



Solum Regeneration LLP

Land off Station Yard, Twickenham, TW1 1BD

Factual Report on Ground Investigation

Project No. 28006-02(00)

DECEMBER 2015





RSK GENERAL NOTES

Project No.: 28006-02 (00)


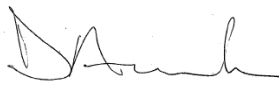

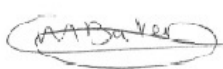
Title: Factual Report on Ground Investigation : Land off Station Yard, Twickenham, TW1 1BD.

Client: Solum Regeneration LLP

Date: 10th December 2015

Office: 18 Frogmore Road, Hemel Hempstead, HP3 9RT.

Status: Final

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Date:	<u>10th December 2015</u>	Date:	<u>10th December 2015</u>

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Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by RSK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of RSK and the party for whom it was prepared.

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

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1 INTRODUCTION

RSK Environment Limited (RSK) was commissioned by Solum Regeneration LLP to carry out a ground investigation of the land north of Station Yard in Twickenham, London. The project was commissioned specifically to provide factual ground information.

This report is subject to the RSK service constraints given in **Appendix A**.

1.1 Scope

The project was carried out to an agreed brief set out by Mace Group. The works undertaken included the following tasks:

- Forming of the exploratory holes at locations determined by Waterman Group;
- Excavation of three trial pits to maximum depths of 1.0m;
- Three in-situ CBR determination using Clegg Impact Hammer apparatus;
- Collection of soil samples as per the Waterman specification;
- Factual reporting.

Details of these works are given in Section 3 of this report.

1.2 Limitations

The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable.

2 THE SITE

2.1 Site Details

2.1.1 Description & Geographic Setting

The site, which may be located by National Grid reference 516064E, 173597N, is situated on the north-east edge of Twickenham. An extract of the 1:25,000 Scale Ordnance Survey map showing the location of the site is presented in **Figure 1**.

The site, covering an approximate area of 860m², comprises a linear car park, bounded by a 2m high concrete fence to the north and 0.75m high wire fence running along the southern, eastern and western boundaries. The site is surfaced with bituminous material, with the exception of a number of gravel filled potholes, small areas of concrete, and a brick path. A site layout plan is presented within **Figure 2**.

The area surrounding the site is summarised in Table 1.

Table 1: Site environs

To the north:	Railway lines, with a multi-storey residential development partway through construction beyond at the time of this report;
To the east:	St Mary's Terrace and a road bridge which runs from south east to north west over the railway lines;
To the south:	Station Yard (road), beyond which lies residential housing and associated soft landscaping; and
To the west:	Disused land, beyond which lies The Albany (pub).

2.1.2 Geology

Published records for the area indicates the geology beneath the site is likely to be characterised by the succession recorded in Table 2.

Table 2: Conjectural Geological Succession beneath the Site

Geological unit	Description	Estimated thickness (m)
Kempton Park Gravel	Orange brown silty, clayey sand gravel.	Several metres
London Clay Formation	Dark grey/blue silty clay	Up to 60m
Source: BGS Website http://www.bgs.ac.uk/opengeoscience/		



In addition to the above, Langley Silt Member (superficial deposit) is noted to lie close to the site's southern border. As such, it is considered possible that the Langley Silt Member deposits may be encountered overlying the Kempton Park Gravels.

3 SITE INVESTIGATION METHODOLOGY

3.1 Rationale

The purpose of the intrusive investigation is to aid confirmation of the ground conditions underlying the area of proposed development. The techniques adopted for the investigation have been chosen in accordance with Waterman specifications.

3.2 General

The ground investigation comprised trial pits, sampling, in-situ testing and laboratory testing.

The results of the ground investigation are presented in **Appendices B and C**, which cover fieldwork and environmental laboratory testing respectively. The factual results of laboratory tests are covered by UKAS accreditation, but opinions and interpretations expressed in the report and on the fieldwork records are outside the scope of UKAS accreditation.

3.3 Fieldwork

The site work was carried out on 28th October 2013 and comprised the activities summarised in Table 3. The investigation and the soil descriptions were carried out in general accordance with BS5930:2015 - Code of Practice for Site Investigations.

Table 3: Summary of Ground Investigation Activities

Investigation Type	Number	Designation	Rationale
Trial Pits – excavated by hand	3	TP1 – TP3	To accurately log the upper strata and collect samples from the shallow made ground and natural soils.
CBR tests	3	TP1 – TP3	To measure the sub-grade strength

The investigation points were provisionally determined by Waterman Group and finalised on site by RSK, prior to the intrusive works.

The trial pits were excavated to 0.5m whereupon a CBR test was undertaken, using a Clegg Impact Soil Tester. The test in TP2 at 0.5m encountered an unexpected error, and so the pit was advanced to 0.6m, and the test repeated. This was to avoid re-testing the

same soil. The reported values are as follows: TP1 at 0.5m is 36%; TP2 at 0.6m is 23%; TP3 at 0.5m is 17%.

Soil was extracted from the trial pits and placed onto an adjacent tarpaulin. The extracted material was then separated into the strata as identified by the RSK engineer on-site, and these strata were repeatedly mixed and divided so to homogenise the soil for sampling. Samples were then collected in the appropriate containers for environmental testing: plastic tubs, glass jars and glass vials.

The trial pits were backfilled with arisings and reinstated as close to their original appearances as possible.

3.4 Laboratory Testing

A programme of chemical laboratory testing, scheduled by Waterman Group, is presented in Table 4. Testing was undertaken by a UKAS accredited laboratory (Envirolab). MCERTS accredited test methods were specified where applicable.

Table 4: Summary of Chemical Testing Programme

Strata	Tests undertaken	Number of tests
Made Ground (TP1 to TP3)	Chloride	4
	Nitrate	4
	Sulphate, sulphide and sulphur	4
	Cyanide (total)	4
	Loss of ignition and TOC	4
	Calorific value	4
	Metal suite	4
	Asbestos screen	4
	Semi-volatile organic compounds including polycyclic aromatic hydrocarbons	4
	Volatile organic compounds	4
	Speciated total petroleum hydrocarbons	4
Kempton Park Gravel (TP1 and TP3)	Chloride	2
	Nitrate	2
	Sulphate, sulphide and sulphur	2
	Cyanide (total)	2
	Loss of ignition and TOC	2
	Calorific value	2
	Metal suite	2
	Asbestos screen	2



	Semi-volatile organic compounds including polycyclic aromatic hydrocarbons	2
	Volatile organic compounds	2
	Speciated total petroleum hydrocarbons	2

4 PHYSICAL GROUND CONDITIONS

The descriptions of the strata encountered, notes regarding visual or olfactory evidence of contamination, list of samples taken, field observations of soil, in-situ testing and details of monitoring well installations are included on the exploratory hole records presented in **Appendix B**.

4.1 General succession of strata

The exploratory holes revealed that the site is underlain by a thin veneer of made ground overlying the Kempton Park Gravel. This appears to generally concur with the stratigraphical succession described within Section 2.1.2. For the purpose of discussion, the ground conditions are summarised in Table 5 and the strata discussed in subsequent subsections.

Table 5: summary of ground conditions

Strata	Exploratory holes encountered	Depth to top of stratum m bgl	Thickness (m)
Made Ground	TP1 to TP3	0.00 (GL)	0.60 – 0.80
Kempton Park Gravel	TP1 to TP3	0.60 – 0.80	Proven to 1.2m bgl.

4.1.1 Made Ground

The exploratory holes revealed a variable thickness of made ground ranging between 0.60 and 0.80m bgl. The made ground recovered was variable in nature and reference should be made to the individual records. In general, it comprised an initial surface layer of bituminous hardstanding overlying a sub-base layer typically consisting of locally clayey gravelly SAND with occasional cobble sized flint. The gravel fraction comprised asphalt, flint and concrete. Beneath this variable proportions of anthropogenic material were noted in a gravelly SAND matrix, grading into a gravelly CLAY/very clayey SAND.

4.1.2 Kempton Park Gravel

Beneath the Made Ground, where present, the Kempton Park Gravel was encountered and typically comprised brown locally mottled orange clayey gravelly SAND. Gravel fraction comprised fine to coarse subangular to rounded flint. The base of the stratum was not proven.

4.2 Groundwater

Groundwater was not encountered during the course of the investigation.

It should be noted that groundwater levels might fluctuate for a number of reasons including seasonal variations. On-going monitoring would be required to establish both the full range of conditions and any trends in groundwater levels.

BIBLIOGRAPHY

British Standards Institution (BSI) (1990), 'BS 1377:1990. Methods of test for soils for civil engineering purposes'.

British Standards Institution (1999), 'BS 5930:1999. Code of practice for site investigations'.

British Standards Institution (2011), 'BS 10175:2011. Investigation of potentially contaminated sites: Code of practice'.

Environment Agency (2004a), *Model Procedures for the Management of Contaminated Land. Contaminated Land Report Number 11 (CLR11)*, September (Bristol: Environment Agency).

Environment Agency (2004b), 'Policy Number 199_04, dated 9 March 2004, Part IIA – Detailed Quantitative Assessment of Chronic Risks to Human Health from Contaminated Soils'.

Environment Agency (2010a), 'GPLC1 – Guiding Principles of Land Contamination', 'GPLC2 – Frequency Asked Questions, Technical Information, Detailed Advice and References', and 'GPLC3 – Reporting Checklists', all March.

Environment Agency www.environment-agency.gov.uk/.

Environmental Permitting (England and Wales) Regulations 2010 (London: HMSO).

Hartless, R. (1991), 'BRE Report 212: Construction of new buildings on gas-contaminated land', Building Research Establishment.

Hazardous Waste Regulations 2005 (London: HMSO).

Norbury, D. (2010), *Soil and Rock Description in Engineering Practice* (Caithness: Whittles).

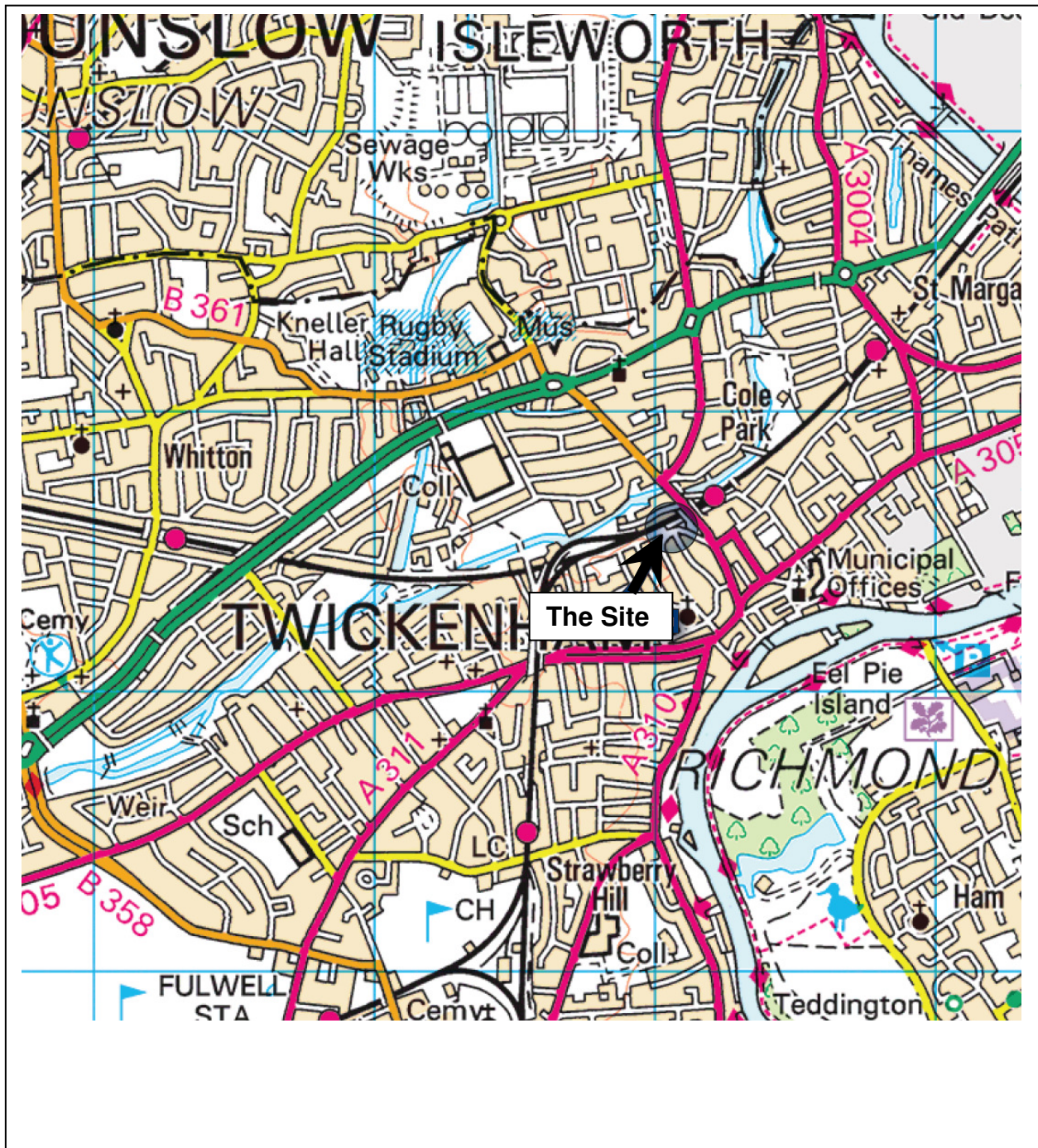
Office of the Deputy Prime Minister (2004), *Planning Policy Statement 23: Planning and Pollution Control* (London: The Stationery Office).

Part IIA of the Environmental Protection Act (Contaminated Land Regulations (England) 2002 (London: HMSO).


The Surface Waters (Abstraction for Drinking Water) (Classification) Regulations 1996 (London: HMSO).

Wilson, S. A. and Card, G. B. (1999), 'Reliability and risk in gas protection design', *Ground Engineering*, February: 33–6.

FIGURES



Reproduced from Ordnance Survey mapping with the permission of the Controller of Her Majesty's Stationery Office. Crown Copyright reserved (Licence No: 100002620)

	SITE LOCATION PLAN	Client: Solum Regeneration LLP	Figure No: 1
		Site: Station Yard, Twickenham	Job No: 28006-R02(00)
		Scale:	Source: OS Map



TRIAL PIT LOCATION PLAN

Client: Solum Regeneration LLP

Figure No: 2

Site: Station Yard, Twickenham

Job No: 28006-R02(00)

Scale: NTS

Source: Waterman



APPENDIX A

SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Solum Regeneration LLP (the "client") in accordance with the terms of a contract between RSK and the "client". The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.
2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.
3. Unless otherwise agreed the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**
4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date hereof, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.
5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.
6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.
7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.
8. The phase II or intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.
9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.



APPENDIX B

EXPLORATORY FIELD RECORDS

Contract: Station Yard, Twickenham		Client: Solum Regeneration LLP		Trial Pit: TP1	
Contract Ref: 28006	Start: 28.10.15 End: 28.10.15	Ground Level: 8.21	National Grid Co-ordinate: E:516075.6 N:173599.1	Sheet: 1 of 1	

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.05	1	ES	J		▲ ▲	MADE GROUND: Bituminous hardstanding.	0.10	
0.10-0.20	2	D				MADE GROUND: Light brown/dark brown slightly clayey very gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint and rare fragments of asphalt. Weak hydrocarbon odour. (Sub-Base Material)	0.20	
						MADE GROUND: Orangish brown/black/dark grey clayey very gravelly SAND with a low cobble content. Sand is fine to coarse. Gravel is angular to well rounded fine to coarse abundant flint, occasional asphalt fragments, and rare brick fragments. Moderate hydrocarbon odour.	(0.30)	
0.50-0.65	3	ES	2x(T+J+V)			MADE GROUND: Grey very clayey gravelly SAND. Sand is fine. Gravel is rounded fine to coarse flint. Occasional pockets of soft light brown sandy clay. No odour.	0.50	
							(0.20)	
0.80-1.00	4	ES	2x(T+J+V)			Brown locally mottled orange slightly clayey gravelly SAND with a low cobble content and occasional lenses of sandy clay. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint. No odour. (Kempton Park Gravel)	(0.50)	
							0.70	
							1.20	

GINT LIBRARY_V8_05.GLB LibVersion: v8_05 - Lib0004 PrjVersion: v8_05 - Core+Logs 0003 | Log X1 - TRIAL PIT LOG - SPECIAL 2 | 28006 TWICKENHAM.GPJ - v8_05 | 10/12/15 - 11:50 | EH.
 RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk

Plan (Not to Scale) 		General Remarks 1. Trial pit sides stable throughout. 2. CBR test at 0.5m is 36%	
Method Used: Hand dug		Plant Used: Hand tools	
Logged By: EHughes		Checked By: EHughes	
All dimensions in metres		Scale: 1:11	

Contract: Station Yard, Twickenham		Client: Solum Regeneration LLP		Trial Pit: TP2	
Contract Ref: 28006	Start: 28.10.15 End: 28.10.15	Ground Level: 8.22	National Grid Co-ordinate: E:516065.0 N:173593.6	Sheet: 1 of 1	

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.10	1	ES	2x(T+J+V)		▲ ▲	MADE GROUND: Bituminous hardstanding.	0.10	
0.20-0.30	2	ES	2x(T+J+V)			MADE GROUND: Light brown and dark brown slightly clayey very gravelly SAND with a low cobble content. Sand is coarse. Gravel is angular to rounded fine to coarse flint, brick, asphalt and concrete. Weak hydrocarbon odour. (Sub-base Material)	(0.25)	
						MADE GROUND: Orangish brown slightly clayey very gravelly SAND with a low cobble content. Sand is coarse. Gravel is angular to well rounded fine to coarse flint and occasional asphalt. Weak hydrocarbon odour.	0.35	
0.50-0.60	3	ES	2x(T+J+V)			MADE GROUND: Grey slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is rounded fine to medium flint.	(0.35)	
						Brown locally mottled orange slightly clayey gravelly SAND with a low cobble content and occasional lenses of sandy clay. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint. No odour. (Kempton Park Gravel)	0.70	
1.10-1.20	4	D					(0.40)	
							1.20	

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RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk

<p>Plan (Not to Scale)</p>	<h3 style="text-align: center;">General Remarks</h3> <ol style="list-style-type: none"> 1. Trial pit sides stable throughout. 2. CBR test at 0.6m is 23%. 		
All dimensions in metres Scale: 1:11			
Method Used: Hand dug	Plant Used: Hand tools	Logged By: EHughes	Checked By: AGS

Contract: Station Yard, Twickenham		Client: Solum Regeneration LLP		Trial Pit: TP3	
Contract Ref: 28006	Start: 28.10.15 End: 28.10.15	Ground Level: 8.06	National Grid Co-ordinate: E:516045.2 N:173599.2	Sheet: 1 of 1	

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.05	1	ES	J+V		▲ ▲	MADE GROUND: Bituminous hardstanding overlying a thin layer of concrete.	0.10	
0.10-0.15	2	ES	J+V			MADE GROUND: Light brown and black slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint and asphalt. Weak hydrocarbon odour.	(0.15)	
0.20-0.25	3	ES	J			MADE GROUND: Light brown and dark brown slightly clayey very sandy GRAVEL with a low cobble content. Sand is coarse. Gravel is angular to rounded fine to coarse asphalt, brick, flint and concrete. Weak hydrocarbon odour. ... at 0.3 Cobble of brick 150mm wide x 30mm thick	0.25	
0.25-0.40	4	ES	2x(T+J+V)				0.50	
0.50-0.60	5	ES	2x(T+J+V)			MADE GROUND: Yellowish brown mottled dark brown sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to well rounded fine to medium flint and rare fragments of asphalt. No odour.	0.60	
0.80-0.90	6	ES	2x(T+J+V)			Orangish brown and slightly clayey SAND and GRAVEL with a low cobble content and rare lenses of sandy clay. Sand is fine to coarse. Gravel is angular to rounded fine to coarse flint. No odour. (Kempton Park Gravel)	(0.60)	
							1.20	

GINT LIBRARY v8_05.GLB LibVersion: v8_05 - Lib0004 PrVersion: v8_05 - Core+Logs 0003 | Log X1 - TRIAL PIT LOG - SPECIAL 2 | 28006 TWICKENHAM.GPJ - v8_05 | 10/12/15 - 11:50 | EH.
 RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tel: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk

Plan (Not to Scale) 		General Remarks 1. Trial pit sides stable throughout. 2. CBR test at 0.5m is 17%.	
Method Used: Hand dug		Plant Used: Hand tools	
Logged By: EHughes		Checked By: EHughes	
All dimensions in metres		Scale: 1:11	



APPENDIX C

CERTIFICATES OF LABORATORY ANALYSIS

Final Test Report

Envirolab Job Number: 15/07148
Issue Number: 1

Date: 18-Nov-15

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Edward Hughes/Nigel Austin
Project Name: Station Yard, Twickenham
Project Ref: 28006
Order No: N/A

Date Samples Received: 5-Nov-15
Date Instructions Received: 5-Nov-15
Date Analysis Completed: 18-Nov-15

Notes - Soil analysis

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

Superscript "M" indicates method accredited to MCERTS.

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



John Gustafson
Director



Sample Details								Landfill Waste Acceptance Criteria Limits					
Lab Sample ID	Method	ISO17025	MCERTS	15/07148/2				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill			
Client Sample Number				3									
Client Sample ID				TP1									
Depth to Top				0.5									
Depth to Bottom				0.65									
Date Sampled				28/10/2015									
Sample Type				Soil - ES									
Sample Matrix Code				4A									
Solid Waste Analysis													
pH (pH Units) _D	A-T-031	Y	Y	7.44				-	>6	-			
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.04				-	to be evaluated	to be evaluated			
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	0.01				-	to be evaluated	to be evaluated			
Loss on Ignition (%) _D	A-T-030	Y	N	1.5				-	-	10			
Total Organic Carbon (%) _D	A-T-032	Y	Y	0.42				3	5	6			
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	11				100	-	-			
Mineral Oil (mg/kg) _A	A-T-007	N	N	13				500	-	-			
Sum of 7 PCBs (mg/kg) _D	A-T-004	N	N	<0.007				1	-	-			
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01				6	-	-			
Eluate Analysis				2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)					
				mg/l		mg/kg							
Arsenic	A-T-025	Y	N	0.004	0.002	0.008	0.020	0.5	2	25			
Barium	A-T-025	Y	N	0.169	0.023	0.335	0.350	20	100	300			
Cadmium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.04	1	5			
Chromium	A-T-025	Y	N	0.002	<0.001	0.004	<0.01	0.5	10	70			
Copper	A-T-025	Y	N	0.014	0.002	0.028	0.030	2	50	100			
Mercury	A-T-025	Y	N	0.0002	<0.0001	0.0004	<0.001	0.01	0.2	2			
Molybdenum	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.5	10	30			
Nickel	A-T-025	Y	N	0.003	<0.001	0.006	<0.01	0.4	10	40			
Lead	A-T-025	Y	N	0.031	0.005	0.061	0.070	0.5	10	50			
Antimony	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.06	0.7	5			
Selenium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7			
Zinc	A-T-025	Y	N	0.021	0.005	0.041	0.060	4	50	200			
Chloride	A-T-026	Y	N	5	<1.00	10	<10	800	15000	25000			
Fluoride	A-T-026	Y	N	0.3	0.2	0.6	2.0	10	150	500			
Sulphate as SO ₄	A-T-026	Y	N	53	3	105	75	1000	20000	50000			
Total Dissolved Solids	A-T-035	N	N	28	<20	56	<200	4000	60000	100000			
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	<0.1	1	-	-			
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	<200	500	800	1000			
Leach Test Information													
pH (pH Units)	A-T-031	N	Y	6.4	6.2								
Conductivity (µS/cm)	A-T-037	N	N	56	22								
Mass Sample (kg)				0.200									
Dry Matter (%)	A-T-044	N	N	92.2									
Stage 1													
Volume Leachant, L ₂ (l)	A-T-046			0.350									
Filtered Eluate Volume, VE ₁ (l)	A-T-046			0.150									
Stage 2													
Volume Leachant, L ₈ (l)	A-T-046			1.470									
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation													

Sample Details								Landfill Waste Acceptance Criteria Limits					
Lab Sample ID	Method	ISO17025	MCERTS	15/07148/3				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill			
Client Sample Number				4									
Client Sample ID				TP1									
Depth to Top				0.8									
Depth to Bottom				1.00									
Date Sampled				28/10/2015									
Sample Type				Soil - ES									
Sample Matrix Code				4A									
Solid Waste Analysis													
pH (pH Units) _D	A-T-031	Y	Y	7.32				-	>6	-			
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.03				-	to be evaluated	to be evaluated			
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	<0.01				-	to be evaluated	to be evaluated			
Loss on Ignition (%) _D	A-T-030	Y	N	1.3				-	-	10			
Total Organic Carbon (%) _D	A-T-032	Y	Y	0.19				3	5	6			
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	19				100	-	-			
Mineral Oil (mg/kg) _A	A-T-007	N	N	<10				500	-	-			
Sum of 7 PCBs (mg/kg) _D	A-T-004	N	N	<0.007				1	-	-			
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01				6	-	-			
Eluate Analysis				2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)					
				mg/l		mg/kg							
Arsenic	A-T-025	Y	N	0.003	0.001	0.005	0.020	0.5	2	25			
Barium	A-T-025	Y	N	0.086	0.018	0.166	0.230	20	100	300			
Cadmium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.04	1	5			
Chromium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.5	10	70			
Copper	A-T-025	Y	N	0.007	0.002	0.014	0.020	2	50	100			
Mercury	A-T-025	Y	N	<0.0001	<0.0001	<0.0002	<0.001	0.01	0.2	2			
Molybdenum	A-T-025	Y	N	0.001	<0.001	0.002	<0.01	0.5	10	30			
Nickel	A-T-025	Y	N	0.001	<0.001	0.003	<0.01	0.4	10	40			
Lead	A-T-025	Y	N	0.014	0.004	0.026	0.040	0.5	10	50			
Antimony	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.06	0.7	5			
Selenium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7			
Zinc	A-T-025	Y	N	0.010	0.002	0.019	0.030	4	50	200			
Chloride	A-T-026	Y	N	2	<1.00	4	<10	800	15000	25000			
Fluoride	A-T-026	Y	N	0.3	0.2	0.5	2.0	10	150	500			
Sulphate as SO ₄	A-T-026	Y	N	19	3	37	41	1000	20000	50000			
Total Dissolved Solids	A-T-035	N	N	24	<20	46	<200	4000	60000	100000			
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	<0.1	1	-	-			
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	<200	500	800	1000			
Leach Test Information													
pH (pH Units)	A-T-031	N	Y	6.3	6.3								
Conductivity (µS/cm)	A-T-037	N	N	48	17								
Mass Sample (kg)				0.199									
Dry Matter (%)	A-T-044	N	N	94.1									
Stage 1													
Volume Leachant, L ₂ (l)	A-T-046			0.350									
Filtered Eluate Volume, VE ₁ (l)	A-T-046			0.150									
Stage 2													
Volume Leachant, L ₈ (l)	A-T-046			1.500									
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation													

Sample Details								Landfill Waste Acceptance Criteria Limits					
Lab Sample ID	Method	ISO17025	MCERTS	15/07148/5				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill			
Client Sample Number				2									
Client Sample ID				TP2									
Depth to Top				0.2									
Depth to Bottom				0.30									
Date Sampled				28/10/2015									
Sample Type				Soil - ES									
Sample Matrix Code				4A									
Solid Waste Analysis													
pH (pH Units) _D	A-T-031	Y	Y	8.53				-	>6	-			
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.7				-	to be evaluated	to be evaluated			
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	0.15				-	to be evaluated	to be evaluated			
Loss on Ignition (%) _D	A-T-030	Y	N	2.3				-	-	10			
Total Organic Carbon (%) _D	A-T-032	Y	Y	0.83				3	5	6			
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	80.1				100	-	-			
Mineral Oil (mg/kg) _A	A-T-007	N	N	11				500	-	-			
Sum of 7 PCBs (mg/kg) _D	A-T-004	N	N	<0.007				1	-	-			
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01				6	-	-			
Eluate Analysis				2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)					
				mg/l		mg/kg							
Arsenic	A-T-025	Y	N	0.005	0.004	0.011	0.040	0.5	2	25			
Barium	A-T-025	Y	N	0.027	0.014	0.052	0.150	20	100	300			
Cadmium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.04	1	5			
Chromium	A-T-025	Y	N	0.007	0.001	0.014	0.020	0.5	10	70			
Copper	A-T-025	Y	N	0.004	0.002	0.009	0.020	2	50	100			
Mercury	A-T-025	Y	N	<0.0001	<0.0001	<0.0002	<0.001	0.01	0.2	2			
Molybdenum	A-T-025	Y	N	0.003	0.001	0.007	0.010	0.5	10	30			
Nickel	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.4	10	40			
Lead	A-T-025	Y	N	0.032	0.022	0.062	0.230	0.5	10	50			
Antimony	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.06	0.7	5			
Selenium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7			
Zinc	A-T-025	Y	N	0.017	0.009	0.033	0.100	4	50	200			
Chloride	A-T-026	Y	N	<1.00	<1.00	<2	<10	800	15000	25000			
Fluoride	A-T-026	Y	N	0.4	0.1	0.8	1.0	10	150	500			
Sulphate as SO ₄	A-T-026	Y	N	2	<1.00	4	<10	1000	20000	50000			
Total Dissolved Solids	A-T-035	N	N	64	29	125	317	4000	60000	100000			
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	<0.1	1	-	-			
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	<200	500	800	1000			
Leach Test Information													
pH (pH Units)	A-T-031	N	Y	7.5	7.5								
Conductivity (µS/cm)	A-T-037	N	N	127	57								
Mass Sample (kg)				0.200									
Dry Matter (%)	A-T-044	N	N	93.4									
Stage 1													
Volume Leachant, L ₂ (l)	A-T-046			0.350									
Filtered Eluate Volume, VE ₁ (l)	A-T-046			0.150									
Stage 2													
Volume Leachant, L ₈ (l)	A-T-046			1.490									
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation													

Sample Details							Landfill Waste Acceptance Criteria Limits					
Lab Sample ID	Method	ISO17025	MCERTS	15/07148/6			Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill			
Client Sample Number				3								
Client Sample ID				TP2								
Depth to Top				0.5								
Depth to Bottom				0.60								
Date Sampled				28/10/2015								
Sample Type				Soil - ES								
Sample Matrix Code				4A								
Solid Waste Analysis												
pH (pH Units) _D	A-T-031	Y	Y	8.37			-	>6	-			
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.08			-	to be evaluated	to be evaluated			
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	0.03			-	to be evaluated	to be evaluated			
Loss on Ignition (%) _D	A-T-030	Y	N	1.8			-	-	10			
Total Organic Carbon (%) _D	A-T-032	Y	Y	0.14			3	5	6			
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	667			100	-	-			
Mineral Oil (mg/kg) _A	A-T-007	N	N	197			500	-	-			
Sum of 7 PCBs (mg/kg) _D	A-T-004	N	N	<0.007			1	-	-			
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01			6	-	-			
Eluate Analysis				2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)				
				mg/l		mg/kg						
Arsenic	A-T-025	Y	N	0.002	0.002	0.004	0.020	0.5	2	25		
Barium	A-T-025	Y	N	0.014	0.007	0.027	0.070	20	100	300		
Cadmium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.04	1	5		
Chromium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.5	10	70		
Copper	A-T-025	Y	N	0.001	<0.001	0.002	<0.01	2	50	100		
Mercury	A-T-025	Y	N	<0.0001	<0.0001	<0.0002	<0.001	0.01	0.2	2		
Molybdenum	A-T-025	Y	N	0.006	0.002	0.011	0.020	0.5	10	30		
Nickel	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.4	10	40		
Lead	A-T-025	Y	N	0.004	0.005	0.007	0.050	0.5	10	50		
Antimony	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.06	0.7	5		
Selenium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7		
Zinc	A-T-025	Y	N	0.004	0.002	0.008	0.030	4	50	200		
Chloride	A-T-026	Y	N	<1.00	<1.00	<2	<10	800	15000	25000		
Fluoride	A-T-026	Y	N	0.6	0.2	1.1	2.0	10	150	500		
Sulphate as SO ₄	A-T-026	Y	N	1	<1.00	2	<10	1000	20000	50000		
Total Dissolved Solids	A-T-035	N	N	49	23	94	249	4000	60000	100000		
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	<0.1	1	-	-		
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	<200	500	800	1000		
Leach Test Information												
pH (pH Units)	A-T-031	N	Y	7.5	7.2							
Conductivity (µS/cm)	A-T-037	N	N	98	46							
Mass Sample (kg)				0.200								
Dry Matter (%)	A-T-044	N	N	94.4								
Stage 1												
Volume Leachant, L ₂ (l)	A-T-046			0.350								
Filtered Eluate Volume, VE ₁ (l)	A-T-046			0.150								
Stage 2												
Volume Leachant, L ₈ (l)	A-T-046			1.510								
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation												

Sample Details								Landfill Waste Acceptance Criteria Limits					
Lab Sample ID	Method	ISO17025	MCERTS	15/07148/8				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill			
Client Sample Number				4									
Client Sample ID				TP3									
Depth to Top				0.25									
Depth to Bottom				0.40									
Date Sampled				28/10/2015									
Sample Type				Soil - ES									
Sample Matrix Code				4A									
Solid Waste Analysis													
pH (pH Units) _D	A-T-031	Y	Y	8.33				-	>6	-			
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.15				-	to be evaluated	to be evaluated			
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	0.08				-	to be evaluated	to be evaluated			
Loss on Ignition (%) _D	A-T-030	Y	N	3.4				-	-	10			
Total Organic Carbon (%) _D	A-T-032	Y	Y	1.21				3	5	6			
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	317				100	-	-			
Mineral Oil (mg/kg) _A	A-T-007	N	N	<10				500	-	-			
Sum of 7 PCBs (mg/kg) _D	A-T-004	N	N	<0.007				1	-	-			
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01				6	-	-			
Eluate Analysis				2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)					
				mg/l		mg/kg							
Arsenic	A-T-025	Y	N	0.002	0.003	0.005	0.030	0.5	2	25			
Barium	A-T-025	Y	N	0.008	0.015	0.015	0.140	20	100	300			
Cadmium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.04	1	5			
Chromium	A-T-025	Y	N	0.001	<0.001	0.003	<0.01	0.5	10	70			
Copper	A-T-025	Y	N	0.001	0.002	0.003	0.020	2	50	100			
Mercury	A-T-025	Y	N	<0.0001	<0.0001	<0.0002	<0.001	0.01	0.2	2			
Molybdenum	A-T-025	Y	N	0.009	0.003	0.019	0.040	0.5	10	30			
Nickel	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.4	10	40			
Lead	A-T-025	Y	N	<0.001	0.011	<0.002	<0.01	0.5	10	50			
Antimony	A-T-025	Y	N	0.001	<0.001	0.003	<0.01	0.06	0.7	5			
Selenium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7			
Zinc	A-T-025	Y	N	<0.001	0.004	<0.002	<0.01	4	50	200			
Chloride	A-T-026	Y	N	1	<1.00	2	<10	800	15000	25000			
Fluoride	A-T-026	Y	N	1.1	0.4	2.1	4.0	10	150	500			
Sulphate as SO ₄	A-T-026	Y	N	8	<1.00	15	<10	1000	20000	50000			
Total Dissolved Solids	A-T-035	N	N	73	31	142	342	4000	60000	100000			
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	<0.1	1	-	-			
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	<200	500	800	1000			
Leach Test Information													
pH (pH Units)	A-T-031	N	Y	7.3	7.3								
Conductivity (µS/cm)	A-T-037	N	N	145	62								
Mass Sample (kg)				0.200									
Dry Matter (%)	A-T-044	N	N	93.4									
Stage 1													
Volume Leachant, L ₂ (l)	A-T-046			0.350									
Filtered Eluate Volume, VE ₁ (l)	A-T-046			0.150									
Stage 2													
Volume Leachant, L ₈ (l)	A-T-046			1.490									
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation													

Sample Details								Landfill Waste Acceptance Criteria Limits					
Lab Sample ID	Method	ISO17025	MCERTS	15/07148/9				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill			
Client Sample Number				6									
Client Sample ID				TP3									
Depth to Top				0.8									
Depth to Bottom				0.90									
Date Sampled				28/10/2015									
Sample Type				Soil - ES									
Sample Matrix Code				1A									
Solid Waste Analysis													
pH (pH Units) _D	A-T-031	Y	Y	8.14				-	>6	-			
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.04				-	to be evaluated	to be evaluated			
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	0.02				-	to be evaluated	to be evaluated			
Loss on Ignition (%) _D	A-T-030	Y	N	1.6				-	-	10			
Total Organic Carbon (%) _D	A-T-032	Y	Y	0.16				3	5	6			
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	36.5				100	-	-			
Mineral Oil (mg/kg) _A	A-T-007	N	N	<10				500	-	-			
Sum of 7 PCBs (mg/kg) _D	A-T-004	N	N	<0.007				1	-	-			
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01				6	-	-			
Eluate Analysis				2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)					
				mg/l		mg/kg							
Arsenic	A-T-025	Y	N	0.002	0.002	0.004	0.020	0.5	2	25			
Barium	A-T-025	Y	N	0.011	0.011	0.022	0.110	20	100	300			
Cadmium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.04	1	5			
Chromium	A-T-025	Y	N	0.001	<0.001	0.002	<0.01	0.5	10	70			
Copper	A-T-025	Y	N	0.001	<0.001	0.002	<0.01	2	50	100			
Mercury	A-T-025	Y	N	<0.0001	<0.0001	<0.0002	<0.001	0.01	0.2	2			
Molybdenum	A-T-025	Y	N	0.007	0.002	0.013	0.020	0.5	10	30			
Nickel	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.4	10	40			
Lead	A-T-025	Y	N	0.002	0.006	0.004	0.050	0.5	10	50			
Antimony	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.06	0.7	5			
Selenium	A-T-025	Y	N	<0.001	<0.001	<0.002	<0.01	0.1	0.5	7			
Zinc	A-T-025	Y	N	0.004	0.003	0.008	0.030	4	50	200			
Chloride	A-T-026	Y	N	1	<1.00	<2	<10	800	15000	25000			
Fluoride	A-T-026	Y	N	0.8	0.3	1.6	3.0	10	150	500			
Sulphate as SO ₄	A-T-026	Y	N	<1.00	<1.00	<2	<10	1000	20000	50000			
Total Dissolved Solids	A-T-035	N	N	45	<20	86	<200	4000	60000	100000			
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	<0.1	1	-	-			
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	<200	500	800	1000			
Leach Test Information													
pH (pH Units)	A-T-031	N	Y	7.0	6.7								
Conductivity (µS/cm)	A-T-037	N	N	91	29								
Mass Sample (kg)				0.200									
Dry Matter (%)	A-T-044	N	N	94.1									
Stage 1													
Volume Leachant, L ₂ (l)	A-T-046			0.350									
Filtered Eluate Volume, VE ₁ (l)	A-T-046			0.150									
Stage 2													
Volume Leachant, L ₈ (l)	A-T-046			1.510									
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation													

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 15/07148
Issue Number: 1
Date: 18 November, 2015


Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Edward Hughes/Nigel Austin
Project Name: Station Yard, Twickenham
Project Ref: 28006
Order No: N/A
Date Samples Received: 05/11/15
Date Instructions Received: 05/11/15
Date Analysis Completed: 18/11/15

Prepared by:


Melanie Marshall
Laboratory Coordinator

Approved by:


John Gustafson
Director

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/1	15/07148/2	15/07148/3	15/07148/4	15/07148/5	15/07148/6	15/07148/7	15/07148/8	Units	Method ref
Client Sample No	1	3	4	1	2	3	3	4		
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3	TP3		
Depth to Top	0.00	0.50	0.80	0.00	0.20	0.50	0.20	0.25		
Depth To Bottom	0.05	0.65	1.00	0.10	0.30	0.60	0.25	0.40		
Date Sampled	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15		
Sample Type	Solid	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Solid	Soil - ES		
Sample Matrix Code	7	4A	4A	7	4A	4A	7	4A		
% Moisture _A	-	7.8	5.9	-	6.6	5.6	-	6.9		
% Stones >10mm _A [#]	<0.1	14.1	23.2	<0.1	12.0	7.7	<0.1	6.1	% w/w	A-T-044
pH _D ^{M#}	-	7.44	7.32	-	8.53	8.37	-	8.33	pH	A-T-031s
Ammonium NH4 (exchangeable/water soluble) _D	-	0.90	0.73	-	1.46	1.45	-	1.89	mg/kg	A-T-033s
Chloride (water sol 2:1) _D ^{M#}	-	<10	<10	-	<10	<10	-	<10	mg/kg	A-T-026s
Nitrate (water sol 2:1) _D	-	3	7	-	<1	<1	-	3	mg/kg	A-T-026s
Sulphate (acid soluble) _D ^{M#}	-	290	260	-	430	<200	-	360	mg/kg	A-T-028s
Cyanide (total) _A ^{M#}	-	<1	<1	-	<1	<1	-	<1	mg/kg	A-T-042sTCN
Sulphide _A	-	<15	<15	-	<15	<15	-	<15	mg/kg	A-T-S2-s
Sulphur (elemental) _D ^{M#}	-	<5	10	-	<5	29	-	<5	mg/kg	A-T-029s
Loss on ignition (550degC) _D	-	1.5	1.3	-	2.3	1.8	-	3.4	% w/w	A-T-030s
Organic matter _D ^{M#}	-	0.7	0.3	-	1.4	0.3	-	2.1	% w/w	A-T-032 OM
Total Organic Carbon _D ^{M#}	-	0.42	0.19	-	0.83	0.14	-	1.21	% w/w	A-T-032s
Calorific Value (Gross/Total) _A	-	186	104	-	1630	1410	-	<100	kJ/kg	Subcon
Arsenic _D ^{M#}	-	8	8	-	10	13	-	9	mg/kg	A-T-024s
Barium _D	-	29	21	-	37	27	-	46	mg/kg	A-T-024s
Beryllium _D [#]	-	<1	<1	-	<1	1	-	1	mg/kg	A-T-024s
Boron (water soluble) _D ^{M#}	-	<1.0	<1.0	-	<1.0	<1.0	-	<1.0	mg/kg	A-T-027s
Cadmium _D ^{M#}	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	mg/kg	A-T-024s
Copper _D ^{M#}	-	6	4	-	11	6	-	13	mg/kg	A-T-024s
Cobalt _D ^{M#}	-	6	5	-	5	7	-	6	mg/kg	A-T-024s
Chromium _D ^{M#}	-	15	14	-	12	20	-	15	mg/kg	A-T-024s
Chromium (hexavalent) _D	-	<1	<1	-	<1	<1	-	<1	mg/kg	A-T-040s
Iron _D	-	15600	15800	-	16600	26900	-	17700	mg/kg	A-T-024s
Lead _D ^{M#}	-	14	10	-	86	30	-	66	mg/kg	A-T-024s
Mercury _D	-	<0.17	<0.17	-	0.31	<0.17	-	<0.17	mg/kg	A-T-024s
Molybdenum _D ^{M#}	-	<1	<1	-	<1	<1	-	<1	mg/kg	A-T-024s
Nickel _D ^{M#}	-	12	12	-	13	21	-	13	mg/kg	A-T-024s
Selenium _D	-	<1	<1	-	<1	<1	-	<1	mg/kg	A-T-024s
Vanadium _D ^{M#}	-	26	25	-	23	38	-	29	mg/kg	A-T-024s
Zinc _D ^{M#}	-	22	18	-	68	34	-	37	mg/kg	A-T-024s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/1	15/07148/2	15/07148/3	15/07148/4	15/07148/5	15/07148/6	15/07148/7	15/07148/8	Units	Method ref
Client Sample No	1	3	4	1	2	3	3	4		
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3	TP3		
Depth to Top	0.00	0.50	0.80	0.00	0.20	0.50	0.20	0.25		
Depth To Bottom	0.05	0.65	1.00	0.10	0.30	0.60	0.25	0.40		
Date Sampled	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15		
Sample Type	Solid	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Solid	Soil - ES		
Sample Matrix Code	7	4A	4A	7	4A	4A	7	4A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil _A [#]	-	NAD	NAD	-	NAD	NAD	-	NAD	A-T-045	
Asbestos ACM - Suitable for Water Absorption Test? _D	-	N/A	N/A	-	N/A	N/A	-	N/A	Gravimetry	

Envirolab Job Number: 15/07148

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Lab Sample ID	15/07148/1	15/07148/2	15/07148/3	15/07148/4	15/07148/5	15/07148/6	15/07148/7	15/07148/8	Units	Method ref
Client Sample No	1	3	4	1	2	3	3	4		
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3	TP3		
Depth to Top	0.00	0.50	0.80	0.00	0.20	0.50	0.20	0.25		
Depth To Bottom	0.05	0.65	1.00	0.10	0.30	0.60	0.25	0.40		
Date Sampled	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15		
Sample Type	Solid	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Solid	Soil - ES		
Sample Matrix Code	7	4A	4A	7	4A	4A	7	4A		
PAH-16 plus Coronene										
Acenaphthene _A ^{M#}	32.1	0.07	0.07	0.07	0.41	5.16	25.4	0.73	mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	40.1	0.12	0.14	0.11	0.41	3.65	27.8	2.46	mg/kg	A-T-019s
Anthracene _A ^{M#}	156	0.36	0.58	0.28	1.75	21.3	97.8	8.41	mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	294	0.78	1.47	1.73	6.41	85.2	358	43.9	mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	250	0.88	1.47	2.57	8.57	63.4	136	34.5	mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	256	0.99	1.69	3.07	9.21	55.5	140	34.4	mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	121	0.52	0.77	1.64	4.81	49.4	71.8	14.3	mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	94	0.33	0.55	0.96	3.57	38.1	83	16.4	mg/kg	A-T-019s
Chrysene _A ^{M#}	242	0.79	1.50	1.94	6.67	53.5	211	29.9	mg/kg	A-T-019s
Coronene _A	24.7	0.15	0.19	0.41	1.02	8.60	13.5	2.39	mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	29.7	0.14	0.22	0.44	1.16	15.1	47	5.21	mg/kg	A-T-019s
Fluoranthene _A ^{M#}	421	1.91	3.71	2.32	11.4	53.9	180	42.6	mg/kg	A-T-019s
Fluorene _A ^{M#}	92.3	0.21	0.24	0.15	0.97	10.7	48	2.36	mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	156	0.61	0.94	1.87	5.82	76.3	133	19.1	mg/kg	A-T-019s
Naphthalene _A ^{M#}	83.4	0.15	0.07	0.05	0.31	5.09	10.3	0.93	mg/kg	A-T-019s
Phenanthrene _A ^{M#}	403	1.44	2.30	1.04	6.63	44.3	340	20.8	mg/kg	A-T-019s
Pyrene _A ^{M#}	391	1.53	3.10	2.35	10.9	77.6	177	39	mg/kg	A-T-019s
PAH (total 17) _A	3090	11	19	21	80.1	667	2100	317	mg/kg	A-T-019s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/1	15/07148/2	15/07148/3	15/07148/4	15/07148/5	15/07148/6	15/07148/7	15/07148/8	Units	Method ref
Client Sample No	1	3	4	1	2	3	3	4		
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3	TP3		
Depth to Top	0.00	0.50	0.80	0.00	0.20	0.50	0.20	0.25		
Depth To Bottom	0.05	0.65	1.00	0.10	0.30	0.60	0.25	0.40		
Date Sampled	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15		
Sample Type	Solid	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Solid	Soil - ES		
Sample Matrix Code	7	4A	4A	7	4A	4A	7	4A		
SVOC										
2,4-Dinitrophenol _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
4,6-Dinitro-2-methylphenol _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Hexachlorobenzene _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Diethyl phthalate _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Dimethyl phthalate _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Dibenzofuran _A	-	<100	158	-	650	4380	-	1810	µg/kg	A-T-052s
Carbazole _A	-	<100	<100	-	706	3070	-	1180	µg/kg	A-T-052s
Butylbenzyl phthalate _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Bis(2-ethylhexyl)phthalate _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Bis(2-chloroethoxy)methane _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Bis(2-chloroethyl)ether _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
4-Nitrophenol _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
4-Methylphenol _A	-	<100	<100	-	<100	197	-	<100	µg/kg	A-T-052s
4-Chloro-3-methylphenol _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
2-Nitrophenol _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
2-Methylphenol _A	-	<100	<100	-	<100	112	-	<100	µg/kg	A-T-052s
2-Chlorophenol _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
2,6-Dinitrotoluene _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
2,4-Dinitrotoluene _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
2,4-Dimethylphenol _A	-	<100	<100	-	<100	263	-	<100	µg/kg	A-T-052s
2,4-Dichlorophenol _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
2,4,6-Trichlorophenol _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
2,4,5-Trichlorophenol _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
2-Chloronaphthalene _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
2-Methylnaphthalene _A	-	<100	<100	-	222	1740	-	288	µg/kg	A-T-052s
Acenaphthylene _A	-	108	107	-	893	4700	-	2820	µg/kg	A-T-052s
Acenaphthene _A	-	<100	<100	-	525	3730	-	791	µg/kg	A-T-052s
Anthracene _A	-	302	413	-	2720	9250	-	5550	µg/kg	A-T-052s
Benzo(a)anthracene _A	-	1180	949	-	8740	38600	-	15600	µg/kg	A-T-052s
Benzo(b)fluoranthene _A	-	1620	1210	-	17500	110000	-	32900	µg/kg	A-T-052s
Benzo(k)fluoranthene _A	-	642	482	-	5780	48100	-	10700	µg/kg	A-T-052s
Benzo(a)pyrene _A	-	1440	1210	-	16400	92200	-	24400	µg/kg	A-T-052s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/1	15/07148/2	15/07148/3	15/07148/4	15/07148/5	15/07148/6	15/07148/7	15/07148/8	Units	Method ref
Client Sample No	1	3	4	1	2	3	3	4		
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3	TP3		
Depth to Top	0.00	0.50	0.80	0.00	0.20	0.50	0.20	0.25		
Depth To Bottom	0.05	0.65	1.00	0.10	0.30	0.60	0.25	0.40		
Date Sampled	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15		
Sample Type	Solid	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Solid	Soil - ES		
Sample Matrix Code	7	4A	4A	7	4A	4A	7	4A		
Benzo(ghi)perylene _A	-	914	728	-	9040	122000	-	8870		
Chrysene _A	-	1080	851	-	7970	41600	-	15700	µg/kg	A-T-052s
Fluoranthene _A	-	2210	1810	-	12700	45200	-	17900	µg/kg	A-T-052s
Fluorene _A	-	123	254	-	1010	6430	-	2030	µg/kg	A-T-052s
Indeno(1,2,3-cd)pyrene _A	-	937	713	-	9360	111000	-	12400	µg/kg	A-T-052s
Phenanthrene _A	-	958	1530	-	7810	19700	-	11100	µg/kg	A-T-052s
Pyrene _A	-	2020	1490	-	12600	44600	-	15800	µg/kg	A-T-052s
Naphthalene _A	-	<100	<100	-	383	2790	-	335	µg/kg	A-T-052s
Dibenzo(ah)anthracene _A	-	228	189	-	2160	32700	-	4150	µg/kg	A-T-052s
Bis(2-chloroisopropyl)ether _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Phenol _A	-	<100	<100	-	<100	145	-	<100	µg/kg	A-T-052s
Pentachlorophenol _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
n-Nitroso-n-dipropylamine _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
n-Dioctylphthalate _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
n-Dibutylphthalate _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Nitrobenzene _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Isophorone _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Hexachloroethane _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Hexachlorocyclopentadiene _A	-	<100	<100	-	<100	<100	-	<100	µg/kg	A-T-052s
Perylene _A	-	379	281	-	4620	54000	-	8550	µg/kg	A-T-052s

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Lab Sample ID	15/07148/1	15/07148/2	15/07148/3	15/07148/4	15/07148/5	15/07148/6	15/07148/7	15/07148/8	Units	Method ref
Client Sample No	1	3	4	1	2	3	3	4		
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3	TP3		
Depth to Top	0.00	0.50	0.80	0.00	0.20	0.50	0.20	0.25		
Depth To Bottom	0.05	0.65	1.00	0.10	0.30	0.60	0.25	0.40		
Date Sampled	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15		
Sample Type	Solid	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Solid	Soil - ES		
Sample Matrix Code	7	4A	4A	7	4A	4A	7	4A		
VOC										
Dichlorodifluoromethane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Chloromethane _A [#]	-	<10	<10	-	<10	<10	-	<10	µg/kg	A-T-006s
Vinyl Chloride _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Bromomethane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Chloroethane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Trichlorofluoromethane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,1-Dichloroethene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Carbon Disulphide _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Dichloromethane _A	-	<5	<5	-	<5	<5	-	<5	µg/kg	A-T-006s
trans 1,2-Dichloroethene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,1-Dichloroethane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
cis 1,2-Dichloroethene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
2,2-Dichloropropane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Bromochloromethane _A [#]	-	<5	<5	-	<5	<5	-	<5	µg/kg	A-T-006s
Chloroform _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,1,1-Trichloroethane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,1-Dichloropropene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Carbon Tetrachloride _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,2-Dichloroethane _A [#]	-	<2	<2	-	<2	<2	-	<2	µg/kg	A-T-006s
Benzene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Trichloroethene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,2-Dichloropropane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Dibromomethane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Bromodichloromethane _A [#]	-	<10	<10	-	<10	<10	-	<10	µg/kg	A-T-006s
cis 1,3-Dichloropropene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Toluene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
trans 1,3-Dichloropropene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,1,2-Trichloroethane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,3-Dichloropropane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Tetrachloroethene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Dibromochloromethane _A [#]	-	<3	<3	-	<3	<3	-	<3	µg/kg	A-T-006s
1,2-Dibromoethane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/1	15/07148/2	15/07148/3	15/07148/4	15/07148/5	15/07148/6	15/07148/7	15/07148/8	Units	Method ref
Client Sample No	1	3	4	1	2	3	3	4		
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3	TP3		
Depth to Top	0.00	0.50	0.80	0.00	0.20	0.50	0.20	0.25		
Depth To Bottom	0.05	0.65	1.00	0.10	0.30	0.60	0.25	0.40		
Date Sampled	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15		
Sample Type	Solid	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Solid	Soil - ES		
Sample Matrix Code	7	4A	4A	7	4A	4A	7	4A		
Chlorobenzene _A [#]	-	<1	<1	-	<1	<1	-	<1		
1,1,1,2-Tetrachloroethane _A	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Ethylbenzene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
m & p Xylene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
o-Xylene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Styrene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Bromoform _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Isopropylbenzene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,1,1,2,2-Tetrachloroethane _A	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,2,3-Trichloropropane _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
Bromobenzene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
n-Propylbenzene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
2-Chlorotoluene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,3,5-Trimethylbenzene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
4-Chlorotoluene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
tert-Butylbenzene _A [#]	-	<2	<2	-	<2	<2	-	<2	µg/kg	A-T-006s
1,2,4-Trimethylbenzene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
sec-Butylbenzene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
4-Isopropyltoluene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,3-Dichlorobenzene _A	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,4-Dichlorobenzene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
n-Butylbenzene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,2-Dichlorobenzene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,2-Dibromo-3-chloropropane _A	-	<2	<2	-	<2	<2	-	<2	µg/kg	A-T-006s
1,2,4-Trichlorobenzene _A	-	<3	<3	-	<3	<3	-	<3	µg/kg	A-T-006s
Hexachlorobutadiene _A [#]	-	<1	<1	-	<1	<1	-	<1	µg/kg	A-T-006s
1,2,3-Trichlorobenzene _A	-	<3	<3	-	<3	<3	-	<3	µg/kg	A-T-006s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/1	15/07148/2	15/07148/3	15/07148/4	15/07148/5	15/07148/6	15/07148/7	15/07148/8	Units	Method ref
Client Sample No	1	3	4	1	2	3	3	4		
Client Sample ID	TP1	TP1	TP1	TP2	TP2	TP2	TP3	TP3		
Depth to Top	0.00	0.50	0.80	0.00	0.20	0.50	0.20	0.25		
Depth To Bottom	0.05	0.65	1.00	0.10	0.30	0.60	0.25	0.40		
Date Sampled	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15		
Sample Type	Solid	Soil - ES	Soil - ES	Solid	Soil - ES	Soil - ES	Solid	Soil - ES		
Sample Matrix Code	7	4A	4A	7	4A	4A	7	4A		
TPH CWG										
Ali >C5-C6 _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s
Ali >C6-C8 _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s
Ali >C8-C10 _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s
Ali >C10-C12 _A [#]	-	<0.1	<0.1	-	<0.1	1.1	-	<0.1	mg/kg	A-T-023s
Ali >C12-C16 _A [#]	-	0.5	0.3	-	<0.1	21.2	-	<0.1	mg/kg	A-T-023s
Ali >C16-C21 _A [#]	-	1.8	0.7	-	1.0	47.5	-	0.3	mg/kg	A-T-023s
Ali >C21-C35 _A [#]	-	13.9	2.0	-	0.9	102	-	1.9	mg/kg	A-T-023s
Total Aliphatics _A	-	16.0	2.9	-	2.0	172	-	2.3	mg/kg	A-T-022+23s
Aro >C5-C7 _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s
Aro >C7-C8 _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s
Aro >C8-C9 _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s
Aro >C9-C10 _A [#]	-	<0.01	<0.01	-	<0.01	0.02	-	<0.01	mg/kg	A-T-022s
Aro >C10-C12 _A [#]	-	<0.1	<0.1	-	<0.1	2.0	-	0.4	mg/kg	A-T-023s
Aro >C12-C16 _A [#]	-	<0.1	<0.1	-	<0.1	31.9	-	8.7	mg/kg	A-T-023s
Aro >C16-C21 _A [#]	-	1.9	0.9	-	5.1	230	-	46.7	mg/kg	A-T-023s
Aro >C21-C35 _A [#]	-	7.1	1.1	-	8.7	684	-	92.5	mg/kg	A-T-023s
Total Aromatics _A	-	8.9	2.0	-	13.9	948	-	148	mg/kg	A-T-022+23s
TPH (Ali & Aro) _A	-	24.9	4.9	-	15.8	1120	-	150	mg/kg	A-T-022+23s
BTEX - Benzene _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s
BTEX - Toluene _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s
BTEX - o Xylene _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s
MTBE _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	mg/kg	A-T-022s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/9									Units	Method ref
Client Sample No	6										
Client Sample ID	TP3										
Depth to Top	0.80										
Depth To Bottom	0.90										
Date Sampled	28-Oct-15										
Sample Type	Soil - ES										
Sample Matrix Code	1A										
% Moisture _A	5.9									% w/w	A-T-044
% Stones >10mm _A [#]	5.9									% w/w	A-T-044
pH _D ^{M#}	8.14									pH	A-T-031s
Ammonium NH4 (exchangeable/water soluble) _D	0.77									mg/kg	A-T-033s
Chloride (water sol 2:1) _D ^{M#}	<10									mg/kg	A-T-026s
Nitrate (water sol 2:1) _D	3									mg/kg	A-T-026s
Sulphate (acid soluble) _D ^{M#}	<200									mg/kg	A-T-028s
Cyanide (total) _A ^{M#}	<1									mg/kg	A-T-042sTCN
Sulphide _A	<15									mg/kg	A-T-S2-s
Sulphur (elemental) _D ^{M#}	28									mg/kg	A-T-029s
Loss on ignition (550degC) _D	1.6									% w/w	A-T-030s
Organic matter _D ^{M#}	0.3									% w/w	A-T-032 OM
Total Organic Carbon _D ^{M#}	0.16									% w/w	A-T-032s
Calorific Value (Gross/Total) _A	495									kJ/kg	Subcon
Arsenic _D ^{M#}	14									mg/kg	A-T-024s
Barium _D	20									mg/kg	A-T-024s
Beryllium _D [#]	1									mg/kg	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0									mg/kg	A-T-027s
Cadmium _D ^{M#}	<0.5									mg/kg	A-T-024s
Copper _D ^{M#}	6									mg/kg	A-T-024s
Cobalt _D ^{M#}	8									mg/kg	A-T-024s
Chromium _D ^{M#}	13									mg/kg	A-T-024s
Chromium (hexavalent) _D	<1									mg/kg	A-T-040s
Iron _D	23500									mg/kg	A-T-024s
Lead _D ^{M#}	11									mg/kg	A-T-024s
Mercury _D	<0.17									mg/kg	A-T-024s
Molybdenum _D ^{M#}	<1									mg/kg	A-T-024s
Nickel _D ^{M#}	19									mg/kg	A-T-024s
Selenium _D	<1									mg/kg	A-T-024s
Vanadium _D ^{M#}	32									mg/kg	A-T-024s
Zinc _D ^{M#}	23									mg/kg	A-T-024s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/9								Units	Method ref
Client Sample No	6									
Client Sample ID	TP3									
Depth to Top	0.80									
Depth To Bottom	0.90									
Date Sampled	28-Oct-15									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
Asbestos in Soil (inc. matrix)										
Asbestos in soil _A [#]	NAD									A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A									Gravimetry

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/9								Units	Method ref
Client Sample No	6									
Client Sample ID	TP3									
Depth to Top	0.80									
Depth To Bottom	0.90									
Date Sampled	28-Oct-15									
Sample Type	Soil - ES									
Sample Matrix Code	1A									
PAH-16 plus Coronene										
Acenaphthene _A ^{M#}	0.05								mg/kg	A-T-019s
Acenaphthylene _A ^{M#}	0.16								mg/kg	A-T-019s
Anthracene _A ^{M#}	0.74								mg/kg	A-T-019s
Benzo(a)anthracene _A ^{M#}	3.56								mg/kg	A-T-019s
Benzo(a)pyrene _A ^{M#}	3.39								mg/kg	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	4.03								mg/kg	A-T-019s
Benzo(ghi)perylene _A ^{M#}	1.63								mg/kg	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	1.43								mg/kg	A-T-019s
Chrysene _A ^{M#}	3.38								mg/kg	A-T-019s
Coronene _A	0.39								mg/kg	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.51								mg/kg	A-T-019s
Fluoranthene _A ^{M#}	7.05								mg/kg	A-T-019s
Fluorene _A ^{M#}	0.11								mg/kg	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	2.05								mg/kg	A-T-019s
Naphthalene _A ^{M#}	<0.03								mg/kg	A-T-019s
Phenanthrene _A ^{M#}	2.15								mg/kg	A-T-019s
Pyrene _A ^{M#}	5.89								mg/kg	A-T-019s
PAH (total 17) _A	36.5								mg/kg	A-T-019s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/9									Units	Method ref
Client Sample No	6										
Client Sample ID	TP3										
Depth to Top	0.80										
Depth To Bottom	0.90										
Date Sampled	28-Oct-15										
Sample Type	Soil - ES										
Sample Matrix Code	1A										
SVOC											
2,4-Dinitrophenol _A	<100									µg/kg	A-T-052s
4,6-Dinitro-2-methylphenol _A	<100									µg/kg	A-T-052s
Hexachlorobenzene _A	<100									µg/kg	A-T-052s
Diethyl phthalate _A	<100									µg/kg	A-T-052s
Dimethyl phthalate _A	<100									µg/kg	A-T-052s
Dibenzofuran _A	<100									µg/kg	A-T-052s
Carbazole _A	<100									µg/kg	A-T-052s
Butylbenzyl phthalate _A	<100									µg/kg	A-T-052s
Bis(2-ethylhexyl)phthalate _A	<100									µg/kg	A-T-052s
Bis(2-chloroethoxy)methane _A	<100									µg/kg	A-T-052s
Bis(2-chloroethyl)ether _A	<100									µg/kg	A-T-052s
4-Nitrophenol _A	<100									µg/kg	A-T-052s
4-Methylphenol _A	<100									µg/kg	A-T-052s
4-Chloro-3-methylphenol _A	<100									µg/kg	A-T-052s
2-Nitrophenol _A	<100									µg/kg	A-T-052s
2-Methylphenol _A	<100									µg/kg	A-T-052s
2-Chlorophenol _A	<100									µg/kg	A-T-052s
2,6-Dinitrotoluene _A	<100									µg/kg	A-T-052s
2,4-Dinitrotoluene _A	<100									µg/kg	A-T-052s
2,4-Dimethylphenol _A	<100									µg/kg	A-T-052s
2,4-Dichlorophenol _A	<100									µg/kg	A-T-052s
2,4,6-Trichlorophenol _A	<100									µg/kg	A-T-052s
2,4,5-Trichlorophenol _A	<100									µg/kg	A-T-052s
2-Chloronaphthalene _A	<100									µg/kg	A-T-052s
2-Methylnaphthalene _A	<100									µg/kg	A-T-052s
Acenaphthylene _A	186									µg/kg	A-T-052s
Acenaphthene _A	<100									µg/kg	A-T-052s
Anthracene _A	389									µg/kg	A-T-052s
Benzo(a)anthracene _A	2050									µg/kg	A-T-052s
Benzo(b)fluoranthene _A	2480									µg/kg	A-T-052s
Benzo(k)fluoranthene _A	916									µg/kg	A-T-052s
Benzo(a)pyrene _A	2150									µg/kg	A-T-052s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/9									Units	Method ref
Client Sample No	6										
Client Sample ID	TP3										
Depth to Top	0.80										
Depth To Bottom	0.90										
Date Sampled	28-Oct-15										
Sample Type	Soil - ES										
Sample Matrix Code	1A										
Benzo(ghi)perylene _A	1110									µg/kg	A-T-052s
Chrysene _A	1800									µg/kg	A-T-052s
Fluoranthene _A	2800									µg/kg	A-T-052s
Fluorene _A	126									µg/kg	A-T-052s
Indeno(1,2,3-cd)pyrene _A	1190									µg/kg	A-T-052s
Phenanthrene _A	927									µg/kg	A-T-052s
Pyrene _A	2390									µg/kg	A-T-052s
Naphthalene _A	<100									µg/kg	A-T-052s
Dibenzo(ah)anthracene _A	403									µg/kg	A-T-052s
Bis(2-chloroisopropyl)ether _A	<100									µg/kg	A-T-052s
Phenol _A	<100									µg/kg	A-T-052s
Pentachlorophenol _A	<100									µg/kg	A-T-052s
n-Nitroso-n-dipropylamine _A	<100									µg/kg	A-T-052s
n-Dioctylphthalate _A	<100									µg/kg	A-T-052s
n-Dibutylphthalate _A	<100									µg/kg	A-T-052s
Nitrobenzene _A	<100									µg/kg	A-T-052s
Isophorone _A	<100									µg/kg	A-T-052s
Hexachloroethane _A	<100									µg/kg	A-T-052s
Hexachlorocyclopentadiene _A	<100									µg/kg	A-T-052s
Perylene _A	553									µg/kg	A-T-052s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/9									Units	Method ref
Client Sample No	6										
Client Sample ID	TP3										
Depth to Top	0.80										
Depth To Bottom	0.90										
Date Sampled	28-Oct-15										
Sample Type	Soil - ES										
Sample Matrix Code	1A										
VOC											
Dichlorodifluoromethane _A [#]	<1									µg/kg	A-T-006s
Chloromethane _A [#]	<10									µg/kg	A-T-006s
Vinyl Chloride _A [#]	<1									µg/kg	A-T-006s
Bromomethane _A [#]	<1									µg/kg	A-T-006s
Chloroethane _A [#]	<1									µg/kg	A-T-006s
Trichlorofluoromethane _A [#]	<1									µg/kg	A-T-006s
1,1-Dichloroethene _A [#]	<1									µg/kg	A-T-006s
Carbon Disulphide _A [#]	<1									µg/kg	A-T-006s
Dichloromethane _A	<5									µg/kg	A-T-006s
trans 1,2-Dichloroethene _A [#]	<1									µg/kg	A-T-006s
1,1-Dichloroethane _A [#]	<1									µg/kg	A-T-006s
cis 1,2-Dichloroethene _A [#]	<1									µg/kg	A-T-006s
2,2-Dichloropropane _A [#]	<1									µg/kg	A-T-006s
Bromochloromethane _A [#]	<5									µg/kg	A-T-006s
Chloroform _A [#]	<1									µg/kg	A-T-006s
1,1,1-Trichloroethane _A [#]	<1									µg/kg	A-T-006s
1,1-Dichloropropene _A [#]	<1									µg/kg	A-T-006s
Carbon Tetrachloride _A [#]	<1									µg/kg	A-T-006s
1,2-Dichloroethane _A [#]	<2									µg/kg	A-T-006s
Benzene _A [#]	<1									µg/kg	A-T-006s
Trichloroethene _A [#]	<1									µg/kg	A-T-006s
1,2-Dichloropropane _A [#]	<1									µg/kg	A-T-006s
Dibromomethane _A [#]	<1									µg/kg	A-T-006s
Bromodichloromethane _A [#]	<10									µg/kg	A-T-006s
cis 1,3-Dichloropropene _A [#]	<1									µg/kg	A-T-006s
Toluene _A [#]	<1									µg/kg	A-T-006s
trans 1,3-Dichloropropene _A [#]	<1									µg/kg	A-T-006s
1,1,2-Trichloroethane _A [#]	<1									µg/kg	A-T-006s
1,3-Dichloropropane _A [#]	<1									µg/kg	A-T-006s
Tetrachloroethene _A [#]	<1									µg/kg	A-T-006s
Dibromochloromethane _A [#]	<3									µg/kg	A-T-006s
1,2-Dibromoethane _A [#]	<1									µg/kg	A-T-006s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/9									Units	Method ref
Client Sample No	6										
Client Sample ID	TP3										
Depth to Top	0.80										
Depth To Bottom	0.90										
Date Sampled	28-Oct-15										
Sample Type	Soil - ES										
Sample Matrix Code	1A										
Chlorobenzene _A [#]	<1									µg/kg	A-T-006s
1,1,1,2-Tetrachloroethane _A	<1									µg/kg	A-T-006s
Ethylbenzene _A [#]	<1									µg/kg	A-T-006s
m & p Xylene _A [#]	<1									µg/kg	A-T-006s
o-Xylene _A [#]	<1									µg/kg	A-T-006s
Styrene _A [#]	<1									µg/kg	A-T-006s
Bromoform _A [#]	<1									µg/kg	A-T-006s
Isopropylbenzene _A [#]	<1									µg/kg	A-T-006s
1,1,1,2-Tetrachloroethane _A	<1									µg/kg	A-T-006s
1,2,3-Trichloropropane _A [#]	<1									µg/kg	A-T-006s
Bromobenzene _A [#]	<1									µg/kg	A-T-006s
n-Propylbenzene _A [#]	<1									µg/kg	A-T-006s
2-Chlorotoluene _A [#]	<1									µg/kg	A-T-006s
1,3,5-Trimethylbenzene _A [#]	<1									µg/kg	A-T-006s
4-Chlorotoluene _A [#]	<1									µg/kg	A-T-006s
tert-Butylbenzene _A [#]	<2									µg/kg	A-T-006s
1,2,4-Trimethylbenzene _A [#]	<1									µg/kg	A-T-006s
sec-Butylbenzene _A [#]	<1									µg/kg	A-T-006s
4-Isopropyltoluene _A [#]	<1									µg/kg	A-T-006s
1,3-Dichlorobenzene _A	<1									µg/kg	A-T-006s
1,4-Dichlorobenzene _A [#]	<1									µg/kg	A-T-006s
n-Butylbenzene _A [#]	<1									µg/kg	A-T-006s
1,2-Dichlorobenzene _A [#]	<1									µg/kg	A-T-006s
1,2-Dibromo-3-chloropropane _A	<2									µg/kg	A-T-006s
1,2,4-Trichlorobenzene _A	<3									µg/kg	A-T-006s
Hexachlorobutadiene _A [#]	<1									µg/kg	A-T-006s
1,2,3-Trichlorobenzene _A	<3									µg/kg	A-T-006s

Envirolab Job Number: 15/07148

Client Project Name: Station Yard, Twickenham

Client Project Ref: 28006

Lab Sample ID	15/07148/9									Units	Method ref
Client Sample No	6										
Client Sample ID	TP3										
Depth to Top	0.80										
Depth To Bottom	0.90										
Date Sampled	28-Oct-15										
Sample Type	Soil - ES										
Sample Matrix Code	1A										
TPH CWG											
Ali >C5-C6 _A [#]	<0.01									mg/kg	A-T-022s
Ali >C6-C8 _A [#]	<0.01									mg/kg	A-T-022s
Ali >C8-C10 _A [#]	<0.01									mg/kg	A-T-022s
Ali >C10-C12 _A [#]	<0.1									mg/kg	A-T-023s
Ali >C12-C16 _A [#]	<0.1									mg/kg	A-T-023s
Ali >C16-C21 _A [#]	2.1									mg/kg	A-T-023s
Ali >C21-C35 _A [#]	12.4									mg/kg	A-T-023s
Total Aliphatics _A	14.5									mg/kg	A-T-022+23s
Aro >C5-C7 _A [#]	<0.01									mg/kg	A-T-022s
Aro >C7-C8 _A [#]	<0.01									mg/kg	A-T-022s
Aro >C8-C9 _A [#]	<0.01									mg/kg	A-T-022s
Aro >C9-C10 _A [#]	<0.01									mg/kg	A-T-022s
Aro >C10-C12 _A [#]	<0.1									mg/kg	A-T-023s
Aro >C12-C16 _A [#]	<0.1									mg/kg	A-T-023s
Aro >C16-C21 _A [#]	1.6									mg/kg	A-T-023s
Aro >C21-C35 _A [#]	8.7									mg/kg	A-T-023s
Total Aromatics _A	10.3									mg/kg	A-T-022+23s
TPH (Ali & Aro) _A	24.8									mg/kg	A-T-022+23s
BTEX - Benzene _A [#]	<0.01									mg/kg	A-T-022s
BTEX - Toluene _A [#]	<0.01									mg/kg	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01									mg/kg	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01									mg/kg	A-T-022s
BTEX - o Xylene _A [#]	<0.01									mg/kg	A-T-022s
MTBE _A [#]	<0.01									mg/kg	A-T-022s

REPORT NOTES

Notes - Soil chemical analysis

All results are reported as dry weight (<40 °C).

For samples with Matrix Codes 1 - 6 natural stones and brick and concrete fragments >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts.

Superscript "M" indicates method accredited to MCERTS.

If results are in italic font they are associated with an AQC failure. These are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

TPH analysis of water by method A-T-007

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Asbestos in soil

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample. Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.