Energy, Environment & Design

Direct Tel: 02079287888
Direct Email: kerstin.hagenhoff@watermangroup.com

Our Ref: EED13325-101.R.1.1.2.KH
Your Ref: 2013/3880/P

Date: 17 November 2014

Head of Development Management
Planning Department
London Borough of Camden
5 Pancras Square
London
N1C 4AG

Dear Sir/Madam

**RE: 2013/3880/P Condition 11 – Interim Update on Site Investigation at One Bedford Avenue**

We are writing with respect to planning application 2013/3880/P relating to 251-258 Tottenham Court Road and 1 Bedford Avenue, London, W1T 7RB and specifically condition 11b which states:

*Before development commences:*
*(a) a written programme of ground investigation for the presence of soil and groundwater contamination and landfill gas shall be submitted to and approved by the local planning authority in writing; and*

*(b) following the approval detailed in paragraph (a), an investigation shall be carried out in accordance with the approved programme and the results and a written scheme of remediation measures [if necessary] shall be submitted to and approved by the local planning authority in writing. The remediation measures shall be implemented strictly in accordance with the approved scheme and a written report detailing the remediation shall be submitted to and approved by the local planning authority in writing prior to occupation.*

A ground investigation specification 'Geotechnical and Geo-environmental Specification – Seeking discharge of part (a) of Planning Condition 11 with reference to decision notice 2013/3880/P (reference EED13325-101.S.1.1.4.KH)' was issued on the 23 July 2014 in response to condition 11(a). The specification was approved by email informally on the 10 September and formally on the 22 September 2014.

Site Investigation

A site investigation was undertaken by Soil Consultants who were instructed by GVA Second Wall on behalf of Exemplar Properties (Bedford) Ltd between the 11 September and the 25 September 2014.

The investigation varied from the proposed and agreed site investigation strategy due to difficult ground conditions and access constraints (further details of are set out in Table 1 below). Table 1 outlines the proposed exploratory holes designations agreed prior to the start of the site investigation and exploratory locations achieved during the site investigation. The proposed exploratory hole location plan and a draft site investigation exploratory hole location plan are attached.

Table 1: Ground investigation strategy

| Layer / Target feature | Proposed Exploratory Holes | Groundwater Wells | Gas Wells | Comments |
|---|---|---|---|---|
| Lynch Hill Gravel Member Gravel | BH1 | installed | installed | Borehole completed |
| Lynch Hill Gravel Member Gravel | BH2 | installed | installed | Borehole completed |
| Lynch Hill Gravel Member Gravel | BH3 | - | - | Not drilled |
| Made Ground | TP2 | - | - | Not drilled |
| Made Ground | TP4 | - | - | Not completed – concrete to 1950mm below ground level |
| Made Ground | TP8 | - | - | Not completed |
| Made Ground | TP10 | - | - | Not completed – concrete >600mm |
| Made Ground | TP12 | Not applicable | Not applicable | Trial pit completed |
| Structural Investigation | CH2 | Not applicable | Not applicable | Location not relevant to ground investigation |
| Structural Investigation | SI1 | Not applicable | Not applicable | Location not relevant to ground investigation |

Ground Conditions Encountered

Ground conditions encountered were described as Made Ground over Lynch Hill Gravel Member and London Clay Formation.

The basement slab encountered was reported to be up to 1950mm thick thus preventing effective soil sampling by hand digging.

Parts of the basement were reportedly underlain by water-filled vaults or chambers up to 6m in depth.

Both borehole BH1 and borehole BH2 were drilled from ground level through a basement void.

Environmental Sampling

Shallow soil samples were collected from exploratory positions. One round of groundwater sampling has been undertaken to date. Soil and groundwater samples were sent to an UKAS accredited laboratory for chemical analysis of a suite of contaminants likely to be present at the Site.

Six rounds of ground gas monitoring are scheduled however results are currently awaited.

The chemical test results are appended.

Preliminary Quantitative Risk Assessment

A preliminary review of the data shows soil results are generally compliant with residential end-use criteria with the exception of a number of PAHs that exceed their respective screening levels at borehole BH2, 3.55m below ground level.

Chemical laboratory data of the first groundwater monitoring round were compared against UK Drinking Water Supply Standards and the results were compliant with the screening levels.

A ground gas assessment has not yet been undertaken.

Remaining Environmental Monitoring

Soil Consultants are scheduled to undertake one further ground water monitoring visit at the Site on Thursday, 20 November 2014. The samples will be sent to the UKAS accredited laboratory on a standard 10 day turnaround. Results of a further five rounds of monthly ground gas monitoring are awaited. The final ground gas monitoring visit is anticipated for February 2015.

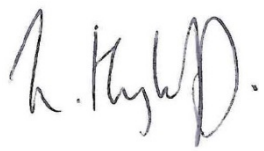
Conclusions

The assessment so far demonstrates an absence of significant contamination at the Site.

Recommendations regarding any remediation measures, if necessary, will be made once all the data are available for review and will be included in the final Environmental Quantitative Risk Assessment report that is anticipated to be issued towards the end of February 2015. Should any further ground investigation works be recommended they will be carried out following the issue of the report and during the phase 2 demolition works (which involve below ground works) scheduled for May 2015.

If you have any queries regarding the above or would like to discuss the results, please do not hesitate to contact me.

Yours sincerely

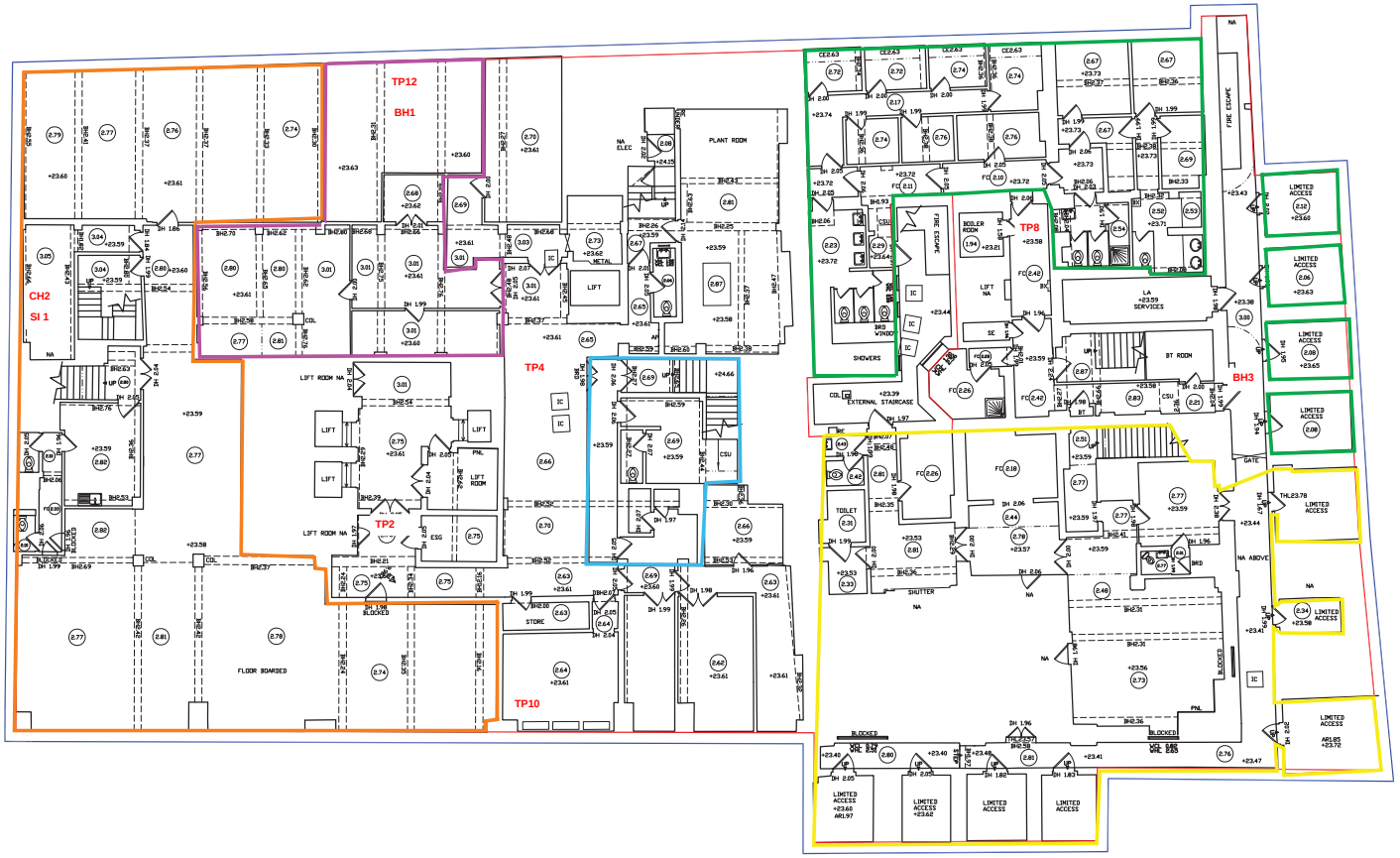


**Kerstin Hagenhoff**
**Senior Consultant**
**For and On Behalf of Waterman Energy, Environment & Design Ltd**

Attached:
Proposed exploratory hole location plan
Exploratory hole location plan
Exploratory hole logs
Laboratory Analysis Certificates – Soils
Laboratory Analysis Certificates - Groundwater

| GEA | GIA |
|---|---|
| 15,82.08m² | 1,475.78m² |
| 17,029.37ft² | 15,885.16ft² |

| | |
|---|---|
| Ask Electronics: | 09 Dec 2014 (notice to be served) |
| Time Out: | 12 Aug 2014 |
| Mr Malik - 251-256 TCR: | 09 Dec 2014 |
| Mr Malik - 257-258 TCR: | 09 Dec 2014 |
| St Giles Hotel: | 09 Dec 2014 (notice to be served) |




This drawing should not be scaled.

The contractor is to check all dimensions on site and inform the contract administrator/project manager of any discrepancies.

All work is to comply in every aspect with the Building Regulations, Codes of Practice and British Standards.

This drawing is to be read in conjunction with all other contract drawings and specifications.



| rev | date | details | by |
|---|---|---|---|
| A | 121012 | ROOMS PREVIOUSLY INACCESSIBLE SURVEYED. | JL |

ABBREVIATIONS

| | | | |
|---|---|---|---|
| AP | Access Panel | LV | Low Volt |
| B | Brick | L | Light |
| BAL | Balcony | LP | Lamp Post |
| BB | Belisha Beacon | LA | Limited Access |
| BD | Bollard | MKR | Marker |
| BH | Borehole or Beam Height | NA | Not Accessible |
| BRD | Boarded | OP | Overlay Point |
| BP | Brick Pier | OHC | Overhead Cables |
| BRV | Brick Retaining Wall | P | Post |
| BX | Boxing | PNL | Panel |
| BT | British Telecom | PF | Picket Fence |
| BW | Brick Wall | PIT | Trial Pit |
| BWF | Barbed Wire Fence | PL | Pavement Light |
| C | Concrete | PM | Parking Meter |
| CAB | Cabinet | PRF | Post & Rail Fence |
| CE | Ceiling Height | PWF | Post & Wire Fence |
| CBW | Concrete Block Wall | R | Render |
| CU | Cupboard | RAD | Radiator |
| CL | Cover Level | RE | Recess |
| CLF | Chain Link Fence | RH | Ridge Height |
| COL | Column | RS | Road Sign |
| CPF | Concrete Panel Fence | RWP | Rain Water Pipe |
| CPS | Concrete Paving Slabs | SG | Secondary Glazing |
| CRW | Concrete Retaining Wall | SV | Stop VALVE |
| CSU | Ceiling Slopes Up | SL | Skylight |
| CTV | Cable Television | SP | Soil Pipe |
| CW | Concrete Wall | SPS | Stone Paving Slabs |
| DBH | Door Beam Height | SR | Service Riser |
| D | Door | SV | Shop Window |
| DHL | Door Head Level | SVS | Surface Water Sewer |
| DV | Dumb Waiter | TCP | Tactile Paving |
| EC | Electricity Cover | T | TILE |
| EH | Eave Height | TB | Telephone Box |
| EP | Electricity Pole | TL | Traffic Light |
| ESG | Electricity Switch Gear | UJ | Underside of Roof Joist |
| FC | False Ceiling | UR | Underside of Ridge Board |
| F/E | Fire Escape | UWP | Underside of Wall Plate |
| FH | Fire Hydrant | V | Vent |
| FL | Floor Level | VP | Vent Pipe |
| FP | Fireplace | W | Window |
| GZ | Glazing | WL | Water Level |
| GY | Gully | WM | Water Meter |
| GV | Gas Valve | WMF | Wire Mesh Fence |
| IC | Inspection Cover | WPF | Wooden Panel Fence |
| IL | Invert Level | WSL | Window SIL Level |
| IRF | Iron Railing Fence | WHL | Window Head Level |
| | | WRW | Wooden Retaining Wall |

Top
Banks
Bottom
Fences
Change in Surface
Edge of Vegetation
OS Data
3.28 Floor to Ceiling Height
Gate
Survey Station
+10.60 Floor Level
Tree

STATION CO-ORDINATE TABLE

| Ref. | East | North | Elevation |
|---|---|---|---|
| 1 | 529718.624 | 181548.321 | - |
| 2 | 529729.414 | 181531.458 | - |
| 3 | 529746.319 | 181501.634 | 26.379 |
| 4 | 529793.151 | 181501.150 | 26.438 |
| 5 | 529805.703 | 181508.847 | 26.612 |
| 6 | 529775.576 | 181543.717 | - |

NOTES

1. ALL LEVELS SHOWN ARE RELATED TO ORDNANCE SURVEY GPS DATUM.
2. ALTHOUGH CARE HAS BEEN TAKEN, DUE TO ACCESS LIMITATIONS ALL HIGH LEVEL DETAIL HAS BEEN SURVEYED REMOTELY AND NOT CHECKED BY PHYSICAL MEASUREMENTS.
4. ALL CRITICAL MEASUREMENTS MUST BE CHECKED / VERIFIED.
5. ALL CO-ORDINATES SHOWN RELATE TO AN ORDNANCE SURVEY DERIVED GRID.

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client
The Bedford Estate c/o McAslan

project
251 - 258 TOTTENHAM COURT RD. & 1 BEDFORD AVENUE

drawing
BASEMENT FLOOR PLAN

| drawn | checked | proj./drawing no. | rev. |
|---|---|---|---|
| | | EL01 | |

| scale at A1 | date |
|---|---|
| 1:100 | MAY 2011 |

| GEA | GIA |
|---|---|
| 15,82.08m² | 1,475.78m² |
| 17,029.37ft² | 15,885.16ft² |

| | |
|---|---|
| Ask Electronics: | 09 Dec 2014 (notice to be served) |
| Time Out: | 12 Aug 2014 |
| Mr Malik - 251-256 TCR: | 09 Dec 2014 |
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| St Giles Hotel: | 09 Dec 2014 (notice to be served) |


NOTES

1. ALL LEVELS SHOWN ARE RELATED TO ORDNANCE SURVEY GPS DATUM.
2. ALTHOUGH CARE HAS BEEN TAKEN, DUE TO ACCESS LIMITATIONS AT HIGH LEVEL DETAIL HAS BEEN SURVEYED REMOTELY AND NOT CHECKED BY PHYSICAL MEASUREMENTS.
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| rev | date | details | by |
|---|---|---|---|
| A | 131212 | ROOMS PREVIOUSLY INACCESSIBLE SURVEYED | A |

client: The Bedford Estate c/o McAslan

project: 251 - 258 TOTTENHAM COURT RD. & 1 BEDFORD AVENUE

drawing: BASEMENT FLOOR PLAN

| drawn | checked | job / drawing no. | rev. |
|---|---|---|---|
| scale at A1: 1:100 | date: MAY 2011 | EL01 | |

| Site & Location: | **One Bedford Avenue**<br>**Bedford Avenue, Camden, London WC1B 3AU** | Borehole No: | **BH1** |
|---|---|---|---|
| Client: | **Exemplar Properties (Bedford) Ltd** | Coords (E/N): 529772.00 - 181542.00 | Sheet 1 of 3 |
| Engineer: | **Waterman Structures Ltd** | Ground Level (m): 26.75 | Report No: 9661/JRCB |

| Progress & Observations | Samples & Tests Type | Samples & Tests Depth (m) | Field Test Results | Strata Depth (m) | Strata Level (m) | Legend | Strata Description | Backfill / Installation |
|---|---|---|---|---|---|---|---|---|
| BH commenced: 11/09/2014 | | | | | | | ASPHALT [100mm] over reinforced CONCRETE | |
| BH/casing dia: 150mm | | | | 0.40 | 26.35 | | Basement VOID | |
| | | | | 3.15 | 23.60 | | CONCRETE with 50mm bituminous layer at 3.35m | |
| | | | | 3.55 | 23.20 | | MADE GROUND: soft dark brown/grey, brown and pale brown slightly silty gravelly clay with brick, concrete fragments and occasional ash. Locally sandy | |
| | E | 3.70 | | | | | | |
| | E | 4.05 | | | | | | |
| | B | 4.05 | | | | | *...slight hydrocarbon odour* | |
| | SPT/S | 4.05 | N=4<br>N60=4 | | | | | |
| | D | 4.75 | | | | | | |
| | D | 5.05 | | | | | | |
| | SPT/S | 5.05 | N=3<br>N60=3 | | | | | |
| Water inflow at 5.90m ['fast']; sealed at 7.65m | | | | 5.90 | 20.85 | | Dense becoming medium dense brown and brown/orange sandy to very sandy fine to coarse, subangular to subrounded flint GRAVEL. Locally grades to gravelly sand | |
| | E | 6.05 | | | | | | |
| | SPT/C | 6.05 | N=31 | | | | | |
| | B | 6.05 | N60=31 | | | | | |
| Water added to assist drilling between 5.90m and 7.40m | | | | | | | | |
| | SPT/C | 7.05 | N=21 | | | | | |
| | B | 7.05 | N60=21 | | | | | |
| | | | | 7.40 | 19.35 | | Stiff brown becoming grey fissured slightly silty CLAY with orange/ brown staining in upper levels and occasional partings of pale grey silt. Rare pyrite nodules, selenite crystals and shell fragments | |
| | D | 7.55 | | | | | | |
| BH cased to 7.90m | | | | | | | | |
| | D | 7.95 | | | | | | |
| | D | 8.05 | | | | | | |
| | SPT/S | 8.05 | N=25<br>N60=25 | | | | | |
| End of shift: 11/09/2014<br>BH depth: 8.50m<br>Casing depth: 7.65m<br>Water depth: Dry<br>Start of shift: 15/09/2014<br>Water depth: Dry | | | | | | | | |
| | D | 9.00 | | | | | | |
| Pressuremeter test at 9.80m depth | | | | | | | | |
| | | | | 10.00 | 16.75 | | Continued on next sheet | |



Key: U = Undisturbed B = Bulk D = Small disturbed W = Water E = glass jar & plastic tub SPT/S = split spoon SPT/C = solid cone HV = Hand Vane [kPa]

PP = Pocket Penetrometer [kg/cm2] PID = Photo Ionisation Detector [ppmv] | Borehole type: Cable Percussion

Remarks :- Self-boring pressuremeter tests carried out by Cambridge Insitu at at 9.80m, 15.30m, 20.00m and 25.00m

Borehole No: **BH1**

[* = full SPT penetration not achieved - see summary sheet]

| Site & Location: | **One Bedford Avenue**<br>**Bedford Avenue, Camden, London WC1B 3AU** | | Borehole No: | **BH1** |
|---|---|---|---|---|
| Client: | **Exemplar Properties (Bedford) Ltd** | Coords (E/N): | 529772.00 - 181542.00 | Sheet 2 of 3 |
| Engineer: | **Waterman Structures Ltd** | Ground Level (m): | 26.75 | Report No: 9661/JRCB |

| Progress & Observations | Samples & Tests Type | Samples & Tests Depth (m) | Field Test Results | Strata Depth (m) | Strata Level (m) | Legend | Strata Description | Backfill / Installation |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Stiff grey fissured slightly silty CLAY with occasional partings of pale grey silt and small pockets of fine sand. Rare pyrite nodules and shell fragments | |
| | U | 10.55 | | | | | | |
| Water inflow at 11.55m ['seepage']; not sealed<br>Chiselling on claystone from 11.55m to 11.70m for 0.5hrs | D | 11.50 | | | | | ....claystone nodule between 11.55m and 11.70m | |
| | D | 12.05 | | | | | | |
| | SPT/S | 12.05 | N=26<br>N60=26 | | | | | |
| | D | 13.00 | | | | | | |
| | U | 13.55 | | | | | | |
| | D | 14.50 | | | | | | |
| End of shift: 15/09/2014<br>BH depth: 14.80m<br>Casing depth: 7.90m<br>Water depth: Dry<br>Start of shift: 16/09/2014<br>Water depth: Dry<br>Pressuremeter test at 15.30m depth | | | | 15.00 | 11.75 | | Very stiff grey fissured slightly silty CLAY occasional partings of pale grey silt. Locally silty with rare pyrite nodules | |
| | D | 16.05 | | | | | | |
| | SPT/S | 16.05 | N=32<br>N60=32 | | | | | |
| | D | 17.00 | | | | | | |
| | U | 17.55 | | | | | | |
| | | | | 18.00 | 8.75 | | Very stiff grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty with rare pyrite nodules | |
| | D | 18.50 | | | | | | |
| | SPT/S | 19.05 | N=38 | | | | | |
| | D | 19.05 | N60=38 | | | | | |
| Pressuremeter test at 20.00m depth | | | | 20.00 | 6.75 | | Continued on next sheet | |



Key: U = Undisturbed B = Bulk D = Small disturbed W = Water E = glass jar & plastic tub SPT/S = split spoon SPT/C = solid cone HV = Hand Vane [kPa]

PP = Pocket Penetrometer [kg/cm2] PID = Photo Ionisation Detector [ppmv] | Borehole type: Cable Percussion

Remarks :- Self-boring pressuremeter tests carried out by Cambridge Insitu at at 9.80m, 15.30m, 20.00m and 25.00m

Borehole No: **BH1**

[* = full SPT penetration not achieved - see summary sheet]

| Site & Location: | **One Bedford Avenue**<br>**Bedford Avenue, Camden, London WC1B 3AU** | Borehole No: | **BH1** |
|---|---|---|---|
| Client: | **Exemplar Properties (Bedford) Ltd** | Coords (E/N): 529772.00 - 181542.00 | Sheet 3 of 3 |
| Engineer: | **Waterman Structures Ltd** | Ground Level (m): 26.75 | Report No: 9661/JRCB |

| Progress & Observations | Samples & Tests Type | Samples & Tests Depth (m) | Field Test Results | Strata Depth (m) | Strata Level (m) | Legend | Strata Description | Backfill / Installation |
|---|---|---|---|---|---|---|---|---|
| Water inflow at 20.00m ['seepage']; not sealed | | | | | | | | |
| | D | 20.50 | | | | | Very stiff grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty with rare pyrite nodules | |
| | U | 21.05 | | | | | | |
| | D | 22.00 | | 22.00 | 4.75 | | Very stiff grey fissured silty CLAY occasional partings of pale grey silt. Locally sandy with pockets/bands of fine grey sand | |
| | D | 22.55 | | | | | | |
| | SPT/S | 22.55 | N=44<br>N60=44 | | | | | |
| | D | 23.50 | | | | | | |
| | D | 23.90 | | 23.80 | 2.95 | | Very stiff brown, blue/grey and red/brown mottled slightly silty CLAY with occasional partings of silt | |
| Pressuremeter test at 25.00m depth | D | 24.50 | | | | | | |
| | U | 24.55 | | | | | | |
| BH complete: 16/09/2014<br>BH depth: 25.00m<br>Casing depth: 7.90m<br>Water depth: Dry | | | | 25.00 | 1.75 | | End of borehole at 25.00 m | |



Key: U = Undisturbed B = Bulk D = Small disturbed W = Water E = glass jar & plastic tub SPT/S = split spoon SPT/C = solid cone HV = Hand Vane [kPa]

PP = Pocket Penetrometer [kg/cm2] PID = Photo Ionisation Detector [ppmv] | Borehole type: Cable Percussion

Remarks :- Self-boring pressuremeter tests carried out by Cambridge Insitu at at 9.80m, 15.30m, 20.00m and 25.00m

Borehole No: **BH1**

[* = full SPT penetration not achieved - see summary sheet]

| Site & Location: | **One Bedford Avenue**<br>**Bedford Avenue, Camden, London WC1B 3AU** | Borehole No: | **BH2** |
|---|---|---|---|
| Client: | **Exemplar Properties (Bedford) Ltd** | Coords (E/N): 529788.00 - 181515.00 | Sheet 1 of 3 |
| Engineer: | **Waterman Structures Ltd** | Ground Level (m): 26.80 | Report No: 9661/JRCB |

| Progress & Observations | Samples & Tests Type | Samples & Tests Depth (m) | Field Test Results | Strata Depth (m) | Strata Level (m) | Legend | Strata Description | Backfill / Installation |
|---|---|---|---|---|---|---|---|---|
| BH commenced: 23/09/2014 | | | | 0.03 | 26.77 | | Steel GRID/MESH<br>Basement VOID | |
| BH/casing dia: 150mm | | | | | | | | |
| | | | | 3.35 | 23.45 | | CONCRETE | |
| | E | 3.55 | | 3.55 | 23.25 | | MADE GROUND: soft brown/orange slightly silty sandy gravelly to very gravelly clay with brick fragments and occasional ash | |
| | D | 3.75 | | | | | | |
| | D | 4.00 | | | | | | |
| | SPT/S | 4.00 | N>50* | | | | | |
| Chiselling on claystone from 4.35m to 4.55m for 1hrs<br>Water added to assist drilling from 4.55m to 7.00m | | | | 4.35 | 22.45 | | CONCRETE | |
| | | | | 4.55 | 22.25 | | Very dense becoming medium dense brown and brown/orange sandy to very sandy fine to coarse, subangular to subrounded flint GRAVEL. Locally grades to gravelly sand | |
| | B | 5.00 | | | | | | |
| | SPT/C | 5.00 | N>50* | | | | | |
| | E | 5.00 | | | | | | |
| Water added to assist drilling between 4.55m and 7.00m | | | | | | | | |
| | B | 6.00 | | | | | | |
| | SPT/C | 6.00 | N>50* | | | | | |
| Water inflow at 6.50m ['fast']; sealed at 7.90m | | | | | | | | |
| | SPT/C | 7.00 | N=17<br>N60=17 | | | | | |
| | | | | 7.25 | 19.55 | | Stiff brown becoming grey fissured slightly silty CLAY with orange/ brown staining in upper levels. Occasional partings of pale grey silt and small pockets of grey fine sand. Rare pyrite nodules, selenite crystals and shell fragments | |
| | D | 7.45 | | | | | | |
| | D | 7.65 | | | | | | |
| | SPT/S | 7.65 | N=21<br>N60=21 | | | | | |
| BH cased to 7.90m | | | | | | | | |
| | D | 8.50 | | | | | | |
| | U | 9.05 | | | | | | |
| | D | 10.00 | | 10.00 | 16.80 | | Continued on next sheet | |



Key: U = Undisturbed B = Bulk D = Small disturbed W = Water E = glass jar & plastic tub SPT/S = split spoon SPT/C = solid cone HV = Hand Vane [kPa]

PP = Pocket Penetrometer [kg/cm2] PID = Photo Ionisation Detector [ppmv] | Borehole type: Cable Percussion

Remarks :-

Borehole No: **BH2**

[* = full SPT penetration not achieved - see summary sheet]

| Site & Location: | **One Bedford Avenue**<br>**Bedford Avenue, Camden, London WC1B 3AU** | Borehole No: | **BH2** |
|---|---|---|---|
| Client: | **Exemplar Properties (Bedford) Ltd** | Coords (E/N): 529788.00 - 181515.00 | Sheet 2 of 3 |
| Engineer: | **Waterman Structures Ltd** | Ground Level (m): 26.80 | Report No: 9661/JRCB |

| Progress & Observations | Samples & Tests Type | Samples & Tests Depth (m) | Field Test Results | Strata Depth (m) | Strata Level (m) | Legend | Strata Description | Backfill / Installation |
|---|---|---|---|---|---|---|---|---|
| | SPT/S<br>D | 10.55<br>10.55 | N=26<br>N60=26 | | | | Stiff grey fissured slightly silty CLAY with occasional partings of pale grey silt and small pockets of fine sand. Rare pyrite nodules and shell fragments | |
| End of shift: 23/09/2014<br>BH depth: 11.00m<br>Casing depth: 7.90m<br>Water depth: Dry<br>Start of shift: 24/09/2014<br>Water depth: Dry<br>Chiselling on claystone from 11.70m to 11.85m for 0.5hrs | D | 11.50 | | | | | *....claystone nodule between 11.70m and 11.85m* | |
| | U | 12.05 | | | | | | |
| | D | 13.00 | | 13.00 | 13.80 | | Very stiff grey fissured slightly silty CLAY occasional partings of pale grey silt and silty fine sand. Locally silty with rare pyrite nodules | |
| | SPT/S<br>D | 13.55<br>13.55 | N=31<br>N60=31 | | | | | |
| | D | 14.50 | | | | | | |
| | U | 15.05 | | | | | | |
| | D | 16.00 | | | | | | |
| | SPT/S<br>D | 16.55<br>16.55 | N=35<br>N60=35 | | | | | |
| Water inflow at 17.00m ['seepage']; not sealed | | | | 16.90 | 9.90 | | Very stiff grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty with rare pyrite nodules | |
| | D | 17.50 | | | | | | |
| | U | 18.05 | | | | | | |
| | D | 19.00 | | | | | | |
| | D<br>SPT/S | 19.55<br>19.55 | N=40<br>N60=40 | | | | | |
| | | | | 20.00 | 6.80 | | Continued on next sheet | |



Key: U = Undisturbed B = Bulk D = Small disturbed W = Water E = glass jar & plastic tub SPT/S = split spoon SPT/C = solid cone HV = Hand Vane [kPa]

PP = Pocket Penetrometer [kg/cm2] PID = Photo Ionisation Detector [ppmv] | Borehole type: Cable Percussion

Remarks :-

Borehole No: **BH2**

[* = full SPT penetration not achieved - see summary sheet]

| Site & Location: | **One Bedford Avenue**<br>**Bedford Avenue, Camden, London WC1B 3AU** | Borehole No: | **BH2** |
|---|---|---|---|
| Client: | **Exemplar Properties (Bedford) Ltd** | Coords (E/N): 529788.00 - 181515.00 | Sheet 3 of 3 |
| Engineer: | **Waterman Structures Ltd** | Ground Level (m): 26.80 | Report No: 9661/JRCB |

| Progress & Observations | Samples & Tests Type | Samples & Tests Depth (m) | Field Test Results | Strata Depth (m) | Strata Level (m) | Legend | Strata Description | Backfill / Installation |
|---|---|---|---|---|---|---|---|---|
| | D | 20.50 | | | | | Very stiff grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty with rare pyrite nodules | |
| | U | 21.05 | | | | | | |
| | D | 22.00 | | 21.90 | 4.90 | | Very stiff grey fissured silty CLAY occasional partings of pale grey silt. Locally very silty and sandy with pockets/bands of fine grey sand | |
| | SPT/S | 22.55 | N=42 | | | | | |
| | D | 22.55 | N60=42 | | | | | |
| | D | 23.75 | | | | | | |
| | D | 24.45 | | 24.35 | 2.45 | | Very stiff brown, blue/grey and red/brown mottled slightly silty CLAY with partings of silt | |
| | D | 24.55 | | | | | | |
| End of shift: 24/09/2014<br>BH depth: 25.00m<br>Casing depth: 7.90m<br>Water depth: Dry<br>Start of shift: 25/09/2014<br>Water depth: Dry | SPT/S | 24.55 | N=60<br>N60=59 | | | | | |
| | D | 25.75 | | | | | | |
| | D | 26.30 | | 26.25 | 0.55 | | Very stiff grey and brown silty locally sandy CLAY with occasional bands/pockets of grey silty fine sand | |
| | SPT/S | 26.55 | N>50* | | | | | |
| | D | 26.55 | | | | | | |
| Water inflow at 27.75m ['fast']; not sealed | D | 27.80 | | | | | | |
| | D | 28.25 | | | | | | |
| | SPT/S | 28.55 | N=71 | | | | | |
| | D | 28.55 | N60=70 | | | | | |
| BH complete: 25/09/2014<br>BH depth: 29.00m<br>Casing depth: 7.90m<br>Water depth: 27.00m | | | | 29.00 | -2.20 | | End of borehole at 29.00 m | |



Key: U = Undisturbed B = Bulk D = Small disturbed W = Water E = glass jar & plastic tub SPT/S = split spoon SPT/C = solid cone HV = Hand Vane [kPa]

PP = Pocket Penetrometer [kg/cm2] PID = Photo Ionisation Detector [ppmv] | Borehole type: Cable Percussion

Remarks :-

Borehole No: **BH2**

[* = full SPT penetration not achieved - see summary sheet]

| Site & Location | **One Bedford Avenue**<br>**Bedford Avenue, Camden, London WC1B 3AU** | Report No: | **9661/JRCB** |
|---|---|---|---|

## STANDARD PENETRATION TEST SUMMARY

| BH ID | Depth [m] | Test type | 'N' value and blow-counts [Seating blows/Test blows] | $N_{60}$ | $N_{60}$ - ext | Casing depth [m] | Water depth [m] | Remarks |
|---|---|---|---|---|---|---|---|---|
| BH1 | 4.05 | S | N = 4 :1 1/ 1 0 1 2 | 4 | | 4.05 | Dry | |
| BH1 | 5.05 | S | N = 3 :1 0/ 0 0 1 2 | 3 | | 5.05 | Dry | |
| BH1 | 6.05 | C | N = 31 :5 6/ 7 7 8 9 | 31 | | 6.05 | 5.50 | Water added |
| BH1 | 7.05 | C | N = 21 :4 4/ 7 6 4 4 | 21 | | 7.06 | 5.50 | Water added |
| BH1 | 8.05 | S | N = 25 :3 4/ 5 6 7 7 | 25 | | 7.90 | Dry | |
| BH1 | 12.05 | S | N = 26 :2 2/ 5 6 7 8 | 26 | | 7.90 | Dry | |
| BH1 | 16.05 | S | N = 32 :3 4/ 7 8 8 9 | 32 | | 7.90 | Dry | |
| BH1 | 19.05 | S | N = 38 :4 5/ 8 9 10 11 | 38 | | 7.90 | Dry | |
| BH1 | 22.55 | S | N = 44 :5 6/ 9 10 12 13 | 44 | | 7.90 | Dry | |
| BH2 | 4.00 | S | 67 :2 3/ 7 10 50 | >50* | 90** | 4.00 | Dry | |
| BH2 | 5.00 | C | 57 :15 14/ 25 32 | >50* | 115** | 5.00 | Dry | |
| BH2 | 6.00 | C | 57 :6 6/ 13 19 25 | >50* | 75** | 6.00 | Dry | |
| BH2 | 7.00 | C | N = 17 :3 3/ 5 4 4 4 | 17 | | 7.00 | 6.50 | Water added |
| BH2 | 7.65 | S | N = 21 :2 3/ 4 5 5 7 | 21 | | 7.90 | Dry | |
| BH2 | 10.55 | S | N = 26 :3 3/ 5 6 7 8 | 26 | | 7.90 | Dry | |
| BH2 | 13.55 | S | N = 31 :3 3/ 6 7 9 9 | 31 | | 7.90 | Dry | |
| BH2 | 16.55 | S | N = 35 :3 4/ 8 8 9 10 | 35 | | 7.90 | Dry | |
| BH2 | 19.55 | S | N = 40 :4 5/ 9 9 10 12 | 40 | | 7.90 | Dry | |
| BH2 | 22.55 | S | N = 42 :4 5/ 8 10 12 12 | 42 | | 7.90 | Dry | |
| BH2 | 24.55 | S | N = 60 :7 8/ 12 13 16 19 | 59 | | 7.90 | Dry | |
| BH2 | 26.55 | S | 77 :9 9/ 20 25 32 | >50* | 105** | 7.90 | Dry | |
| BH2 | 28.55 | S | N = 71 :7 8/ 15 17 18 21 | 70 | | 7.90 | 27.00 | |



Standard Penetration Test : BS EN ISO 22476:2005 Part 3 Hammer Energy Ratio, Er = 59.4%

* where full penetration not achieved, the reported $N_{60}$ is based on maximum uncorrected blow-counts of 50

** extrapolated $N_{60}$ value where full penetration not achieved - this is indicative only and should be used with caution



Soil Consultants

| Site Location: | **One Bedford Avenue, London, WC1B 3AU** | Ref: **9661/JRCB** |
|---|---|---|

## Results of Ground Gas/Groundwater Monitoring

| | | | |
|---|---|---|---|
| Date: | 02 Oct 14 | | |
| Time [24hr]: | 10:20 | | |
| Barometric pressure: | 1030 | | |
| a] Trend [24hrs]: | Falling | | |
| b] At start [mB]: | 1030 | | |
| c] At end [mB]: | 1029 | | |
| Recorded by: | MR | | |
| Surface ground conditions: | Dry | | |
| Weather conditions: | Mild, Cloudy | | |
| Ambient air temp [°C]: | 16 | | |

**Monitoring equipment**

Instrument: GA2000 Plus MC08/0126/00

Calibration check details: Within monitor tolerance

Next calibration date: 17/10/2014

Notes:

1] Barometric pressure trend and ambient air temperature is recorded from BBC weather website on the day of the monitoring visit

2] Calibration check is performed at start of monitoring against ambient air and also periodically with a 5% CH4, 5% CO2 and 6% O2 gas mixture

3] CH4 = methane; CO2 = carbon dioxide; CO = carbon monoxide; O2 = oxygen; H2S = hydrogen sulphide

**Results**



| Date | Time [24hr] | Borehole | GW Depth | Depth to Base | CH4 [%] | | CO2 [%] | | O2 [%] | | Highest [ppm] | | Emission Rate | Relative Pressure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | [m] | [m] | Max | Steady | Max | Steady | Min | Steady | CO | $H_2S$ | [l/hr] | [mb] |
| 02/10/2014 | 11:15 | BH1 | 3.30 | 4.29 | 0 | 0 | 0.8 | 0.7 | 19.3 | 19.6 | 0 | 0 | 0.00 | 0.00 |
| | | BH2 (50mm) | 3.46 | 4.50 | 0 | 0 | 0 | 0 | 20.5 | 20.5 | 0 | 0 | 0.00 | 0.00 |
| | | BH2 (19mm) | 21.89 | 25.37 | - | - | - | - | - | - | - | - | - | - |

Soil Consultants

Site & Location: **One Bedford Avenue, Bedford Avenue, Camden, London WC1B 3AU**

Report No: **9661/JRCB**

## SUMMARY OF CLASSIFICATION TEST RESULTS

| BH ID | Depth (m) | Type | w (%) | $w_L$ (%) | $w_P$ (%) | Pass 425 (%) | $I_P$ (%) | Mod $I_P$ (%) | $I_L$ (%) | LOI (%) | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BH1 | 7.95 | D | 27 | | | | | | | | Brown fissured slightly silty CLAY with orange/brown staining in upper levels and occasional partings of pale grey silt |
| BH1 | 9.00 | D | 26 | | | | | | | | Grey fissured slightly silty CLAY with orange/brown staining in upper levels and occasional partings of pale grey silt |
| BH1 | 11.50 | D | 27 | | | | | | | | Grey fissured slightly silty CLAY with occasional partings of pale grey silt and small pockets of fine sand |
| BH1 | 13.00 | D | 23 | | | | | | | | Grey fissured slightly silty CLAY with occasional partings of pale grey silt and small pockets of fine sand |
| BH1 | 13.55 | U | 25 | 71 | 27 | >95 | 44 | | -0.06 | | Grey fissured slightly silty CLAY with occasional partings of pale grey silt and small pockets of fine sand |
| BH1 | 17.00 | D | 29 | | | | | | | | Grey fissured slightly silty CLAY occasional partings of pale grey silt. Locally silty |
| BH1 | 17.55 | U | 24 | 71 | 26 | >95 | 45 | | -0.05 | | Grey fissured slightly silty CLAY occasional partings of pale grey silt. Locally silty |
| BH1 | 18.50 | D | 20 | | | | | | | | Grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty |
| BH1 | 20.50 | D | 25 | | | | | | | | Grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty |
| BH1 | 21.05 | U | 22 | 61 | 24 | >95 | 37 | | -0.05 | | Grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty |
| BH1 | 22.00 | D | 24 | 67 | 25 | >95 | 42 | | -0.04 | | Grey fissured silty CLAY occasional partings of pale grey silt. Locally sandy with pockets/bands of fine grey sand |
| BH1 | 23.50 | D | 19 | 68 | 18 | >95 | 50 | | 0.03 | | Grey fissured silty CLAY occasional partings of pale grey silt. Locally sandy with pockets/bands of fine grey sand |
| BH1 | 24.55 | U | 20 | 53 | 16 | >95 | 37 | | 0.10 | | Brown, blue/grey and red/brown mottled slightly silty CLAY with occasional partings of silt |
| BH2 | 10.00 | D | 22 | | | | | | | | Grey fissured slightly silty CLAY with occasional partings of pale grey silt and small pockets of fine sand |
| BH2 | 11.50 | D | 24 | | | | | | | | Grey fissured slightly silty CLAY with occasional partings of pale grey silt and small pockets of fine sand |
| BH2 | 12.05 | U | 28 | 68 | 29 | >95 | 39 | | -0.03 | | Grey fissured slightly silty CLAY with occasional partings of pale grey silt and small pockets of fine sand |
| BH2 | 13.00 | D | 20 | | | | | | | | Grey fissured slightly silty CLAY occasional partings of pale grey silt and silty fine sand. Locally silty |
| BH2 | 14.50 | D | 20 | | | | | | | | Grey fissured slightly silty CLAY occasional partings of pale grey silt and silty fine sand. Locally silty |
| BH2 | 15.05 | U | 25 | 72 | 26 | >95 | 46 | | -0.03 | | Grey fissured slightly silty CLAY occasional partings of pale grey silt and silty fine sand. Locally silty |



Testing in accordance with BS EN ISO 17892 unless specified otherwise

Date: 25 Feb 14

Modified Plasticity Index calculated in accordance with NHBC Standards Chapter 4.2 (reported if %passing 425mm <95%)

Percent passing 425μm: by estimation, by hand* or by sieving**



Soil Consultants

| Site & Location | **One Bedford Avenue**<br>**Bedford Avenue, Camden, London WC1B 3AU** | Report No: | **9661/JRCB** |
|---|---|---|---|

## SUMMARY OF CLASSIFICATION TEST RESULTS

| BH ID | Depth (m) | Type | w (%) | $w_L$ (%) | $w_P$ (%) | Pass 425 (%) | $I_P$ (%) | Mod $I_P$ (%) | $I_L$ (%) | LOI (%) | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BH2 | 16.00 | D | 20 | | | | | | | | Grey fissured slightly silty CLAY occasional partings of pale grey silt and silty fine sand. Locally silty |
| BH2 | 17.50 | D | 22 | | | | | | | | Grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty |
| BH2 | 18.05 | U | 23 | | | | | | | | Grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty |
| BH2 | 19.00 | D | 18 | | | | | | | | Grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty |
| BH2 | 20.50 | D | 19 | 79 | 26 | >95 | 53 | | -0.13 | | Grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty |
| BH2 | 21.05 | U | 25 | 76 | 29 | >95 | 47 | | -0.10 | | Grey fissured slightly silty CLAY occasional pockets of pale grey silty fine sand and silt partings. Locally silty |
| BH2 | 22.00 | D | 20 | 71 | 21 | >95 | 50 | | -0.02 | | Grey fissured silty CLAY occasional partings of pale grey silt. Locally very silty and sandy with pockets/bands of fine grey sand |
| BH2 | 23.75 | D | 18 | 69 | 19 | >95 | 50 | | -0.03 | | Grey fissured silty CLAY occasional partings of pale grey silt. Locally very silty and sandy with pockets/bands of fine grey sand |
| BH2 | 24.45 | D | 15 | 59 | 20 | >95 | 39 | | -0.15 | | Brown, blue/grey and red/brown mottled slightly silty CLAY with partings of silt |
| BH2 | 25.75 | D | 16 | 62 | 21 | >95 | 41 | | -0.13 | | Brown, blue/grey and red/brown mottled slightly silty CLAY with partings of silt |
| BH2 | 26.30 | D | 9 | 26 | 11 | >95 | 15 | | -0.14 | | Grey and brown silty sandy CLAY/very silty fine SAND [interbedded] |
| BH2 | 28.25 | D | 16 | 54 | 19 | >95 | 35 | | -0.10 | | Grey and brown silty locally sandy CLAY with occasional bands/pockets of grey silty fine sand |



Testing in accordance with BS EN ISO 17892 unless specified otherwise

Date: 25 Feb 14

Modified Plasticity Index calculated in accordance with NHBC Standards Chapter 4.2 (reported if %passing 425mm <95%)

Percent passing 425μm: by estimation, by hand* or by sieving**

| Site | One Bedford Avenue | Report No: | 9661/JRCB |
|---|---|---|---|
| Location | Bedford Avenue, Camden, London WC1B 3AU | | |

## SUMMARY OF UNDRAINED SHEAR STRENGTH TEST RESULTS

| BH ID | Depth [m] | Moisture content [%] | Bulk density [Mg/m$^3$] | Dry density [Mg/m$^3$] | Cell pressure [kPa] | $(\sigma_1-\sigma_3)_f$ [kPa] | Failure strain [%] | Failure mode | Undrained cohesion [kPa] | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| BH1 | 13.55 | 25 | 2.03 | 1.63 | 270 | 498 | 3.00 | B | 249 | |
| BH1 | 17.55 | 24 | 2.03 | 1.64 | 350 | 421 | 3.00 | B | 211 | |
| BH1 | 21.05 | 22 | 2.09 | 1.71 | 420 | 778 | 4.50 | B | 389 | |
| BH2 | 12.05 | 28 | 1.99 | 1.56 | 240 | 226 | 2.50 | I | 113 | |
| BH2 | 15.05 | 25 | 2.01 | 1.61 | 300 | 295 | 2.50 | B | 148 | |
| BH2 | 18.05 | 23 | 2.05 | 1.66 | 360 | 402 | 2.50 | B | 201 | |
| BH2 | 21.05 | 25 | 2.04 | 1.64 | 420 | 347 | 2.00 | B | 174 | |



Testing in accordance with BS EN ISO 17892 UU = unconsolidated, undrained; MUU = multistage, unconsolidated, ur Date: 06 October 14

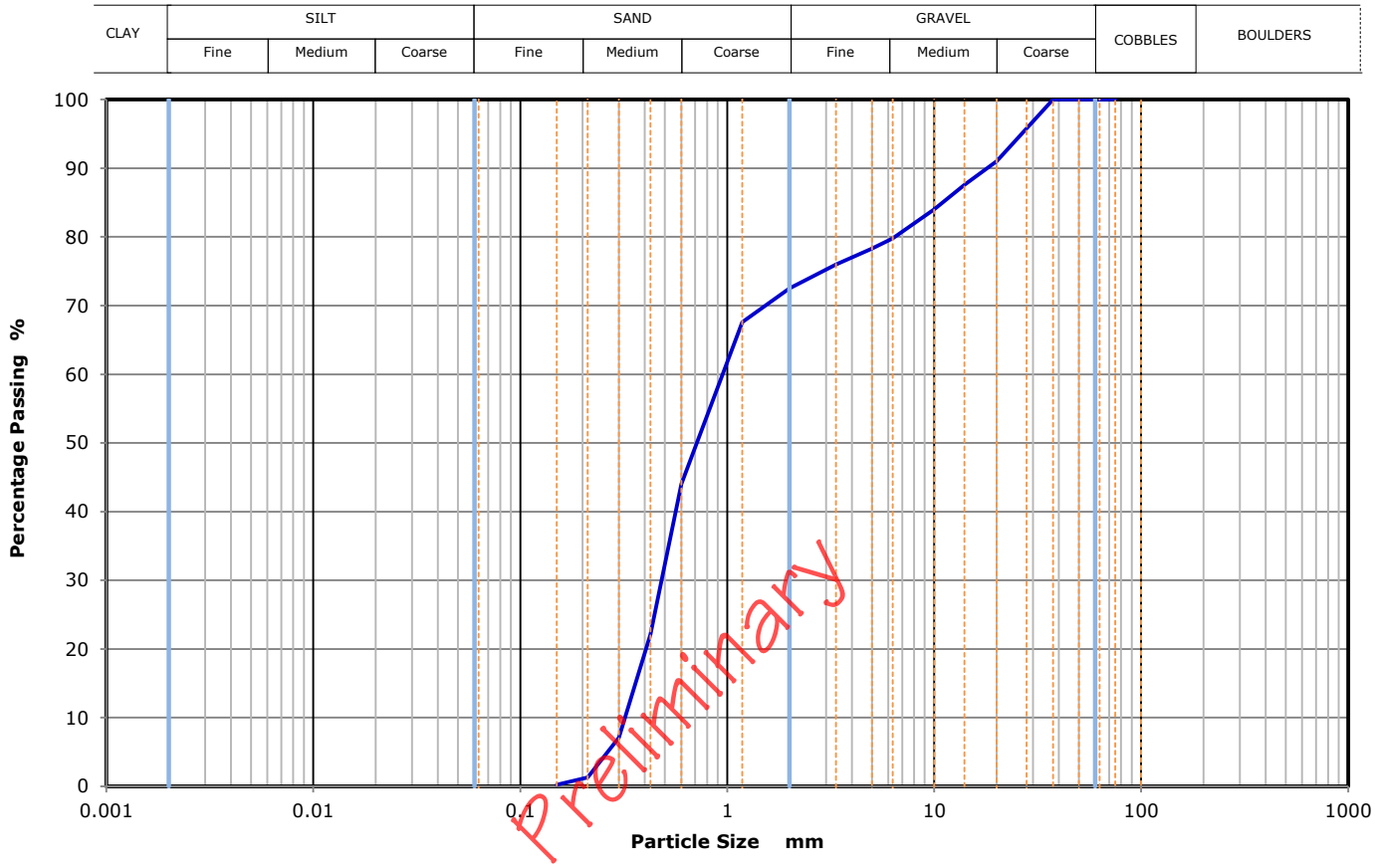
Unless stated otherwise: Rate of strain = 2mm/min, Standard latex membrame used with thickness = 0.5mm

Failure modes: B = brittle, I = intermediate, P = plastic

| Site | **One Bedford Avenue** | Report No: | **9661/JRCB** |
|---|---|---|---|
| Location | **Bedford Avenue, Camden, London WC1B 3AU** | | |

# PARTICLE SIZE DISTRIBUTION

| Hole ID: **BH1**<br>Depth [m]: **6.05** | Description: **Brown/orange gravelly fine to coarse SAND** |
|---|---|




| Sieving | |
|---|---|
| Size [mm] | % passing |
| 75 | 100 |
| 63 | 100 |
| 50 | 100 |
| 37.5 | 100 |
| 28 | 95.8 |
| 20 | 91 |
| 14 | 87.6 |
| 10 | 84 |
| 6.3 | 79.8 |
| 5 | 78.3 |
| 3.35 | 76 |
| 2 | 72.5 |
| 1.18 | 67.6 |
| 0.6 | 44 |
| 0.425 | 22.1 |
| 0.3 | 7.1 |
| 0.212 | 1.3 |
| 0.15 | 0.2 |
| 0.063 | #N/A |

| **Sample proportions** | % |
|---|---|
| Cobbles | 0 |
| Gravel | 28 |
| Sand | 73 |
| Fines <0.063mm | 0 |

| **Grading analysis** | | |
|---|---|---|
| D60 | mm | 0.9 |
| D30 | mm | 0.5 |
| D10 | mm | 0.3 |
| | | |
| Uniformity Coefficient | | 3.0 |
| Curvature Coefficient | | 0.8 |

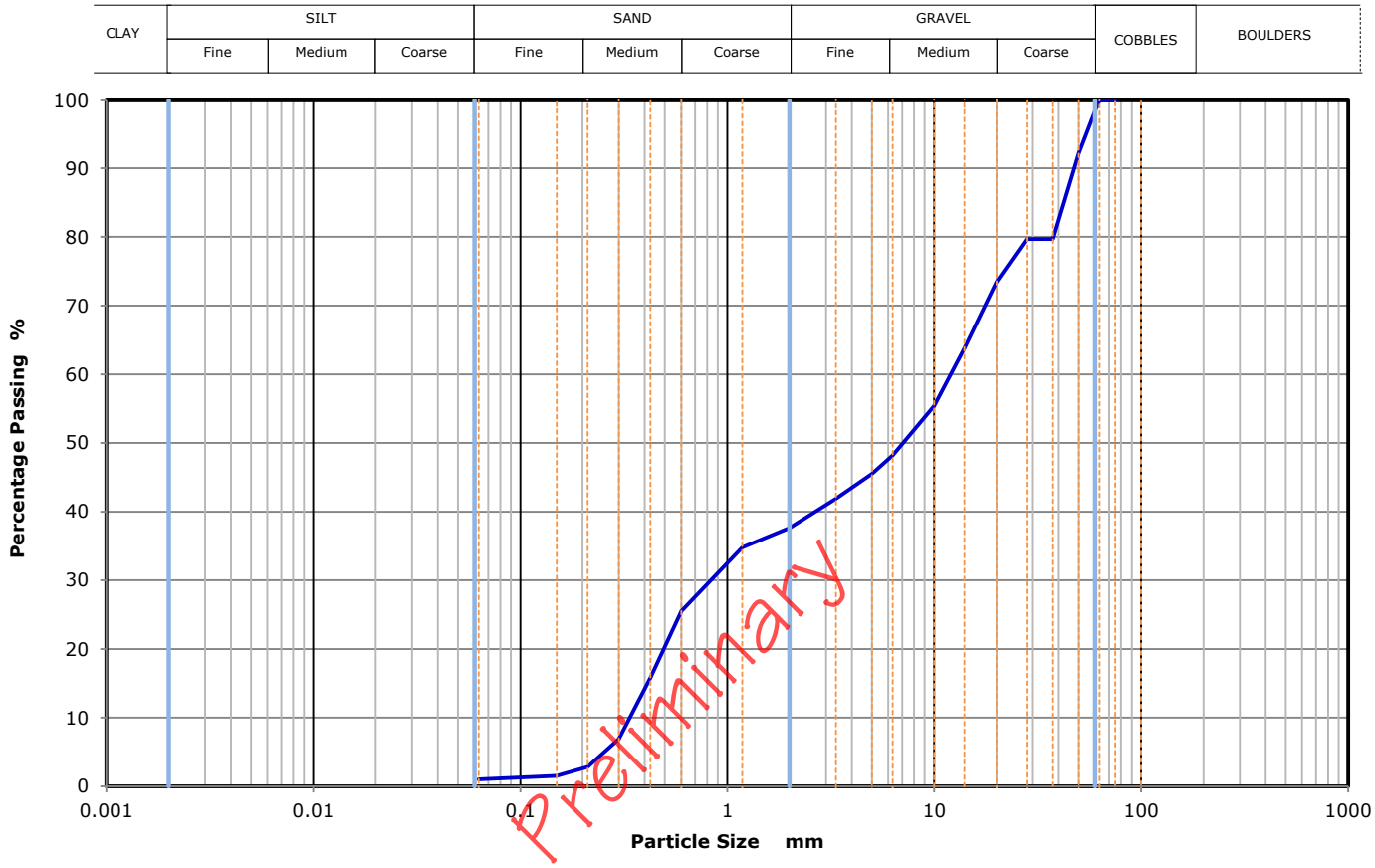
| **Test method and date** | |
|---|---|
| Testing in accordance with BS EN ISO 17892: | |
| Wet sieving method | |
| Reporting date: | 01 Oct 14 |

Soil Consultants

| Site | **One Bedford Avenue** | Report No: | **9661/JRCB** |
|---|---|---|---|
| Location | **Bedford Avenue, Camden, London WC1B 3AU** | | |

# PARTICLE SIZE DISTRIBUTION

| Hole ID: **BH1**<br>Depth [m]: **7.05** | Description: **Brown/oranfe very sandy fine to coarse flint GRAVEL** |
|---|---|




| Sieving | |
|---|---|
| Size [mm] | % passing |
| 75 | 100 |
| 63 | 100 |
| 50 | 92.2 |
| 37.5 | 79.7 |
| 28 | 79.7 |
| 20 | 73.5 |
| 14 | 63.8 |
| 10 | 55.4 |
| 6.3 | 48.2 |
| 5 | 45.5 |
| 3.35 | 41.9 |
| 2 | 37.6 |
| 1.18 | 34.8 |
| 0.6 | 25.5 |
| 0.425 | 15.8 |
| 0.3 | 6.9 |
| 0.212 | 2.8 |
| 0.15 | 1.5 |
| 0.063 | 1 |

| **Sample proportions** | % |
|---|---|
| Cobbles | 0 |
| Gravel | 62 |
| Sand | 37 |
| Fines <0.063mm | 1 |

| **Grading analysis** | | |
|---|---|---|
| D60 | mm | 12.0 |
| D30 | mm | 0.8 |
| D10 | mm | 0.3 |
| | | |
| Uniformity Coefficient | | 35.5 |
| Curvature Coefficient | | 0.2 |

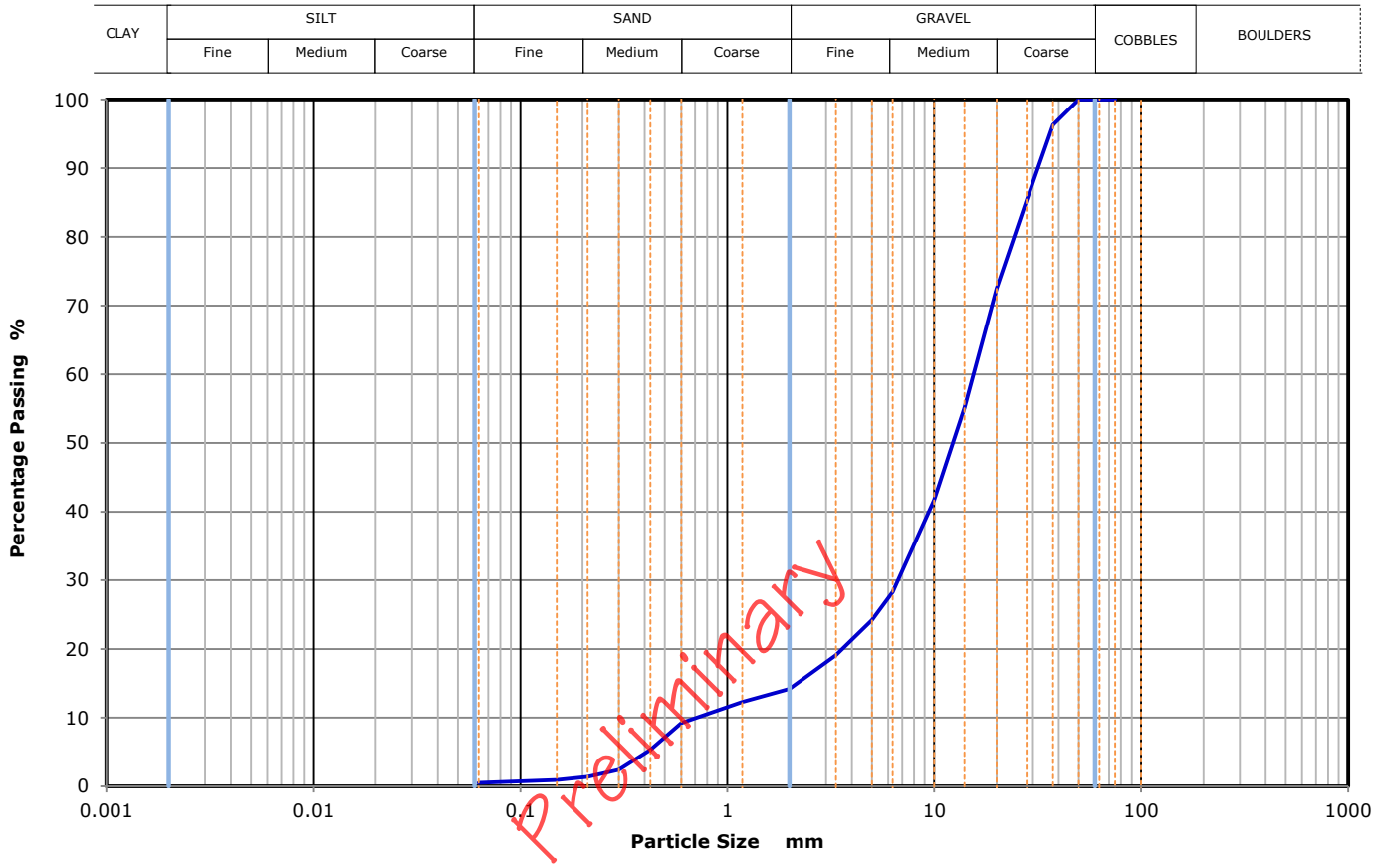
| **Test method and date** | |
|---|---|
| Testing in accordance with BS EN ISO 17892: | |
| Wet sieving method | |
| Reporting date: | 01 Oct 14 |

Soil Consultants

| | | | |
|---|---|---|---|
| Site | **One Bedford Avenue** | Report No: | **9661/JRCB** |
| Location | **Bedford Avenue, Camden, London WC1B 3AU** | | |

# PARTICLE SIZE DISTRIBUTION

| | |
|---|---|
| Hole ID: **BH2**<br>Depth [m]: **5.00** | Description: **Brown/orange sandy fine to coarse flint GRAVEL** |




| Sieving | |
|---|---|
| Size [mm] | % passing |
| 75 | 100 |
| 63 | 100 |
| 50 | 100 |
| 37.5 | 96.3 |
| 28 | 85.3 |
| 20 | 72.5 |
| 14 | 55.1 |
| 10 | 41.7 |
| 6.3 | 28.3 |
| 5 | 24.2 |
| 3.35 | 19.1 |
| 2 | 14.2 |
| 1.18 | 12.3 |
| 0.6 | 9.2 |
| 0.425 | 5.3 |
| 0.3 | 2.4 |
| 0.212 | 1.4 |
| 0.15 | 0.9 |
| 0.063 | 0.5 |

| Sample proportions | % |
|---|---|
| Cobbles | 0 |
| Gravel | 86 |
| Sand | 14 |
| Fines <0.063mm | 1 |

| Grading analysis | | |
|---|---|---|
| D60 | mm | 15.5 |
| D30 | mm | 6.7 |
| D10 | mm | 0.7 |
| | | |
| Uniformity Coefficient | | 21.7 |
| Curvature Coefficient | | 4.0 |

| Test method and date | |
|---|---|
| Testing in accordance with BS EN ISO 17892: | |
| Wet sieving method | |
| Reporting date: | 01 Oct 14 |

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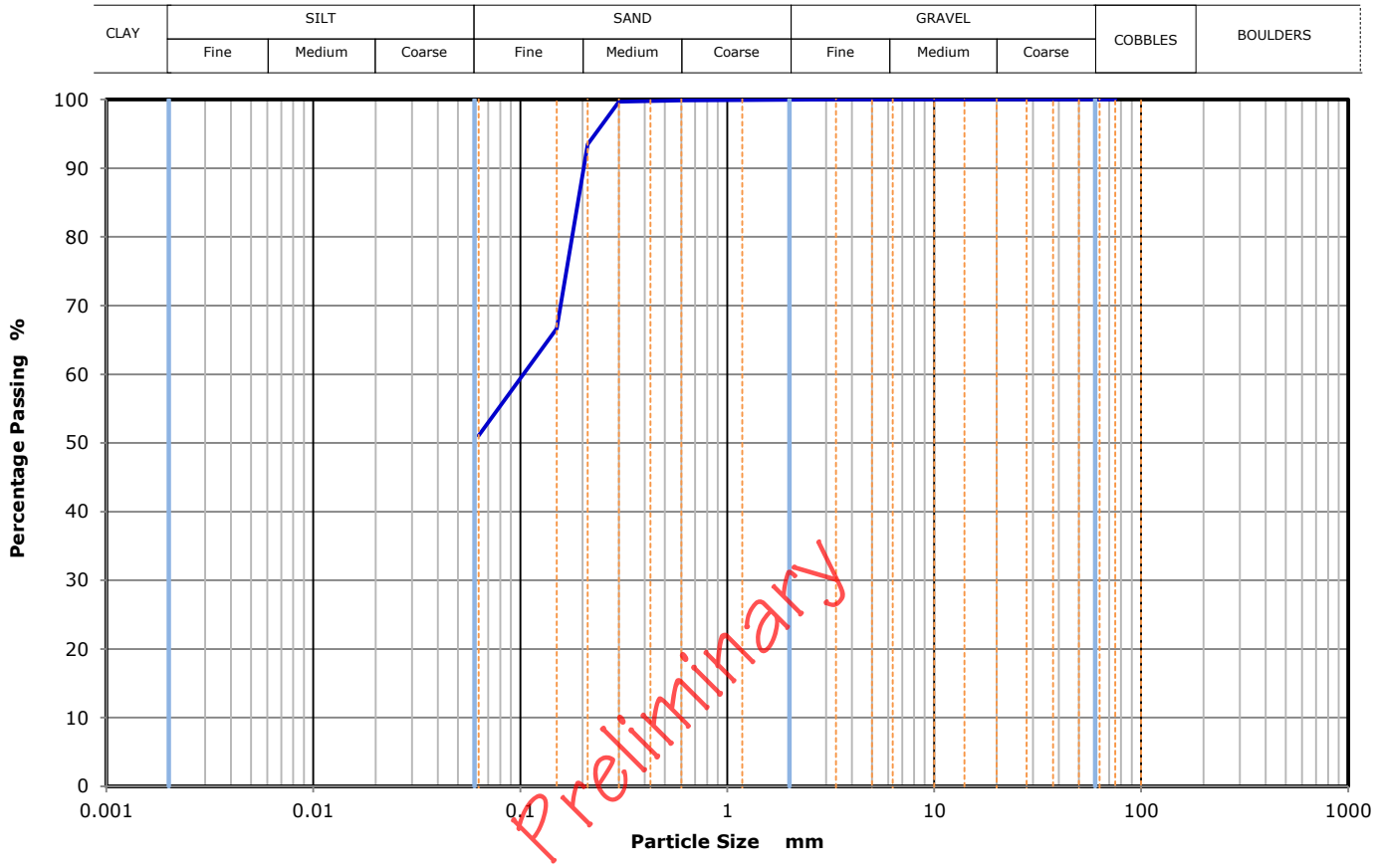
| Site | **One Bedford Avenue** | Report No: | **9661/JRCB** |
|---|---|---|---|
| Location | **Bedford Avenue, Camden, London WC1B 3AU** | | |

# PARTICLE SIZE DISTRIBUTION

| Hole ID: **BH2**<br>Depth [m]: **27.80** | Description: **Brown/grey silty sandy CLAY with bands/pockets of silty fine sand** |
|---|---|




| Sieving | |
|---|---|
| Size [mm] | % passing |
| 75 | 100 |
| 63 | 100 |
| 50 | 100 |
| 37.5 | 100 |
| 28 | 100 |
| 20 | 100 |
| 14 | 100 |
| 10 | 100 |
| 6.3 | 100 |
| 5 | 100 |
| 3.35 | 100 |
| 2 | 99.98 |
| 1.18 | 99.92 |
| 0.6 | 99.86 |
| 0.425 | 99.78 |
| 0.3 | 99.68 |
| 0.212 | 93.48 |
| 0.15 | 66.68 |
| 0.063 | 51.08 |

| **Sample proportions** | % |
|---|---|
| Cobbles | 0 |
| Gravel | 0 |
| Sand | 49 |
| Fines <0.063mm | 51 |

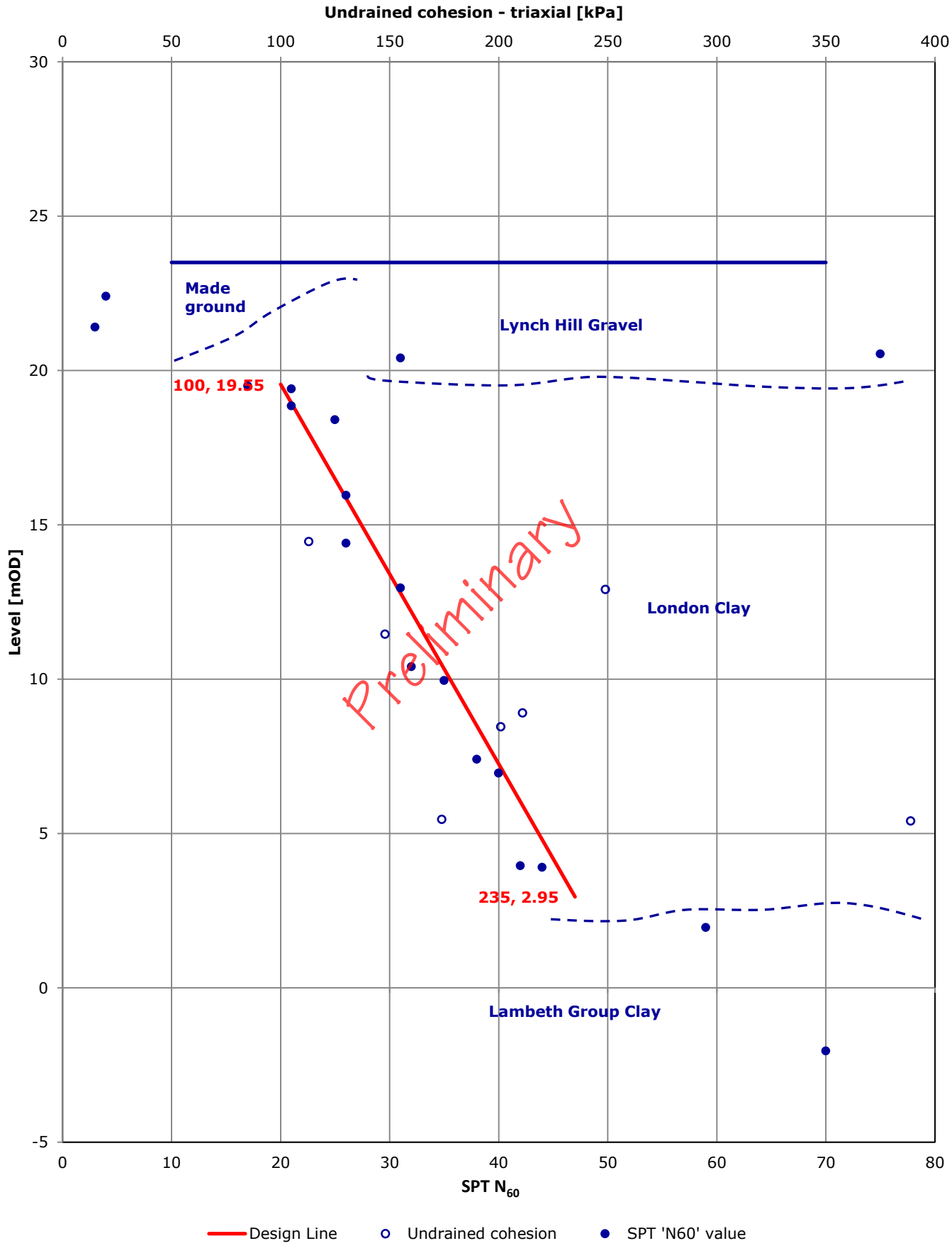
| **Grading analysis** | | |
|---|---|---|
| D60 | mm | 0.1 |
| D30 | mm | |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

| **Test method and date** | |
|---|---|
| Testing in accordance with BS EN ISO 17892: | |
| Wet sieving method | |
| Reporting date: | 01 Oct 14 |

Soil Consultants

| Site & Location | One Bedford Avenue<br>Bedford Avenue, Camden, London WC1B 3AU | Report No: | 9661/JRCB |
|---|---|---|---|

## Undrained cohesion and SPT [N60] vs level



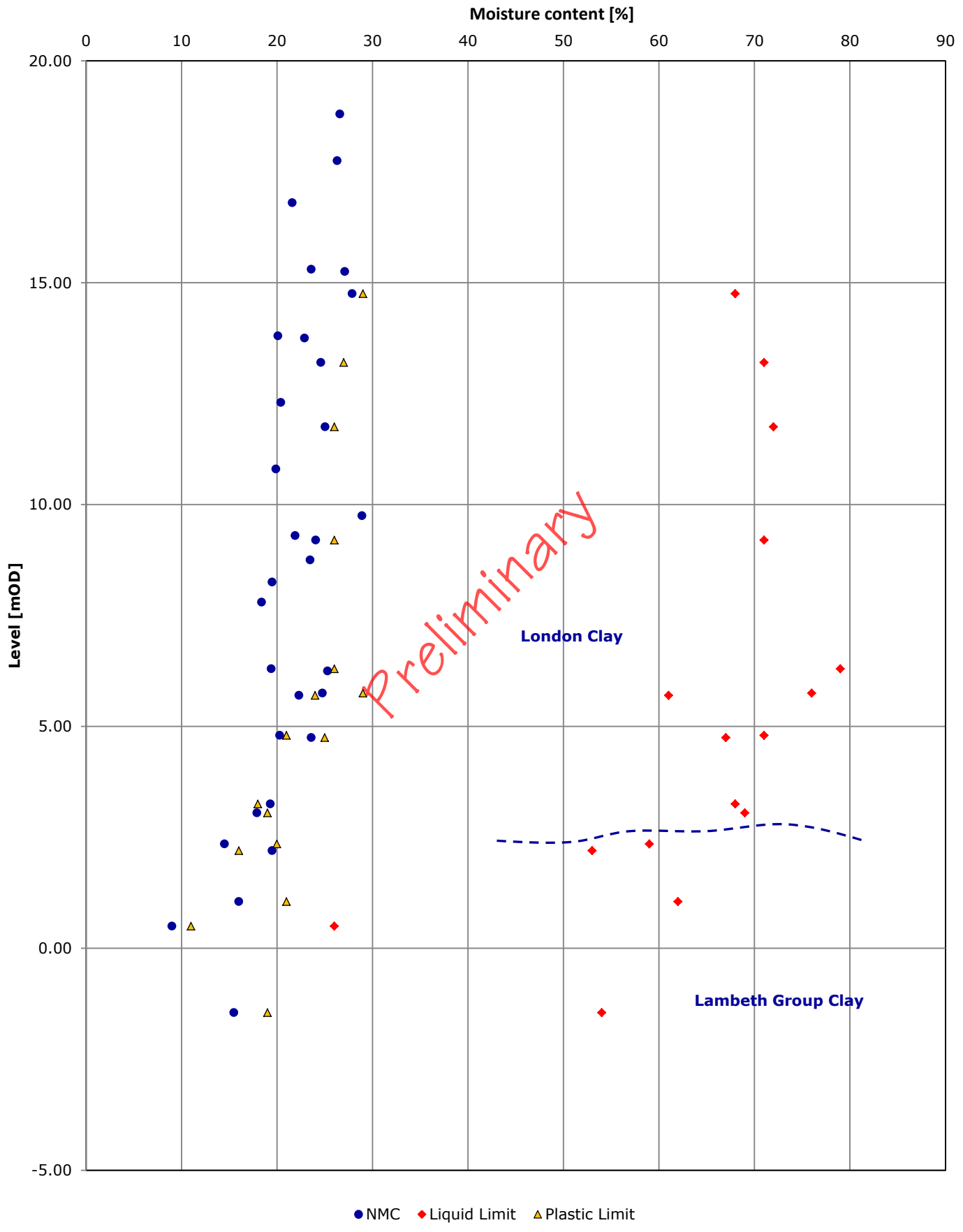

**Design Line Δcu = 8.13kPa/m**

Note: this plot may incorporate extrapolated results, generally where 'N' >50 - these are indicative only and should be used with caution

Soil Consultants

| Site & Location | One Bedford Avenue<br>Bedford Avenue, Camden, London WC1B 3AU | Report No: | 9661/JRCB |
|---|---|---|---|

## Natural Moisture Content and Index Properties vs level

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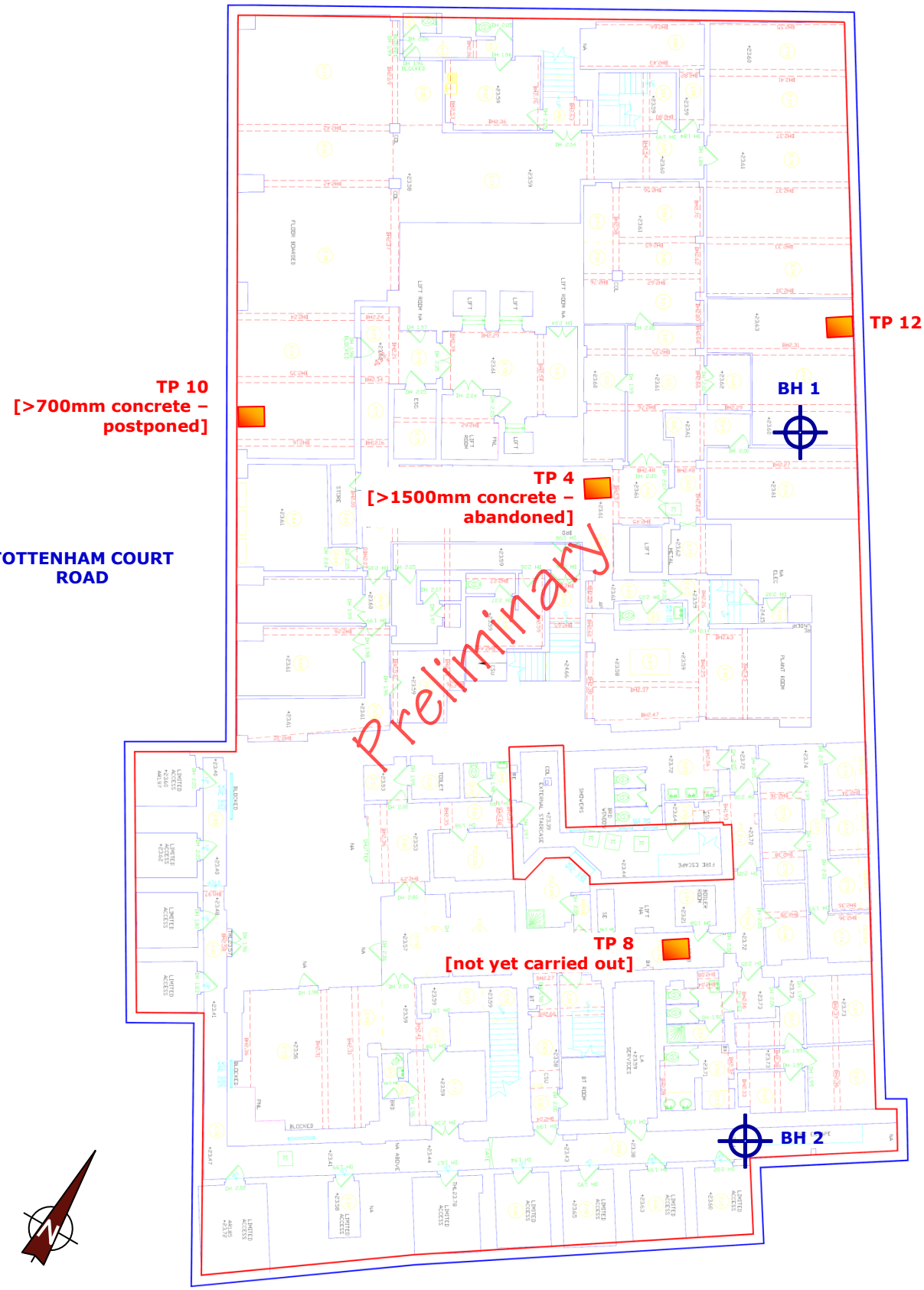
| Site Location | One Bedford Avenue<br>Bedford Avenue, Camden, London WC1B 3AU | Report No:<br>9661/JRCB |
|---|---|---|

## Site Plan [at basement level]

[Fieldwork: Sep/Oct 2014]





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**QTS Environmental Ltd**
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
**t:** 01622 850410
russell.jarvis@qtsenvironmental.com

# QTS Environmental Report No: 14-24916

| | |
|---|---|
| **Site Reference:** | Bedford Avenue |
| **Project / Job Ref:** | None Supplied |
| **Order No:** | None Supplied |
| **Sample Receipt Date:** | 15/09/2014 |
| **Sample Scheduled Date:** | 17/09/2014 |
| **Report Issue Number:** | 1 |
| **Reporting Date:** | 24/09/2014 |

**Authorised by:**

Russell Jarvis
Director
**On behalf of QTS Environmental Ltd**

**Authorised by:**

Kevin Old
Director
**On behalf of QTS Environmental Ltd**

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 | BH1 | BH1 | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | D1 | D2 | None Supplied | | |
| **Order No: None Supplied** | **Depth (m)** | 3.70 | 4.05 | 6.05 | | |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118337 | 118338 | 118339 | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Asbestos Screen | N/a | N/a | ISO17025 | Not Detected | Not Detected | Not Detected | | |
| pH | pH Units | N/a | MCERTS | 7.4 | 7.9 | 8.0 | | |
| W/S Sulphate as SO4 (2:1) | g/l | < 0.01 | MCERTS | 1.54 | 0.25 | 0.02 | | |
| Elemental Sulphur | mg/kg | < 10 | NONE | < 10 | < 10 | < 10 | | |
| Sulphide | mg/kg | < 5 | NONE | < 5 | < 5 | < 5 | | |
| Total Organic Carbon (TOC) | % | < 0.1 | NONE | 0.8 | 0.6 | < 0.1 | | |
| Arsenic (As) | mg/kg | < 2 | MCERTS | 12 | 8 | < 2 | | |
| Beryllium (Be) | mg/kg | < 0.5 | NONE | 0.5 | < 0.5 | < 0.5 | | |
| W/S Boron | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | | |
| Cadmium (Cd) | mg/kg | < 0.5 | MCERTS | < 0.5 | < 0.5 | < 0.5 | | |
| Chromium (Cr) | mg/kg | < 2 | MCERTS | 35 | 25 | 6 | | |
| Chromium (hexavalent) | mg/kg | < 2 | NONE | < 2 | < 2 | < 2 | | |
| Copper (Cu) | mg/kg | < 4 | MCERTS | 52 | 33 | < 4 | | |
| Lead (Pb) | mg/kg | < 3 | MCERTS | 91 | 92 | 6 | | |
| Mercury (Hg) | mg/kg | < 1 | NONE | 1.6 | 1.2 | < 1 | | |
| Nickel (Ni) | mg/kg | < 3 | MCERTS | 46 | 24 | 6 | | |
| Selenium (Se) | mg/kg | < 3 | NONE | < 3 | < 3 | < 3 | | |
| Vanadium (V) | mg/kg | < 2 | NONE | 61 | 46 | 12 | | |
| Zinc (Zn) | mg/kg | < 3 | MCERTS | 62 | 50 | 15 | | |
| Total Phenols (monohydric) | mg/kg | < 2 | NONE | < 2 | < 2 | < 2 | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{O}$C

Analysis carried out on the dried sample is corrected for the stone content

The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)

This report refers to samples as received, and QTS Environmental Ltd, takes no responsibility for the accuracy or competence of sampling by others.

The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.

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

Asbestos Analyst: Graham Revell

RL: Reporting Limit

Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).

Subcontracted analysis $^{(S)}$

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| Soil Analysis Certificate - Speciated PAHs | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 | BH1 | BH1 | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | D1 | D2 | None Supplied | | |
| **Order No: None Supplied** | **Depth (m)** | 3.70 | 4.05 | 6.05 | | |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118337 | 118338 | 118339 | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Acenaphthylene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Acenaphthene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Fluorene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Phenanthrene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Fluoranthene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Pyrene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Benzo(a)anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Chrysene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Benzo(b)fluoranthene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Benzo(k)fluoranthene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Benzo(a)pyrene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Dibenz(a,h)anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Benzo(ghi)perylene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Coronene | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| Total Oily Waste PAHs | mg/kg | < 1 | MCERTS | < 1 | < 1 | < 1 | | |
| Total Dutch 10 PAHs | mg/kg | < 1 | MCERTS | < 1 | < 1 | < 1 | | |
| Total EPA-16 PAHs | mg/kg | < 1.6 | MCERTS | < 1.6 | < 1.6 | < 1.6 | | |
| Total WAC-17 PAHs | mg/kg | < 1.7 | NONE | < 1.7 | < 1.7 | < 1.7 | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{o}$C

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| Soil Analysis Certificate - EPH Oily Waste Banded | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 | BH1 | BH1 | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | D1 | D2 | None Supplied | | |
| **Order No: None Supplied** | **Depth (m)** | 3.70 | 4.05 | 6.05 | | |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118337 | 118338 | 118339 | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Oily Waste (C6 - C10) | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | | |
| Oily Waste (>C10 - C25) | mg/kg | < 1 | MCERTS | 23 | < 1 | < 1 | | |
| Oily Waste (>C25 - C40) | mg/kg | < 6 | MCERTS | 46 | < 6 | < 6 | | |
| Oily Waste (C6 - C40) | mg/kg | < 6 | NONE | 69 | < 6 | < 6 | | |

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| Soil Analysis Certificate - TPH CWG Banded | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 | BH1 | BH1 | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | D1 | D2 | None Supplied | | |
| **Order No: None Supplied** | **Depth (m)** | 3.70 | 4.05 | 6.05 | | |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118337 | 118338 | 118339 | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aliphatic >C5 - C6 | mg/kg | < 0.01 | NONE | < 0.01 | < 0.01 | < 0.01 | | |
| Aliphatic >C6 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | | |
| Aliphatic >C8 - C10 | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | | |
| Aliphatic >C10 - C12 | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | | |
| Aliphatic >C12 - C16 | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | | |
| Aliphatic >C16 - C21 | mg/kg | < 1 | NONE | 2 | < 1 | < 1 | | |
| Aliphatic >C21 - C34 | mg/kg | < 6 | NONE | 15 | < 6 | < 6 | | |
| Aliphatic (C5 - C34) | mg/kg | < 12 | NONE | 17 | < 12 | < 12 | | |
| Aromatic >C5 - C7 | mg/kg | < 0.01 | NONE | < 0.01 | < 0.01 | < 0.01 | | |
| Aromatic >C7 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | | |
| Aromatic >C8 - C10 | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | | |
| Aromatic >C10 - C12 | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | | |
| Aromatic >C12 - C16 | mg/kg | < 1 | NONE | < 1 | < 1 | < 1 | | |
| Aromatic >C16 - C21 | mg/kg | < 1 | NONE | 2 | < 1 | < 1 | | |
| Aromatic >C21 - C35 | mg/kg | < 6 | NONE | 14 | < 6 | < 6 | | |
| Aromatic (C5 - C35) | mg/kg | < 12 | NONE | 17 | < 12 | < 12 | | |
| Total >C5 - C35 | mg/kg | < 24 | NONE | 34 | < 24 | < 24 | | |

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| Soil Analysis Certificate - BTEX / MTBE | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 | BH1 | BH1 | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | D1 | D2 | None Supplied | | |
| **Order No: None Supplied** | **Depth (m)** | 3.70 | 4.05 | 6.05 | | |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118337 | 118338 | 118339 | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | | |
| Toluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Ethylbenzene | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| p & m-xylene | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| o-xylene | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| MTBE | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{o}$C

**QTS Environmental Ltd**
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**Tel : 01622 850410**

4480

| Soil Analysis Certificate - Volatile Organic Compounds (VOC) | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 | BH1 | BH1 | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | D1 | D2 | None Supplied | | |
| **Order No: None Supplied** | **Depth (m)** | 3.70 | 4.05 | 6.05 | | |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118337 | 118338 | 118339 | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Vinyl Chloride | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Chloromethane | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| Chloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Bromomethane | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| Trichlorofluoromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,1-Dichloroethene | ug/kg | < 5 | ISO17025 | < 5 | < 5 | < 5 | | |
| MTBE | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| trans-1,2-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,1-Dichloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| cis-1,2-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 2,2-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Chloroform | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Bromochloromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,1,1-Trichloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,1-Dichloropropene | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| Carbon Tetrachloride | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,2-Dichloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Benzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | < 2 | | |
| 1,2-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Trichloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Bromodichloromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Dibromomethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| TAME | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| cis-1,3-Dichloropropene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Toluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| trans-1,3-Dichloropropene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,1,2-Trichloroethane | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| 1,3-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Tetrachloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Dibromochloromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,2-Dibromoethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Chlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,1,1,2-Tetrachloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Ethyl Benzene | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| m,p-Xylene | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| o-Xylene | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| Styrene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Bromoform | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| Isopropylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,1,2,2-Tetrachloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,2,3-Trichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| n-Propylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| Bromobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 2-Chlorotoluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,3,5-Trimethylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 4-Chlorotoluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| tert-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,2,4-Trimethylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| sec-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| p-Isopropyltoluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,3-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,4-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| n-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,2-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |
| 1,2-Dibromo-3-chloropropane | ug/kg | < 10 | MCERTS | < 10 | < 10 | < 10 | | |
| Hexachlorobutadiene | ug/kg | < 5 | MCERTS | < 5 | < 5 | < 5 | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{o}$C

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**Tel : 01622 850410**

| Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | D1 |
| **Order No: None Supplied** | **Depth (m)** | 3.70 |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118337 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | µg/kg | < 10 | < 10 |
| 2 | N/a | N/a | µg/kg | < 10 | < 10 |
| 3 | N/a | N/a | µg/kg | < 10 | < 10 |
| 4 | N/a | N/a | µg/kg | < 10 | < 10 |
| 5 | N/a | N/a | µg/kg | < 10 | < 10 |

There were no / other compounds identified with a match of >90%

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| Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | D2 |
| **Order No: None Supplied** | **Depth (m)** | 4.05 |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118338 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | µg/kg | < 10 | < 10 |
| 2 | N/a | N/a | µg/kg | < 10 | < 10 |
| 3 | N/a | N/a | µg/kg | < 10 | < 10 |
| 4 | N/a | N/a | µg/kg | < 10 | < 10 |
| 5 | N/a | N/a | µg/kg | < 10 | < 10 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
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**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied |
| **Order No: None Supplied** | **Depth (m)** | 6.05 |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118339 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | µg/kg | < 10 | < 10 |
| 2 | N/a | N/a | µg/kg | < 10 | < 10 |
| 3 | N/a | N/a | µg/kg | < 10 | < 10 |
| 4 | N/a | N/a | µg/kg | < 10 | < 10 |
| 5 | N/a | N/a | µg/kg | < 10 | < 10 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC) | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | None Supplied | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 | BH1 | BH1 | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | D1 | D2 | None Supplied | | |
| **Order No: None Supplied** | **Depth (m)** | 3.70 | 4.05 | 6.05 | | |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118337 | 118338 | 118339 | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Phenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| 1,2,4-Trichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | | |
| 2-Nitrophenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| Nitrobenzene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| 0-Cresol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| bis(2-chloroethoxy)methane | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| bis(2-chloroethyl)ether | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| 2,4-Dichlorophenol | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| 2-Chlorophenol | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | | |
| 1,3-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | | |
| 1,4-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | | |
| 1,2-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | | |
| 2,4-Dimethylphenol | mg/kg | < 0.15 | ISO17025 | < 0.15 | < 0.15 | < 0.15 | | |
| Isophorone | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| Hexachloroethane | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| p-Cresol | mg/kg | < 0.15 | MCERTS | < 0.15 | < 0.15 | < 0.15 | | |
| 2,4,6-Trichlorophenol | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| 2,4,5-Trichlorophenol | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| 2-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| 4-Chloro-3-methylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| 2-Methylnaphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Hexachlorocyclopentadiene | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| Hexachlorobutadiene | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | | |
| 2,6-Dinitrotoluene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Dimethyl phthalate | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| 2-Chloronaphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| 4-Chloroanaline | mg/kg | < 0.2 | NONE | < 0.2 | < 0.2 | < 0.2 | | |
| 4-Nitrophenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| 4-Chlorophenyl phenyl ether | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| 3-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| 4-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| 4-Bromophenyl phenyl ether | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Hexachlorobenzene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| 2,4-Dinitrotoluene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Diethyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Dibenzofuran | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Azobenzene | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | | |
| Dibutyl phthalate | mg/kg | < 0.15 | ISO17025 | < 0.15 | < 0.15 | < 0.15 | | |
| Carbazole | mg/kg | < 0.1 | ISO17025 | < 0.1 | < 0.1 | < 0.1 | | |
| bis(2-ethylhexyl)phthalate | mg/kg | < 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | | |
| Benzyl butyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |
| Di-n-octyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{0}$C

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | D1 |
| **Order No: None Supplied** | **Depth (m)** | 3.70 |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118337 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 2 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 3 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 4 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 5 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
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**Rose Lane**
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**Maidstone**
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| Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | D2 |
| **Order No: None Supplied** | **Depth (m)** | 4.05 |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118338 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 2 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 3 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 4 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 5 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-24916** | **Date Sampled** | None Supplied |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH1 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied |
| **Order No: None Supplied** | **Depth (m)** | 6.05 |
| **Reporting Date: 24/09/2014** | **QTSE Sample No** | 118339 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 2 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 3 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 4 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 5 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |

There were no / other compounds identified with a match of >90%

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**Rose Lane**
**Lenham Heath**
**Maidstone**
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| Soil Analysis Certificate - Sample Descriptions | |
|---|---|
| QTS Environmental Report No: 14-24916 | |
| Soil Consultants Ltd | |
| Site Reference: Bedford Avenue | |
| Project / Job Ref: None Supplied | |
| Order No: None Supplied | |
| Reporting Date: 24/09/2014 | |

| QTSE Sample No | TP / BH No | Additional Refs | Depth (m) | Moisture Content (%) | Sample Matrix Description |
|---|---|---|---|---|---|
| ^ 118337 | BH1 | D1 | 3.70 | 13 | Brown loamy clay with rubble |
| ^ 118338 | BH1 | D2 | 4.05 | 11.5 | Brown clayey gravel with stones |
| ^ 118339 | BH1 | None Supplied | 6.05 | 15.9 | Brown sandy gravel with stones |

*Moisture content is part of procedure E003 & is not an accredited test*
Insufficient Sample I/S
Unsuitable Sample U/S
^ no sampling date provided; unable to confirm if samples are within acceptable holding times

**QTS Environmental Ltd**
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**Rose Lane**
**Lenham Heath**
**Maidstone**
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**Tel : 01622 850410**

4480

| **Soil Analysis Certificate - Methodology & Miscellaneous Information** |
|---|
| **QTS Environmental Report No: 14-24916** |
| **Soil Consultants Ltd** |
| **Site Reference: Bedford Avenue** |
| **Project / Job Ref: None Supplied** |
| **Order No: None Supplied** |
| **Reporting Date: 24/09/2014** |

| Matrix | Analysed On | Determinand | Brief Method Description | Method No |
|---|---|---|---|---|
| Soil | D | Boron - Water Soluble | Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES | E012 |
| Soil | AR | BTEX | Determination of BTEX by headspace GC-MS | E001 |
| Soil | D | Cations | Determination of cations in soil by aqua-regia digestion followed by ICP-OES | E002 |
| Soil | D | Chloride - Water Soluble (2:1) | Determination of chloride by extraction with water & analysed by ion chromatography | E009 |
| Soil | AR | Chromium - Hexavalent | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry | E016 |
| Soil | AR | Cyanide - Complex | Determination of complex cyanide by distillation followed by colorimetry | E015 |
| Soil | AR | Cyanide - Free | Determination of free cyanide by distillation followed by colorimetry | E015 |
| Soil | AR | Cyanide - Total | Determination of total cyanide by distillation followed by colorimetry | E015 |
| Soil | D | Cyclohexane Extractable Matter (CEM) | Gravimetrically determined through extraction with cyclohexane | E011 |
| Soil | AR | Diesel Range Organics (C10 - C24) | Determination of hexane/acetone extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | Electrical Conductivity | Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement | E022 |
| Soil | AR | Electrical Conductivity | Determination of electrical conductivity by addition of water followed by electrometric measurement | E023 |
| Soil | D | Elemental Sulphur | Determination of elemental sulphur by solvent extraction followed by GC-MS | E020 |
| Soil | AR | EPH (C10 – C40) | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | EPH Product ID | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | EPH TEXAS | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | D | Fluoride - Water Soluble | Determination of Fluoride by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | FOC (Fraction Organic Carbon) | Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | D | Loss on Ignition @ 450oC | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace | E019 |
| Soil | D | Magnesium - Water Soluble | Determination of water soluble magnesium by extraction with water followed by ICP-OES | E025 |
| Soil | D | Metals | Determination of metals by aqua-regia digestion followed by ICP-OES | E002 |
| Soil | AR | Mineral Oil (C10 - C40) | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge | E004 |
| Soil | AR | Moisture Content | Moisture content; determined gravimetrically | E003 |
| Soil | D | Nitrate - Water Soluble (2:1) | Determination of nitrate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Organic Matter | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | AR | PAH - Speciated (EPA 16) | Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards | E005 |
| Soil | AR | PCB - 7 Congeners | Determination of PCB by extraction with acetone and hexane followed by GC-MS | E008 |
| Soil | D | Petroleum Ether Extract (PEE) | Gravimetrically determined through extraction with petroleum ether | E011 |
| Soil | AR | pH | Determination of pH by addition of water followed by electrometric measurement | E007 |
| Soil | AR | Phenols - Total (monohydric) | Determination of phenols by distillation followed by colorimetry | E021 |
| Soil | D | Phosphate - Water Soluble (2:1) | Determination of phosphate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Sulphate (as SO4) - Total | Determination of total sulphate by extraction with 10% HCl followed by ICP-OES | E013 |
| Soil | D | Sulphate (as SO4) - Water Soluble (2:1) | Determination of sulphate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Sulphate (as SO4) - Water Soluble (2:1) | Determination of water soluble sulphate by extraction with water followed by ICP-OES | E014 |
| Soil | AR | Sulphide | Determination of sulphide by distillation followed by colorimetry | E018 |
| Soil | D | Sulphur - Total | Determination of total sulphur by extraction with aqua-regia followed by ICP-OES | E024 |
| Soil | AR | SVOC | Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS | E006 |
| Soil | AR | Thiocyanate (as SCN) | Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry | E017 |
| Soil | D | Toluene Extractable Matter (TEM) | Gravimetrically determined through extraction with toluene | E011 |
| Soil | D | Total Organic Carbon (TOC) | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | AR | TPH CWG | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge | E004 |
| Soil | AR | TPH LQM | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge | E004 |
| Soil | AR | VOCs | Determination of volatile organic compounds by headspace GC-MS | E001 |
| Soil | AR | VPH (C6 - C10) | Determination of hydrocarbons C6-C10 by headspace GC-MS | E001 |

**D Dried**
**AR As Received**

John Bartley
Soil Consultants Ltd
8 Haven House
Albemarle Street
Harwich
Essex
CO12 3HL

**QTS Environmental Ltd**
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
**t:** 01622 850410
russell.jarvis@qtsenvironmental.com

# QTS Environmental Report No: 14-25327

| | |
|---|---|
| **Site Reference:** | Bedford Avenue |
| **Project / Job Ref:** | None Supplied |
| **Order No:** | None Supplied |
| **Sample Receipt Date:** | 01/10/2014 |
| **Sample Scheduled Date:** | 02/10/2014 |
| **Report Issue Number:** | 1 |
| **Reporting Date:** | 08/10/2014 |

**Authorised by:**

Russell Jarvis
Director
**On behalf of QTS Environmental Ltd**

**Authorised by:**

Kevin Old
Director
**On behalf of QTS Environmental Ltd**

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 | 23/09/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 | BH2 | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/D | 2/B | | | |
| **Order No: None Supplied** | **Depth (m)** | 3.55 | 5.00 - 5.45 | | | |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120311 | 120312 | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Asbestos Screen | N/a | N/a | ISO17025 | Not Detected | Not Detected | | | |
| pH | pH Units | N/a | MCERTS | 7.7 | 8.6 | | | |
| W/S Sulphate as SO4 (2:1) | g/l | < 0.01 | MCERTS | 0.18 | 0.36 | | | |
| Elemental Sulphur | mg/kg | < 10 | NONE | < 10 | < 10 | | | |
| Sulphide | mg/kg | < 5 | NONE | < 5 | < 5 | | | |
| Total Organic Carbon (TOC) | % | < 0.1 | NONE | 0.3 | 0.5 | | | |
| Arsenic (As) | mg/kg | < 2 | MCERTS | 6 | 14 | | | |
| Beryllium (Be) | mg/kg | < 0.5 | NONE | < 0.5 | < 0.5 | | | |
| W/S Boron | mg/kg | < 1 | NONE | < 1 | < 1 | | | |
| Cadmium (Cd) | mg/kg | < 0.5 | MCERTS | 0.8 | < 0.5 | | | |
| Chromium (Cr) | mg/kg | < 2 | MCERTS | 12 | 11 | | | |
| Chromium (hexavalent) | mg/kg | < 2 | NONE | < 2 | < 2 | | | |
| Copper (Cu) | mg/kg | < 4 | MCERTS | 20 | 5 | | | |
| Lead (Pb) | mg/kg | < 3 | MCERTS | 147 | 25 | | | |
| Mercury (Hg) | mg/kg | < 1 | NONE | < 1 | < 1 | | | |
| Nickel (Ni) | mg/kg | < 3 | MCERTS | 16 | 12 | | | |
| Selenium (Se) | mg/kg | < 3 | NONE | < 3 | < 3 | | | |
| Vanadium (V) | mg/kg | < 2 | NONE | 20 | 16 | | | |
| Zinc (Zn) | mg/kg | < 3 | MCERTS | 199 | 42 | | | |
| Total Phenols (monohydric) | mg/kg | < 2 | NONE | < 2 | < 2 | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{O}$C

Analysis carried out on the dried sample is corrected for the stone content

The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)

This report refers to samples as received, and QTS Environmental Ltd, takes no responsibility for the accuracy or competence of sampling by others.

The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.

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

Asbestos Analyst: Graham Revell

RL: Reporting Limit

Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).

Subcontracted analysis $^{(S)}$

**QTS Environmental Ltd**
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**Tel : 01622 850410**

| Soil Analysis Certificate - Speciated PAHs | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 | 23/09/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 | BH2 | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/D | 2/B | | | |
| **Order No: None Supplied** | **Depth (m)** | 3.55 | 5.00 - 5.45 | | | |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120311 | 120312 | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | < 0.1 | MCERTS | 1.32 | < 0.1 | | | |
| Acenaphthylene | mg/kg | < 0.1 | MCERTS | < 0.1 | < 0.1 | | | |
| Acenaphthene | mg/kg | < 0.1 | MCERTS | 1.71 | < 0.1 | | | |
| Fluorene | mg/kg | < 0.1 | MCERTS | 1.77 | < 0.1 | | | |
| Phenanthrene | mg/kg | < 0.1 | MCERTS | 11.70 | < 0.1 | | | |
| Anthracene | mg/kg | < 0.1 | MCERTS | 3.09 | < 0.1 | | | |
| Fluoranthene | mg/kg | < 0.1 | MCERTS | 9.35 | < 0.1 | | | |
| Pyrene | mg/kg | < 0.1 | MCERTS | 7.16 | < 0.1 | | | |
| Benzo(a)anthracene | mg/kg | < 0.1 | MCERTS | 3.64 | < 0.1 | | | |
| Chrysene | mg/kg | < 0.1 | MCERTS | 2.95 | < 0.1 | | | |
| Benzo(b)fluoranthene | mg/kg | < 0.1 | MCERTS | 2.60 | < 0.1 | | | |
| Benzo(k)fluoranthene | mg/kg | < 0.1 | MCERTS | 1.07 | < 0.1 | | | |
| Benzo(a)pyrene | mg/kg | < 0.1 | MCERTS | 2.18 | < 0.1 | | | |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS | 0.87 | < 0.1 | | | |
| Dibenz(a,h)anthracene | mg/kg | < 0.1 | MCERTS | 0.13 | < 0.1 | | | |
| Benzo(ghi)perylene | mg/kg | < 0.1 | MCERTS | 0.67 | < 0.1 | | | |
| Coronene | mg/kg | < 0.1 | NONE | 0.40 | < 0.1 | | | |
| Total Oily Waste PAHs | mg/kg | < 1 | MCERTS | 13.4 | < 1 | | | |
| Total Dutch 10 PAHs | mg/kg | < 1 | MCERTS | 36.8 | < 1 | | | |
| Total EPA-16 PAHs | mg/kg | < 1.6 | MCERTS | 50.2 | < 1.6 | | | |
| Total WAC-17 PAHs | mg/kg | < 1.7 | NONE | 50.6 | < 1.7 | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{o}$C

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**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - EPH Oily Waste Banded | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 | 23/09/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 | BH2 | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/D | 2/B | | | |
| **Order No: None Supplied** | **Depth (m)** | 3.55 | 5.00 - 5.45 | | | |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120311 | 120312 | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Oily Waste (C6 - C10) | mg/kg | < 1 | NONE | < 1 | < 1 | | | |
| Oily Waste (>C10 - C25) | mg/kg | < 1 | MCERTS | 70 | < 1 | | | |
| Oily Waste (>C25 - C40) | mg/kg | < 6 | MCERTS | 65 | < 6 | | | |
| Oily Waste (C6 - C40) | mg/kg | < 6 | NONE | 135 | < 6 | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{o}$C

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - TPH CWG Banded | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 | 23/09/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 | BH2 | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/D | 2/B | | | |
| **Order No: None Supplied** | **Depth (m)** | 3.55 | 5.00 - 5.45 | | | |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120311 | 120312 | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aliphatic >C5 - C6 | mg/kg | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Aliphatic >C6 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | < 0.05 | | | |
| Aliphatic >C8 - C10 | mg/kg | < 1 | NONE | < 1 | < 1 | | | |
| Aliphatic >C10 - C12 | mg/kg | < 1 | NONE | < 1 | < 1 | | | |
| Aliphatic >C12 - C16 | mg/kg | < 1 | NONE | < 1 | < 1 | | | |
| Aliphatic >C16 - C21 | mg/kg | < 1 | NONE | < 1 | < 1 | | | |
| Aliphatic >C21 - C34 | mg/kg | < 6 | NONE | 28 | < 6 | | | |
| Aliphatic (C5 - C34) | mg/kg | < 12 | NONE | | < 12 | | | |
| Aromatic >C5 - C7 | mg/kg | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Aromatic >C7 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | < 0.05 | | | |
| Aromatic >C8 - C10 | mg/kg | < 1 | NONE | < 1 | < 1 | | | |
| Aromatic >C10 - C12 | mg/kg | < 1 | NONE | 2 | < 1 | | | |
| Aromatic >C12 - C16 | mg/kg | < 1 | NONE | 10 | < 1 | | | |
| Aromatic >C16 - C21 | mg/kg | < 1 | NONE | 26 | < 1 | | | |
| Aromatic >C21 - C35 | mg/kg | < 6 | NONE | 44 | < 6 | | | |
| Aromatic (C5 - C35) | mg/kg | < 12 | NONE | 83 | < 12 | | | |
| Total >C5 - C35 | mg/kg | < 24 | NONE | 121 | < 24 | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{0}$C

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - BTEX / MTBE | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 | 23/09/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 | BH2 | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/D | 2/B | | | |
| **Order No: None Supplied** | **Depth (m)** | 3.55 | 5.00 - 5.45 | | | |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120311 | 120312 | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | | | |
| Toluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Ethylbenzene | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| p & m-xylene | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| o-xylene | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| MTBE | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{o}$C

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

4480

| Soil Analysis Certificate - Volatile Organic Compounds (VOC) | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 | 23/09/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 | BH2 | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/D | 2/B | | | |
| **Order No: None Supplied** | **Depth (m)** | 3.55 | 5.00 - 5.45 | | | |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120311 | 120312 | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Vinyl Chloride | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Chloromethane | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| Chloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Bromomethane | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| Trichlorofluoromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,1-Dichloroethene | ug/kg | < 5 | ISO17025 | < 5 | < 5 | | | |
| MTBE | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| trans-1,2-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,1-Dichloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| cis-1,2-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 2,2-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Chloroform | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Bromochloromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,1,1-Trichloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,1-Dichloropropene | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| Carbon Tetrachloride | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,2-Dichloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Benzene | ug/kg | < 2 | MCERTS | < 2 | < 2 | | | |
| 1,2-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Trichloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Bromodichloromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Dibromomethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| TAME | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| cis-1,3-Dichloropropene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Toluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| trans-1,3-Dichloropropene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,1,2-Trichloroethane | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| 1,3-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Tetrachloroethene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Dibromochloromethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,2-Dibromoethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Chlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,1,1,2-Tetrachloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Ethyl Benzene | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| m,p-Xylene | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| o-Xylene | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| Styrene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Bromoform | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| Isopropylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,1,2,2-Tetrachloroethane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,2,3-Trichloropropane | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| n-Propylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| Bromobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 2-Chlorotoluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,3,5-Trimethylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 4-Chlorotoluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| tert-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,2,4-Trimethylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| sec-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| p-Isopropyltoluene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,3-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,4-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| n-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,2-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |
| 1,2-Dibromo-3-chloropropane | ug/kg | < 10 | MCERTS | < 10 | < 10 | | | |
| Hexachlorobutadiene | ug/kg | < 5 | MCERTS | < 5 | < 5 | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{o}$C

**QTS Environmental Ltd**
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**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/D |
| **Order No: None Supplied** | **Depth (m)** | 3.55 |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120311 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | µg/kg | < 10 | < 10 |
| 2 | N/a | N/a | µg/kg | < 10 | < 10 |
| 3 | N/a | N/a | µg/kg | < 10 | < 10 |
| 4 | N/a | N/a | µg/kg | < 10 | < 10 |
| 5 | N/a | N/a | µg/kg | < 10 | < 10 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/B |
| **Order No: None Supplied** | **Depth (m)** | 5.00 - 5.45 |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120312 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | µg/kg | < 10 | < 10 |
| 2 | N/a | N/a | µg/kg | < 10 | < 10 |
| 3 | N/a | N/a | µg/kg | < 10 | < 10 |
| 4 | N/a | N/a | µg/kg | < 10 | < 10 |
| 5 | N/a | N/a | µg/kg | < 10 | < 10 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC) | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 | 23/09/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 | BH2 | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/D | 2/B | | | |
| **Order No: None Supplied** | **Depth (m)** | 3.55 | 5.00 - 5.45 | | | |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120311 | 120312 | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Phenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 1,2,4-Trichlorobenzene | mg/kg | < 0.1 | **ISO17025** | < 0.1 | < 0.1 | | | |
| 2-Nitrophenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Nitrobenzene | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| 0-Cresol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| bis(2-chloroethoxy)methane | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| bis(2-chloroethyl)ether | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| 2,4-Dichlorophenol | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| 2-Chlorophenol | mg/kg | < 0.1 | **ISO17025** | < 0.1 | < 0.1 | | | |
| 1,3-Dichlorobenzene | mg/kg | < 0.1 | **ISO17025** | < 0.1 | < 0.1 | | | |
| 1,4-Dichlorobenzene | mg/kg | < 0.1 | **ISO17025** | < 0.1 | < 0.1 | | | |
| 1,2-Dichlorobenzene | mg/kg | < 0.1 | **ISO17025** | < 0.1 | < 0.1 | | | |
| 2,4-Dimethylphenol | mg/kg | < 0.15 | **ISO17025** | < 0.15 | < 0.15 | | | |
| Isophorone | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Hexachloroethane | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| p-Cresol | mg/kg | < 0.15 | **MCERTS** | < 0.15 | < 0.15 | | | |
| 2,4,6-Trichlorophenol | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| 2,4,5-Trichlorophenol | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| 2-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-Chloro-3-methylphenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2-Methylnaphthalene | mg/kg | < 0.1 | **MCERTS** | 0.2 | < 0.1 | | | |
| Hexachlorocyclopentadiene | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Hexachlorobutadiene | mg/kg | < 0.1 | **ISO17025** | < 0.1 | < 0.1 | | | |
| 2,6-Dinitrotoluene | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| Dimethyl phthalate | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2-Chloronaphthalene | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| 4-Chloroanaline | mg/kg | < 0.2 | NONE | < 0.2 | < 0.2 | | | |
| 4-Nitrophenol | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-Chlorophenyl phenyl ether | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| 3-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-Bromophenyl phenyl ether | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| Hexachlorobenzene | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| 2,4-Dinitrotoluene | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| Diethyl phthalate | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| Dibenzofuran | mg/kg | < 0.1 | **MCERTS** | 0.5 | < 0.1 | | | |
| Azobenzene | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Dibutyl phthalate | mg/kg | < 0.15 | **ISO17025** | < 0.15 | < 0.15 | | | |
| Carbazole | mg/kg | < 0.1 | **ISO17025** | 0.7 | < 0.1 | | | |
| bis(2-ethylhexyl)phthalate | mg/kg | < 0.2 | **MCERTS** | 0.2 | < 0.2 | | | |
| Benzyl butyl phthalate | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |
| Di-n-octyl phthalate | mg/kg | < 0.1 | **MCERTS** | < 0.1 | < 0.1 | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{0}$C

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**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/D |
| **Order No: None Supplied** | **Depth (m)** | 3.55 |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120311 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 2 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 3 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 4 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 5 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/B |
| **Order No: None Supplied** | **Depth (m)** | 5.00 - 5.45 |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120312 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 2 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 3 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 4 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 5 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
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**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - PCB (7 Congeners) | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25327** | **Date Sampled** | 23/09/14 | 23/09/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | BH2 | BH2 | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | 2/D | 2/B | | | |
| **Order No: None Supplied** | **Depth (m)** | 3.55 | 5.00 - 5.45 | | | |
| **Reporting Date: 08/10/2014** | **QTSE Sample No** | 120311 | 120312 | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congener 28 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | | | |
| PCB Congener 52 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | | | |
| PCB Congener 101 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | | | |
| PCB Congener 118 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | | | |
| PCB Congener 138 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | | | |
| PCB Congener 153 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | | | |
| PCB Congener 180 | mg/kg | < 0.008 | NONE | < 0.008 | < 0.008 | | | |
| Total PCB (7 Congeners) | mg/kg | < 0.1 | NONE | < 0.1 | < 0.1 | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{O}$C

**QTS Environmental Ltd**
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**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Sample Descriptions | |
|---|---|
| QTS Environmental Report No: 14-25327 | |
| Soil Consultants Ltd | |
| Site Reference: Bedford Avenue | |
| Project / Job Ref: None Supplied | |
| Order No: None Supplied | |
| Reporting Date: 08/10/2014 | |

| QTSE Sample No | TP / BH No | Additional Refs | Depth (m) | Moisture Content (%) | Sample Matrix Description |
|---|---|---|---|---|---|
| 120311 | BH2 | 2/D | 3.55 | 6.8 | Brown clayey gravel with stones |
| 120312 | BH2 | 2/B | 5.00 - 5.45 | 5.2 | Brown sandy gravel with stones |

*Moisture content is part of procedure E003 & is not an accredited test*
Insufficient Sample I/S
Unsuitable Sample U/S

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
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**Tel : 01622 850410**

4480

| **Soil Analysis Certificate - Methodology & Miscellaneous Information** |
|---|
| **QTS Environmental Report No: 14-25327** |
| **Soil Consultants Ltd** |
| **Site Reference: Bedford Avenue** |
| **Project / Job Ref: None Supplied** |
| **Order No: None Supplied** |
| **Reporting Date: 08/10/2014** |

| Matrix | Analysed On | Determinand | Brief Method Description | Method No |
|---|---|---|---|---|
| Soil | D | Boron - Water Soluble | Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES | E012 |
| Soil | AR | BTEX | Determination of BTEX by headspace GC-MS | E001 |
| Soil | D | Cations | Determination of cations in soil by aqua-regia digestion followed by ICP-OES | E002 |
| Soil | D | Chloride - Water Soluble (2:1) | Determination of chloride by extraction with water & analysed by ion chromatography | E009 |
| Soil | AR | Chromium - Hexavalent | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry | E016 |
| Soil | AR | Cyanide - Complex | Determination of complex cyanide by distillation followed by colorimetry | E015 |
| Soil | AR | Cyanide - Free | Determination of free cyanide by distillation followed by colorimetry | E015 |
| Soil | AR | Cyanide - Total | Determination of total cyanide by distillation followed by colorimetry | E015 |
| Soil | D | Cyclohexane Extractable Matter (CEM) | Gravimetrically determined through extraction with cyclohexane | E011 |
| Soil | AR | Diesel Range Organics (C10 - C24) | Determination of hexane/acetone extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | Electrical Conductivity | Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement | E022 |
| Soil | AR | Electrical Conductivity | Determination of electrical conductivity by addition of water followed by electrometric measurement | E023 |
| Soil | D | Elemental Sulphur | Determination of elemental sulphur by solvent extraction followed by GC-MS | E020 |
| Soil | AR | EPH (C10 – C40) | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | EPH Product ID | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | EPH TEXAS | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | D | Fluoride - Water Soluble | Determination of Fluoride by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | FOC (Fraction Organic Carbon) | Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | D | Loss on Ignition @ 450oC | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace | E019 |
| Soil | D | Magnesium - Water Soluble | Determination of water soluble magnesium by extraction with water followed by ICP-OES | E025 |
| Soil | D | Metals | Determination of metals by aqua-regia digestion followed by ICP-OES | E002 |
| Soil | AR | Mineral Oil (C10 - C40) | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge | E004 |
| Soil | AR | Moisture Content | Moisture content; determined gravimetrically | E003 |
| Soil | D | Nitrate - Water Soluble (2:1) | Determination of nitrate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Organic Matter | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | AR | PAH - Speciated (EPA 16) | Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards | E005 |
| Soil | AR | PCB - 7 Congeners | Determination of PCB by extraction with acetone and hexane followed by GC-MS | E008 |
| Soil | D | Petroleum Ether Extract (PEE) | Gravimetrically determined through extraction with petroleum ether | E011 |
| Soil | AR | pH | Determination of pH by addition of water followed by electrometric measurement | E007 |
| Soil | AR | Phenols - Total (monohydric) | Determination of phenols by distillation followed by colorimetry | E021 |
| Soil | D | Phosphate - Water Soluble (2:1) | Determination of phosphate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Sulphate (as SO4) - Total | Determination of total sulphate by extraction with 10% HCl followed by ICP-OES | E013 |
| Soil | D | Sulphate (as SO4) - Water Soluble (2:1) | Determination of sulphate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Sulphate (as SO4) - Water Soluble (2:1) | Determination of water soluble sulphate by extraction with water followed by ICP-OES | E014 |
| Soil | AR | Sulphide | Determination of sulphide by distillation followed by colorimetry | E018 |
| Soil | D | Sulphur - Total | Determination of total sulphur by extraction with aqua-regia followed by ICP-OES | E024 |
| Soil | AR | SVOC | Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS | E006 |
| Soil | AR | Thiocyanate (as SCN) | Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry | E017 |
| Soil | D | Toluene Extractable Matter (TEM) | Gravimetrically determined through extraction with toluene | E011 |
| Soil | D | Total Organic Carbon (TOC) | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | AR | TPH CWG | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge | E004 |
| Soil | AR | TPH LQM | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge | E004 |
| Soil | AR | VOCs | Determination of volatile organic compounds by headspace GC-MS | E001 |
| Soil | AR | VPH (C6 - C10) | Determination of hydrocarbons C6-C10 by headspace GC-MS | E001 |

**D Dried**
**AR As Received**

John Bartley
Soil Consultants Ltd
8 Haven House
Albemarle Street
Harwich
Essex
CO12 3HL

**QTS Environmental Ltd**
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ME17 2JN
**t:** 01622 850410
russell.jarvis@qtsenvironmental.com

# QTS Environmental Report No: 14-25397

| | |
|---|---|
| **Site Reference:** | Bedford Avenue |
| **Project / Job Ref:** | None Supplied |
| **Order No:** | None Supplied |
| **Sample Receipt Date:** | 03/10/2014 |
| **Sample Scheduled Date:** | 06/10/2014 |
| **Report Issue Number:** | 1 |
| **Reporting Date:** | 10/10/2014 |

**Authorised by:**

Russell Jarvis
Director
**On behalf of QTS Environmental Ltd**

**Authorised by:**

Kevin Old
Director
**On behalf of QTS Environmental Ltd**

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25397** | **Date Sampled** | None Supplied | | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | TP12 | | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied | | | | |
| **Order No: None Supplied** | **Depth (m)** | 6.50 | | | | |
| **Reporting Date: 10/10/2014** | **QTSE Sample No** | 120671 | | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Asbestos Screen | N/a | N/a | ISO17025 | Not Detected | | | | |
| pH | pH Units | N/a | MCERTS | 8.2 | | | | |
| W/S Sulphate as SO4 (2:1) | g/l | < 0.01 | MCERTS | 0.08 | | | | |
| Elemental Sulphur | mg/kg | < 10 | NONE | < 10 | | | | |
| Sulphide | mg/kg | < 5 | NONE | < 5 | | | | |
| Total Organic Carbon (TOC) | % | < 0.1 | NONE | 0.3 | | | | |
| Arsenic (As) | mg/kg | < 2 | MCERTS | 5 | | | | |
| Beryllium (Be) | mg/kg | < 0.5 | NONE | < 0.5 | | | | |
| W/S Boron | mg/kg | < 1 | NONE | < 1 | | | | |
| Cadmium (Cd) | mg/kg | < 0.5 | MCERTS | < 0.5 | | | | |
| Chromium (Cr) | mg/kg | < 2 | MCERTS | 16 | | | | |
| Chromium (hexavalent) | mg/kg | < 2 | NONE | < 2 | | | | |
| Copper (Cu) | mg/kg | < 4 | MCERTS | 20 | | | | |
| Lead (Pb) | mg/kg | < 3 | MCERTS | 13 | | | | |
| Mercury (Hg) | mg/kg | < 1 | NONE | < 1 | | | | |
| Nickel (Ni) | mg/kg | < 3 | MCERTS | 16 | | | | |
| Selenium (Se) | mg/kg | < 3 | NONE | < 3 | | | | |
| Vanadium (V) | mg/kg | < 2 | NONE | 23 | | | | |
| Zinc (Zn) | mg/kg | < 3 | MCERTS | 38 | | | | |
| Total Phenols (monohydric) | mg/kg | < 2 | NONE | < 2 | | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{O}$C

Analysis carried out on the dried sample is corrected for the stone content

The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)

This report refers to samples as received, and QTS Environmental Ltd, takes no responsibility for the accuracy or competence of sampling by others.

The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.

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

Asbestos Analyst: Javeed Malik

RL: Reporting Limit

Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).

Subcontracted analysis $^{(S)}$

**QTS Environmental Ltd**
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| Soil Analysis Certificate - Speciated PAHs | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25397** | **Date Sampled** | None Supplied | | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | TP12 | | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied | | | | |
| **Order No: None Supplied** | **Depth (m)** | 6.50 | | | | |
| **Reporting Date: 10/10/2014** | **QTSE Sample No** | 120671 | | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Acenaphthylene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Acenaphthene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Fluorene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Phenanthrene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Fluoranthene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Pyrene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Benzo(a)anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Chrysene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Benzo(b)fluoranthene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Benzo(k)fluoranthene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Benzo(a)pyrene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Dibenz(a,h)anthracene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Benzo(ghi)perylene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Coronene | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| Total Oily Waste PAHs | mg/kg | < 1 | MCERTS | < 1 | | | | |
| Total Dutch 10 PAHs | mg/kg | < 1 | MCERTS | < 1 | | | | |
| Total EPA-16 PAHs | mg/kg | < 1.6 | MCERTS | < 1.6 | | | | |
| Total WAC-17 PAHs | mg/kg | < 1.7 | NONE | < 1.7 | | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{o}$C

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| Soil Analysis Certificate - EPH Oily Waste Banded | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25397** | **Date Sampled** | None Supplied | | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | TP12 | | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied | | | | |
| **Order No: None Supplied** | **Depth (m)** | 6.50 | | | | |
| **Reporting Date: 10/10/2014** | **QTSE Sample No** | 120671 | | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Oily Waste (C6 - C10) | mg/kg | < 1 | NONE | < 1 | | | | |
| Oily Waste (>C10 - C25) | mg/kg | < 1 | MCERTS | < 1 | | | | |
| Oily Waste (>C25 - C40) | mg/kg | < 6 | MCERTS | < 6 | | | | |
| Oily Waste (C6 - C40) | mg/kg | < 6 | NONE | < 6 | | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{o}$C

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| **Soil Analysis Certificate - TPH CWG Banded** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25397** | **Date Sampled** | None Supplied | | | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | | | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | TP12 | | | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied | | | | | |
| **Order No: None Supplied** | **Depth (m)** | 6.50 | | | | | |
| **Reporting Date: 10/10/2014** | **QTSE Sample No** | 120671 | | | | | |

| **Determinand** | **Unit** | **RL** | **Accreditation** | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aliphatic >C5 - C6 | mg/kg | < 0.01 | NONE | < 0.01 | | | | |
| Aliphatic >C6 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | | | | |
| Aliphatic >C8 - C10 | mg/kg | < 1 | NONE | < 1 | | | | |
| Aliphatic >C10 - C12 | mg/kg | < 1 | NONE | < 1 | | | | |
| Aliphatic >C12 - C16 | mg/kg | < 1 | NONE | < 1 | | | | |
| Aliphatic >C16 - C21 | mg/kg | < 1 | NONE | < 1 | | | | |
| Aliphatic >C21 - C34 | mg/kg | < 6 | NONE | < 6 | | | | |
| Aliphatic (C5 - C34) | mg/kg | < 12 | NONE | < 12 | | | | |
| Aromatic >C5 - C7 | mg/kg | < 0.01 | NONE | < 0.01 | | | | |
| Aromatic >C7 - C8 | mg/kg | < 0.05 | NONE | < 0.05 | | | | |
| Aromatic >C8 - C10 | mg/kg | < 1 | NONE | < 1 | | | | |
| Aromatic >C10 - C12 | mg/kg | < 1 | NONE | < 1 | | | | |
| Aromatic >C12 - C16 | mg/kg | < 1 | NONE | < 1 | | | | |
| Aromatic >C16 - C21 | mg/kg | < 1 | NONE | < 1 | | | | |
| Aromatic >C21 - C35 | mg/kg | < 6 | NONE | < 6 | | | | |
| Aromatic (C5 - C35) | mg/kg | < 12 | NONE | < 12 | | | | |
| Total >C5 - C35 | mg/kg | < 24 | NONE | < 24 | | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{0}$C

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**Maidstone**
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| Soil Analysis Certificate - BTEX / MTBE | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25397** | **Date Sampled** | None Supplied | | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | TP12 | | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied | | | | |
| **Order No: None Supplied** | **Depth (m)** | 6.50 | | | | |
| **Reporting Date: 10/10/2014** | **QTSE Sample No** | 120671 | | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzene | ug/kg | < 2 | MCERTS | < 2 | | | | |
| Toluene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Ethylbenzene | ug/kg | < 10 | MCERTS | < 10 | | | | |
| p & m-xylene | ug/kg | < 10 | MCERTS | < 10 | | | | |
| o-xylene | ug/kg | < 10 | MCERTS | < 10 | | | | |
| MTBE | ug/kg | < 5 | MCERTS | < 5 | | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{o}$C

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4480

| **Soil Analysis Certificate - Volatile Organic Compounds (VOC)** | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25397** | **Date Sampled** | None Supplied | | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | TP12 | | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied | | | | |
| **Order No: None Supplied** | **Depth (m)** | 6.50 | | | | |
| **Reporting Date: 10/10/2014** | **QTSE Sample No** | 120671 | | | | |

| **Determinand** | **Unit** | **RL** | **Accreditation** | | | | | |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Vinyl Chloride | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Chloromethane | ug/kg | < 10 | MCERTS | < 10 | | | | |
| Chloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Bromomethane | ug/kg | < 10 | MCERTS | < 10 | | | | |
| Trichlorofluoromethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1-Dichloroethene | ug/kg | < 5 | ISO17025 | < 5 | | | | |
| MTBE | ug/kg | < 5 | MCERTS | < 5 | | | | |
| trans-1,2-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1-Dichloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| cis-1,2-Dichloroethene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 2,2-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Chloroform | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Bromochloromethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1,1-Trichloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1-Dichloropropene | ug/kg | < 10 | MCERTS | < 10 | | | | |
| Carbon Tetrachloride | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,2-Dichloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Benzene | ug/kg | < 2 | MCERTS | < 2 | | | | |
| 1,2-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Trichloroethene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Bromodichloromethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Dibromomethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| TAME | ug/kg | < 5 | MCERTS | < 5 | | | | |
| cis-1,3-Dichloropropene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Toluene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| trans-1,3-Dichloropropene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1,2-Trichloroethane | ug/kg | < 10 | MCERTS | < 10 | | | | |
| 1,3-Dichloropropane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Tetrachloroethene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Dibromochloromethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,2-Dibromoethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Chlorobenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1,1,2-Tetrachloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Ethyl Benzene | ug/kg | < 10 | MCERTS | < 10 | | | | |
| m,p-Xylene | ug/kg | < 10 | MCERTS | < 10 | | | | |
| o-Xylene | ug/kg | < 10 | MCERTS | < 10 | | | | |
| Styrene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Bromoform | ug/kg | < 10 | MCERTS | < 10 | | | | |
| Isopropylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,1,2,2-Tetrachloroethane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,2,3-Trichloropropane | ug/kg | < 5 | MCERTS | < 5 | | | | |
| n-Propylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| Bromobenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 2-Chlorotoluene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,3,5-Trimethylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 4-Chlorotoluene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| tert-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,2,4-Trimethylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| sec-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| p-Isopropyltoluene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,3-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,4-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| n-Butylbenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,2-Dichlorobenzene | ug/kg | < 5 | MCERTS | < 5 | | | | |
| 1,2-Dibromo-3-chloropropane | ug/kg | < 10 | MCERTS | < 10 | | | | |
| Hexachlorobutadiene | ug/kg | < 5 | MCERTS | < 5 | | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{O}$C

**QTS Environmental Ltd**
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**Tel : 01622 850410**

| Soil Analysis Certificate - Volatile Organic Compounds TIC (VOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-25397** | **Date Sampled** | None Supplied |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | TP12 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied |
| **Order No: None Supplied** | **Depth (m)** | 6.50 |
| **Reporting Date: 10/10/2014** | **QTSE Sample No** | 120671 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | µg/kg | < 10 | < 10 |
| 2 | N/a | N/a | µg/kg | < 10 | < 10 |
| 3 | N/a | N/a | µg/kg | < 10 | < 10 |
| 4 | N/a | N/a | µg/kg | < 10 | < 10 |
| 5 | N/a | N/a | µg/kg | < 10 | < 10 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC) | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25397** | **Date Sampled** | None Supplied | | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | TP12 | | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied | | | | |
| **Order No: None Supplied** | **Depth (m)** | 6.50 | | | | |
| **Reporting Date: 10/10/2014** | **QTSE Sample No** | 120671 | | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| Phenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 2-Nitrophenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| Nitrobenzene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 0-Cresol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| bis(2-chloroethoxy)methane | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| bis(2-chloroethyl)ether | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 2,4-Dichlorophenol | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 2-Chlorophenol | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 1,3-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 1,4-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 1,2-Dichlorobenzene | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 2,4-Dimethylphenol | mg/kg | < 0.15 | ISO17025 | < 0.15 | | | | |
| Isophorone | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| Hexachloroethane | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| p-Cresol | mg/kg | < 0.15 | MCERTS | < 0.15 | | | | |
| 2,4,6-Trichlorophenol | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 2,4,5-Trichlorophenol | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 2-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 4-Chloro-3-methylphenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2-Methylnaphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Hexachlorocyclopentadiene | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| Hexachlorobutadiene | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| 2,6-Dinitrotoluene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Dimethyl phthalate | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 2-Chloronaphthalene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 4-Chloroanaline | mg/kg | < 0.2 | NONE | < 0.2 | | | | |
| 4-Nitrophenol | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 4-Chlorophenyl phenyl ether | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 3-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 4-Nitroaniline | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| 4-Bromophenyl phenyl ether | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Hexachlorobenzene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| 2,4-Dinitrotoluene | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Diethyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Dibenzofuran | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Azobenzene | mg/kg | < 0.1 | NONE | < 0.1 | | | | |
| Dibutyl phthalate | mg/kg | < 0.15 | ISO17025 | < 0.15 | | | | |
| Carbazole | mg/kg | < 0.1 | ISO17025 | < 0.1 | | | | |
| bis(2-ethylhexyl)phthalate | mg/kg | < 0.2 | MCERTS | < 0.2 | | | | |
| Benzyl butyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |
| Di-n-octyl phthalate | mg/kg | < 0.1 | MCERTS | < 0.1 | | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{0}$C

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| Soil Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC) | | |
|---|---|---|
| **QTS Environmental Report No: 14-25397** | **Date Sampled** | None Supplied |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | TP12 |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied |
| **Order No: None Supplied** | **Depth (m)** | 6.50 |
| **Reporting Date: 10/10/2014** | **QTSE Sample No** | 120671 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 2 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 3 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 4 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |
| 5 | N/a | N/a | mg/kg | < 0.1 | < 0.1 |

There were no / other compounds identified with a match of >90%

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| **Soil Analysis Certificate - PCB (7 Congeners)** | | | | | | |
|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25397** | **Date Sampled** | None Supplied | | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | TP12 | | | | |
| **Project / Job Ref: None Supplied** | **Additional Refs** | None Supplied | | | | |
| **Order No: None Supplied** | **Depth (m)** | 6.50 | | | | |
| **Reporting Date: 10/10/2014** | **QTSE Sample No** | 120671 | | | | |

| **Determinand** | **Unit** | **RL** | **Accreditation** | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congener 28 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 52 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 101 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 118 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 138 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 153 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| PCB Congener 180 | mg/kg | < 0.008 | NONE | < 0.008 | | | | |
| Total PCB (7 Congeners) | mg/kg | < 0.1 | NONE | < 0.1 | | | | |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30$^{O}$C

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**Rose Lane**
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| Soil Analysis Certificate - Sample Descriptions | |
|---|---|
| QTS Environmental Report No: 14-25397 | |
| Soil Consultants Ltd | |
| Site Reference: Bedford Avenue | |
| Project / Job Ref: None Supplied | |
| Order No: None Supplied | |
| Reporting Date: 10/10/2014 | |

| QTSE Sample No | TP / BH No | Additional Refs | Depth (m) | Moisture Content (%) | Sample Matrix Description |
|---|---|---|---|---|---|
| ^ 120671 | TP12 | None Supplied | 6.50 | 6.7 | Light brown clayey gravel with stones |

*Moisture content is part of procedure E003 & is not an accredited test*
Insufficient Sample I/S
Unsuitable Sample U/S
^ no sampling date provided; unable to confirm if samples are within acceptable holding times

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| **Soil Analysis Certificate - Methodology & Miscellaneous Information** |
|---|
| **QTS Environmental Report No: 14-25397** |
| **Soil Consultants Ltd** |
| **Site Reference: Bedford Avenue** |
| **Project / Job Ref: None Supplied** |
| **Order No: None Supplied** |
| **Reporting Date: 10/10/2014** |

| Matrix | Analysed On | Determinand | Brief Method Description | Method No |
|---|---|---|---|---|
| Soil | D | Boron - Water Soluble | Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES | E012 |
| Soil | AR | BTEX | Determination of BTEX by headspace GC-MS | E001 |
| Soil | D | Cations | Determination of cations in soil by aqua-regia digestion followed by ICP-OES | E002 |
| Soil | D | Chloride - Water Soluble (2:1) | Determination of chloride by extraction with water & analysed by ion chromatography | E009 |
| Soil | AR | Chromium - Hexavalent | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry | E016 |
| Soil | AR | Cyanide - Complex | Determination of complex cyanide by distillation followed by colorimetry | E015 |
| Soil | AR | Cyanide - Free | Determination of free cyanide by distillation followed by colorimetry | E015 |
| Soil | AR | Cyanide - Total | Determination of total cyanide by distillation followed by colorimetry | E015 |
| Soil | D | Cyclohexane Extractable Matter (CEM) | Gravimetrically determined through extraction with cyclohexane | E011 |
| Soil | AR | Diesel Range Organics (C10 - C24) | Determination of hexane/acetone extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | Electrical Conductivity | Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement | E022 |
| Soil | AR | Electrical Conductivity | Determination of electrical conductivity by addition of water followed by electrometric measurement | E023 |
| Soil | D | Elemental Sulphur | Determination of elemental sulphur by solvent extraction followed by GC-MS | E020 |
| Soil | AR | EPH (C10 – C40) | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | EPH Product ID | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | EPH TEXAS | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | D | Fluoride - Water Soluble | Determination of Fluoride by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | FOC (Fraction Organic Carbon) | Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | D | Loss on Ignition @ 450oC | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace | E019 |
| Soil | D | Magnesium - Water Soluble | Determination of water soluble magnesium by extraction with water followed by ICP-OES | E025 |
| Soil | D | Metals | Determination of metals by aqua-regia digestion followed by ICP-OES | E002 |
| Soil | AR | Mineral Oil (C10 - C40) | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge | E004 |
| Soil | AR | Moisture Content | Moisture content; determined gravimetrically | E003 |
| Soil | D | Nitrate - Water Soluble (2:1) | Determination of nitrate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Organic Matter | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | AR | PAH - Speciated (EPA 16) | Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards | E005 |
| Soil | AR | PCB - 7 Congeners | Determination of PCB by extraction with acetone and hexane followed by GC-MS | E008 |
| Soil | D | Petroleum Ether Extract (PEE) | Gravimetrically determined through extraction with petroleum ether | E011 |
| Soil | AR | pH | Determination of pH by addition of water followed by electrometric measurement | E007 |
| Soil | AR | Phenols - Total (monohydric) | Determination of phenols by distillation followed by colorimetry | E021 |
| Soil | D | Phosphate - Water Soluble (2:1) | Determination of phosphate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Sulphate (as SO4) - Total | Determination of total sulphate by extraction with 10% HCl followed by ICP-OES | E013 |
| Soil | D | Sulphate (as SO4) - Water Soluble (2:1) | Determination of sulphate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Sulphate (as SO4) - Water Soluble (2:1) | Determination of water soluble sulphate by extraction with water followed by ICP-OES | E014 |
| Soil | AR | Sulphide | Determination of sulphide by distillation followed by colorimetry | E018 |
| Soil | D | Sulphur - Total | Determination of total sulphur by extraction with aqua-regia followed by ICP-OES | E024 |
| Soil | AR | SVOC | Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS | E006 |
| Soil | AR | Thiocyanate (as SCN) | Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry | E017 |
| Soil | D | Toluene Extractable Matter (TEM) | Gravimetrically determined through extraction with toluene | E011 |
| Soil | D | Total Organic Carbon (TOC) | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | AR | TPH CWG | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge | E004 |
| Soil | AR | TPH LQM | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge | E004 |
| Soil | AR | VOCs | Determination of volatile organic compounds by headspace GC-MS | E001 |
| Soil | AR | VPH (C6 - C10) | Determination of hydrocarbons C6-C10 by headspace GC-MS | E001 |

**D Dried**
**AR As Received**

4480

John Bartley
Soil Consultants Ltd
8 Haven House
Albemarle Street
Harwich
Essex
CO12 3HL

**QTS Environmental Ltd**
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
**t:** 01622 850410
russell.jarvis@qtsenvironmental.com

# QTS Environmental Report No: 14-25909

**Site Reference:** Bedford Avenue

**Project / Job Ref:** 9661

**Order No:** None Supplied

**Sample Receipt Date:** 23/10/2014

**Sample Scheduled Date:** 23/10/2014

**Report Issue Number:** 1

**Reporting Date:** 31/10/2014

**Authorised by:**

Russell Jarvis
Director
**On behalf of QTS Environmental Ltd**

**Authorised by:**

Kevin Old
Director
**On behalf of QTS Environmental Ltd**

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

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| Water Analysis Certificate | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25909** | **Date Sampled** | 22/10/14 | 22/10/14 | | | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS1 | WS2 | | | | | |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied | None Supplied | | | | | |
| **Order No: None Supplied** | **Depth (m)** | None Supplied | None Supplied | | | | | |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123063 | 123064 | | | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| pH | pH Units | N/a | **ISO17025** | 7.4 | 7.4 | | | |
| Sulphate as $SO_4$ | mg/l | < 1 | **ISO17025** | 152 | 149 | | | |
| Sulphide | mg/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Ammonium as $NH_4$ | ug/l | < 50 | NONE | 60 | < 50 | | | |
| Chloride | mg/l | < 1 | **ISO17025** | 65 | 85 | | | |
| Nitrate as $NO_3$ | mg/l | < 0.5 | **ISO17025** | 32.4 | 97.1 | | | |
| Hardness - Total | mgCaCO3/l | < 1 | NONE | 564 | 496 | | | |
| Arsenic (dissolved) | ug/l | < 10 | NONE | < 10 | < 10 | | | |
| Barium (dissolved) | ug/l | < 20 | NONE | 95 | 127 | | | |
| Beryllium (dissolved) | ug/l | < 1 | NONE | < 1 | < 1 | | | |
| Boron (dissolved) | ug/l | < 50 | NONE | 132 | 110 | | | |
| Cadmium (dissolved) | ug/l | < 0.5 | NONE | < 0.5 | < 0.5 | | | |
| Chromium (dissolved) | ug/l | < 5 | NONE | < 5 | < 5 | | | |
| Copper (dissolved) | ug/l | < 10 | NONE | < 10 | < 10 | | | |
| Iron (dissolved) | ug/l | < 25 | NONE | 299 | 150 | | | |
| Lead (dissolved) | ug/l | < 5 | NONE | < 5 | < 5 | | | |
| Mercury (dissolved) | ug/l | < 0.05 | NONE | < 0.05 | < 0.05 | | | |
| Nickel (dissolved) | ug/l | < 7 | NONE | < 7 | < 7 | | | |
| Selenium (dissolved) | ug/l | < 5 | NONE | < 5 | < 5 | | | |
| Vanadium (dissolved) | ug/l | < 5 | NONE | < 5 | < 5 | | | |
| Zinc (dissolved) | ug/l | < 5 | NONE | < 5 | < 5 | | | |

Subcontracted analysis (S)
Insufficient sample I/S
Unsuitable Sample U/S

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| **Water Analysis Certificate - Speciated PAH** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-2** | **Date Sampled** | 22/10/14 | 22/10/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS1 | WS2 | | | |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied | None Supplied | | | |
| **Order No: None Supplied** | **Depth (m)** | None Supplied | None Supplied | | | |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123063 | 123064 | | | |

| **Determinand** | **Unit** | **RL** | **Accreditation** | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Acenaphthylene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Acenaphthene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Fluorene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Phenanthrene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Anthracene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Fluoranthene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Pyrene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Benzo(a)anthracene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Chrysene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Benzo(b)fluoranthene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Benzo(k)fluoranthene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Benzo(a)pyrene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Indeno(1,2,3-cd)pyrene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Dibenz(a,h)anthracene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Benzo(ghi)perylene | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |
| Total EPA-16 PAHs | ug/l | < 0.01 | NONE | < 0.01 | < 0.01 | | | |

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**Tel : 01622 850410**

| Water Analysis Certificate - TPH CWG Banded | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25909** | **Date Sampled** | 22/10/14 | 22/10/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS1 | WS2 | | | |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied | None Supplied | | | |
| **Order No: None Supplied** | **Depth (m)** | None Supplied | None Supplied | | | |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123063 | 123064 | | | |

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

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**Lenham Heath**
**Maidstone**
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| Water Analysis Certificate - BTEX / MTBE | | | | | | | |
|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25909** | **Date Sampled** | 22/10/14 | 22/10/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS1 | WS2 | | | |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied | None Supplied | | | |
| **Order No: None Supplied** | **Depth (m)** | None Supplied | None Supplied | | | |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123063 | 123064 | | | |

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

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

UKAS TESTING
4480

| Water Analysis Certificate - Volatile Organic Compounds (VOC) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25909** | **Date Sampled** | 22/10/14 | 22/10/14 | | | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS1 | WS2 | | | | | |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied | None Supplied | | | | | |
| **Order No: None Supplied** | **Depth (m)** | None Supplied | None Supplied | | | | | |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123063 | 123064 | | | | | |

| **Determinand** | **Unit** | **RL** | **Accreditation** | | | | | |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Vinyl Chloride | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Chloromethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Chloroethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Bromomethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Trichlorofluoromethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,1-Dichloroethene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| MTBE | ug/l | < 10 | **ISO17025** | < 10 | < 10 | | | |
| trans-1,2-Dichloroethene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,1-Dichloroethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| cis-1,2-Dichloroethene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 2,2-Dichloropropane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Chloroform | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Bromochloromethane | ug/l | < 10 | **ISO17025** | < 10 | < 10 | | | |
| 1,1,1-Trichloroethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,1-Dichloropropene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Carbon Tetrachloride | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,2-Dichloroethane | ug/l | < 10 | **ISO17025** | < 10 | < 10 | | | |
| Benzene | ug/l | < 1 | **ISO17025** | < 1 | < 1 | | | |
| 1,2-Dichloropropane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Trichloroethene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Bromodichloromethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Dibromomethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| TAME | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| cis-1,3-Dichloropropene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Toluene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| trans-1,3-Dichloropropene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,1,2-Trichloroethane | ug/l | < 10 | **ISO17025** | < 10 | < 10 | | | |
| 1,3-Dichloropropane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Tetrachloroethene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Dibromochloromethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,2-Dibromoethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Chlorobenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,1,1,2-Tetrachloroethane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Ethyl Benzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| m,p-Xylene | ug/l | < 10 | **ISO17025** | < 10 | < 10 | | | |
| o-Xylene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Styrene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Bromoform | ug/l | < 10 | **ISO17025** | < 10 | < 10 | | | |
| Isopropylbenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,1,2,2-Tetrachloroethane | ug/l | < 10 | **ISO17025** | < 10 | < 10 | | | |
| 1,2,3-Trichloropropane | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| n-Propylbenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| Bromobenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 2-Chlorotoluene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,3,5-Trimethylbenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 4-Chlorotoluene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| tert-Butylbenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,2,4-Trimethylbenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| sec-Butylbenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| p-Isopropyltoluene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,3-Dichlorobenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,4-Dichlorobenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| n-Butylbenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,2-Dichlorobenzene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |
| 1,2-Dibromo-3-chloropropane | ug/l | < 10 | **ISO17025** | < 10 | < 10 | | | |
| Hexachlorobutadiene | ug/l | < 5 | **ISO17025** | < 5 | < 5 | | | |

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| **Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)** | | |
|---|---|---|
| **QTS Environmental Report No: 14-25909** | **Date Sampled** | 22/10/14 |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS1 |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied |
| **Order No: None Supplied** | **Depth (m)** | None Supplied |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123063 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | µg/l | < 5 | < 5 |
| 2 | N/a | N/a | µg/l | < 5 | < 5 |
| 3 | N/a | N/a | µg/l | < 5 | < 5 |
| 4 | N/a | N/a | µg/l | < 5 | < 5 |
| 5 | N/a | N/a | µg/l | < 5 | < 5 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
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**Tel : 01622 850410**

| **Water Analysis Certificate - Volatile Organic Compounds TIC (VOC)** | | |
|---|---|---|
| **QTS Environmental Report No: 14-25909** | **Date Sampled** | 22/10/14 |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS2 |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied |
| **Order No: None Supplied** | **Depth (m)** | None Supplied |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123064 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | µg/l | < 5 | < 5 |
| 2 | N/a | N/a | µg/l | < 5 | < 5 |
| 3 | N/a | N/a | µg/l | < 5 | < 5 |
| 4 | N/a | N/a | µg/l | < 5 | < 5 |
| 5 | N/a | N/a | µg/l | < 5 | < 5 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
**Unit 1, Rose Lane Industrial Estate**
**Rose Lane**
**Lenham Heath**
**Maidstone**
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**Tel : 01622 850410**

| Water Analysis Certificate - Semi Volatile Organic Compounds (SVOC) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25909** | **Date Sampled** | 22/10/14 | 22/10/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS1 | WS2 | | | |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied | None Supplied | | | |
| **Order No: None Supplied** | **Depth (m)** | None Supplied | None Supplied | | | |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123063 | 123064 | | | |

| **Determinand** | **Unit** | **RL** | **Accreditation** | | | | | |
|---|---|---|---|---|---|---|---|---|
| Phenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 1,2,4-Trichlorobenzene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2-Nitrophenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Nitrobenzene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 0-Cresol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| bis(2-chloroethoxy)methane | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| bis(2-chloroethyl)ether | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2,4-Dichlorophenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2-Chlorophenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 1,3-Dichlorobenzene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 1,4-Dichlorobenzene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 1,2-Dichlorobenzene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2,4-Dimethylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Isophorone | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Hexachloroethane | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| p-Cresol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2,4,6-Trichlorophenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2,4,5-Trichlorophenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2-Nitroaniline | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-Chloro-3-methylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2-Methylnaphthalene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Hexachlorocyclopentadiene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Hexachlorobutadiene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2,6-Dinitrotoluene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Dimethyl phthalate | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2-Chloronaphthalene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-Chloroanaline | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-Nitrophenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-Chlorophenyl phenyl ether | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 3-Nitroaniline | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-Nitroaniline | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-Bromophenyl phenyl ether | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Hexachlorobenzene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2,4-Dinitrotoluene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Diethyl phthalate | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Dibenzofuran | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Azobenzene | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Dibutyl phthalate | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Carbazole | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| bis(2-ethylhexyl)phthalate | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Benzyl butyl phthalate | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Di-n-octyl phthalate | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |

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**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| **Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)** | | |
|---|---|---|
| **QTS Environmental Report No: 14-25909** | **Date Sampled** | 22/10/14 |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS1 |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied |
| **Order No: None Supplied** | **Depth (m)** | None Supplied |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123063 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | µg/l | < 0.1 | < 0.1 |
| 2 | N/a | N/a | µg/l | < 0.1 | < 0.1 |
| 3 | N/a | N/a | µg/l | < 0.1 | < 0.1 |
| 4 | N/a | N/a | µg/l | < 0.1 | < 0.1 |
| 5 | N/a | N/a | µg/l | < 0.1 | < 0.1 |

There were no / other compounds identified with a match of >90%

**QTS Environmental Ltd**
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**Lenham Heath**
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| **Water Analysis Certificate - Semi Volatile Organic Compounds TIC (SVOC)** | | |
|---|---|---|
| **QTS Environmental Report No: 14-25909** | **Date Sampled** | 22/10/14 |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS2 |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied |
| **Order No: None Supplied** | **Depth (m)** | None Supplied |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123064 |

| Compound No | Compound Name | % Match | Units | RL | Estimated Concentration |
|---|---|---|---|---|---|
| 1 | N/a | N/a | µg/l | < 0.1 | < 0.1 |
| 2 | N/a | N/a | µg/l | < 0.1 | < 0.1 |
| 3 | N/a | N/a | µg/l | < 0.1 | < 0.1 |
| 4 | N/a | N/a | µg/l | < 0.1 | < 0.1 |
| 5 | N/a | N/a | µg/l | < 0.1 | < 0.1 |

There were no / other compounds identified with a match of >90%

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**Rose Lane**
**Lenham Heath**
**Maidstone**
**Kent ME17 2JN**
**Tel : 01622 850410**

| **Water Analysis Certificate - PCB (7 Congeners)** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25909** | **Date Sampled** | 22/10/14 | 22/10/14 | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS1 | WS2 | | | |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied | None Supplied | | | |
| **Order No: None Supplied** | **Depth (m)** | None Supplied | None Supplied | | | |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123063 | 123064 | | | |

| **Determinand** | **Unit** | **RL** | **Accreditation** | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congener 28 | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| PCB Congener 52 | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| PCB Congener 101 | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| PCB Congener 118 | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| PCB Congener 138 | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| PCB Congener 153 | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| PCB Congener 180 | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| Total PCB (7 Congeners) | ug/l | < 0.7 | NONE | < 0.7 | < 0.7 | | | |

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**Tel : 01622 850410**

| Water Analysis Certificate - Speciated Phenols | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **QTS Environmental Report No: 14-25909** | **Date Sampled** | 22/10/14 | 22/10/14 | | | | | |
| **Soil Consultants Ltd** | **Time Sampled** | None Supplied | None Supplied | | | | | |
| **Site Reference: Bedford Avenue** | **TP / BH No** | WS1 | WS2 | | | | | |
| **Project / Job Ref: 9661** | **Additional Refs** | None Supplied | None Supplied | | | | | |
| **Order No: None Supplied** | **Depth (m)** | None Supplied | None Supplied | | | | | |
| **Reporting Date: 31/10/2014** | **QTSE Sample No** | 123063 | 123064 | | | | | |

| **Determinand** | **Unit** | **RL** | **Accreditation** | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2, 3, 5-trimethylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2, 3, 6-trimethylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2, 3-xylenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2, 4, 6-trimethylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2, 4-xylenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2, 5-xylenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2, 6-xylenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2-ethylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 2-isopropylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 3, 4, 5-trimethylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 3, 4-xylenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 3, 5-xylenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 3-ethylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 3-isopropylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-ethylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| 4-isopropylphenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| m-cresol (3-methylphenol) | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| o-cresol (2-methylphenol) | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| p-cresol (4-methylphenol) | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |
| phenol | ug/l | < 0.1 | NONE | < 0.1 | < 0.1 | | | |

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - Methodology & Miscellaneous Information |
|---|
| QTS Environmental Report No: 14-25909 |
| Soil Consultants Ltd |
| Site Reference: Bedford Avenue |
| Project / Job Ref: 9661 |
| Order No: None Supplied |
| Reporting Date: 31/10/2014 |

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

Key

**F Filtered**
**UF Unfiltered**