

Frankham Consultancy Group Ltd  
Irene House  
Five Arches Business Park  
Maidstone Road  
Sidcup  
Kent  
DA14 5AE

For the attention of Mr Gordon Lane

## Geotechnical Department

Our ref: F13/1/HA

17 January 2013

Dear Gordon,

### **RE: PROPOSED YIEWSLEY HEALTH CENTRE, OTTERFIELD ROAD – WASTE CLASSIFICATION HAZARD ASSESSMENT**

CET Infrastructure (CET) was instructed by Frankham Consultancy Group Ltd (Frankham) to undertake an intrusive ground investigation and waste classification Hazard Assessment of a portion of currently disused ground located to the west of Otterfield Road, Yiewsley. It is understood that the study site was formerly occupied by a swimming pool and associated buildings that had recently been demolished. It is further understood that it is proposed to redevelop the site to a mixed end use, comprising residential housing, healthcare and leisure facilities.

#### ***Background***

Wastes are listed in the European Waste Catalogue (EWC 2002) and grouped according to generic industry, process or waste type. Wastes within the EWC are either Hazardous or Non Hazardous. Some of these wastes are Hazardous without further assessment (absolute entries) or are 'mirror' entries that require further assessment as to hazardous properties in order to determine whether the waste is Hazardous.

Waste soil has mirror entries on the EWC and as such the first phase of the waste classification process is to determine if the waste is Hazardous or not, i.e. a Hazard Assessment.

Certain contaminants (e.g. asbestos, diesel) have prescribed concentration thresholds that if breached will render the material Hazardous waste. Thus, in the first instance the concentrations of plausible contaminants within the soil should be identified.

Results of this assessment should help to determine the likely fate of the soil (re-use elsewhere or disposal) and whether or not the soil is Hazardous or Non Hazardous.

Dependent on the results of the Hazard Assessment advice can be given as to the likely options available for a given waste and any further testing or assessment that may be required.

Hazardous waste will likely require landfilling (subject to 'passing' further Waste Acceptance Criteria (WAC) testing and after 'pre-treatment') or off site treatment; Non Hazardous waste may be suitable for re-use rather than landfilling in which case reduced or no further testing is likely to be required.

### ***Site Investigation & Recovery of Soil Samples***

Attention is drawn to the fact that whilst every effort has been made to ensure the accuracy of the data supplied and any analysis derived from it, there are potential risks for variations in ground conditions and contamination between and beyond the specific locations investigated. No liability can be accepted for any such variations. Furthermore, any recommendations are specific to the client requirements and no liability will be accepted should these be used by third parties without prior consultation with CET Infrastructure.

The intrusive ground investigation was carried out over two phases. The initial environmental investigation, comprising the formation of eight shallow hand dug trial pits, TP01 to TP08, to depths of up to 1.2m below ground level was carried on 17 December 2013. A subsequent phase of investigation, undertaken for primarily for geotechnical purposes, was conducted between the 02 and 08 January 2014 and comprised the formation of three cable percussion boreholes , BH01 to BH03, to depths of 25m bgl.

Made Ground was encountered in all exploratory holes and was proved to a maximum depth of 1.7m bgl. The Made Ground on the southern and central portions of the site generally comprised clayey, sandy gravel/sandy, gravelly clay with extraneous fill materials including brick, concrete, flint and ceramic with rare ash/clinker and asphalt. Blue/green fragments of tile observed in the trial pits would suggest these were associated with the former swimming pool. Within the northern portion of the site the Made Ground was observed as light brown, red brown and brown, slightly sandy, slightly gravelly clay with some inclusions of brick, flint and occasional ash.

The Lynch Hill Gravel Member, comprising brown, white and black clayey, sandy GRAVEL of angular to rounded flint was identified beneath the Made Ground in the three cable percussion boreholes to depths of between 2.8m and 3.3m bgl. The London Clay Formation, comprising grey brown CLAY, was proved to the base of each cable percussion borehole at 25m bgl.

Upon completion of the intrusive ground investigation nine samples of Made Ground were selected for chemical analysis. The samples were placed in laboratory prepared vessels with a minimum of headspace and labelled accordingly prior to being despatched to accredited analytical laboratory in cool boxes.

The suite of analysis was determined with reference to the Phase 1 Preliminary Risk Assessment (PRA) of the study site (ref: F13/146109/PRA, January 2014). and on site observations and comprised the following determinands:

- A suite of metals comprising As, Cu, Cd, Cr, Cr VI, Hg, Pb, Ni, Se and Zn;
- Speciated Poly Aromatic Hydrocarbons (PAHs);
- Polychlorinated biphenyls (PCBs);
- Phenols (total monohydric)
- Asbestos (identification only);
- Volatile and Semi Volatile Organic Compounds (VOCs/SVOCs);
- pH; and
- Total Organic Carbon (TOC).

The laboratory results for this site are attached in full as laboratory report 367860-1.

### ***Hazard Assessment***

The CATWASTE<sup>SOIL</sup> model was subsequently used to undertake the Hazard Assessment, the purpose of which is to establish whether the sampled soils should be considered as either Hazardous or Non Hazardous waste.

As the attached Hazard Assessment model output sheets show, all nine of the samples tested for the total concentrations of the contaminants previously listed were returned as Non Hazardous waste.

Based on the recorded concentration of various indicator parameters such as TOC, PCBs and total PAHs it is considered that it may be possible to reclassify the sampled soils as Inert waste. However, such a classification would be subject to the results of supplementary Waste Acceptance Criteria (WAC) testing.

In order to comply with the requirements of disposal to landfill some sort of physical pre-treatment is required. This can be in the form of sorting the bricks, concrete, etc., from the soil matrix. However, the level to which this practice is implemented will depend upon the percentage volume of material to be segregated and that under certain circumstances, where the percentage is understood to be very low, pre-treatment may not be necessary.

With respect to waste classification, the results of the testing indicate that the Made Ground soils recovered from the site are likely to be suitable for disposal at a site exempt from an Environmental Permit (EP) or an EP Non Hazardous landfill. However, it may be possible to dispose of the soils to an EP Inert landfill subject to supplementary laboratory analysis and compliance with Inert WAC threshold concentrations.

A copy of this letter and results should be sent to the proposed receiving site operator prior to any removal of material to the site in question.

We trust that the above meets your requirements. However, please do not hesitate to contact us with any queries.

Kind regards,

A handwritten signature in grey ink, appearing to read 'J. Appleby', written over a faint circular watermark or background.

**JAMES APPLEBY**

Principal Environmental Scientist

**For and on behalf of CET Infrastructure**

Enc.            Laboratory Results 367860-1  
                  CATWASTE<sup>SOIL</sup> Model Output Sheets

<b>Site Name</b>	Proposed Yiewsley Health Centre
<b>Location</b>	Otterfield Road, Yiewsley
<b>Site ID</b>	
<b>Job Number</b>	146109
<b>Date</b>	1/7/2014 9:17:33 AM
<b>User Name</b>	<a href="mailto:james.appleby@cet-uk.com">james.appleby@cet-uk.com</a>
<b>Company Name</b>	CET

Hole ID	Sample Depth	Hazardous Waste Y/N	H1	H2	H3A	H3B	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15
TP01	0.4m	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
TP02	0.5m	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
TP03	0.4m	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
TP04	0.2m	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
TP05	0.5m	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
TP06	0.1m	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
TP06	0.4m	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
TP07	0.6m	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
TP08	0.3m	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

## Notes - Additional Information on Risk Phrases

<b>R1 to R6</b>	Explosive - See comment	Associated with H15, where the hazard (H15) will apply if the waste contains substances that degrade to form, or react with, other wastes or substances (or produce on combustion) other substances with any of the properties H1 to H14, at or above the appropriate threshold.
<b>R7, R8 and R9</b>	Test/calculation for oxides	Applicable to solid compounds that are not explosive, highly flammable, organic peroxides or combustible. A test for the compounds oxidising properties as described in Directive 92/69/EEC, Test Method A17. For organic peroxides calculate the available oxygen content (%). For liquids and oxidising materials not covered by those previously listed no testing available.
<b>R10</b>	R10 test flash point	Flashpoint test as per Directive 92/62/EEC, Test Method A9
<b>R11</b>	R11 test flash point	For liquid substances, undertake the flashpoint test as per Directive 92/62/EEC, Test Method A9. For solid substances undertake flammability test as per directive 92/62/EEC, Test Method A10
<b>R12</b>	R12 test flammability	Flammability of gasses test as per Directive 92/62/EEC Test Method A11.
<b>R15</b>	R15 test flammability	To test the flammability of a substance when in contact with water test as per Directive 92/62/EEC, Test Method A12.
<b>R16</b>	R16 test for explosives	See comment above
<b>R17</b>	R17 pyrophoric test	To test the pyrophoric properties of solids and liquids test as per Directive 92/62/EEC, Test Method A13.
<b>R18</b>	R18 test for flammable explosive vapour air mixture	See comment above
<b>R19</b>	R19 test for flammable explosive peroxides	See comment above
<b>R29</b>	R29 test or calculation	Undertake test as per Directive 92/62/EEC, Test Method A12.
<b>R31</b>	R31 test or calculation	Undertake testing as per Directive 92/62/EEC, Test Method A12 modified to replace water with an acid which will not cause a displacement reaction to occur. Method to measure SO <sub>2</sub> evolved when a waste is in contact with an acid (see Environment Agency SWEN 068).
<b>R32</b>	R32 test or calculation	Undertake testing as per Directive 92/62/EEC, Test Method A12 modified to replace water with an acid which will not cause a displacement reaction to occur).
<b>R44</b>	R44 test for explosives	See comment above
<b>R54 to R58</b>	see comment	Classification of waste as ecotoxic (on the basis of terrestrial non-aquatic toxicity) is not applicable due to the lack of detailed information. Until more data becomes available R54 to R58 should not be considered when assessing the ecotoxic hazard of wastes and classifications should be based upon aquatic toxicity data. Where there is reason to believe that a waste contains substances that only have effects on the terrestrial environment, guidance on the appropriate test method should be obtained from the Environment Agency.

## Notes:

Testing of compounds which would be classified under H14 should only be undertaken where the hazards cannot be adequately identified. (i.e. where the waste contains a substance/s for which there is no aquatic toxicity data and/or where the waste is an uncharacterised mixture and/or there is the potential that the waste may contain unknown substances or breakdown products.

Aquatic toxicity testing should be undertaken in accordance with the Environmental Health and Safety Publication, series on Testing and Assessment No. 23 ENV/JM/MONO(2000) 6 June 2000



# Scientific Analysis Laboratories Ltd

## Certificate of Analysis

3 Crittall Drive  
Springwood Industrial  
Estate  
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CM7 2RT  
Tel : 01376 560120  
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Scientific Analysis Laboratories is a  
limited company registered in England and  
Wales (No 2514788) whose address is at  
Hadfield House, Hadfield Street, Manchester M16 9FE

**Report Number:** 367860-1

**Date of Report:** 06-Jan-2014

**Customer:** CET Group Ltd  
Northdown House  
Harrietsham Maidstone Kent  
ME17 1QW

**Customer Contact:** Mr James Appleby

**Customer Job Reference:** 146109

**Customer Purchase Order:** 493754/G2

**Customer Site Reference:** Otterfield Road, Yiewsley

**Date Job Received at SAL:** 19-Dec-2013

**Date Analysis Started:** 20-Dec-2013

**Date Analysis Completed:** 06-Jan-2014

The results reported relate to samples received in the laboratory  
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation  
This report should not be reproduced except in full without the written approval of the laboratory  
Tests covered by this certificate were conducted in accordance with SAL SOPs  
All results have been reviewed in accordance with QP22



Report checked  
and authorised by :  
Miss Claire Brown  
Customer Service Manager

Issued by :  
Miss Claire Brown  
Customer Service Manager

SAL Reference: 367860										
Project Site: Otterfield Road, Yiewsley										
Customer Reference: 146109										
Soil Miscellaneous										
Analysed as Soil										
SAL Reference					367860 001	367860 002	367860 003	367860 004	367860 005	
Customer Sample Reference					TP01 @ 0.40m - 129137	TP02 @ 0.50m - 129138	TP03 @ 0.40m - 129139	TP04 @ 0.20m - 129140	TP05 @ 0.50m - 129141	
Date Sampled					17-DEC-2013	17-DEC-2013	17-DEC-2013	17-DEC-2013	17-DEC-2013	
Determinand	Method	Test Sample	LOD	Units						
Arsenic	T257	A40	2.0	mg/kg	13	13	15	19	17	
Cadmium	T257	A40	0.1	mg/kg	0.3	0.2	<0.1	<0.1	0.1	
Chromium	T257	A40	0.5	mg/kg	20	20	22	27	23	
Copper	T257	A40	2	mg/kg	32	37	37	28	47	
Lead	T257	A40	2	mg/kg	91	120	90	76	160	
Mercury	T245	A40	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	
Nickel	T257	A40	0.5	mg/kg	15	16	21	18	23	
Selenium	T257	A40	3	mg/kg	<3	<3	<3	<3	<3	
Zinc	T257	A40	2	mg/kg	99	120	56	77	67	
Asbestos ID	T27	A40			Asbestos not detected	Asbestos not detected	Asbestos not detected	Asbestos not detected	Asbestos not detected	
Chromium VI	T6	A40	1	mg/kg	1	<1	<1	<1	<1	
Total Organic Carbon	T21	A40	0.1	%	0.9	1.3	0.6	-	1.0	
pH	T7	A40			10.8	10.7	8.8	-	8.1	
Phenols(Mono)	T221	AR	0.5	mg/kg	-	-	<0.5	<0.5	<0.5	
PCB (Total Tri-Hepta)	T1	AR	0.05	µg/kg	-	-	<0.05	28	<0.05	

SAL Reference: 367860										
Project Site: Otterfield Road, Yiewsley										
Customer Reference: 146109										
Soil Miscellaneous										
Analysed as Soil										
SAL Reference					367860 006	367860 007	367860 008	367860 009		
Customer Sample Reference					TP06 @ 0.10m - 129142	TP06 @ 0.40m - 129143	TP07 @ 0.60m - 129144	TP08 @ 0.30m - 129145		
Date Sampled					17-DEC-2013	17-DEC-2013	17-DEC-2013	17-DEC-2013		
Determinand	Method	Test Sample	LOD	Units						
Arsenic	T257	A40	2.0	mg/kg	18	17	15	37		
Cadmium	T257	A40	0.1	mg/kg	0.2	<0.1	0.3	0.6		
Chromium	T257	A40	0.5	mg/kg	23	24	28	22		
Copper	T257	A40	2	mg/kg	70	40	26	28		
Lead	T257	A40	2	mg/kg	280	93	61	88		
Mercury	T245	A40	1.0	mg/kg	2.1	<1.0	<1.0	<1.0		
Nickel	T257	A40	0.5	mg/kg	22	20	17	17		
Selenium	T257	A40	3	mg/kg	<3	<3	<3	<3		
Zinc	T257	A40	2	mg/kg	110	65	150	140		
Asbestos ID	T27	A40			Asbestos not detected	Asbestos not detected	Asbestos not detected	Asbestos not detected		
Chromium VI	T6	A40	1	mg/kg	<1	<1	<1	<1		
Total Organic Carbon	T21	A40	0.1	%	-	-	1.2	1.1		
pH	T7	A40			-	-	9.8	10.5		
Phenols(Mono)	T221	AR	0.5	mg/kg	-	<0.5	-	-		
PCB (Total Tri-Hepta)	T1	AR	0.05	µg/kg	-	<0.05	-	-		



**SAL Reference:** 367860  
**Project Site:** Otterfield Road, Yiewsley  
**Customer Reference:** 146109

**Soil** Analysed as Soil  
**Total and Speciated USEPA16 PAH (SE)**

SAL Reference					367860 001	367860 002	367860 003	367860 004	367860 005
Customer Sample Reference					TP01 @ 0.40m - 129137	TP02 @ 0.50m - 129138	TP03 @ 0.40m - 129139	TP04 @ 0.20m - 129140	TP05 @ 0.50m - 129141
Date Sampled					17-DEC-2013	17-DEC-2013	17-DEC-2013	17-DEC-2013	17-DEC-2013
Determinand	Method	Test Sample	LOD	Units					
Naphthalene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	T16	AR	0.1	mg/kg	0.1	0.3	<0.1	<0.1	<0.1
Acenaphthene	T16	AR	0.1	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Fluorene	T16	AR	0.1	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Phenanthrene	T16	AR	0.1	mg/kg	0.7	5.6	<0.1	<0.1	0.2
Anthracene	T16	AR	0.1	mg/kg	0.2	1.6	<0.1	<0.1	<0.1
Fluoranthene	T16	AR	0.1	mg/kg	2.5	16	<0.1	0.3	0.4
Pyrene	T16	AR	0.1	mg/kg	2.6	14	<0.1	0.3	0.4
Benzo(a)Anthracene	T16	AR	0.1	mg/kg	1.6	7.8	<0.1	0.1	0.2
Chrysene	T16	AR	0.1	mg/kg	1.6	7.1	<0.1	0.2	0.2
Benzo(b)fluoranthene	T16	AR	0.1	mg/kg	0.8	3.5	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	T16	AR	0.1	mg/kg	0.9	3.5	<0.1	<0.1	0.1
Benzo(a)Pyrene	T16	AR	0.1	mg/kg	0.9	3.7	<0.1	<0.1	0.1
Indeno(123-cd)Pyrene	T16	AR	0.1	mg/kg	0.6	1.9	<0.1	<0.1	<0.1
Dibenzo(ah)Anthracene	T16	AR	0.1	mg/kg	0.2	0.7	<0.1	<0.1	<0.1
Benzo(ghi)Perylene	T16	AR	0.1	mg/kg	0.7	2.3	<0.1	<0.1	<0.1
PAH(total)	T16	AR	0.1	mg/kg	13	68	<0.1	1.0	1.7

**SAL Reference:** 367860  
**Project Site:** Otterfield Road, Yiewsley  
**Customer Reference:** 146109

**Soil** Analysed as Soil  
**Total and Speciated USEPA16 PAH (SE)**

SAL Reference					367860 006	367860 007	367860 008	367860 009
Customer Sample Reference					TP06 @ 0.10m - 129142	TP06 @ 0.40m - 129143	TP07 @ 0.60m - 129144	TP08 @ 0.30m - 129145
Date Sampled					17-DEC-2013	17-DEC-2013	17-DEC-2013	17-DEC-2013
Determinand	Method	Test Sample	LOD	Units				
Naphthalene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T16	AR	0.1	mg/kg	0.1	<0.1	<0.1	0.4
Anthracene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	0.1
Fluoranthene	T16	AR	0.1	mg/kg	0.4	<0.1	0.2	2.0
Pyrene	T16	AR	0.1	mg/kg	0.3	<0.1	0.2	2.0
Benzo(a)Anthracene	T16	AR	0.1	mg/kg	0.2	<0.1	<0.1	1.0
Chrysene	T16	AR	0.1	mg/kg	0.2	<0.1	0.1	0.9
Benzo(b)fluoranthene	T16	AR	0.1	mg/kg	0.1	<0.1	<0.1	0.7
Benzo(k)fluoranthene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	0.8
Benzo(a)Pyrene	T16	AR	0.1	mg/kg	0.1	<0.1	<0.1	1.0
Indeno(123-cd)Pyrene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	0.5
Dibenzo(ah)Anthracene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	0.2
Benzo(ghi)Perylene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	0.6
PAH(total)	T16	AR	0.1	mg/kg	1.5	<0.1	0.6	10

SAL Reference: 367860

Project Site: Otterfield Road, Yiewsley

Customer Reference: 146109

Soil  
Analysed as Soil  
Semi-Volatile Organic Compounds (USEPA 625) (SE)

SAL Reference					367860 003	367860 004	367860 005	367860 007
Customer Sample Reference					TP03 @ 0.40m - 129139	TP04 @ 0.20m - 129140	TP05 @ 0.50m - 129141	TP06 @ 0.40m - 129143
Date Sampled					17-DEC-2013	17-DEC-2013	17-DEC-2013	17-DEC-2013
Determinand	Method	Test Sample	LOD	Units				
1,2,4-Trichlorobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
1,3-Dichlorobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2,4,5-Trichlorophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2,4,6-Trichlorophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2,4-Dichlorophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2,4-Dimethylphenol	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2,4-Dinitrotoluene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2,6-Dinitrotoluene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2-Chloronaphthalene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2-Chlorophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2-methyl phenol	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2-Methylnaphthalene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2-Nitroaniline	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
2-Nitrophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
3-Nitroaniline	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
3/4-Methylphenol	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
4-Bromophenyl phenylether	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
4-Chloro-3-methylphenol	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
4-Chloroaniline	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
4-Chlorophenyl phenylether	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
4-Nitroaniline	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Anthracene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Azobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(a)Anthracene	T16	AR	0.1	mg/kg	<0.1	<b>0.1</b>	<b>0.2</b>	<0.1
Benzo(a)Pyrene	T16	AR	0.1	mg/kg	<0.1	<0.1	<b>0.1</b>	<0.1
Benzo(b/k)Fluoranthene	T16	AR	0.1	mg/kg	<0.1	<b>0.2</b>	<b>0.2</b>	<0.1
Benzo(ghi)Perylene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroethoxy) methane	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroethyl) ether	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Bis (2-chloroisopropyl) ether	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Bis (2-ethylhexyl)phthalate	T16	AR	0.1	mg/kg	<0.1	<b>0.1</b>	<0.1	<0.1
Butyl benzylphthalate	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Carbazole	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Chrysene	T16	AR	0.1	mg/kg	<0.1	<b>0.2</b>	<b>0.2</b>	<0.1
Di-n-butylphthalate	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Di-n-octylphthalate	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)Anthracene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Dibenzofuran	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Diethyl phthalate	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Dimethyl phthalate	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluoranthene	T16	AR	0.1	mg/kg	<0.1	<b>0.3</b>	<b>0.4</b>	<0.1
Fluorene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Hexachlorobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Hexachlorobutadiene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Hexachlorocyclopentadiene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Hexachloroethane	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Indeno(123-cd)Pyrene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Isophorone	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Naphthalene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Nitrobenzene	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Pentachlorophenol	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T16	AR	0.1	mg/kg	<0.1	<0.1	<b>0.2</b>	<0.1
Phenol	T16	AR	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1
Pyrene	T16	AR	0.1	mg/kg	<0.1	<b>0.3</b>	<b>0.4</b>	<0.1

SAL Reference: 367860  
 Project Site: Otterfield Road, Yiewsley  
 Customer Reference: 146109

Soil  
 VOC (SE)                      Analysed as Soil

SAL Reference					367860 003	367860 004	367860 005	367860 007
Customer Sample Reference					TP03 @ 0.40m - 129139	TP04 @ 0.20m - 129140	TP05 @ 0.50m - 129141	TP06 @ 0.40m - 129143
Date Sampled					17-DEC-2013	17-DEC-2013	17-DEC-2013	17-DEC-2013
Determinand	Method	Test Sample	LOD	Units				
1,1,1,2-Tetrachloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5
1,1,1-Trichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5
1,1,2-Trichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5
1,1,2-Trichloroethylene	T54	AR	5	µg/kg	<5	<5	<5	<5
1,1-Dichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5
1,1-Dichloroethylene	T54	AR	5	µg/kg	<5	<5	<5	<5
1,1-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5
1,2,3-Trichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
1,2,3-Trichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5
1,2,4-Trichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
1,2,4-Trimethylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	T54	AR	10	µg/kg	<10	<10	<10	<10
1,2-dibromoethane	T54	AR	5	µg/kg	<5	<5	<5	<5
1,2-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
1,2-Dichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5
1,2-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5
1,3,5-Trimethylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
1,3-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
1,3-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5
1,4-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
Ethyl-2-Methylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
2,2-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5
2-Chlorotoluene	T54	AR	5	µg/kg	<5	<5	<5	<5
4-Chlorotoluene	T54	AR	5	µg/kg	<5	<5	<5	<5
Benzene	T54	AR	1	µg/kg	(13) <1	(13) <1	(13) <1	(13) <1
Bromobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
Bromochloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5
Bromodichloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5
Bromoform	T54	AR	5	µg/kg	<5	<5	<5	<5
Bromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5
Carbon tetrachloride	T54	AR	5	µg/kg	<5	<5	<5	<5
Chlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
Chlorodibromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5
Chloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5
Chloroform	T54	AR	5	µg/kg	<5	<5	<5	<5
Chloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5
Cis-1,2-Dichloroethylene	T54	AR	5	µg/kg	<5	<5	<5	<5
Cis-1,3-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5
Dibromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5
Dichlorodifluoromethane	T54	AR	5	µg/kg	<5	<5	<5	<5
EthylBenzene	T54	AR	1	µg/kg	<1	<1	<1	<1
Hexachlorobutadiene	T54	AR	5	µg/kg	<5	<5	<5	<5
Isopropyl benzene	T54	AR	5	µg/kg	<5	<5	<5	<5
m/p ethyl toluene	T54	AR	5	µg/kg	<5	<5	<5	<5
M/P Xylene	T54	AR	1	µg/kg	<1	<1	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	<1	<1	<1	<1
n-Butylbenzene	T54	AR	10	µg/kg	<10	<10	<10	<10
n-Propylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
O Xylene	T54	AR	1	µg/kg	<1	<1	<1	<1
p-Isopropyltoluene	T54	AR	5	µg/kg	<5	<5	<5	<5
S-Butylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
Styrene	T54	AR	5	µg/kg	<5	<5	<5	<5
T-Butylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5
Tertiary amyl methyl ether	T54	AR	5	µg/kg	<5	<5	<5	<5
Tetrachloroethene	T54	AR	5	µg/kg	<5	<5	<5	<5
Toluene	T54	AR	1	µg/kg	<1	<1	<1	<1
Trans-1,2-Dichloroethene	T54	AR	5	µg/kg	<5	<5	<5	<5
Trans-1,3-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5

<b>SAL Reference:</b> 367860									
<b>Project Site:</b> Otterfield Road, Yiewsley									
<b>Customer Reference:</b> 146109									
<b>Soil</b>			Analysed as Soil						
<b>VOC (SE)</b>									
<b>SAL Reference</b>			<b>367860 003</b>		<b>367860 004</b>		<b>367860 005</b>		<b>367860 007</b>
<b>Customer Sample Reference</b>			<b>TP03 @ 0.40m - 129139</b>		<b>TP04 @ 0.20m - 129140</b>		<b>TP05 @ 0.50m - 129141</b>		<b>TP06 @ 0.40m - 129143</b>
<b>Date Sampled</b>			<b>17-DEC-2013</b>		<b>17-DEC-2013</b>		<b>17-DEC-2013</b>		<b>17-DEC-2013</b>
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>					
Trichlorofluoromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Vinyl chloride	T54	AR	5	µg/kg	<5	<5	<5	<5	<5

## Index to symbols used in 367860-1

Value	Description
A40	Assisted dried < 40C
AR	As Received
13	Results have been blank corrected.
W	Analysis was performed at another SAL laboratory
S	Analysis was subcontracted
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

## Notes

Where an asbestos result of none detected is reported, this is obtained from analysis of a representative sub sample.

## Method Index

Value	Description
T21	OX/IR
T54	GC/MS (Headspace)
T257	ICP/OES (SIM) (Aqua Regia Extraction)
T7	Probe
T221	Colorimetry (CE)
T245	ICP/OES(Aqua Regia Extraction)
T1	GC/MS (HR)
T16	GC/MS
T27	PLM
T6	ICP/OES

## Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Arsenic	T257	A40	2.0	mg/kg	U	001-009
Cadmium	T257	A40	0.1	mg/kg	U	001-009
Chromium	T257	A40	0.5	mg/kg	U	001-009
Copper	T257	A40	2	mg/kg	U	001-009
Lead	T257	A40	2	mg/kg	U	001-009
Mercury	T245	A40	1.0	mg/kg	U	001-009
Nickel	T257	A40	0.5	mg/kg	U	001-009
Selenium	T257	A40	3	mg/kg	U	001-009
Zinc	T257	A40	2	mg/kg	U	001-009
Asbestos ID	T27	A40			SU	001-009
Chromium VI	T6	A40	1	mg/kg	N	001-009
Total Organic Carbon	T21	A40	0.1	%	WN	001-003,005,008-009
pH	T7	A40			U	001-003,005,008-009
Phenols(Mono)	T221	AR	0.5	mg/kg	U	003-005,007
PCB (Total Tri-Hepta)	T1	AR	0.05	µg/kg	WU	003-005,007
1,2,4-Trichlorobenzene	T16	AR	0.1	mg/kg	U	003-005,007
1,2-Dichlorobenzene	T16	AR	0.1	mg/kg	U	003-005,007
1,3-Dichlorobenzene	T16	AR	0.1	mg/kg	U	003-005,007
1,4-Dichlorobenzene	T16	AR	0.1	mg/kg	U	003-005,007
2,4,5-Trichlorophenol	T16	AR	0.1	mg/kg	N	003-005,007

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
2,4,6-Trichlorophenol	T16	AR	0.1	mg/kg	N	003-005,007
2,4-Dichlorophenol	T16	AR	0.1	mg/kg	N	003-005,007
2,4-Dimethylphenol	T16	AR	0.1	mg/kg	N	003-005,007
2,4-Dinitrotoluene	T16	AR	0.1	mg/kg	U	003-005,007
2,6-Dinitrotoluene	T16	AR	0.1	mg/kg	U	003-005,007
2-Chloronaphthalene	T16	AR	0.1	mg/kg	U	003-005,007
2-Chlorophenol	T16	AR	0.1	mg/kg	U	003-005,007
2-methyl phenol	T16	AR	0.1	mg/kg	U	003-005,007
2-Methylnaphthalene	T16	AR	0.1	mg/kg	U	003-005,007
2-Nitroaniline	T16	AR	0.1	mg/kg	U	003-005,007
2-Nitrophenol	T16	AR	0.1	mg/kg	N	003-005,007
3-Nitroaniline	T16	AR	0.1	mg/kg	U	003-005,007
3/4-Methylphenol	T16	AR	0.1	mg/kg	U	003-005,007
4-Bromophenyl phenylether	T16	AR	0.1	mg/kg	U	003-005,007
4-Chloro-3-methylphenol	T16	AR	0.1	mg/kg	U	003-005,007
4-Chloroaniline	T16	AR	0.1	mg/kg	U	003-005,007
4-Chlorophenyl phenylether	T16	AR	0.1	mg/kg	U	003-005,007
4-Nitroaniline	T16	AR	0.1	mg/kg	U	003-005,007
Azobenzene	T16	AR	0.1	mg/kg	U	003-005,007
Benzo(b/k)Fluoranthene	T16	AR	0.1	mg/kg	U	003-005,007
Bis (2-chloroethoxy) methane	T16	AR	0.1	mg/kg	U	003-005,007
Bis (2-chloroethyl) ether	T16	AR	0.1	mg/kg	U	003-005,007
Bis (2-chloroisopropyl) ether	T16	AR	0.1	mg/kg	U	003-005,007
Bis (2-ethylhexyl)phthalate	T16	AR	0.1	mg/kg	N	003-005,007
Butyl benzylphthalate	T16	AR	0.1	mg/kg	N	003-005,007
Carbazole	T16	AR	0.1	mg/kg	U	003-005,007
Di-n-butylphthalate	T16	AR	0.1	mg/kg	U	003-005,007
Di-n-octylphthalate	T16	AR	0.1	mg/kg	U	003-005,007
Dibenzofuran	T16	AR	0.1	mg/kg	U	003-005,007
Diethyl phthalate	T16	AR	0.1	mg/kg	U	003-005,007
Dimethyl phthalate	T16	AR	0.1	mg/kg	U	003-005,007
Hexachlorobenzene	T16	AR	0.1	mg/kg	U	003-005,007
Hexachlorobutadiene	T16	AR	0.1	mg/kg	U	003-005,007
Hexachlorocyclopentadiene	T16	AR	0.1	mg/kg	N	003-005,007
Hexachloroethane	T16	AR	0.1	mg/kg	U	003-005,007
Isophorone	T16	AR	0.1	mg/kg	U	003-005,007
Nitrobenzene	T16	AR	0.1	mg/kg	U	003-005,007
Pentachlorophenol	T16	AR	0.1	mg/kg	N	003-005,007
Phenol	T16	AR	0.1	mg/kg	U	003-005,007
Naphthalene	T16	AR	0.1	mg/kg	U	001-009
Acenaphthylene	T16	AR	0.1	mg/kg	U	001-009
Acenaphthene	T16	AR	0.1	mg/kg	U	001-009
Fluorene	T16	AR	0.1	mg/kg	U	001-009
Phenanthrene	T16	AR	0.1	mg/kg	U	001-009
Anthracene	T16	AR	0.1	mg/kg	U	001-009
Fluoranthene	T16	AR	0.1	mg/kg	N	001-009
Pyrene	T16	AR	0.1	mg/kg	N	001-009
Benzo(a)Anthracene	T16	AR	0.1	mg/kg	U	001-009
Chrysene	T16	AR	0.1	mg/kg	U	001-009
Benzo(b)fluoranthene	T16	AR	0.1	mg/kg	U	001-009
Benzo(k)fluoranthene	T16	AR	0.1	mg/kg	N	001-009
Benzo(a)Pyrene	T16	AR	0.1	mg/kg	U	001-009
Indeno(123-cd)Pyrene	T16	AR	0.1	mg/kg	U	001-009
Dibenzo(ah)Anthracene	T16	AR	0.1	mg/kg	U	001-009
Benzo(ghi)Perylene	T16	AR	0.1	mg/kg	U	001-009
PAH(total)	T16	AR	0.1	mg/kg	U	001-009
1,1,1,2-Tetrachloroethane	T54	AR	5	µg/kg	U	003-005,007
1,1,1-Trichloroethane	T54	AR	5	µg/kg	U	003-005,007
1,1,2,2-Tetrachloroethane	T54	AR	5	µg/kg	U	003-005,007
1,1,2-Trichloroethane	T54	AR	5	µg/kg	U	003-005,007
1,1,2-Trichloroethylene	T54	AR	5	µg/kg	U	003-005,007
1,1-Dichloroethane	T54	AR	5	µg/kg	U	003-005,007
1,1-Dichloroethylene	T54	AR	5	µg/kg	U	003-005,007
1,1-Dichloropropene	T54	AR	5	µg/kg	U	003-005,007
1,2,3-Trichlorobenzene	T54	AR	5	µg/kg	U	003-005,007
1,2,3-Trichloropropane	T54	AR	5	µg/kg	U	003-005,007
1,2,4-Trichlorobenzene	T54	AR	5	µg/kg	U	003-005,007
1,2,4-Trimethylbenzene	T54	AR	5	µg/kg	U	003-005,007
1,2-Dibromo-3-Chloropropane	T54	AR	10	µg/kg	U	003-005,007
1,2-dibromoethane	T54	AR	5	µg/kg	U	003-005,007

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
1,2-Dichlorobenzene	T54	AR	5	µg/kg	U	003-005,007
1,2-Dichloroethane	T54	AR	5	µg/kg	U	003-005,007
1,2-Dichloropropane	T54	AR	5	µg/kg	U	003-005,007
1,3,5-Trimethylbenzene	T54	AR	5	µg/kg	U	003-005,007
1,3-Dichlorobenzene	T54	AR	5	µg/kg	U	003-005,007
1,3-Dichloropropane	T54	AR	5	µg/kg	U	003-005,007
1,4-Dichlorobenzene	T54	AR	5	µg/kg	U	003-005,007
Ethyl-2-Methylbenzene	T54	AR	5	µg/kg	U	003-005,007
2,2-Dichloropropane	T54	AR	5	µg/kg	U	003-005,007
2-Chlorotoluene	T54	AR	5	µg/kg	U	003-005,007
4-Chlorotoluene	T54	AR	5	µg/kg	U	003-005,007
Benzene	T54	AR	1	µg/kg	U	003-005,007
Bromobenzene	T54	AR	5	µg/kg	U	003-005,007
Bromochloromethane	T54	AR	5	µg/kg	U	003-005,007
Bromodichloromethane	T54	AR	5	µg/kg	U	003-005,007
Bromoform	T54	AR	5	µg/kg	U	003-005,007
Bromomethane	T54	AR	5	µg/kg	U	003-005,007
Carbon tetrachloride	T54	AR	5	µg/kg	U	003-005,007
Chlorobenzene	T54	AR	5	µg/kg	U	003-005,007
Chlorodibromomethane	T54	AR	5	µg/kg	U	003-005,007
Chloroethane	T54	AR	5	µg/kg	U	003-005,007
Chloroform	T54	AR	5	µg/kg	U	003-005,007
Chloromethane	T54	AR	5	µg/kg	N	003-005,007
Cis-1,2-Dichloroethylene	T54	AR	5	µg/kg	U	003-005,007
Cis-1,3-Dichloropropene	T54	AR	5	µg/kg	U	003-005,007
Dibromomethane	T54	AR	5	µg/kg	U	003-005,007
Dichlorodifluoromethane	T54	AR	5	µg/kg	N	003-005,007
EthylBenzene	T54	AR	1	µg/kg	U	003-005,007
Hexachlorobutadiene	T54	AR	5	µg/kg	U	003-005,007
Isopropyl benzene	T54	AR	5	µg/kg	U	003-005,007
m/p ethyl toluene	T54	AR	5	µg/kg	U	003-005,007
M/P Xylene	T54	AR	1	µg/kg	U	003-005,007
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	U	003-005,007
n-Butylbenzene	T54	AR	10	µg/kg	U	003-005,007
n-Propylbenzene	T54	AR	5	µg/kg	U	003-005,007
O Xylene	T54	AR	1	µg/kg	U	003-005,007
p-Isopropyltoluene	T54	AR	5	µg/kg	U	003-005,007
S-Butylbenzene	T54	AR	5	µg/kg	U	003-005,007
Styrene	T54	AR	5	µg/kg	U	003-005,007
T-Butylbenzene	T54	AR	5	µg/kg	U	003-005,007
Tertiary amyl methyl ether	T54	AR	5	µg/kg	U	003-005,007
Tetrachloroethene	T54	AR	5	µg/kg	U	003-005,007
Toluene	T54	AR	1	µg/kg	U	003-005,007
Trans-1,2-Dichloroethene	T54	AR	5	µg/kg	U	003-005,007
Trans-1,3-Dichloropropene	T54	AR	5	µg/kg	U	003-005,007
Trichlorofluoromethane	T54	AR	5	µg/kg	U	003-005,007
Vinyl chloride	T54	AR	5	µg/kg	U	003-005,007

SAL