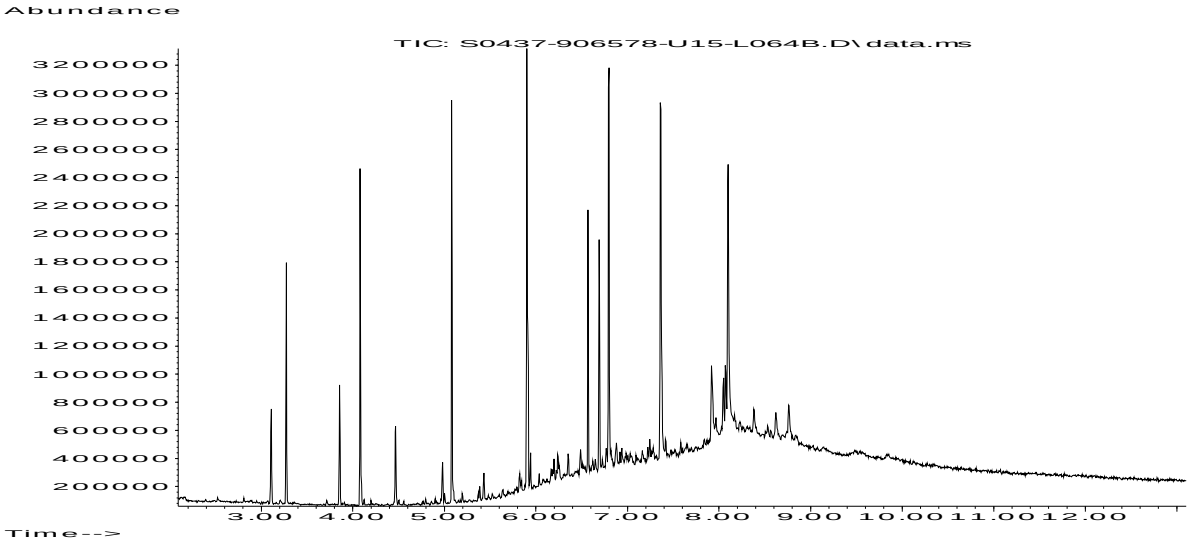

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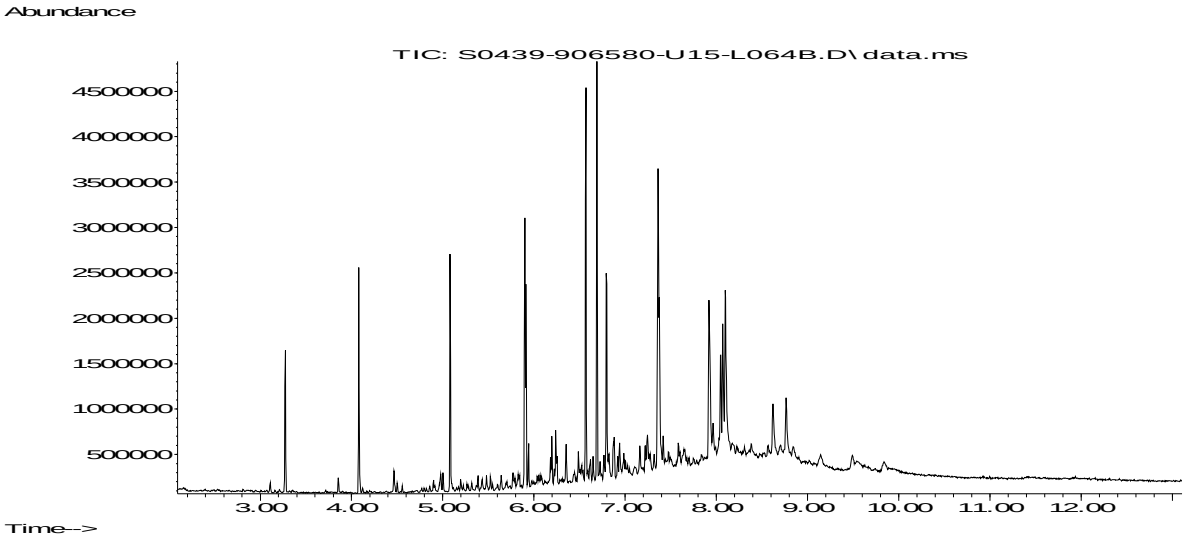

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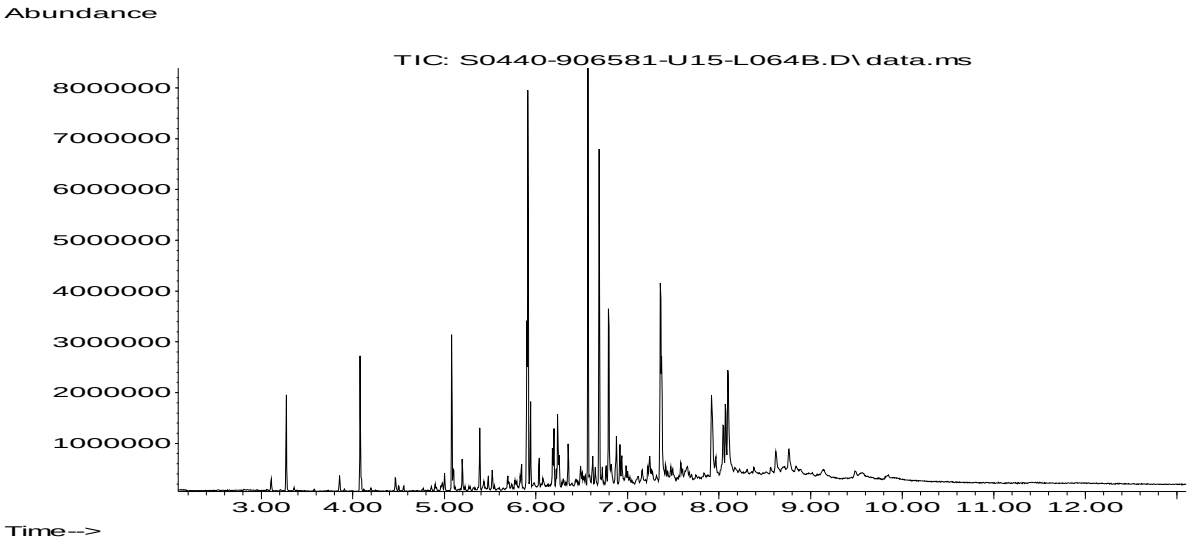

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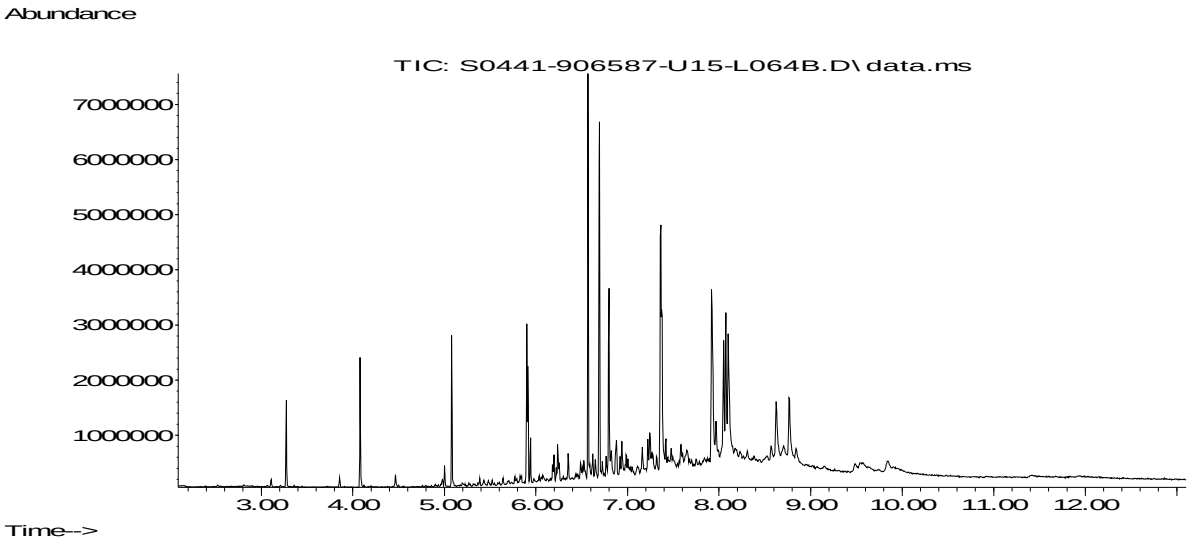

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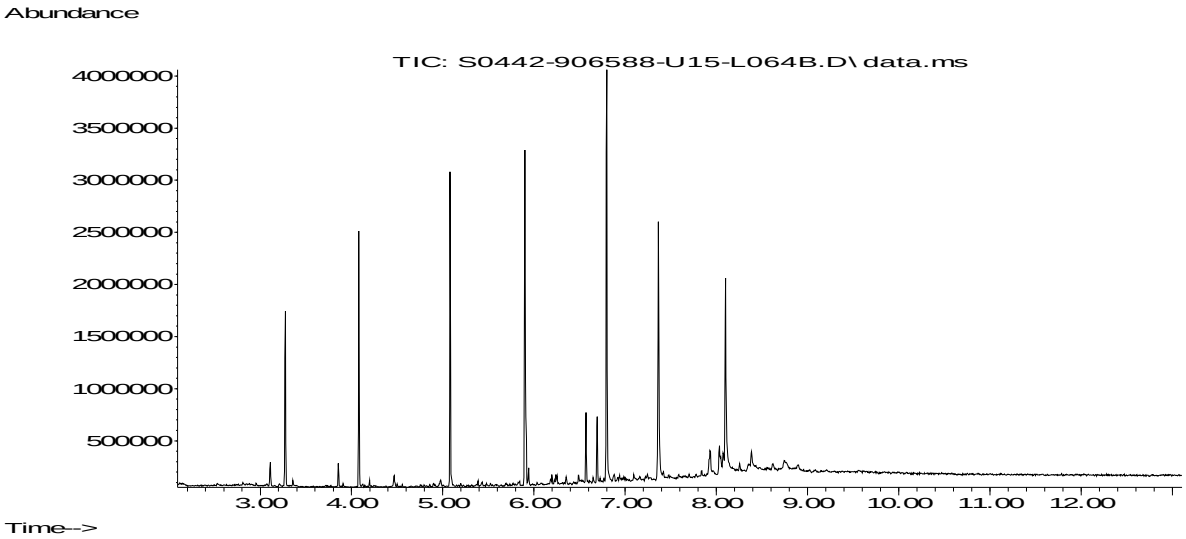

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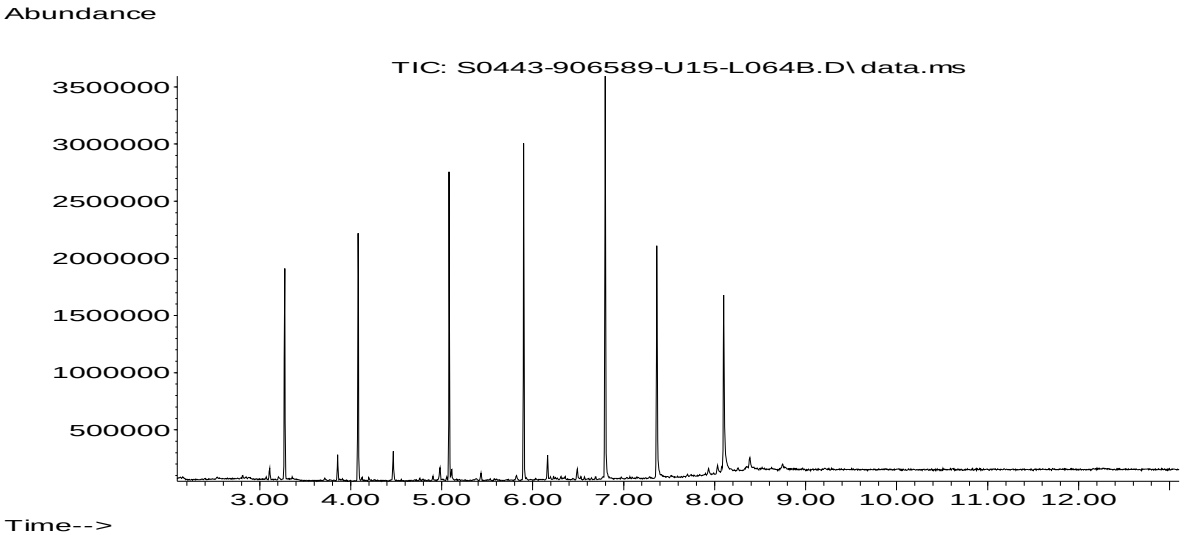

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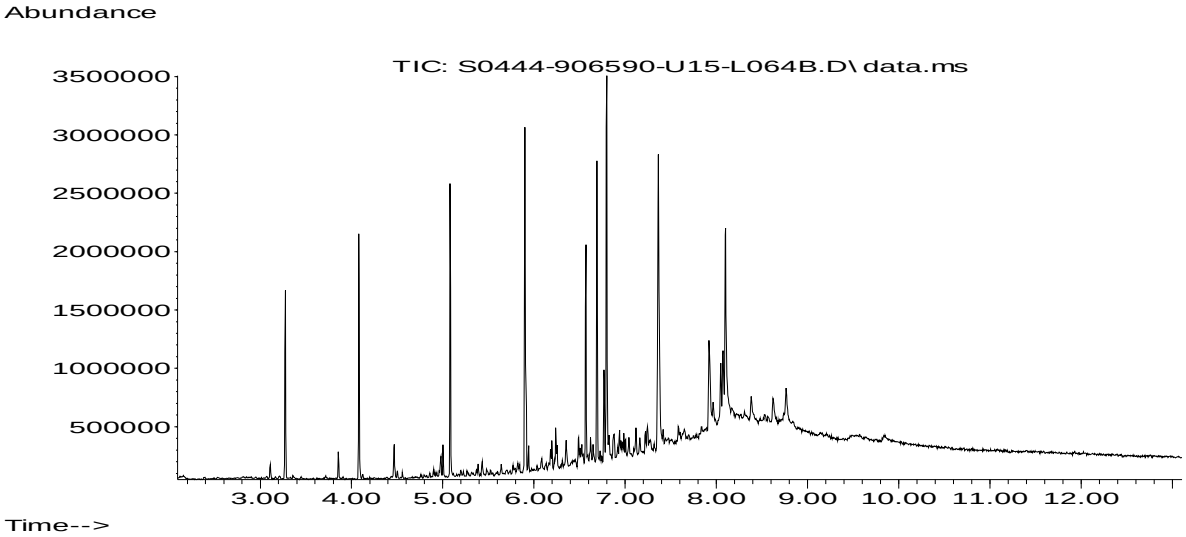

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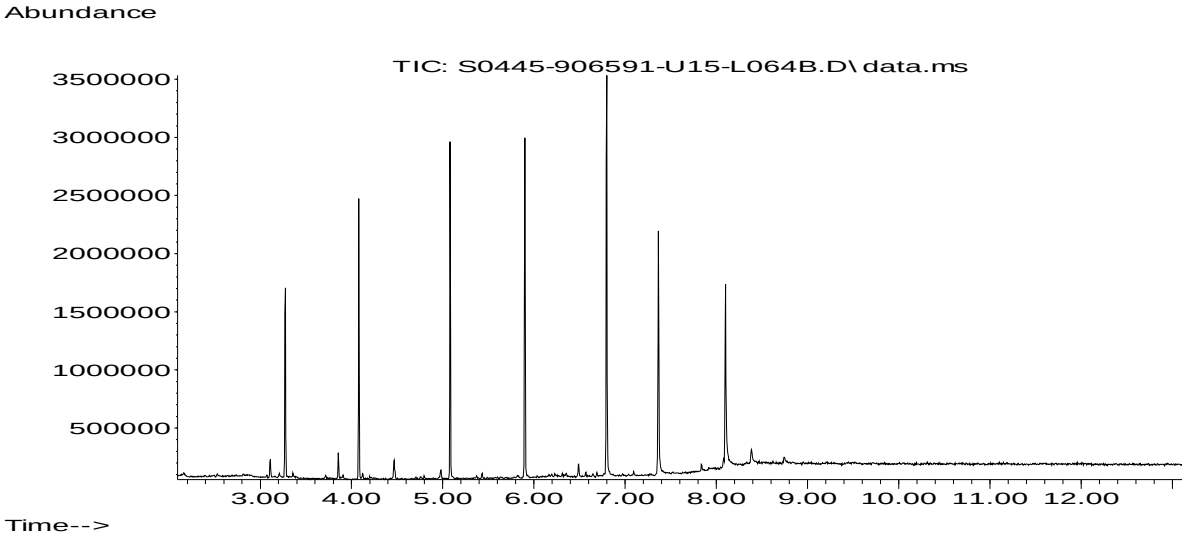

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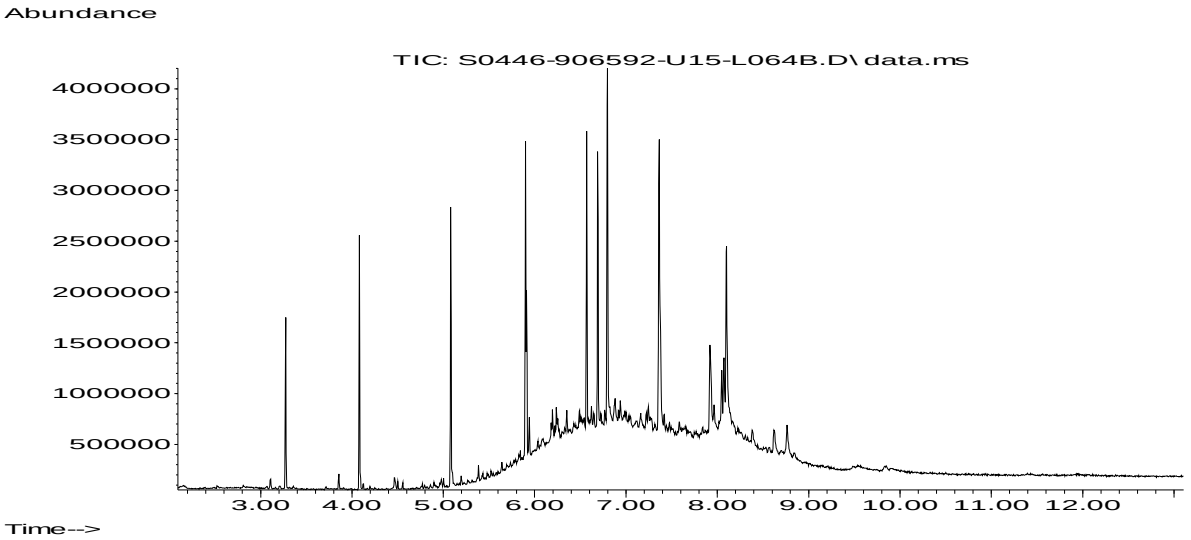

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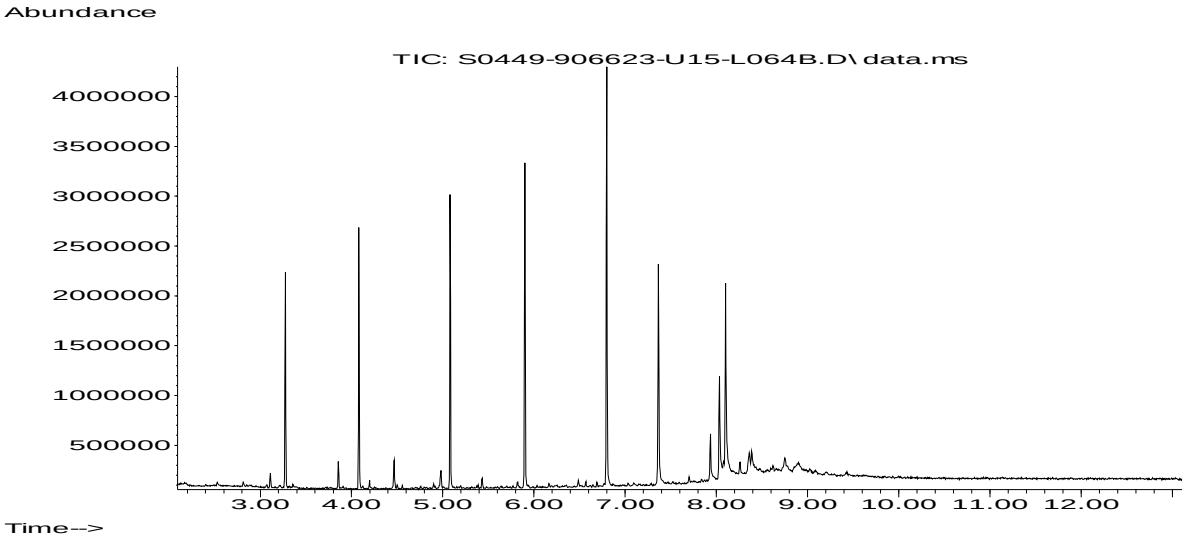

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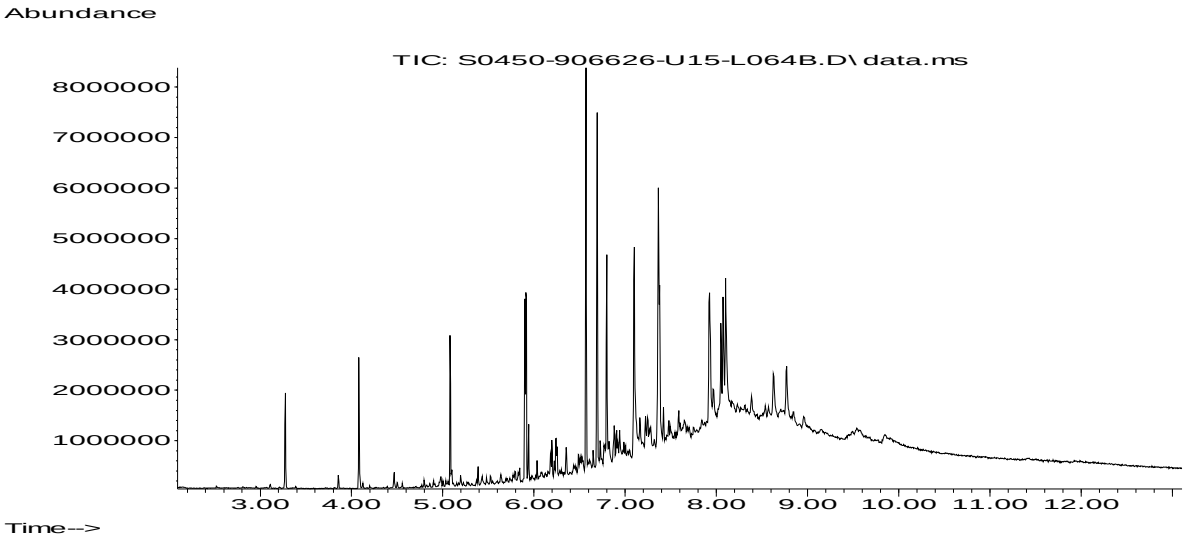

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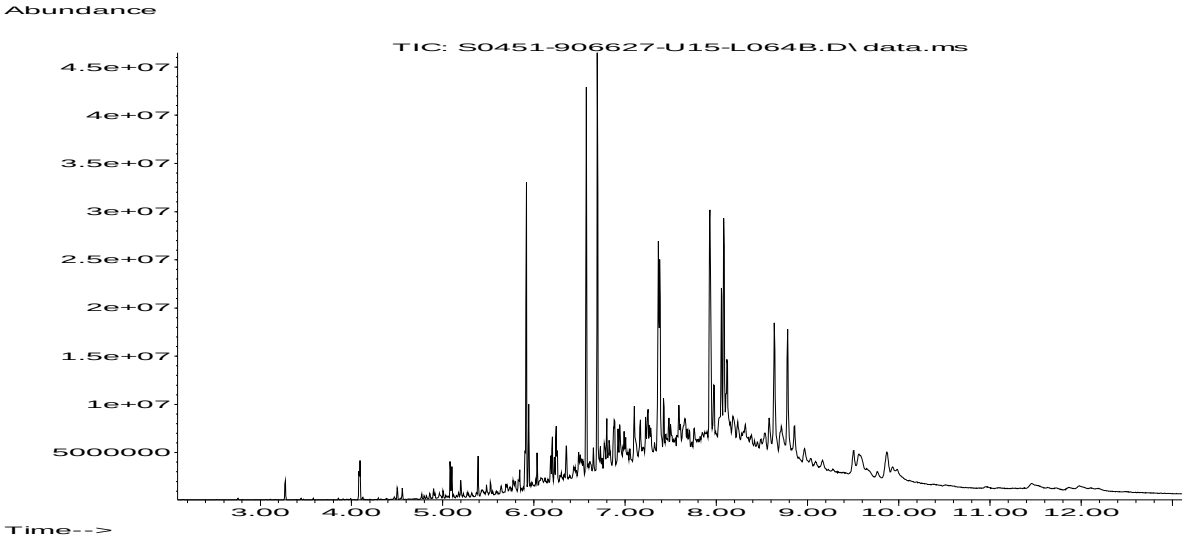

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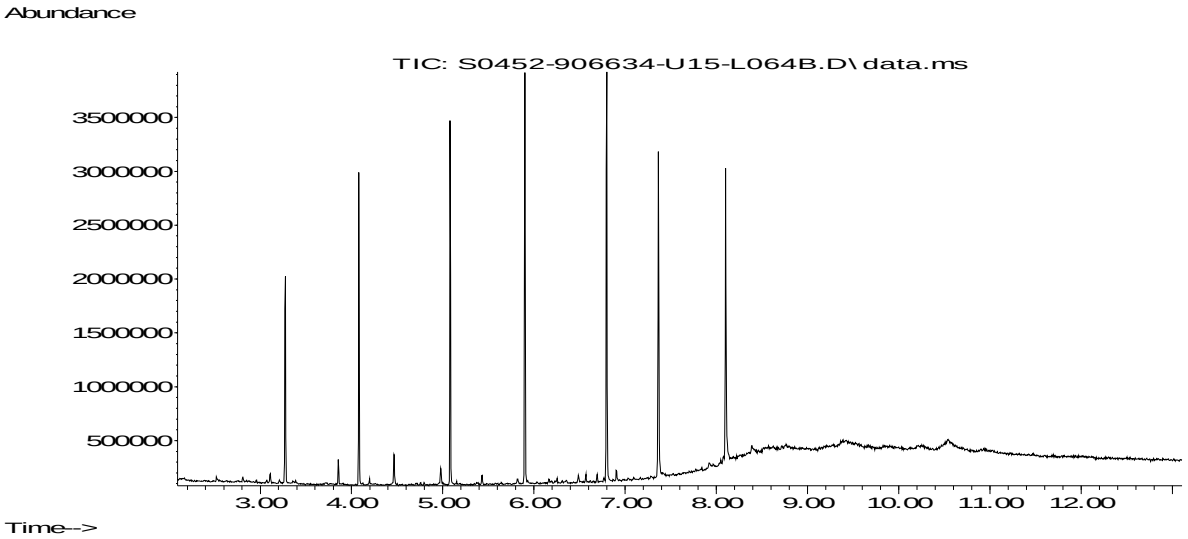

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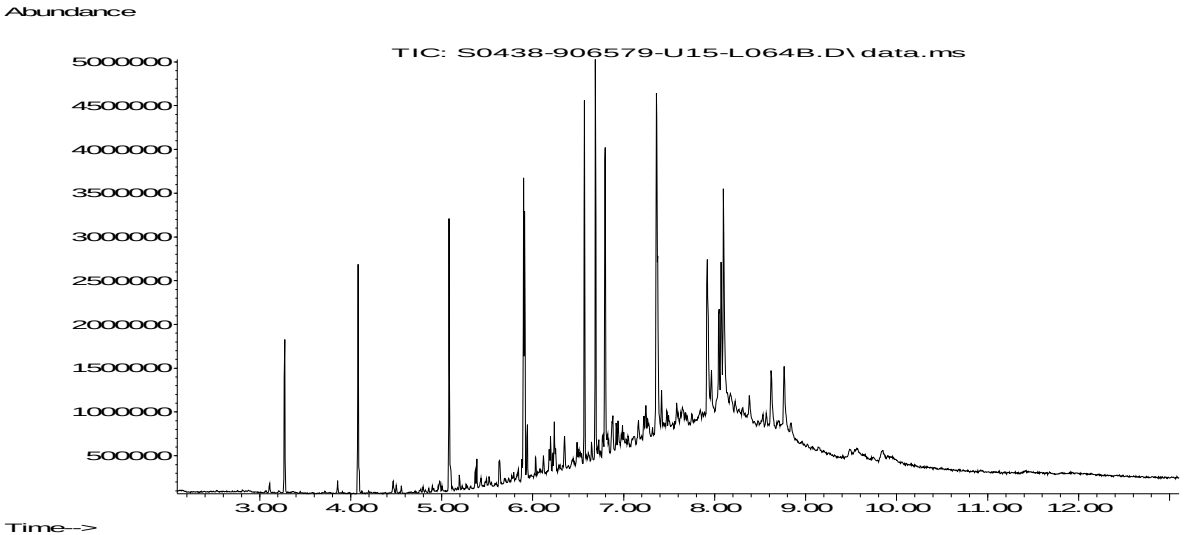

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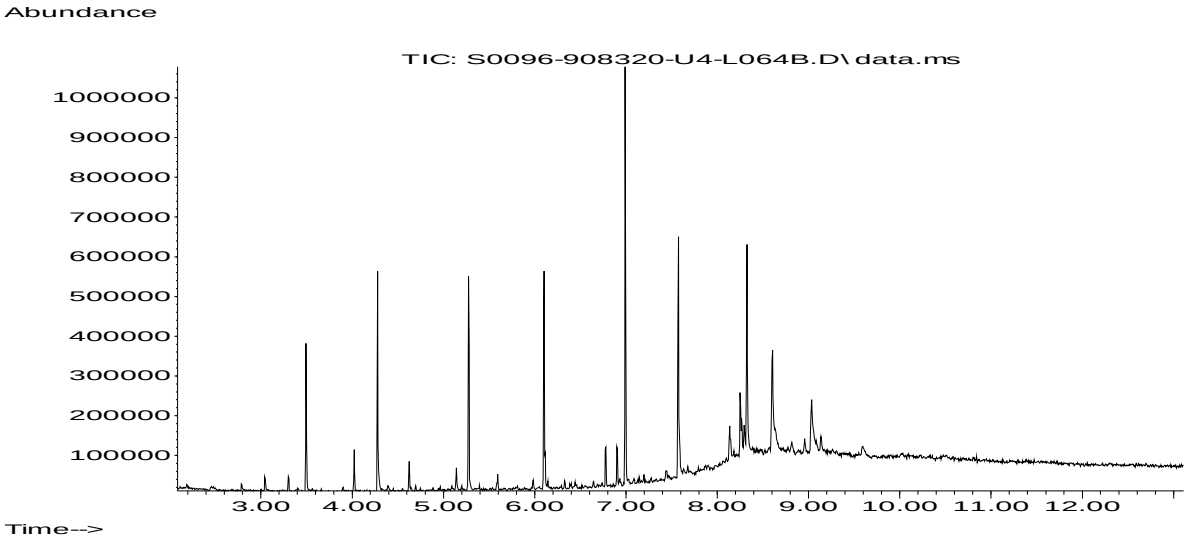

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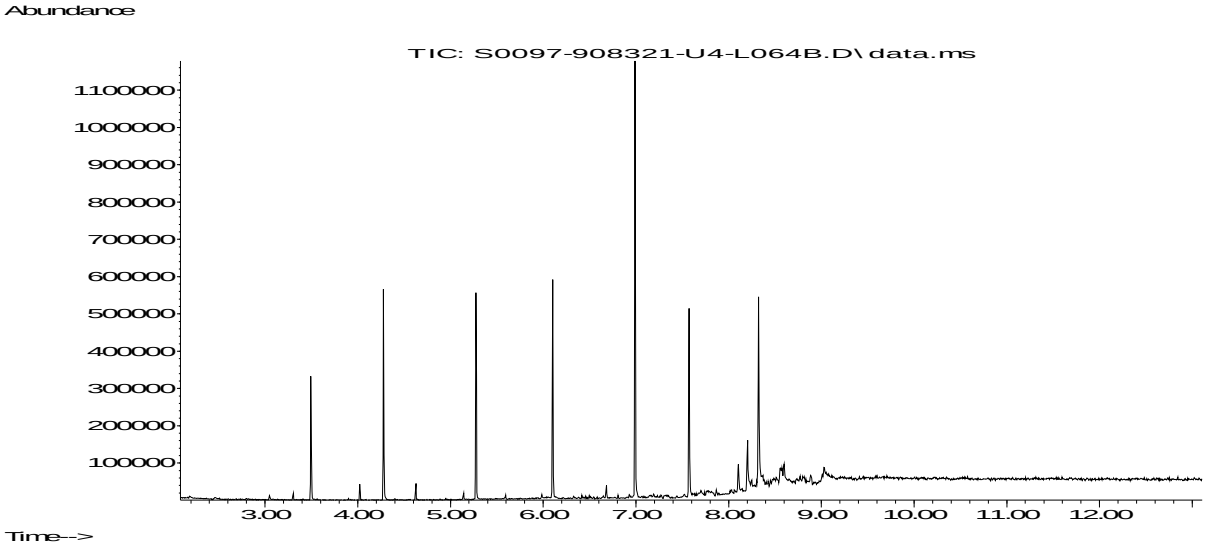

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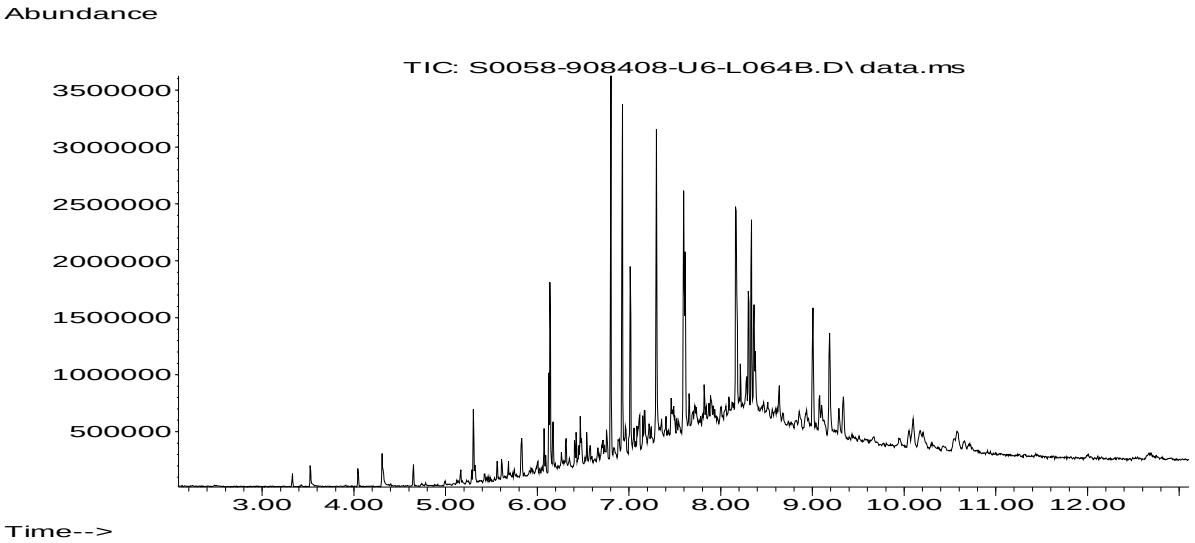

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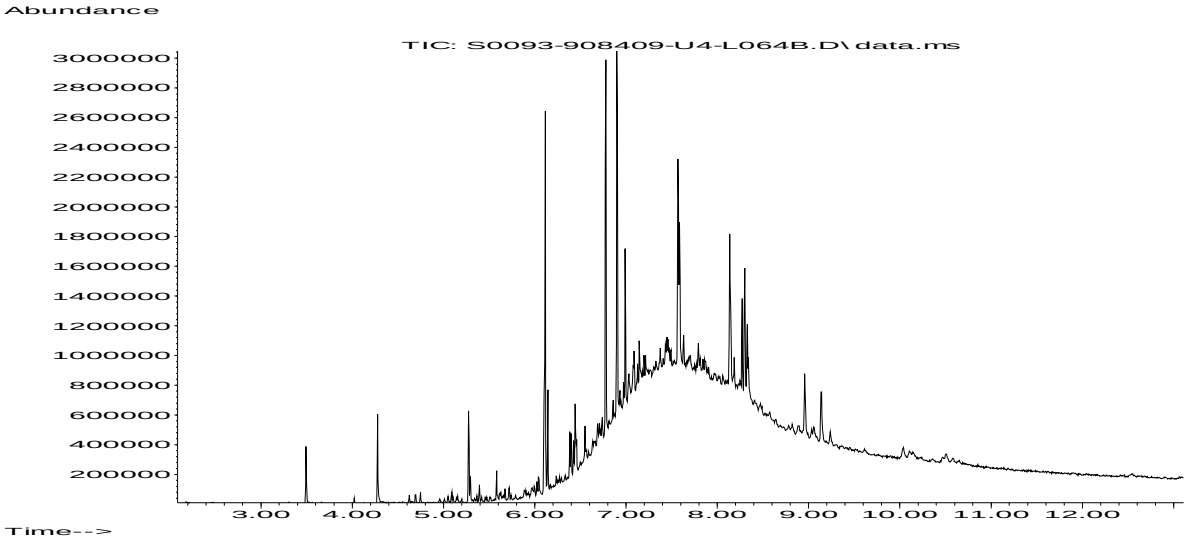

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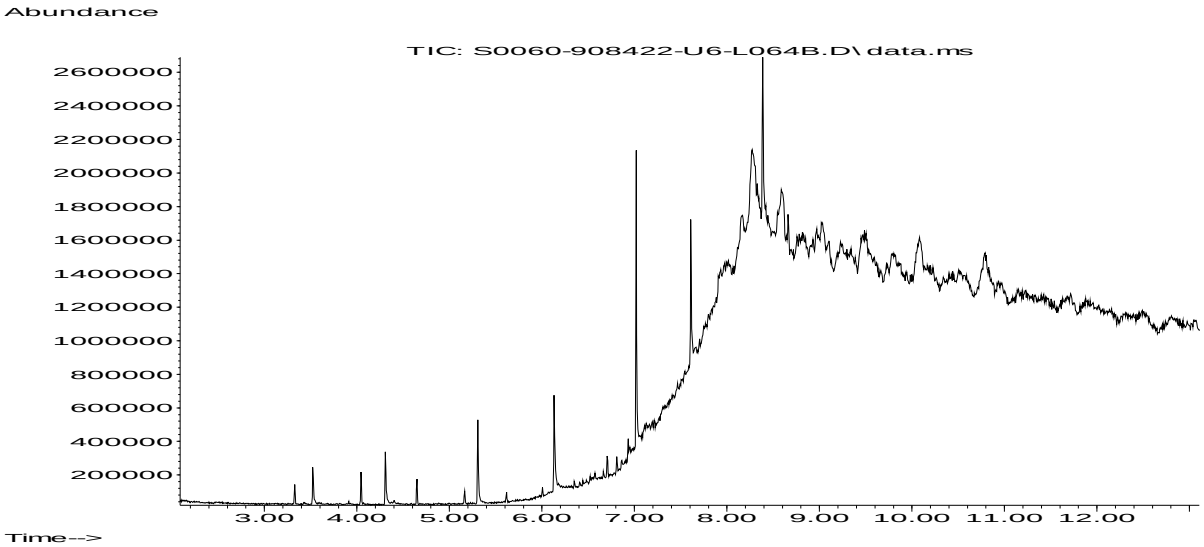

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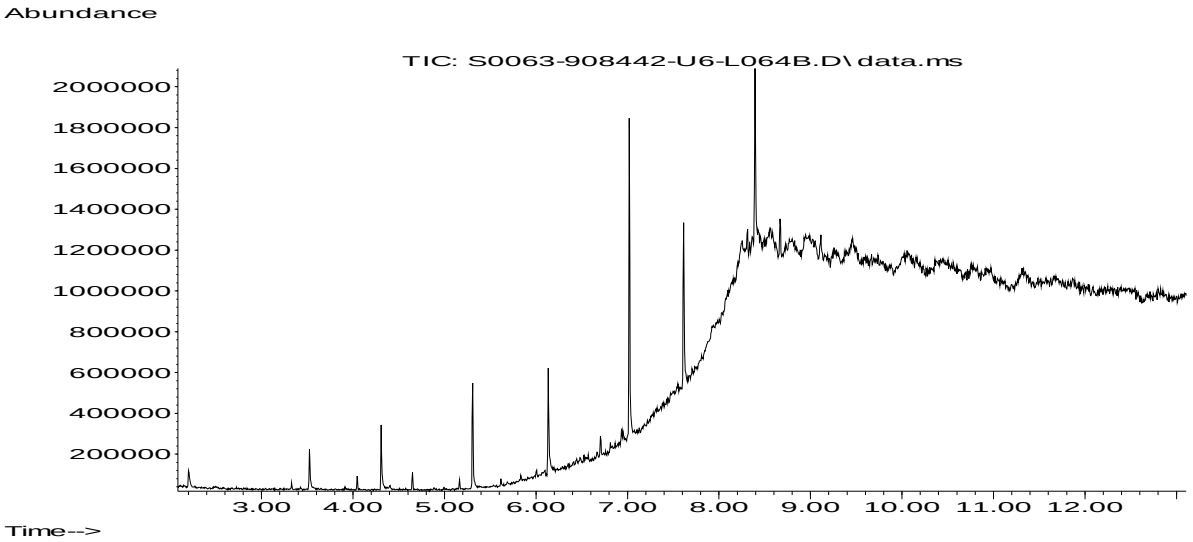

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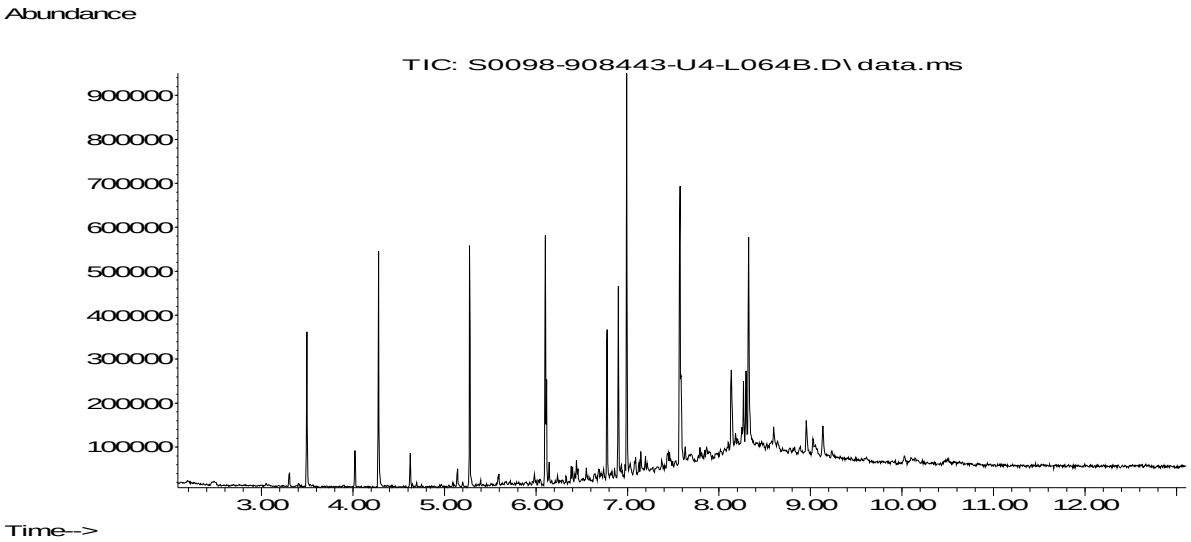

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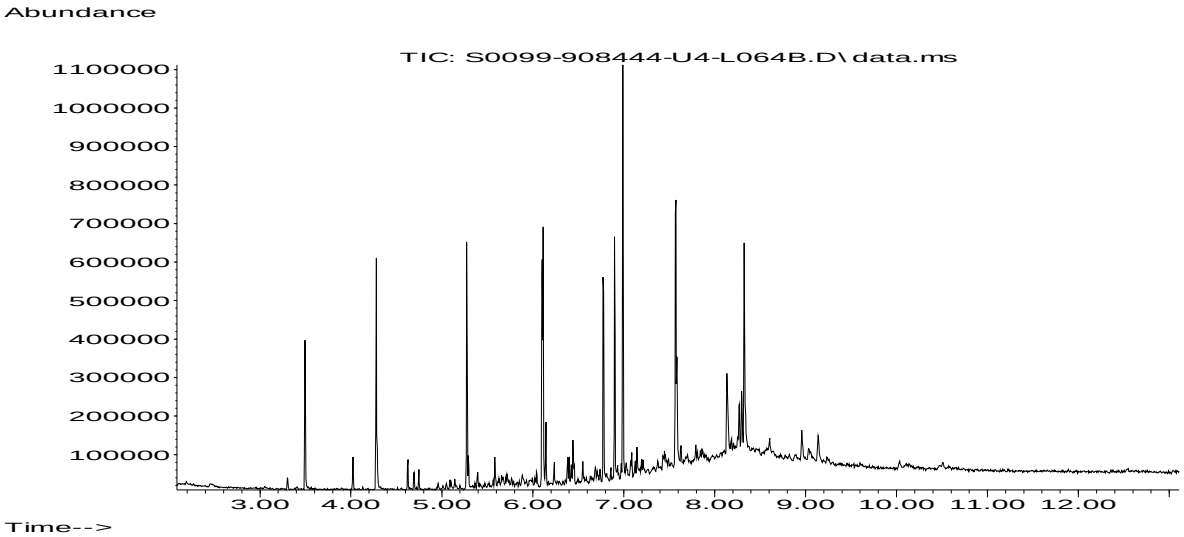

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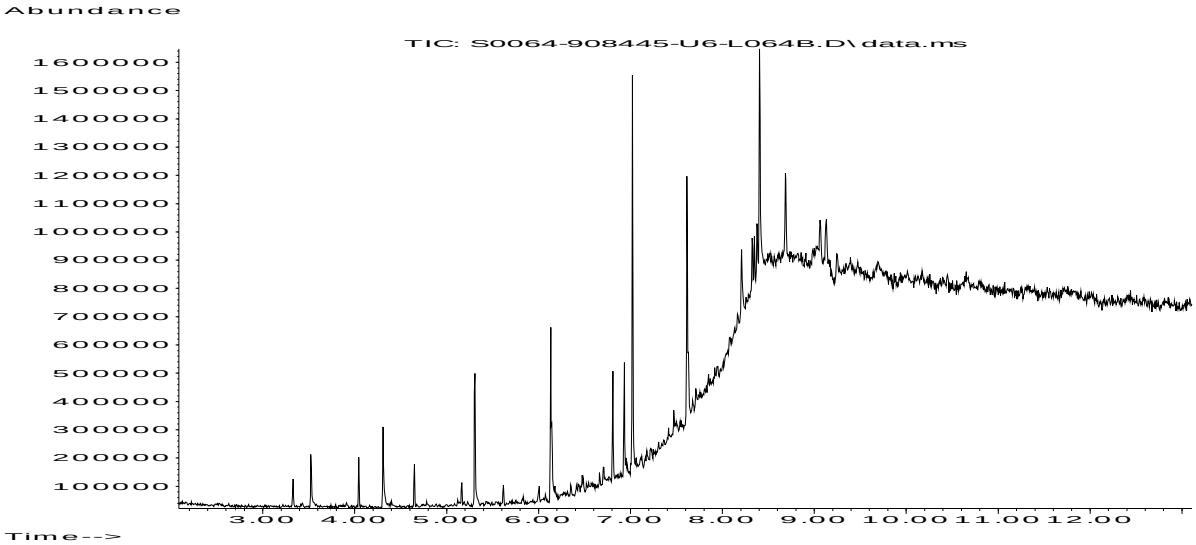

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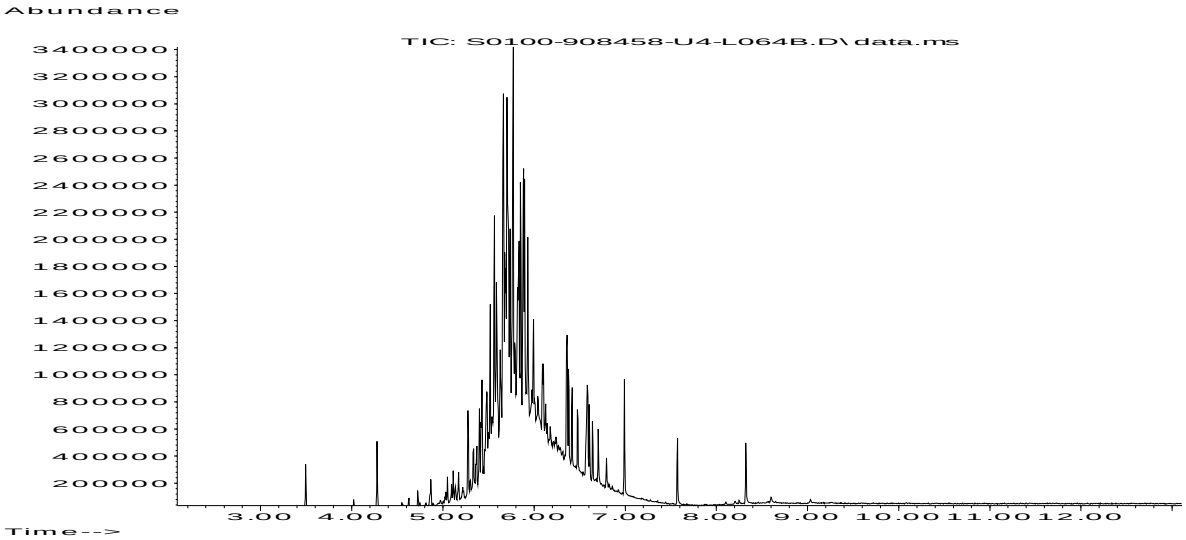

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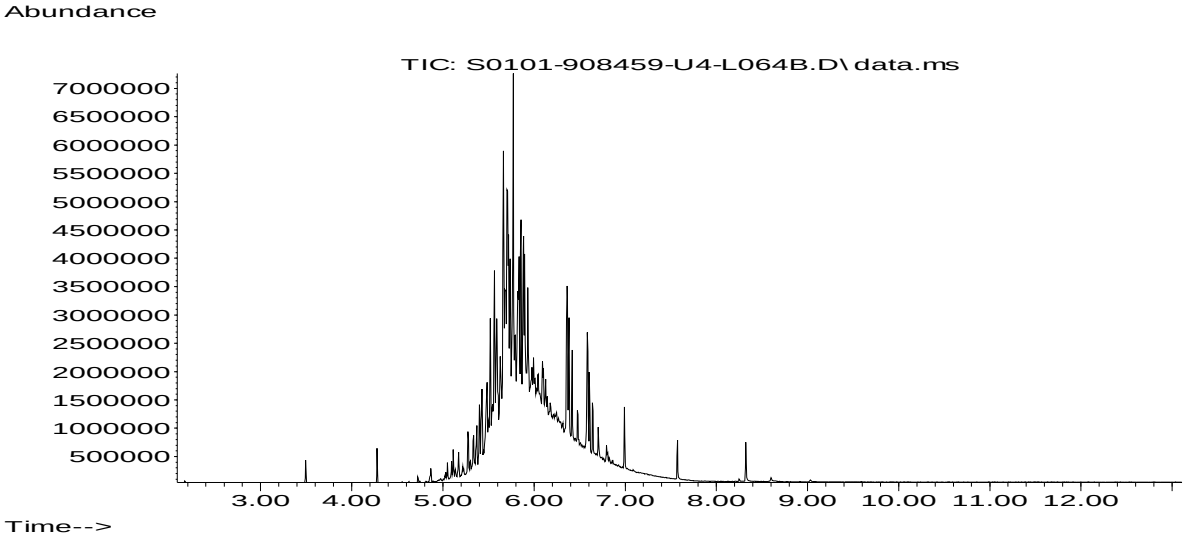

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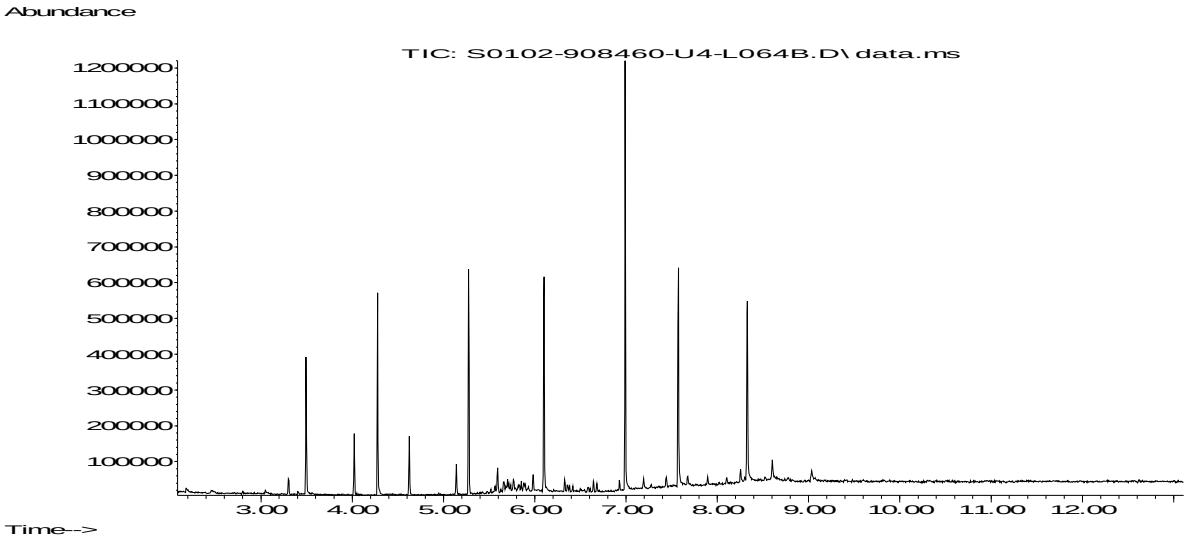

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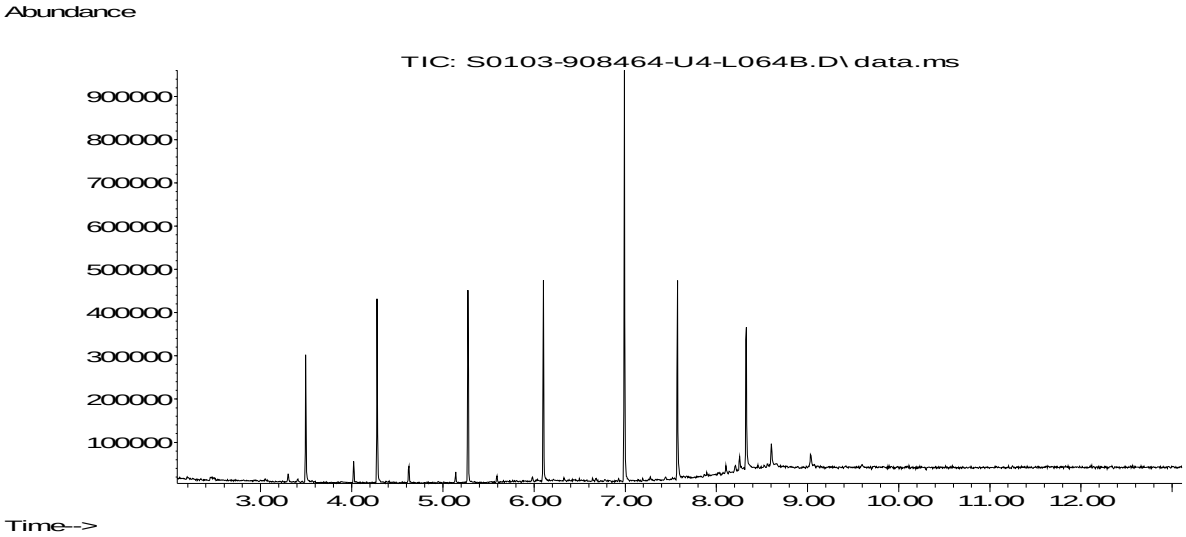

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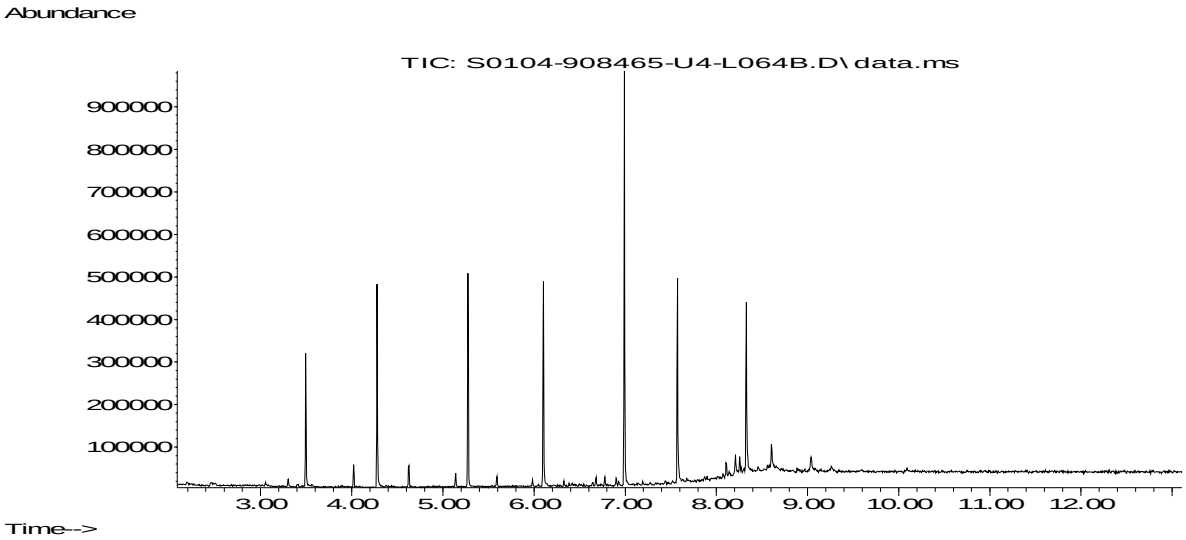

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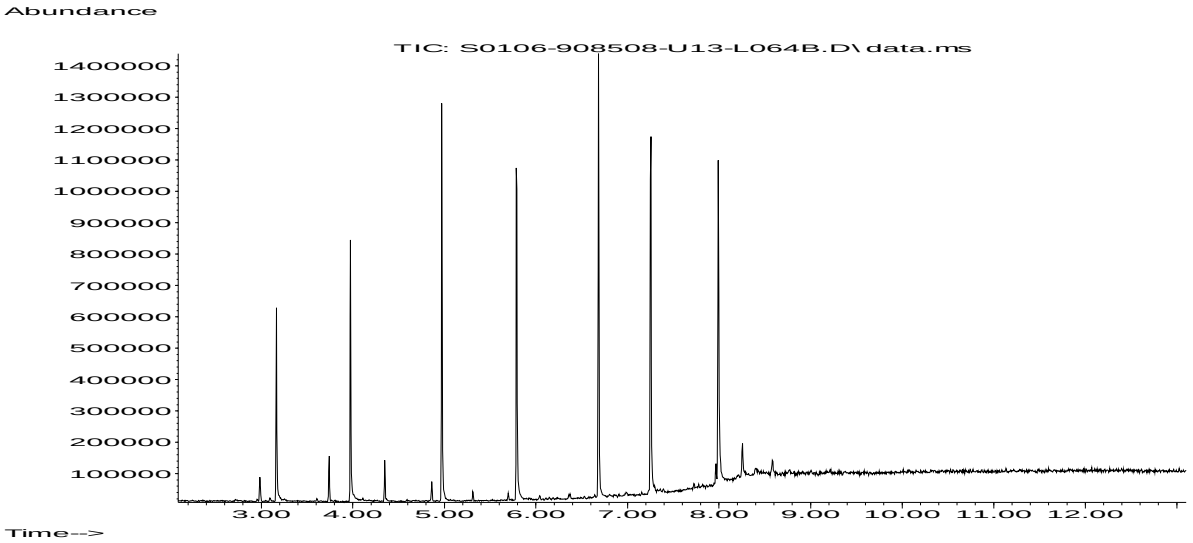

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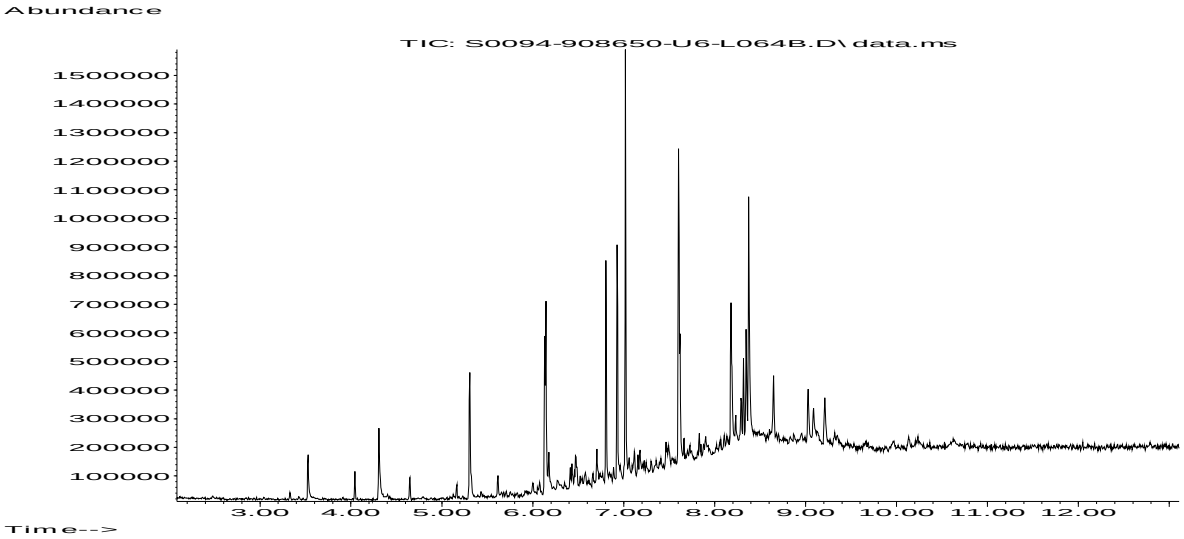

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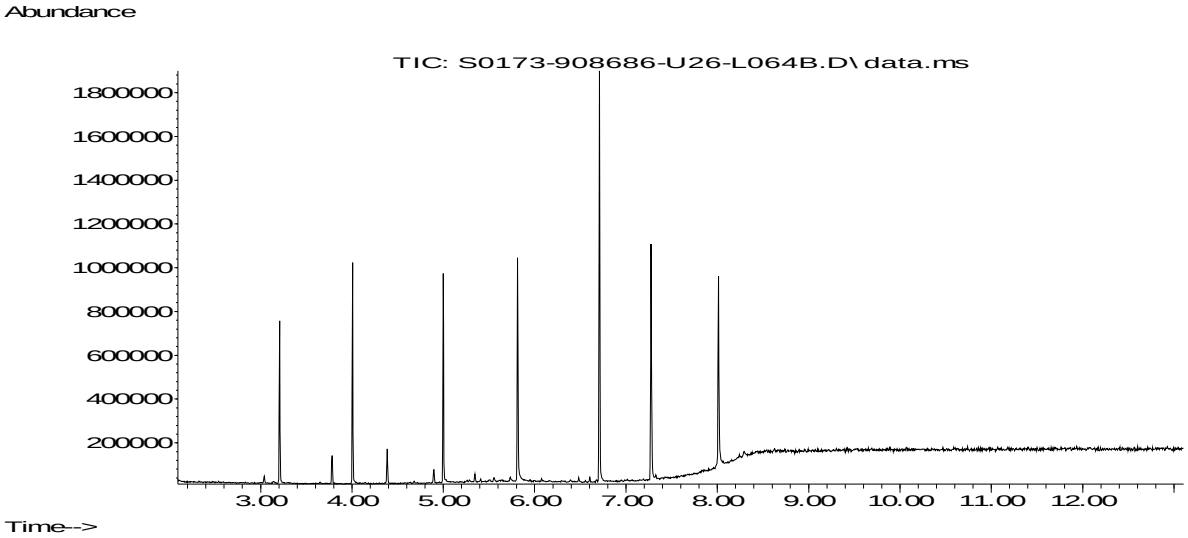

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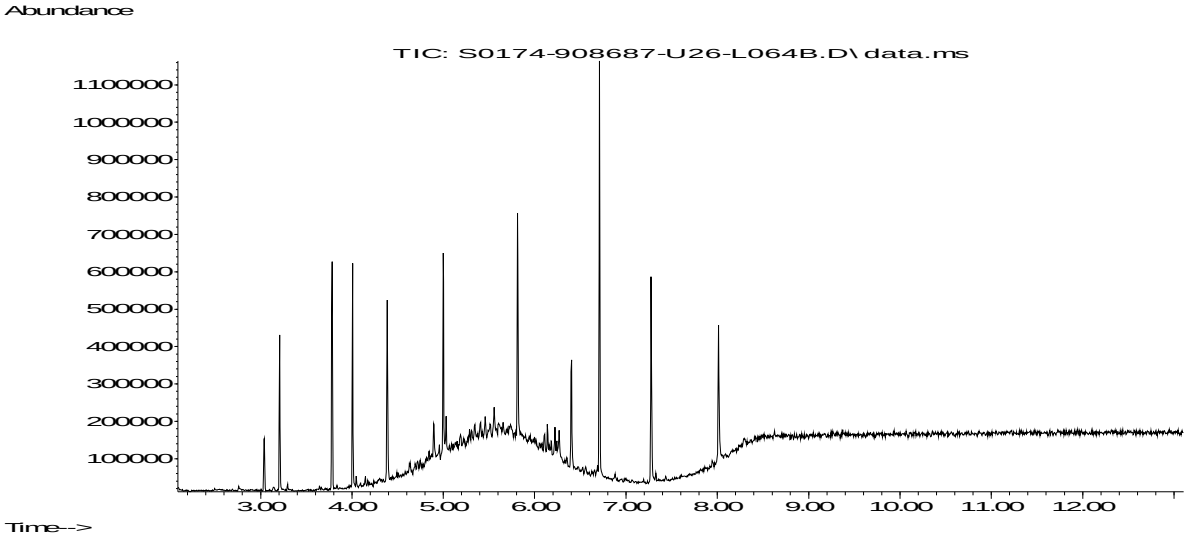

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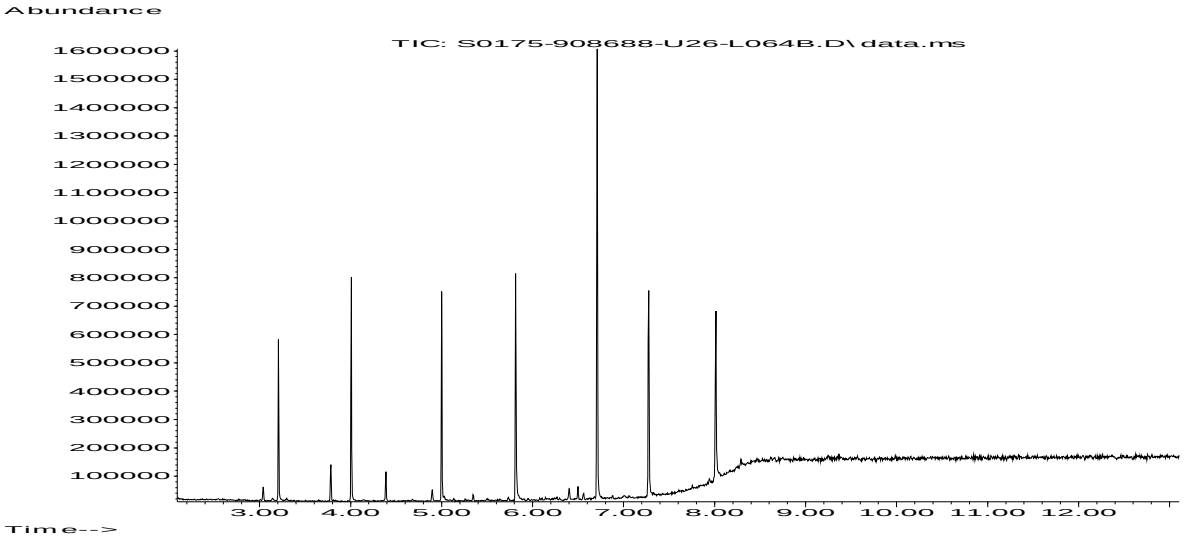

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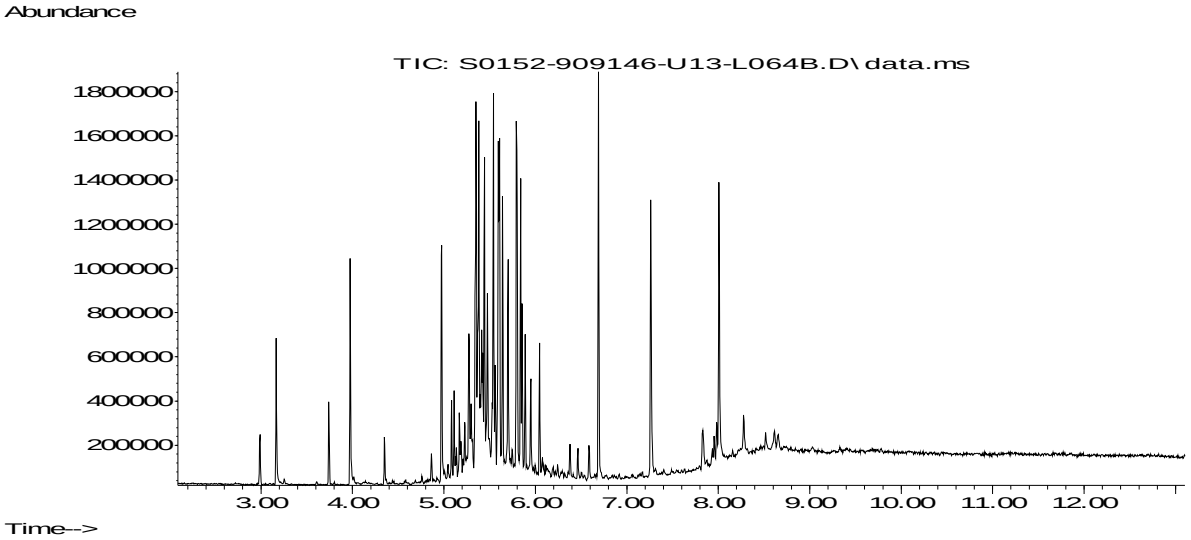

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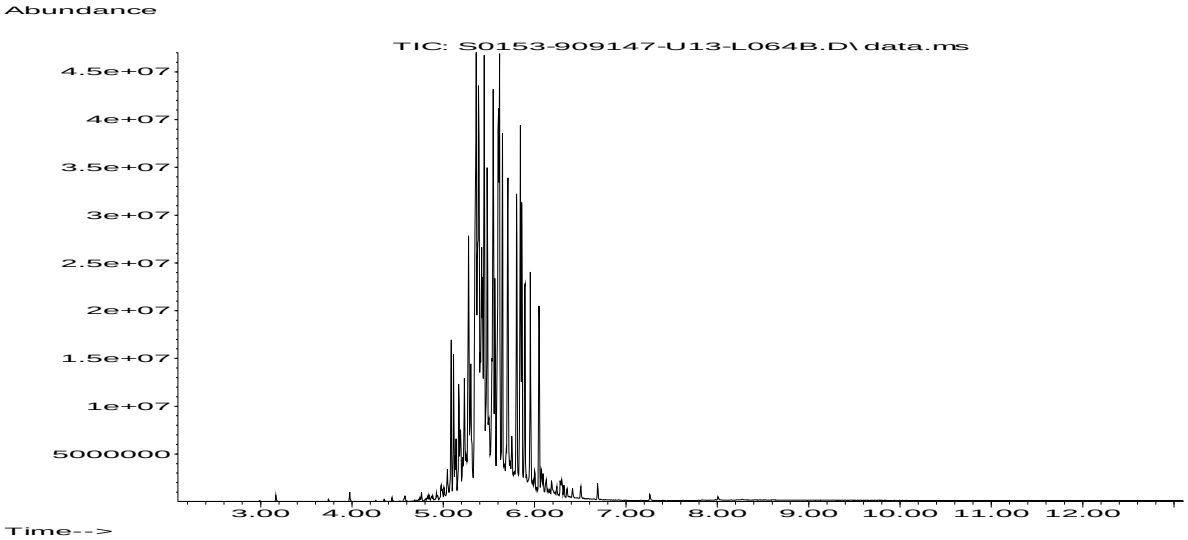

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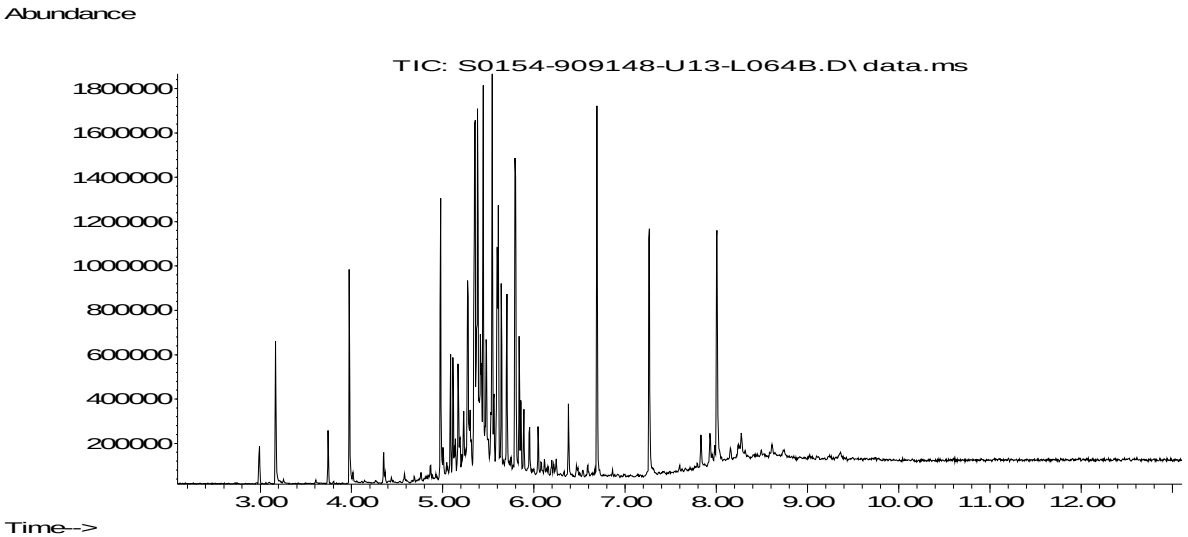

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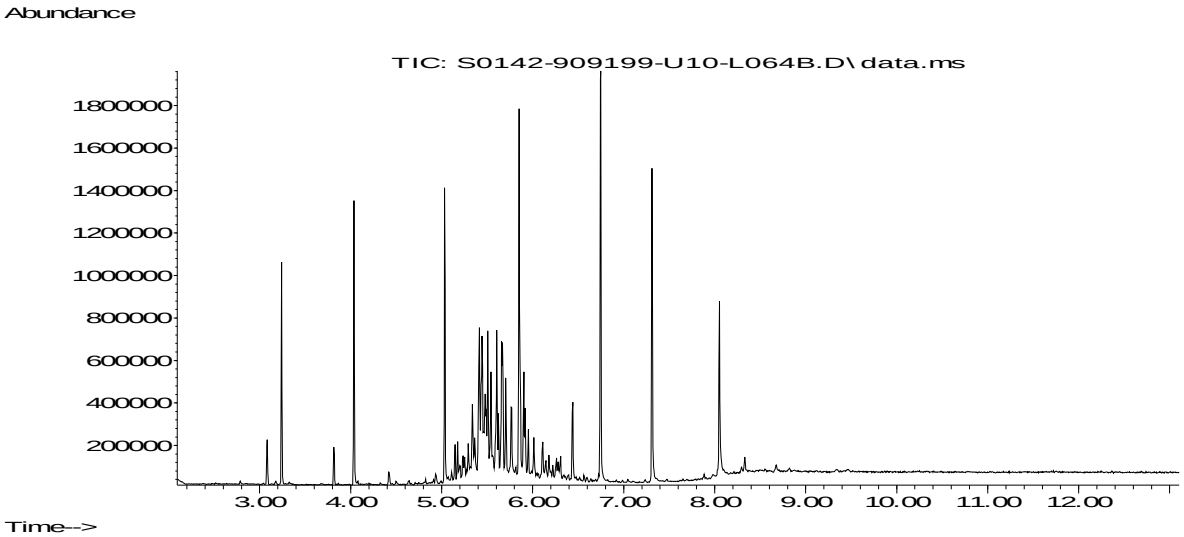

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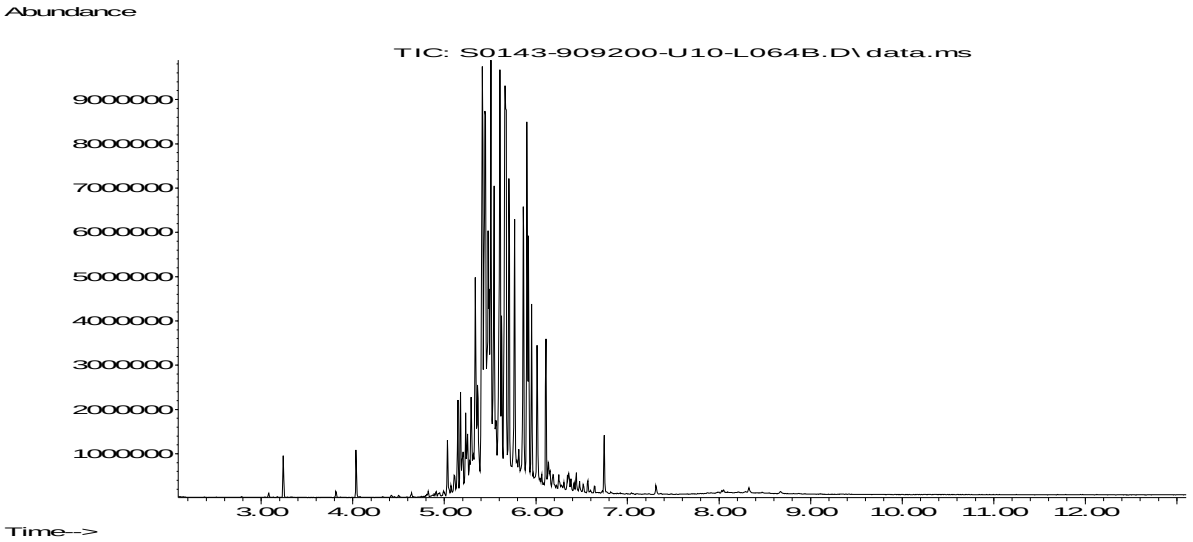

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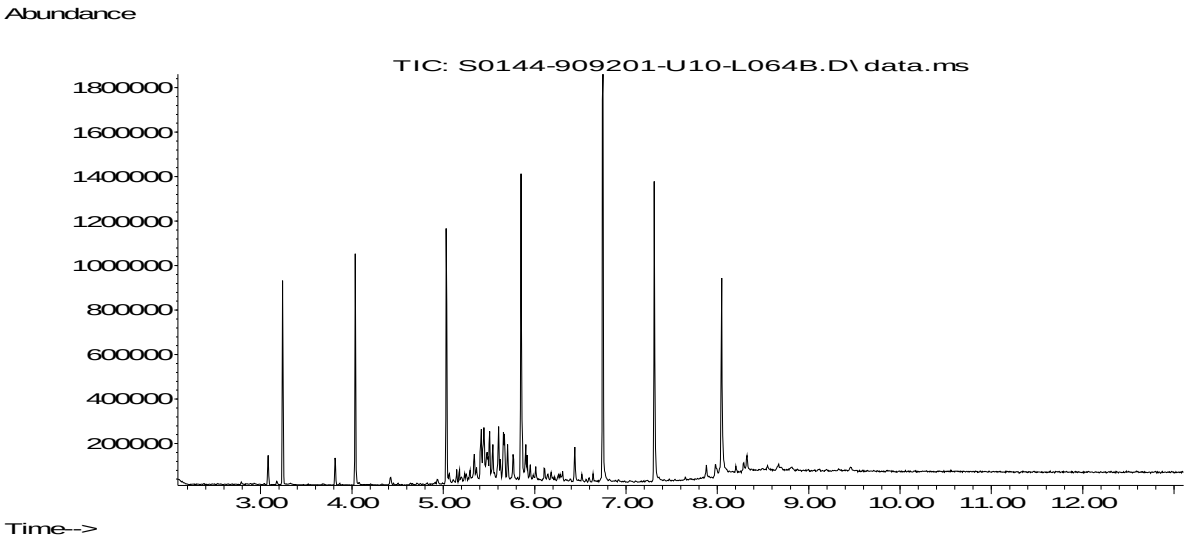

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Innsworth Lane
Gloucester
GL3 1DL

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e: jon@ccground.co.uk

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Watford,
Herts,
WD18 8YS

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Combined Report : SSE Site, Vastern Road - WAC

Project / Site name:	SSE Site, Vastern Road, Reading	**Samples received on:**	05/02/2018
Your job number:	C5925	**Samples instructed on:**	14/02/2018
Your order number:	C5925	**Analysis completed by:**	23/02/2018
Report Issue Number:	1	**Report issued on:**	07/03/2018
Samples Analysed:	10 10:1 WAC samples		

Signed:

Rexona Rahman
Head of Customer Services
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

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The results included within the report are representative of the samples submitted for analysis.

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Waste Acceptance Criteria Analytical Results

Report No:	Combined Report SSE Site Vastern Road - WAC						
					Client: CCGROUND		
Location	SSE Site, Vastern Road, Reading						
Lab Reference (Sample Number)	908247 / 908248				Landfill Waste Acceptance Criteria Limits		
Sampling Date	05/02/2018				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH1003C						
Depth (m)	0.45						
Solid Waste Analysis							
TOC (%)**	2.1				3%	5%	6%
Loss on Ignition (%) **	4.6				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	150				500	--	--
Total PAH (WAC-17) (mg/kg)	32				100	--	--
pH (units)**	8.8				--	>6	--
Acid Neutralisation Capacity (mol / kg)	20				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0110			0.0769	0.5	2	25
Barium *	0.0179			0.125	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0085			0.059	0.5	10	70
Copper *	0.011			0.078	2	50	100
Mercury *	0.0054			0.0379	0.01	0.2	2
Molybdenum *	0.0022			0.0153	0.5	10	30
Nickel *	< 0.0003			< 0.0030	0.4	10	40
Lead *	0.017			0.12	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0084			0.058	4	50	200
Chloride *	72			500	800	4000	25000
Fluoride	0.19			1.3	10	150	500
Sulphate *	9.0			63	1000	20000	50000
TDS	190			1300	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	3.52			24.6	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.5						
Dry Matter (%)	90						
Moisture (%)	10						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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The results included within the report are representative of the samples submitted for analysis.

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email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**Combined Report SSE Site Vastern Road - WAC**						
					Client:	**CCGROUND**	
Location	**SSE Site, Vastern Road, Reading**						
Lab Reference (Sample Number)	908280 / 908281				**Landfill Waste Acceptance Criteria**		
					Limits		
Sampling Date	05/02/2018				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH1004						
Depth (m)	2.00						
Solid Waste Analysis							
TOC (%)**	2.5				3%	5%	6%
Loss on Ignition (%) **	6.7				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	16				100	--	--
pH (units)**	7.7				--	>6	--
Acid Neutralisation Capacity (mol / kg)	4.1				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0074			0.0472	0.5	2	25
Barium *	0.0656			0.416	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0007			0.0046	0.5	10	70
Copper *	0.0054			0.034	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0071			0.0452	0.5	10	30
Nickel *	0.0037			0.023	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0022			0.014	4	50	200
Chloride *	36			230	800	4000	25000
Fluoride	0.53			3.3	10	150	500
Sulphate *	9.7			62	1000	20000	50000
TDS	240			1500	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	12.7			80.6	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	62						
Moisture (%)	38						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.
*= UKAS accredited (liquid eluate analysis only)
Stated limits are for guidance only and i2 cannot be held responsible for any discrepencies with current legislation
** = MCERTS accrediited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Waste Acceptance Criteria Analytical Results

Report No:	**Combined Report SSE Site Vastern Road - WAC**						
					Client:	**CCGROUND**	
Location	**SSE Site, Vastern Road, Reading**						
Lab Reference (Sample Number)	908329 / 908330				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	08/02/2018				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS013						
Depth (m)	0.60						
Solid Waste Analysis							
TOC (%)**	0.9				3%	5%	6%
Loss on Ignition (%) **	2.8				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	200				500	--	--
Total PAH (WAC-17) (mg/kg)	99				100	--	--
pH (units)**	10.6				--	>6	--
Acid Neutralisation Capacity (mol / kg)	40				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.0011			< 0.0110	0.5	2	25
Barium *	0.0939			0.784	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0043			0.036	0.5	10	70
Copper *	0.0052			0.043	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0028			0.0235	0.5	10	30
Nickel *	< 0.0003			< 0.0030	0.4	10	40
Lead *	0.0080			0.067	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.012			0.10	4	50	200
Chloride *	26			220	800	4000	25000
Fluoride	0.14			1.2	10	150	500
Sulphate *	20			170	1000	20000	50000
TDS	170			1400	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	4.61			38.5	500	800	1000
Leach Test Information							
Stone Content (%)	63						
Sample Mass (kg)	1.7						
Dry Matter (%)	96						
Moisture (%)	4.3						

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Waste Acceptance Criteria Analytical Results

Report No:	**Combined Report SSE Site Vastern Road - WAC**						
					Client:	**CCGROUND**	
Location	**SSE Vastern Road, Reading**						
Lab Reference (Sample Number)	908417 / 908418				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	07/02/2018				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS1002						
Depth (m)	1.70						
Solid Waste Analysis							
TOC (%)**	7.3				3%	5%	6%
Loss on Ignition (%) **	13.9				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	12000				500	--	--
Total PAH (WAC-17) (mg/kg)	940				100	--	--
pH (units)**	8.1				--	>6	--
Acid Neutralisation Capacity (mol / kg)	11				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0092			0.0658	0.5	2	25
Barium *	0.0334			0.240	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	< 0.0004			< 0.0040	0.5	10	70
Copper *	0.0078			0.056	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.134			0.961	0.5	10	30
Nickel *	0.0040			0.029	0.4	10	40
Lead *	0.0021			0.015	0.5	10	50
Antimony *	0.034			0.24	0.06	0.7	5
Selenium *	0.0069			0.050	0.1	0.5	7
Zinc *	0.0024			0.017	4	50	200
Chloride *	8.1			58	800	4000	25000
Fluoride	0.36			2.6	10	150	500
Sulphate *	49			350	1000	20000	50000
TDS	150			1100	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	9.19			66.0	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.97						
Dry Matter (%)	78						
Moisture (%)	22						

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Waste Acceptance Criteria Analytical Results

Report No:	**Combined Report SSE Site Vastern Road - WAC**						
					Client:	**CCGROUND**	
Location	**SSE Site, Vastern Road, Reading**						
Lab Reference (Sample Number)	908420 / 908421				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	09/02/2018				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP1005						
Depth (m)	0.30						
Solid Waste Analysis							
TOC (%)**	0.7				3%	5%	6%
Loss on Ignition (%) **	2.0				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	780				500	--	--
Total PAH (WAC-17) (mg/kg)	88				100	--	--
pH (units)**	9.4				--	>6	--
Acid Neutralisation Capacity (mol / kg)	25				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0089			0.0685	0.5	2	25
Barium *	0.0523			0.404	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.021			0.16	0.5	10	70
Copper *	0.0074			0.057	2	50	100
Mercury *	0.0034			0.0266	0.01	0.2	2
Molybdenum *	0.0023			0.0176	0.5	10	30
Nickel *	0.0010			0.0076	0.4	10	40
Lead *	0.089			0.69	0.5	10	50
Antimony *	0.0089			0.069	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.044			0.34	4	50	200
Chloride *	65			500	800	4000	25000
Fluoride	0.23			1.8	10	150	500
Sulphate *	14			110	1000	20000	50000
TDS	230			1800	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	3.65			28.2	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.9						
Dry Matter (%)	89						
Moisture (%)	11						

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Waste Acceptance Criteria Analytical Results

Report No:	**Combined Report SSE Site Vastern Road - WAC**						
					Client:	**CCGROUND**	
Location	**SSE Site, Vastern Road, Reading**						
Lab Reference (Sample Number)	908423 / 908424				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	08/02/2018				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS1006						
Depth (m)	1.90						
Solid Waste Analysis							
TOC (%)**	1.2				3%	5%	6%
Loss on Ignition (%) **	3.3				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	3.0				100	--	--
pH (units)**	8.0				--	>6	--
Acid Neutralisation Capacity (mol / kg)	17				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0047			0.0293	0.5	2	25
Barium *	0.0212			0.131	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0005			< 0.0040	0.5	10	70
Copper *	0.0052			0.032	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0072			0.0442	0.5	10	30
Nickel *	0.0013			0.0078	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0013			0.0078	4	50	200
Chloride *	4.1			26	800	4000	25000
Fluoride	0.29			1.8	10	150	500
Sulphate *	36			220	1000	20000	50000
TDS	170			1000	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	8.15			50.4	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.2						
Dry Matter (%)	72						
Moisture (%)	28						

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Waste Acceptance Criteria Analytical Results

Report No:	**Combined Report SSE Site Vastern Road - WAC**						
					Client:	**CCGROUND**	
Location	**SSE Site, Vastern Road, Reading**						
Lab Reference (Sample Number)	908461 / 908462				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	13/02/2018				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH2003						
Depth (m)	3.50						
Solid Waste Analysis							
TOC (%)**	0.3				3%	5%	6%
Loss on Ignition (%) **	1.4				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	700				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.9				100	--	--
pH (units)**	8.1				--	>6	--
Acid Neutralisation Capacity (mol / kg)	5.3				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.0011			< 0.0110	0.5	2	25
Barium *	0.0054			0.0428	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0005			0.0041	0.5	10	70
Copper *	0.0014			0.011	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0102			0.0815	0.5	10	30
Nickel *	< 0.0003			< 0.0030	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0012			0.0092	4	50	200
Chloride *	1.6			13	800	4000	25000
Fluoride	0.12			0.97	10	150	500
Sulphate *	12			92	1000	20000	50000
TDS	44			360	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	3.09			24.7	500	800	1000
Leach Test Information							
Stone Content (%)	43						
Sample Mass (kg)	2.0						
Dry Matter (%)	94						
Moisture (%)	6.5						

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Waste Acceptance Criteria Analytical Results

Report No:	**Combined Report SSE Site Vastern Road - WAC**						
					Client:	**CCGROUND**	
Location	**SSE Site, Vastern Road, Reading**						
Lab Reference (Sample Number)	908677 / 908678				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	06/02/2018				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS1004						
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	1.1				3%	5%	6%
Loss on Ignition (%) **	3.0				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	2.1				100	--	--
pH (units)**	8.8				--	>6	--
Acid Neutralisation Capacity (mol / kg)	16				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0167			0.129	0.5	2	25
Barium *	0.0061			0.0472	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0016			0.012	0.5	10	70
Copper *	0.0055			0.043	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0070			0.0544	0.5	10	30
Nickel *	0.0012			0.0093	0.4	10	40
Lead *	0.0028			0.022	0.5	10	50
Antimony *	0.0094			0.073	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.021			0.16	4	50	200
Chloride *	30			230	800	4000	25000
Fluoride	0.37			2.9	10	150	500
Sulphate *	5.6			43	1000	20000	50000
TDS	120			930	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	2.54			19.7	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.0						
Dry Matter (%)	88						
Moisture (%)	12						

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Waste Acceptance Criteria Analytical Results

Report No:	**Combined Report SSE Site Vastern Road - WAC**						
					Client:	**CCGROUND**	
Location	**SSE Site, Vastern Road, Reading**						
Lab Reference (Sample Number)	909157 / 909158				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	14/02/2018				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH2005						
Depth (m)	1.90						
Solid Waste Analysis							
TOC (%)**	3.5				3%	5%	6%
Loss on Ignition (%) **	8.0				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	1300				500	--	--
Total PAH (WAC-17) (mg/kg)	2.1				100	--	--
pH (units)**	7.7				--	>6	--
Acid Neutralisation Capacity (mol / kg)	11				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0015			< 0.0110	0.5	2	25
Barium *	0.0355			0.256	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	< 0.0004			< 0.0040	0.5	10	70
Copper *	0.0090			0.065	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0045			0.0323	0.5	10	30
Nickel *	< 0.0003			< 0.0030	0.4	10	40
Lead *	0.0097			0.070	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.010			0.072	4	50	200
Chloride *	91			660	800	4000	25000
Fluoride	0.44			3.2	10	150	500
Sulphate *	10			74	1000	20000	50000
TDS	250			1800	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	18.7			134	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.8						
Dry Matter (%)	77						
Moisture (%)	23						

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Waste Acceptance Criteria Analytical Results

Report No:	**Combined Report SSE Site Vastern Road - WAC**						
					Client:	**CCGROUND**	
Location	**SSE Site, Vastern Road, Reading**						
Lab Reference (Sample Number)	909209 / 909210				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	14/02/2018				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH2006						
Depth (m)	1.80						
Solid Waste Analysis							
TOC (%)**	3.2				3%	5%	6%
Loss on Ignition (%) **	11.4				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	200				500	--	--
Total PAH (WAC-17) (mg/kg)	4.1				100	--	--
pH (units)**	8.2				--	>6	--
Acid Neutralisation Capacity (mol / kg)	19				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0024			0.0160	0.5	2	25
Barium *	0.0549			0.370	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0044			0.030	0.5	10	70
Copper *	0.0062			0.042	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0104			0.0698	0.5	10	30
Nickel *	< 0.0003			< 0.0030	0.4	10	40
Lead *	0.0070			0.047	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0094			0.064	4	50	200
Chloride *	34			230	800	4000	25000
Fluoride	0.56			3.8	10	150	500
Sulphate *	13			89	1000	20000	50000
TDS	150			1000	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	4.32			29.1	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	72						
Moisture (%)	28						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.
*= UKAS accredited (liquid eluate analysis only)
Stated limits are for guidance only and i2 cannot be held responsible for any discrepencies with current legislation
** = MCERTS accrediited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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The results included within the report are representative of the samples submitted for analysis.

Combined Report : SSE Site, Vastern Road - WAC

Project / Site name: SSE Site, Vastern Road, Reading

* 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 *
908247	BH1003C	None Supplied	0.45	Brown gravelly sand.
908280	BH1004	None Supplied	2.00	Grey clay and sand.
908329	WS013	None Supplied	0.60	Grey gravelly sand with stones and rubble.
908417	WS1002	None Supplied	1.70	Grey clay and sand with gravel.
908420	TP1005	None Supplied	0.30	Brown sand with brick and gravel
908423	WS1006	None Supplied	1.90	Light brown clay and sand.
908461	BH2003	None Supplied	3.50	Light brown clay and sand with stones and gravel.
908463	TP1004	None Supplied	1.00	Brown clay and sand with gravel and brick.
908677	WS1004	None Supplied	1.00	Light brown clay and sand with gravel and rubble.
909157	BH2005	None Supplied	1.90	Grey clay and sand with gravel and chalk.
909209	BH2006	None Supplied	1.80	Brown clay and sand with gravel.

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Combined Report : SSE Site, Vastern Road - WAC

Project / Site name: SSE Site, Vastern Road, Reading

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
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-UK	W	NONE
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
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	in-house method	L076-PL	D	NONE
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 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
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
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

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Combined Report : SSE Site, Vastern Road - WAC

Project / Site name: SSE Site, Vastern Road, Reading

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
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-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 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	NONE
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
TPH Chromatogram	TPH Chromatogram.	In-house method	L064-PL	D	NONE
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.

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The results included within the report are representative of the samples submitted for analysis.

Exova Jones Environmental

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Adler and Allan Ltd
4B Lovett Road
Hampton Lovett Trading Estate
Droitwich
WR9 0QG

Attention :	Angela Gomez
Date :	20th July, 2017
Your reference :	CL2637.ai.1
Our reference :	Test Report 17/11978 Batch 1
Location :	Reading
Date samples received :	12th July, 2017
Status :	Final report
Issue :	1

Nine samples were received for analysis on 12th July, 2017 of which nine were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: Adler and Allan Ltd
Reference: CL2637.ai.1
Location: Reading
Contact: Angela Gomez
JE Job No.: 17/11978

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14				LOD/LOR	Units	Method No.
Sample ID	SP1	SP2	SP3	SP4	SP5	Excav1-Base	Stockpile						
Depth													
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J						
Sample Date	10/07/2017	10/07/2017	10/07/2017	10/07/2017	10/07/2017	10/07/2017	10/07/2017						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	12/07/2017	12/07/2017	12/07/2017	12/07/2017	12/07/2017	12/07/2017	12/07/2017						
Arsenic #	-	-	-	-	-	-	11.8				<0.5	mg/kg	TM30/PM15
Barium #	-	-	-	-	-	-	47				<1	mg/kg	TM30/PM15
Beryllium	-	-	-	-	-	-	1.1				<0.5	mg/kg	TM30/PM15
Cadmium #	-	-	-	-	-	-	<0.1				<0.1	mg/kg	TM30/PM15
Chromium #	-	-	-	-	-	-	161.5				<0.5	mg/kg	TM30/PM15
Copper #	-	-	-	-	-	-	25				<1	mg/kg	TM30/PM15
Lead #	-	-	-	-	-	-	457				<5	mg/kg	TM30/PM15
Mercury #	-	-	-	-	-	-	0.2				<0.1	mg/kg	TM30/PM15
Nickel #	-	-	-	-	-	-	27.9				<0.7	mg/kg	TM30/PM15
Selenium #	-	-	-	-	-	-	<1				<1	mg/kg	TM30/PM15
Vanadium	-	-	-	-	-	-	38				<1	mg/kg	TM30/PM15
Water Soluble Boron #	-	-	-	-	-	-	<0.1				<0.1	mg/kg	TM74/PM32
Zinc #	-	-	-	-	-	-	55				<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	-	-	-	-	-	-	<0.20 $_{AA}$				<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	-	-	-	-	-	0.18 $_{AA}$				<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	-	-	-	-	-	<0.25 $_{AA}$				<0.05	mg/kg	TM4/PM8
Fluorene #	-	-	-	-	-	-	<0.20 $_{AA}$				<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	-	-	-	-	-	0.71 $_{AA}$				<0.03	mg/kg	TM4/PM8
Anthracene #	-	-	-	-	-	-	0.37 $_{AA}$				<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	-	-	-	-	-	0.73 $_{AA}$				<0.03	mg/kg	TM4/PM8
Pyrene #	-	-	-	-	-	-	0.57 $_{AA}$				<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	-	-	-	-	-	0.53 $_{AA}$				<0.06	mg/kg	TM4/PM8
Chrysene #	-	-	-	-	-	-	0.34 $_{AA}$				<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	-	-	-	-	-	0.56 $_{AA}$				<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	-	-	-	-	-	0.28 $_{AA}$				<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-	-	-	-	-	-	0.24 $_{AA}$				<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	-	-	-	-	-	<0.20 $_{AA}$				<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	-	-	-	-	-	<0.20 $_{AA}$				<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	-	-	-	-	-	4.5 $_{AA}$				<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	-	-	-	-	-	0.40 $_{AA}$				<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	-	-	-	-	-	0.16 $_{AA}$				<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	-	-	-	-	-	110 $_{AA}$				<0	%	TM4/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Adler and Allan Ltd
Reference: CL2637.ai.1
Location: Reading
Contact: Angela Gomez
JE Job No.: 17/11978

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14				LOD/LOR	Units	Method No.
Sample ID	SP1	SP2	SP3	SP4	SP5	Excav1-Base	Stockpile						
Depth													
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J						
Sample Date	10/07/2017	10/07/2017	10/07/2017	10/07/2017	10/07/2017	10/07/2017	10/07/2017						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	12/07/2017	12/07/2017	12/07/2017	12/07/2017	12/07/2017	12/07/2017	12/07/2017						
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1 SV				<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1 SV				<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1 SV				<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	<0.2	0.6	<0.2	0.9				<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	<4	<4	472	1603	1685				<4	mg/kg	TM5/PM16
>C16-C21 #	<7	<7	<7	<7	3488	12528	17384				<7	mg/kg	TM5/PM16
>C21-C35 #	<7	<7	<7	<7	20	135	54				<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	<19	<19	<19	3981	14266	19124				<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1 SV				<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1 SV				<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1 SV				<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2	1.3	1.3				<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	<4	<4	88	466	873				<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	<7	<7	10	534	2915	7020				<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	26	22	148	97	113	27				<7	mg/kg	TM5/PM16
Total aromatics C5-35 #	<19	26	22	158	719	3495	7921				<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	<38	<38	158	4700	17761	27045				<38	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5	<5	<5	<5	<5 SV	<5 SV				<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	<5	<5	<5 SV	<5 SV				<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5	<5	<5	<5 SV	<5 SV				<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	<5	<5	<5 SV	<5 SV				<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	<5	<5	<5 SV	<5 SV				<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	<5	<5	<5 SV	<5 SV				<5	ug/kg	TM31/PM12
PCB 28 #	-	-	-	-	-	-	<5				<5	ug/kg	TM17/PM8
PCB 52 #	-	-	-	-	-	-	<5				<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	-	-	<5				<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	-	-	<5				<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	-	-	<5				<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-	-	-	-	<5				<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-	-	-	-	<5				<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-	-	-	-	<35				<35	ug/kg	TM17/PM8
Natural Moisture Content	7.8	25.0	31.3	29.0	20.1	26.9	12.3				<0.1	%	PM4/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Adler and Allan Ltd
Reference: CL2637.ai.1
Location: Reading
Contact: Angela Gomez
JE Job No.: 17/11978

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	15-16	17									LOD/LOR	Units	Method No.
Sample ID	Drums	Drum2											
Depth													
COC No / misc													
Containers	V G	G											
Sample Date	10/07/2017	10/07/2017											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	12/07/2017	12/07/2017											
TPH CWG													
Aliphatics													
>C5-C6 #	<10 SV	19									<10	ug/l	TM36/PM12
>C6-C8 #	<10 SV	<10									<10	ug/l	TM36/PM12
>C8-C10 #	<10 SV	<10									<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5									<5	ug/l	TM5/PM30
>C12-C16 #	2300	90									<10	ug/l	TM5/PM30
>C16-C21 #	23190	1000									<10	ug/l	TM5/PM30
>C21-C35 #	<10	<10									<10	ug/l	TM5/PM30
Total aliphatics C5-35 #	25490	1109									<10	ug/l	TM5/TM36/PM30/PM12
Aromatics													
>C5-EC7 #	<10 SV	<10									<10	ug/l	TM36/PM12
>EC7-EC8 #	<10 SV	<10									<10	ug/l	TM36/PM12
>EC8-EC10 #	<10 SV	<10									<10	ug/l	TM36/PM12
>EC10-EC12 #	8	<5									<5	ug/l	TM5/PM30
>EC12-EC16 #	4330	190									<10	ug/l	TM5/PM30
>EC16-EC21 #	32970	1530									<10	ug/l	TM5/PM30
>EC21-EC35 #	<10	<10									<10	ug/l	TM5/PM30
Total aromatics C5-35 #	37308	1720									<10	ug/l	TM5/TM36/PM30/PM12
Total aliphatics and aromatics(C5-35) #	62798	2829									<10	ug/l	TM5/TM36/PM30/PM12
MTBE #	<5 SV	<5									<5	ug/l	TM31/PM12
Benzene #	<5 SV	<5									<5	ug/l	TM31/PM12
Toluene #	<5 SV	<5									<5	ug/l	TM31/PM12
Ethylbenzene #	<5 SV	<5									<5	ug/l	TM31/PM12
m/p-Xylene #	<5 SV	<5									<5	ug/l	TM31/PM12
o-Xylene #	<5 SV	<5									<5	ug/l	TM31/PM12

Please see attached notes for all abbreviations and acronyms

Client Name: Adler and Allan Ltd **Matrix : Solid**
Reference: CL2637.ai.1
Location: Reading
Contact: Angela Gomez

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/11978	1	SP1		1-2	No interpretation possible
17/11978	1	SP2		3-4	No interpretation possible
17/11978	1	SP3		5-6	No interpretation possible
17/11978	1	SP4		7-8	PAH's
17/11978	1	SP5		9-10	Linear alkylbenzenes & PAH's
17/11978	1	Excav1-Base		11-12	Linear alkylbenzenes
17/11978	1	Stockpile		13-14	Linear alkylbenzenes

Client Name: Adler and Allan Ltd **Matrix : Liquid**
Reference: CL2637.ai.1
Location: Reading
Contact: Angela Gomez

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/11978	1	Drums		15-16	Linear alkylbenzenes
17/11978	1	Drum2		17	Linear alkylbenzenes

Client Name: Adler and Allan Ltd

Reference: CL2637.ai.1

Location: Reading

Contact: Angela Gomez

Matrix : Solid

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/11978	1	SP1		1-2	GRO	Solid Samples were received at a temperature above 9°C.
17/11978	1	SP2		3-4	GRO	Solid Samples were received at a temperature above 9°C.
17/11978	1	SP3		5-6	GRO	Solid Samples were received at a temperature above 9°C.
17/11978	1	SP4		7-8	GRO	Solid Samples were received at a temperature above 9°C.
17/11978	1	SP5		9-10	GRO	Solid Samples were received at a temperature above 9°C.
17/11978	1	Excav1-Base		11-12	GRO	Solid Samples were received at a temperature above 9°C.
17/11978	1	Stockpile		13-14	GRO	Solid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

Client Name: Adler and Allan Ltd

Reference: CL2637.ai.1

Location: Reading

Contact: Angela Gomez

Matrix : Liquid

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/11978	1					Liquid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/11978

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

JE Job No: 17/11978

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM30/PM12	CWG GC-FID	Yes			

JE Job No: 17/11978

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes

Exova Jones Environmental

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Adler and Allan Ltd
4B Lovett Road
Hampton Lovett Trading Estate
Droitwich
WR9 0QG

Attention :	Angela Gomez
Date :	21st July, 2017
Your reference :	CL2637
Our reference :	Test Report 17/12160 Batch 1
Location :	Reading
Date samples received :	15th July, 2017
Status :	Final report
Issue :	1

Five samples were received for analysis on 15th July, 2017 of which five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: Adler and Allan Ltd
Reference: CL2637
Location: Reading
Contact: Angela Gomez
JE Job No.: 17/12160

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4											
Sample ID	EXC1-B-01	EXC1-B-02											
Depth													
COC No / misc													
Containers	V J	V J											
Sample Date	13/07/2017	13/07/2017											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	15/07/2017	15/07/2017											

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2									<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	15									<4	mg/kg	TM5/PM16
>C16-C21 #	35	180									<7	mg/kg	TM5/PM16
>C21-C35 #	<7	45									<7	mg/kg	TM5/PM16
Total aliphatics C5-35	35	240									<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2									<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	16									<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	184									<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	66									<7	mg/kg	TM5/PM16
Total aromatics C5-35 #	<19	266									<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	506									<38	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5									<5	ug/kg	TM31/PM12
Benzene #	<5	<5									<5	ug/kg	TM31/PM12
Toluene #	<5	<5									<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5									<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5									<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5									<5	ug/kg	TM31/PM12
Natural Moisture Content	6.1	17.7									<0.1	%	PM4/PM0

Client Name: Adler and Allan Ltd
Reference: CL2637
Location: Reading
Contact: Angela Gomez
JE Job No.: 17/12160

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	5-6	7-8	9-10									
Sample ID	SW1	SW2	SW3									
Depth												
COC No / misc												
Containers	V G	V G	V G									
Sample Date	13/07/2017	13/07/2017	13/07/2017									
Sample Type	Surface Water	Surface Water	Surface Water									
Batch Number	1	1	1									
Date of Receipt	15/07/2017	15/07/2017	15/07/2017									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10								<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10	<10								<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	<10								<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5								<5	ug/l	TM5/PM30
>C12-C16 #	<10	<10	<10								<10	ug/l	TM5/PM30
>C16-C21 #	<10	<10	<10								<10	ug/l	TM5/PM30
>C21-C35 #	<10	<10	<10								<10	ug/l	TM5/PM30
Total aliphatics C5-35 #	<10	<10	<10								<10	ug/l	TM5/TM36/PM30/PM12
Aromatics													
>C5-EC7 #	<10	<10	<10								<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10								<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10	<10								<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5								<5	ug/l	TM5/PM30
>EC12-EC16 #	<10	<10	<10								<10	ug/l	TM5/PM30
>EC16-EC21 #	<10	<10	<10								<10	ug/l	TM5/PM30
>EC21-EC35 #	<10	<10	<10								<10	ug/l	TM5/PM30
Total aromatics C5-35 #	<10	<10	<10								<10	ug/l	TM5/TM36/PM30/PM12
Total aliphatics and aromatics(C5-35) #	<10	<10	<10								<10	ug/l	TM5/TM36/PM30/PM12
MTBE #	<5	<5	<5								<5	ug/l	TM31/PM12
Benzene #	<5	<5	<5								<5	ug/l	TM31/PM12
Toluene #	<5	<5	<5								<5	ug/l	TM31/PM12
Ethylbenzene #	<5	<5	<5								<5	ug/l	TM31/PM12
m/p-Xylene #	<5	<5	<5								<5	ug/l	TM31/PM12
o-Xylene #	<5	<5	<5								<5	ug/l	TM31/PM12

Client Name: Adler and Allan Ltd **Matrix : Solid**
Reference: CL2637
Location: Reading
Contact: Angela Gomez

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/12160	1	EXC1-B-01		1-2	No interpretation possible
17/12160	1	EXC1-B-02		3-4	Unknown pattern

Client Name: Adler and Allan Ltd **Matrix : Liquid**
Reference: CL2637
Location: Reading
Contact: Angela Gomez

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/12160	1	SW1		5-6	No interpretation possible
17/12160	1	SW2		7-8	No interpretation possible
17/12160	1	SW3		9-10	No interpretation possible

Client Name: Adler and Allan Ltd
Reference: CL2637
Location: Reading
Contact: Angela Gomez

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/12160						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
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NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/12160

SOILS

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It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

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The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

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ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 17/12160

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions	PM30/PM12	CWG GC-FID	Yes			
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

JE Job No: 17/12160

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

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Adler and Allan Ltd
4B Lovett Road
Hampton Lovett Trading Estate
Droitwich
WR9 0QG

Attention :	Angela Gomez
Date :	25th July, 2017
Your reference :	
Our reference :	Test Report 17/12172 Batch 1
Location :	
Date samples received :	15th July, 2017
Status :	Final report
Issue :	1

Eight samples were received for analysis on 15th July, 2017 of which eight were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: Adler and Allan Ltd
Reference:
Location:
Contact: Angela Gomez
JE Job No.: 17/12172

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9	10	11-12	13-14			LOD/LOR	Units	Method No.
Sample ID	LOCATION 1	LOCATION 2	LOCATION 3	LOCATION 4	LOCATION 5	LOCATION 5	LOCATION 6	LOCATION 7					
Depth	BASE	SIDEWALL	SIDEWALL	SIDEWALL	SIDEWALL	BANK	BASE	SIDEWALL					
COC No / misc													
Containers	V J	V J	V J	V J	V	J	V J	V J					
Sample Date	09/07/2017	09/07/2017	09/07/2017	09/07/2017	09/07/2017	09/07/2017	09/07/2017	09/07/2017					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	15/07/2017	15/07/2017	15/07/2017	15/07/2017	15/07/2017	15/07/2017	15/07/2017	15/07/2017					
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>C6-C8 #	0.1 SV	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>C8-C10	0.1 SV	<0.1 SV	<0.1	0.1	<0.1 SV	<0.1 SV	0.2	<0.1			<0.1	mg/kg	TM36/PM12
>C10-C12 #	4.2 ++	<0.2	<0.2	<0.2	1.2	1.6	<0.2	<0.2			<0.2	mg/kg	TM5/PM16
>C12-C16 #	3093 ++	338	61	184	1023	764	452	7			<4	mg/kg	TM5/PM16
>C16-C21 #	26866 ++	3034	594	1768	9076	6875	4403	218			<7	mg/kg	TM5/PM16
>C21-C35 #	131 ++	13	<7	<7	29	29	36	73			<7	mg/kg	TM5/PM16
Total aliphatics C5-35	30094	3385	655	1952	10129	7670	4891	298			<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	0.1 SV	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	2.3	<0.2	<0.2	<0.2	1.4	<0.2	<0.2	<0.2			<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	1538	194	68	205	468	522	289	<4			<4	mg/kg	TM5/PM16
>EC16-EC21 #	10725	1354	476	1482	3279	3706	2172	40			<7	mg/kg	TM5/PM16
>EC21-EC35 #	41	<7	<7	<7	11	22	<7	26			<7	mg/kg	TM5/PM16
Total aromatics C5-35 #	12306	1548	544	1687	3759	4250	2461	66			<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	42400	4933	1199	3639	13888	11920	7352	364			<38	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5 SV	<5 SV	<5	<5	<5 SV	<5 SV	<5	<5			<5	ug/kg	TM31/PM12
Benzene #	<5 SV	<5 SV	<5	<5	<5 SV	<5 SV	<5	<5			<5	ug/kg	TM31/PM12
Toluene #	<5 SV	<5 SV	<5	<5	<5 SV	<5 SV	<5	91			<5	ug/kg	TM31/PM12
Ethylbenzene #	28 SV	<5 SV	<5	<5	<5 SV	<5 SV	<5	<5			<5	ug/kg	TM31/PM12
m/p-Xylene #	96 SV	<5 SV	<5	<5	<5 SV	<5 SV	<5	<5			<5	ug/kg	TM31/PM12
o-Xylene #	35 SV	<5 SV	<5	<5	<5 SV	<5 SV	<5	<5			<5	ug/kg	TM31/PM12
Natural Moisture Content	17.1	21.1	18.8	11.9	37.7	31.9	6.1	3.0			<0.1	%	PM4/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Adler and Allan Ltd **Matrix : Solid**
Reference:
Location:
Contact: Angela Gomez

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/12172	1	LOCATION 1	BASE	1-2	Linear alkylbenzenes
17/12172	1	LOCATION 2	SIDEWALL	3-4	Linear alkylbenzenes
17/12172	1	LOCATION 3	SIDEWALL	5-6	Linear alkylbenzenes
17/12172	1	LOCATION 4	SIDEWALL	7-8	Linear alkylbenzenes
17/12172	1	LOCATION 5	SIDEWALL	9	Linear alkylbenzenes
17/12172	1	LOCATION 5	BANK	10	Linear alkylbenzenes
17/12172	1	LOCATION 6	BASE	11-12	Linear alkylbenzenes
17/12172	1	LOCATION 7	SIDEWALL	13-14	Mineral insulating oil trype product & Trace of possible linear alkylbenzenes

Client Name: Adler and Allan Ltd

Matrix : Solid

Reference:

Location:

Contact: Angela Gomez

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/12172	1	LOCATION 1	BASE	1-2	GRO	Solid Samples were received at a temperature above 9°C.
17/12172	1	LOCATION 2	SIDEWALL	3-4	GRO	Solid Samples were received at a temperature above 9°C.
17/12172	1	LOCATION 3	SIDEWALL	5-6	GRO	Solid Samples were received at a temperature above 9°C.
17/12172	1	LOCATION 4	SIDEWALL	7-8	GRO	Solid Samples were received at a temperature above 9°C.
17/12172	1	LOCATION 5	SIDEWALL	9	GRO	Solid Samples were received at a temperature above 9°C.
17/12172	1	LOCATION 5	BANK	10	GRO	Solid Samples were received at a temperature above 9°C.
17/12172	1	LOCATION 6	BASE	11-12	GRO	Solid Samples were received at a temperature above 9°C.
17/12172	1	LOCATION 7	SIDEWALL	13-14	GRO	Solid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/12172

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 17/12172

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions.	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions.	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

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Analytical Report Number : 18-78223

Project / Site name:	SSE Site, Vastern Road, Reading	**Samples received on:**	07/03/2018
Your job number:	C5925	**Samples instructed on:**	08/03/2018
Your order number:	C5925	**Analysis completed by:**	16/03/2018
Report Issue Number:	1	**Report issued on:**	16/03/2018
Samples Analysed:	12 water samples		

Signed:

Nicole Fay
Quality Assistant
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.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920646	920647	920648	920649	920650
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.16	1.69	2.30	2.13	1.02
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.3	8.3	7.2	7.5	7.7
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1600	3000	1900	1000	840
Sulphate as SO_4	µg/l	45	ISO 17025	97400	161000	134000	47200	39000
Sulphate as SO_4	mg/l	0.045	ISO 17025	97.4	161	134	47.2	39.0
Chloride	mg/l	0.15	ISO 17025	220	470	370	130	71
Ammonium as NH_4	µg/l	15	ISO 17025	1400	2400	1200	1200	830
Alkalinity	mgCaCO3/l	3	ISO 17025	580	670	500	370	500
Dissolved Oxygen	mg/l	1	NONE	8.4	8.9	< 1.0	2.6	7.2
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	11	< 10	< 10	< 10
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.18	6.41	1.56	2.25	1.79
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.03	< 0.02	< 0.02	< 0.02
Calcium (dissolved)	mg/l	0.012	ISO 17025	190	280	230	150	93
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	1.6	< 1.0	< 1.0	< 1.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	1.6	< 0.2	< 0.2	0.6
Copper (dissolved)	µg/l	0.5	ISO 17025	9.3	11	3.6	3.0	4.8
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	1.5	0.8	0.2	0.6
Mercury (dissolved)	µg/l	0.05	ISO 17025	0.13	0.08	0.08	0.06	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	3.3	12	3.4	2.9	3.8
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.6	51	1.5	0.9	3.7
Zinc (dissolved)	µg/l	0.5	ISO 17025	5.0	4.6	3.4	3.2	8.1

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920646	920647	920648	920649	920650
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.16	1.69	2.30	2.13	1.02
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920646	920647	920648	920649	920650
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.16	1.69	2.30	2.13	1.02
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920646	920647	920648	920649	920650
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.16	1.69	2.30	2.13	1.02
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		10	NONE	ND	ND	ND	ND	ND
VOC % Match	%	10	NONE	-	-	-	-	-
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920646	920647	920648	920649	920650
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.16	1.69	2.30	2.13	1.02
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

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Your Order No: C5925

Lab Sample Number				920646	920647	920648	920649	920650
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.16	1.69	2.30	2.13	1.02
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	ND	ND	ND	ND	ND
SVOC % Match	%	N/A	NONE	0	0	0	0	0
PCBs by GC-MS								
PCB Congener 28	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 52	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 101	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 118	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 138	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 153	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 180	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCBs by GC-MS								
Total PCBs	µg/l	0.14	NONE	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920651	920652	920653	920654	920655
Sample Reference				WS1019	BH1001	BH1002C	BH1003E	BH1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.27	2.30	2.38	2.62	2.17
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.5	7.4	7.4	7.7	7.2
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	870	1000	1100	1400	4400
Sulphate as SO_4	µg/l	45	ISO 17025	63100	60200	36900	45900	40100
Sulphate as SO_4	mg/l	0.045	ISO 17025	63.1	60.2	36.9	45.9	40.1
Chloride	mg/l	0.15	ISO 17025	99	130	150	260	1300
Ammonium as NH_4	µg/l	15	ISO 17025	38	1100	1100	250	2900
Alkalinity	mgCaCO3/l	3	ISO 17025	450	480	490	250	620
Dissolved Oxygen	mg/l	1	NONE	3.4	3.5	1.8	4.7	2.4
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.20	3.39	6.41	1.37	0.53
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Calcium (dissolved)	mg/l	0.012	ISO 17025	150	140	130	150	250
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.3	< 0.2	< 0.2	0.7	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	3.4	4.4	1.9	4.0	2.4
Lead (dissolved)	µg/l	0.2	ISO 17025	0.5	1.8	< 0.2	0.4	0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.2	1.9	2.5	1.4	2.5
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.0	0.9	1.4	6.7	5.7
Zinc (dissolved)	µg/l	0.5	ISO 17025	2.4	3.3	2.4	2.4	1.8

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920651	920652	920653	920654	920655
Sample Reference				WS1019	BH1001	BH1002C	BH1003E	BH1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.27	2.30	2.38	2.62	2.17
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920651	920652	920653	920654	920655
Sample Reference				WS1019	BH1001	BH1002C	BH1003E	BH1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.27	2.30	2.38	2.62	2.17
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Chloroethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Bromomethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Vinyl Chloride	µg/l	1	NONE	< 1.0	-	-	-	-
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	-	-	-	-
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Trichloromethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Benzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Trichloroethene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Dibromomethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Toluene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Styrene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Tribromomethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
o-Xylene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Bromobenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Butylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	-	-	-	-
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	-	-

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920651	920652	920653	920654	920655
Sample Reference				WS1019	BH1001	BH1002C	BH1003E	BH1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.27	2.30	2.38	2.62	2.17
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		10	NONE	ND	-	-	-	-
VOC % Match	%	10	NONE	-	-	-	-	-
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	-	-	-	-
Phenol	µg/l	0.05	NONE	< 0.05	-	-	-	-
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	-	-	-	-
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	-	-	-	-
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	-	-	-	-
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	-	-	-	-
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	-	-	-	-
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	-	-	-	-
2-Methylphenol	µg/l	0.05	NONE	< 0.05	-	-	-	-
Hexachloroethane	µg/l	0.05	NONE	< 0.05	-	-	-	-
Nitrobenzene	µg/l	0.05	NONE	< 0.05	-	-	-	-
4-Methylphenol	µg/l	0.05	NONE	< 0.05	-	-	-	-
Isophorone	µg/l	0.05	NONE	< 0.05	-	-	-	-
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	-	-	-	-
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	-	-	-	-
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	-	-	-	-
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	-	-	-	-
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	-	-	-	-
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	-	-	-	-
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	-	-	-	-
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	-	-	-	-
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	-	-	-	-
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	-	-	-	-
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	-	-	-	-
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	-	-	-	-
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	-	-	-	-
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	-	-	-	-
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	-	-	-	-
Dibenzofuran	µg/l	0.05	NONE	< 0.05	-	-	-	-
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	-	-	-	-
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	-	-	-	-
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	-	-	-	-
Fluorene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Azobenzene	µg/l	0.05	NONE	< 0.05	-	-	-	-
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	-	-	-	-
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	-	-	-	-
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Anthracene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Carbazole	µg/l	0.05	NONE	< 0.05	-	-	-	-
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	-	-	-	-
Anthraquinone	µg/l	0.05	NONE	< 0.05	-	-	-	-
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Pyrene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	-	-	-	-
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Chrysene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920651	920652	920653	920654	920655
Sample Reference				WS1019	BH1001	BH1002C	BH1003E	BH1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.27	2.30	2.38	2.62	2.17
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	-	-	-	-

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920651	920652	920653	920654	920655
Sample Reference				WS1019	BH1001	BH1002C	BH1003E	BH1004
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.27	2.30	2.38	2.62	2.17
Date Sampled				07/03/2018	07/03/2018	07/03/2018	07/03/2018	07/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	ND	-	-	-	-
SVOC % Match	%	N/A	NONE	0	-	-	-	-
PCBs by GC-MS								
PCB Congener 28	µg/l	0.02	NONE	< 0.02	-	-	-	-
PCB Congener 52	µg/l	0.02	NONE	< 0.02	-	-	-	-
PCB Congener 101	µg/l	0.02	NONE	< 0.02	-	-	-	-
PCB Congener 118	µg/l	0.02	NONE	< 0.02	-	-	-	-
PCB Congener 138	µg/l	0.02	NONE	< 0.02	-	-	-	-
PCB Congener 153	µg/l	0.02	NONE	< 0.02	-	-	-	-
PCB Congener 180	µg/l	0.02	NONE	< 0.02	-	-	-	-
PCBs by GC-MS								
Total PCBs	µg/l	0.14	NONE	< 0.14	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920656	920657			
Sample Reference				BH2001	BH2002			
Sample Number				None Supplied	None Supplied			
Depth (m)				2.39	2.35			
Date Sampled				07/03/2018	07/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.5	7.3			
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1500	850			
Sulphate as SO_4	µg/l	45	ISO 17025	36400	23300			
Sulphate as SO_4	mg/l	0.045	ISO 17025	36.4	23.3			
Chloride	mg/l	0.15	ISO 17025	190	41			
Ammonium as NH_4	µg/l	15	ISO 17025	520	130			
Alkalinity	mgCaCO3/l	3	ISO 17025	640	640			
Dissolved Oxygen	mg/l	1	NONE	2.1	< 1.0			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16			
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	2.78	1.51			
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.03	0.03			
Calcium (dissolved)	mg/l	0.012	ISO 17025	140	160			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0			
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0			
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.4	< 0.2			
Copper (dissolved)	µg/l	0.5	ISO 17025	3.3	1.3			
Lead (dissolved)	µg/l	0.2	ISO 17025	0.4	0.5			
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05			
Nickel (dissolved)	µg/l	0.5	ISO 17025	5.7	2.5			
Selenium (dissolved)	µg/l	0.6	ISO 17025	6.9	1.4			
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.0	6.1			

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920656	920657			
Sample Reference				BH2001	BH2002			
Sample Number				None Supplied	None Supplied			
Depth (m)				2.39	2.35			
Date Sampled				07/03/2018	07/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0			
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10			

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920656	920657			
Sample Reference				BH2001	BH2002			
Sample Number				None Supplied	None Supplied			
Depth (m)				2.39	2.35			
Date Sampled				07/03/2018	07/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0			
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0			
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920656	920657			
Sample Reference				BH2001	BH2002			
Sample Number				None Supplied	None Supplied			
Depth (m)				2.39	2.35			
Date Sampled				07/03/2018	07/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		10	NONE	ND	ND			
VOC % Match	%	10	NONE	-	-			
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05			
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05			
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05			
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05			
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05			
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05			
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05			
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05			
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05			
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05			
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05			
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05			
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05			
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05			
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05			
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05			
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05			
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05			
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05			
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05			
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05			
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05			
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05			
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05			
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05			
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05			
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05			
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05			
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05			
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05			
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05			
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05			
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			

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Analytical Report Number: 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				920656	920657			
Sample Reference				BH2001	BH2002			
Sample Number				None Supplied	None Supplied			
Depth (m)				2.39	2.35			
Date Sampled				07/03/2018	07/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			

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Lab Sample Number				920656	920657			
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Sample Number				None Supplied	None Supplied			
Depth (m)				2.39	2.35			
Date Sampled				07/03/2018	07/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	0	0			
SVOC % Match	%	N/A	NONE	0	0			
PCBs by GC-MS								
PCB Congener 28	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 52	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 101	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 118	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 138	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 153	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 180	µg/l	0.02	NONE	< 0.02	< 0.02			
PCBs by GC-MS								
Total PCBs	µg/l	0.14	NONE	< 0.14	< 0.14			

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number : 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

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
Alkalinity in Water	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025
Ammonium as NH4 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Oxygen in water	Determination of dissolved oxygen.	In-house method	L086-PL	W	NONE
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
PCB's By GC-MS in water	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L028-PL	W	NONE
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	W	ISO 17025
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	NONE
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025

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Analytical Report Number : 18-78223

Project / Site name: SSE Site, Vastern Road, Reading

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
Tentatively identified compounds (SVOC) in water	Determination of semi-volatile organic compounds total ion count in water by extraction with hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L070-PL	W	NONE
Tentatively identified compounds (VOC) in water	Determination of volatile organic compounds total ion count in water by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073B-PL	W	NONE
TPH Chromatogram	TPH Chromatogram.	In-house method	L070-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025

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.

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Jon Ind
CC Ground Investigation Ltd
Unit A2
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Analytical Report Number : 18-78389

Project / Site name:	SSE Site, Vastern Road, Reading	**Samples received on:**	09/03/2018
Your job number:	C5925	**Samples instructed on:**	09/03/2018
Your order number:	C5925	**Analysis completed by:**	19/03/2018
Report Issue Number:	1	**Report issued on:**	19/03/2018
Samples Analysed:	7 water samples		

Signed: CCStone

Dr Claire Stone
Quality 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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-78389

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				921465	921466	921467	921468	921469
Sample Reference				BH2003	BH2004	BH2005	BH2006	BH1005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.43	2.52	2.50	1.60	2.56
Date Sampled				08/03/2018	08/03/2018	08/03/2018	08/03/2018	08/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.6	7.6	6.9	7.2	7.3
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	810	660	2500	3000	1400
Sulphate as SO_4	µg/l	45	ISO 17025	18700	18500	39000	73500	61900
Sulphate as SO_4	mg/l	0.045	ISO 17025	18.7	18.5	39.0	73.5	61.9
Chloride	mg/l	0.15	ISO 17025	130	61	580	740	280
Ammonium as NH_4	µg/l	15	ISO 17025	250	250	220	320	26
Alkalinity	mgCaCO3/l	3	ISO 17025	400	390	680	620	410
Dissolved Oxygen	mg/l	1	NONE	9.7	9.8	9.3	9.6	8.7
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.91	2.36	3.55	0.93	0.62
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.06	0.09	0.12	< 0.02	0.03
Calcium (dissolved)	mg/l	0.012	ISO 17025	120	120	320	220	170
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.6	0.6	< 0.2	0.3	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	11	8.3	4.4	0.7	3.5
Lead (dissolved)	µg/l	0.2	ISO 17025	0.5	0.8	0.5	3.6	0.4
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.7	4.7	14	3.4	5.2
Selenium (dissolved)	µg/l	0.6	ISO 17025	2.5	2.3	3.0	2.5	1.5
Zinc (dissolved)	µg/l	0.5	ISO 17025	7.8	12	160	13	4.4

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Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				921465	921466	921467	921468	921469
Sample Reference				BH2003	BH2004	BH2005	BH2006	BH1005
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Date Sampled				08/03/2018	08/03/2018	08/03/2018	08/03/2018	08/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	730	27	47
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	2700	61	120
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	3400	88	170

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Date Sampled				08/03/2018	08/03/2018	08/03/2018	08/03/2018	08/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	-
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	-
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-

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Date Sampled				08/03/2018	08/03/2018	08/03/2018	08/03/2018	08/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		10	NONE	None Detected	None Detected	None Detected	None Detected	-
VOC % Match	%	10	NONE	0	0	0	0	-

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Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	-
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	-

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Analytical Report Number: 18-78389

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				921465	921466	921467	921468	921469
Sample Reference				BH2003	BH2004	BH2005	BH2006	BH1005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.43	2.52	2.50	1.60	2.56
Date Sampled				08/03/2018	08/03/2018	08/03/2018	08/03/2018	08/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	None Detected	None Detected	Benzene, (1-propylnonyl)-	Benzene, (1-butyloctyl)-	-
SVOC % Match	%	N/A	NONE	0	0	97	97	-
SVOCs TICs Compound Name		N/A	NONE	-	-	1H-Isoindole-1,3(2H)-dione	1R-.alpha.-Pinene	-
SVOC % Match	%	N/A	NONE	-	-	96	96	-
SVOCs TICs Compound Name		N/A	NONE	-	-	Benzene, (1-butyloctyl)-	Benzene, (1-propylnonyl)-	-
SVOC % Match	%	N/A	NONE	-	-	96	96	-
SVOCs TICs Compound Name		N/A	NONE	-	-	Benzene, (1-ethyldecyl)-	Benzene, (1-butylheptyl)-	-
SVOC % Match	%	N/A	NONE	-	-	96	95	-
SVOCs TICs Compound Name		N/A	NONE	-	-	Benzenepropanoic acid, .beta.-methyl-, (S)-	Benzene, (1-butylnonyl)-	-
SVOC % Match	%	N/A	NONE	-	-	95	95	-
SVOCs TICs Compound Name		N/A	NONE	-	-	Benzene, (1-butylhexyl)-	Benzene, (1-propyldecyl)-	-
SVOC % Match	%	N/A	NONE	-	-	95	95	-
SVOCs TICs Compound Name		N/A	NONE	-	-	Benzene, (1-butylheptyl)-	Benzene, (1-ethylundecyl)-	-
SVOC % Match	%	N/A	NONE	-	-	95	95	-
SVOCs TICs Compound Name		N/A	NONE	-	-	Benzene, (1-pentylheptyl)-	1H-Isoindole-1,3(2H)-dione	-
SVOC % Match	%	N/A	NONE	-	-	95	94	-
SVOCs TICs Compound Name		N/A	NONE	-	-	Benzene, (1-butylnonyl)-	Benzene, (1-ethyloctyl)-	-
SVOC % Match	%	N/A	NONE	-	-	95	94	-
SVOCs TICs Compound Name		N/A	NONE	-	-	Benzene, (1-propyldecyl)-	Benzene, (1-pentylheptyl)-	-
SVOC % Match	%	N/A	NONE	-	-	95	94	-
PCBs by GC-MS								
PCB Congener 28	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	-
PCB Congener 52	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	-
PCB Congener 101	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	-
PCB Congener 118	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	-
PCB Congener 138	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	-
PCB Congener 153	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	-
PCB Congener 180	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	-
PCBs by GC-MS								
Total PCBs	µg/l	0.14	NONE	< 0.14	< 0.14	< 0.14	< 0.14	-

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number: 18-78389

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				921470	921471			
Sample Reference				SW1001	SW1002			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.50	0.50			
Date Sampled				08/03/2018	08/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	8.1	8.1			
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	680	680			
Sulphate as SO_4	µg/l	45	ISO 17025	54200	54900			
Sulphate as SO_4	mg/l	0.045	ISO 17025	54.2	54.9			
Chloride	mg/l	0.15	ISO 17025	66	64			
Ammonium as NH_4	µg/l	15	ISO 17025	110	270			
Alkalinity	mgCaCO3/l	3	ISO 17025	230	230			
Dissolved Oxygen	mg/l	1	NONE	10	10			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16			
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.96	1.27			
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.03	0.05			
Calcium (dissolved)	mg/l	0.012	ISO 17025	110	100			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0			
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0			
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.6	0.8			
Copper (dissolved)	µg/l	0.5	ISO 17025	6.1	6.7			
Lead (dissolved)	µg/l	0.2	ISO 17025	0.7	0.8			
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05			
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.9	2.5			
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.2	1.2			
Zinc (dissolved)	µg/l	0.5	ISO 17025	4.9	4.5			

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Analytical Report Number: 18-78389

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				921470	921471			
Sample Reference				SW1001	SW1002			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.50	0.50			
Date Sampled				08/03/2018	08/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0			
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10			

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Analytical Report Number: 18-78389

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				921470	921471			
Sample Reference				SW1001	SW1002			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.50	0.50			
Date Sampled				08/03/2018	08/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0			
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0			
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0			
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0			
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			

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Analytical Report Number: 18-78389

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				921470	921471			
Sample Reference				SW1001	SW1002			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.50	0.50			
Date Sampled				08/03/2018	08/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		10	NONE	None Detected	None Detected			
VOC % Match	%	10	NONE	0	0			

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Analytical Report Number: 18-78389

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				921470	921471			
Sample Reference				SW1001	SW1002			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.50	0.50			
Date Sampled				08/03/2018	08/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05			
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05			
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05			
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05			
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05			
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05			
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05			
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05			
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05			
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05			
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05			
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05			
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05			
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05			
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05			
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05			
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05			
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05			
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05			
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05			
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05			
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05			
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05			
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05			
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05			
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05			
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05			
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05			
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05			
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05			
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05			
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05			
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05			
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-78389

Project / Site name: SSE Site, Vastern Road, Reading

Your Order No: C5925

Lab Sample Number				921470	921471			
Sample Reference				SW1001	SW1002			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.50	0.50			
Date Sampled				08/03/2018	08/03/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	None Detected	None Detected			
SVOC % Match	%	N/A	NONE	0	0			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
PCBs by GC-MS								
PCB Congener 28	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 52	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 101	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 118	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 138	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 153	µg/l	0.02	NONE	< 0.02	< 0.02			
PCB Congener 180	µg/l	0.02	NONE	< 0.02	< 0.02			
PCBs by GC-MS								
Total PCBs	µg/l	0.14	NONE	< 0.14	< 0.14			

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number : 18-78389

Project / Site name: SSE Site, Vastern Road, Reading

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
Alkalinity in Water	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025
Ammonium as NH4 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Oxygen in water	Determination of dissolved oxygen.	In-house method	L086-PL	W	NONE
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
PCB's By GC-MS in water	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L028-PL	W	NONE
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	W	ISO 17025
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	NONE
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Tentatively identified compounds (SVOC) in water	Determination of semi-volatile organic compounds total ion count in water by extraction with hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L070-PL	W	NONE

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Analytical Report Number : 18-78389

Project / Site name: SSE Site, Vastern Road, Reading

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
Tentatively identified compounds (VOC) in water	Determination of volatile organic compounds total ion count in water by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073B-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025

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.

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Analytical Report Number : 18-81102

Project / Site name:	SSE Site, Vestern Road, Reading	**Samples received on:**	05/04/2018
Your job number:	C5925	**Samples instructed on:**	05/04/2018
Your order number:	C5925-JI	**Analysis completed by:**	11/04/2018
Report Issue Number:	1	**Report issued on:**	11/04/2018
Samples Analysed:	17 water 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

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936887	936888	936889	936890	936891
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.91	1.47	2.07	1.91	1.03
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.0	8.1	7.3	7.6	7.8
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1700	3400	1500	680	1400
Sulphate as SO_4	µg/l	45	ISO 17025	177000	400000	101000	49300	80300
Sulphate as SO_4	mg/l	0.045	ISO 17025	177	400	101	49.3	80.3
Chloride	mg/l	0.15	ISO 17025	310	810	320	62	88
Ammonium as NH_4	µg/l	15	ISO 17025	840	4300	1200	1400	1500
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	9.71	31.7	5.79	4.86	6.48
Alkalinity	mgCaCO3/l	3	ISO 17025	550	620	460	350	500
Dissolved Oxygen	mg/l	1	NONE	4.3	7.4	8.5	4.9	3.9
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.92	8.62	1.51	2.21	9.48
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.02	< 0.02	< 0.02	< 0.02
Calcium (dissolved)	mg/l	0.012	ISO 17025	230	82	180	110	41
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.4	1.0	0.3	0.4	1.0
Copper (dissolved)	µg/l	0.5	ISO 17025	1.8	5.9	2.6	2.4	1.6
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	2.0	< 0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	2.3	9.0	0.9	< 0.5	11
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.2	9.3	0.8	< 0.6	1.8
Zinc (dissolved)	µg/l	0.5	ISO 17025	2.6	3.7	1.2	2.0	5.2

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936887	936888	936889	936890	936891
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.91	1.47	2.07	1.91	1.03
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	57	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	84	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	140	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936887	936888	936889	936890	936891
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.91	1.47	2.07	1.91	1.03
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936887	936888	936889	936890	936891
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.91	1.47	2.07	1.91	1.03
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		N/A	NONE	ND	ND	ND	ND	ND
VOC % Match	%	N/A	NONE	-	-	-	-	-

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Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936887	936888	936889	936890	936891
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.91	1.47	2.07	1.91	1.03
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	5.7	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936887	936888	936889	936890	936891
Sample Reference				WS1006	WS1005	WS1004	WS1003	WS1007
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.91	1.47	2.07	1.91	1.03
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	ND	Benzene, 1,2-dichloro-3-isocyanato-	ND	ND	ND
SVOC % Match	%	N/A	NONE	-	96	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	Phenol, 2,4-bis(1,1-dimethylethyl)-	-	-	-
SVOC % Match	%	N/A	NONE	-	96	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	Benzophenone	-	-	-
SVOC % Match	%	N/A	NONE	-	96	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	Longifolenaldehyde	-	-	-
SVOC % Match	%	N/A	NONE	-	96	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-4-methylene-, [1aR-(1a.alpha.,4a.beta.,7.alpha.,7a.beta.,7b.alpha.)]-	-	-	-
SVOC % Match	%	N/A	NONE	-	95	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	D-Homoandrostane, (5.alpha.,13.alpha.)-	-	-	-
SVOC % Match	%	N/A	NONE	-	95	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	3-Carene	-	-	-
SVOC % Match	%	N/A	NONE	-	94	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	3a,9-Dimethyldodecahydrocyclohepta[d]inden-3-one	-	-	-
SVOC % Match	%	N/A	NONE	-	94	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	.alpha.-Pinene	-	-	-
SVOC % Match	%	N/A	NONE	-	93	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	Benzenesulfonamide, N-butyl-	-	-	-
SVOC % Match	%	N/A	NONE	-	93	-	-	-
PCBs by GC-MS								
PCB Congener 28	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 52	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 101	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 118	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 138	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 153	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCB Congener 180	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PCBs by GC-MS								
Total PCBs	µg/l	0.14	NONE	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936892	936893	936894	936895	936896
Sample Reference				WS1019	BH1001	BH1003E	BH2004	BH2003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.04	2.07	2.39	2.28	2.21
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.4	7.4	7.7	7.6	7.6
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	860	710	1100	680	690
Sulphate as SO_4	µg/l	45	ISO 17025	48700	66400	21300	18500	17300
Sulphate as SO_4	mg/l	0.045	ISO 17025	48.7	66.4	21.3	18.5	17.3
Chloride	mg/l	0.15	ISO 17025	120	77	260	75	90
Ammonium as NH_4	µg/l	15	ISO 17025	60	540	38	40	24
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	3.47	3.58	2.69	3.01	2.78
Alkalinity	mgCaCO3/l	3	ISO 17025	380	240	230	370	250
Dissolved Oxygen	mg/l	1	NONE	5.7	5.2	9.3	9.4	9.5
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.24	0.33	2.05	2.12	1.80
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.05	< 0.02	< 0.02	0.04	< 0.02
Calcium (dissolved)	mg/l	0.012	ISO 17025	130	110	100	110	97
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	1.2	< 1.0	< 1.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.5	0.5	1.2	0.8	0.8
Copper (dissolved)	µg/l	0.5	ISO 17025	6.4	2.6	4.6	5.5	3.8
Lead (dissolved)	µg/l	0.2	ISO 17025	0.3	< 0.2	< 0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	5.9	2.2	< 0.5	2.4	1.5
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.8	< 0.6	1.7	2.0	1.6
Zinc (dissolved)	µg/l	0.5	ISO 17025	15	7.0	1.2	7.8	6.9

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936892	936893	936894	936895	936896
Sample Reference				WS1019	BH1001	BH1003E	BH2004	BH2003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.04	2.07	2.39	2.28	2.21
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936892	936893	936894	936895	936896
Sample Reference				WS1019	BH1001	BH1003E	BH2004	BH2003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.04	2.07	2.39	2.28	2.21
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	-	-	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	-	-	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936892	936893	936894	936895	936896
Sample Reference				WS1019	BH1001	BH1003E	BH2004	BH2003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.04	2.07	2.39	2.28	2.21
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		N/A	NONE	ND	-	-	ND	ND
VOC % Match	%	N/A	NONE	-	-	-	-	-

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936892	936893	936894	936895	936896
Sample Reference				WS1019	BH1001	BH1003E	BH2004	BH2003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.04	2.07	2.39	2.28	2.21
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	-	-	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	-	-	< 0.01	< 0.01

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936892	936893	936894	936895	936896
Sample Reference				WS1019	BH1001	BH1003E	BH2004	BH2003
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.04	2.07	2.39	2.28	2.21
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	ND	-	-	ND	ND
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
PCBs by GC-MS								
PCB Congener 28	µg/l	0.02	NONE	< 0.02	-	-	< 0.02	< 0.02
PCB Congener 52	µg/l	0.02	NONE	< 0.02	-	-	< 0.02	< 0.02
PCB Congener 101	µg/l	0.02	NONE	< 0.02	-	-	< 0.02	< 0.02
PCB Congener 118	µg/l	0.02	NONE	< 0.02	-	-	< 0.02	< 0.02
PCB Congener 138	µg/l	0.02	NONE	< 0.02	-	-	< 0.02	< 0.02
PCB Congener 153	µg/l	0.02	NONE	< 0.02	-	-	< 0.02	< 0.02
PCB Congener 180	µg/l	0.02	NONE	< 0.02	-	-	< 0.02	< 0.02
PCBs by GC-MS								
Total PCBs	µg/l	0.14	NONE	< 0.14	-	-	< 0.14	< 0.14

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936897	936898	936899	936900	936901
Sample Reference				BH2002	BH2001	BH1002C	BH2006	BH2005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	2.15	2.14	1.52	2.06
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.3	7.3	7.4	7.1	6.9
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	620	1400	1000	3200	2300
Sulphate as SO_4	µg/l	45	ISO 17025	16200	21400	47500	79300	33400
Sulphate as SO_4	mg/l	0.045	ISO 17025	16.2	21.4	47.5	79.3	33.4
Chloride	mg/l	0.15	ISO 17025	45	240	180	920	620
Ammonium as NH_4	µg/l	15	ISO 17025	36	180	1000	160	120
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	11.6	14.8	5.13	5.52	26.9
Alkalinity	mgCaCO3/l	3	ISO 17025	430	620	370	650	590
Dissolved Oxygen	mg/l	1	NONE	3.6	6.0	5.6	7.3	6.4
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	3.03	2.18	9.81	3.42	4.96
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Calcium (dissolved)	mg/l	0.012	ISO 17025	120	130	120	210	250
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.2	0.5	0.2	0.3	0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	1.9	2.5	5.4	1.0	5.1
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.8	3.9	1.5	4.5	14
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.5	3.4	0.6	1.2	1.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	2.7	4.1	2.5	8.8	260

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936897	936898	936899	936900	936901
Sample Reference				BH2002	BH2001	BH1002C	BH2006	BH2005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	2.15	2.14	1.52	2.06
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	79
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	170
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	250

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Your Order No: C5925-JI

Lab Sample Number				936897	936898	936899	936900	936901
Sample Reference				BH2002	BH2001	BH1002C	BH2006	BH2005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	2.15	2.14	1.52	2.06
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	-	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	-	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	-	< 1.0	< 1.0

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936897	936898	936899	936900	936901
Sample Reference				BH2002	BH2001	BH1002C	BH2006	BH2005
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	2.15	2.14	1.52	2.06
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		N/A	NONE	ND	ND	-	ND	ND
VOC % Match	%	N/A	NONE	-	-	-	-	-

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Lab Sample Number				936897	936898	936899	936900	936901
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Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	2.15	2.14	1.52	2.06
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	-	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	-	< 0.01	< 0.01

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Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	ND	ND	-	ND	Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethyl-, (.+/-.)-
SVOC % Match	%	N/A	NONE	-	-	-	-	95
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	Cyclopropane, 1,1-dimethyl-2-(3-methyl-1,3-butadienyl)-
SVOC % Match	%	N/A	NONE	-	-	-	-	93
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	Acetophenone
SVOC % Match	%	N/A	NONE	-	-	-	-	93
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	3-Phenylheptanoic acid
SVOC % Match	%	N/A	NONE	-	-	-	-	93
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	Bromacil
SVOC % Match	%	N/A	NONE	-	-	-	-	93
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	Benzene, 1-methyl-2-(1-methylethyl)-
SVOC % Match	%	N/A	NONE	-	-	-	-	92
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	Benzene, tert-butyl-
SVOC % Match	%	N/A	NONE	-	-	-	-	91
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
PCBs by GC-MS								
PCB Congener 28	µg/l	0.02	NONE	< 0.02	< 0.02	-	< 0.02	< 0.02
PCB Congener 52	µg/l	0.02	NONE	< 0.02	< 0.02	-	< 0.02	< 0.02
PCB Congener 101	µg/l	0.02	NONE	< 0.02	< 0.02	-	< 0.02	< 0.02
PCB Congener 118	µg/l	0.02	NONE	< 0.02	< 0.02	-	< 0.02	< 0.02
PCB Congener 138	µg/l	0.02	NONE	< 0.02	< 0.02	-	< 0.02	< 0.02
PCB Congener 153	µg/l	0.02	NONE	< 0.02	< 0.02	-	< 0.02	< 0.02
PCB Congener 180	µg/l	0.02	NONE	< 0.02	< 0.02	-	< 0.02	< 0.02
PCBs by GC-MS								
Total PCBs	µg/l	0.14	NONE	< 0.14	< 0.14	-	< 0.14	< 0.14

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936902	936903			
Sample Reference				BH1005	BH1004			
Sample Number				None Supplied	None Supplied			
Depth (m)				2.33	1.95			
Date Sampled				04/04/2018	04/04/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.3	7.0			
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1500	3900			
Sulphate as SO_4	µg/l	45	ISO 17025	60100	33600			
Sulphate as SO_4	mg/l	0.045	ISO 17025	60.1	33.6			
Chloride	mg/l	0.15	ISO 17025	340	1400			
Ammonium as NH_4	µg/l	15	ISO 17025	58	2100			
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	4.18	4.00			
Alkalinity	mgCaCO3/l	3	ISO 17025	410	440			
Dissolved Oxygen	mg/l	1	NONE	8.7	8.1			
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16			
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.34	0.44			
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.04	< 0.02			
Calcium (dissolved)	mg/l	0.012	ISO 17025	180	220			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0			
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0			
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.3	0.3			
Copper (dissolved)	µg/l	0.5	ISO 17025	2.4	8.4			
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.2			
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05			
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.5	2.6			
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.9	1.4			
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.4	2.4			

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936902	936903			
Sample Reference				BH1005	BH1004			
Sample Number				None Supplied	None Supplied			
Depth (m)				2.33	1.95			
Date Sampled				04/04/2018	04/04/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0			
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10			

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936902	936903			
Sample Reference				BH1005	BH1004			
Sample Number				None Supplied	None Supplied			
Depth (m)				2.33	1.95			
Date Sampled				04/04/2018	04/04/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	-	-			
Chloroethane	µg/l	1	ISO 17025	-	-			
Bromomethane	µg/l	1	ISO 17025	-	-			
Vinyl Chloride	µg/l	1	NONE	-	-			
Trichlorofluoromethane	µg/l	1	NONE	-	-			
1,1-Dichloroethene	µg/l	1	ISO 17025	-	-			
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	-	-			
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	-	-			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	-	-			
1,1-Dichloroethane	µg/l	1	ISO 17025	-	-			
2,2-Dichloropropane	µg/l	1	ISO 17025	-	-			
Trichloromethane	µg/l	1	ISO 17025	-	-			
1,1,1-Trichloroethane	µg/l	1	ISO 17025	-	-			
1,2-Dichloroethane	µg/l	1	ISO 17025	-	-			
1,1-Dichloropropene	µg/l	1	ISO 17025	-	-			
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	-	-			
Benzene	µg/l	1	ISO 17025	-	-			
Tetrachloromethane	µg/l	1	ISO 17025	-	-			
1,2-Dichloropropane	µg/l	1	ISO 17025	-	-			
Trichloroethene	µg/l	1	ISO 17025	-	-			
Dibromomethane	µg/l	1	ISO 17025	-	-			
Bromodichloromethane	µg/l	1	ISO 17025	-	-			
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	-	-			
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	-	-			
Toluene	µg/l	1	ISO 17025	-	-			
1,1,2-Trichloroethane	µg/l	1	ISO 17025	-	-			
1,3-Dichloropropane	µg/l	1	ISO 17025	-	-			
Dibromochloromethane	µg/l	1	ISO 17025	-	-			
Tetrachloroethene	µg/l	1	ISO 17025	-	-			
1,2-Dibromoethane	µg/l	1	ISO 17025	-	-			
Chlorobenzene	µg/l	1	ISO 17025	-	-			
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	-	-			
Ethylbenzene	µg/l	1	ISO 17025	-	-			
p & m-Xylene	µg/l	1	ISO 17025	-	-			
Styrene	µg/l	1	ISO 17025	-	-			
Tribromomethane	µg/l	1	ISO 17025	-	-			
o-Xylene	µg/l	1	ISO 17025	-	-			
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	-	-			
Isopropylbenzene	µg/l	1	ISO 17025	-	-			
Bromobenzene	µg/l	1	ISO 17025	-	-			
n-Propylbenzene	µg/l	1	ISO 17025	-	-			
2-Chlorotoluene	µg/l	1	ISO 17025	-	-			
4-Chlorotoluene	µg/l	1	ISO 17025	-	-			
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	-	-			
tert-Butylbenzene	µg/l	1	ISO 17025	-	-			
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	-	-			
sec-Butylbenzene	µg/l	1	ISO 17025	-	-			
1,3-Dichlorobenzene	µg/l	1	ISO 17025	-	-			
p-Isopropyltoluene	µg/l	1	ISO 17025	-	-			
1,2-Dichlorobenzene	µg/l	1	ISO 17025	-	-			
1,4-Dichlorobenzene	µg/l	1	ISO 17025	-	-			
Butylbenzene	µg/l	1	ISO 17025	-	-			
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	-	-			
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	-	-			
Hexachlorobutadiene	µg/l	1	ISO 17025	-	-			
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	-	-			

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936902	936903			
Sample Reference				BH1005	BH1004			
Sample Number				None Supplied	None Supplied			
Depth (m)				2.33	1.95			
Date Sampled				04/04/2018	04/04/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs TICs								
VOCs TICs Compound Name		N/A	NONE	-	-			
VOC % Match	%	N/A	NONE	-	-			

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936902	936903			
Sample Reference				BH1005	BH1004			
Sample Number				None Supplied	None Supplied			
Depth (m)				2.33	1.95			
Date Sampled				04/04/2018	04/04/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	µg/l	0.05	NONE	-	-			
Phenol	µg/l	0.05	NONE	-	-			
2-Chlorophenol	µg/l	0.05	NONE	-	-			
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	-	-			
1,3-Dichlorobenzene	µg/l	0.05	NONE	-	-			
1,2-Dichlorobenzene	µg/l	0.05	NONE	-	-			
1,4-Dichlorobenzene	µg/l	0.05	NONE	-	-			
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	-	-			
2-Methylphenol	µg/l	0.05	NONE	-	-			
Hexachloroethane	µg/l	0.05	NONE	-	-			
Nitrobenzene	µg/l	0.05	NONE	-	-			
4-Methylphenol	µg/l	0.05	NONE	-	-			
Isophorone	µg/l	0.05	NONE	-	-			
2-Nitrophenol	µg/l	0.05	NONE	-	-			
2,4-Dimethylphenol	µg/l	0.05	NONE	-	-			
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	-	-			
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	-	-			
Naphthalene	µg/l	0.01	ISO 17025	-	-			
2,4-Dichlorophenol	µg/l	0.05	NONE	-	-			
4-Chloroaniline	µg/l	0.05	NONE	-	-			
Hexachlorobutadiene	µg/l	0.05	NONE	-	-			
4-Chloro-3-methylphenol	µg/l	0.05	NONE	-	-			
2,4,6-Trichlorophenol	µg/l	0.05	NONE	-	-			
2,4,5-Trichlorophenol	µg/l	0.05	NONE	-	-			
2-Methylnaphthalene	µg/l	0.05	NONE	-	-			
2-Chloronaphthalene	µg/l	0.05	NONE	-	-			
Dimethylphthalate	µg/l	0.05	NONE	-	-			
2,6-Dinitrotoluene	µg/l	0.05	NONE	-	-			
Acenaphthylene	µg/l	0.01	ISO 17025	-	-			
Acenaphthene	µg/l	0.01	ISO 17025	-	-			
2,4-Dinitrotoluene	µg/l	0.05	NONE	-	-			
Dibenzofuran	µg/l	0.05	NONE	-	-			
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	-	-			
Diethyl phthalate	µg/l	0.05	NONE	-	-			
4-Nitroaniline	µg/l	0.05	NONE	-	-			
Fluorene	µg/l	0.01	ISO 17025	-	-			
Azobenzene	µg/l	0.05	NONE	-	-			
Bromophenyl phenyl ether	µg/l	0.05	NONE	-	-			
Hexachlorobenzene	µg/l	0.05	NONE	-	-			
Phenanthrene	µg/l	0.01	ISO 17025	-	-			
Anthracene	µg/l	0.01	ISO 17025	-	-			
Carbazole	µg/l	0.05	NONE	-	-			
Dibutyl phthalate	µg/l	0.05	NONE	-	-			
Anthraquinone	µg/l	0.05	NONE	-	-			
Fluoranthene	µg/l	0.01	ISO 17025	-	-			
Pyrene	µg/l	0.01	ISO 17025	-	-			
Butyl benzyl phthalate	µg/l	0.05	NONE	-	-			
Benzo(a)anthracene	µg/l	0.01	ISO 17025	-	-			
Chrysene	µg/l	0.01	ISO 17025	-	-			
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	-	-			
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	-	-			
Benzo(a)pyrene	µg/l	0.01	ISO 17025	-	-			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	-	-			
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	-	-			
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	-	-			

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Analytical Report Number: 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

Your Order No: C5925-JI

Lab Sample Number				936902	936903			
Sample Reference				BH1005	BH1004			
Sample Number				None Supplied	None Supplied			
Depth (m)				2.33	1.95			
Date Sampled				04/04/2018	04/04/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs TICs								
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
SVOCs TICs Compound Name		N/A	NONE	-	-			
SVOC % Match	%	N/A	NONE	-	-			
PCBs by GC-MS								
PCB Congener 28	µg/l	0.02	NONE	-	-			
PCB Congener 52	µg/l	0.02	NONE	-	-			
PCB Congener 101	µg/l	0.02	NONE	-	-			
PCB Congener 118	µg/l	0.02	NONE	-	-			
PCB Congener 138	µg/l	0.02	NONE	-	-			
PCB Congener 153	µg/l	0.02	NONE	-	-			
PCB Congener 180	µg/l	0.02	NONE	-	-			
PCBs by GC-MS								
Total PCBs	µg/l	0.14	NONE	-	-			

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number : 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

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
Alkalinity in Water	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025
Ammonium as NH4 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Dissolved Oxygen in water	Determination of dissolved oxygen.	In-house method	L086-PL	W	NONE
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
PCB's By GC-MS in water	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L028-PL	W	NONE
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	W	ISO 17025
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	NONE
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025

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Analytical Report Number : 18-81102

Project / Site name: SSE Site, Vestern Road, Reading

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
Tentatively identified compounds (SVOC) in water	Determination of semi-volatile organic compounds total ion count in water by extraction with hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L070-PL	W	NONE
Tentatively identified compounds (VOC) in water	Determination of volatile organic compounds total ion count in water by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073B-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025

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.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

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Omnia
10 Manor Court
2 Barnes Wallis Road
Segensworth
Fareham
PO15 5TH

Attention :	Adrian King
Date :	19th April, 2018
Your reference :	A10967
Our reference :	Test Report 18/5668 Batch 1
Location :	Vastern Road, Reading
Date samples received :	17th April, 2018
Status :	Final report
Issue :	2

Seven samples were received for analysis on 17th April, 2018 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: Omnia
Reference: A10967
Location: Vastern Road, Reading
Contact: Adrian King
JE Job No.: 18/5668

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	9-12	17-20	26-30									
Sample ID	WS1003 WS1	WS1005A WS1	WS1019WS1									
Depth	2.12-5.01	1.10-2.04	2.26-4.98									
COC No / misc												
Containers	V P G	V P G	V HN P G									
Sample Date	16/04/2018	16/04/2018	16/04/2018									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1									
Date of Receipt	17/04/2018	17/04/2018	17/04/2018									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10								<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10	<10								<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	<10								<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5								<5	ug/l	TM5/PM16/PM30
>C12-C16 #	<10	<10	<10								<10	ug/l	TM5/PM16/PM30
>C16-C21 #	<10	90	<10								<10	ug/l	TM5/PM16/PM30
>C21-C35 #	<10	90	<10								<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-35 #	<10	180	<10								<10	ug/l	TM5/TM36/PM12/PM16/PM30
Aromatics													
>C5-EC7 #	<10	<10	<10								<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10								<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10	<10								<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5								<5	ug/l	TM5/PM16/PM30
>EC12-EC16 #	<10	<10	<10								<10	ug/l	TM5/PM16/PM30
>EC16-EC21 #	<10	<10	<10								<10	ug/l	TM5/PM16/PM30
>EC21-EC35 #	<10	<10	<10								<10	ug/l	TM5/PM16/PM30
Total aromatics C5-35 #	<10	<10	<10								<10	ug/l	TM5/TM36/PM12/PM16/PM30
Total aliphatics and aromatics(C5-35) #	<10	180	<10								<10	ug/l	TM5/TM36/PM12/PM16/PM30
MTBE #	<5	<5	<5								<5	ug/l	TM31/PM12
Benzene #	<5	<5	<5								<5	ug/l	TM31/PM12
Toluene #	<5	<5	<5								<5	ug/l	TM31/PM12
Ethylbenzene #	<5	<5	<5								<5	ug/l	TM31/PM12
m/p-Xylene #	<5	<5	<5								<5	ug/l	TM31/PM12
o-Xylene #	<5	<5	<5								<5	ug/l	TM31/PM12

Client Name: Omnia **Matrix : Liquid**
Reference: A10967
Location: Vastern Road, Reading
Contact: Adrian King

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
18/5668	1	WS1003 WS1	2.12-5.01	9-12	No interpretation possible
18/5668	1	WS1005A WS1	1.10-2.04	17-20	Dissolved phase compounds
18/5668	1	WS1019WS1	2.26-4.98	26-30	No interpretation possible

Client Name: Omnia

Matrix : Liquid

Reference: A10967

Location: Vastern Road, Reading

Contact: Adrian King

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
18/5668	1	-	-	-	Samples : 9-12,17-20,26-30	Liquid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 18/5668

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 18/5668

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

Exova Jones Environmental

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Omnia
10 Manor Court
2 Barnes Wallis Road
Segensworth
Fareham
PO15 5TH

Attention :	Adrian King
Date :	24th April, 2018
Your reference :	A10967
Our reference :	Test Report 18/5703 Batch 1
Location :	Vastern Road, Reading
Date samples received :	17th April, 2018
Status :	Final report
Issue :	1

Nine samples were received for analysis on 17th April, 2018 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: Omnia
Reference: A10967
Location: Vastern Road, Reading
Contact: Adrian King
JE Job No.: 18/5703

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	26-29	30-35	36-40							LOD/LOR	Units	Method No.
Sample ID	BH2003 WS1	BH2006 WS1	BH2005 WS1	BH1005 WS1									
Depth	2.39-4.01	1.53-2.03	2.08-3.01	2.49-7.14									
COC No / misc													
Containers	V HN P G	V P G	V P G	V HN P G									
Sample Date	13/04/2018	13/04/2018	13/04/2018	13/04/2018									
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1	1									
Date of Receipt	17/04/2018	17/04/2018	17/04/2018	17/04/2018									
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10	<10							<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10	<10	<10							<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	<10	<10							<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5	<5							<5	ug/l	TM5/PM16/PM30
>C12-C16 #	<10	20	<10	<10							<10	ug/l	TM5/PM16/PM30
>C16-C21 #	<10	90	50	40							<10	ug/l	TM5/PM16/PM30
>C21-C35 #	<10	<10	<10	<10							<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-35 #	<10	110	50	40							<10	ug/l	TM5/TM36/PM12/PM16/PM30
Aromatics													
>C5-EC7 #	<10	<10	<10	<10							<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10	<10							<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10	<10	<10							<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5	<5							<5	ug/l	TM5/PM16/PM30
>EC12-EC16 #	<10	30	40	20							<10	ug/l	TM5/PM16/PM30
>EC16-EC21 #	<10	160	190	70							<10	ug/l	TM5/PM16/PM30
>EC21-EC35 #	<10	<10	<10	<10							<10	ug/l	TM5/PM16/PM30
Total aromatics C5-35 #	<10	190	230	90							<10	ug/l	TM5/TM36/PM12/PM16/PM30
Total aliphatics and aromatics(C5-35) #	<10	300	280	130							<10	ug/l	TM5/TM36/PM12/PM16/PM30
MTBE #	<5	<5	<5	<5							<5	ug/l	TM31/PM12
Benzene #	<5	<5	<5	<5							<5	ug/l	TM31/PM12
Toluene #	<5	<5	<5	<5							<5	ug/l	TM31/PM12
Ethylbenzene #	<5	<5	<5	<5							<5	ug/l	TM31/PM12
m/p-Xylene #	<5	<5	<5	<5							<5	ug/l	TM31/PM12
o-Xylene #	<5	<5	<5	<5							<5	ug/l	TM31/PM12
PCB 28	-	-	<0.1	-							<0.1	ug/l	TM17/PM30
PCB 52	-	-	<0.1	-							<0.1	ug/l	TM17/PM30
PCB 101	-	-	<0.1	-							<0.1	ug/l	TM17/PM30
PCB 118	-	-	<0.1	-							<0.1	ug/l	TM17/PM30
PCB 138	-	-	<0.1	-							<0.1	ug/l	TM17/PM30
PCB 153	-	-	<0.1	-							<0.1	ug/l	TM17/PM30
PCB 180	-	-	<0.1	-							<0.1	ug/l	TM17/PM30
Total 7 PCBs	-	-	<0.7	-							<0.7	ug/l	TM17/PM30

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia **Matrix : Liquid**
Reference: A10967
Location: Vastern Road, Reading
Contact: Adrian King

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
18/5703	1	BH2003 WS1	2.39-4.01	1-5	No interpretation possible
18/5703	1	BH2006 WS1	1.53-2.03	26-29	Linear alkylbenzenes
18/5703	1	BH2005 WS1	2.08-3.01	30-35	Linear alkylbenzenes
18/5703	1	BH1005 WS1	2.49-7.14	36-40	Linear alkylbenzenes

Client Name: Omnia
Reference: A10967
Location: Vastern Road, Reading
Contact: Adrian King

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 18/5703						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 18/5703

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 18/5703

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

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Omnia
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Attention :	Lee McDonald
Date :	24th April, 2018
Your reference :	A10967
Our reference :	Test Report 18/5726 Batch 1
Location :	Vastern Road, Reading
Date samples received :	18th April, 2018
Status :	Final report
Issue :	1

Twenty seven samples were received for analysis on 18th April, 2018 of which eleven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: Omnia
Reference: A10967
Location: Vastern Road, Reading
Contact: Lee McDonald
JE Job No.: 18/5726

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	3-4	9-10	21-22	23-24	25-26	31-32	39-40	41-42	43-44	45-46	LOD/LOR	Units	Method No.
Sample ID	WS101	WS101	WS102	WS102	WS103	WS103	WS104	WS104	WS104	WS105			
Depth	0.45-0.80	1.30-1.50	1.50-2.00	2.00-2.40	0.40-0.70	1.60-1.70	1.55-1.75	1.75-2.00	2.00-2.40	0.60-0.90			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	16/04/2018	16/04/2018	16/04/2018	16/04/2018	16/04/2018	16/04/2018	17/04/2018	17/04/2018	17/04/2018	17/04/2018			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018			
Arsenic	8.2	-	-	-	24.4	-	-	-	-	13.3	<0.5	mg/kg	TM30/PM62
Barium	130	-	-	-	368	-	-	-	-	137	<1	mg/kg	TM30/PM62
Beryllium	2.5	-	-	-	2.6	-	-	-	-	0.7	<0.5	mg/kg	TM30/PM62
Cadmium	0.2	-	-	-	0.5	-	-	-	-	<0.1	<0.1	mg/kg	TM30/PM62
Chromium	18.2	-	-	-	22.6	-	-	-	-	14.3	<0.5	mg/kg	TM30/PM62
Copper	31	-	-	-	102	-	-	-	-	61	<1	mg/kg	TM30/PM62
Lead	29	-	-	-	2019	-	-	-	-	141	<5	mg/kg	TM30/PM62
Mercury	<0.1	-	-	-	1.9	-	-	-	-	0.3	<0.1	mg/kg	TM30/PM62
Nickel	30.1	-	-	-	36.4	-	-	-	-	15.6	<0.7	mg/kg	TM30/PM62
Selenium	<1	-	-	-	<1	-	-	-	-	<1	<1	mg/kg	TM30/PM62
Vanadium	57	-	-	-	44	-	-	-	-	34	<1	mg/kg	TM30/PM62
Water Soluble Boron	3.8	-	-	-	4.7	-	-	-	-	1.4	<0.1	mg/kg	TM74/PM61
Zinc	60	-	-	-	301	-	-	-	-	74	<5	mg/kg	TM30/PM62
PAH MS													
Naphthalene #	0.11	-	-	-	0.19	-	-	-	-	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.03	-	-	-	0.59	-	-	-	-	0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	-	-	-	0.08	-	-	-	-	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	-	-	-	0.10	-	-	-	-	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.36	-	-	-	1.87	-	-	-	-	0.13	<0.03	mg/kg	TM4/PM8
Anthracene #	0.10	-	-	-	0.70	-	-	-	-	0.06	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.60	-	-	-	5.45	-	-	-	-	0.44	<0.03	mg/kg	TM4/PM8
Pyrene #	0.58	-	-	-	4.98	-	-	-	-	0.39	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.33	-	-	-	3.73	-	-	-	-	0.30	<0.06	mg/kg	TM4/PM8
Chrysene #	0.33	-	-	-	2.89	-	-	-	-	0.29	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.60	-	-	-	6.92	-	-	-	-	0.56	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.30	-	-	-	3.89	-	-	-	-	0.27	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.21	-	-	-	2.78	-	-	-	-	0.18	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.04	-	-	-	0.53	-	-	-	-	0.06	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.21	-	-	-	2.78	-	-	-	-	0.18	<0.04	mg/kg	TM4/PM8
PAH 16 Total	3.8	-	-	-	37.5	-	-	-	-	2.9	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.43	-	-	-	4.98	-	-	-	-	0.40	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.17	-	-	-	1.94	-	-	-	-	0.16	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	97	-	-	-	93	-	-	-	-	91	<0	%	TM4/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A10967
Location: Vastern Road, Reading
Contact: Lee McDonald
JE Job No.: 18/5726

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	3-4	9-10	21-22	23-24	25-26	31-32	39-40	41-42	43-44	45-46	LOD/LOR	Units	Method No.
Sample ID	WS101	WS101	WS102	WS102	WS103	WS103	WS104	WS104	WS104	WS105			
Depth	0.45-0.80	1.30-1.50	1.50-2.00	2.00-2.40	0.40-0.70	1.60-1.70	1.55-1.75	1.75-2.00	2.00-2.40	0.60-0.90			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	16/04/2018	16/04/2018	16/04/2018	16/04/2018	16/04/2018	16/04/2018	17/04/2018	17/04/2018	17/04/2018	17/04/2018			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018			
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1 SV	<0.1	0.3 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1 SV	<0.1	<0.1	<0.1	<0.1 SV	<0.1	2.9 SV	0.7	1.2	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	101.0	72.1	27.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	<4	<4	<4	<4	<4	<4	1113	241	90	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	<7	<7	<7	<7	<7	<7	2336	331	116	<7	<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	<7	<7	<7	<7	11	<7	393	57	20	<7	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35	<19	<19	<19	<19	<19	<19	3946	702	254	<19	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	12.9	18.3	7.0	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	<4	<4	<4	<4	<4	<4	233	67	27	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	18	<7	<7	<7	26	<7	657	92	35	<7	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	49	<7	<7	<7	155	<7	333	<7	<7	23	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	67	<19	<19	<19	181	<19	1236	177	69	23	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35)	67	<38	<38	<38	181	<38	5182	879	323	<38	<38	mg/kg	TM5/TM36/PM8/PM12/PM16
MTBE #	<5 SV	<5	<5	<5	<5 SV	<5	<5 SV	<5	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	<5 SV	<5	<5	<5	<5 SV	<5	<5 SV	<5	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	<5 SV	<5	<5	<5	<5 SV	<5	<5 SV	<5	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5 SV	<5	<5	<5	<5 SV	<5	<5 SV	<5	12	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5 SV	<5	<5	<5	<5 SV	<5	24 SV	16	26	<5	<5	ug/kg	TM31/PM12
o-Xylene #	<5 SV	<5	<5	<5	<5 SV	<5	<5 SV	<5	29	<5	<5	ug/kg	TM31/PM12
PCB 28 #	-	<5	-	-	-	-	-	-	<5	-	<5	ug/kg	TM17/PM8
PCB 52 #	-	<5	-	-	-	-	-	-	<5	-	<5	ug/kg	TM17/PM8
PCB 101 #	-	<5	-	-	-	-	-	-	<5	-	<5	ug/kg	TM17/PM8
PCB 118 #	-	<5	-	-	-	-	-	-	<5	-	<5	ug/kg	TM17/PM8
PCB 138 #	-	<5	-	-	-	-	-	-	<5	-	<5	ug/kg	TM17/PM8
PCB 153 #	-	<5	-	-	-	-	-	-	<5	-	<5	ug/kg	TM17/PM8
PCB 180 #	-	<5	-	-	-	-	-	-	<5	-	<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	<35	-	-	-	-	-	-	<35	-	<35	ug/kg	TM17/PM8
Total Phenols HPLC	<0.15	-	-	-	<0.15	-	-	-	-	<0.15	<0.15	mg/kg	TM26/PM21
Natural Moisture Content	-	51.8	20.1	56.7	-	14.5	38.8	63.8	52.6	-	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	11.0	-	-	-	11.9	-	-	-	-	4.8	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	-	-	-	<0.3	-	-	-	-	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.3374	-	-	-	0.1798	-	-	-	-	0.1028	<0.0015	g/l	TM38/PM60

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A10967
Location: Vastern Road, Reading
Contact: Lee McDonald
JE Job No.: 18/5726

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	3-4	9-10	21-22	23-24	25-26	31-32	39-40	41-42	43-44	45-46	LOD/LOR	Units	Method No.
Sample ID	WS101	WS101	WS102	WS102	WS103	WS103	WS104	WS104	WS104	WS105			
Depth	0.45-0.80	1.30-1.50	1.50-2.00	2.00-2.40	0.40-0.70	1.60-1.70	1.55-1.75	1.75-2.00	2.00-2.40	0.60-0.90			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	16/04/2018	16/04/2018	16/04/2018	16/04/2018	16/04/2018	16/04/2018	17/04/2018	17/04/2018	17/04/2018	17/04/2018			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018	18/04/2018			
Chromium III	NDP	-	-	-	NDP	-	-	-	-	NDP	<0.5	mg/kg	NONE/NONE
Chromium III	18.2	-	-	-	22.6	-	-	-	-	14.3	<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	-	-	-	0.7	-	-	-	-	<0.5	<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-	-	8.20	-	-	-	-	-	1.07	-	<0.02	%	TM21/PM24
pH #	8.10	-	-	-	8.20	-	-	-	-	8.25	<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A10967
Location: Vastern Road, Reading
Contact: Lee McDonald
JE Job No.: 18/5726

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	53-54												
Sample ID	WS105												
Depth	2.00-2.30												
COC No / misc													
Containers	V J												
Sample Date	17/04/2018												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	18/04/2018												
												LOD/LOR	Units	Method No.
Arsenic	-											<0.5	mg/kg	TM30/PM62
Barium	-											<1	mg/kg	TM30/PM62
Beryllium	-											<0.5	mg/kg	TM30/PM62
Cadmium	-											<0.1	mg/kg	TM30/PM62
Chromium	-											<0.5	mg/kg	TM30/PM62
Copper	-											<1	mg/kg	TM30/PM62
Lead	-											<5	mg/kg	TM30/PM62
Mercury	-											<0.1	mg/kg	TM30/PM62
Nickel	-											<0.7	mg/kg	TM30/PM62
Selenium	-											<1	mg/kg	TM30/PM62
Vanadium	-											<1	mg/kg	TM30/PM62
Water Soluble Boron	-											<0.1	mg/kg	TM74/PM61
Zinc	-											<5	mg/kg	TM30/PM62
PAH MS														
Naphthalene #	-											<0.04	mg/kg	TM4/PM8
Acenaphthylene	-											<0.03	mg/kg	TM4/PM8
Acenaphthene #	-											<0.05	mg/kg	TM4/PM8
Fluorene #	-											<0.04	mg/kg	TM4/PM8
Phenanthrene #	-											<0.03	mg/kg	TM4/PM8
Anthracene #	-											<0.04	mg/kg	TM4/PM8
Fluoranthene #	-											<0.03	mg/kg	TM4/PM8
Pyrene #	-											<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-											<0.06	mg/kg	TM4/PM8
Chrysene #	-											<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-											<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-											<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-											<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-											<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-											<0.04	mg/kg	TM4/PM8
PAH 16 Total	-											<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-											<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-											<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-											<0	%	TM4/PM8

Client Name: Omnia
Reference: A10967
Location: Vastern Road, Reading
Contact: Lee McDonald
JE Job No.: 18/5726

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	53-54												
Sample ID	WS105												
Depth	2.00-2.30												
COC No / misc													
Containers	V J												
Sample Date	17/04/2018												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	18/04/2018												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1										<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1										<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1										<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2										<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	<4										<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	<7										<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	<7										<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35	<19										<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2										<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	<4										<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	<7										<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	<7										<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	<19										<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38										<38	mg/kg	TM5/TM36/PM8/PM12/PM16
MTBE #	<5										<5	ug/kg	TM31/PM12
Benzene #	<5										<5	ug/kg	TM31/PM12
Toluene #	<5										<5	ug/kg	TM31/PM12
Ethylbenzene #	<5										<5	ug/kg	TM31/PM12
m/p-Xylene #	<5										<5	ug/kg	TM31/PM12
o-Xylene #	<5										<5	ug/kg	TM31/PM12
PCB 28 #	-										<5	ug/kg	TM17/PM8
PCB 52 #	-										<5	ug/kg	TM17/PM8
PCB 101 #	-										<5	ug/kg	TM17/PM8
PCB 118 #	-										<5	ug/kg	TM17/PM8
PCB 138 #	-										<5	ug/kg	TM17/PM8
PCB 153 #	-										<5	ug/kg	TM17/PM8
PCB 180 #	-										<5	ug/kg	TM17/PM8
Total 7 PCBs #	-										<35	ug/kg	TM17/PM8
Total Phenols HPLC	-										<0.15	mg/kg	TM26/PM21
Natural Moisture Content	79.0										<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	-										<0.1	%	PM4/PM0
Hexavalent Chromium #	-										<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-										<0.0015	g/l	TM38/PM60

Client Name: Omnia
Reference: A10967
Location: Vastern Road, Reading
Contact: Lee McDonald
JE Job No.: 18/5726

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	53-54												
Sample ID	WS105												
Depth	2.00-2.30												
COC No / misc													
Containers	V J												
Sample Date	17/04/2018												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	18/04/2018												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Chromium III	-										<0.5	mg/kg	NONE/NONE
Chromium III	-										<0.5	mg/kg	NONE/NONE
Total Cyanide #	-										<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-										<0.02	%	TM21/PM24
pH #	-										<0.01	pH units	TM73/PM11

Client Name: Omnia **Matrix : Solid**
Reference: A10967
Location: Vastern Road, Reading
Contact: Lee McDonald

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
18/5726	1	WS101	0.45-0.80	3-4	PAH's
18/5726	1	WS101	1.30-1.50	9-10	No interpretation possible
18/5726	1	WS102	1.50-2.00	21-22	No interpretation possible
18/5726	1	WS102	2.00-2.40	23-24	No interpretation possible
18/5726	1	WS103	0.40-0.70	25-26	PAH's
18/5726	1	WS103	1.60-1.70	31-32	No interpretation possible
18/5726	1	WS104	1.55-1.75	39-40	Possible Degraded diesel & PAH's
18/5726	1	WS104	1.75-2.00	41-42	Degraded diesel
18/5726	1	WS104	2.00-2.40	43-44	Degraded diesel
18/5726	1	WS105	0.60-0.90	45-46	No interpretation possible
18/5726	1	WS105	2.00-2.30	53-54	No interpretation possible

Client Name: Omnia
Reference: A10967
Location: Vastern Road, Reading
Contact: Lee McDonald

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:



Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
18/5726	1	WS101	0.45-0.80	4	20/04/2018	**General Description (Bulk Analysis)**	Soil-Clay/Brick/Stone
					20/04/2018	**Asbestos Fibres**	Fibre Bundles
					20/04/2018	**Asbestos ACM**	NAD
					20/04/2018	**Asbestos Type**	Chrysotile
					20/04/2018	**Asbestos Level Screen**	less than 0.1%
18/5726	1	WS103	0.40-0.70	26	20/04/2018	**General Description (Bulk Analysis)**	Soil-Clay/Brick/Stone
					20/04/2018	**Asbestos Fibres**	Fibre Bundles
					20/04/2018	**Asbestos ACM**	NAD
					20/04/2018	**Asbestos Type**	Chrysotile
					20/04/2018	**Asbestos Level Screen**	Asbestos level cannot be determined from Screen. Quantification required.
18/5726	1	WS105	0.60-0.90	46	20/04/2018	**General Description (Bulk Analysis)**	Soil-Clay/Brick/Stone
					20/04/2018	**Asbestos Fibres**	Fibre Bundles
					20/04/2018	**Asbestos ACM**	NAD
					20/04/2018	**Asbestos Type**	Chrysotile
					20/04/2018	**Asbestos Level Screen**	less than 0.1%

Client Name: Omnia **Matrix : Solid**
Reference: A10967
Location: Vastern Road, Reading
Contact: Lee McDonald

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
18/5726	1	WS101	0.45-0.80	3-4	Asbestos detected in sample
18/5726	1	WS103	0.40-0.70	25-26	Asbestos detected in sample
18/5726	1	WS105	0.60-0.90	45-46	Asbestos detected in sample

Client Name: Omnia

Matrix : Solid

Reference: A10967

Location: Vastern Road, Reading

Contact: Lee McDonald

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
18/5726	1	WS101	0.45-0.80	3-4	GRO	Solid Samples were received at a temperature above 9°C.
18/5726	1	WS101	1.30-1.50	9-10	GRO	Solid Samples were received at a temperature above 9°C.
18/5726	1	WS102	1.50-2.00	21-22	GRO	Solid Samples were received at a temperature above 9°C.
18/5726	1	WS102	2.00-2.40	23-24	GRO	Solid Samples were received at a temperature above 9°C.
18/5726	1	WS103	0.40-0.70	25-26	GRO	Solid Samples were received at a temperature above 9°C.
18/5726	1	WS103	1.60-1.70	31-32	GRO	Solid Samples were received at a temperature above 9°C.
18/5726	1	WS104	1.55-1.75	39-40	GRO	Solid Samples were received at a temperature above 9°C.
18/5726	1	WS104	1.75-2.00	41-42	GRO	Solid Samples were received at a temperature above 9°C.
18/5726	1	WS104	2.00-2.40	43-44	GRO	Solid Samples were received at a temperature above 9°C.
18/5726	1	WS105	0.60-0.90	45-46	GRO	Solid Samples were received at a temperature above 9°C.
18/5726	1	WS105	2.00-2.30	53-54	GRO	Solid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 18/5726

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 18/5726

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes

JE Job No: 18/5726

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes

JE Job No: 18/5726

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes

APPENDIX VI

EXPLORATORY HOLE LOGS

CC GROUND INVESTIGATIONS LTD

BOREHOLE LOG

Telephone: 01452 739165 , Fax: 01452 739220 , Email: info@ccground.co.uk

Borehole No. **BH1001**

Sheet 1 of 2

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471576 N 174181	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.39mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 29/01/2018 End: 31/01/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
		B	0.20 - 0.40				MADE GROUND: Grey ASPHALT.	0.10	38.29	
		ES	0.20				MADE GROUND: Dark grey sandy slightly silty angular fine to coarse GRAVEL of siliceous material and brick with low cobble content.	0.40	37.99	
		B	0.40 - 0.60					0.60	37.79	
		ES	0.50				MADE GROUND: Brown sandy silty angular fine to coarse GRAVEL of siliceous material and brick with medium cobble content of brick.	0.70	37.69	
1		B	0.70 - 1.20				MADE GROUND: Grey CONCRETE.	(0.80)		1
		ES	1.20	S 4			MADE GROUND: Soft dark greyish brown slightly gravelly sandy CLAY. Gravel is angular fine to coarse of siliceous material, concrete and brick.	1.50	36.89	
	2	SPT	1.20 - 1.65				Soft becoming very soft green slightly sandy CLAY with a moderate organic odour. (ALLUVIUM)			
2		D	2.00							2
		ES	2.00 - 2.45							
		UT100								
		D	2.50					(2.50)		
3		D	3.00	S<1						3
	1	SPT	3.00 - 3.45							
	1						Loose grey silty very sandy angular to subangular fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	4.00	34.39	
4		B	4.00 - 4.45	S 5						4
		D	4.00					(1.00)		
		SPT C	4.00 - 4.45							
5		B	5.00 - 5.45	C 25			Medium dense grey sandy silty angular to sub-angular fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	5.00	33.39	5
		D	5.00							
		SPT C	5.00 - 5.45					(1.50)		
6		D	6.00							6
		SPT C	6.50 - 6.95	C 27			Medium dense light brown sandy becoming very sandy silty angular to sub-rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	6.50	31.89	
7		D	7.00							7
	2							(2.50)		
8										8

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Light cable percussion rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.20m. Cable percussion drilled using 250mm diameter clay cutter and bailer 1.20-1.70m and 200mm diameter clay cutter and bailer 1.70-12.00m.
CASING: 250mm diameter to 1.70m. 200mm diameter to 10.50m.
GROUNDWATER: Encountered at 4.00m, and rose to 3.40m after 20 minutes; and at 8.00m and rose to 1.70m after 20 minutes.
INSTALLATION: Borehole was sealed with bentonite pellets: 7.00-12.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 7.00-1.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 1.00-0.20m. Flush 150mm steel cover set in concrete: Flush cover set in concrete: 0.20-0.10m. Gas valve fitted. Surface reinstated with tarmacadam 0.10-0.00m.
REMARKS: Borehole was installed on 31/1/18. Clean drilling techniques; bentonite seal from 1.50-2.00m. PID readings taken on all environmental samples. Results: 0.20m - 0.10ppm; 0.50m -0.20ppm; 1.20m - 0.20.ppm; 2.00m - 0.40ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
30/01/18	4.00	4.00	3.40
30/01/18	8.00	7.60	1.70

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
29/01/2018 17:00	0.05		
30/01/2018 08:00	0.05		

CC GROUND INVESTIGATIONS LTD

BOREHOLE LOG

Telephone: 01452 739165 , Fax: 01452 739220 , Email: info@ccground.co.uk

Borehole No. **BH1001**

Sheet 2 of 2

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471576 N 174181	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.39mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 29/01/2018 End: 31/01/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
		D SPT	8.00 8.00 - 8.45	S 10			Medium dense light brown sandy becoming very sandy silty angular to sub-rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL) *(continued from previous sheet)* 8.00m: Firm grey gravelly sandy clay. Gravel angular to sub-rounded fine to medium.			
9		D	9.00				CHALK recovered as: light brown and off white slightly sandy slightly silty angular to sub-angular fine to coarse GRAVEL and COBBLES of weak low to medium density chalk. (WHITE CHALK SUBGROUP)	9.00	29.39	9
		SPT	9.50 - 9.95	S 6						
10		D	10.00					(3.00)		10
11		D SPT	11.00 11.00 - 11.45	S 12						11
12		D	12.00				Borehole completed at 12.00m	12.00	26.39	12
13										13
14										14
15										15
16										16
17										17

DRAFT

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
30/01/2018 17:00	12.00	10.50	3.60
31/01/2018 08:00	12.00	10.50	

CC GROUND INVESTIGATIONS LTD

INSPECTION PIT LOG

Telephone: 01452 739165 , Fax: 01452 739220 , Email: info@ccground.co.uk

Pit No **BH1002**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471596 N 174164 Level: 38.30mAOD	Date 29/01/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 0.50m Depth 0.80m 0.50m	Scale 1 : 12.5
Client: SSE Plc			Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Grey ASPHALT.	(0.10)		
		B	0.10 - 0.15		MADE GROUND: Dark grey sandy slightly silty angular fine to coarse GRAVEL of siliceous material and brick.	0.10	38.20	
		ES	0.15		MADE GROUND: Grey CONCRETE.	0.15	38.15	
						(0.65)		
					Inspection pit completed at 0.80m	0.80	37.50	
1								1
2								2

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-0.80m.

CASING: None used.

GROUNDWATER: None encountered.

BACKFILL: Borehole was backfilled with bentonite pellets and ground surface reinstated.

REMARKS: Unable to advance hole through concrete. Relocated as BH1002A. PID readings taken on all environmental samples. Results: 0.15m - 0.20ppm.

CC GROUND INVESTIGATIONS LTD

INSPECTION PIT LOG

Telephone: 01452 739165 , Fax: 01452 739220 , Email: info@ccground.co.uk

Pit No **BH1002A**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471600 N 174161 Level: 38.28mAOD	Date 30/01/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 0.50m x 0.50m Depth 0.80m	Scale 1 : 12.5
Client: SSE Plc			Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Grey ASPHALT.	(0.10)		
					MADE GROUND: Grey to brown sandy slightly silty angular fine to coarse GRAVEL of siliceous material and brick with low cobble content and rare possible asbestos containing material.	0.10	38.18	
		ES	0.50			(0.70)		
					0.80m: Concrete across base of pit.	0.80	37.48	
					Inspection pit completed at 0.80m			
1								1
2								2

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-0.80m.

CASING: None used.

GROUNDWATER: None encountered.

BACKFILL: Borehole was backfilled with bentonite pellets and ground surface reinstated.

REMARKS: Unable to advance hole through concrete. Relocated as BH1002B. PID readings taken on all environmental samples. Results: 0.50m - 0.00ppm.

CC GROUND INVESTIGATIONS LTD

INSPECTION PIT LOG

Telephone: 01452 739165 , Fax: 01452 739220 , Email: info@ccground.co.uk

Pit No **BH1002B**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471592 N 174149 Level: 38.37mAOD	Date 30/01/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 0.50m Depth 0.45m 0.50m	Scale 1 : 12.5
Client: SSE Plc			Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Grey ASPHALT.	(0.10)		
					MADE GROUND: Red brick MASONRY.	0.10	38.27	
						(0.25)		
					MADE GROUND: Grey CONCRETE.	0.35	38.02	
						(0.10)		
					0.450m: 1no. metal pipe approximately 50mm diameter, broken with surround of light grey to brown sandy slightly silty angular fine gravel of siliceous material.	0.45	37.92	
					Inspection pit completed at 0.45m			
1								1
2								2

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-0.45m.

CASING: None used.

GROUNDWATER: None encountered.

BACKFILL: Borehole was backfilled with bentonite pellets and ground surface reinstated.

REMARKS: Metal pipe in base of pit. Relocated as BH1002C.

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BOREHOLE LOG

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Borehole No. **BH1002C**

Sheet 1 of 4

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471591 N 174147	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.40mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 31/01/2018 End: 02/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
		B	0.10 - 0.50				MADE GROUND: Grey ASPHALT.	0.10	38.30	
		ES	0.20				MADE GROUND: Brown tending to grey sandy slightly silty angular fine to coarse GRAVEL of siliceous material and red brick with medium cobble content. Cobbles are angular of brick.	0.30	38.10	
		ES	0.60					0.50	37.90	
		B	0.65 - 1.10				MADE GROUND: Red brick MASONRY.	0.65	37.75	
1		ES	1.00				MADE GROUND: Light brown locally grey sandy slightly silty angular fine to coarse GRAVEL of siliceous material and red brick.	(0.45)		1
		D	1.20					1.10	37.30	
	2	ES	1.50	S 6			MADE GROUND: Dark greyish brown slightly gravelly sandy CLAY. Gravel is angular fine to coarse of siliceous material, concrete and red brick.			
		SPT	1.50 - 1.65				Very soft dark grey slightly sandy CLAY with occasional partially decomposed organic material (<5mm). (ALLUVIUM)	(1.20)		
2										2
		ES	2.50				Soft to firm greenish grey slightly sandy CLAY. (ALLUVIUM)	2.30	36.10	
		UT100	2.50 - 2.95							
3		D	3.00					(1.50)		3
	1									
		SPT	3.50 - 3.95	S 31						
	1	B	3.80 - 4.30				Dense grey sandy silty angular to sub-angular fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	3.80	34.60	
4										4
		B	4.50 - 5.00	C 34				(1.30)		
		SPT C	4.50 - 4.95							
5										5
							Medium dense locally dense light brown sandy tending to very sandy slightly silty angular to sub-angular fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	5.10	33.30	
		B	5.50 - 6.00	C 27						
		SPT C	5.50 - 5.95							
6										6
7		B	7.00 - 7.50	C 30						7
		SPT C	7.00 - 7.45					(5.00)		
8	2									8

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Light cable percussion rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.20m. Cable percussion drilled using 200mm diameter clay cutter and bailer 1.20-10.50m and 150mm diameter clay cutter and bailer 10.50-35.00m.
CASING: 250mm diameter to 1.70m, 200mm diameter to 10.50m, 150mm diameter to 24.90m.
GROUNDWATER: Encountered at 4.00m, and rose to 3.40m after 20 minutes; and at 8.00m and rose to 1.70m after 20 minutes.
INSTALLATION: Borehole was backfilled with bentonite pellets: 35.00-7.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 7.00-2.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 2.00-0.20m. Flush 150mm steel cover set in concrete: Flush cover set in concrete: 0.20-0.10m. Gas valve fitted. Surface reinstated with tarmacadam 0.10-0.00m.
REMARKS: Clean drilling techniques; bentonite seal from 1.50-2.00m. PID readings taken on all environmental samples. Results: 0.20m - 0.00ppm; 0.60m -1.50ppm; 1.00m - 0.00.ppm; 1.50m - 4.50ppm; 2.50m - 0.30ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
31/01/18	4.00	4.00	3.40
01/02/18	8.00	8.00	1.70

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
31/01/2018 17:00	7.00	6.90	3.20
01/02/2018 08:00	7.00	6.90	

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BOREHOLE LOG

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Borehole No. **BH1002C**

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471591 N 174147	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.40mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 31/01/2018 End: 02/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
		B SPT C	8.50 - 9.00 8.50 - 8.95	C 21			Medium dense locally dense light brown sandy tending to very sandy slightly silty angular to sub-angular fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL) *(continued from previous sheet)*			
9										9
10		B SPT C	10.00 - 10.50 10.00 - 10.45	C 8			CHALK recovered as light brown and off white slightly sandy silty angular to sub-angular fine to coarse GRAVEL with rare flints. Clasts are very weak low to medium dense. (Dc) (WHITE CHALK SUBGROUP)	10.10	28.30	10
11		U100	11.50 - 11.95					(1.90)		11
12		D	12.00				CHALK recovered as off white sandy silty angular to sub-angular fine to coarse GRAVEL with rare rinded flints. Clasts are weak high density. (WHITE CHALK SUBGROUP)	12.00	26.40	12
13		SPT	13.00 - 13.45	S 8						13
14		D	14.00							14
		U100	14.50 - 14.95							
15		D	15.00							15
16		SPT	16.00 - 16.45	S 33						16
17		D	17.00							17
		U100	17.50 - 17.95							

DRAFT

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)

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BOREHOLE LOG

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Borehole No. **BH1002C**

Sheet 3 of 4

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471591 N 174147	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.40mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 31/01/2018 End: 02/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
18		D	18.00				CHALK recovered as off white sandy silty angular to sub-angular fine to coarse GRAVEL with rare rinded flints. Clasts are weak high density. (WHITE CHALK SUBGROUP) *(continued from previous sheet)*			
19		SPT	19.00 - 19.45	S 46						
20		U100	20.50 - 20.95							
21		D	21.00							
22		SPT	22.00 - 22.45	S*55						
23		B	23.50 - 24.00					(23.00)		
24										
25		SPT	25.00 - 25.45	S*188						
26		SPT	26.50 - 26.95	S*81						
27										

DRAFT

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
01/02/2018 17:00	25.00	24.90	3.80
02/02/2018 08:00	25.00	24.90	3.60

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BOREHOLE LOG

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Borehole No. **BH1002C**

Sheet 4 of 4

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471591 N 174147	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.40mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 31/01/2018 End: 02/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
28		SPT	28.00 - 28.45	S*176			CHALK recovered as off white sandy silty angular to sub-angular fine to coarse GRAVEL with rare rinded flints. Clasts are weak high density. (WHITE CHALK SUBGROUP) *(continued from previous sheet)*			
29		SPT	29.50 - 29.95	S*107						
30										
31		SPT	31.00 - 31.45	S*103						
32										
33		SPT	32.50 - 32.95	S*120						
34		SPT	34.00 - 34.45	S*83						
35		D	35.00				Borehole completed at 35.00m	35.00	3.40	
36										
37										

DRAFT

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
02/02/2018 17:00	35.00	34.90	3.60

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INSPECTION PIT LOG

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Pit No **BH1003**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471556 N 174145 Level: 38.57mAOD	Date 01/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 0.50m Depth 0.80m 0.50m	Scale 1 : 12.5
Client: SSE Plc			Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Grey ASPHALT.	(0.10)		
		B	0.10 - 0.25		MADE GROUND: Brown to grey slightly gravelly slightly silty SAND. Gravel is angular fine to coarse of siliceous material and brick.	0.10	38.47	
		D ES	0.20			(0.15)		
					MADE GROUND: Red brick MASONRY.	0.25	38.32	
						(0.20)		
					MADE GROUND: Brown to grey gravelly slightly silty SAND. Gravel is angular fine to coarse of siliceous material and brick.	0.45	38.12	
						(0.10)		
					MADE GROUND: Grey CONCRETE.	0.55	38.02	
						(0.10)		
		B	0.65 - 0.80		MADE GROUND: Brown to grey gravelly slightly silty SAND. Gravel is angular fine to coarse of siliceous material and brick.	0.65	37.92	
						(0.15)		
		D ES	0.80		0.80m: Clay pipe in north face of inspection pit. Intact (approximately 100mm). Inspection pit completed at 0.80m	0.80	37.77	
1								1
2								2

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-0.80m.

CASING: None used.

GROUNDWATER: None encountered.

BACKFILL: Borehole was backfilled with bentonite pellets and ground surface reinstated.

REMARKS: Borehole terminated due to clay pipe at 0.80m. Relocated as BH1003A. PID readings taken on all environmental samples. Results: 0.20m - 0.30ppm; 0.80m -0.20ppm.

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INSPECTION PIT LOG

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Pit No **BH1003A** Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471557 N 174145 Level: 38.56mAOD	Date 02/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: m Depth 1.50m	Scale 1 : 12.5
Client: SSE Plc			Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Grey ASPHALT.	(0.10)		
					MADE GROUND: Brownish grey slightly gravelly slightly silty SAND. Gravel is angular fine to coarse of siliceous material and brick.	0.10 (0.10)	38.46	
					MADE GROUND: Red brick MASONRY.	0.20 (0.20)	38.36	
					MADE GROUND: Brownish grey gravelly slightly silty SAND. Gravel is angular fine to coarse of siliceous material and brick.	0.40 (0.30)	38.16	
					MADE GROUND: Grey CONCRETE.	0.70 (0.20)	37.86	
		B	0.90 - 1.20		MADE GROUND: Loose brownish grey gravelly slightly silty (ashy) SAND with low cobble content. Gravel is angular fine to coarse of siliceous material and brick. Cobbles are angular of brick.	0.90	37.66	
1		D ES	1.00					1
		SPT	1.20 - 1.65		1.20-1.50m: Concrete footing in north face of the pit.	(0.60)		
					Inspection pit completed at 1.50m	1.50	37.06	
2								2

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Light cable percussion rig.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.15m. Cable percussion drilled using 200mm diameter clay cutter and bailer 1.20-1.50m

CASING: None used.

GROUNDWATER: Groundwater seepage encountered at 0.50m. No rise is record.

BACKFILL: Borehole was backfilled with bentonite pellets and ground surface reinstated.

REMARKS: Unable to advance hole through concrete. Relocated as BH1003B. PID readings taken on all environmental samples. Results: 1.00m - 0.30ppm.

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INSPECTION PIT LOG

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Pit No **BH1003B**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471544 N 174148 Level: 38.71mAOD	Date 02/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 0.50m, Depth 0.70m, 0.60m	Scale 1 : 12.5
Client: SSE Plc			Logged By TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
		C	0.05 - 0.70		MADE GROUND: Black ASPHALT.			
					MADE GROUND: Dark grey CONCRETE.	0.08	38.63	
						(0.32)		
					MADE GROUND: Light grey CONCRETE.	0.40	38.31	
						(0.30)		
					Inspection pit completed at 0.70m	0.70	38.01	
1								1
2								2

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Terrier 2002 track mounted rig.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels: 0.00-0.05m. Borehole advanced using 300mm diameter coring barrel: 0.05-0.70m.

CASING: None used.

GROUNDWATER: None encountered.

BACKFILL: Borehole was backfilled with arisings and ground surface reinstated.

REMARKS: Unable to advance hole through concrete. Relocated as BH1003C.

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INSPECTION PIT LOG

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Pit No **BH1003C**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471544 N 174137 Level: 38.76mAOD	Date 05/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 0.50m Depth 0.50m 0.50m	Scale 1 : 12.5
Client: SSE Plc			Logged By TH/MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
		C	0.00 - 0.20		MADE GROUND: Dark grey ASPHALT.	(0.10)		
		B	0.10		MADE GROUND: Brown very sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL mixed lithologies including concrete, red brick, chalk and siliceous material.	0.10	38.66	
		D ES	0.20					
		B	0.30 - 0.45			(0.40)		
					0.40-0.47m: Clayey.			
		D ES	0.45		0.50m: Concrete across base of pit.	0.50	38.26	
					Inspection pit completed at 0.50m			
1								1
2								2

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Terrier 2002 track mounted rig.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels: 0.00-0.05m. Borehole advanced using 300mm diameter coring barrel utilizing water flush: 0.05-0.20m.

Hand dug inspection pit: 0.20-050m.

CASING: None used.

GROUNDWATER: None encountered.

BACKFILL: None used.

REMARKS: Unable to advance hole through concrete at 0.50. Relocated as BH1003D. Inspection pit covered and fenced off to be continued using rotary drilling techniques: See BH2004. PID readings taken on all environmental samples. Results: 0.20m -0.20ppm; 0.45m -0.40ppm.

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INSPECTION PIT LOG

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Pit No **BH1003D**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471535 N 174144 Level: 38.72mAOD	Date 05/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 0.60m, Depth 0.05m, 0.50m	Scale 1 : 12.5
Client: SSE Plc			Logged By TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Dark grey ASPHALT. 0.05m: Concrete across base of inspection pit. Inspection pit completed at 0.05m	0.05	38.67	

DRAFT

EQUIPMENT: Hydraulic breaker.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels: 0.00-0.05m.

CASING: None used.

GROUNDWATER: None encountered.

BACKFILL: Ground surface reinstated.

REMARKS: Unable to advance hole through concrete. Relocated as BH1003E.

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BOREHOLE LOG

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Borehole No. **BH1003E**

Sheet 1 of 4

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471544 N 174164	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.71mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 05/02/2018 End: 08/02/2018	Logged By TH

(m)	Water Levels	Samples & In Situ Testing: No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
							MADE GROUND: Black ASPHALT.	0.08	38.63	
							MADE GROUND: Grey sandy angular fine to coarse GRAVEL of igneous material.	0.15 (0.40)	38.56	
		B ES	0.30 - 0.40 0.30							
		B ES	0.60 - 0.70 0.60				MADE GROUND: Reddish brown very sandy silty angular to sub-angular fine to coarse GRAVEL of red brick, concrete and siliceous material.	0.55	38.16	
1		B ES	1.00 - 1.10 1.00				0.40-0.50m: 2no. clay pipes. Broken and infilled with sediment. Orientation approximately East to West.	0.90	37.81	1
		B ES SPT	1.30 - 1.40 1.30 1.50 - 1.95	S 2			MADE GROUND: Light brown very sandy clayey angular to sub-rounded fine to coarse GRAVEL of mixed lithologies including chalk, red brick, and siliceous material.	1.20 (0.70)	37.51	
2		D ES	2.00				MADE GROUND: Off white and light brown sandy very clayey angular to sub-rounded COBBLES of chalk with some very silty angular to sub-angular fine to coarse gravel of chalk and siliceous material.	1.90	36.81	2
		UT100	2.50 - 2.95				MADE GROUND: Light brown sandy very clayey angular to sub-rounded fine to coarse GRAVEL of red brick, chalk and siliceous material locally tending to slightly sandy gravelly clay with rare bone and clay pot fragments (<100mm). 1.50-1.90m: Very loose.	(0.80) 2.70	36.01	
3							Very soft bluish grey mottled greenish grey silty CLAY with rare shell fragments (<5mm), rare pockets (<30mm) of dark grey peat and a moderate organic odour. (ALLUVIUM)	(0.60) 3.30	35.41	3
		B SPT C	3.50 - 4.00 3.50 - 3.95	C 7			Very soft greyish brown slightly sandy gravelly CLAY. Gravel is angular to sub-rounded fine to coarse siliceous material. (ALLUVIUM) 3.00-3.30m: Tending to sandy, very clayey gravel.	(1.20)		
4		D	4.00				Loose greyish brown very sandy slightly silty angular to sub-rounded, fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)			4
		B SPT C	4.50 - 5.00 4.50 - 4.95	C 30			Dense grey very sandy silty angular to sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	4.50	34.21	
5		D	5.00							5
		B SPT C	5.50 - 6.00 5.50 - 5.95	C 30						
6		D	6.00					(4.00)		6
7		B D SPT C	7.00 - 7.45 7.00 7.00 - 7.45	C 32			7.00-7.45m: Locally tending to very gravelly silty SAND with low cobble content. Cobbles are sub-rounded siliceous material.			7
8										8

EQUIPMENT: Hand tools. Hydraulic breaker. Light cable percussion rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.50m. Cable percussion drilled using 200mm diameter clay cutter and bailer 1.50-10.50m and 150mm diameter clay cutter and bailer 10.50-35.00m..
CASING: 250mm diameter to 1.70m, 200mm diameter to 12.80m, 150mm diameter to 26.50m.
GROUNDWATER: Encountered at 4.00m, and rose to 3.40m after 20 minutes; and at 8.00m and rose to 1.70m after 20 minutes.
INSTALLATION: Borehole was backfilled with bentonite pellets: 35.00-6.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 6.00-1.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 1.00-0.40m. Flush 150mm steel cover set in concrete: 0.40-0.10m. Gas valve fitted. Surface reinstated with tarmacadam 0.10-0.00m.
REMARKS: Clean drilling techniques; bentonite seal from 1.50-2.40m. PID readings taken on all environmental samples. Results: 0.30m - 1.10ppm; 0.60m -1.60ppm; 1.00m - 1.10.ppm; 1.30m - 0.30ppm; 2.00m - 0.00ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
05/02/2018 17:00	1.50		
06/02/2018 08:00	1.50		
08/02/2018 08:00			

CC BH LOG C5925.GPJ CCGI GINT STD AGS 4_0.GDT 9/3/18

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BOREHOLE LOG

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Borehole No. **BH1003E**

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471544 N 174164	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.71mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 05/02/2018 End: 08/02/2018	Logged By TH

(m)	Water Levels	Samples & In Situ Testing: No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
		D	8.00				Dense grey very sandy silty angular to sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL) *(continued from previous sheet)*			
		B	8.50 - 8.95	C 22			8.00-8.10m: Light brown slight sandy gravelly silty CLAY. Gravel is angular to sub-rounded fine to coarse chalk.	8.50	30.21	
		SPT C					Medium dense light brown very sandy silty angular to rounded fine to coarse GRAVEL of siliceous material and chalk. (KEMPTON PARK GRAVEL)			
9		D	9.00							9
								(2.60)		
10		D	10.00	C 30						10
		SPT C	10.00 - 10.45							
11		D	11.00							11
							Soft light brown locally light greyish brown slightly sandy gravelly silty CLAY. Gravel is angular to rounded fine to coarse siliceous material and chalk. (KEMPTON PARK GRAVEL)	11.10	27.61	
		SPT	11.50 - 11.95	S 9				(0.75)		
12		D	12.00				Medium dense slightly sandy very silty angular to sub-rounded fine to coarse GRAVEL of siliceous material and chalk. (KEMPTON PARK GRAVEL)	11.85	26.86	12
								(0.65)		
		B	12.50 - 12.80				CHALK recovered as off white slightly sandy very silty sub-angular to sub-rounded fine to coarse Gravel with rare rinded flints. Clasts are very weak medium and high density. (WHITE CHALK SUBGROUP)	12.50	26.21	
13		B	13.00 - 13.41							13
		D	13.00							
14		D	14.00							14
		SPT	14.50 - 14.95	S 17						
15		D	15.00							15
16		D	16.00							16
		U100	16.00 - 16.45							
17		D	17.00							17
		SPT	17.50 - 17.95	S 19			17.50-17.95m: Occasional flints.			

DRAFT

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
06/02/2018 17:00	11.50	11.50	3.50
07/02/2018 08:00	11.50	11.50	3.00

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BOREHOLE LOG

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Borehole No. **BH1003E**

Sheet 3 of 4

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471544 N 174164	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.71mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 05/02/2018 End: 08/02/2018	Logged By TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
18		D	18.00				CHALK recovered as off white slightly sandy very silty sub-angular to sub-rounded fine to coarse Gravel with rare rinded flints. Clasts are very weak medium and high density. (WHITE CHALK SUBGROUP) *(continued from previous sheet)*	(11.50)		
19		D U100	19.00 19.00 - 19.45							
20		D	20.00				20.00-20.45m: Locally speckled black.			
		SPT	20.50 - 20.95	S 28						
21		D	21.00							
22		B D U100	22.00 - 22.45 22.00 22.00 - 22.45							
23		D	23.00							
		SPT	23.50 - 23.95	S*167						
24		D	24.00				CHALK recovered as off white slightly sandy very silty sub-angular to sub-rounded fine to coarse GRAVEL with rare rinded flints. Clasts are weak high density. (WHITE CHALK SUBGROUP)	24.00	14.71	
25		D SPT	25.00 25.00 - 25.45	S*88						
26		D	26.00							
		SPT	26.50 - 26.95	S*185						
27		D	27.00							

DRAFT

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
07/02/2018 17:00	26.50	26.50	5.90

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BOREHOLE LOG

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Borehole No. **BH1003E**

Sheet 4 of 4

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471544 N 174164	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.71mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 05/02/2018 End: 08/02/2018	Logged By TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
28		D SPT	28.00 28.00 - 28.45	S*130			CHALK recovered as off white slightly sandy very silty sub-angular to sub-rounded fine to coarse GRAVEL with rare rinded flints. Clasts are weak high density. (WHITE CHALK SUBGROUP) *(continued from previous sheet)*			
29		D	29.00							
		SPT	29.50 - 29.95	S*200				(11.00)		
30		D	30.00							
31		D SPT	31.00 31.00 - 31.45	S*115			31.00-34.00m: Occasional rinded flints			
32		D	32.00							
		SPT	32.50 - 32.95	S*88						
33		D	33.00							
34		D SPT	34.00 34.00 - 34.45	S*97						
35		D	35.00				Borehole completed at 35.00m	35.00	3.71	
36										
37										

DRAFT

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)

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BOREHOLE LOG

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Borehole No. **BH1004**

Sheet 1 of 4

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471494 N 174112	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.31mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 05/02/2018 End: 08/02/2018	Logged By MM/TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
							Black ASPHALT.	0.10	38.21	
		ES	0.30				MADE GROUND: Dark grey mottled black gravelly silty SAND. Gravel is sub-angular, fine to coarse siliceous material and clinker.	0.40	37.91	
		ES	0.60				MADE GROUND: Brown and greyish brown gravelly silty SAND with low cobble content and occasional fragments of wood and ceramics. Gravel is angular fine to coarse of red brick and concrete. Cobbles are angular of red brick.	(0.80)		
1		ES	1.00							1
		ES	1.20				MADE GROUND: Soft black gravelly CLAY. Gravel is angular, fine to medium red brick.	1.20	37.11	
		B	1.30 - 1.70					(0.50)		
		SPT	1.50 - 1.95	S 1						
		ES	1.70				Very soft bluish grey and brownish grey silty CLAY with frequent pockets (<30mm) of partially decomposed organic material and a moderate organic odour. (ALLUVIUM)	1.70	36.61	
2		B	2.00 - 2.40					(0.70)		2
		ES	2.00							
		B	2.50 - 3.00	C 24			Medium dense light brown very sandy silty angular to rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL) 2.40-8.10m: Partial loss of fines.	2.40	35.91	
		SPT C	2.50 - 2.95							
3										3
		B	3.50 - 4.00	C 21						
		SPT C	3.50 - 3.95							
4										4
		B	4.50 - 5.00	C 22						
		SPT C	4.50 - 4.95							
5								(5.70)		5
		B	5.50 - 6.00	C 29						
		SPT C	5.50 - 5.95							
6										6
7		B	7.00 - 7.50	C 25						7
		SPT C	7.00 - 7.45							
8										8

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Light cable percussion rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.20m. Cable percussion drilled using 250mm diameter clay cutter and bailer 1.20-2.00m and 200mm diameter clay cutter and bailer 1.20-9.00m, and 150mm diameter clay cutter and bailer 9.00-35.00m.
CASING: 250mm diameter to 2.00m, 200mm diameter to 9.00m, 150mm diameter to 35.00m.
GROUNDWATER: None recorded, however was added to assist drilling.
INSTALLATION: Borehole was backfilled with bentonite pellets: 35.00-7.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 7.00-1.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 1.00-0.40m. Flush 150mm steel cover set in concrete: 0.40-0.10m. Gas valve fitted. Surface reinstated with tarmacadam 0.10-0.00m.
REMARKS: Clean drilling techniques; bentonite seal from 1.50-2.40m. PID readings taken on all environmental samples. Results: 0.30m - 0.30ppm; 0.60m -0.20ppm; 1.00m - 0.40ppm; 1.20m - 2.30ppm; 1.70m - 0.20ppm; 2.00m - 1.00ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
05/02/2018 17:00	2.50	2.00	
06/02/2018 08:00	2.50	2.00	

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Borehole No. **BH1004**

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471494 N 174112	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.31mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 05/02/2018 End: 08/02/2018	Logged By MM/TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
		B	8.20 - 8.50				CHALK off white locally speckled black recovered as very silty sub-angular to sub-rounded fine to coarse GRAVEL with rare rinded flints. Clasts are very weak and weak medium density. (Dc) (WHITE CHALK SUBGROUP)	8.10	30.21	
		B	8.50 - 9.00	S 7						
		SPT	8.50 - 8.95							
9										9
		U100	10.00 - 10.45							
10										10
		D	10.50							
11										11
		SPT	11.50 - 11.95	S 8						
12										12
		D	12.50							
13		U100	13.00 - 13.45							13
		D	13.50							
14										14
								(12.40)		
		SPT	14.50 - 14.95	S 19						
15										15
		D	15.50							
16		U100	16.00 - 16.45							16
		D	16.50							
17										17
		SPT	17.50 - 17.95	S 34						

DRAFT

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)

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Borehole No. **BH1004**

Sheet 3 of 4

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471494 N 174112	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.31mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 05/02/2018 End: 08/02/2018	Logged By MM/TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
18							CHALK off white locally speckled black recovered as very silty sub-angular to sub-rounded fine to coarse GRAVEL with rare rinded flints. Clasts are very weak and weak medium density. (Dc) (WHITE CHALK SUBGROUP) *(continued from previous sheet)*			
		D	18.50							
19		B	19.00 - 19.50							
20										
		SPT	20.50 - 20.95	S*158			CHALK recovered as off white very silty sub-angular to sub-rounded fine to coarse GRAVEL with rare rinded flints. Clasts are weak medium and high density. (Dc) (WHITE CHALK SUBGROUP)	20.50	17.81	
21		D	21.00							
22		SPT	22.00 - 22.45	S*75						
23		D	23.00							
		SPT	23.50 - 23.95	S*97						
24		D	24.50							
25		SPT	25.00 - 25.45	S*94						
26		D	26.00							
		SPT	26.50 - 26.95	S*107						
27										

DRAFT

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
06/02/2018 17:00	20.50	20.40	4.80
07/02/2018 08:00	20.50	20.40	

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Borehole No. **BH1004**

Sheet 4 of 4

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471494 N 174112	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.31mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 05/02/2018 End: 08/02/2018	Logged By MM/TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
28		D SPT	28.00 28.00 - 28.45	S*136			CHALK recovered as off white very silty sub-angular to sub-rounded fine to coarse GRAVEL with rare rinded flints. Clasts are weak medium and high density. (Dc) (WHITE CHALK SUBGROUP) *(continued from previous sheet)*	(14.50)		
29		D	29.00							
		SPT	29.50 - 29.95	S*150						
30		D	30.50							
31		SPT	31.00 - 31.45	S*120			31.00-35.00m: Occasional rinded flints. 32.5m: Rinded flint cobbles.			
32		D	32.00							
		SPT	32.50 - 32.95	S**						
33		B	33.50 - 34.00							
34		SPT	34.00 - 34.45	S*103						
35		D	35.00				Borehole completed at 35.00m	35.00	3.31	
36										
37										

DRAFT

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
07/02/2018 17:00	28.00	28.00	3.10
08/02/2018 08:00	28.00	28.00	
08/02/2018 17:00	35.00	35.00	3.10

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BOREHOLE LOG

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Borehole No. **BH1005**

Sheet 1 of 2

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471538 N 174120	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.69mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 31/01/2018 End: 01/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
							MADE GROUND: Grey ASPHALT.	0.10	38.59	
		B ES	0.20 - 0.40 0.30				MADE GROUND: Dark grey slightly silty angular fine to coarse GRAVEL of siliceous material and brick.	0.20 (0.40)	38.49	
		B ES	0.60 - 0.90 0.70				MADE GROUND: Reddish brown and grey sandy slightly silty (ashy) angular fine to coarse GRAVEL of siliceous material and brick with medium cobble content. Cobbles are angular of brick.	0.60	38.09	
1		B ES SPT	0.90 - 1.20 1.00 1.20 - 1.65	S 1			MADE GROUND: Grey sandy slightly silty angular fine to coarse GRAVEL of siliceous material, sandstone and brick with low cobble content. Cobbles are angular of brick.	0.90	37.79	1
							MADE GROUND: Very soft dark greyish brown slightly gravelly sandy CLAY. Gravel is angular fine to coarse of siliceous material, concrete and brick.	(1.00)		
2		D ES UT100 D	2.00 2.00 - 2.45 2.50				Very soft greenish grey slightly sandy silty CLAY. (ALLUVIUM)	1.90 (0.90)	36.79	2
		D	2.80				Very soft grey mottled brown slightly gravelly sandy CLAY. Gravel is sub-angular fine to medium of siliceous material. (ALLUVIUM)	2.80	35.89	
3		B SPT C	3.00 - 3.50 3.00 - 3.45	S 11				3.00	35.69	3
							Medium dense light brown to grey very sandy slightly silty angular to sub-rounded GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)			
4		B SPT C	4.00 - 4.50 4.00 - 4.45	S 25						4
5		B SPT C	5.00 - 5.50 5.00 - 5.45	S 30						5
6								(6.70)		6
		B SPT C	6.50 - 7.00 6.50 - 6.95	S 33			6.50-6.95m: Very dense.			
7										7
8										8

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Light cable percussion rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.20m. Cable percussion drilled using 250mm diameter clay cutter and bailer 1.20-2.00m and 200mm diameter clay cutter and bailer 1.20-9.00m, and 150mm diameter clay cutter and bailer 9.00-35.00m.
CASING: 250mm diameter to 2.00m, 200mm diameter to 9.00m, 150mm diameter to 35.00m.
GROUNDWATER: None recorded, however was added to assist drilling.
INSTALLATION: Borehole was backfilled with bentonite pellets: 12.00-7.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 7.00-2.80m. 50mm ID HDPE plain pipe with bentonite pellet seal: 2.80-0.20m. Flush 150mm steel cover set in concrete: 0.20-0.10m. Gas valve fitted. Surface reinstated with tarmacadam 0.10-0.00m.
REMARKS: Clean drilling techniques; bentonite seal from 1.50-2.00m. PID readings taken on all environmental samples. Results: 0.30m - 0.00ppm; 0.70m -0.20ppm; 1.00m - 0.50ppm; 2.00m - 0.20ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
31/01/2018 17:00	5.50	4.00	
01/02/2018 08:00	5.50	6.10	

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BOREHOLE LOG

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Borehole No. **BH1005**

Sheet 2 of 2

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471538 N 174120	Hole Type CP
Location: Vastern Road, Reading, RG1 8BU		Level: 38.69mAOD	Scale 1 : 50.00
Client: SSE Plc		Dates: Start: 31/01/2018 End: 01/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
		B SPT C	8.00 - 8.45	S 20			Medium dense light brown to grey very sandy slightly silty angular to sub-rounded GRAVEL of siliceous material. (KEMPTON PARK GRAVEL) *(continued from previous sheet)* 8.50-9.70m: Very sandy.			
		SPT D	9.50 - 9.95 9.70	S 7			CHALK recovered as off white locally speckled black very silty sub-angular to sub-rounded fine to coarse GRAVEL with rare rinded flints. Clasts are very weak and weak medium density. (Dc) (WHITE CHALK SUBGROUP)	9.70	28.99	
		B U100	11.00 - 11.45					(2.30)		
		SPT	11.50 - 11.95	S 36			Borehole completed at 12.00m	12.00	26.69	

DRAFT

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)

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ROTARY BOREHOLE LOG

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Borehole No. **BH2001**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471586 N 174141	Hole Type DS+RC
Location: Vastern Road, Reading, RG1 8BU		Level: 38.42mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 13/02/2018 End: 13/02/2018	Logged By TH

(m)	Water Levels	Core Run, Samples & Testing: No/Type	Depth (m)	Result	Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
								MADE GROUND: Dark grey ASPHALT.	0.08	38.34	
								MADE GROUND: Light brown very sandy angular fine to coarse GRAVEL of siliceous material and brick.	0.30	38.12	
								MADE GROUND: Dark grey sandy silty (ashy) GRAVEL with low cobble content. Cobbles are angular of red brick.	0.55	37.87	
		C	0.60 - 1.20		C	100% 33% 33%		MADE GROUND: CONCRETE.	0.80	37.62	
		ES	0.80					MADE GROUND: Dark grey very sandy very clayey angular to sub-angular fine to coarse GRAVEL of red brick, concrete and siliceous material.	0.90	37.52	
1		D	0.90						(0.40)		1
		ES	1.00					MADE GROUND: Very soft light greyish brown locally mottled orangish brown slightly gravelly slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to coarse of red brick and siliceous material.	1.30	37.12	
		D	1.40					Very soft dark bluish green locally mottled light grey CLAY with rare partially decomposed organic material (<5mm) and occasional comminuted shell fragments (<3mm). (ALLUVIUM)	(1.10)		
2		D	2.00						2.40	36.02	2
								Very soft bluish green mottled brown slightly gravelly slightly sandy CLAY with rare partially decomposed organic material (5mm) and a moderate organic odour. Gravel is sub-rounded to rounded fine to coarse siliceous material. (ALLUVIUM)	(1.20)		
3		D	3.00						3.60	34.82	3
								Light brown very sandy slightly silty angular to sub-rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL) 3.60-3.80m: Very clayey.	(1.40)		
4		B	4.00 - 5.00						5.00	33.42	4
								Borehole completed at 5.00m			
5											5
6											6

DRAFT

EQUIPMENT: Hand digging tools. Comacchio Fraste Multi-drill ML track mounted rig.
METHOD: Hand dug inspection pit: See WS1008. Waterflush rotary coring (150mm): 0.60-1.20m. Dynamic sampling using 128mm and 113mm sample barrels: 1.20-5.00m.
CASING: 140mm diameter to 4.00m.
GROUNDWATER: None encountered prior to using water flush.
INSTALLATION: Bentonite seal 5.00-4.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 4.00-3.00m. Plain 50mm ID HDPE pipe with washed gravel response zone: 3.00-2.80m, bentonite pellet seal: 2.80-0.60m and gravel 0.60-0.40m. Flush cover set in concrete: 0.40-0.10m. Gas valve fitted. Surface reinstated with tarmacadam 0.10-0.00m.
REMARKS: Drilled at location of WS1008. PID readings taken on all environmental samples. Results: 0.80m - 3.60ppm; 1.00m - 4.70ppm; 1.50m - 4.80ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
13/02/2018 10:30	5.00	4.00	

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ROTARY BOREHOLE LOG

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Borehole No. **BH2002**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471577 N 174143	Hole Type DS+RC
Location: Vastern Road, Reading, RG1 8BU		Level: 38.37mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 12/02/2018 End: 12/02/2018	Logged By TH

(m)	Water Levels	Core Run, Samples & Testing: No/Type	Depth (m)	Result	Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
								MADE GROUND: Dark grey ASPHALT.	0.10	38.27	
		C	0.25 - 1.20		C	89% 13% 13%		MADE GROUND: Grey and brown very sandy silty angular fine to coarse GRAVEL of siliceous material and red brick.	0.25	38.12	
								MADE GROUND: CONCRETE. 0.37-1.00m: recovered as very sandy silty angular fine to coarse gravel of concrete.	(0.75)		
1		ES	1.00					MADE GROUND: Off white and dark grey slightly sandy very silty angular GRAVEL of chalk. 1.10m: 1no. bone fragment (<30mm).	1.00	37.37	1
									(0.45)		
		ES	1.50					Very soft dark bluish green CLAY with rare partially decomposed organic material (<5mm) and occasional comminuted shell fragments (<3mm). (ALLUVIUM) 1.45-1.60m: Light brown. Occasional partially decomposed organic material (<5mm).	1.45	36.92	
		D	1.60						(0.65)		
2											2
		ES	2.20					Very soft bluish green mottled light grey slightly sandy silty calcareous CLAY with frequent lenses (<1mm) of light grey silt. (ALLUVIUM)	2.10	36.27	
		D	2.30						(0.80)		
3		D	3.00					Very soft dark bluish green slightly gravelly slightly sandy CLAY with rare partially decomposed organic material (<5mm) and a slight organic odour. Gravel is sub-rounded fine to coarse siliceous material. (ALLUVIUM)	2.90	35.47	3
									(0.70)		
								Light brown very sandy slightly slightly silty angular to sub-rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL) 3.60-3.80m: Very clayey.	3.60	34.77	
4		B	4.00 - 5.00						(1.40)		4
5								Borehole completed at 5.00m	5.00	33.37	5
6											6

EQUIPMENT: Hand digging tools. Comacchio Fraste Multi-drill ML track mounted rig.
METHOD: Hand dug inspection pit: See WS1009. Waterflush rotary coring (150mm): 0.25-1.20m. Dynamic sampling using 128mm and 113mm sample barrels: 1.20-5.00.
CASING: 140mm diameter to 4.00m.
GROUNDWATER: None encountered prior to using water flush.
INSTALLATION: Bentonite seal 5.00-4.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 4.00-3.00m. Plain 50mm ID HDPE pipe with washed gravel response zone: 3.00-2.80m, bentonite pellet seal: 2.80-0.60m and gravel 0.60-0.40m. Flush cover set in concrete: 0.40-0.10m. Gas valve fitted. Surface reinstated with tarmacadam 0.10-0.00m.
REMARKS: Drilled at location of WS1009. PID readings taken on all environmental samples. Results: 1.00m - 4.00ppm; 1.50m - 3.50ppm; 2.20m - 4.80ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
12/02/2018 17:00	5.00	4.00	

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ROTARY BOREHOLE LOG

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Borehole No. **BH2003**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471557 N 174145	Hole Type DS+RC
Location: Vastern Road, Reading, RG1 8BU		Level: 38.56mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 12/02/2018 End: 12/02/2018	Logged By TH

(m)	Water Levels	Core Run, Samples & Testing: No/Type	Depth (m)	Result	Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
								MADE GROUND: Grey ASPHALT.	0.10	38.46	
								MADE GROUND: Brownish grey slightly gravelly slightly silty SAND. Gravel is angular fine to coarse of siliceous material and brick.	0.20	38.36	
								MADE GROUND: Red brick MASONRY.	0.40	38.16	
								MADE GROUND: Brownish grey gravelly slightly silty SAND. Gravel is angular fine to coarse of siliceous material and brick.	(0.30) 0.70	37.86	
1								MADE GROUND: Grey CONCRETE.	0.90	37.66	1
								MADE GROUND: Loose brownish grey gravelly slightly silty (ashy) SAND with low cobble content. Gravel is angular fine to coarse of siliceous material and brick. Cobbles are angular of brick.	(0.60)		
		C	1.50 - 2.00		C	60% 0% 0%		MADE GROUND: CONCRETE recovered as dark grey, grey and reddish brown angular coarse gravel of red brick, siliceous material and concrete with 1no. cobble of angular concrete.	1.50 (0.50)	37.06	
2								MADE GROUND: Brownish grey very sandy silty angular to sub-rounded fine to coarse GRAVEL of mixed lithologies including red brick, concrete and siliceous material.	2.00 2.20	36.56 36.36	2
		D ES	2.30 2.40					Very soft greenish grey CLAY with a moderate hydrocarbon odour, occasional partially decomposed organic material (<5mm) and rare comminuted shell fragments (<5mm). (ALLUVIUM)	(0.80)		
3								2.90-3.00m: Slightly gravelly slightly sandy clay. Gravel is angular to sub-angular fine to coarse siliceous material.	3.00	35.56	3
		ES	3.50					Light brown very sandy very clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material with a moderate hydrocarbon odour and free product (black). (KEMPTON PARK GRAVEL) 3.50-3.80m: Dark grey with a strong hydrocarbon odour.	(0.80)		
		B	3.80 - 4.50					Light brown very sandy silty angular to sub-angular fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	3.80 (0.70)	34.76	
4		ES	4.20								4
								Borehole completed at 4.50m	4.50	34.06	
5											5
6											6

EQUIPMENT: Hand digging tools. Comacchio Fraste Multi-drill ML track mounted rig.
METHOD: Hand dug inspection pit and geology to 1.50m: See BH1003A. Waterflush rotary coring (146mm) : 1.50-2.00m. Dynamic sampling using 128mm and 113mm sample barrels: 2.00-4.50m.
CASING: 140mm diameter to 4.50m.
GROUNDWATER: None encountered prior to using water flush.
INSTALLATION: Bentonite seal 4.50-4.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 4.00-3.00m. Plain 50mm ID HDPE pipe with washed gravel response zone: 3.00-2.80m, bentonite pellet seal: 2.80-0.60m and gravel 0.60-0.40m. Flush cover set in concrete: 0.40-0.10m. Gas valve fitted. Surface reinstated with tarmacadam 0.10-0.00m.
REMARKS: Drilled at location of BH1003A. PID readings taken on all environmental samples. Results: 2.40m - 5.70ppm; 3.50m - 5.80ppm; 4.20m - 6.90ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
12/02/2018 17:00	4.50	4.50	

CC ROTARY LOG C5925.GPJ CCGI GINT STD AGS 4_0.GDT 9/3/18

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ROTARY BOREHOLE LOG

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Borehole No. **BH2004**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471544 N 174137	Hole Type DS+RC
Location: Vastern Road, Reading, RG1 8BU		Level: 38.76mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 13/02/2018 End: 13/02/2018	Logged By TH

(m)	Water Levels	Core Run, Samples & Testing: No/Type	Depth (m)	Result	Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
								MADE GROUND: Dark grey ASPHALT.	0.10	38.66	
								MADE GROUND: Brown very sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL mixed lithologies including concrete, red brick, chalk and siliceous material.	(0.40)		
		C	0.50 - 1.80			100% 21% 0%		MADE GROUND: CONCRETE recovered as light brown very sandy silty angular to sub-angular cobbles of concrete, red brick and siliceous material.	0.50	38.26	
								MADE GROUND: CONCRETE recovered as angular to sub-angular cobbles of concrete with little very sandy angular fine to coarse gravel of red brick, siliceous material and concrete.	(0.40)		
1					C			1.40-1.60m: Red brick masonry recovered as reddish brown very sandy silty angular to sub-angular fine to coarse gravel of red brick.	0.90	37.86	1
		C	1.80 - 2.90			100% 100% 100%		MADE GROUND: Light grey matrix supported CONCRETE. Aggregate is angular to rounded fine to coarse of red brick and siliceous material. 1.80-3.40m: Drill induced discontinuities are horizontal closely to medium spaced undulating and stepped rough.	(0.90)		
2					C				1.80	36.96	2
									(1.70)		
3		C	2.90 - 3.50		C	100% 83% 83%					3
		B	3.50 - 5.00					3.40-3.50m: Recovered non intact as angular fine to carse gravel of red brick and concrete. Light brown very sandy slightly silty angular to rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	3.50	35.26	
4		ES	4.00						(1.50)		4
5								Borehole completed at 5.00m	5.00	33.76	5
6											6

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EQUIPMENT: Hand digging tools. Comacchio Fraste Multi-drill ML track mounted rig.
METHOD: Hand dug inspection pit: See BH1003C. Dry drill rotary coring using 150mm coring barrel: 0.50-1.80m. Waterflush rotary coring using T6-116 coring barrel: 1.80-3.50m. Dynamic sampling using 98mm sample barrels: 3.50-5.00m.
CASING: 140mm diameter to 1.80m.
GROUNDWATER: None encountered prior to using water flush.
INSTALLATION: 50mm ID HDPE slotted pipe with washed gravel response zone: 3.80-3.30m. Plain 50mm ID HDPE pipe with washed gravel response zone: 3.30-3.10m, bentonite pellet seal: 3.10-0.60m and gravel 0.60-0.40m. Flush cover set in concrete: 0.40-0.10m. Gas valve fitted. Surface reinstated with tarmacadam 0.10-0.00m.
REMARKS: Drilled at location of BH1003C. On completion, hole collapsed to 3.80m as unable to advance casing. PID readings taken on all environmental samples. Results: 4.00m - 0.00ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
13/02/2018 17:00	5.00	1.80	

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Borehole No. **BH2005**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471552 N 174113	Hole Type DS+RC
Location: Vastern Road, Reading, RG1 8BU		Level: 38.65mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 13/02/2018 End: 13/02/2018	Logged By TH

(m)	Water Levels	Core Run, Samples & Testing: No/Type	Depth (m)	Result	Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
								MADE GROUND: Dark grey ASPHALT.			
								MADE GROUND: Grey sandy slightly silty angular fine to coarse GRAVEL of concrete and siliceous material with high cobble content. Cobbles are angular of concrete.	0.15 (0.35)	38.50	
		C	0.50 - 1.20		C	100%		MADE GROUND: Concrete and red brick cobbles recovered as greyish brown and reddish brown very sandy silty angular to sub-angular fine to coarse GRAVEL of concrete, red brick, siliceous material and asphalt with 2no. angular cobbles of red brick and concrete.	0.50 (0.45)	38.15	
		ES	0.60			0%					
		B	0.70 - 0.95			0%					
1		ES	0.95						0.95	37.70	1
		D	1.05					MADE GROUND: Very soft slightly gravelly slightly sandy CLAY. Gravel is angular to rounded fine to coarse chalk, siliceous material and red brick.	(0.90)		
		ES	1.75								
		ES	1.90					MADE GROUND: Dark grey very sandy clayey angular to sub-angular fine to coarse GRAVEL of red brick and siliceous material with visible hydrocarbons.	1.85 (0.30)	36.80	
2									2.15	36.50	2
		D	2.30					Very soft dark green locally dark grey slightly gravelly slightly sandy CLAY with rare partially decomposed organic material (<5mm). Gravel is sub-rounded fine to medium of siliceous material. (ALLUVIUM)			
		ES	2.40					2.50-3.30m: Limited recovery: slightly sandy gravelly clay. Gravel is angular to sub-rounded fine to coarse siliceous material.	(1.15)		
3											3
		D	3.20						3.30	35.35	
		B	3.30 - 5.00					Light brown very sandy slightly silty angular to rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)			
4									(1.70)		4
5								Borehole completed at 5.00m	5.00	33.65	5
6											6

EQUIPMENT: Hand digging tools. Comacchio Fraste Multi-drill ML track mounted rig.
METHOD: Hand dug inspection pit: See WS1018. Dry drill rotary coring using 150mm coring barrel: 0.50-1.20m. Dynamic sampling using 128mm and 113mm sample barrels: 1.20-5.00m.
CASING: 150mm diameter casing to 1.20m and 140mm diameter casing to 4.00m.
GROUNDWATER: None encountered prior to using water flush.
INSTALLATION: Bentonite seal 3.00-5.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 4.00-1.00m. Plain 50mm ID HDPE pipe with washed gravel response zone: 1.00-0.95m and bentonite pellet seal: 0.95-0.40m. Flush cover set in concrete: 0.40-0.10m. Gas valve fitted. Surface reinstated with tarmacadam 0.10-0.00m.
REMARKS: Drilled at location of WS1018. PID readings taken on all environmental samples. Results: 0.60m - 2.80ppm; 0.95m -4.00ppm; 1.75m - 4.00ppm; 1.90m - 3.40ppm; 2.40m - 2.40ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
14/02/2018 17:00	5.00		

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Borehole No. **BH2006**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471564 N 174107	Hole Type DS+RC
Location: Vastern Road, Reading, RG1 8BU		Level: 38.49mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 14/02/2018 End: 14/02/2018	Logged By TH

(m)	Water Levels	Core Run, Samples & Testing: No/Type	Depth (m)	Result	Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
		C	0.00 - 1.20			100% 0% 0%		MADE GROUND: Light grey CONCRETE.	0.12	38.37	
								MADE GROUND: Grey sandy slightly silty angular fine to coarse GRAVEL of concrete and siliceous material with high cobble content. Cobbles are angular of concrete.	(0.38)		
		ES	0.60		C				0.50	37.99	
		B	0.70 - 0.90					MADE GROUND: Concrete and red brick cobbles recovered as greyish brown and reddish brown very sandy silty angular to sub-angular fine to coarse GRAVEL of concrete, red brick, siliceous material and asphalt with 3no. angular cobbles of concrete.	(0.40)		
1		B	0.90 - 1.20						0.90	37.59	1
		ES	1.00					MADE GROUND: Dark grey and off white very sandy very silty angular to sub-angular fine to coarse GRAVEL of chalk, siliceous material, concrete and red brick.	(0.30)		
		ES	1.40					MADE GROUND: Very soft slightly gravelly slightly sandy CLAY. Gravel is angular to rounded fine to coarse chalk, siliceous material and red brick.	1.20	37.29	
		D	1.50						(0.50)		
		ES	1.80					MADE GROUND: Dark grey very sandy clayey angular to sub-angular fine to coarse GRAVEL of red brick and siliceous material with visible hydrocarbons.	1.70	36.79	
2		ES	2.00					Very soft dark green locally dark grey slightly gravelly slightly sandy CLAY with rare partially decomposed organic material (<5mm). Gravel is sub-rounded fine to medium of siliceous material. (ALLUVIUM)	1.95	36.54	2
		D	2.20					2.50-3.00m: Limited recovery: slightly sandy gravelly clay. Gravel is angular to sub-rounded fine to coarse of siliceous material.	(1.05)		
		ES	2.40								
3		B	3.30 - 5.00					Light brown very sandy silty angular to rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL) 3.00-3.20m: Very clayey. 3.20-3.30m: Clayey. 3.30-3.40m: Slightly clayey.	3.00	35.49	3
4									(2.00)		4
5								Borehole completed at 5.00m	5.00	33.49	5
6											6

EQUIPMENT: Hand digging tools. Comacchio Fraste Multi-drill ML track mounted rig.
METHOD: Hand dug inspection pit: See WS1019. Dry drill rotary coring using 150mm coring barrel: 0.50-1.20m. Dynamic sampling using 128mm and 113mm sample barrels: 1.20-5.00m.
CASING: 140mm diameter casing to 4.00m.
GROUNDWATER: None encountered prior to using water flush.
INSTALLATION: Bentonite seal 2.00-5.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 2.00-1.00m. Plain 50mm ID HDPE pipe with washed gravel response zone: 1.00-0.95m and bentonite pellet seal: 0.95-0.40m. Flush cover set in concrete: 0.40-0.10m. Gas valve fitted. Surface reinstated with tarmacadam 0.10-0.00m.
REMARKS: Drilled at location of WS1017. PID readings taken on all environmental samples. Results: 0.60m - 1.80ppm; 1.00m -1.60ppm; 1.40m - 2.30.ppm; 1.80m - 3.10ppm; 2.00m - 3.20ppm; 2.40m - 2.30ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
14/02/2018 17:00	5.00	4.00	

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WINDOWLESS SAMPLE LOG

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Borehole No. **WS1002**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471584 N 174194	Hole Type WS
Location: Vastern Road, Reading, RG1 8BU		Level: 38.26mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 06/02/2018 End: 06/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
		B	0.10 - 0.20				MADE GROUND: Black ASPHALT.	0.10	38.16	
		ES	0.20				MADE GROUND: Reddish brown and grey sandy slightly silty angular fine to coarse GRAVEL of siliceous material and concrete.	0.20	38.06	
		B	0.30 - 0.50					(0.30)		
		D	0.50				MADE GROUND: Greyish brown very sandy clayey angular fine to coarse GRAVEL of brick and concrete. Cobbles are angular of concrete.	0.50	37.76	
		ES								
		B	0.80 - 1.00				MADE GROUND: Brown to grey slightly sandy gravelly CLAY. Gravel is angular to sub-angular fine to medium of brick, siliceous material and concrete.			
1		D	1.00							1
		ES						(1.20)		
		SPT	1.20 - 1.65	S 5						
		ES	1.70				1.70m: Slow groundwater seepage.	1.70	36.56	
							Borehole completed at 1.70m			
2										2
3										3
4										4
5										5
6										6

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EQUIPMENT: Hand tools. Hydraulic breaker. Terrier 2002 track mounted rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.20m. Continuous disturbed sampling using 101mm sample barrel: 1.20-1.70m.
CASING: None used.
GROUNDWATER: Seepage encountered at 1.70m. No rise after 20 minutes.
BACKFILL: On completion, hole backfilled with arisings and the surface reinstated.
REMARKS: Obstruction encountered at 1.70m. PID readings taken on all environmental samples. Results: 0.20m -0.10ppm; 0.50m -0.60ppm; 1.00m -0.70ppm; 1.70m -1.50ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
06/02/18	1.70		1.70

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
06/02/2018 00:00	1.70	1.70	

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WINDOWLESS SAMPLE LOG

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Borehole No. **WS1003**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471596 N 174182	Hole Type WS
Location: Vastern Road, Reading, RG1 8BU		Level: 38.21mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 06/02/2018 End: 06/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
		B D ES	0.10 - 0.30 0.20				MADE GROUND: Dark grey ASPHALT.	0.10	38.11	
							MADE GROUND: Reddish brown slightly sandy angular fine to coarse GRAVEL of brick.	0.12	38.09	
		B D ES	0.40 - 0.60 0.50				MADE GROUND: Dark grey very sandy slightly silty (ashy) angular fine to coarse GRAVEL of siliceous material and brick.	(0.98)		
		B	0.80 - 1.00							
1		D ES D ES SPT	1.00 1.10 1.20 1.20 - 1.65	S<1			MADE GROUND: Light brown to grey sandy angular slightly silty fine to coarse GRAVEL of siliceous material and brick.	1.10 (0.30)	37.11	1
							Very soft brown slightly sandy CLAY. (ALLUVIUM)	1.40 (0.35)	36.81	
		D ES	1.70				Very soft greenish grey silty CLAY with moderate organic odour. (ALLUVIUM)	1.75	36.46	
2		SPT	2.00 - 2.45	S<1						2
								(2.05)		
3	1	SPT	3.00 - 3.45	S<1						3
	1	D	3.80				Very soft dark grey organic sandy CLAY. (ALLUVIUM)	3.80 (0.30)	34.41	
4		B SPT	4.00 - 5.00 4.00 - 4.45	S 10			Medium dense becoming dense grey to brown sandy sub-angular to rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	4.10	34.11	4
								(1.35)		
5		SPT	5.00 - 5.45	S 44						5
							Borehole completed at 5.45m	5.45	32.76	
6										6

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EQUIPMENT: Hand tools. Hydraulic breaker. Terrier 2002 track mounted rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.20m. Continuous disturbed sampling using 101mm sample barrel: 1.20-5.00m.
CASING: 113mm diameter to 5.00m.
GROUNDWATER: Encountered at 3.89m and rose to 2.99m after a 20 minute monitoring period.
INSTALLATION: Borehole backfilled with washed gravel: 5.45-5.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 5.00-3.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 3.00-0.40m. Flush cover set in concrete: 0.40-0.10m and tarmacadam: 0.10-0.00m. Gas valve fitted.
REMARKS: PID readings taken on all environmental samples. Results: 0.20m -0.10ppm; 0.50m -0.60ppm; 1.00m -0.70ppm; 1.70m -0.10ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
06/02/18	3.89	4.00	2.99

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
06/02/2018 17:00	5.45	5.00	2.42

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WINDOWLESS SAMPLE LOG

Telephone: 01452 739165 , Fax: 01452 739220 , Email: info@ccground.co.uk

Borehole No. **WS1004**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471603 N 174169	Hole Type WS
Location: Vastern Road, Reading, RG1 8BU		Level: 38.37mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 06/02/2018 End: 06/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
							MADE GROUND: Grey ASPHALT.	0.10	38.27	
		B D ES	0.20 - 0.40 0.20				MADE GROUND: Grey very sandy angular fine to coarse GRAVEL of siliceous material and brick.	(0.40)		
		B D ES	0.50 - 0.70 0.60				MADE GROUND: Grey very sandy slightly silty (ashy) angular fine to coarse GRAVEL of siliceous material and brick.	0.50	37.87	
		B	0.80 - 1.00				MADE GROUND: Very soft brown slightly sandy gravelly CLAY. Gravel is angular to sub-angular of siliceous material and brick.	0.70	37.67	
1		D ES SPT	1.00 1.20 - 1.65	S 2				(0.80)		1
							Very soft brown mottled grey slightly sandy CLAY. (ALLUVIUM)	1.50	36.87	
		D	1.80					(0.50)		
2		ES SPT	2.00 2.00 - 2.45	S 3			Very soft greenish grey mottled brown slightly sandy CLAY with moderate organic odour. (ALLUVIUM)	2.00	36.37	2
	1									
3		D SPT	3.00 3.00 - 3.45	S<1				(1.70)		3
	1	D	3.70				Grey very sandy slightly silty angular to sub-rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	3.70	34.67	
4		B D SPT	4.00 - 5.00 4.00 4.00 - 4.45	S 25				3.90	34.47	4
							Medium dense grey to brown sandy sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	(1.55)		
5		SPT	5.00 - 5.45	S 38						5
							Borehole completed at 5.45m	5.45	32.92	
6										6

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Terrier 2002 track mounted rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.20m. Continuous disturbed sampling using 101mm sample barrel: 1.20-5.00m.
CASING: 113mm diameter to 5.00m.
GROUNDWATER: Encountered at 3.71m and rose to 2.67m after a 20 minute monitoring period.
INSTALLATION: Borehole backfilled with washed gravel: 5.45-5.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 5.45-3.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 3.00-0.40m. Flush cover set in concrete: 0.40-0.10m and tarmacadam: 0.10-0.00m. Gas valve fitted.
REMARKS: PID readings taken on all environmental samples. Results: 0.20m -0.10ppm; 0.60m -0.70ppm; 1.00m -0.90ppm; 2.00m -0.20ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
06/02/18	3.71	4.00	2.67

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
06/02/2018 17:00	5.45	5.00	2.43

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WINDOWLESS SAMPLE LOG

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Borehole No. **WS1005A**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471614 N 174146	Hole Type WS
Location: Vastern Road, Reading, RG1 8BU		Level: 38.17mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 09/02/2018 End: 09/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
							MADE GROUND: Dark grey ASPHALT.			
		B	0.25 - 0.45					0.25	37.92	
		ES	0.30				MADE GROUND: Reddish brown sandy slightly silty angular fine to coarse GRAVEL of siliceous material.	0.45	37.72	
		B	0.45 - 0.60				MADE GROUND: Reddish brown and grey sandy clayey fine to coarse GRAVEL of siliceous material and brick.	0.60	37.57	
		ES	0.50				Very loose greyish brown slightly sandy clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material. (ALLUVIUM)			
		B	0.80 - 1.20							
1		ES	1.00					(1.00)		1
		SPT	1.20 - 1.65	S 4						
		ES	1.50				Very soft bluish grey mottled brown slightly sandy CLAY with occasional shell fragments (<5mm). (ALLUVIUM)	1.60	36.57	
		D	1.90							
2	1	SPT	2.00 - 2.45	S 3						2
	1							(2.40)		
3		D	2.90							3
		SPT	3.00 - 3.45	S<1						
		D	3.90							
4		SPT	4.00 - 4.45	S 37			Dense brown sandy clayey angular fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	4.00	34.17	4
		B	4.30 - 4.65					(0.65)		
		B	4.65 - 5.00				Dense light brown sandy angular to sub-rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	4.65	33.52	
5		SPT	5.00 - 5.45	S 41				(0.80)		5
							Borehole completed at 5.45m	5.45	32.72	
6										6

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Terrier 2002 track mounted rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.20m. Continuous disturbed sampling using 101mm sample barrel: 1.20-5.00m.
CASING: 113mm diameter to 5.00m.
GROUNDWATER: Encountered at 2.76m and rose to and levelled out at 2.22m after a 15 minute monitoring period.
INSTALLATION: Bentonite seal 5.45-2.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 2.00-1.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 1.00-0.40m. Flush cover set in concrete: 0.40-0.10m and tarmacadam: 0.10-0.00m. Gas valve fitted.
REMARKS: PID readings taken on all environmental samples. Results: 0.20m -0.40ppm; 0.50m -0.80ppm; 1.00m -1.40ppm; 1.50m -0.40ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
09/02/18	2.76	3.00	2.22

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
08/02/2018 17:00	5.45	5.00	2.29

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WINDOWLESS SAMPLE LOG

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Borehole No. **WS1006**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471608 N 174137	Hole Type WS
Location: Vastern Road, Reading, RG1 8BU		Level: 38.19mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 08/02/2018 End: 08/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
							MADE GROUND: Dark grey ASPHALT.			
		B D ES	0.20 - 0.40 0.30 0.40 - 0.60				MADE GROUND: Grey and reddish brown sandy angular fine to coarse GRAVEL of siliceous material.	0.20 (0.40)	37.99	
		B D ES B	0.50 0.60 - 0.90				MADE GROUND: Brown and greyish brown sandy angular to sub-angular fine to coarse GRAVEL of siliceous material, brick and concrete with rare geotextile membrane fragments (<80mm).	0.60	37.59	
1		D ES SPT	1.00 1.20 - 1.65	S 3				(1.00)		1
							Very soft bluish grey mottled brown slightly sandy CLAY. (ALLUVIUM)	1.60	36.59	
2		D ES SPT	1.90 2.00 - 2.45	S<1				(1.40)		2
		D	2.40							
3	1	B SPT	3.00 - 3.75 3.00 - 3.45	S 18			Medium dense brown and greyish brown sandy sub-angular to sub-rounded fine to medium GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	3.00 (0.75)	35.19	3
							Dense light brown sandy slightly silty sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	3.75	34.44	
4		SPT	4.00 - 4.45	S 41						4
		B	4.40 - 5.00					(1.70)		
5		SPT	5.00 - 5.45	S 30						5
							Borehole completed at 5.45m	5.45	32.74	
6										6

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Terrier 2002 track mounted rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.20m. Continuous disturbed sampling using 101mm sample barrel: 1.20-5.00m.
CASING: 113mm diameter to 5.00m.
GROUNDWATER: Encountered at 3.36m and rose to 2.94 after 20 minutes.
INSTALLATION: Borehole backfilled with washed gravel: 5.45-5.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 5.00-3.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 3.00-0.40m. Flush cover set in concrete: 0.40-0.10m and tarmacadam: 0.10-0.00m. Gas valve fitted.
REMARKS: PID readings taken on all environmental samples. Results: 0.30m -0.10ppm; 0.50m -0.30ppm; 1.00m -0.20ppm; 1.90m -0.10ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
07/02/18	3.36		2.94

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
07/02/2018 17:00	3.45	3.00	3.36
08/02/2018 08:00	3.45	3.00	2.28
08/02/2018 17:00	5.45	5.00	2.32

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WINDOWLESS SAMPLE LOG

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Borehole No. **WS1007**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471593 N 174138	Hole Type WS
Location: Vastern Road, Reading, RG1 8BU		Level: 38.38mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 05/02/2018 End: 05/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
		B D ES	0.10 - 0.20 0.15 0.20 - 0.50				MADE GROUND: ASPHALT.	0.10	38.28	
		B D ES	0.45				MADE GROUND: Brown sandy silty angular to sub-rounded fine to medium GRAVEL of siliceous material.	0.20 (0.30)	38.18	
							MADE GROUND: Grey sandy slightly silty angular fine to coarse of GRAVEL of brick, concrete and siliceous material.	0.50	37.88	
							MADE GROUND: Brown sandy clayey GRAVEL of siliceous material and chalk.			
1	1	B D ES SPT	1.00 - 1.20 1.00 1.20 - 1.65	S 1				(1.20)		1
							Grey mottled orangish brown gravelly CLAY. (ALLUVIUM)	1.70	36.68	
2		D ES SPT	2.00 2.00 - 2.45	S 4				(0.60)		2
							Orangish brown and grey sandy clayey GRAVEL. (KEMPTON PARK GRAVEL)	2.30	36.08	
								(1.00)		
3		D SPT	3.00 3.00 - 3.45	S 11			3.00m: Medium dense.			3
		B	3.30 - 3.70				Dense brown sandy GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	3.30	35.08	
4		B SPT	4.00 - 5.00 4.00 - 4.45	S 30				(2.15)		4
5		SPT	5.00 - 5.45	S 34						5
							Borehole completed at 5.45m	5.45	32.93	
6										6

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Terrier 2002 track mounted rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.20m. Continuous disturbed sampling using 101mm sample barrel: 1.20-5.00m.
CASING: 113mm diameter to 5.00m.
GROUNDWATER: Encountered at 1.10m. No rise is recorded.
INSTALLATION: Borehole backfilled with washed gravel: 5.45-5.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 5.00-3.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 3.00-0.40m. Flush cover set in concrete: 0.40-0.10m and tarmacadam: 0.10-0.00m. Gas valve fitted.
REMARKS: PID readings taken on all environmental samples. Results: 0.15m -0.20ppm; 0.45m -0.40ppm; 1.00m -0.30ppm; 2.00m -0.10ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
05/02/18	1.10		

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
05/02/2018 17:00	5.45	5.00	2.48

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INSPECTION PIT LOG

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Pit No **WS1008**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471586 N 174141 Level: 38.42mAOD	Date 05/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: m Depth 0.55m m	Scale 1 : 12.5
Client: SSE Plc			Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
		C	0.00 - 0.10		MADE GROUND: Dark grey ASPHALT.			
		B	0.10 - 0.25		MADE GROUND: Light brown very sandy angular fine to coarse GRAVEL of siliceous material and brick.	0.08	38.34	
		D ES	0.20			(0.22)		
		B	0.30 - 0.50		MADE GROUND: Dark grey sandy silty (ashy) GRAVEL with low cobble content. Cobbles are angular of red brick.	0.30	38.12	
		D ES	0.45		0.50m: Concrete across base of pit.	(0.25)		
					Inspection pit completed at 0.55m	0.55	37.87	
1								1
2								2

DRAFT

EQUIPMENT: Hand digging tools. Terrier 2002 track mounted rig.

METHOD: Borehole advanced using 300mm diameter coring barrel utilizing water flush: 0.00-0.10m. Hand dug inspection pit: 0.10-0.55m.

GROUNDWATER: None encountered.

BACKFILL: On completion, hole backfilled with bentonite pellets: 0.55-0.10 and the surface reinstated with Tarmacadam: 0.10-0.00.

REMARKS: Unable to advance hole through concrete. Position continued with rotary coring and renamed BH2001. See separate sheet. PID readings taken on all environmental samples. Results: 0.20m -0.10ppm; 0.45m -0.10ppm.

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INSPECTION PIT LOG

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Pit No **WS1009**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471577 N 174143 Level: 38.37mAOD	Date 05/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: m Depth 0.25m m	Scale 1 : 12.5
Client: SSE Plc			Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
		C	0.00 - 0.10		MADE GROUND: Dark grey ASPHALT.	(0.10)		
		B	0.10 - 0.25		MADE GROUND: Grey and brown very sandy silty angular fine to coarse GRAVEL of siliceous material and red brick.	0.10	38.27	
		D ES	0.20		(0.15) 0.25m: Concrete across base of pit. Inspection pit completed at 0.25m	0.25	38.12	
1								1
2								2

DRAFT

EQUIPMENT: Hand digging tools. Terrier 2002 track mounted rig.

METHOD: Borehole advanced using 300mm diameter coring barrel utilizing water flush: 0.00-0.10m. Hand dug inspection pit: 0.10-0.25m.

GROUNDWATER: None encountered.

BACKFILL: On completion, hole backfilled with bentonite pellets: 0.25-0.10 and the surface reinstated with Tarmacadam: 0.10-0.00.

REMARKS: Unable to advance hole through concrete. Position continued with rotary coring and renamed BH2002. See separate sheet. PID readings taken on all environmental samples. Results: 0.20m -0.20ppm.

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INSPECTION PIT LOG

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Pit No **WS1013**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471560 N 174180 Level: 38.54mAOD	Date 08/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: m Depth 0.80m m	Scale 1 : 12.5
Client: SSE Plc			Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: ASPHALT.	(0.10)		
						0.10	38.44	
		B	0.15 - 0.40		MADE GROUND: Grey angular COBBLES of concrete with some slightly sandy angular fine to coarse gravel of concrete and brick.			
		ES	0.20					
		B	0.40 - 0.70			(0.70)		
		ES	0.60					
					Inspection pit completed at 0.80m	0.80	37.74	
1								1
2								2

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-0.80m.

GROUNDWATER: None encountered.

BACKFILL: On completion, hole backfilled with bentonite pellets: 0.80-0.10 and the surface reinstated with Tarmacadam: 0.10-0.00.

REMARKS: Unable to advance hole through concrete cobbles and boulders. PID readings taken on all environmental samples. Results: 0.20m -0.20ppm; 0.60m -0.30ppm.

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INSPECTION PIT LOG

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Pit No **WS1013A**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471560 N 174180 Level: 38.54mAOD	Date 09/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: m Depth 0.55m m	Scale 1 : 12.5
Client: SSE Plc			Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: ASPHALT.	(0.10)		
					MADE GROUND: Grey angular COBBLES of concrete with some slightly sandy angular fine to coarse gravel of concrete and brick.	0.10	38.44	
						(0.45)		
					Inspection pit completed at 0.55m	0.55	37.99	
1								1
2								2

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-0.55m.

GROUNDWATER: None encountered.

BACKFILL: On completion, hole backfilled with bentonite pellets: 0.55-0.10 and the surface reinstated with Tarmacadam: 0.10-0.00.

REMARKS: Unable to advance hole through concrete cobbles and boulders.

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INSPECTION PIT LOG

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Pit No **WS1017**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471564 N 174107 Level: 38.49mAOD	Date 07/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: m Depth 0.50m m	Scale 1 : 12.5
Client: SSE Plc			Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
		B	0.00 - 0.12		MADE GROUND: Light grey CONCRETE.	(0.12)		
		B	0.12 - 0.40		MADE GROUND: Grey sandy slightly silty angular fine to coarse GRAVEL of concrete and siliceous material with high cobble content. Cobbles are angular of concrete.	0.12	38.37	
		D ES	0.40			(0.38)		
					Inspection pit completed at 0.50m	0.50	37.99	
1								1
2								2

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-0.50m.

GROUNDWATER: None encountered.

BACKFILL: On completion, hole backfilled with bentonite pellets: 0.50-0.10 and the surface reinstated with Tarmacadam: 0.10-0.00.

REMARKS: Unable to advance hole through concrete. Position continued with rotary coring and renamed BH2006. See separate sheet. PID readings taken on all environmental samples. Results: 0.20m -0.10ppm.

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INSPECTION PIT LOG

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Pit No **WS1018**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471552 N 174113 Level: 38.65mAOD	Date 07/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: m Depth 0.50m m	Scale 1 : 12.5
Client: SSE Plc			Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
		B	0.07 - 0.20		MADE GROUND: Dark grey ASPHALT.	(0.15)		
		D ES B	0.15 0.20 - 0.45		MADE GROUND: Grey sandy slightly silty angular fine to coarse GRAVEL of concrete and siliceous material with high cobble content. Cobbles are angular of concrete.	0.15 (0.35)	38.50	
		D ES	0.40		Inspection pit completed at 0.50m	0.50	38.15	
1								1
2								2

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker.

METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-0.50m.

GROUNDWATER: None encountered.

BACKFILL: On completion, hole backfilled with bentonite pellets: 0.50-0.10 and the surface reinstated with Tarmacadam: 0.10-0.00.

REMARKS: Unable to advance hole through concrete. Position continued with rotary coring and renamed BH2005. See separate sheet. PID readings taken on all environmental samples. Results: 0.15m -0.20ppm; 0.40m -0.10ppm.

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WINDOWLESS SAMPLE LOG

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Borehole No. **WS1019**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471552 N 174069	Hole Type WS
Location: Vastern Road, Reading, RG1 8BU		Level: 38.32mAOD	Scale 1 : 37.50
Client: SSE Plc		Dates: Start: 07/02/2018 End: 07/02/2018	Logged By MM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Sample	Install	Description	Depth (m)	Level (mAD)	Legend
		B ES B ES	0.10 - 0.25 0.20 0.25 - 0.50 0.50				MADE GROUND: Dark grey ASPHALT.	0.10	38.22	
							MADE GROUND: Grey and reddish brown sandy slightly silty angular fine to coarse GRAVEL of siliceous material.	0.25	38.07	
							MADE GROUND: Brown and greyish brown very sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of siliceous material, brick and concrete with low cobble content. Cobbles are angular brick.	(0.75)		
1		B D ES SPT	1.00 - 1.20 1.10 1.20 - 1.65	S<1			MADE GROUND: Very soft brown gravelly sandy CLAY. Gravel is angular to sub-angular fine to coarse of siliceous material, brick and concrete.	1.00	37.32	1
								(0.70)		
		D ES SPT	1.80 2.00 - 2.45	S<1			Very soft firm greenish grey slightly gravelly slightly sandy CLAY. Gravel is sub-angular fine to medium of siliceous material. (ALLUVIUM)	1.70	36.62	
2								(0.78)		2
	1	D	2.40				Medium dense light brown very sandy slightly silty sub-angular to rounded fine to coarse GRAVEL of siliceous material. (KEMPTON PARK GRAVEL)	2.48	35.84	
3		SPT	3.00 - 3.45	S 11						3
4		D SPT	4.00 4.00 - 4.45	S 15				(2.97)		4
5		SPT	5.00 - 5.45	S 25						5
							Borehole completed at 5.45m	5.45	32.87	
6										6

DRAFT

EQUIPMENT: Hand tools. Hydraulic breaker. Terrier 2002 track mounted rig.
METHOD: Hard standing broken out using hydraulic breaker with a range of chisels and continued with hand dug inspection pit: 0.00-1.20m. Continuous disturbed sampling using 101mm sample barrel: 1.20-5.00m.
CASING: 113mm diameter to 5.00m.
GROUNDWATER: Encountered at 2.48m and rose to and leveling out at 2.36m after 15 minutes.
INSTALLATION: Borehole backfilled with washed gravel: 5.45-5.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 5.00-3.00m. 50mm ID HDPE plain pipe with bentonite pellet seal: 2.00-0.40m. Flush cover set in concrete: 0.40-0.10m and tarmacadam: 0.10-0.00m. Gas valve fitted.
REMARKS: PID readings taken on all environmental samples. Results: 0.20m -0.20ppm; 0.50m -0.30ppm; 1.10m -0.10ppm; 1.80m - 0.10ppm.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
07/02/18	2.48	3.00	2.36

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
07/02/2018 17:00	5.45	5.00	2.44

CC GROUND INVESTIGATIONS LTD

TRIAL PIT LOG

Telephone: 01452 739165 , Fax: 01452 739220 , Email: info@ccground.co.uk

Pit No **TP1001**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471567 N 174208 Level: 38.13mAOD	Date 07/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 3.10m Depth 1.20m 0.60m	Scale 1 : 37.5
Client: SSE Plc			Logged By TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
		B D ES	0.20		MADE GROUND: Dark brown slightly gravelly sandy silty CLAY with frequent roots and rootlets (<20mm) and rare fragments (<60mm) of pottery. Gravel is angular to sub-angular fine to coarse of siliceous material, concrete and red brick.	(0.40) 0.40	37.73	
		B ES	0.50		MADE GROUND: Dark greyish brown, grey and reddish brown COBBLES of concrete, red brick and slag with low boulder content and much very gravelly slightly clayey sand. Gravel is angular to sub-angular fine to coarse of mixed lithologies including red brick, concrete and siliceous material. Boulders are angular of concrete and intact red brick masonry (<400mm).	(0.40) 0.80	37.33	
1		B D ES	1.00		MADE GROUND: Firm light brown mottled greyish brown slightly gravelly slightly sandy CLAY with rare roots and rootlets (<5mm). Gravel is angular to sub-rounded fine to coarse of red brick, concrete and siliceous material. 0.80m: Light grey concrete slab with red brick masonry across large are of pit. 1.20m: 1no. black cable (Intact) approximately 50mm diameter orientated approximately Southwest - Northeast. 1.20m: Dry. Trial pit completed at 1.20m	(0.40) 1.20	36.93	
2								
3								
4								
5								
6								

DRAFT

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pit excavated using 0.60m wide backactor bucket.

GROUNDWATER: None encountered.

STABILITY: Trial pit generally stable and vertical throughout.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: PID readings taken on all environmental samples. Results: 0.20m -1.90ppm; 1.50m -2.00ppm; 1.00m - 2.60ppm. Trial pit terminated at 1.20m due to buried service at 1.20m.

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TRIAL PIT LOG

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Pit No **TP1002**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471604 N 174164 Level: 38.36mAOD	Date 07/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 3.70m; Depth 4.00m; 2.00m	Scale 1 : 37.5
Client: SSE Plc			Logged By TH

(m)	Water Levels	Samples & In Situ Testing: No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Dark grey ASPHALT.	0.05	38.31	
					MADE GROUND: CONCRETE.	0.15	38.21	
		B ES	0.30		MADE GROUND: Brown very sandy very silty angular to sub-angular fine to coarse GRAVEL of red brick, concrete and siliceous material with medium cobble content and rare fragments (<50mm) of metal. Cobbles are angular to sub-angular of red brick and concrete.	0.35	38.01	
					MADE GROUND: CONCRETE.	0.50	37.86	
		B ES	0.80		MADE GROUND: Brown, grey and reddish brown COBBLES of red brick and concrete with much very sandy very silty angular to rounded fine to coarse gravel of red brick, siliceous material and concrete.	(0.60)		
1					0.50-1.10m: Intact red brick masonry in Northern pit wall.	1.10	37.26	1
		B ES	1.40		MADE GROUND: Brown very sandy very clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material, red brick and chalk. 1.40-1.60m: Tending to slightly sandy gravelly clay.	(0.50)		
		B D ES	1.70		Very soft dark green slightly sandy silty CLAY with moderate organic odour and rare comminuted shell fragments (<5mm). (ALLUVIUM)	1.60	36.76	
2						(0.80)		2
		B D	2.50		Very soft bluish green mottled light grey silty calcareous CLAY with rare partially decomposed organic material (<5mm), occasional comminuted shell fragments (<5mm) and a moderate organic odour. (ALLUVIUM)	2.40	35.96	
3						(1.60)		3
		B D	3.50					
4	1.1	D	3.90		3.90-4.00m: 1no. lens of light grey and off white very clayey sand with frequent comminuted shell fragments (<5mm). 4.00m: Slow groundwater seepage. Trial pit completed at 4.00m	4.00	34.36	4
5								5
6								6

DRAFT

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pit excavated using 0.60m wide backactor bucket.

GROUNDWATER: Slow groundwater seepage encountered at 4.00m.

STABILITY: Trial pit generally stable and vertical throughout.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: PID readings taken on all environmental samples. Results: 0.30m -2.50ppm; 0.80m -3.40ppm; 1.40m - 4.10ppm; 1.70m -3.50ppm. Surface reinstated on 13/02/2018.

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TRIAL PIT LOG

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Pit No **TP1003**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471596 N 174149 Level: 38.35mAOD	Date 07/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 3.60m, Depth 0.35m, 1.80m	Scale 1 : 37.5
Client: SSE Plc			Logged By TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Dark grey ASPHALT.	0.05	38.30	
					MADE GROUND: CONCRETE.	0.10	38.25	
		B ES	0.30		MADE GROUND: Reddish brown very sandy silty angular to sub-rounded fine to coarse GRAVEL of mixed lithologies including concrete, red brick and siliceous material with high cobble content. Cobbles are angular to sub-angular of red brick and concrete. 0.30m: Historic concrete foundations with rolled steel joists (~200mm). 0.30-0.35m: Attempt to break through concrete obstruction. Concrete extending bellow extent of JCB pecker. 0.35m: 1no steel plate (exposed 1.40mx0.80m) - Possible earthing plate. 0.35m: Dry.	0.35	38.00	
					Trial pit completed at 0.35m			
1								
2								
3								
4								
5								
6								

DRAFT

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pit excavated using 0.60m wide backactor bucket.

GROUNDWATER: None encountered.

STABILITY: Trial pit generally stable and vertical throughout.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: PID readings taken on all environmental samples. Results: 0.20m -1.80ppm. Trial pit terminated at 0.35m due to historic reinforced concrete foundations. Surface reinstated on 13/02/2018.

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TRIAL PIT LOG

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Pit No **TP1004**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471580 N 174166 Level: 38.29mAOD	Date 07/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 3.60m, Depth 4.20m, 2.10m	Scale 1 : 37.5
Client: SSE Plc			Logged By TH

(m)	Water Levels	Samples & In Situ Testing: No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Dark grey ASPHALT.	0.05	38.24	
					MADE GROUND: CONCRETE.	(0.30)		
						0.35	37.94	
		B ES	0.40		MADE GROUND: Brown very sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of red brick, concrete and siliceous material with a medium cobble content. Cobbles are angular of red brick.	0.50	37.79	
		B ES	0.60		MADE GROUND: Off white and brown sandy very clayey angular to sub-rounded fine to coarse GRAVEL of chalk, red brick and siliceous material.	0.75	37.54	
1		B D ES	1.00		MADE GROUND: Very soft dark green and bluish grey slightly gravelly slightly sandy silty calcareous CLAY with a slight organic odour. Gravel is angular to sub-angular fine to coarse of red brick.	(0.55)		1
		B D ES	1.50		Very soft dark green and dark brownish grey silty calcareous CLAY with rare shell fragments (<5mm) and a strong organic odour. (ALLUVIUM)	1.30	36.99	
						(0.70)		
2					Very soft bluish green mottled light grey silty calcareous CLAY with a strong organic odour and rare partially decomposed organic material (<5mm). (ALLUVIUM)	2.00	36.29	2
		B D	2.50			(1.10)		
3	1				Very soft greenish grey mottled greenish brown and light grey slightly sandy silty calcareous CLAY with occasional comminuted shell fragments (<5mm). (ALLUVIUM)	3.10	35.19	3
		B D	3.50			(1.10)		
4	1				Trial pit completed at 4.20m	4.20	34.09	4
5								5
6								6

DRAFT

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pit excavated using 0.60m wide backactor bucket.

GROUNDWATER: Groundwater encountered at 3.90m rising to 3.40m after a 10 minute monitoring period.

STABILITY: Trial pit generally stable and vertical throughout.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: PID readings taken on all environmental samples. Results: 0.40m -0.70ppm; 0.60m -1.30ppm; 1.00m - 1.50ppm; 1.50m - 4.20ppm. Surface reinstated on 13/02/2018.

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Pit No **TP1005**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471567 N 174159 Level: 38.41mAOD	Date 07/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 2.60m Depth 1.10m 2.20m	Scale 1 : 37.5
Client: SSE Plc			Logged By TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Dark grey ASPHALT.	0.05	38.36	
					MADE GROUND: CONCRETE.	0.15	38.26	
		B ES	0.30		MADE GROUND: Brown and reddish brown COBBLES of angular red brick and concrete with much very sandy very silty angular to sub-angular fine to coarse gravel of red brick, concrete, slag and siliceous material.			
		B ES	0.70			(0.95)		
1					0.80m: 1no. broken black metal pipe (~80mm diameter) orientated approximately East to West.			
					Trial pit completed at 1.10m	1.10	37.31	
2								
3								
4								
5								
6								

DRAFT

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pit excavated using 0.60m wide backactor bucket.

GROUNDWATER: None encountered.

STABILITY: Trial pit generally stable and vertical throughout.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: PID readings taken on all environmental samples. Results: 0.30m -0.40ppm; 0.70m -2.00ppm. Trial pit terminated at 1.10m due to buried service at 1.20m. Trial pit terminated at 0.35m due to historic reinforced concrete foundations. Surface reinstated on 13/02/2018.

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TRIAL PIT LOG

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Pit No **TP1006**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471565 N 174172 Level: 38.44mAOD	Date 07/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 3.60m, Depth 2.40m, 2.00m	Scale 1 : 37.5
Client: SSE Plc			Logged By TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Dark grey ASPHALT.	0.05	38.39	
					MADE GROUND: CONCRETE.	0.15	38.29	
		B ES	0.30		MADE GROUND: Brown very sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of red brick, concrete and siliceous material with a medium cobble content. Cobbles are angular of red brick.	(0.30) 0.45	37.99	
		B ES	0.50		MADE GROUND: Light brown very sandy silty angular to sub-rounded fine to coarse GRAVEL of siliceous material, red and yellow brick.	0.60	37.84	
		B ES	0.70		MADE GROUND: Off white and light brown slightly sandy very silty angular to sub-rounded fine to coarse GRAVEL of chalk and siliceous material with high cobble content. Cobbles are sub-angular to sub-rounded of chalk and siliceous material. 0.90-1.10m: Light brown and reddish brown very sandy clayey angular to sub-angular gravel of siliceous material, red brick and concrete with a high cobble content. Cobbles are angular to sub-angular of red brick. 1.10-1.90m: Low cobble content.	(1.30)		
1		B ES	1.50					
2	1				Very soft dark green and dark grey CLAY with strong organic odour. (ALLUVIUM)	1.90 (0.50)	36.54	
	1	B D ES	2.20		Trial pit completed at 2.40m	2.40	36.04	
3								
4								
5								
6								

DRAFT

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pit excavated using 0.60m wide backactor bucket.

GROUNDWATER: Groundwater encountered at 2.40m rising to 2.30m after a ten minute monitoring period. Slow groundwater seepage encountered at 1.90m.

STABILITY: Trial pit collapsing from 1.10-1.90m.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: PID readings taken on all environmental samples. Results: 0.30m -1.20ppm; 0.50m -1.20ppm; 0.70m - 1.40ppm; 1.50m - 0.70ppm; 2.20m - 1.70ppm. Trial pit terminated at 2.40m due to undermining of surface hardstanding. Surface reinstated on 13/02/2018.

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TRIAL PIT LOG

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Pit No **TP1007**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471545 N 174170 Level: 38.70mAOD	Date 07/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 2.80m Depth 0.70m 2.20m	Scale 1 : 37.5
Client: SSE Plc			Logged By TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Dark grey ASPHALT.	0.05	38.65	
					MADE GROUND: CONCRETE.	0.10	38.60	
		B ES	0.20		MADE GROUND: Brown very sandy very silty angular to sub-angular fine to coarse GRAVEL of red brick, concrete and siliceous material with medium cobble content and rare fragments (<50mm) of metal. Cobbles are angular to sub-angular of red brick and concrete.	(0.40)		
		B ES	0.50		0.30m: Historic concrete foundations.	0.50	38.20	
					MADE GROUND: Firm light brown slightly gravelly sandy silty CLAY with a moderate hydrocarbon odour. Gravel is angular to sub-angular fine to coarse of red brick, siliceous material, chalk and concrete.	0.70	38.00	
					Trial pit completed at 0.70m			

DRAFT

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pits excavated using 0.60m backactor bucket.

GROUNDWATER: None encountered.

STABILITY: Trial pit generally stable and vertical throughout.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: PID readings taken on all environmental samples. Results: 0.20m -3.20ppm; 0.70m -5.20ppm. Trial pit terminated at 0.70m due to historic reinforced concrete foundations. Surface reinstated on 13/02/2018.

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TRIAL PIT LOG

Telephone: 01452 739165 , Fax: 01452 739220 , Email: info@ccground.co.uk

Pit No **TP1008**

Sheet 1 of 1

Project Name: SSE Site, Vastern Road, Reading	Project No: **C5925**	Co-ords: E 471546 N 174157 Level: 38.69mAOD	Date 07/02/2018
Location: Vastern Road, Reading, RG1 8BU		Dimensions: 3.10m Depth 1.70m 1.50m	Scale 1 : 37.5
Client: SSE Plc			Logged By TH

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
					MADE GROUND: Dark grey ASPHALT.	0.05	38.64	
					MADE GROUND: CONCRETE.	(0.30)		
						0.35	38.34	
		B ES	0.40		MADE GROUND: Gray and light brown and reddish brown very sandy silty angular to sub-angular fine to coarse GRAVEL of mixed lithologies including concrete, red brick and siliceous material with high cobble content. Cobbles are angular to sub-angular of concrete and red brick.	(0.35)		
						0.70	37.99	
1		B ES	0.80		MADE GROUND: Firm light brown slightly gravelly sandy silty CLAY. Gravel is angular to sub-angular fine to coarse of chalk, siliceous material, red brick and clinker. 0.75-1.10m: 1no. pocket of dark grey and grey ash. 1.00-1.70m: With pockets (<0.5m) of off white slightly sandy very silty angular to sub-angular fine to coarse gravel of chalk and siliceous material.	(1.00)		
		B D ES	1.50		1.70m: Dry. Trial pit completed at 1.70m	1.70	36.99	
2								
3								
4								
5								
6								

DRAFT

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pit excavated using 0.60m wide backactor bucket.

GROUNDWATER: None encountered.

STABILITY: Trial pit generally unstable and collapse from 1.20-1.70m.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: PID readings taken on all environmental samples. Results: 0.40m -1.70ppm; 0.80m -0.60ppm; 1.50m - 1.40ppm. Trial pit terminated at 1.20m due to buried service at 1.20m. Trial pit terminated at 1.70m due to undermining surface hardstanding. Surface reinstated on 13/02/2018.

Omnia Environmental Consulting
10 Manor Court
2 Barnes Wallis Road
Fareham
PO15 5TH

Borehole Log

Borehole No.
WS101
Sheet 1 of 1

Project Name: 55 Vastern Road, Reading	Project No. A10967	Co-ords: -	Hole Type WS
Location: SSE Contracting Ltd, 55 Vastern Road, Reading, Berkshire, RG1 8BU		Level:	Scale 1:25
Client: Berkely (Western) Homes		Dates: 16/04/2018 -	Logged By K.D

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
				PID=4	0.40			MADE GROUND Concrete.
		0.40 - 0.45	ES		0.45			MADE GROUND Soft dark grey slightly silty CLAY. Black staining present.
		0.45 - 0.80	ES	PID=4				MADE GROUND Dark grey SAND AND GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse concrete, brick and asphalt.
				PID=4	0.80			
		0.80 - 1.00	ES					MADE GROUND Dark grey/black slightly silty slightly gravelly fine to coarse SAND. Gravel of subangular to subrounded fine to coarse brick and concrete.
				PID=10				
		1.00 - 1.30	ES					
				PID=9	1.30			MADE GROUND Soft brown slightly sandy slightly gravelly CLAY. Sand is medium to coarse. Gravel is subangular to subrounded fine to coarse chalk, asphalt and clinker.
		1.30 - 1.50	ES					
				PID=8	1.50			CLAY Soft brown slightly gravelly CLAY. Gravel is subangular to subrounded fine shell fragments.
		1.50 - 1.70	ES					
				PID=6	1.70			CLAY Firm green with black speckling slightly gravelly slightly silty CLAY. Gravel is subangular to subrounded fine to medium chalk, flint and organic matter.
		1.70 - 1.80	ES		1.80			End of borehole at 1.80 m

Remarks
Cleared by Cable Avoidance Tool (CAT).
No groundwater encountered.

AGS

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2 Barnes Wallis Road
Fareham
PO15 5TH

Borehole Log

Borehole No. **WS102**

Sheet 1 of 1

Project Name: 55 Vastern Road, Reading	Project No. A10967	Co-ords: -	Hole Type WS
Location: SSE Contracting Ltd, 55 Vastern Road, Reading, Berkshire, RG1 8BU		Level:	Scale 1:25
Client: Berkely (Western) Homes		Dates: 16/04/2018 -	Logged By K.D

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
				PID=4	0.38			MADE GROUND Concrete.
		0.40 - 0.60	ES					
				PID=4	0.60			MADE GROUND Black gravely medium to coarse SAND. Gravel of subangular to subrounded fine to coarse concrete, clinker, asphalt and PACM.
		0.60 - 0.90	ES					MADE GROUND Multicoloured gravelly medium to coarse SAND. Gravel of subangular to subrounded fine to medium clinker, concrete and brick.
				PID=7	0.95			MADE GROUND Light grey SAND AND GRAVEL. Sand is medium to coarse. Gravel is angular to subrounded fine to coarse brick concrete and clinker.
		0.95 - 1.50	ES					
				PID=9				
		1.50 - 2.00	ES					
				PID=10	2.00			CLAY Soft green slightly gravelly slightly silty CLAY. Gravel of subangular to subrounded fine chalk and shell fragments.
		2.00 - 2.40	ES					
					2.40			End of borehole at 2.40 m

1
2
3
4
5

Remarks
Cleared by Cable Avoidance Tool (CAT).
No groundwater encountered.

AGS

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10 Manor Court
2 Barnes Wallis Road
Fareham
PO15 5TH

Borehole Log

Borehole No.
WS103
Sheet 1 of 1

Project Name: 55 Vastern Road, Reading	Project No. A10967	Co-ords: -	Hole Type WS
Location: SSE Contracting Ltd, 55 Vastern Road, Reading, Berkshire, RG1 8BU		Level:	Scale 1:25
Client: Berkely (Western) Homes		Dates: 16/04/2018 -	Logged By K.D

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.40 - 0.70	ES	PID=5	0.40			MADE GROUND Concrete.
		1.20 - 1.40	ES	PID=4				MADE GROUND Grey and SAND AND GRAVEL. Sand is fine to coarse with frequent cobble content of brick, ceramic, clinker asphalt, chalk and concrete.
		1.60 - 1.70	ES	PID=6	1.60			MADE GROUND Soft brown slightly gravelly CLAY. Gravel of subangular to subrounded fine to coarse brick, chalk, clinker and flint.
		1.70 - 2.00	ES	PID=3	1.70 1.80			CLAY Soft brown slightly gravelly CLAY . Gravel of subangular to subrounded fine chalk.
					2.00			CLAY Soft green slightly gravelly CLAY. Gravel of subangular to subrounded flint, chalk and shell fragments. End of borehole at 2.00 m

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Remarks
Cleared by Cable Avoidance Tool (CAT).
No groundwater encountered.

AGS

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10 Manor Court
2 Barnes Wallis Road
Fareham
PO15 5TH

Borehole Log

Borehole No.
WS104
Sheet 1 of 1

Project Name: 55 Vastern Road, Reading	Project No. A10967	Co-ords: -	Hole Type WS
Location: SSE Contracting Ltd, 55 Vastern Road, Reading, Berkshire, RG1 8BU		Level:	Scale 1:25
Client: Berkely (Western) Homes		Dates: 17/04/2018 -	Logged By K.D

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30 - 0.70	ES		0.30			MADE GROUND Concrete.
		0.70 - 1.55	ES	PID=3	0.70			MADE GROUND Grey sandy GRAVEL. Sand is medium to coarse. Gravel of subangular to subrounded fine to medium concrete and brick.
		1.55 - 1.75	ES	PID=13	1.55			MADE GROUND Soft brown gravelly CLAY. Gravel subangular to subrounded fine to coarse with frequent cobble of brick, concrete, slate, clinker and flint.
		1.75 - 2.00	ES	PID=2307	1.75			MADE GROUND Firm black slightly gravelly CLAY. Gravel of subangular to subrounded fine to coarse flint, brick and concrete.
		2.00 - 2.40	ES	PID=368				CLAY Firm greyish green with black staining present slightly gravelly CLAY. Gravel subangular to subrounded fine, chalk and shell fragments.
					2.40			End of borehole at 2.40 m

Remarks
Cleared by Cable Avoidance Tool (CAT).
No groundwater encountered.

Omnia Environmental Consulting
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Fareham
PO15 5TH

Borehole Log

Borehole No.
WS105
Sheet 1 of 1

Project Name: 55 Vastern Road, Reading	Project No. A10967	Co-ords: -	Hole Type WS
Location: SSE Contracting Ltd, 55 Vastern Road, Reading, Berkshire, RG1 8BU		Level:	Scale 1:25
Client: Berkely (Western) Homes		Dates: 17/04/2018 -	Logged By K.D

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND Concrete.
		0.60 - 0.90	ES	PID=4	0.60			MADE GROUND Soft brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel of subangular to subrounded fine to coarse with frequent cobble content brick, clinker and flint.
		0.90 - 1.30	ES	PID=4				
		1.60 - 1.70	ES					
		1.70 - 1.80	ES	PID=8	1.70			MADE GROUND Soft dark brown/black slightly gravelly CLAY. Gravel of subangular to subrounded fine to medium brick, clinker and flint.
		2.00 - 2.30	ES	PID=3	1.85			CLAY Soft greyish green slightly gravelly CLAY. Gravel of subangular to subrounded fine shell fragments chalk and orangic matter.
					2.30			End of borehole at 2.20 m

Remarks
Cleared by Cable Avoidance Tool (CAT).
Groundwater encountered as strike at 2.2m bgl.

Omnia Environmental Consulting 10 Manor Court 2 Barnes Wallis Road Fareham PO15 5TH	**Borehole Log**	Borehole No. **WS106** Sheet 1 of 1

Project Name: 55 Vastern Road, Reading	Project No. A10967	Co-ords: -	Hole Type WS
Location: SSE Contracting Ltd, 55 Vastern Road, Reading, Berkshire, RG1 8BU		Level:	Scale 1:25
Client: Berkely (Western) Homes		Dates: 18/04/2018 -	Logged By K.D

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND Concrete.
		0.40 - 0.70	ES		0.40			MADE GROUND Red slightly sandy GRAVEL. Sand is medium to coarse. Gravel of subangular to subrounded fine to coarse with frequent cobble content of brick.
					0.70			End of borehole at 0.70 m

Remarks
Cleared by Cable Avoidance Tool (CAT).
No groundwater encountered.
Hole terminated due to obstruction at 0.70m bgl.

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PO15 5TH

Borehole Log

Borehole No.
WS107
Sheet 1 of 1

Project Name: 55 Vastern Road, Reading	Project No. A10967	Co-ords: -	Hole Type WS
Location: SSE Contracting Ltd, 55 Vastern Road, Reading, Berkshire, RG1 8BU		Level:	Scale 1:25
Client: Berkely (Western) Homes		Dates: 18/04/2018 -	Logged By K.D

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.40	ES	PID=0				MADE GROUND Brown slightly silty gravelly fine to coarse SAND. Gravel of subangular to subrounded fine to coarse with frequent cobble content of brick and concrete.
		0.50 - 1.00	ES	PID=0				
		1.00 - 1.50	ES	PID=1				
					1.50			POOR RECOVERY BETWEEN 1.50- 2.20M BGL.
					2.20			End of borehole at 2.20 m

Remarks
Cleared by Cable Avoidance Tool (CAT)
No groundwater encountered.
Hole terminated due to obstruction at 2.20m bgl.

Omnia Environmental Consulting 10 Manor Court 2 Barnes Wallis Road Fareham PO15 5TH	**Borehole Log**		Borehole No. **WS108** Sheet 1 of 1
Project Name: 55 Vastern Road, Reading	Project No. A10967	Co-ords: -	Hole Type WS
Location: SSE Contracting Ltd, 55 Vastern Road, Reading, Berkshire, RG1 8BU		Level:	Scale 1:25
Client: Berkely (Western) Homes		Dates: 18/04/2018 -	Logged By K.D

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.30	ES	PID=0	0.05			MADE GROUND Asphalt cover.
		0.50 - 0.70	ES	PID=0				MADE GROUND Brown slightly clayey gravelly fine to coarse SAND. Gravel of subangular to subrounded fine to coarse brick, concrete and flint.
		0.90 - 1.20	ES	PID=0				
		1.20 - 1.50	ES	PID=3				
		1.50 - 1.70	ES	PID=6	1.50			CLAY Firm greyish green slightly silty slightly gravelly CLAY. Gravel of subangular to subrounded fine flint and orangic material.
		1.80 - 2.00	ES	PID=0				
		2.00 - 2.50	ES					
					2.50			End of borehole at 2.50 m

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Remarks
Cleared by Cable Avoidance Tool (CAT).
No groundwater encountered

AGS

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2 Barnes Wallis Road
Fareham
PO15 5TH

Borehole Log

Borehole No.
WS109
Sheet 1 of 1

Project Name: 55 Vastern Road, Reading	Project No. A10967	Co-ords: -	Hole Type WS
Location: SSE Contracting Ltd, 55 Vastern Road, Reading, Berkshire, RG1 8BU		Level:	Scale 1:25
Client: Berkely (Western) Homes		Dates: 18/04/2018 -	Logged By K.D

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.30	ES	PID=6	0.05			MADE GROUND Asphalt cover.
		0.30 - 0.60	ES	PID=2				MADE GROUND Brown slightly silty gravelly fine to coarse SAND. Gravel of subangular to subrounded fine to coarse with frequent cobble content of brick, asphalt and concrete.
		0.60 - 0.90	ES	PID=0				
					1.00			End of borehole at 1.00 m

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Remarks
Cleared by Cable Avoidance Tool (CAT).
No groundwater encountered.
Hole terminated due to obstruction at 1.00m bgl.

APPENDIX VII

GROUND GAS RESULTS

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
BH1001	22/02/18	1021	0.0	0.4	17.6	4	0	+0.0/+0.0	2.35	0.2	Standpipe developed by bailing. NAPLs not detected
BH1001	07/03/18	991	0.0	0.5	18.4	1	0	-0.1/+0.0	2.30	0.3	NAPLs detected (film only)
BH1001	22/03/18	1019	0.0	0.8	19.0	2	0	+0.0/+0.0	2.34	1.0	NAPLs not detected
BH1001	04/04/18	989	0.0	1.0	17.8	1	0	+0.0/+0.0	2.07	1.1	NAPLs not detected
BH1001	19/04/18	1020	0.2	0.9	18.9	3	0	+0.0/+0.0	2.29	2.9	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
BH1002C	22/02/18	1021	1.6	0.3	9.0	0	0	+0.0/+0.2	2.44	0.3	Standpipe developed by bailing. NAPLs not detected
BH1002C	07/03/18	992	0.0	0.2	12.4	0	0	-0.1/-0.0	2.38	0.5	NAPLs not detected
BH1002C	22/03/18	1019	0.0	0.4	13.3	2	0	+0.0/+0.0	2.42	1.3	NAPLs not detected
BH1002C	04/0418	989	0.0	0.2	9.1	5	0	-0.1/-0.0	2.14	1.8	NAPLs not detected. Redish Brown (oxide?) pressent
BH1002C	19/04/18	1020	0.2	0.1	20.9	4	0	+0.0/+0.0	2.37	4.1	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
BH1003E	22/02/18	1022	0.0	0.2	18.9	5	0	+0.0/+0.0	2.67	0.5	Standpipe developed by bailing. NAPLs not detected
BH1003E	07/03/18	992	0.0	0.3	19.3	4	0	-0.1/+0.0	2.62	0.1	NAPLs detected (film only)
BH1003E	22/03/18	1019	0.0	0.5	20.4	2	0	+0.0/+0.0	2.65	0.7	NAPLs not detected
BH1003E	04/04/18	989	0.0	0.6	19.8	1	0	+0.0/+0.0	2.39	1.0	NAPLs not detected
BH1003E	19/04/18	1021	0.2	0.5	19.5	2	0	+0.0/+0.0	2.61	2.6	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
BH1004	22/02/18	1020	2.2	4.0	9.3	12	0	-0.3/+0.1	2.22	0.0	Standpipe developed by bailing. NAPLs not detected
BH1004	07/03/18	992	0.2	3.4	14.1	3	0	+0.0/+0.1	2.17	0.1	NAPLs not detected
BH1004	22/03/18	1017	3.0	3.9	6.5	1	0	-0.0/-0.0	2.20	2.6	NAPLs not detected
BH1004	04/04/18	988	1.5	2.4	2.2	1	0	+0.0/+0.0	1.92	0.0	NAPLs not detected
BH1004	19/04/18	1020	0.3	3.5	5.6	3	0	+0.1/+0.0	2.13	4.5	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
BH1005	22/02/18	1020	0.0	0.3	18.7	4	0	+0.0/+0.0	2.61	0.0	Standpipe developed by bailing. NAPLs not detected
BH1005	08/03/18	991	0.0	0.8	19.0	0	0	-0.5/-0.2	2.56	0.0	Interface meter faulty
BH1005	22/03/18	1016	0.0	1.2	20.1	2	0	-3.1/-0.7	2.60	2.8	NAPLs not detected
BH1005	04/04/18	988	0.0	1.3	19.9	2	0	+4.4/+11.4	2.33	2.6	NAPLs not detected
BH1005	19/04/18	1020	0.2	0.5	21.2	5	0	+0.0/+0.0	2.54	4.7	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
BH2001	22/02/18	1022	0.0	0.0	19.8	1	0	+0.2/+0.5	2.43	0.8	Standpipe developed by bailing. NAPLs not detected
BH2001	07/03/18	992	0.0	0.5	19.7	5	0	-3.7/-1.2	2.39	0.5	NAPLs not detected
BH2001	22/03/18	1018	0.1	1.0	20.7	6	0	-2.8/-0.7	2.41	3.2	NAPLs not detected
BH2001	04/04/18	989	0.1	0.9	20.4	6	0	+4.7/+11.2	2.15	2.9	NAPLs not detected
BH2001	19/04/18										Unable to access due to car parked on top of cover

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
BH2002	22/02/18	1022	0.0	0.0	19.6	4	0	+0.0/+0.0	2.39	2.7	Standpipe developed by bailing. NAPLs not detected
BH2002	07/03/18	991	0.0	0.6	19.6	3	0	-0.1/+0.0	2.35	0.5	NAPLs not detected
BH2002	22/03/18	1018	0.0	0.2	21.1	1	0	+0.0/+0.0	2.38	1.3	NAPLs not detected
BH2002	04/04/18	989	0.0	0.2	20.6	1	0	+0.0/+0.0	2.10	1.4	NAPLs not detected. Redish Brown (oxide?) pressent
BH2002	19/04/18	1020	0.3	0.2	20.9	2	1	-0.1/+0.0	2.15	4.2	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
BH2003	22/02/18	1022	0.0	0.0	19.7	1	0	+0.0/+0.0	2.55	1.9	Standpipe developed by bailing. NAPLs not detected
BH2003	08/03/18	991	0.0	0.2	19.8	4	0	-0.5/-0.3	2.43	0.2	NAPLs not detected
BH2003	22/03/18	1018	0.0	0.6	20.8	4	0	-3.3/-0.9	2.46	3.4	NAPLs not detected
BH2003	04/04/18	989	0.0	0.6	20.7	3	0	+4.7/+11.3	2.21	2.9	NAPLs not detected
BH2003	19/04/18	1021	0.3	0.2	20.4	3	0	+0.1/+0.1	4.53	3.9	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
BH2004	22/02/18	1021	0.0	0.0	19.7	1	0	+0.0/+0.0	2.54	0.5	Standpipe developed by bailing. NAPLs not detected
BH2004	08/03/18	990	0.0	0.3	19.6	4	0	-0.1/-0.0	2.52	0.5	NAPLs detected (film only)
BH2004	22/03/18	1018	0.0	0.6	20.8	3	0	+0.0/+0.0	2.58	1.3	NAPLs not detected
BH2004	04/04/18	989	0.0	0.6	20.6	3	0	+0.0/+0.0	2.25	1.7	NAPLs not detected
BH2004	19/04/18	1021	0.3	0.2	20.5	2	0	-0.0/+0.0	2.53	2.4	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
BH2005	22/02/18	1021	0.0	2.9	11.9	8	0	+0.1/+0.6	2.37	0.6	Standpipe developed by bailing. NAPLs not detected
BH2005	08/03/18	990	0.0	5.4	12.6	4	0	-0.0/+0.0	2.50	1.1	NAPLs not detected
BH2005	22/03/18	1016	0.1	5.3	10.6	1	0	+0.0/+0.0	2.28	1.9	NAPLs not detected
BH2005	04/04/18	989	0.0	6.1	11.3	1	0	-0.0/+0.0	2.06	1.7	NAPLs not detected. Redish Brown (oxide?) pressent
BH2005	19/04/18	1020	0.2	6.8	6.5	4	0	+0.0/+0.1	2.12	6.4	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
BH2006	22/02/18	1021	0.0	0.1	13.1	78	0	+0.0/+0.1	1.63	0.5	Standpipe developed by bailing. NAPLs not detected
BH2006	08/03/18	990	0.0	0.6	12.5	9	0	+0.0	1.60	0.4	NAPLs detected 1.60-2.00m
BH2006	22/03/18	1016	0.0	1.3	11.2	1	0	+0.0/+0.1	1.61	1.7	NAPLs not detected
BH2006	04/04/18	988	0.0	1.9	10.6	1	0	+0.0/+0.0	1.52	1.3	NAPLs not detected
BH2006	19/04/18	1020	0.1	1.6	13.4	8	1	+0.0/+0.1	1.57	5.6	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
WS1003	22/02/18	1021	0.0	0.6	19.2	0	0	+0.0/+0.1	2.18	0.3	Standpipe developed by bailing. NAPLs not detected
WS1003	07/03/18	990	0.0	0.3	19.8	0	0	+0.0/+0.1	2.13	0.7	NAPLs not detected
WS1003	22/03/18	1019	0.0	1.0	20.6	1	0	+0.0/+0.1	2.17	1.7	NAPLs not detected
WS1003	04/04/18	989	0.0	0.7	20.2	1	0	+0.0/+0.0	1.91	2.7	NAPLs not detected
WS1003	19/04/18	1020	0.2	0.2	21.2	2	0	+0.0/+0.1	2.11	4.6	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
WS1004	22/02/18	1021	0.0	0.8	19.2	0	0	+0.0/+0.1	2.36	0.6	Standpipe developed by bailing. NAPLs not detected
WS1004	07/03/18	991	0.0	0.6	19.6	0	0	-0.1/-0.0	2.30	1.2	NAPLs not detected
WS1004	22/03/18	1019	0.0	1.0	20.7	0	0	+0.0/+0.0	2.34	1.2	NAPLs not detected
WS1004	04/04/18	989	0.0	1.8	19.0	2	0	-0.0/+0.0	2.07	5.3	NAPLs not detected
WS1004	19/04/18	1020	0.2	0.2	21.5	3	0	+0.0/+0.1	2.30	5.1	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
WS10005A	22/02/18	1021	0.0	0.0	19.6	1	0	+0.0/+0.1	0.97	0.3	Standpipe developed by bailing. NAPLs not detected
WS10005A	07/03/18	990	0.9	0.0	10.3	0	0	-0.0/+0.0	1.69	0.0	NAPLs not detected
WS10005A	22/03/18	1019	0.0	0.3	15.2	1	0	+0.0/+0.1	1.63	0.9	NAPLs not detected
WS10005A	04/04/18	989	0.0	0.3	9.6	1	0	+0.1/+0.8	1.47	2.9	NAPLs not detected
WS10005A	19/04/18	1020	0.2	0.0	21.6	3	0	-0.0/+0.1	1.37	3.3	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
WS1006	22/02/18	1021	0.0	0.6	19.1	4	0	+0.0/+0.0	2.22	0.1	Standpipe developed by bailing. NAPLs not detected
WS1006	07/03/18	990	0.0	0.3	19.2	0	0	-0.0/+0.0	2.16	0.1	NAPLs not detected
WS1006	22/03/18	1019	0.0	0.4	21.1	1	0	+0.0/+0.0	1.20	1.1	NAPLs not detected
WS1006	04/04/18	989	0.0	0.5	19.9	4	0	+0.0/+0.0	1.92	2.7	NAPLs not detected
WS1006	19/04/18	1020	0.2	0.1	21.4	3	0	0.0+/+0.1	2.16	3.3	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
WS1007	22/02/18	1021	0.0	0.3	19.5	5	0	-0.3/-0.1	1.06	0.7	Standpipe developed by bailing. NAPLs not detected
WS1007	07/03/18	990	0.0	0.1	19.6	1	0	-0.3/-0.1	1.02	0.3	NAPLs not detected
WS1007	22/03/18	1018	0.0	0.6	21.2	4	0	-2.2/-0.3	1.06	5.9	NAPLs not detected
WS1007	04/04/18	988	0.0	0.4	21.0	3	0	+0.7/+3.5	1.03	6.2	NAPLs not detected
WS1007	19/04/18	1020	0.3	0.3	21.0	3	0	-0.0/-0.0	1.03	10.3	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

Peak Gas and Groundwater Monitoring

Borehole	Date	Barometric Pressure (mb)	Methane (%)	Carbon Dioxide (%)	Oxygen (min) (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Gas Flow (min/max) (Litres/hour)	Water Level (mbgl)	PID (ppm)	Comments
WS10019	22/02/18	1021	0.0	0.9	18.5	1	0	+0.0/+0.0	2.32	0.7	Standpipe developed by bailing. NAPLs not detected
WS10019	07/03/18	991	0.0	1.5	17.8	1	0	-0.1/-0.0	2.27	0.4	NAPLs not detected
WS10019	22/03/18	1017	0.0	2.0	19.3	1	0	-0.1/+0.0	2.31	1.3	NAPLs not detected
WS10019	04/04/18	989	0.0	0.7	20.5	1	0	-0.1/-0.0	2.04	0.9	NAPLs not detected
WS10019	19/04/18	1021	0.2	1.0	19.6	3	1	+0.1/+0.1	2.27	4.6	NAPLs not detected

CC Ground Investigations Ltd

Contract Name:	SSE Site, Vastern Road, Reading
Contract ID:	C5925
Client:	SSE Plc
Instrument used:	GA5000 Gas Analyser. Geotechnical Instruments dip meter. ATEX approved oil/water interface meter.

APPENDIX VIII

ORIGIN OF GAC VALUES

Constituent	Unit	GAC	Origin of Risk Assessment Value
Arsenic	mg/kg	40	LQM CIEH Suitable for Use Levels (S4UL) 2015- Inorganic Arsenic
Boron	mg/kg	11000	LQM CIEH Suitable for Use Levels (S4UL) 2015
Cadmium	mg/kg	85	LQM CIEH Suitable for Use Levels (S4UL) 2015
Chromium VI	mg/kg	6	
Chromium III	mg/kg	910	
Lead	mg/kg	310	Category 4 Screening Level (C4SL) utilising exposure parameters from CLEA SR3 report.
Mercury	mg/kg	56	LQM CIEH Suitable for Use Levels (S4UL) 2015- Inorganic Mercury
Nickel	mg/kg	180	LQM CIEH Suitable for Use Levels (S4UL) 2015
Selenium	mg/kg	430	
Copper	mg/kg	7100	
Zinc	mg/kg	40000	
Vanadium	mg/kg	1200	
Phenol	mg/kg	750	LQM CIEH Suitable for Use Levels (S4UL) 2015 1%SOM
Cyanide	mg/kg	791	CLEA 1.04 OEC Derived Value
Naphthalene	mg/kg	2.3	LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM.
Acenaphthylene	mg/kg	2900(Sol)	
Acenaphthene	mg/kg	3000(Sol)	
Fluorene	mg/kg	2800 (sol)	
Phenanthrene	mg/kg	1300 (sol)	
Anthracene	mg/kg	31000(vap)	
Fluoranthene	mg/kg	1500	
Pyrene	mg/kg	3700	
Benzo(a)Anthracene(	mg/kg	11	
Chrysene	mg/kg	30	
Benzo(b)Fluoranthene	mg/kg	3.9	
Benzo(k)Fluoranthene	mg/kg	110	
Benzo(a)Pyrene	mg/kg	3.2	
Indeno(123-cd)Pyrene	mg/kg	45	
Dibenzo(a,h)Anthracene	mg/kg	0.31	
Benzo(ghi)Perylene	mg/kg	360	
Benzene	mg/kg	0.38	LQM CIEH Suitable for Use Levels (S4UL) 2015 1%SOM
Toluene	mg/kg	869	LQM CIEH Suitable for Use Levels (S4UL) 2015 1%SOM- based on vapour saturation limit.
Ethylbenzene	mg/kg	83	LQM CIEH Suitable for Use Levels (S4UL) 2015 1%SOM
Xylenes	mg/kg	79	LQM CIEH Suitable for Use Levels (S4UL) 2015 1% SOM p-Xylene
TPH CWG (Speciated)			
Aliphatic			LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as

Constituent	Unit	GAC	Origin of Risk Assessment Value
Aliphatic EC 5-6	mg/kg	42	defined in SR3 (EA 2009) 1% SOM
Aliphatic EC >6-8	mg/kg	100	
Aliphatic EC >8-10	mg/kg	27	
Aliphatic EC >10-12	mg/kg	130(vap)	
Aliphatic EC > 12-16	mg/kg	1100(sol)	
Aliphatic EC > 16-35	mg/kg	65000(sol)	
Aliphatic EC >35-44	mg/kg	65000(sol)	
Aromatic			LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM
Aromatic EC 5-7	mg/kg	370	
Aromatic EC>7-8	mg/kg	860	
Aromatic EC> 8-10	mg/kg	47	
Aromatic EC> 10-12	mg/kg	250	
Aromatic EC> 12-16	mg/kg	1800	
Aromatic EC> 16-21	mg/kg	1900	
Aromatic EC> 21-35	mg/kg	1900	
Aromatic EC> 35-44	mg/kg	1900	
Banded TPH			
Aliphatic EC 5-6	mg/kg	42	LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM, utilising the most conservative of the Ali/Aro chain lengths.
Aliphatic EC >6-8	mg/kg	100	
Aliphatic EC >8-10	mg/kg	27	
Aliphatic EC> 10-12	mg/kg	130	
Aliphatic EC> 12-16	mg/kg	1100	
Aromatic EC> 16-21	mg/kg	1900	
Aromatic EC> 21-35	mg/kg	1900	
Aromatic EC> 35-44	mg/kg	1900	

(Sol) - exceeds the solubility saturation limit
(Vap) – exceeds the vapour saturation limit.

Constituent	Unit	GAC	Origin of Risk Assessment Value
Arsenic	mg/kg	640	LQM CIEH Suitable for Use Levels (S4UL) 2015- Inorganic Arsenic
Barium	mg/kg	22000	LQM CIEH Suitable for Use Levels (S4UL) 2015
Beryllium	mg/kg	12	
Boron	mg/kg	240000	
Cadmium	mg/kg	190	
Chromium VI	mg/kg	33	
Chromium III	mg/kg	8600	
Lead	mg/kg	2300	Category 4 Screening Level (C4SL) utilising exposure parameters from CLEA SR3 report.
Mercury	mg/kg	1100	LQM CIEH Suitable for Use Levels (S4UL) 2015- Inorganic Mercury
Nickel	mg/kg	980	LQM CIEH Suitable for Use Levels (S4UL) 2015
Selenium	mg/kg	12000	
Copper	mg/kg	68000	
Zinc	mg/kg	730000	
Vanadium	mg/kg	9000	
PAH			
Phenol	mg/kg	760	LQM CIEH Suitable for Use Levels (S4UL) 2015 1%SOM
Cyanide	mg/kg	16200	CLEA 1.04 OEC Derived Value
Naphthalene	mg/kg	190(Sol)	LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM.
Acenaphthylene	mg/kg	83,000(Sol)	
Acenaphthene	mg/kg	84,000(Sol)	
Fluorene	mg/kg	63,000(Sol)	
Phenanthrene	mg/kg	22,000	
Anthracene	mg/kg	520,000	
Fluoranthene	mg/kg	23,000	
Pyrene	mg/kg	54,000	
Benzo(a)Anthracene[	mg/kg	170	
Chrysene	mg/kg	350	
Benzo(b)Fluoranthene	mg/kg	44	
Benzo(k)Fluoranthene	mg/kg	1,200	
Benzo(a)Pyrene	mg/kg	35	
Indeno(123-cd)Pyrene	mg/kg	500	
Dibenzo(a,h)Anthracene	mg/kg	3.5	
Benzo(ghi)Perylene	mg/kg	3,900	
Benzene	mg/kg	27	LQM CIEH Suitable for Use Levels (S4UL) 2015 1%SOM
Toluene	mg/kg	56,000(Vap)	LQM CIEH Suitable for Use Levels (S4UL) 2015 1%SOM- based on vapour saturation limit.
Ethylbenzene	mg/kg	5,700(Vap)	LQM CIEH Suitable for Use Levels (S4UL) 2015 1%SOM- based on vapour saturation limit
Xylenes	mg/kg	5,900(Sol)	LQM CIEH Suitable for Use Levels (S4UL) 2015 1% SOM p-Xylene
TPH CWG (Speciated)			

Constituent	Unit	GAC	Origin of Risk Assessment Value
Aliphatic			LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM
Aliphatic EC 5-6	mg/kg	3,200$^{(Sol)}$	
Aliphatic EC >6-8	mg/kg	7,800$^{(Sol)}$	
Aliphatic EC >8-10	mg/kg	2,000$^{(Sol)}$	
Aliphatic EC >10-12	mg/kg	9,700$^{(Sol)}$	
Aliphatic EC > 12-16	mg/kg	59,000$^{(Sol)}$	
Aliphatic EC > 16-35	mg/kg	1,600,000	
Aliphatic EC >35-44	mg/kg	1,600,000	
Aromatic			LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM
Aromatic EC 5-7	mg/kg	26,000$^{(Sol)}$	
Aromatic EC>7-8	mg/kg	56,000$^{(Vap)}$	
Aromatic EC> 8-10	mg/kg	3,500$^{(Vap)}$	
Aromatic EC> 10-12	mg/kg	16,000$^{(Sol)}$	
Aromatic EC> 12-16	mg/kg	36,000$^{(Sol)}$	
Aromatic EC> 16-21	mg/kg	28,000	
Aromatic EC> 21-35	mg/kg	28,000	
Aromatic EC> 35-44	mg/kg	28,000	
Banded TPH			
Aliphatic EC 5-6	mg/kg	3,200$^{(Sol)}$	LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM, utilising the most conservative of the Ali/Aro chain lengths.
Aliphatic EC >6-8	mg/kg	7,800$^{(Sol)}$	
Aliphatic EC >8-10	mg/kg	2,000$^{(Sol)}$	
Aliphatic EC> 10-12	mg/kg	9,700$^{(Sol)}$	
Aliphatic EC> 12-16	mg/kg	36,000$^{(Sol)}$	
Aromatic EC> 16-21	mg/kg	28,000	
Aromatic EC> 21-35	mg/kg	28,000	
Aromatic EC> 35-44	mg/kg	28,000	

(^{Sol}) - exceeds the solubility saturation limit
(^{Vap}) – exceeds the vapour saturation limit.

Abbreviations: GAC = General Assessment Criteria, n = number of samples, MC = Maximum Concentration; Loc of Ex = Location of Exceedance.

* The Tier 1 GAC for the hydrocarbon fraction is derived from the CIEH/S4UL assessment for petroleum hydrocarbons Criteria Working Group (CWG) for both aliphatic and aromatic compounds. OEC has utilised the lowest of the aliphatic and aromatic chainlengths inorder to adopt a conservative approach, which is considered satisfactory for the protection of human health.

(i) Benzo (b) Fluoranthene (3.9mg/kg) Benzo (k) Fluoranthene (110mg/kg)

APPENDIX IX

DQRA INPUT PARAMETERS

DQRA Justification of Input Parameters

Parameter	Value		Data Source
Contaminants Considered	TPH	Aromatic C_{12}-C_{16}	Compounds encountered further to Tier 1 controlled waters assessment
		Aromatic C_{16}-C_{21}	
Target Concentrations (mg/l)	Aromatic C_{12}-C_{16}	9.0E-02	WHO Guidance on Petroleum Products in Drinking Water
	Aromatic C_{16}-C_{21}	9.0E-02	
Air Filled Porosity (fraction)	2.00E-01		estimate based on Domenico & Schwarz, 1990
Water Filled Porosity (fraction)	1.00E-01		estimate based on Domenico & Schwarz, 1990
Bulk Density (g/cm^3)	1.60E+00		Estimate based on mean value for Fluvio-glacial Sediments from Wiedemeir et al, 1995
Henry's Law Constant (dimensionless)	TPH Aromatic		Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 3: Selection of Representative TPH Fractions based on Fate and Transport Considerations, 1997.
	C_{12}-C_{16}	5.58E-02	
	C_{16}-C_{21}	1.34E-02	
Soil water partition co-efficient	N/A		Not applicable for organic compounds.
Fraction of organic carbon (FOC)	1.82E-02 (Made Ground)		Average of values measured for on-site soils.
	2.90E-03 (Kempton Park Gravel)		
Organic carbon partition co-efficient (L/kg)	Aromatic C_{12}-C_{16}	5.01E+03	Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 3: Selection of Representative TPH Fractions based on Fate and Transport Considerations, 1997.
	Aromatic C_{16}-C_{21}	1.58E+04	
Sorption co-efficient	N/A		Not applicable for organic compounds.
Infiltration (m/day)	1.74E-03		Average annual rainfall for Meteorological Office Reading University Weather Station (1981-2010)
Area of contaminant source (m^2)	2.08E+03		Based on site derived information.
Length of contaminant source in direction of groundwater flow (m)	5.50E+01		
Saturated aquifer thickness (m)	6.58E+00		Average saturated thickness of Kempton Park Gravel Formation (KPG) based on Borehole Logs and groundwater monitoring data.

Hydraulic conductivity (m/day)	5.00E+00		Upper-range literature value for a silty SAND (Freeze & Cherry, 1979)
Hydraulic Gradient (fraction)	2.68E-03		Calculated from on-site data indicating a measured fall of 0.12m over a horizontal distance of 44.82m.
Width of source perpendicular to groundwater flow (m)	4.30E+01		Based on Site-derived measurements
Background concentration of contaminant in groundwater beneath the site.	0.0E+00		In order to adopt a conservative approach OEC have assumed that upgradient groundwater is unaffected by the determinands and that all impact is due to the source present on-site.
Mixing zone depth (m)	N/A		Calculated from P20 sheet.
Soil Concentration (mg/kg)	Aromatic C_{12}-C_{16}	3.60E+03	Maximum Soil Concentrations Recorded
	Aromatic C_{16}-C_{21}	3.90E+03	
Half-life for degradation of contaminant in water (t ½) (Days)	Aromatic C_{12}-C_{16}	6.94E+03	Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 3: Selection of Representative TPH Fractions based on Fate and Transport Considerations, 1997.
	Aromatic C_{16}-C_{21}	1.39E+04	
Width of plume in aquifer (m)	4.30E+01		Assumed plume width is equal to width of source area perpendicular to groundwater flow.
Plume thickness in aquifer (m)	6.58E+00		From Level 2
Bulk density of aquifer material (g/cm^3)	1.59E+00		Estimate based on mid-range value for a Gravelly Sand from Wiedermeier *et. al.* (1995)
Effective porosity of aquifer (%)	2.70E-01		Estimate based on mid-range value for a Gravelly Sand from Wiedermeier *et. al.* (1995)
Hydraulic gradient	2.68E-03		Calculated from on-site data indicating a measured fall of 0.12m over a horizontal distance of 44.82m.
Hydraulic Conductivity (m/day)	5.00E+00		Upper-range literature value for a silty SAND (Freeze & Cherry, 1979)
Distance to compliance point from source (m)	9.00E+01		Compliance point calculated as 90m from eastern limit of source area.

Time since pollutant entered groundwater	9.99E+99	Value recommended in RTM guidance to simulate steady state conditions.

APPENDIX X

P20 SHEETS

Hydrogeological risk assessment for land contamination

Remedial Targets Worksheet , Release 3.2

First released: 2006. Version 3.2: January 2013

This worksheet has been produced in combination with the document 'Remedial Targets Methodology: Hydrogeological risk assessment for land contamination (Environment Agency 2006).

Users of this worksheet should always refer to the User Manual to the Remedial Targets Methodology and to relevant guidance on UK legislation and policy, in order to understand how this procedure should be applied in an appropriate context.

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The calculation of equations in this worksheet has been independently checked by Entec (UK) Ltd on behalf of the Environment Agency.

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IMPORTANT: To enable MS Excel worksheet, click Tools, Add -Ins, Analysis Tool Pak and Analysis Tool Pak-VBA (to calculate error functions).

Details to be completed for each assessment

Site Name:	**Vastern Road, Reading**			
Site Address:	**55 Vastern Road, Reading, Berkshire, RG1 8BU**			
Completed by:	**Dr. Adrian King**			
Date:	**24-Apr-18**		**Version:**	**1**
Contaminant	**TPH Aro C12-C16**			
Target Concentration (C_T)	**0.09**	**mg/l**	**Origin of C_T:**	**WHO Petroleum Products in Drinking Water**

This worksheet can be used to determine remedial targets for soils (Worksheets Level 1 Soil, Level 2 and Level 3 Soil) or to determine remedial targets for groundwater (Level 3 Groundwater). For Level 3, parameter values must be entered separately dependent on whether the assessment is for soil or groundwater. For soil, remedial targets are calculated as either mg/kg (for comparision with soil measurements) or mg/l (for comparison with leaching tests or pore water concentrations).
Site details entered on this page are automatically copied to Level 1, 2 and 3 Worksheets.
Worksheet options are identified by brown background and employ a pull-down menus. Data entry are identified as blue background.
Data origin / justification should be noted in cells coloured yellow and fully documented in subsequent reports.
Data carried forward from an earlier worksheet are identified by a light green background
It is recommended that a copy of the original worksheet is saved (all data fields in the original copy are blank).

The spreadsheet also includes a porosity calculation worksheet, a soil impact calculation worksheet and a worksheet that performs some simple hydrogeological calculations.

Remedial Targets Worksheet , Release 3.2

Level 1 - Soil

Select the method of calculating the soil water Partition Co-efficient by using the pull down menu below

Calculate for non-polar organic chemicals

Contaminant		**TPH Aro C12-C16**		
Target concentration	C_T	**0.09**	**mg/l**	
Input Parameters	**Variable**	**Value**	**Unit**	**Source of parameter value**
Standard entry				
Water filled soil porosity	θ_W	1.00E-01	fraction	
Air filled soil porosity	θa	2.00E-01	fraction	
Bulk density of soil zone material	ρ	1.60E+00	g/cm^3	
Henry's Law constant	H	5.58E-02	dimensionless	
Entry if specify partition coefficient (option)				
Soil water partition coefficient	Kd		l/kg	
Entry for non-polar organic chemicals (option)				
Fraction of organic carbon (in soil)	foc	1.82E-02	fraction	
Organic carbon partition coefficient	Koc	5.01E+03	l/kg	
Entry for ionic organic chemicals (option)				
Sorption coefficient for neutral species	$K_{oc,n}$		l/kg	
Sorption coefficient for ionised species	$K_{oc,i}$		l/kg	
pH value	pH		pH units	
Acid dissociation constant	pKa			
Fraction of organic carbon (in soil)	foc		fraction	
Soil water partition coefficient used in Level Assessment	**Kd**	**9.12E+01**	**l/kg**	*Calculated value*

This sheet calculates the Level 1 remedial target for soils(mg/kg) based on a selected target concentration and theoretical calculation of soil water partitioning. Three options are included for determining the partition coefficient.

The measured soil concentration as mg/kg should be compared with the Level 1 remedial target to determine the need for further action.

Level 1 Remedial Target

Level 1 Remedial Target	**8.22E+00**	**mg/kg**	**(for comparison with soil analyses)**
	or		
	0.09	**mg/l**	**(for comparison with leachate test results)**

Site being assessed:	Vastern Road, Reading
Completed by:	Dr. Adrian King
Date:	24-Apr-18
Version:	1

Remedial Targets Worksheet , Release 3.2

Level 2 - Soil

Contaminant		**TPH Aro C12-C16**		from Level 1
Target concentration	**C_T**	**0.09**	**mg/l**	from Level 1

This sheet calculates the Level 2 remedial target for soils (mg/kg) or for pore water (mg/l).

The measured soil concentration as mg/kg or pore water concentration should be compared with the Level 2 remedial target to determine the need for further action. Equations presented in 'Hydrogeological risk assessment for land contamiantion' (Environment Agency 2006)

Input Parameters	**Variable**	**Value**	**Unit**	**Source of parameter value**	
Standard entry					
Infiltration	Inf	1.74E-03	m/d	**Reading University (635.4mm/yr) https://www.metoffice.g**	
Area of contaminant source	A	2.08E+03	m^2	**Site measurements**	Not used in calculation
Entry for groundwater flow below site					
Length of contaminant source in direction of groundwater flow	L	5.50E+01	m	**Site measurements**	
Saturated aquifer thickness	da	6.58E+00	m	**aturated Thickness from Site Measurements of Groundw**	
Hydraulic Conductivity of aquifer in which dilution occurs	K	5.00E+01	m/d	**e based on Permeability Tests Undertaken in KPG on Si**	
Hydraulic gradient of water table	i	2.68E-04	fraction	**neasurement of 0.012m drop over 44.82m horizontal dist**	
Width of contaminant source perpendicular to groundwater flow	w	4.30E+01	m	**Site measurements**	Not used in calculation
Background concentration of contaminant in groundwater beneath site	Cu	0.00E+00	mg/l	**Assume Zero Concentration**	
Define mixing zone depth by specifying or calculating depth (using pull down list)		**Calculate**			
Enter mixing zone thickness	Mz		m		
Calculated mixing zone thickness	Mz	6.58E+00	m		

Calculated Parameters

Dilution Factor	**DF**	**1.92E+00**		
Level 2 Remedial Target		**1.73E-01**	**mg/l**	**For comparison with measured pore water concentration. This assumes Level 1 Remedial Target is based on Target Concentration.**
		or		
		1.58E+01	**mg/kg**	**For comparison with measured soil concentration. This assumes Level 1 Remedial Target calculated from soil-water**

Additional option

Calculation of impact on receptor

Concentration of contaminant in contaminated discharge (entering receptor)	Cc	0.00E+00	mg/l	
Calculated concentration within receptor (dilution only)		0.00E+00	mg/l	0

Site being assessed:	Vastern Road, Reading
Completed by:	Dr. Adrian King
Date:	24-Apr-18
Version:	1

Remedial Targets Worksheet , Release 3.2

Level 3 - Soil

See Note

Environment Agency

Input Parameters	Variable	Value	Unit	Source
Contaminant		TPH Aro C12-C16		from Level 1
Target Concentration	C_T	0.09	mg/l	from Level 1
Dilution Factor	DF	1.92E+00		from Level 2

Select analytical solution (click on brown cell below, then on pull-down menu)

Ogata Banks — Equations in HRA publication

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: **Apply degradation rate to dissolved pollutants only**

	Variable	Value	Unit	Source of parameter value
Enter source concentration		Soil concentration as mg/kg		
Enter soil concentration		3.60E+03	mg/kg	
Half life for degradation of contaminant in water	$t_{1/2}$	6.94E+03	days	*Total Petroleum Hydrocarbon Criteria Working G*
Calculated decay rate	λ	9.99E-05	$days^{-1}$	calculated
Width of plume in aquifer at source	Sz	4.30E+01	m	from Level 2
Plume thickness in aquifer at source	Sy	6.58E+00	m	from Level 2
Bulk density of aquifer materials	ρ	1.59E+00	g/cm^3	
Effective porosity of aquifer	n	2.70E-01	fraction	
Hydraulic gradient	i	5.59E-04	fraction	from Level 2 (adjusted)
Hydraulic conductivity of saturated aquifer	K	5.00E+01	m/d	from Level 2
Distance to compliance point	x	9.00E+01	m	
Distance (lateral) to compliance point perpendicular to flow direction	z		m	
Distance (depth) to compliance point perpendicular to flow direction	y		m	
Time since pollutant entered groundwater	t	1.00E+99	days	*time variant options only*
Parameters values determined from options				
Partition coefficient	Kd	1.45E+01	l/kg	*see options*
Longitudinal dispersivity	ax	9.000	m	*see options*
Transverse dispersivity	az	0.900	m	*see options*
Vertical dispersivity	ay	0.090	m	*see options*

Parameter values should be checked against Level 1 and 2

Calculated Parameters	Variable		
Groundwater flow velocity	v	1.03E-01	m/d
Retardation factor	Rf	8.66E+01	fraction
Decay rate used	λ	1.15E-06	d^{-1}
Hydraulic gradient used in aquifer flow down-gradient	i	5.59E-04	fraction
Rate of contaminant flow due to retardation	u	1.20E-03	m/d
Ratio of Compliance Point to Source Concentration	C_{ED}/C_0	7.49E-01	fraction
Attenuation factor (C_0/C_{ED})	**AF**	**1.34E+00**	**fraction**
Calculated soil leachate concentration	Co	3.94E+01	mg/l

Remedial Targets

Level 3 Remedial Target		**2.31E-01**	**mg/l**	For comparison with measured pore water concentration.
Ogata Banks		**or**		This assumes Level 1 Remedial Target is based on Target Concentration.
		2.11E+01	**mg/kg**	For comparison with measured soil concentration. This
Distance to compliance point		**90**	**m**	assumes Level 1 Remedial Target calculated from soil-water partitioning equation.
Ratio of Compliance Point to Source Concentration	C_{ED}/C_0	**7.49E-01**	**fraction**	Ogata Banks

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target.
The recommended value for time when calculating the remedial target is 9.9E+99

Enter method of defining partition co-efficient (using pull down list)

Calculate for non-polar organic chemicals

Entry if specify partition coefficient (option)

Soil water partition coefficient — Kd — l/kg

Entry for non-polar organic chemicals (option)

Fraction of organic carbon in aquifer	foc	2.90E-03	fraction
Organic carbon partition coefficient	Koc	5.01E+03	l/kg

Entry for ionic organic chemicals (option)

Sorption coefficient for related species	$K_{oc,n}$		l/kg
Sorption coefficient for ionised species	$K_{oc,i}$		l/kg
pH value	pH		
Acid dissociation constant	pKa		
Fraction of organic carbon in aquifer	foc		fraction
Soil water partition coefficient	Kd	1.45E+01	l/kg

Define dispersivity (click brown cell and use pull down list)

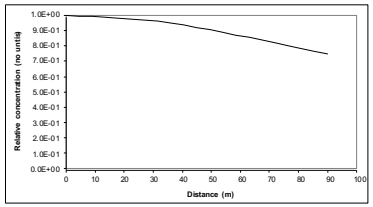
Dispersivities 10%, 1%, 0.1% of pathway length

		Enter value	Calc value	Xu & Eckstein	
Longitudinal dispersivity	**ax**	0.00E+00	9.00E+00	4.18E+00	m
Transverse dispersivity	**az**	0.00E+00	9.00E-01	4.18E-01	m
Vertical dispersivity	**ay**	0.00E+00	9.00E-02	4.18E-02	m

Note values of dispersivity must be > 0

Xu & Eckstein (1995) report ax = $0.83(\log_{10}x)^{2.414}$; az = ax/10, ay = ax/100 are assumed

Note
This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best described by an electron limited degradation such as oxidation by O, NO_3, SO_4 etc than an alternative solution should be used



Note: 'Relative concentration' is the ratio of calculated concentation at a given position compared to the source concentration. The calculations assume plume disperses from the top of the aquifer. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

This sheet calculates the Level 3 remedial target for soils(mg/kg) or for pore water (mg/l), based on the distance to the receptor or compliance located down hydraulic gradient of the source Three solution methods are included, the preferred option is Ogata Banks.By setting a long travel time (e.g. 9E99) it will give the steady state solution, which should always be used when calculating remedial targets.

The measured soil concentration as mg/kg or pore water concentration should be compared with the Level 3 remedial target to determine the need for further action.

Note if contaminant is not subject to first order degradation, then set half life as 9.9E+99.

Site being assessed:	Vastern Road, Reading
Completed by:	Dr. Adrian King
Date:	########
Version:	1

Calculated (relative) concentrations for distance-concentration graph

Ogata Banks
From calculation sheet

Distance	Relative concentration (No units)	Concentration mg/l
0	1.0E+00	2.05E+01
4.5	9.96E-01	2.04E+01
9.0	9.91E-01	2.03E+01
13.5	9.87E-01	2.03E+01
18.0	9.83E-01	2.02E+01
22.5	9.77E-01	2.01E+01
27.0	9.70E-01	1.99E+01
31.5	9.61E-01	1.97E+01
36.0	9.49E-01	1.95E+01
40.5	9.37E-01	1.92E+01
45.0	9.22E-01	1.89E+01
49.5	9.06E-01	1.86E+01
54.0	8.90E-01	1.83E+01
58.5	8.73E-01	1.79E+01
63.0	8.55E-01	1.75E+01
67.5	8.37E-01	1.72E+01
72.0	8.19E-01	1.68E+01
76.5	8.01E-01	1.64E+01
81.0	7.83E-01	1.61E+01
85.5	7.66E-01	1.57E+01
90.0	7.49E-01	1.54E+01

Remedial Targets Worksheet , Release 3.2

Calculation of contaminant concentration in groundwater from a soil source

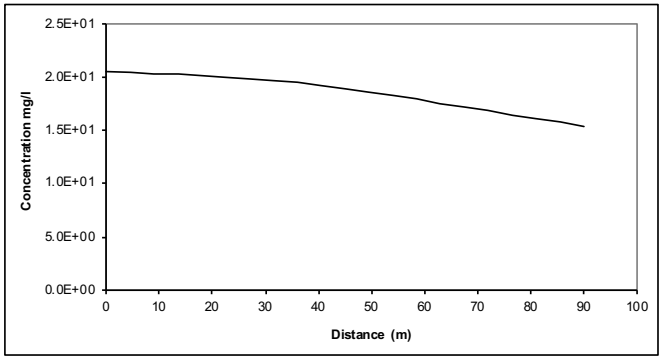
Only input required is Soil Contaminant Concentration

	Input Parameters			
	Soil contaminant concentration	C_0	3.60E+03	mg/kg
Level 1 Parameters				
	Water filled soil porosity	θ_W	1.00E-01	fraction
	Air filled soil porosity	θa	2.00E-01	fraction
	Bulk density	ρ	1.60E+00	g/cm^3
	Henry's Law constant	H	5.58E-02	dimensionless
	Soil water partition coefficient used in Level Assessment	Kd	9.12E+01	l/kg
	Factor (partitioning between soil and water)		9.13E+01	dimensionless
Level 2 Parameters	**Dilution Factor**	DF	1.92E+00	
Level 3 Parameters	**Attenuation factor (C_O/C_{ED})**	AF	1.34E+00	

Predicted concentrations at compliance point

Level 1	C	3.94E+01	mg/l	No dilution or attenuation
Level 2	C	2.05E+01	mg/l	Dilution taken into account
Level 3	C	1.54E+01	mg/l	Dilution and attenuation taken into account

Predicted concentrations between source and compliance point - Level 3



Distance m	Concentration mg/l
0.00	2.05E+01
4.50	2.04E+01
9.00	2.03E+01
13.50	2.03E+01
18.00	2.02E+01
22.50	2.01E+01
27.00	1.99E+01
31.50	1.97E+01
36.00	1.95E+01
40.50	1.92E+01
45.00	1.89E+01
49.50	1.86E+01
54.00	1.83E+01
58.50	1.79E+01
63.00	1.75E+01
67.50	1.72E+01
72.00	1.68E+01
76.50	1.64E+01
81.00	1.61E+01
85.50	1.57E+01
90.00	1.54E+01

R&D Publication 20 Remedial Targets Worksheet, Release 3.2

Level 3 - Groundwater

See Note

Input Parameters (using pull down menu)

	Variable	Value	Unit	Source
Contaminant		TPH Aro C12-C16		from Level 1
Target Concentration	C_T	9.00E-02	mg/l	from Level 1

Select analytical solution (click on brown cell below, then on pull-down menu)

Ogata Banks — Equations in HRA publication

Approach for simulating vertical dispersion: Simulate vertical dispersion in 1 direction

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: Apply degradation rate to dissolved pollutants only

				Source of parameter value
Initial contaminant concentration in groundwater at plume core	C_0	7.30E-01	mg/l	*Maximum Recorded Groundwater Concentration*
Half life for degradation of contaminant in water	$t_{1/2}$	6.94E+03	days	*Total Petroleum Hydrocarbon Criteria Workin*
Calculated decay rate	λ	1.00E-04	$days^{-1}$	
Width of plume in aquifer at source (perpendicular to flow)	Sz	4.30E+01	m	*Site measurements*
Plume thickness at source	Sy	6.45E+00	m	*From Level 3 Soil*
Saturated aquifer thickness	da	6.58E+00	m	*Average Saturated Thickness from Site Mea*
Bulk density of aquifer materials	ρ	1.59E+00	g/cm^3	*Estimate based on mid range value for gravelly sand fro*
Effective porosity of aquifer	n	2.70E-01	fraction	*estimate based on mid range value for Gravelly Sand from Wiedemeir et al 1995*
Hydraulic gradient	i	2.68E-04	fraction	*Site measurement of 0.012m drop over 44.82m horizontal distance*
Hydraulic conductivity of aquifer	K	5.00E+01	m/d	*Average value based on Permeability Tests*
Distance to compliance point	x	9.00E+01	m	*Distance to Centre of River Thames from Ea*
Distance (lateral) to compliance point perpendicular to flow direction	z	0.00E+00	m	
Distance (depth) to compliance point perpendicular to flow direction	y	0.00E+00	m	
Time since pollutant entered groundwater	t	1.00E+100	days	*time variant options only*
Parameters values determined from options				
Partition coefficient	Kd	1.45E+01	l/kg	*see options*
Longitudinal dispersivity	ax	9.00E+00	m	*see options*
Transverse dispersivity	az	9.00E-01	m	*see options*
Vertical dispersivity	ay	9.00E-02	m	*see options*

Calculated Parameters

	Variable		
Groundwater flow velocity	v	4.96E-02	m/d
Retardation factor	Rf	8.66E+01	fraction
Decay rate used	λ	1.15E-06	d^{-1}
Rate of contaminant flow due to retardation	u	5.73E-04	m/d
Contaminant concentration at distance x, assuming one-way vertical dispersion	C_{CED}	4.95E-01	mg/l
Attenuation factor (one way vertical dispersion, CO/CED)	**AF**	**1.48E+00**	

Remedial Targets

Remedial Target		**1.33E-01**	**mg/l**	For comparison with measured groundwater concentration.
Ogata Banks				
Distance to compliance point		**90**	**m**	
Concentration of contaminant at compliance point	C_{ED}/C_0	**4.95E-01**	**mg/l**	Ogata Banks
after		**1.0E+100**	**days**	

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target.
The recommended value for time when calculating the remedial target is 9.9E+99.

Select Method for deriving Partition Co-efficient (using pull down menu)

Calculate for non-polar organic chemicals

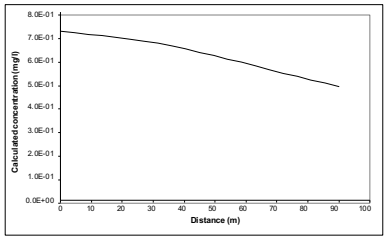
Entry if specify partition coefficient (option)			
Soil water partition coefficient	Kd		l/kg
Entry for non-polar organic chemicals (option)			
Fraction of organic carbon in aquifer	foc	2.90E-03	fraction
Organic carbon partition coefficient	Koc	5.01E+03	l/kg
Entry for ionic organic chemicals (option)			
Sorption coefficient for related species	$K_{oc,n}$		l/kg
Sorption coefficient for ionised species	$K_{oc,i}$		l/kg
pH value	pH		
acid dissociation constant	pKa		
Fraction of organic carbon in aquifer	foc		fraction
Soil water partition coefficient	Kd	1.45E+01	l/kg

Define dispersivity (click brown cell and use pull down list)

Dispersivities 10%, 1%, 0.1% of pathway length

		Enter value	Calc value	Xu & Eckstein	
Longitudinal dispersivity	**ax**	0.00E+00	9.00E+00	4.18E+00	m
Transverse dispersivity	**az**	0.00E+00	9.00E-01	4.18E-01	m
Vertical dispersivity	**ay**	0.00E+00	9.00E-02	4.18E-02	

Note values of dispersivity must be > 0
For calculated value, assumes ax = 0.1 *x, az = 0.01 * x, ay = 0.001 * x
Xu & Eckstein (1995) report ax = $0.83(\log_{10}x)^{2.414}$; az = ax/10, ay = ax/100 are assumed



Note graph assumes plume disperses vertically in one direction only. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Note

This sheet calculates the Level 3 remedial target for groundwater, based on the distance to the receptor or compliance located down hydraulic gradient of the source Three solution methods are included, the preferred option is Ogata Banks.

By setting a long travel time it will give the steady state solution, which should be used to calculate remedial targets.

The measured groundwater concentration should be compared with the Level 3 remedial target to determine the need for further action.
Note if contaminant is not subject to first order degradation, then set half life as 9.0E+99.

This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best desribed by an electron limited degradation such as oxidation by O2, NO3, SO4 etc than an alternative solution should be used

Calculated concentrations for distance-concentration graph

Ogata Banks
From calculation sheet

Distance	Concentration
	mg/l
0	7.3E-01
4.5	7.24E-01
9.0	7.17E-01
13.5	7.11E-01
18.0	7.04E-01
22.5	6.97E-01
27.0	6.88E-01
31.5	6.78E-01
36.0	6.67E-01
40.5	6.55E-01
45.0	6.41E-01
49.5	6.27E-01
54.0	6.12E-01
58.5	5.97E-01
63.0	5.82E-01
67.5	5.67E-01
72.0	5.52E-01
76.5	5.37E-01
81.0	5.23E-01
85.5	5.09E-01
90.0	4.95E-01

Site being assessed:	Vastern Road, Reading
Completed by:	Dr. Adrian King
Date:	########
Version:	1

Hydrogeological risk assessment for land contamination

Remedial Targets Worksheet , Release 3.2

First released: 2006. Version 3.2: January 2013

This worksheet has been produced in combination with the document 'Remedial Targets Methodology: Hydrogeological risk assessment for land contamination (Environment Agency 2006).

Users of this worksheet should always refer to the User Manual to the Remedial Targets Methodology and to relevant guidance on UK legislation and policy, in order to understand how this procedure should be applied in an appropriate context.

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The calculation of equations in this worksheet has been independently checked by Entec (UK) Ltd on behalf of the Environment Agency.

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IMPORTANT: To enable MS Excel worksheet, click Tools, Add -Ins, Analysis Tool Pak and Analysis Tool Pak-VBA (to calculate error functions).

Details to be completed for each assessment				
Site Name:	Vastern Road, Reading			
Site Address:	55 Vastern Road, Reading, Berkshire, RG1 8BU			
Completed by:	Dr. Adrian King			
Date:	24-Apr-18		Version:	1
Contaminant	TPH Aro C16-C21			
Target Concentration (C_T)	0.09	mg/l	Origin of C_T:	WHO Petroleum Products in Drinking Water

This worksheet can be used to determine remedial targets for soils (Worksheets Level 1 Soil, Level 2 and Level 3 Soil) or to determine remedial targets for groundwater (Level 3 Groundwater). For Level 3, parameter values must be entered separately dependent on whether the assessment is for soil or groundwater. For soil, remedial targets are calculated as either mg/kg (for comparision with soil measurements) or mg/l (for comparison with leaching tests or pore water concentrations).
Site details entered on this page are automatically copied to Level 1, 2 and 3 Worksheets.
Worksheet options are identified by brown background and employ a pull-down menus. Data entry are identified as blue background.
Data origin / justification should be noted in cells coloured yellow and fully documented in subsequent reports.
Data carried forward from an earlier worksheet are identified by a light green background
It is recommended that a copy of the original worksheet is saved (all data fields in the original copy are blank).

The spreadsheet also includes a porosity calculation worksheet, a soil impact calculation worksheet and a worksheet that performs some simple hydrogeological calculations.

Remedial Targets Worksheet , Release 3.2

Level 1 - Soil

Select the method of calculating the soil water Partition Co-efficient by using the pull down menu below

Calculate for non-polar organic chemicals

Contaminant		**TPH Aro C16-C21**		
Target concentration	C_T	**0.09**	**mg/l**	
Input Parameters	**Variable**	**Value**	**Unit**	**Source of parameter value**
Standard entry				
Water filled soil porosity	θ_W	1.00E-01	fraction	Estimate based on Domenico & Schwarz, 1990
Air filled soil porosity	θa	2.00E-01	fraction	Estimate based on Domenico & Schwarz, 1990
Bulk density of soil zone material	ρ	1.60E+00	g/cm^3	
Henry's Law constant	H	1.34E-02	dimensionless	
Entry if specify partition coefficient (option)				
Soil water partition coefficient	Kd		l/kg	
Entry for non-polar organic chemicals (option)				
Fraction of organic carbon (in soil)	foc	1.82E-02	fraction	
Organic carbon partition coefficient	Koc	1.58E+04	l/kg	
Entry for ionic organic chemicals (option)				
Sorption coefficient for neutral species	$K_{oc,n}$		l/kg	
Sorption coefficient for ionised species	$K_{oc,i}$		l/kg	
pH value	pH		pH units	
Acid dissociation constant	pKa			
Fraction of organic carbon (in soil)	foc		fraction	
Soil water partition coefficient used in Level Assessment	**Kd**	**2.88E+02**	**l/kg**	*Calculated value*

This sheet calculates the Level 1 remedial target for soils(mg/kg) based on a selected target concentration and theoretical calculation of soil water partitioning. Three options are included for determining the partition coefficient.

The measured soil concentration as mg/kg should be compared with the Level 1 remedial target to determine the need for further action.

Level 1 Remedial Target

Level 1 Remedial Target	**2.59E+01**	**mg/kg**	**(for comparison with soil analyses)**
	or		
	0.09	**mg/l**	**(for comparison with leachate test results)**

Site being assessed:	Vastern Road, Reading
Completed by:	Dr. Adrian King
Date:	24-Apr-18
Version:	1

Remedial Targets Worksheet , Release 3.2

Level 2 - Soil

Contaminant		**TPH Aro C16-C21**		from Level 1
Target concentration	**C_T**	**0.09**	**mg/l**	from Level 1

This sheet calculates the Level 2 remedial target for soils (mg/kg) or for pore water (mg/l).

The measured soil concentration as mg/kg or pore water concentration should be compared with the Level 2 remedial target to determine the need for further action. Equations presented in 'Hydrogeological risk assessment for land contamiantion' (Environment Agency 2006)

Input Parameters	**Variable**	**Value**	**Unit**	**Source of parameter value**	
Standard entry					
Infiltration	Inf	1.74E-03	m/d		
Area of contaminant source	A	2.08E+03	m^2		Not used in calculation
Entry for groundwater flow below site					
Length of contaminant source in direction of groundwater flow	L	5.50E+01	m		
Saturated aquifer thickness	da	6.58E+00	m		
Hydraulic Conductivity of aquifer in which dilution occurs	K	5.00E+00	m/d		
Hydraulic gradient of water table	i	2.68E-03	fraction		
Width of contaminant source perpendicular to groundwater flow	w	4.30E+01	m		Not used in calculation
Background concentration of contaminant in groundwater beneath site	Cu	0.00E+00	mg/l		
Define mixing zone depth by specifying or calculating depth (using pull down list)		**Calculate**			
Enter mixing zone thickness	Mz		m		
Calculated mixing zone thickness	Mz	6.58E+00	m		

Calculated Parameters

Dilution Factor	**DF**	**1.92E+00**		
Level 2 Remedial Target		**1.73E-01**	**mg/l**	**For comparison with measured pore water concentration. This assumes Level 1 Remedial Target is based on Target Concentration.**
		or		
		4.97E+01	**mg/kg**	**For comparison with measured soil concentration. This assumes Level 1 Remedial Target calculated from soil-water**

Additional option

Calculation of impact on receptor

Concentration of contaminant in contaminated discharge (entering receptor)	Cc	0.00E+00	mg/l	
Calculated concentration within receptor (dilution only)		0.00E+00	mg/l	0

Site being assessed:	Vastern Road, Reading
Completed by:	Dr. Adrian King
Date:	24-Apr-18
Version:	1

Remedial Targets Worksheet , Release 3.2

Level 3 - Soil

See Note

Input Parameters	Variable	Value	Unit	Source
Contaminant		TPH Aro C16-C21		from Level 1
Target Concentration	C_T	0.09	mg/l	from Level 1
Dilution Factor	DF	1.92E+00		from Level 2

Select analytical solution (click on brown cell below, then on pull-down menu)

Ogata Banks — Equations in HRA publication

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: **Apply degradation rate to dissolved pollutants only**

	Variable	Value	Unit	Source of parameter value
Enter source concentration		Soil concentration as mg/kg		
Enter soil concentration		3.90E+03	mg/kg	
Half life for degradation of contaminant in water	$t_{1/2}$	1.39E+04	days	
Calculated decay rate	λ	4.99E-05	$days^{-1}$	calculated
Width of plume in aquifer at source	Sz	4.30E+01	m	from Level 2
Plume thickness in aquifer at source	Sy	6.58E+00	m	from Level 2
Bulk density of aquifer materials	ρ	1.59E+00	g/cm^3	
Effective porosity of aquifer	n	2.70E-01	fraction	
Hydraulic gradient	i	5.59E-03	fraction	from Level 2 (adjusted)
Hydraulic conductivity of saturated aquifer	K	5.00E+00	m/d	from Level 2
Distance to compliance point	x	9.00E+01	m	
Distance (lateral) to compliance point perpendicular to flow direction	z		m	
Distance (depth) to compliance point perpendicular to flow direction	y		m	
Time since pollutant entered groundwater	t	1.00E+99	days	*time variant options only*
Parameters values determined from options				
Partition coefficient	Kd	1.45E+01	l/kg	*see options*
Longitudinal dispersivity	ax	9.000	m	*see options*
Transverse dispersivity	az	0.900	m	*see options*
Vertical dispersivity	ay	0.090	m	*see options*

Parameter values should be checked against Level 1 and 2

Calculated Parameters	Variable		
Groundwater flow velocity	v	1.03E-01	m/d
Retardation factor	Rf	8.66E+01	fraction
Decay rate used	λ	5.76E-07	d^{-1}
Hydraulic gradient used in aquifer flow down-gradient	i	5.59E-03	fraction
Rate of contaminant flow due to retardation	u	1.20E-03	m/d
Ratio of Compliance Point to Source Concentration	C_{ED}/C_0	7.82E-01	fraction
Attenuation factor (C_0/C_{ED})	**AF**	**1.28E+00**	**fraction**
Calculated soil leachate concentration	Co	1.36E+01	mg/l

Remedial Targets

Level 3 Remedial Target		**2.21E-01**	**mg/l**	For comparison with measured pore water concentration.
Ogata Banks		**or**		This assumes Level 1 Remedial Target is based on Target Concentration.
		6.36E+01	**mg/kg**	For comparison with measured soil concentration. This
Distance to compliance point		**90**	**m**	assumes Level 1 Remedial Target calculated from soil-water partitioning equation.
Ratio of Compliance Point to Source Concentration	C_{ED}/C_0	**7.82E-01**	**fraction**	Ogata Banks

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target.
The recommended value for time when calculating the remedial target is 9.9E+99

Enter method of defining partition co-efficient (using pull down list)

Calculate for non-polar organic chemicals

Entry if specify partition coefficient (option)

Soil water partition coefficient — Kd — l/kg

Entry for non-polar organic chemicals (option)

Fraction of organic carbon in aquifer	foc	2.90E-03	fraction
Organic carbon partition coefficient	Koc	5.01E+03	l/kg

Entry for ionic organic chemicals (option)

Sorption coefficient for related species	$K_{oc,n}$		l/kg
Sorption coefficient for ionised species	$K_{oc,i}$		l/kg
pH value	pH		
Acid dissociation constant	pKa		
Fraction of organic carbon in aquifer	foc		fraction
Soil water partition coefficient	Kd	1.45E+01	l/kg

Define dispersivity (click brown cell and use pull down list)

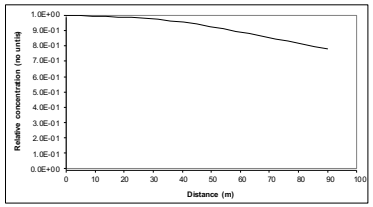
Dispersivities 10%, 1%, 0.1% of pathway length

		Enter value	Calc value	Xu & Eckstein	
Longitudinal dispersivity	**ax**	0.00E+00	9.00E+00	4.18E+00	m
Transverse dispersivity	**az**	0.00E+00	9.00E-01	4.18E-01	m
Vertical dispersivity	**ay**	0.00E+00	9.00E-02	4.18E-02	m

Note values of dispersivity must be > 0

Xu & Eckstein (1995) report ax = $0.83(\log_{10}x)^{2.414}$; az = ax/10, ay = ax/100 are assumed

Note
This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best described by an electron limited degradation such as oxidation by NO_3, SO_4 etc than an alternative solution should be used



Note: 'Relative concentration' is the ratio of calculated concentation at a given position compared to the source concentration. The calculations assume plume disperses from the top of the aquifer. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

This sheet calculates the Level 3 remedial target for soils(mg/kg) or for pore water (mg/l), based on the distance to the receptor or compliance located down hydraulic gradient of the source Three solution methods are included, the preferred option is Ogata Banks.By setting a long travel time (e.g. 9E99) it will give the steady state solution, which should always be used when calculating remedial targets.

The measured soil concentration as mg/kg or pore water concentration should be compared with the Level 3 remedial target to determine the need for further action.

Note if contaminant is not subject to first order degradation, then set half life as 9.9E+99.

Site being assessed:	Vastern Road, Reading
Completed by:	Dr. Adrian King
Date:	########
Version:	1

Calculated (relative) concentrations for distance-concentration graph

Ogata Banks
From calculation sheet

Distance	Relative concentration (No units)	Concentration mg/l
0	1.0E+00	7.06E+00
4.5	9.98E-01	7.04E+00
9.0	9.96E-01	7.03E+00
13.5	9.94E-01	7.01E+00
18.0	9.91E-01	6.99E+00
22.5	9.87E-01	6.97E+00
27.0	9.82E-01	6.93E+00
31.5	9.75E-01	6.88E+00
36.0	9.66E-01	6.82E+00
40.5	9.55E-01	6.74E+00
45.0	9.42E-01	6.65E+00
49.5	9.28E-01	6.55E+00
54.0	9.13E-01	6.44E+00
58.5	8.97E-01	6.33E+00
63.0	8.81E-01	6.22E+00
67.5	8.64E-01	6.10E+00
72.0	8.48E-01	5.98E+00
76.5	8.31E-01	5.86E+00
81.0	8.14E-01	5.75E+00
85.5	7.98E-01	5.63E+00
90.0	7.82E-01	5.52E+00

Remedial Targets Worksheet , Release 3.2

Calculation of contaminant concentration in groundwater from a soil source

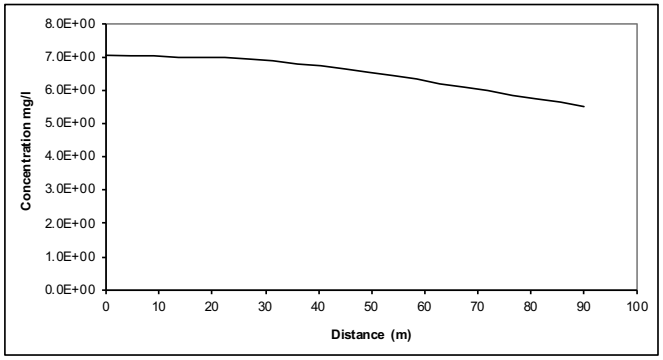
Only input required is Soil Contaminant Concentration

	Input Parameters			
	Soil contaminant concentration	C_0	3.90E+03	mg/kg
Level 1 Parameters				
	Water filled soil porosity	θ_W	1.00E-01	fraction
	Air filled soil porosity	θa	2.00E-01	fraction
	Bulk density	ρ	1.60E+00	g/cm^3
	Henry's Law constant	H	1.34E-02	dimensionless
	Soil water partition coefficient used in Level Assessment	Kd	2.88E+02	l/kg
	Factor (partitioning between soil and water)		2.88E+02	dimensionless
Level 2 Parameters	**Dilution Factor**	DF	1.92E+00	
Level 3 Parameters	**Attenuation factor (C_O/C_{ED})**	AF	1.28E+00	

Predicted concentrations at compliance point

Level 1	C	1.36E+01	mg/l	No dilution or attenuation
Level 2	C	7.06E+00	mg/l	Dilution taken into account
Level 3	C	5.52E+00	mg/l	Dilution and attenuation taken into account

Predicted concentrations between source and compliance point - Level 3



Distance m	Concentration mg/l
0.00	7.06E+00
4.50	7.04E+00
9.00	7.03E+00
13.50	7.01E+00
18.00	6.99E+00
22.50	6.97E+00
27.00	6.93E+00
31.50	6.88E+00
36.00	6.82E+00
40.50	6.74E+00
45.00	6.65E+00
49.50	6.55E+00
54.00	6.44E+00
58.50	6.33E+00
63.00	6.22E+00
67.50	6.10E+00
72.00	5.98E+00
76.50	5.86E+00
81.00	5.75E+00
85.50	5.63E+00
90.00	5.52E+00

R&D Publication 20 Remedial Targets Worksheet, Release 3.2

Level 3 - Groundwater

See Note

Input Parameters (using pull down menu) | Variable | Value | Unit | Source

Contaminant		TPH Aro C16-C21		from Level 1
Target Concentration	C_T	9.00E-02	mg/l	from Level 1

Select analytical solution (click on brown cell below, then on pull-down menu)

Ogata Banks — Equations in HRA publication

Approach for simulating vertical dispersion: Simulate vertical dispersion in 1 direction

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: Apply degradation rate to dissolved pollutants only

				Source of parameter value
Initial contaminant concentration in groundwater at plume core	C_0	2.70E+00	mg/l	
Half life for degradation of contaminant in water	$t_{1/2}$	1.39E+04	days	
Calculated decay rate	λ	4.99E-05	$days^{-1}$	
Width of plume in aquifer at source (perpendicular to flow)	Sz	4.30E+01	m	
Plume thickness at source	Sy	6.45E+00	m	
Saturated aquifer thickness	da	6.58E+00	m	
Bulk density of aquifer materials	ρ	1.59E+00	g/cm^3	
Effective porosity of aquifer	n	2.70E-01	fraction	
Hydraulic gradient	i	2.68E-03	fraction	
Hydraulic conductivity of aquifer	K	5.00E+00	m/d	
Distance to compliance point	x	9.00E+01	m	
Distance (lateral) to compliance point perpendicular to flow direction	z	0.00E+00	m	
Distance (depth) to compliance point perpendicular to flow direction	y	0.00E+00	m	
Time since pollutant entered groundwater	t	1.00E+100	days	*time variant options only*
Parameters values determined from options				
Partition coefficient	Kd	4.58E+01	l/kg	*see options*
Longitudinal dispersivity	ax	9.00E+00	m	*see options*
Transverse dispersivity	az	9.00E-01	m	*see options*
Vertical dispersivity	ay	9.00E-02	m	*see options*

Calculated Parameters | Variable

Groundwater flow velocity	v	4.96E-02	m/d
Retardation factor	Rf	2.71E+02	fraction
Decay rate used	λ	1.84E-07	d^{-1}
Rate of contaminant flow due to retardation	u	1.83E-04	m/d
Contaminant concentration at distance x, assuming one-way vertical dispersion	C_{CED}	2.00E+00	mg/l
Attenuation factor (one way vertical dispersion, CO/CED)	**AF**	**1.35E+00**	

Remedial Targets

Remedial Target		**1.22E-01**	**mg/l**	For comparison with measured groundwater concentration.
Ogata Banks				
Distance to compliance point		**90**	**m**	
Concentration of contaminant at compliance point	C_{ED}/C_0	**2.00E+00**	**mg/l**	Ogata Banks
after		**1.0E+100**	**days**	

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target.
The recommended value for time when calculating the remedial target is 9.9E+99.

Select Method for deriving Partition Co-efficient (using pull down menu)

Calculate for non-polar organic chemicals

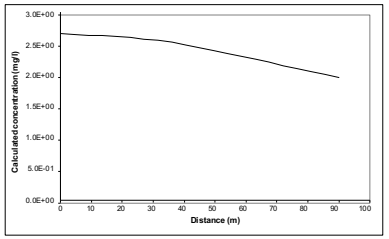
Entry if specify partition coefficient (option)			
Soil water partition coefficient	Kd		l/kg
Entry for non-polar organic chemicals (option)			
Fraction of organic carbon in aquifer	foc	2.90E-03	fraction
Organic carbon partition coefficient	Koc	1.58E+04	l/kg
Entry for ionic organic chemicals (option)			
Sorption coefficient for related species	$K_{oc,n}$		l/kg
Sorption coefficient for ionised species	$K_{oc,i}$		l/kg
pH value	pH		
acid dissociation constant	pKa		
Fraction of organic carbon in aquifer	foc		fraction
Soil water partition coefficient	Kd	4.58E+01	l/kg

Define dispersivity (click brown cell and use pull down list)

Dispersivities 10%, 1%, 0.1% of pathway length

		Enter value	Calc value	Xu & Eckstein	
Longitudinal dispersivity	**ax**	0.00E+00	9.00E+00	4.18E+00	m
Transverse dispersivity	**az**	0.00E+00	9.00E-01	4.18E-01	m
Vertical dispersivity	**ay**	0.00E+00	9.00E-02	4.18E-02	

Note values of dispersivity must be > 0
For calculated value, assumes ax = 0.1 *x, az = 0.01 * x, ay = 0.001 * x
Xu & Eckstein (1995) report ax = $0.83(\log_{10}x)^{2.414}$; az = ax/10, ay = ax/100 are assumed



Note graph assumes plume disperses vertically in one direction only. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Note

This sheet calculates the Level 3 remedial target for groundwater, based on the distance to the receptor or compliance located down hydraulic gradient of the source Three solution methods are included, the preferred option is Ogata Banks.

By setting a long travel time it will give the steady state solution, which should be used to calculate remedial targets.

The measured groundwater concentration should be compared with the Level 3 remedial target to determine the need for further action.
Note if contaminant is not subject to first order degradation, then set half life as 9.0E+99.

This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best desribed by an electron limited degradation such as oxidation by O2, NO3, SO4 etc than an alternative solution should be used

Calculated concentrations for distance-concentration graph

Ogata Banks
From calculation sheet

Distance	Concentration
	mg/l
0	2.7E+00
4.5	2.69E+00
9.0	2.68E+00
13.5	2.66E+00
18.0	2.65E+00
22.5	2.63E+00
27.0	2.61E+00
31.5	2.59E+00
36.0	2.56E+00
40.5	2.52E+00
45.0	2.48E+00
49.5	2.43E+00
54.0	2.39E+00
58.5	2.34E+00
63.0	2.29E+00
67.5	2.24E+00
72.0	2.19E+00
76.5	2.14E+00
81.0	2.09E+00
85.5	2.05E+00
90.0	2.00E+00

Site being assessed:	Vastern Road, Reading
Completed by:	Dr. Adrian King
Date:	########
Version:	1

APPENDIX 3

EXTENDED PHASE 1 HABITAT SURVEY

Extended Phase 1 Habitat Survey Report

55 Vastern Road, Reading, RG1 8BU

April 2018

Client details	Berkeley Homes (Oxford and Chiltern) Limited	Berkeley House, Farnham Lane, Farnham Royal, SL2 3RQ	
Date of Survey work	11/04/2018	**Date of Report**	27/04/2018
Version	280219	**Author**	Robert Gray

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	Name	Position	Date
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Reviewed	Iain Corbyn MA (Oxon) MSc CEnv MCIEEM	Principal Ecologist	27/04/2018

This report has been written in accordance with guidelines set out by British Standard and Chartered Institute of Ecology and Environmental Management.

Signature of project supervisor 

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1 Summary

1.1 Introduction

1.1.1 Ecoconsult Ltd has been commissioned to carry out an extended phase 1 habitat survey, daytime bat inspection survey and ecological data search for 55 Vastern Road, Reading.

1.2 Summary of survey work

1.2.1 Ecoconsult is not aware of any other ecological reports relating to the site.

1.2.2 The following work has been undertaken to inform the report.

- phase 1 habitat survey
- daytime bat inspection survey
- desk study

1.3 Summary of findings

1.3.1 Common habitats were recorded on site.

1.3.2 The River Thames (UK Biodiversity Action Plan Priority Habitat) is located within 5m from the northern boundary.

1.3.3 No evidence of roosting bats was located. The buildings are highly unlikely to support roosting bats.

1.3.4 Habitats on site have potential to support nesting birds.

1.4 Summary of conclusions

1.4.1 Wildlife habitats on the site are limited and of low ecological value.

1.4.2 Nesting birds will use hedgerows, scrub and trees on site to nest. Nesting birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended).

2 Introduction

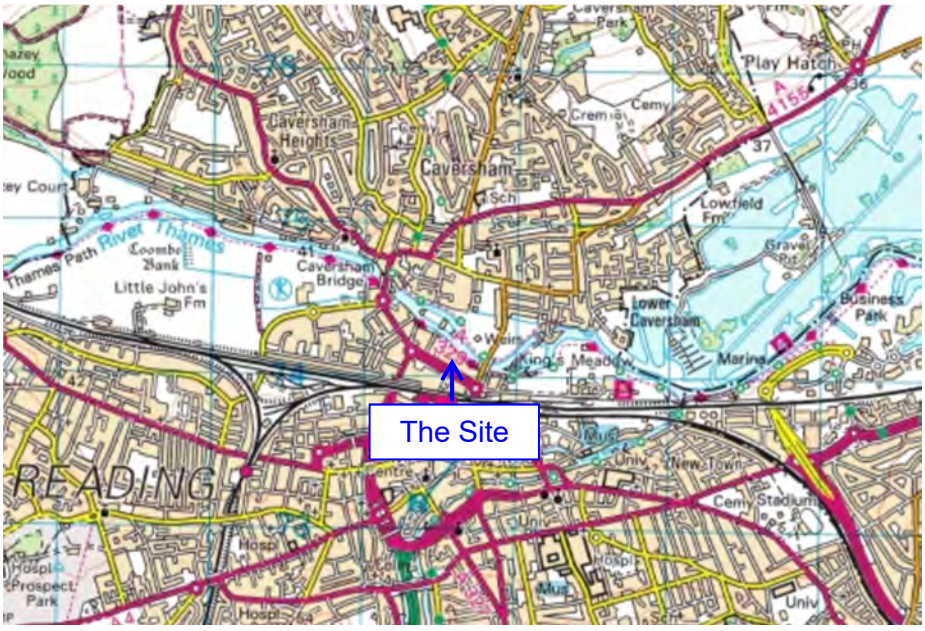
2.1 Objectives of survey

2.1.1 The objectives of the survey were:

- to determine if there are any habitats of ecological value on site
- to locate any evidence of protected species being present on site

2.2 Surrounding landscape

2.2.1 The site is located in the centre of Reading in an urban location. Land to the east, south and west is built environment dominated by commercial and residential buildings with limited open greenspace. The River Thames is located 5m north of the site beyond which lies areas of amenity grassland. Fry's Island is located 35m from the northern site boundary and supports residential and commercial properties and an area of woodland which is more than 100m from the site. The site is located at grid reference: SU 71557 74130.



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Figure 1: Site location (scale 1:50,000)

3 Methodology

3.1 Desk study

3.1.1 A data search was requested from Thames Valley Environmental Records Centre (TVERC) for the site and 1km radius from the site boundary to provide records for designated sites and protected and notable species.

3.1.2 The MAGIC website was searched to provide information regarding international statutory nature conservation sites within 5km from the site boundary.

3.1.3 The site was assessed in relation to Natural England's Sites of Special Scientific Interest (SSSI) Impact Risk Zones (IRZs).

3.1.4 Aerial photographs and 1:10,000 Ordnance Survey maps were used to search for ponds within 500m of the site.

3.2 Field surveys

Phase 1 habitat survey

3.2.1 The extended phase 1 habitat survey was carried out on 11th April 2018 and followed the methodology in *Handbook for Phase 1 Habitat Survey* (Joint Nature Conservation Committee, 2003) and *Guidelines for Baseline Ecological Assessment* (Institute of Environmental Management and Assessment, 1995).

Daytime bat inspection survey

3.2.2 A daytime survey of the buildings was carried out on 11th April 2018.

3.2.3 The daytime survey followed *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (2016).

3.2.4 A thorough search was made of the building(s) including all accessible areas and crevices for bats, their droppings, food remains or characteristic grease marks at potential exit/entrance points. The exterior of the buildings was searched, paying particular attention to window ledges or pipes where droppings can gather undisturbed, and under potential access points such as loose tiles and gaps between boarding.

3.2.5 Equipment for daytime inspection included:

- 8x32 close-focussing binoculars
- Cluson SM126 Smartlite heavy duty rechargeable torches
- fibre-optic endoscope (video inspection system: KC-150a)
- long ladder, 3 section extension (9.17m)
- telescopic ladder (3.8m)
- digital camera

3.2.6 Signs of bat activity searched for included:

- Droppings - these typically contain fragments of insect exoskeleton and crumble to dust (unlike those of small rodents, which typically become hard). Bat droppings will stick to surfaces including walls, windows and window ledges. Droppings may also become caught in spider webs below a roost site or feeding perch.
- Feeding remains - these include the discarded wings of flying invertebrates, which may accumulate under a well-used feeding perch. Some species, such as the brown long-eared bat have seasonal preference for moths of the noctuid family. Hence the accumulated wings of these moths commonly identify this bat as being present.
- Oil staining - the fur of bats may leave an oily residue on surfaces close to occupied roost sites and access/egress points.
- Smell – most bat species have an identifiable aroma while certain species, such as the noctule, are noted for their “smelly roosts” due to urine scent marking activity.
- Daytime vocalisations - these are most pronounced at larger roost sites during periods of hot weather.
- Absence of cobwebs - a well-used bat roost and its access points are typically clear of cobwebs.
- Scratching - scratch marks produced by the claws of many bats may be apparent close to the access point for a well-used roost.
- Dead bats.
- Tracks in dust.

Table 1: Timings and conditions of surveys

Date	Timings	Survey work	Weather
11/04/18	Start: 09:30 Finish: 13:00	Phase 1 survey of the site and daytime bat inspection survey	8 °C No rain Light breeze (Beaufort 2) 100% cloud

3.3 Personnel

3.3.1 The survey of the site was carried out by the following surveyor:

3.3.2 Robert Gray is a Senior Ecologist at Ecoconsult with a BSc (Hons) degree in Conservation and Environment. He has carried out bat surveys since 2006 and has extensive experience in ecological survey and monitoring techniques, protected species surveys, mitigation and licensing, and acting as ecological clerk of works. He holds the following Natural England licences:

- Natural England Licence to disturb and take bats for the purposes of science and education or conservation bat survey licence (no. 2015-12641-CLS-CLS).
- Natural England Level 1 Licence to survey great crested newts for scientific (including research) or educational purposes (no. 2015-18636-CLS-CLS).

3.4 Constraints

3.4.1 Access was unavailable to the interior of buildings 2, 3, 4 and 5 and a shallow loft void associated with Building 1a.

4 Survey results

4.1 Designated Sites

Statutory Nature Conservation Sites

4.1.1 There are no international nature conservation sites located within 5km from the site boundary.

4.1.2 There are no national nature conservation sites located within 2km from the site boundary.

4.1.3 The site does not lie within a Site of Special Scientific Interest Impact Risk Zone.

Non-Statutory Nature Conservation Sites

4.1.4 The following non-statutory nature conservation sites are located within 1km from the site boundary:

- Cow Lane Depot Local Wildlife Site (LWS) is located 855m southwest of the site.
- The Warren Woodlands Complex Local Wildlife Site (LWS) is located 910m northwest of the site.
- The Coal, Kennetmouth and Kings Meadow East Local Wildlife Site (LWS) is located 920m east of the site.

Biodiversity Opportunity Area

4.1.5 The site does not lie within a Biodiversity Opportunity Area.

4.2 Habitats present on site

4.2.1 The site is dominated by building and hard-standing. The following habitat types are present on site:

- poor semi-improved grassland
- scattered scrub
- intact species poor hedgerow
- individual trees
- building
- hardstanding

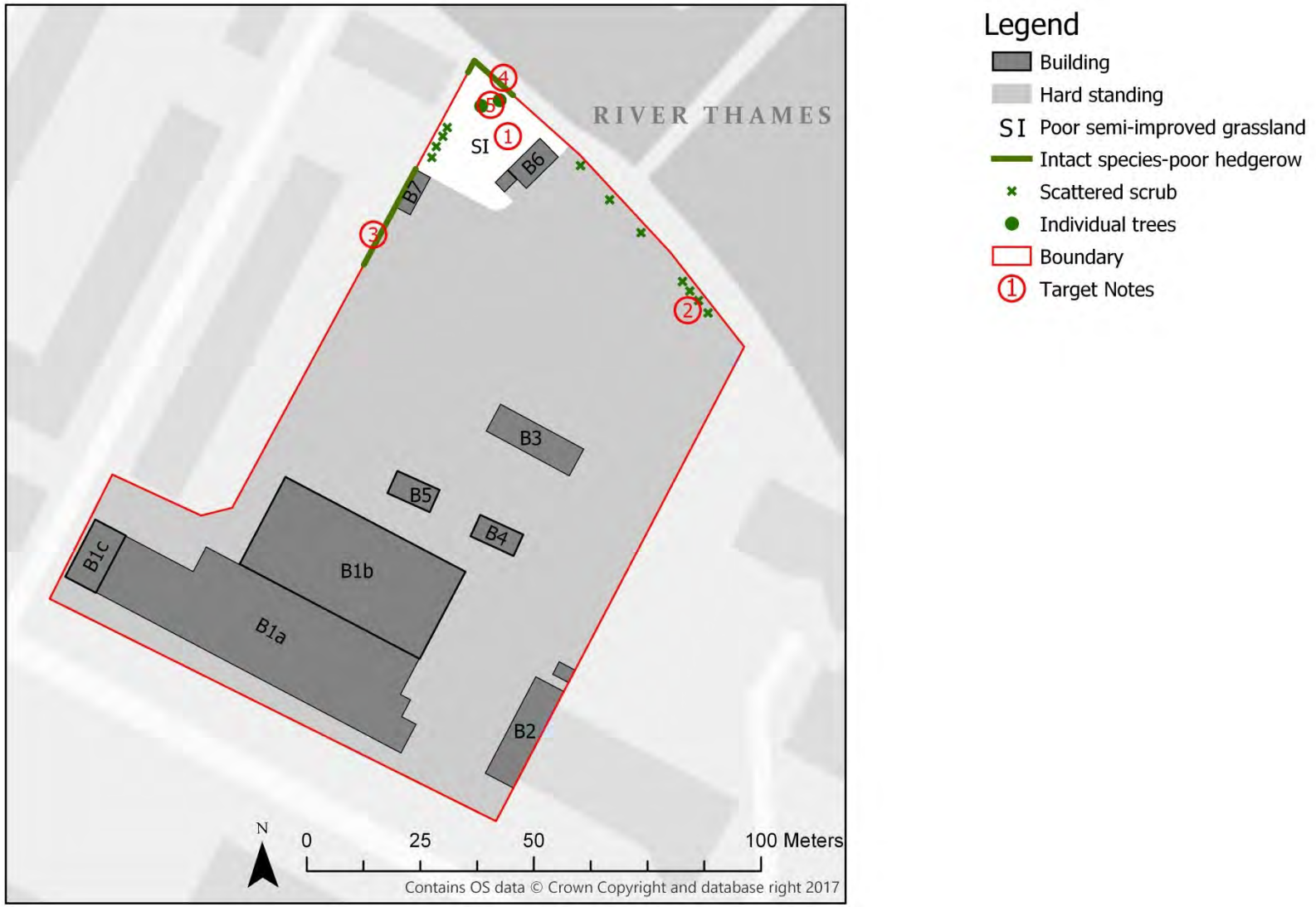


Figure 2: Phase 1 map

4.3 Target note 1: Poor semi-improved grassland

4.3.1 A small area of poor semi-improved grassland has developed from what was previously regularly mown amenity grassland (last cut July 2017) in the northwest corner of the site (see Figure 2, Target note 1 and Plate 1 below). Please refer to Table 2 below for botanical species list.

Table 2: Target note 1 botanical species list

Scientific name	Common name	DAFOR
Achillea millefolium	Yarrow	LA
Bellis perennis	Daisy	LF
Festuca arundinacea	Tall fescue	F
Festuca rubra agg.	Red fescue agg.	LF
Geranium dissectum	Cut-leaved crane's-bill	F
Holcus lanatus	Yorkshire fog	O
Hypochaeris radicata	Common cat's-ear	LF
Lolium perenne	Perennial rye-grass	LA
Luzula campestris	Field woodrush	LA
Medicago arabica	Spotted medick	LF
Plantago lanceolata	Ribwort plantain	F
Ranunculus bulbosus	Bulbous buttercup	O

DAFOR: D=Dominant; A=Abundant; O=Occasional; F=Frequent, R=Rare; L=Locally

4.4 Target note 2: Scattered scrub

4.4.1 Small linear sections of scattered butterfly-bush *Buddleja davidii* scrub are present partway along the northern boundary of the site (see Figure 2, Target note 2 and Plate 2 below).

4.5 Target note 3: Intact species-poor hedgerow

4.5.1 A 30m section of intact species-poor hedgerow runs partway along the western boundary (see Figure 2, Target note 3 and Plate 3 below). The hedgerow is dominated by butterfly-bush with a field-layer dominated by common ivy *Hedera helix*.

4.6 Target note 4: Intact species-poor hedgerow

4.6.1 A 20m section of intact species-poor hedgerow runs partway along the northern boundary (see Figure 2, Target note 4 and Plate 4 below). The hedgerow is dominated by butterfly-bush and has been planted above the poor semi-improved grassland.

4.7 Target note 5: Individual trees

4.7.1 Two mid-aged whitebeam *Sorbus aria* have been planted above the poor semi-improved grassland in the northwest corner of the site (see Figure 2, Target note 5 and Plate 5 below). The mid-aged trees do not support suitable bat roosting features.

4.8 Buildings

4.8.1 Buildings present on site include disused offices, sub-stations, garages and temporary prefabricated structures. Please refer to building locations in Figure 2 above and descriptions in Table 3 below.

Table 3: Building descriptions

4.8.2

	Description	Photo
B1a	A large structure that was up until May 2017 used as offices. The exterior of the structure is well-sealed with no obvious access/roosting habitat for bats (see image right top). The majority of the roof is flat and felt was replaced in 2011 (see image middle right). A single pitched roof section is present in the wester section covered in corrugated metal sheeting. Roof coverings are in good condition with no obvious access for bats. A single loft void is present beneath the pitched section of roof. The void is well-sealed with no obvious access for bats. The eastern section is cluttered with water tanks and ducting (see image bottom right). The building does not provide suitable habitat to support roosting bats.	  

	Description	Photo
B1b	A large modern structure that was used as offices up until May 2017 (see image top right). The shallow pitched roof is covered in corrugated metal sheeting that is in good condition (see image middle right). The exterior of the structure is well-sealed with no obvious access/roosting habitat for bats. A single well-sealed loft void is present above a suspended ceiling. The suspended wires promote a cluttered void (see image bottom right). The structure does not provide suitable habitat to support roosting bats.	  

	Description	Photo
B1c	A brick section of building with a pitched roof covered in close fitting slates that was used as offices up until May 2017 (see image top right). The walls and roof are well-sealed. A single inaccessible shallow loft void (less than 1m height) is present. Street lighting promotes high light levels around the exterior of the building. A gap is present beneath lifted lead flashing (see Image middle right) with an additional gap between timber soffit and wall (see Image bottom right). No evidence of roosting bats was recorded when closely viewed closely.	  
B2	A flat roofed brick building used as an electricity substation (see image right). The roof and walls are well-sealed with no obvious access for bats. A separate small substation is present to the north which is equally well-sealed with a shallow sloping roof. Access was unavailable to the interior of these structures. The exterior of the structures does not provide suitable habitat to support roosting bats.	

	Description	Photo
B3	A flat roofed brick building used as an electricity substation (see image right). The roof and walls are well-sealed with no obvious access for bats. Access was unavailable to the interior of the structure. The exterior of the structure does not provide suitable habitat to support roosting bats.	
B4	A flat roofed brick building used as an electricity substation (see image top right). The roof and walls are well-sealed with no obvious access for bats. Access was unavailable to the interior of the structure. A gap is present between plastic fascia and brick walls on the southeast and northwest elevations that was heavily cobwebbed (see image bottom right).	 
B5	A flat roofed brick building used as an electricity substation (see image right). The roof and walls are well-sealed with no obvious access for bats. Access was unavailable to the interior of the structure.	

	Description	Photo
B6	A double concrete garage with flat roof and a metal bicycle shed (see Image right). The structures do not provide suitable bat roosting habitat.	
B7	A temporary prefabricated structure previously used as a workshop with open fronted smoking room (see image right). The structure does not provide suitable bat roosting habitat.	

Species

4.9 Badger

4.9.1 The Thames Valley Environmental Records Centre currently holds a single record for a dead badger within 1km from the site.

4.9.2 No evidence of badgers was recorded during the survey. The majority of the site supports building/hard-standing and therefore it is highly unlikely badgers will use the site for foraging/commuting.

4.10 Bats

4.10.1 The Thames Valley Environmental Records Centre currently holds multiple records for five confirmed species of bats within 1km from the site. None of the records originated from within the site boundary.

4.10.2 No evidence of roosting bats was recorded during the daytime bat inspection survey. The majority of surveyed sections of buildings on site do not support any potential bat roosting features. No evidence of use by bats was recorded in gaps associated with B1c and B4 and these were cobwebbed at the time of survey.

4.10.3 Access was unavailable to the interior of buildings 2, 3, 4 and 5.

4.10.4 The two whitebeam trees do not support potential bat roosting features.

4.10.5 Bats could use the boundaries of the site for foraging/commuting, particularly the northern boundary adjacent to the River Thames. However the majority of the site supports poor foraging habitat.

4.11 Otter

4.11.1 The Thames Valley Environmental Records Centre currently holds two otter records within 1km from the site boundary. One of the records is for a visual sighting of an adult otter more than 200m east of the site. There are no records for holts within 1km from the site.

4.11.2 The northern site boundary is located within 5m of The River Thames and there is a wall along the northern boundary of the site and the river has reinforced banks.

4.11.3 The section of river adjacent to the site and within 100m of the site is heavily disturbed, including high light levels with very limited areas of semi-natural habitat and therefore is highly unlikely to support an otter holt.

4.12 Water vole

4.12.1 The Thames Valley Environmental Records Centre does not currently hold any water vole records within 1km from the site boundary.

4.12.2 The northern site boundary is located within 5m of The River Thames. The section of river adjacent to the site and within 100m of the site is heavily disturbed with reinforced banks and very limited areas of semi-natural habitat and therefore is highly unlikely to support water vole.

4.13 Great crested newt

4.13.1 The Thames Valley Environmental Records Centre currently holds a single great crested record for View Island located more than 400m east of the site. The record is for a positive eDNA record. Additional amphibian records include smooth newt, common frog and common toad.

4.13.2 There are no ponds within the site boundary or located within 250m of the site. A pond is located within 500m of the site on View Island. Great crested newts will not be affected by the proposals.

4.14 Reptiles

4.14.1 The Thames Valley Environmental Records Centre currently holds three old slow-worm records within 1km from the site boundary. None of the records originated from inside the site boundary.

4.14.2 The site does not provide suitable reptile habitat. The small area of poor semi-improved grassland located in the northwest corner of the site had up until July 2017 been managed as amenity grassland and is isolated from nearby areas of suitable reptile habitat.

4.15 Nesting birds

4.15.1 The Thames Valley Environmental Records Centre currently holds records for ten notable/protected bird species within 1km from the site.

4.15.2 No Red Listed Birds of Conservation Concern were recorded on the site during the survey. The following Amber Listed Birds of Conservation Concern were recorded on site: dunnock.

4.15.3 The site provides suitable habitat for nesting birds within hedgerows, individual trees and buildings.

4.16 Invertebrates

4.16.1 The Thames Valley Environmental Records Centre currently holds records for four species of notable/protected invertebrates within 1km from the site boundary. None of the records originated from inside the site boundary.

4.16.2 The habitats within the site are common and widespread, and therefore are only likely to support common and widespread species of invertebrates.

4.17 Plants

4.17.1 The Thames Valley Environmental Records Centre does not currently hold any notable/protected plant records within 1km from the site boundary.

4.17.2 No protected/notable plant species were recorded within the site boundary.

5 Conclusions and recommendations

5.1.1 A desk study, extended phase 1 habitat survey and daytime bat survey have been undertaken 55 Vastern Road, Reading.

5.2 Nature conservation sites

5.2.1 There are no likely impacts to any statutory or non-statutory nature conservation sites.

5.3 Habitats

5.3.1 The site supports habitats that are common and widespread in the local area. No UK Biodiversity Action Plan (UKBAP) Priority habitats are present within the site.

5.3.2 The site is located within 5m of The River Thames (UK Biodiversity Action Plan Priority habitat).

5.4 Legally protected species

Bats

5.4.1 No evidence of roosting bats was located in the buildings. Electricity substation buildings 2, 3, 4 and 5 were inaccessible due to health and safety concerns. It is highly unlikely that these buildings support bats and no further surveys are considered necessary.

Nesting birds

5.4.2 The site provides suitable habitat for nesting birds within hedgerows, individual trees and buildings.

5.4.3 Nesting birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). Disturbance to nesting birds can be avoided by carrying out works and/or by excluding birds from suitable nest sites outside the main nesting season. The main nesting season is generally March to August inclusive. However, birds may nest outside the main nesting period, in which case, works that would result in nest disturbance will cease until birds have fledged. Alternatively a suitably qualified ecologist could be employed to determine presence/absence of nesting birds and advise as necessary.

5.5 Opportunities for habitat creation

5.5.1 Opportunities should be sought to realise a net gain for biodiversity through the proposed development through the creation of new habitats. These will be developed having regard to The Reading Biodiversity Action Plan.

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