

APPENDIX Q

Ramboll Report on Disposal of Waste Drums

Mr. Trevor Cole
F M Conway Ltd
Conway House
Vestry Road
Sevenoaks
Kent
TN14 5EL

Dear Trevor,

**REPORT ON DISPOSAL OF WASTE DRUMS:
SOUTHALL WESTERN ACCESS, MINET TIP, HAYES**

Date 19/05/2017

1. Introduction

1.1 Background

Ramboll Environ UK Limited ("Ramboll Environ") was commissioned by FM Conway Ltd (the "Client") to arrange for the removal and disposal of four steel 'oil' drums containing potentially hazardous waste liquids or materials at the Southall Western Access, Hayes (the "site", see Figure 1).

The drums were discovered during clearance of vegetation from the banks of the River Crane, which is being undertaken for the construction of the Western Access bridge and associated flood compensation works. It is assumed that the drums were previously 'tipped' from the A312 at top of the adjacent embankment.

For background, the bridge will provide access to the Southall Waterside development site from the north-west and A312 (i.e. across the existing Yeading Brook and Grand Union Canal).

2. Scoping Visit

Ramboll Environ attended site on Tuesday 15th August 2017 accompanied by specialist environmental remediation contractors, 'Soilfix Ltd' and 'Waste Matters Ltd', to inspect the site and refine the scope and methodology for the work. The condition and likely content of the drums was assessed and strategy for their safe disposal was subsequently established and agreed with F M Conway. Four steel 205l drums were identified as containing a dark oily product with a hydrocarbon odour (likely waste engine oil).

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Artillery House
11-19 Artillery Row
London
SW1P 1RT
United Kingdom

T +44 207 808 1420
www.ramboll-environ.com

Ref LUK11-24029 Drum
Disposal_01

Ramboll Environ UK Limited
Registered in England
Company No: 2331163
Registered Office:
Artillery House
11-19 Artillery Row
London
SW1P 1RT

3. Disposal Procedure

The disposal of the drums was undertaken on Friday 18th August 2017 and was supervised by Charles Collins of Ramboll Environ. The waste disposal was arranged by Soilfix and Waste Matters Ltd. The waste disposal procedure included the following scope of work (undertaken by Soilfix / Waste Matters):

- Preparation of the work area in the vicinity of the drums including laying of polythene sheeting and arrangement of spill materials to ensure no unnecessary impact to the surrounding soils was caused during the disposal works;
- Removal of waste liquid products from each drum using manual syphon pumps and transfer of liquids to new 25l plastic containers for transport;
- Wrapping of the damaged steel drums in PVC shrink wrap to ensure no spillage of residual contents occurred during removal;
- Placing of the damaged steel drums into plastic over drums for transport;
- Clean up of the work area and disposal of dirty polythene sheeting and spill materials associated with the disposal work; and
- Removal of the drums and associated clean-up materials from site on completion of the work for offsite disposal at a licensed waste facility by Waste Matters under correct duty of care.

A photographic log presenting the completion of the works is included in Appendix 1.

The relevant waste transfer documentation for the disposal of the drums and their liquid contents is included in Appendix 2.

4. Field Observations of Contamination

Field observations of contamination recorded during the drum disposal were as follows:

- Visual evidence of localised oil staining was observed to the soil surface underlying all four drums following their removal. The lateral extent of the staining was limited to the footprint of the drums.
- The above referenced staining was accompanied by a slight hydrocarbon odour.

5. Soil Chemical Analysis

On completion of the disposal works, Ramboll Environ collected one sample from the shallow soils immediately underlying each of the four drums removed (four samples in total). The soil samples were then submitted to a UKAS approved MCERTS laboratory for chemical analysis for a general suite of contaminants including TPH, PAHs, metals, VOCs, cyanide, phenols and ammonia.

The results of the soil chemical analysis identified elevated concentrations of TPH (total petroleum hydrocarbons) at concentrations between 25,684 mg/kg and 78,104 mg/kg (total). These concentrations are consistent with the field observations hydrocarbon impact to the soil surface underlying the drums recorded on completion of the removal works.

The full laboratory analytical report is presented in Appendix 3.

6. Conclusions and Recommendations

Based on the results of the soil chemical analysis, Ramboll Environ recommends further investigation of the impacted area including the removal of the top layer of shallow soils and further verification

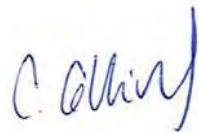
sampling to establish the vertical extent of the hydrocarbon impact. It is likely that this could be undertaken by using an excavator to strip back the topsoil until the soil is visually clean (i.e. investigating and remediating at the same time). This may have two outcomes:

- The hydrocarbon impacted soil is found to be only shallow and can be removed for processing or disposal by FM Conway (likely case); or
- Deeper contamination impact is found that requires further investigation (unlikely).

If impacted soils are to be disposed of, additional WAC (Waste Acceptance Criteria) analysis may be required. Appropriate validation of the excavation will also be required (i.e. soil sampling for TPH to prove the contamination has been removed).

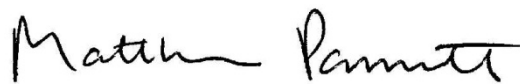
Please do not hesitate to contact me if you have any questions.

Yours sincerely,



Charles Collins
Consultant

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M +44 7917 106 767
ccollins@ramboll.com



Matthew Pannett
Principal

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Cc. Hannah Lewis, Ramboll Environ; Rikki Lamb, St James West London

Encl. Appendix 1: Photographic Log

Appendix 2: Waste Transfer Documentation

Appendix 3: Soil Analytical Certificates

Appendix 1
Photographic Log



Photo 1. View of the former location of the drums adjacent to the River Crane prior to removal.



Photo 2. Positioning of spill prevention materials prior to decanting of liquid contents of drums.

Title: Photographic Log	Client: F M CONWAY
Site: Southall Western Access	Date: 18/08/2017



Photo 3. Decanting of liquid contents from damaged 205l drums to new plastic 25l containers for transport.



Photo 4. Damaged drums wrapped in shrink wrap and placed into plastic over drums for transport.

Title: Photographic Log	Client: F M CONWAY
Site: Southall Western Access	Date: 18/08/2017



Photo 5. Preparation of waste containers for removal from site including placement of damaged 205l steel drums into over drums and palletising of 25l product containers.



Photo 6. View of the work area following completion of the drum disposal.

Title: Photographic Log	Client: F M CONWAY
Site: Southall Western Access	Date: 18/08/2017



Photo 7. Soil samples obtained from shallow soils immediately underlying the drums.



Photo 8. Exposed soils formerly covered by drums showing localised oil staining to soil surface.

Title: Photographic Log	Client: F M CONWAY
Site: Southall Western Access	Date: 18/08/2017

Appendix 2

Waste Transfer Documentation

The Hazardous Waste Regulations 2005: Consignment Note

WASTE MATTERS LTD
Hazardous Waste Management



PART A Notification details

1. Consignment note code: SOILFI / 19417

2. The waste described below is to be removed from (name, address, postcode):

SOILFI LTD
PUMP LANE
SOUTHALL, UB4 0LL
WEST LONDON

4. The waste will be taken to (name, address, postcode):

WASTE MATTERS LTD
BROOK LANE
WESTBURY, WILTS BA13 4EN

3. Premises code (where applicable):

SOILFI

Expires:

PART B Description of the waste

If continuation sheet used, tick here ☒

1. The process giving rise to the waste(s) was:

SITE CLEARANCE

2. SIC for the process giving rise to the waste:

43.12 /

3. WASTE DETAILS (where more than one waste type is collected all of the information given below must be completed for each EWC identified)

Description of waste	List of wastes (EWC code) (6 digits)	Quantity (kg)	The chemical/biological components of the waste and their concentrations are:		Physical form (gas, liquid, solid, powder, sludge or mixed)	Hazard code(s)	Container type, number and size
			Component	Concentration (% or mg/kg)			
AS PER LIST							

The information given below is to be completed for each EWC identified

EWC code	Packing group(s)	UN identification no.(s)	Proper shipping name(s)	UN class(es)	Special handling requirements
AS PER LIST					

PART C Carrier's certificate

(If more than one carrier is used, please attach schedule for subsequent carriers.
If a schedule of carriers is attached tick here. ☐)

I certify that I today collected the consignment and that the details in A2, A4 and B3 are correct and I have been advised of any specific handling requirements.

1. Carrier name: K E JOSEPH
On behalf of (name, address, postcode):

WASTE MATTERS LTD
BROOK LANE
WESTBURY
WILTS
BA13 4EN

2. Carrier registration no./reason for exemption:

GB/DU155868

3. Vehicle registration no: WSXSGZPK

Signature: *K E Joseph*

Date: 18 08 2017

Arrive

Time: 08 00

Depart

Time: 13 00

Part D Consignor's certificate

I certify that the information in A, B and C above is correct, that the carrier is registered or exempt and was advised of the appropriate precautionary measures. All of the waste is packaged and labelled correctly and the carrier has been advised of any special handling requirements.

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Reg.12 of the Waste (England & Wales) Regulations 2011.

1. Consignor name: K D BARTLET
On behalf of (name, address, postcode):

SOILFI LTD
PUMP LANE
SOUTHALL
WEST LONDON
UB4 0LL

Signature: *K D Bartlett*

Date: 18 08 2017

Time: 13 00

PART E Consignee's certificate (where more than one waste type is collected all of the information given below must be completed for each EWC)

Individual EWC code(s) received	Quantity of each EWC code received (kg)	EWC code accepted/rejected	Waste management operation (R or D code)

1. I received this waste at the address given in A4 on:

Date:

Time:

2. Vehicle registration No:

Name:

on behalf of (name, address, postcode):

WASTE MATTERS LTD
BROOK LANE,
WESTBURY, WILTSHIRE. BA13 4EN

I certify that waste management licence/permit/authorised exemption no(s)

EA/PPC/CP3331SC

authorises the management of the waste described in B at the address given in A4.

Signature

Date:

Time:

CONSIGNMENT NOTE NO:

WASTE PRODUCER

DISPOSAL SITE

SOILFI / 19417
SOLIFIX LTD
 WASTE MATTERS LTD

PAGE 2 OF 2



WASTE MATTERS LTD
 Hazardous Waste Management

EWIC	WASTE UN No.	PROPER SHIPPING NAME (and technical name if required)	CLASS	(Sub. class)	Packing Group	CONTAINER SIZE AND TYPE	Physical form	Hazard Codes	Accept/ Reject	Disposal Code
13 02 08*	Waste, UN NDW	NON DANGEROUS WASTE	NC	NC	NC	21 x 25L	LIQUID	HP4 HP7 HP14		
	General Description Hazardous Components	(OIL / WATER)			Total Weight (KG)	525 kg				
15 01 10*	Waste, UN NDW	NON DANGEROUS WASTE	NC	NC	NC	4 x 205L	SOLID	HP4 HP7 HP14		
	General Description Hazardous Components	(EMPTY CONTAMINATED DRUMS)			Total Weight (KG)	40 kg				
15 02 02*	Waste, UN NDW	NON DANGEROUS WASTE	NC	NC	NC	1 x 205L	SOLID	HP4 HP7 HP14		
	General Description Hazardous Components	(OIL CONTAMINATED BOOMS / ABSORBANTS)			Total Weight (KG)	50 kg				
	Waste, UN									
	General Description Hazardous Components				Total Weight (KG)					
	Waste, UN									
	General Description Hazardous Components				Total Weight (KG)					
	Waste, UN									
	General Description Hazardous Components				Total Weight (KG)					
	Waste, UN									
	General Description Hazardous Components				Total Weight (KG)					
	Waste, UN									
	General Description Hazardous Components				Total Weight (KG)					
	Waste, UN									
	General Description Hazardous Components				Total Weight (KG)					
	Waste, UN									
	General Description Hazardous Components				Total Weight (KG)					
	Waste, UN									
	General Description Hazardous Components				Total Weight (KG)					

I HEREBY DECLARE THAT THE CONTENTS OF THIS CONSIGNMENT ARE FULLY & ACCURATELY DESCRIBED ABOVE BY THE PROPER SHIPPING NAME, AND ARE CLASSIFIED, PACKAGED, MARKED AND LABELLED/PLACARDED AND ARE IN ALL RESPECTS IN PROPER CONDITION FOR TRANSPORT ACCORDING TO THE APPLICABLE NATIONAL GOVERNMENTAL REGULATIONS.

Appendix 3

Results of Soil Chemical Analysis



Exova Jones Environmental

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

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Ramboll Environ UK Ltd
Artillery House
11-19 Artillery Row
London
SW1P 1RT

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781



Attention :	Charles Collins
Date :	4th September, 2017
Your reference :	UK11-24029
Our reference :	Test Report 17/14080 Batch 1
Location :	Southall Western Access
Date samples received :	22nd August, 2017
Status :	Final report
Issue :	1

Five samples were received for analysis on 22nd August, 2017 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Boden BSc
Project Manager

Please see attached notes for all abbreviations and acronyms

Client Name: Ramboll Environ UK Ltd
Reference: UK11-24029
Location: Southall Western Access
Contact: Charles Collins
JE Job No.: 17/14080

Report : Solid

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

J E Sample No.	1-3	4-7	8-10	11-13							Please see attached notes for all abbreviations and acronyms		
Sample ID	D1	D2	D3	D4									
Depth	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10									
COC No / misc													
Containers	V J	V J	V J	V J									
Sample Date	18/08/2017 11:00	18/08/2017 11:00	18/08/2017 11:00	18/08/2017 11:00									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	22/08/2017	22/08/2017	22/08/2017	22/08/2017							LOD/LOR	Units	Method No.
PAH MS													
Naphthalene #	0.06	12.20 ^{AC}	<0.40 ^{AC}	<0.40 ^{AC}							<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.12	5.60 ^{AC}	<0.30 ^{AC}	<0.30 ^{AC}							<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	5.63 ^{AC}	<0.50 ^{AC}	<0.50 ^{AC}							<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	13.20 ^{AC}	<0.40 ^{AC}	<0.40 ^{AC}							<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.28	37.57 ^{AC}	<0.30 ^{AC}	1.87 ^{AC}							<0.03	mg/kg	TM4/PM8
Anthracene #	0.12	0.73 ^{AC}	<0.40 ^{AC}	<0.40 ^{AC}							<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.59	4.59 ^{AC}	<0.30 ^{AC}	0.97 ^{AC}							<0.03	mg/kg	TM4/PM8
Pyrene #	0.51	7.71 ^{AC}	1.12 ^{AC}	1.97 ^{AC}							<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.31	1.45 ^{AC}	<0.60 ^{AC}	<0.60 ^{AC}							<0.06	mg/kg	TM4/PM8
Chrysene #	0.34	2.11 ^{AC}	0.36 ^{AC}	0.64 ^{AC}							<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.79	2.49 ^{AC}	<0.70 ^{AC}	<0.70 ^{AC}							<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.36	1.28 ^{AC}	<0.40 ^{AC}	<0.40 ^{AC}							<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04	0.78 ^{AC}	<0.40 ^{AC}	<0.40 ^{AC}							<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.40 ^{AC}	<0.40 ^{AC}	<0.40 ^{AC}							<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	0.88 ^{AC}	<0.40 ^{AC}	0.61 ^{AC}							<0.04	mg/kg	TM4/PM8
PAH 16 Total	3.5	96.2 ^{AC}	<6.0 ^{AC}	6.1 ^{AC}							<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.57	1.79 ^{AC}	<0.50 ^{AC}	<0.50 ^{AC}							<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.22	0.70 ^{AC}	<0.20 ^{AC}	<0.20 ^{AC}							<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	87	95 ^{AC}	91 ^{AC}	96 ^{AC}							<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	<2	<2	<2	<2							<2	ug/kg	TM15/PM10
Benzene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Toluene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
p/m-Xylene #	<5	416	<5	<5							<5	ug/kg	TM15/PM10
o-Xylene #	<3	445	<3	<3							<3	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	50	51	58	53							<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	73	71	73	72							<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1 ^{SV}	<0.1 ^{SV}	0.1 ^{SV}	<0.1 ^{SV}							<0.1	mg/kg	TM36/PM12
>C6-C8 #	0.1 ^{SV}	0.2 ^{SV}	0.3 ^{SV}	<0.1 ^{SV}							<0.1	mg/kg	TM36/PM12
>C8-C10	0.1 ^{SV}	15.3 ^{SV}	0.1 ^{SV}	<0.1 ^{SV}							<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	829.3 ⁺⁺	13.6 ⁺⁺	<0.8 ^{++ AA}							<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	5034 ⁺⁺	231 ⁺⁺	143 ^{++ AA}							<4	mg/kg	TM5/PM16
>C16-C21 #	102	10076 ⁺⁺	697 ⁺⁺	1485 ^{++ AA}							<7	mg/kg	TM5/PM16
>C21-C35 #	18973	28485 ⁺⁺	16834 ⁺⁺	53420 ^{++ AA}							<7	mg/kg	TM5/PM16
Total aliphatics C5-35	19075	44440	17776	55048 ^{AA}							<19	mg/kg	TM5/PM16

Exova Jones Environmental

Client Name: Ramboll Environ UK Ltd
Reference: UK11-24029
Location: Southall Western Access
Contact: Charles Collins
JE Job No.: 17/14080

Report : Solid

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

J E Sample No.	1-3	4-7	8-10	11-13							Please see attached notes for all abbreviations and acronyms		
Sample ID	D1	D2	D3	D4									
Depth	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10									
COC No / misc													
Containers	V J	V J	V J	V J									
Sample Date	18/08/2017 11:00	18/08/2017 11:00	18/08/2017 11:00	18/08/2017 11:00									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	22/08/2017	22/08/2017	22/08/2017	22/08/2017							LOD/LOR	Units	Method No.
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1 ^{SV}	<0.1 ^{SV}	<0.1 ^{SV}	<0.1 ^{SV}							<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1 ^{SV}	<0.1 ^{SV}	<0.1 ^{SV}	<0.1 ^{SV}							<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1 ^{SV}	0.2 ^{SV}	<0.1 ^{SV}	<0.1 ^{SV}							<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	19.4	665.2	7.5	<0.8 ^{AA}							<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	82	3610	135	152 ^{AA}							<4	mg/kg	TM5/PM16
>EC16-EC21 #	141	5353	707	1129 ^{AA}							<7	mg/kg	TM5/PM16
>EC21-EC35 #	7572	6962	7238	21775 ^{AA}							<7	mg/kg	TM5/PM16
Total aromatics C5-35 #	7814	16590	8088	23056 ^{AA}							<19	mg/kg	TM5/PM16/PM15
Total aliphatics and aromatics(C5-35)	26889	61030	25864	78104 ^{AA}							<38	mg/kg	TM5/PM16/PM15
Total Phenols HPLC	0.46	0.50	1.01	0.61							<0.15	mg/kg	TM26/PM21
Natural Moisture Content	17.7	14.2	32.2	22.4							<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3							<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	NDP	0.0148	NDP	NDP							<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.0472	-	0.0397	0.0486							<0.0015	g/l	TM38/PM60
Chromium III	NDP	76.6	NDP	NDP							<0.5	mg/kg	NONE/NONE
Chromium III	23.2	-	24.2	21.7							<0.5	mg/kg	NONE/NONE
Total Cyanide #	1.3	<0.5	<0.5	<0.5							<0.5	mg/kg	TM89/PM45
pH #	6.31	7.12	4.74	6.21							<0.01	pH units	TM73/PM11

Client Name: Ramboll Environ UK Ltd
Reference: UK11-24029
Location: Southall Western Access
Contact: Charles Collins
JE Job No.: 17/14080

VOC Report : Solid

J E Sample No.	1-3	4-7	8-10	11-13							Please see attached notes for all abbreviations and acronyms		
Sample ID	D1	D2	D3	D4									
Depth	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10									
COC No / misc													
Containers	V J	V J	V J	V J									
Sample Date	18/08/2017 11:00	18/08/2017 11:00	18/08/2017 11:00	18/08/2017 11:00									
Sample Type	Soil	Soil	Soil	Soil							LOD/LOR	Units	Method No.
Batch Number	1	1	1	1									
Date of Receipt	22/08/2017	22/08/2017	22/08/2017	22/08/2017									
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2							<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #	<2	<2	<2	<2							<2	ug/kg	TM15/PM10
Chloromethane #	40	35	28	33							<3	ug/kg	TM15/PM10
Vinyl Chloride	<2	<2	<2	<2							<2	ug/kg	TM15_A/PM10
Bromomethane	<1	<1	<1	<1							<1	ug/kg	TM15/PM10
Chloroethane #	<2	<2	<2	<2							<2	ug/kg	TM15/PM10
Trichlorofluoromethane #	<2	<2	<2	<2							<2	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<6	<6	<6	<6							<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	58	<30	<30	<30							<30	ug/kg	TM15/PM10
trans-1,2-Dichloroethene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
cis-1,2-Dichloroethene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Bromochloromethane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Chloroform #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,1,1-Trichloroethane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Carbon tetrachloride #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,2-Dichloroethane #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Benzene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,2-Dichloropropane #	<6	<6	<6	<6							<6	ug/kg	TM15/PM10
Dibromomethane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Bromodichloromethane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
cis-1,3-Dichloropropene	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Toluene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
trans-1,3-Dichloropropene	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,3-Dichloropropane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Dibromochloromethane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Chlorobenzene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
p/m-Xylene #	<5	416	<5	<5							<5	ug/kg	TM15/PM10
o-Xylene #	<3	445	<3	<3							<3	ug/kg	TM15/PM10
Styrene	<3	<3	<3	<3							<3	ug/kg	TM15_A/PM10
Bromoform	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Isopropylbenzene #	<3	56	<3	<3							<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2	<2	<2							<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Propylbenzene #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	2862 ⁺⁺	<3	<3							<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5	<5	<5							<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6	9226 ⁺⁺	<6	<6							<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4	1553	<4	<4							<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4	2632 ⁺⁺	<4	<4							<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7	<7	<7							<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Naphthalene	<27	<27	<27	<27							<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7	<7	<7							<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	50	51	58	53							<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	73	71	73	72							<0	%	TM15/PM10

Matrix : Solid

[illegible]

Matrix : Solid

Client Name:	Ramboll Environ UK Ltd	Matrix : Solid
Reference:	UK11-24029	

Reference: UK11-24029

Location: Southall Western Access

Location: Southall Western Access

Contact: Charles Collins

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

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NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/14080

SOILS

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

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

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

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

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

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

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

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

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

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

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

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

WATERS

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

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

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

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

DEVIATING SAMPLES

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

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x4 Dilution
AB	x5 Dilution
AC	x10 Dilution

JE Job No: 17/14080

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX.	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions.	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes

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Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes

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Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes