

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 14/12/16	Ground Level (mOD) 4.23	Co-Ordinates E 543181.6 N 180343.2	Final Depth 33.00m
Date Completed 16/12/16				

Client

London City Airport Limited

PROGRESS					SPT DETAILS					
Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Type	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)
14/12/16	0.00				S	15.50	N15	2, 2 / 3, 3, 4, 5	14.00	
14/12/16	15.50	14.00	2.10	... see Remark 5	S	17.00	N16	3, 2 / 3, 4, 4, 5	14.00	
15/12/16	15.50	14.00	3.10		S	18.50	N29	3, 4 / 4, 8, 8, 9	14.00	
15/12/16	29.00	14.00	1.90		S	20.00	N31	3, 3 / 6, 8, 9, 8	14.00	
16/12/16	29.00	14.00	3.10		S	21.50	N50/0.005	25 / 50	14.00	
16/12/16	33.00	14.00	1.90		S	23.00	N50/0.005	25 / 50	14.00	
					S	24.50	N40	3, 6 / 8, 9, 11, 12	14.00	
					S	26.00	N40	3, 7 / 7, 10, 11, 12	14.00	
					S	27.50	N50	4, 7 / 11, 12, 16, 11	14.00	
					S	29.00	N50/0.105	7, 12 / 21, 29	14.00	
					S	30.20	N28/0.19	6, 13 / 16, 2, 10	14.00	

GENERAL REMARKS

- Borehole carried out from a pontoon. All levels are recorded relative to the pontoon level.
- Clearance by UXO Magnetometer probe.
- Borehole drilled open hole between 12.50m and 15.50m depth.
- Dynamic sampling techniques used from 15.50m to 18.00m. Rotary boring carried out thereafter.
- Water present in the borehole from casing installation through the dock.

KEY

SAMPLES

- ES - Environmental Sample (Tub, Vial, Jar)
- U - 100mm Diameter Undisturbed Sample
- UT - 100mm Diameter Thin Wall Undisturbed Sample
- U38 - 38mm Diameter Undisturbed Sample
- D - Disturbed Sample, B-Bulk Sample, LB- Large Bulk Sample, BLK-Block Sample
- C - Core Sample, W-Water Sample, R-Root Sample

INSTALLATION DETAILS

- SPIE - Standpipe Piezometer
- SPGW - Groundwater Monitor Standpipe
- SPG/GW - Gas / Groundwater Monitor Standpipe
- VWP - Vibrating Wire Piezometer
- ICM - Inclinator
- HOLE TYPES
- IP - Inspection Pit, TP-Trial Pit TT - Trial Trench
- CP - Cable Percussion, RC-Rotary Coring, R/S-Rotary/Sonic
- DS - Dynamic Sampling, DS/R-Dynamic Sampling /Rotary
- DC - Diamond Coring, CPR-Cable Percussion Rotary follow on

TESTS S/C-SPT / CPT, V-Shear Vane, PP-Pocket Penetrometer, MP-Mackintosh Probe, VOC-Volatile Organic Compounds

Note: All depths are in metres, all diameters in millimetres, water strike rise time in minutes. For details of abbreviations see Key

Sheet 1 of 4

Issue No: 01	Checked By: AN	Approved By: OS	Log Print Date & Time: 03/03/2017 17:48	
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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 14/12/16 Date Completed 16/12/16	Ground Level (mOD) 4.23	Co-Ordinates E 543181.6 N 180343.2	Final Depth 33.00m
Client London City Airport Limited			Method/ Plant Used Dynamic Sampling / Rotary	Sheet 2 of 4

PROGRESS			STRATA							SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
14/12/16 15/12/16	14.00 14.00	2.10 3.10				-8.27		12.50	Open hole	15.50 15.50 15.50-15.70	D01 B02	N15	2, 2 / 3, 3, 4, 5	
								(3.00)						
						-11.27		15.50						
								(1.50)						
						-12.77		17.00						
						-12.87		17.10						
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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 14/12/16	Ground Level (mOD) 4.23	Co-Ordinates E 543181.6 N 180343.2	Final Depth 33.00m
Date Completed 16/12/16				
Client London City Airport Limited	Method/ Plant Used Dynamic Sampling / Rotary		Sheet 3 of 4	

PROGRESS			STRATA						SAMPLES & TESTS			Field Records	Instrument/ Backfill	
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No			Test Result
15/12/16 16/12/16	14.00 14.00	1.90 3.10	100						23.30 ... with rare rinded flint cobbles	20.00	D06		25 / 50	
										21.50		N50/ 5 mm		25 / 50
										23.00		N50/ 5 mm		25 / 50
			24.00	B07										
			24.10 ... becoming strong, medium density white chalk	24.50						N40	3, 6 / 8, 9, 11, 12			
			24.20 ... with a horizontal fracture and at 24.45m, 25.40m and 25.70m	24.50	D08									
			24.70 - 24.90 ... becoming weak chalk, with rare flint cobbles	25.10	B09									
			25.00 - 25.40 ... with a vertical fracture											
			26.00		N40					3, 7 / 7, 10, 11, 12				
			26.00	D10										
			26.30 - 27.40 ... [NI] recovered as: firm, white very gravelly SILT. Gravel comprises angular to subangular fine to coarse weak, medium density chalk fragments and black rinded flint	27.00	B11									
			26.80 ... with subvertical and subhorizontal fractures											
			27.10 ... with a black rinded flint cobble											
			27.40 - 27.75 ... [NI] recovered as: white angular to subangular fine to coarse silty GRAVEL with rare black rinded flint cobbles. Gravel comprises weak to moderately weak, medium density chalk fragments	27.50						N50	4, 7 / 11, 12, 16, 11			
			27.75 - 30.70 ... [NI] recovered as: firm, white very gravelly SILT. Gravel comprises angular to subangular fine to coarse weak, medium density chalk fragments and black rinded flint	27.50	D12									
27.90 ... with a wide open horizontal fracture infilled with weak, medium density angular to subangular fine to coarse chalk fragments with occasional purple staining	28.00	B13												
28.00 ... with a wide open subhorizontal fracture and at 28.10m														
28.40 - 28.60 ... [NI] recovered as: white angular to subangular fine to coarse silty GRAVEL with rare cobble size black rinded flint. Gravel comprises weak, medium density chalk fragments and black rinded flint	29.00		N50/ 105 mm	7, 12 / 21, 29										
									29.00	D14				
									29.40	B15				

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 14/12/16 Date Completed 16/12/16	Ground Level (mOD) 4.23	Co-Ordinates E 543181.6 N 180343.2	Final Depth 33.00m
Client London City Airport Limited			Method/ Plant Used Dynamic Sampling / Rotary	Sheet 4 of 4

PROGRESS			STRATA						SAMPLES & TESTS			Field Records	Instrument/ Backfill			
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No			Test Result		
16/12/16	14.00	1.90	100	75	50	-28.77		-33.00	28.75 ... with a wide open horizontal fracture infilled with weak to moderately weak, medium density coarse chalk fragments	30.20	C16	N28/ 190 mm	6, 13 / 16, 2, 10			
									29.00 - 29.20 ... with a wide open vertical fracture with occasional purple staining	30.60-30.85						
			100	85	62				29.25 ... with a wide open vertical fracture and at 29.35m							
									29.50 - 29.70 ... with rare angular to subangular fine to coarse black rinded flint gravel							
									29.70 - 29.80 ... with a wide open horizontal fracture infilled with weak, medium density angular to subangular fine to coarse chalk fragments and rare cobble size chalk fragments							
									29.95 ... with a horizontal fracture and at 30.40m and 30.45m		C17					
			100						30.10 ... with a wide open horizontal fracture infilled with weak, medium density angular to subangular fine to coarse chalk fragments	32.10-32.40						
									30.70 ... with a horizontal fracture and at 30.90m, 31.00m, 31.10m, 31.20m and 31.40m							
									31.40 - 31.50 ... [NI] recovered as: firm, white very gravelly SILT with rare black rinded flint cobbles. Gravel is angular to subangular fine to coarse black rinded flint							
									31.50 ... with a wide open vertical fracture and at 31.70m							
									31.75 ... with a wide open vertical fracture and at 31.85m and 32.00m							
									32.40 - 32.50 ... [NI] recovered as: white angular to subangular fine to coarse silty GRAVEL with rare cobble size black rinded flint. Gravel comprises weak to moderately weak, medium density chalk fragments and black rinded flint							
									End of Borehole							

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 17/11/16 Date Completed 18/11/16	Ground Level (mOD) 4.69	Co-Ordinates E 543245.5 N 180364.4	Final Depth 32.00m
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Client

London City Airport Limited

BOREHOLE SUMMARY

Top (m)	Base (m)	Type	Date Started	Date Ended	Crew	Logged By	Core Barrel (mm)	Core Bit	Plant Used/ Method	SPT Hammer Reference
0.00	32.00	CP	17/11/2016	18/11/2016	SW	CB			Dando 175	AR909

WATER STRIKES

WATER ADDED

CHISELLING / SLOW DRILLING

Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)	From (m)	To (m)	From (m)	To (m)	Duration (hr)	Remarks
							31.10	31.40	0:45	Gravel

HOLE

CASING

ROTARY RECOVERY

Depth (m)	Diameter (mm)	Depth (m)	Diameter (mm)	From (m)	To (m)	Blows	Recovery (%)
0.00	200	0.00	200				
16.00	200	15.10	200				
32.00	150	27.30	150				

ROTARY FLUSH DETAIL

From (m)	To (m)	Flush Type	Flush Return (%)	Flush Colour

INSTALLATION DETAILS

Type	Diameter (mm)	Depth of Installation (m)	Top of Response Zone (m)	Bottom of Response Zone (m)	Date of Installation

BACKFILL DETAILS

Top (m)	Bottom (m)	Material	Backfill Date
12.00	32.00	Cement / Bentonite Grout	18/11/2016

Issue No: 02

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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 17/11/16 Date Completed 18/11/16	Ground Level (mOD) 4.69	Co-Ordinates E 543245.5 N 180364.4	Final Depth 32.00m
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Client

London City Airport Limited

PROGRESS					SPT DETAILS					
Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Type	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)
17/11/16	0.00			... see Remark 3	C	12.50	N22	1, 2 / 7, 6, 5, 4	12.50	1.10
17/11/16	12.50	12.50	1.10		C	13.50	N15	4, 4 / 5, 3, 4, 3	13.50	1.60
17/11/16	13.50	13.50	1.60		C	14.50	N12	5, 4 / 4, 3, 2, 3	14.50	1.40
17/11/16	14.50	14.50	1.40		S	15.50	N5	5, 3 / 2, 1, 1, 1	15.10	1.90
17/11/16	15.50	15.10	1.90		S	16.50	N9	1, 2 / 2, 3, 2, 2	16.50	2.30
17/11/16	16.50	16.50	2.30		S	18.00	N11	3, 2 / 3, 2, 3, 3	18.00	3.10
17/11/16	18.00	18.00	3.10		S	19.50	N11	3, 2 / 2, 3, 4, 2	19.50	2.90
17/11/16	19.50	19.50	2.90		S	21.00	N21	2, 3 / 5, 5, 6, 5	21.00	3.20
17/11/16	21.00	21.00	3.20		S	22.50	N34	3, 4 / 5, 13, 8, 8	22.50	2.80
17/11/16	22.50	22.50	2.80		S	24.00	N28	5, 5 / 6, 7, 8, 7	24.00	3.00
17/11/16	24.00	24.00	3.00		S	27.00	N45	4, 7 / 9, 11, 11, 14	27.00	2.80
17/11/16	26.00	25.30	2.95		S	28.50	N50/0.28	5, 8 / 10, 12, 14, 14	27.30	3.10
18/11/16	26.00	25.30	2.90		S	30.00	N50/0.235	12, 13 / 18, 13, 14, 5	27.30	2.90
18/11/16	27.00	27.00	2.80		S	31.50	N50/0.235	9, 12 / 13, 16, 15, 6	27.30	3.00
18/11/16	28.50	27.30	3.10							
18/11/16	30.00	27.30	2.90							
18/11/16	31.50	27.30	3.00							
18/11/16	32.00	27.30	3.00							

GENERAL REMARKS

- Borehole carried out from a pontoon. All levels are recorded relative to the pontoon level.
- Clearance by UXO Magnetometer probe.
- Water present in the borehole from casing installation through the dock.
- Ø200mm casing used from pontoon level to 15.10m depth. Bentonite seal inserted between 14.50m and 16.00m and borehole re-drilled with Ø150mm casing to 27.30m depth.

KEY

SAMPLES

- ES - Environmental Sample (Tub, Vial, Jar)
U - 100mm Diameter Undisturbed Sample
UT - 100mm Diameter Thin Wall Undisturbed Sample
U38 - 38mm Diameter Undisturbed Sample
D - Disturbed Sample, B-Bulk Sample, LB- Large Bulk Sample, BLK-Block Sample
C - Core Sample, W-Water Sample, R-Root Sample

INSTALLATION DETAILS

- SPIE - Standpipe Piezometer
SPGW - Groundwater Monitor Standpipe
SPG/GW - Gas / Groundwater Monitor Standpipe
VWP - Vibrating Wire Piezometer
ICM - Inclinator

HOLE TYPES

- IP - Inspection Pit, TP-Trial Pit TT - Trial Trench
CP - Cable Percussion, RC-Rotary Coring, RS-Rotary/Sonic
DS - Dynamic Sampling, DS/R-Dynamic Sampling /Rotary
DC - Diamond Coring, CPR-Cable Percussion Rotary follow on

TESTS S/C-SPT / CPT, V-Shear Vane, PP-Pocket Penetrometer, MP-Mackintosh Probe, VOC-Volatile Organic Compounds

Note: All depths are in metres, all diameters in millimetres, water strike rise time in minutes. For details of abbreviations see Key


Issue No: 02

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Approved By: OS

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Sheet 1 of 4

Issue No: 02	Checked By: AN	Approved By: OS	Log Print Date & Time: 28/03/2017 12:58	 AGS <small>AGENCIJA ZA GRAFIČKO IŠTRAŽIVAČKI POSLOVANJE</small> <small>AGENCIJA ZA GRAFIČKO IŠTRAŽIVAČKI POSLOVANJE</small>
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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 17/11/16 Date Completed 18/11/16	Ground Level (mOD) 4.69	Co-Ordinates E 543245.5 N 180364.4	Final Depth 32.00m
Client London City Airport Limited			Method/ Plant Used Cable Percussion	Sheet 2 of 4

PROGRESS			STRATA				SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
17/11/16	12.50	1.10	-7.31		12.00		12.00			... VOC 0.5ppm	
				x x x	(0.50)	Soft, dark to light grey SILT with strong hydrocarbon odour and rare glass fragments (<85mm). (DOCK SEDIMENT)	12.00-12.50	ES01 B02			
			-7.81	x x x	12.50		12.50		N22	1, 2 / 7, 6, 5, 4 ... VOC 0.5ppm	
17/11/16	13.50	1.60				Grey sandy angular to well-rounded fine to coarse flint GRAVEL with hydrocarbon odour. Sand is fine to coarse. (RIVER TERRACE DEPOSITS)	12.50-13.00	ES03 B04			
					(2.00)		13.25	D05			
						13.50 ... becoming very sandy with no hydrocarbon odour	13.50		N15	4, 4 / 5, 3, 4, 3 ... VOC 0.1ppm	
17/11/16	14.50	1.40					13.50-14.00	ES06 B07			
			-9.81		14.50		14.25	D08			
						Off-white to brown very sandy angular to subangular fine to medium flint GRAVEL with occasional black rinded flint cobbles. Sand is fine to coarse. (RIVER TERRACE DEPOSITS)	14.50-15.00	B09	N12	5, 4 / 4, 3, 2, 3	
17/11/16	15.10	1.90	-10.31		(0.50)		15.00-15.50	B10			
						[NI] White CHALK recovered as: angular to subangular fine to coarse white silty GRAVEL. Gravel is extremely weak, medium density chalk and angular to subangular fine to coarse black rinded flint. (SEAFORD CHALK FORMATION)	15.50		N5	5, 3 / 2, 1, 1, 1	
						15.50 ... [NI] recovered as: firm to stiff, white SILT	15.50	D11			
17/11/16	16.50	2.30				16.00 ... becoming angular to subangular strong, chalk fragments with no rinded flint	16.00-16.50	B12			
						16.50 ... [NI] recovered as: firm to stiff, white SILT	16.50		N9	1, 2 / 2, 3, 2, 2	
						17.00 ... with cobble size strong, medium density chalk fragments and coarse gravel and cobble size angular to subangular black rinded flint	17.00-17.50	B14			
17/11/16	18.00	3.10					18.00		N11	3, 2 / 3, 2, 3, 3	
						18.00 ... [NI] recovered as: firm, white SILT	18.00	D15			
						18.50 ... with rare pockets of white chalk SILT (<200mm)	18.50-19.00	B16			
17/11/16	19.50	2.90					19.50		N11	3, 2 / 2, 3, 4, 2	
						19.50 ... becoming firm SILT	19.50	D17			
							20.00-20.50	B18			

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 17/11/16 Date Completed 18/11/16	Ground Level (mOD) 4.69	Co-Ordinates E 543245.5 N 180364.4	Final Depth 32.00m
Client London City Airport Limited			Method/ Plant Used Cable Percussion	Sheet 3 of 4

PROGRESS			STRATA				SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
17/11/16	21.00	3.20				20.00 - 20.50 ... with rare angular to subangular coarse black rinded flint gravel	21.00 21.00	D19	N21	2, 3 / 5, 5, 6, 5	
						21.00 ... [NI] recovered as: white gravelly SILT. Gravel is angular to subangular medium to coarse black rinded flint	21.50-22.00	B20			
						21.50 - 22.00 ... with no rinded flint					
17/11/16	22.50	2.80				22.50 ... [NI] recovered as: firm, white SILT	22.50 22.50	D21	N34	3, 4 / 5, 13, 8, 8	
							23.00-23.50	B22			
17/11/16	24.00	3.00					24.00 24.00	D23	N28	5, 5 / 6, 7, 8, 7	
						24.50 - 25.00 ... with no rinded flint	24.50-25.00	B24			
						25.50 ... [NI] recovered as: firm, white SILT					
17/11/16	25.30	2.95					26.00-26.50	B25			
18/11/16	25.30	2.90									
18/11/16	27.00	2.80				27.00 ... [NI] recovered as: white SILT	27.00 27.00	D26	N45	4, 7 / 9, 11, 11, 14	
							28.00	D27			
18/11/16	27.30	3.10				28.00 ... [NI] recovered as: white gravelly SILT. Gravel is angular to subangular fine, extremely weak, low density white chalk and angular to subangular coarse gravel to cobble size black rinded flint	28.50		N50/ 280 mm	5, 8 / 10, 12, 14, 14	
						28.50 ... [NI] recovered as: firm, white SILT	28.50	D28			
							29.50	D29			
18/11/16	27.30	2.90				29.50 ... becoming very silty	30.00		N50/ 233 mm	12, 13 / 18, 13, 14, 5	

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CADP Surveys Ground Investigation (Dock) - Phase 2

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Client London City Airport Limited			Method/ Plant Used Cable Percussion	Sheet 4 of 4

PROGRESS			STRATA				SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
18/11/16	27.30	3.00				30.00 ... [NI] recovered as: firm, white gravelly SILT. Gravel is angular to subangular fine to coarse black rinded flint 30.50 ... with no cobble size chalk fragments	30.00	D30		9, 12 / 13, 16, 15, 6	
							31.00	D31			
							31.10-31.40	B32			
							31.50		N50/ 235 mm		
18/11/16	27.30	3.00	-27.31		32.00	31.50 ... [NI] recovered as: firm, white SILT	31.50	D33			
						End of Borehole					

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 09/12/16 Date Completed 14/12/16	Ground Level (mOD) 4.61	Co-Ordinates E 543300.7 N 180351.6	Final Depth 31.40m
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Client

London City Airport Limited

BOREHOLE SUMMARY

Top (m)	Base (m)	Type	Date Started	Date Ended	Crew	Logged By	Core Barrel (mm)	Core Bit	Plant Used/ Method	SPT Hammer Reference
0.00 20.00	20.00 31.40	DS RC	09/12/2016 13/12/2016	13/12/2016 14/12/2016	TC TC	CB CB	112	PDC	Geotec 350 Geotec 350	AR779 AR779

WATER STRIKES

WATER ADDED

CHISELLING / SLOW DRILLING

Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)	From (m)	To (m)	From (m)	To (m)	Duration (hr)	Remarks

HOLE

CASING

ROTARY RECOVERY

Depth (m)	Diameter (mm)	Depth (m)	Diameter (mm)	From (m)	To (m)	Blows	Recovery (%)
0.00	150	0.00	150	11.20	11.50		100
20.00	150	14.80	150	11.50	12.00		100
31.40	146			12.00	13.00		100
				13.00	14.00		100
				14.00	14.80		50
				14.80	15.80		40
				15.80	16.80		100
				16.80	17.80		100
				17.80	18.90		100
				18.90	20.00		100
				20.00	21.00		100
				21.00	22.50		100
				22.50	24.00		100
				24.00	25.50		100
				25.50	27.00		100
				27.00	28.00		80
				28.00	28.50		100
				28.50	29.90		100
				29.90	31.40		100

ROTARY FLUSH DETAIL

From (m)	To (m)	Flush Type	Flush Return (%)	Flush Colour
20.00	28.00	Water	70	
28.00	31.40	Water	75	

INSTALLATION DETAILS

Type	Diameter (mm)	Depth of Installation (m)	Top of Response Zone (m)	Bottom of Response Zone (m)	Date of Installation

BACKFILL DETAILS

Top (m)	Bottom (m)	Material	Backfill Date
11.20	31.40	Cement / Bentonite Grout	14/12/2016

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 09/12/16 Date Completed 14/12/16	Ground Level (mOD) 4.61	Co-Ordinates E 543300.7 N 180351.6	Final Depth 31.40m
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Client

London City Airport Limited

PROGRESS					SPT DETAILS					
Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Type	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)
09/12/16	0.00			... see Remark 4	C	12.00	N5	0, 0 / 1, 1, 2, 1	11.00	
09/12/16	11.20	11.00			C	13.00	N10	1, 3 / 2, 3, 3, 2	12.00	
09/12/16	12.00	12.00			C	14.00	N9	2, 2 / 2, 2, 2, 3	14.00	
09/12/16	14.80	14.80			S	14.80	N10	2, 2 / 2, 3, 2, 3	14.80	
09/12/16	16.80	14.80	2.20		S	15.80	N10	3, 2 / 2, 2, 3, 3	14.80	
13/12/16	16.80	14.80	1.90		S	16.80	N15	1, 1 / 3, 5, 4, 3	14.80	
13/12/16	28.00	14.80	1.10		S	17.80	N22	3, 3 / 6, 5, 5, 6	14.80	
14/12/16	28.00	14.80	2.80		S	18.90	N20	3, 4 / 5, 5, 5, 5	14.80	
14/12/16	31.40	14.80			S	20.00	N16	3, 2 / 4, 3, 4, 5	14.80	
					S	21.00	N17	4, 3 / 3, 4, 4, 6	14.80	
					S	22.50	N44	6, 7 / 9, 11, 11, 13	14.80	
					S	24.00	N49	3, 4 / 8, 12, 13, 16	14.80	
					S	25.50	N50/0.285	2, 4 / 6, 10, 16, 18	14.80	
					S	27.00	N50/0.245	5, 9 / 11, 14, 17, 8	14.80	
					S	28.50	N50/0.285	4, 6 / 11, 12, 14, 13	14.80	
					S	29.90	N50/0.255	3, 6 / 12, 14, 14, 10	14.80	

GENERAL REMARKS

- Borehole carried out from a pontoon. All levels are recorded relative to the pontoon level.
- Clearance by UXO Magnetometer probe.
- Water present in the borehole from casing installation through the dock.
- Dynamic sampling techniques used from 11.20m to 20.00m. Rotary boring carried out thereafter.

KEY

SAMPLES

- ES - Environmental Sample (Tub, Vial, Jar)
- U - 100mm Diameter Undisturbed Sample
- UT - 100mm Diameter Thin Wall Undisturbed Sample
- U38 - 38mm Diameter Undisturbed Sample
- D - Disturbed Sample, B-Bulk Sample, LB- Large Bulk Sample, BLK-Block Sample
- C - Core Sample, W-Water Sample, R-Root Sample

INSTALLATION DETAILS

- SPIE - Standpipe Piezometer
- SPGW - Groundwater Monitor Standpipe
- SPG/GW - Gas / Groundwater Monitor Standpipe
- VWP - Vibrating Wire Piezometer
- ICM - Inclinator

HOLE TYPES

- IP - Inspection Pit, TP-Trial Pit TT - Trial Trench
- CP - Cable Percussion, RC-Rotary Coring, RS-Rotary/Sonic
- DS - Dynamic Sampling, DS/R-Dynamic Sampling /Rotary
- DC - Diamond Coring, CPR-Cable Percussion Rotary follow on

TESTS S/C-SPT / CPT, V-Shear Vane, PP-Pocket Penetrometer, MP-Mackintosh Probe, VOC-Volatile Organic Compounds

Note: All depths are in metres, all diameters in millimetres, water strike rise time in minutes. For details of abbreviations see Key

Issue No: 01 Checked By: AN Approved By: OS Log Print Date & Time: 03/03/2017 17:44

Sheet 1 of 4

Issue No: 01	Checked By: AN	Approved By: OS	Log Print Date & Time: 03/03/2017 17:49	 <small>AGS</small>
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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 09/12/16 Date Completed 14/12/16	Ground Level (mOD) 4.61	Co-Ordinates E 543300.7 N 180351.6	Final Depth 31.40m
Client London City Airport Limited			Method/ Plant Used Dynamic Sampling / Rotary	Sheet 2 of 4

PROGRESS			STRATA							SAMPLES & TESTS			Field Records	Instrument/ Backfill			
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result					
09/12/16	11.00					-6.59		11.20	Soft, brown silty CLAY with occasional dark grey staining and strong hydrocarbon odour. (DOCK SEDIMENT)	11.90 12.00	D01	N5	0, 0 / 1, 1, 2, 1				
			100														
			100					(1.30)									
09/12/16	12.00								12.50	Dark grey sandy angular to well rounded fine to coarse flint GRAVEL with strong hydrocarbon odour. Sand is fine to coarse. (RIVER TERRACE DEPOSITS) 13.00 ... becoming yellowish brown with slight hydrocarbon odour	13.00		N10		1, 3 / 2, 3, 3, 2		
																13.50	B02
			100														
							-7.89		13.70	White CHALK recovered as: firm to stiff, SILT. (SEAFORD CHALK FORMATION) 13.90 ... becoming slightly gravelly. Gravel is angular to subangular black rinded flint (from above) 14.50 ... with occasional moderately weak, medium density chalk cobbles	14.00 14.80		N9		2, 2 / 2, 2, 2, 3		
			50														
09/12/16	14.80									15.70 ... with rare subangular to angular coarse black rinded flint gravel 16.20 ... with no black rinded flint	15.70 15.80 15.80	B03 D04	N10		3, 2 / 2, 2, 3, 3		
			40														
										16.80 ... [NI] recovered as: angular to subangular fine to coarse GRAVEL with occasional weak, medium density chalk cobbles. Gravel is weak, medium density white chalk fragments	16.50 16.80		B05				
			100														
09/12/16	14.80		2.20							18.10 - 18.30 ... with occasional angular to subangular fine to coarse black rinded flint gravel and rare flint cobbles	16.80 17.10		B06		1, 1 / 3, 5, 4, 3		
13/12/16	14.80	1.90															
								(8.10)	18.10 - 18.30 ... with occasional angular to subangular fine to coarse black rinded flint gravel and rare flint cobbles	17.80 17.80 18.10		D07 B08	N22	3, 3 / 6, 5, 5, 6			
		100															
									19.50 ... with rare angular to subangular fine to coarse black rinded flint gravel	18.90 18.90 19.10		D09 B10	N20	3, 4 / 5, 5, 5, 5			
		100															
										20.00		N16	3, 2 / 4, 3, 4, 5				

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 09/12/16 Date Completed 14/12/16	Ground Level (mOD) 4.61	Co-Ordinates E 543300.7 N 180351.6	Final Depth 31.40m
Client London City Airport Limited			Method/ Plant Used Dynamic Sampling / Rotary	Sheet 3 of 4

PROGRESS			STRATA							SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
13/12/16 14/12/16	14.80 14.80	1.10 2.80	100						20.00 ... becoming sandy	20.00	D11		4, 3 / 3, 4, 4, 6	
									20.50 - 20.80 ... with occasional black rinded flint gravel	20.50	B12			
			100	20	10	-17.19		21.80	20.90 ... with 1No subvertical fracture with purple staining	21.00		N17	6, 7 / 9, 11, 11, 13	
									21.50	B13				
			100			-17.49		22.10	Strong, medium density white CHALK with occasional subvertical and subhorizontal fractures with purple staining. (SEAFORD CHALK FORMATION)	22.50	D14	N44	2, 4 / 6, 10, 16, 18	
									White CHALK recovered as: firm to stiff, SILT. (SEAFORD CHALK FORMATION)	22.50				
			100							23.40 ... with horizontal fractures at 23.40m, 23.50m and 23.70m	23.50	B15	N49	3, 4 / 8, 12, 13, 16
										24.00	D16			
			100	40	27					24.50 ... with 1No subhorizontal fracture at 24.50m and 1No vertical open fracture between 24.50m and 24.70m	24.70	B17		5, 9 / 11, 14, 17, 8
										24.70 ... with 1No horizontal fracture and at 24.80m, 24.85m and 24.90m				
			100	43	41					25.50			N50/ 285 mm	4, 6 / 11, 12, 14, 13
										25.50	D18			
			80							26.40 - 26.50 ... [NI] recovered as: silty angular to subangular fine to coarse GRAVEL with rare black rinded flint cobbles. Gravel comprises weak, medium density white chalk fragments and rare black rinded flint	26.50-26.70	C19		3, 6 / 12, 14, 14, 10
										26.65 ... with 1No horizontal fracture and at 26.80m and 26.90m				
			100	80	76					27.00 ... [NI] recovered as: silty angular to subangular fine to coarse GRAVEL. Gravel comprises weak, medium density white chalk fragments and rare black rinded flint	27.00	D20 B21		
										27.40 ... with rare stong, medium density chalk cobbles	27.50			
			100	71	64					27.90 - 28.10 ... with angular to subangular fine to coarse black rinded flint gravel and rare black rinded flint cobbles	28.50	D22		
										28.20 ... with 1No subvertical fracture				
										28.35 ... with 1No wide open fracture infilled with angular to subangular fine to coarse weak, medium density chalk fragments	28.50	C23		
										28.70 ... becoming very silty with frequent angular to subangular fine to coarse black rinded flint				
							28.90 ... with subvertical fractures	29.40-29.70						
							29.20 - 29.30 ... with 1No wide open fracture infilled with angular to subangular fine to coarse weak, medium density chalk fragments and rare black rinded flint cobbles	29.90				N50/ 255 mm		

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 09/12/16 Date Completed 14/12/16	Ground Level (mOD) 4.61	Co-Ordinates E 543300.7 N 180351.6	Final Depth 31.40m
Client London City Airport Limited			Method/ Plant Used Dynamic Sampling / Rotary	Sheet 4 of 4

PROGRESS			STRATA							SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
14/12/16	14.80		100	67	63				29.40 ... with 1No horizontal fracture 29.60 - 29.70 ... with 1No wide open fracture infilled with angular to subangular fine to coarse weak, medium density chalk fragments and black rinded flint and rare black rinded flint cobbles 30.20 - 30.30 ... [NI] recovered as: silty angular to subangular fine to coarse GRAVEL. Gravel comprises weak to moderately weak, medium density white chalk fragments and rare black rinded flint 30.55 ... with 1No horizontal fracture 30.60 ... with 1No vertical fracture 30.90 ... with 1No wide open fracture infilled with angular to subangular fine to coarse moderately weak to weak, medium density chalk fragments 31.10 ... with 1No horizontal fracture End of Borehole	29.90 30.20-30.40	D24 C25			
			100	67	63									

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 07/12/16 Date Completed 08/12/16	Ground Level (mOD) 4.19	Co-Ordinates E 543391.0 N 180334.1	Final Depth 32.00m
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Client

London City Airport Limited

BOREHOLE SUMMARY

Top (m)	Base (m)	Type	Date Started	Date Ended	Crew	Logged By	Core Barrel (mm)	Core Bit	Plant Used/ Method	SPT Hammer Reference
0.00 18.50	18.50 32.00	DS RC	07/12/2016 07/12/2016	07/12/2016 08/12/2016	TC TC	CB CB	112	PCD	Geotec 350 Geotec 350	AR779 AR779

WATER STRIKES

WATER ADDED

CHISELLING / SLOW DRILLING

Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)	From (m)	To (m)	From (m)	To (m)	Duration (hr)	Remarks

HOLE

CASING

ROTARY RECOVERY

Depth (m)	Diameter (mm)	Depth (m)	Diameter (mm)	From (m)	To (m)	Blows	Recovery (%)
0.00	150	0.00	200	12.00	12.50		100
18.50	150	17.50	150	12.50	13.50		100
32.00	146			13.50	14.50		100
				14.50	15.20		100
				15.20	16.20		100
				16.20	17.20		80
				17.20	18.50		100
				18.50	19.50		60
				19.50	20.00		100
				20.00	20.60		100
				20.60	21.50		78
				21.50	23.00		100
				23.00	24.50		100
				24.50	26.00		100
				26.00	27.50		100
				27.50	29.00		100
				29.00	30.50		100
				30.50	32.00		100

ROTARY FLUSH DETAIL

From (m)	To (m)	Flush Type	Flush Return (%)	Flush Colour
18.50	19.50	Water	25	
19.50	32.00	Water	75	

INSTALLATION DETAILS

Type	Diameter (mm)	Depth of Installation (m)	Top of Response Zone (m)	Bottom of Response Zone (m)	Date of Installation

BACKFILL DETAILS

Top (m)	Bottom (m)	Material	Backfill Date
12.00	32.00	Cement / Bentonite Grout	08/12/2016

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 07/12/16 Date Completed 08/12/16	Ground Level (mOD) 4.19	Co-Ordinates E 543391.0 N 180334.1	Final Depth 32.00m
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Client

London City Airport Limited

PROGRESS					SPT DETAILS					
Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Type	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)
07/12/16	0.00			... see Remark 4	C	13.50	N9	0, 0 / 1, 3, 2, 3	12.50	
07/12/16	12.00	12.50			C	14.50	N9	0, 1 / 2, 2, 2, 3	12.50	
07/12/16	18.50	12.50			S	15.20	N10	1, 2 / 2, 2, 3, 3	12.50	
07/12/16	19.50	17.50			S	16.20	N6	3, 4 / 1, 1, 2, 2	12.50	
08/12/16	19.50	17.50	1.70		S	17.20	N10	2, 3 / 3, 3, 2, 2	12.50	
08/12/16	32.00	17.50	0.90		S	18.50	N12	2, 3 / 3, 3, 3, 3	17.50	
					S	20.00	N13	3, 3 / 3, 3, 3, 4	17.50	
					S	21.50	N15	3, 3 / 4, 4, 3, 4	17.50	
					S	23.00	N42	5, 8 / 9, 10, 11, 12	17.50	
					S	24.50	N44	6, 6 / 9, 11, 11, 13	17.50	
					S	26.00	N50/0.24	6, 11 / 13, 18, 15, 4	17.50	
					S	27.50	N42	5, 7 / 8, 11, 11, 12	17.50	
					S	29.00	N50/0.255	4, 8 / 12, 13, 17, 8	17.50	
					S	30.50	N50/0.015	18, 7 / 50	17.50	

GENERAL REMARKS

1. Borehole carried out from a pontoon. All levels are recorded relative to the pontoon level.
2. Clearance by UXO Magnetometer probe.
3. Water present in the borehole from casing installation through the dock.
4. Dynamic sampling techniques used from 12.00m to 18.50m. Rotary boring carried out thereafter.

KEY

SAMPLES

- ES - Environmental Sample (Tub, Vial, Jar)
- U - 100mm Diameter Undisturbed Sample
- UT - 100mm Diameter Thin Wall Undisturbed Sample
- U38 - 38mm Diameter Undisturbed Sample
- D - Disturbed Sample, B-Bulk Sample, L-B- Large Bulk Sample, BLK-Block Sample
- C - Core Sample, W-Water Sample, R-Root Sample

INSTALLATION DETAILS

- SPIE - Standpipe Piezometer
- SPGW - Groundwater Monitor Standpipe
- SPG/GW - Gas / Groundwater Monitor Standpipe
- VWP - Vibrating Wire Piezometer
- ICM - Inclinator
- HOLE TYPES
- IP - Inspection Pit, TP-Trial Pit TT - Trial Trench
- CP - Cable Percussion, RC-Rotary Coring, R/S-Rotary/Sonic
- DS - Dynamic Sampling, DS/R-Dynamic Sampling /Rotary
- DC - Diamond Coring, CPR-Cable Percussion Rotary follow on

TESTS S/C-SPT / CPT, V-Shear Vane, PP-Pocket Penetrometer, MP-Mackintosh Probe, VOC-Volatile Organic Compounds

Note: All depths are in metres, all diameters in millimetres, water strike rise time in minutes. For details of abbreviations see Key

Sheet 1 of 4

Issue No: 01	Checked By: AN	Approved By: OS	Log Print Date & Time: 03/03/2017 17:49	 <small>AGS</small>
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CADP Surveys Ground Investigation (Dock) - Phase 2

Issue No: 01	Checked By: AN	Approved By: OS	Log Print Date & Time: 03/03/2017 17:49	AGS <small>AGENCIJA ZA GRAFIČKO I IZDAVAČKO POSREDOVANJE</small>
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Project

CADP Surveys Ground Investigation (Dock) - Phase 2

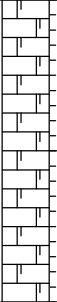
Job No 16/2900	Date Started 07/12/16	Ground Level (mOD) 4.19	Co-Ordinates E 543391.0 N 180334.1	Final Depth 32.00m
Date Completed 08/12/16				
Client London City Airport Limited	Method/ Plant Used Dynamic Sampling / Rotary	Sheet 3 of 4		

PROGRESS			STRATA							SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
			100						19.60 ... [NI] recovered as : firm, very gravelly SILT. Gravel is angular to subangular fine to coarse moderately weak to weak, medium density chalk fragments and black rinded flint	20.60-21.50	B13			
			78					20.00 - 20.50 ... [NI] recovered as : angular to subangular fine to coarse silty GRAVEL with occasional black rinded flint cobbles. Gravel comprises moderately weak to weak, medium density chalk fragments and black rinded flint						
								20.60 ... [NI] recovered as : angular to subangular fine to coarse GRAVEL with occasional black rinded flint cobbles and rare chalk cobbles. Gravel comprises moderately weak to weak, medium density chalk fragments and black rinded flint	21.50 21.50	D14	N15	3, 3 / 4, 4, 3, 4		
			100	73	63			21.50 ... with a band of angular to subangular black rinded flint cobbles	22.00					
								21.70 ... with occasional medium to coarse black rinded flint, rare black rinded flint cobbles and weak, medium density chalk cobbles		D16	N42	5, 8 / 9, 10, 11, 12		
								21.80 ... becoming medium to strong, medium density white CHALK with occasional subvertical fractures and purple staining	23.00 23.00					
								22.60 - 22.90 ... [NI] recovered as : angular to subangular fine to coarse GRAVEL with rare chalk cobbles. Gravel is weak, medium density chalk fragments		B17				
			100	53	43			22.90 ... with 1No angular to subangular black rinded flint cobble	23.80					
								23.00 ... with occasional angular to subangular medium to coarse black rinded flint		D18	N44	6, 6 / 9, 11, 11, 13		
								23.20 - 23.60 ... [NI] becoming gravelly SILT. Gravel is angular to subangular fine to coarse black rinded flint	24.50 24.50					
								24.30 ... with occasional angular to subrounded medium to coarse flint gravel and subvertical and subhorizontal fractures		C19				
			100	43	33			24.50 - 24.70 ... [NI] recovered as : angular to subangular fine to coarse GRAVEL. Gravel is weak medium density chalk fragments	25.40-25.70					
								25.00 - 25.30 ... [NI] recovered as : angular to subangular fine to coarse GRAVEL with rare moderately weak, medium density chalk cobbles and occasional black rinded flint cobbles. Gravel is weak, medium density chalk fragments		D20 C21	N50/ 240 mm	6, 11 / 13, 18, 15, 4		
								25.70 - 26.00 ... [NI] recovered as : angular to subangular fine to coarse GRAVEL with rare black rinded flint cobbles and rare moderately weak, medium density chalk cobbles. Gravel is weak, medium density chalk fragments and black rinded flint	26.00 26.50-26.80					
								26.00 - 26.30 ... [NI] recovered as : firm, white gravelly SILT with weak medium density chalk cobbles. Gravel is angular to subangular fine to coarse weak, medium density chalk fragments		D22	N42	5, 7 / 8, 11, 11, 12		
			100	60	53			26.45 ... with 1No horizontal fracture infilled with extremely weak, low density angular to subangular fine to coarse chalk fragments	27.50 27.50					
								26.75 ... with 1No subhorizontal fracture		B23				
								26.85 ... with 1No wide open subhorizontal fracture						
								27.00 ... with 1No wide open horizontal fracture infilled with weak, medium density angular to subangular fine to coarse chalk fragments		D24	N50/ 255 mm	4, 8 / 12, 13, 17, 8		
			100	90	53			27.30 ... with 1No wide open horizontal fracture	28.70					
								27.50 - 27.60 ... [NI] recovered as : angular to subangular fine to coarse GRAVEL. Gravel comprises weak, medium density chalk fragments and black rinded flint	29.00	C25				
								27.80 ... with 1No subvertical fracture	29.00					
								28.00 - 28.10 ... with 1No vertical fracture infilled with angular to subangular fine to coarse weak, medium density chalk fragments and black rinded flint						
			100	73	50			28.30 ... with 1No subvertical fracture	29.80-30.00					
								28.50 ... with 1No wide open horizontal fracture						
								28.70 - 28.90 ... with 1No wide open horizontal fracture						

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 07/12/16 Date Completed 08/12/16	Ground Level (mOD) 4.19	Co-Ordinates E 543391.0 N 180334.1	Final Depth 32.00m
Client London City Airport Limited			Method/ Plant Used Dynamic Sampling / Rotary	Sheet 4 of 4

PROGRESS			STRATA							SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	TCR %	SCR %	RQD %	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
08/12/16	17.50	0.90	100	73	50				29.00 - 29.40 ... [NI] recovered as : angular to subangular fine to coarse GRAVEL with rare black rinded flint cobbles and rare moderately weak, medium density chalk cobbles. Gravel is weak, medium density chalk fragments and black rinded flint	30.10-30.35	C26	N50/ 15 mm	18, 7 / 50	
									29.55 ... with 1No horizontal fracture and at 29.65m, 29.80m, 30.00m, 30.10m, 30.40m	30.50				
			100	73	60				30.50 - 30.70 ... [NI] becoming very silty GRAVEL with rare black rinded flint cobbles and rare moderately weak, medium density chalk cobbles. Gravel is angular to subangular fine to coarse weak, medium density chalk fragments and black rinded flint	31.70-32.00	C27			
						-27.81		32.00	30.85 ... with 1No wide open horizontal fracture infilled with angular to subangular fine to coarse weak, medium density chalk fragments					
									31.00 - 31.15 ... with rare angular to subangular black rinded flint cobbles					
									31.35 ... with 1No horizontal fracture					
									31.55 ... with 1No horizontal fracture					
									31.70 ... with 1No open wide fracture infilled with angular to subangular fine to coarse weak, medium density chalk fragments and with rare medium weak, chalk cobbles					
									End of Borehole					

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 15/11/16 Date Completed 16/11/16	Ground Level (mOD) 4.96	Co-Ordinates E 543460.0 N 180338.9	Final Depth 31.50m
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Client

London City Airport Limited

BOREHOLE SUMMARY

Top (m)	Base (m)	Type	Date Started	Date Ended	Crew	Logged By	Core Barrel (mm)	Core Bit	Plant Used/ Method	SPT Hammer Reference
0.00	31.50	CP	15/11/2016	16/11/2016	SW	CB			Dando 175	AR909

WATER STRIKES

WATER ADDED

CHISELLING / SLOW DRILLING

Strike at (m)	Rise to (m)	Time to Rise (min)	Casing Depth (m)	Sealed (m)	From (m)	To (m)	From (m)	To (m)	Duration (hr)	Remarks

HOLE

CASING

ROTARY RECOVERY

Depth (m)	Diameter (mm)	Depth (m)	Diameter (mm)	From (m)	To (m)	Blows	Recovery (%)
0.00	200	0.00	200				
16.50	200	15.10	200				
31.50	150	26.50	150				

ROTARY FLUSH DETAIL

From (m)	To (m)	Flush Type	Flush Return (%)	Flush Colour

INSTALLATION DETAILS

Type	Diameter (mm)	Depth of Installation (m)	Top of Response Zone (m)	Bottom of Response Zone (m)	Date of Installation

BACKFILL DETAILS

Top (m)	Bottom (m)	Material	Backfill Date
11.50	31.50	Cement / Bentonite Grout	16/11/2016

Issue No: 01

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Log Print Date & Time: 03/03/2017 17:43

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 15/11/16 Date Completed 16/11/16	Ground Level (mOD) 4.96	Co-Ordinates E 543460.0 N 180338.9	Final Depth 31.50m
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Client

London City Airport Limited

PROGRESS					SPT DETAILS						
Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Type	Depth (m)	N Value	Blow Count / 75mm	Casing Depth (m)	Water Depth (m)	
15/11/16	0.00			... see Remark 3	S	12.00	N0	0, 0 / 0, 0, 0, 0	12.00	0.90	
15/11/16	12.00	12.00	0.90		C	14.00	N48	7, 9 / 11, 12, 14, 11	14.00	0.90	
15/11/16	13.00	13.00	1.20		S	15.00	N14	2, 3 / 3, 5, 3, 3	15.00	1.00	
15/11/16	14.00	14.00	0.90		S	15.10	N10	2, 2 / 3, 2, 2, 3	15.10	1.00	
15/11/16	15.00	15.00	1.00		S	17.50	N8	3, 2 / 1, 2, 3, 2	17.50	1.60	
15/11/16	16.00	15.10	1.00		S	19.00	N8	2, 2 / 1, 2, 3, 2	19.00	2.20	
15/11/16	16.50	15.10	0.95		S	20.50	N11	9, 7 / 3, 2, 3, 3	20.50	1.40	
16/11/16	16.50	15.10	0.90		S	22.00	N13	2, 2 / 3, 2, 3, 5	22.00	2.00	
16/11/16	17.50	17.50	1.60		S	23.50	N38	5, 6 / 6, 5, 17, 10	23.50	2.80	
16/11/16	19.00	19.00	2.20		S	25.00	N24	4, 7 / 7, 6, 5, 6	25.00	1.60	
16/11/16	20.50	20.50	1.40		S	26.50	N38	3, 5 / 7, 9, 12, 10	26.50	1.40	
16/11/16	22.00	22.00	2.00		S	28.00	N44	6, 8 / 10, 10, 11, 13	26.50	1.10	
16/11/16	23.50	23.50	2.80		S	29.50	N50/0.275	10, 11 / 10, 12, 11, 17	26.50	1.50	
16/11/16	25.00	25.00	1.60		S	31.00	N50/0.295	8, 10 / 12, 12, 14, 12	26.50	2.10	
16/11/16	26.50	26.50	1.40								
16/11/16	28.00	26.50	1.10								
16/11/16	29.50	26.50	1.50								
16/11/16	31.00	26.50	2.10								
16/11/16	31.50	26.50	2.10								
GENERAL REMARKS											
1. Borehole carried out from a pontoon. All levels are recorded relative to the pontoon level.											
2. Clearance by UXO Magnetometer probe.											
3. Water present in the borehole from casing installation through the dock.											
4. Ø200mm casing used from pontoon level to 15.10m depth. Bentonite seal inserted between 14.50m and 16.50m and borehole re-drilled with Ø150mm casing to 26.50m depth.											
KEY											
SAMPLES											
ES - Environmental Sample (Tub, Vial, Jar)											
U - 100mm Diameter Undisturbed Sample											
UT - 100mm Diameter Thin Wall Undisturbed Sample											
U38 - 38mm Diameter Undisturbed Sample											
D - Disturbed Sample, B-Bulk Sample, LB- Large Bulk Sample, BLK-Block Sample											
C - Core Sample, W-Water Sample, R-Root Sample											
INSTALLATION DETAILS					HOLE TYPES						
SPIE - Standpipe Piezometer					IP - Inspection Pit, TP-Trial Pit TT - Trial Trench						
SPGW - Groundwater Monitor Standpipe					CP - Cable Percussion, RC-Rotary Coring, R/S-Rotary/Sonic						
SPG/GW - Gas / Groundwater Monitor Standpipe					DS - Dynamic Sampling, DS/R-Dynamic Sampling /Rotary						
VWP - Vibrating Wire Piezometer					DC - Diamond Coring, CP/R-Cable Percussion Rotary follow on						
ICM - Inclinator											
TESTS S/C-SPT / CPT, V-Shear Vane, PP-Pocket Penetrometer, MP-Mackintosh Probe, VOC-Volatile Organic Compounds											
Note: All depths are in metres, all diameters in millimetres, water strike rise time in minutes. For details of abbreviations see Key											

Project

CADP Surveys Ground Investigation (Dock) - Phase 2



Job No 16/2900	Date Started 15/11/16 Date Completed 16/11/16	Ground Level (mOD) 4.96	Co-Ordinates E 543460.0 N 180338.9	Final Depth 31.50m
Client London City Airport Limited			Method/ Plant Used Cable Percussion	Sheet 3 of 4

PROGRESS			STRATA				SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No	Test Result		
16/11/16	20.50	1.40				black rinded flint and rare black angular rinded flint cobbles	20.50 20.50	D21	N11	9, 7 / 3, 2, 3, 3	
							21.00-21.50	B22			
						21.00 ... becoming very silty with rare angular to subangular coarse black rinded flint					
16/11/16	22.00	2.00				22.00 ... [NI] recovered as: slightly gravelly SILT. Gravel is angular to subangular fine to coarse extremely weak, low density chalk fragments	22.00 22.00	D23	N13	2, 2 / 3, 2, 3, 5	
						22.50 ... becoming silty	22.50-23.00	B24			
16/11/16	23.50	2.80			(16.50)	23.50 ... [NI] recovered as: firm SILT	23.50 23.50	D25	N38	5, 6 / 6, 5, 17, 10	
							24.00-24.50	B26			
16/11/16	25.00	1.60				25.00 - 26.50 ... [NI] recovered as: firm SILT	25.00 25.00	D27	N24	4, 7 / 7, 6, 5, 6	
							25.50-26.00	B28			
16/11/16	26.50	1.40				27.00 - 27.50 with frequent angular to subangular black rinded flint cobbles	26.50 26.50	D29	N38	3, 5 / 7, 9, 12, 10	
							27.00-27.50	B30			
16/11/16	26.50	1.10				28.00 ... [NI] recovered as: firm gravelly SILT. Gravel is medium to coarse black rinded flint	28.00 28.00	D31	N44	6, 8 / 10, 10, 11, 13	
							29.00	B32			
16/11/16	26.50	1.50				29.00 ... [NI] recovered as: very silty angular to subangular fine to coarse GRAVEL with occasional black rinded flint cobbles. Gravel is very weak, medium density chalk fragments	29.50		N50/ 275 mm	10, 11 / 10, 12, 11, 17	
						29.50 ... [NI] recovered as: firm slightly gravelly SILT. Gravel is fine black rinded flint	29.50 30.00	D33 B34			

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 15/11/16 Date Completed 16/11/16	Ground Level (mOD) 4.96	Co-Ordinates E 543460.0 N 180338.9	Final Depth 31.50m
Client London City Airport Limited			Method/ Plant Used Cable Percussion	Sheet 4 of 4

PROGRESS			STRATA			SAMPLES & TESTS			Field Records	Instrument/ Backfill
Date	Casing	Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth (m)	Type No		
16/11/16	26.50	2.10					31.00			8, 10 / 12, 12, 14, 12
16/11/16	26.50	2.10	-26.55		31.50		31.00	D35	N50/ 295 mm	
						End of Borehole				

Project

CADP Surveys Ground Investigation (Dock) - Phase 2

Job No 16/2900	Date Started 29/11/16 Date Completed 29/11/16	Ground Level (mOD) 5.44	Co-Ordinates E 543374.6 N 180188.8	Final Depth 2.00m
Client London City Airport Limited			Method/ Plant Used Machine Excavated	Sheet 1 of 1

STRATA					SAMPLES & TESTS			Field Records
Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Depth	Type No	Test Result	
	5.14		(0.30) 0.30	CONCRETE.				
			(1.70)	Brown, very sandy GRAVEL with concrete cobbles. Gravel comprises fine to coarse flint with brick and concrete fragments. (MADE GROUND)				
	3.44		2.00	End of Trial Pit				

GENERAL REMARKS

1. Weather was overcast but dry.
2. Trial pit was stable.
3. Water seepage encountered at 2.00m below ground level.
4. Trial pit dimensions 1.90mx 3.20mx 2.00m depth.
5. Trial pit backfilled with soil arisings.
6. 4No Dynamic probes were carried out through the backfilled pit to establish dock profile on the 19/01/17.
7. Water encountered on the rods at 1.40m depth during dynamic probing.
8. Also refer to TP01 sketch.

Issue No: 00	Drilled By: SW	Logged By: MK	Checked By: OS	Approved By: OS	Log Print Date & Time: 28/02/2017 16:57	
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APPENDIX D

Summary of Previous Reports

Factual Report on Ground Investigation, London City Airport – Phase I Airside Improvement Programme, by Soil Mechanics Limited, dated January 2001

Soil Mechanics were commissioned to carry out an intrusive ground investigation between June and August 2000 across four areas around and on the existing runway facilities of London City Airport and KGV Dock for the Airside Improvement Programme. The purpose of the investigation was to determine subsurface conditions in order to aid the design and construction phases of the proposed works. The areas of investigation were as follows (note: Area 1 was investigated during a later phase, detailed below):

- a) Area 2: Eastern areas of the runway and KGV Dock; 25 trial pits were excavated through the eastern area of the runway;
- b) Area 3: Approximately 10m north of the western edge of KGV Dock; 24 trial pits were excavated in this area;
- c) Area 4: Western area of London City Airport; 20 trial pits were excavated and one borehole was drilled in this area; and
- d) Area 5: Approximately 5m north of the western edge of the existing runway; five trial pits were excavated in this area.

The investigation comprised a total of 74 trial pits and one borehole. Made Ground encountered in the trial pits typically comprised silty gravelly sand in Area 2 and Area 3, and variable sand, clay and silt in Area 4 and Area 5. The borehole, drilled to a maximum depth of 13.10m in Area 4, encountered Made Ground of red brown clayey gravel and blue grey sandy organic clay underlain by firm grey brown mottled dark grey fissured clay (interpreted as Alluvium), further underlain by grey brown very sandy flint gravel, likely to represent River Terrace Deposits. Groundwater was struck at a depth of 5.80m bgl, rising to 5.10m after a 20 minute interval.

Geotechnical testing was carried out on representative soil samples along with testing for a suite of metals, asbestos, chloride, pH, SVOC, TPH (total mineral oil) and glycol. No interpretation of the data was presented in the report. However, the results do not indicate that significant contamination was encountered within the Made Ground in any areas of the site which were investigated. Localised elevated concentrations of metals were detected but metal contamination does not appear to have been widespread. Total TPH was detected within the majority of samples, although no speciated analysis was undertaken. Also, with the exception of occasional occurrences of PAH compounds, the SVOC concentrations were generally below or close to the laboratory limits of detection.

Factual Report on Ground Investigation, London City Airport – Phase 2 Airside Improvement Programme, by Soil Mechanics Limited, dated October 2001

Soil Mechanics undertook an additional intrusive ground investigation for the Airside Improvement Programme on behalf of London City Airport Limited between 5th March and 4th May 2001. The investigation comprised the drilling of 17 boreholes through the base of KGV Dock, in areas known as Area 1 (western half of the dock) and Area 2 (eastern half of the dock). Boreholes were drilled to a maximum depth of 25.80m below the base of the dock.

Ground conditions comprised dark grey silt (Alluvium) underlain by sandy gravel (River Terrace Deposits). The Thanet Formation was encountered beneath the River Terrace Deposits in Area 1, but this stratum was absent beneath the eastern area of the dock. Chalk was encountered beneath the Thanet Formation in the western area of KGV Dock at depths ranging between approximately 15m and 20m below the base of the Dock. The Chalk was encountered beneath the River Terrace Deposits at much shallower depth in the eastern area of the Dock, at depths ranging between 2m and 3m below its base.

Depths to groundwater ranged from 9.20m to 12.40m in Area 1 and 10.70m and 11.60m in Area 2, indicating a relatively consistent groundwater body within the Thanet Formation and Chalk.

As part of this 2001 investigation, geotechnical testing was undertaken on a number of samples. However, no laboratory testing for potential contaminants of concern was undertaken.

Contaminated Land Survey at London City Airport – Interpretive Report, by FUGRO Engineering Services Ltd, dated February 2006

FUGRO Engineering Services Ltd was commissioned in February 2006 to carry out an intrusive ground investigation at the Airport. The objective of this investigation was to provide information on potential issues associated with land contamination that could impact the proposed development of a taxiway and parking apron in the far western area of the Airport.

A total of eight trial pits were excavated and chemical analysis, waste acceptance criteria and leachate testing was undertaken on selected soil samples. A degree of hydrocarbon and metal contamination was identified within shallow soils. Groundwater analysis was not undertaken; however, the leachate test results indicated the presence of potentially mobile soil contaminants, including metals and hydrocarbons. It was concluded that the proposed development at that time, which would have comprised the excavation of Made Ground to a depth of 2.00m bgl and replacement with a concrete apron, would provide a suitable form of remediation. However, a further site investigation was recommended in order to delineate the extent of ground contamination.

London City Airport Aircraft Stands and Car Park – Phase 2 Site Investigation Report, by RPS, Ref: HLEC3237/004R, dated May 2008

An intrusive ground investigation was carried out by RPS during May 2008 at the Hartmann Road staff car park in the southwest of the Airport and of land to the east of this car park, which comprised a slope with an electricity sub-station. The investigation was undertaken in relation to proposals to redevelop this part of the site into aircraft stands and an underground car park (Note: these proposals were not subsequently pursued by the Airport). Several potentially contaminative land uses previously occupied this area, including the composition works and a paint works.

The investigation comprised the drilling of seven window sampler boreholes, advanced to a maximum depth of 5.00m bgl; three cable percussive boreholes, advanced to a maximum depth of 30.00m bgl; seven trial pits, excavated to a maximum depth of 3.80m bgl; and, the installation of ten groundwater / ground gas monitoring wells. Three rounds of groundwater and ground gas monitoring were also undertaken.

Encountered ground conditions comprised concrete underlain by Made Ground constituting ashly clay, sand and gravel with varying amounts of brick, metal, clinker, pottery and wood to depths of between 1.20m and 3.60m bgl. Alluvium was recorded beneath the Made Ground, underlain by the River Terrace Deposits and Thanet Formation. Some visual and olfactory evidence of hydrocarbon contamination was recorded within the Made Ground and Alluvium.

A degree of ground contamination (hydrocarbons and metals) was identified within the Made Ground and shallow natural Alluvium. However, due to the commercial nature of the site, and the extensive hardstanding and building cover, the contamination was not considered to pose a significant risk to future site users due to the absence of an active exposure pathway. No elevated concentrations of contaminants were recorded within groundwater sampled from the Alluvium, River Terrace Deposits or Thanet Formation. This indicated that the contamination had not impacted shallow groundwater and was unlikely to migrate from this area of the site via the groundwater migration pathway.

Ground gas monitoring data was indicative of CIRIA Characteristic Situation 2 (CS2), whereby basic gas protection measures would need to be installed into future site buildings.

Environmental Investigation Report – BP Air Fuel Storage Area, London City Airport, Royal Dock, London, by Subadra, dated January 2011

Subadra was commissioned to carry out an intrusive site investigation during November and December 2011 at the BP Fuel Storage Area in the west of the Airport, approximately 5m north of Camel Road and the DLR viaduct. This site comprised a tanker off-loading facility and a central bund structure containing four fuel

storage tanks. The purpose of the investigation was to determine whether past or current land uses in this area had led to contamination of underlying groundwater and soils.

The Subdara report includes a review of two previous reports relating to this area, as follows:

- a) Assessment of Environmental Impact at UK Aviation Terminals, September 1993, completed by Land Restoration Systems on behalf of BP; this report included a summary of the history of this area, which was formerly a 'composition works' and later a works. The report included anecdotal evidence that remedial works may have been undertaken at the site, required as a result of historical contamination. The remedial works reportedly comprised excavation of soils to a depth of 1.00m bgl and placement of an impermeable membrane prior to development of the fuel depot.
- b) London City Airport Environmental Compliance Audit, September 2007, completed by Wardell Armstrong LLP on behalf of BP Air; this report detailed the results of an environmental compliance audit completed at the BP Air fuel storage depot and associated air-side fuelling station. No intrusive works were completed as part of the investigation. The report mentions that remedial works may have been undertaken in the past.

Subadra carried out some additional research into the possibility that remedial works may have been carried out at the site. The construction engineers confirmed that remedial works were carried out for geotechnical ground improvement purposes in order to provide a suitable founding layer for the fuel tanks. Clay soils from this area were excavated and a geotextile membrane was placed prior to backfilling of the excavation with compacted granular material.

Five direct-push boreholes were drilled to a maximum depth of 5.00m bgl and two hand-pits were excavated to a maximum depth of 1.20m bgl. Soil and groundwater samples were collected and analysed for a range of contaminants. Ground conditions comprised hardstanding underlain by Made Ground of gravel, concrete and brick fragments, underlain by a layer of Made Ground of soft slightly sandy clay. Beneath the Made Ground, natural clay and peat were encountered (Alluvium). Hydrocarbon odours were noted in soil samples collected from one borehole, with a sheen noted on groundwater at this location. Hydrocarbon odours were also noted in one hand pit. Free phase hydrocarbons were encountered in a second borehole product.

Soil and groundwater analysis indicated that kerosene range hydrocarbons were present in shallow soils and groundwater underlying the northeast of the site. However, as this contamination was found beneath a thick layer of concrete and block paving, the risk to human receptors was considered to be negligible.

Due to the low permeability of the Alluvium, it was considered unlikely that contamination within perched groundwater would migrate to other parts of the Airport site.

Environmental Investigation Report - BP Air Airside Fuel Loading Area, London City Airport, Royal Dock, London, by Subadra, dated January 2011

On 26th November 2011, Subadra carried out an 'airside' intrusive site investigation, approximately 5m to the north of Connaught Road in the western end of the Airport. The area of investigation comprised a fuelling island and fuel loading area for aviation fuelling tankers with an underground tank, wasted drum storage and an oil/water interceptor. The investigation was undertaken to establish whether there was any existing diesel contamination in the underlying soils or groundwater, prior to the fuelling facilities being taken over by London City Airport.

The investigation comprised the drilling of three direct-push geoprobe boreholes advanced to a maximum depth of 4.80m. One borehole was located on the airside pavement and two were located within the loading bay. Ground conditions comprised hardstanding (block paving underlain by a sand layer and concrete) and Made Ground of compacted concrete and brick in-fill. The Made Ground was underlain by natural soils comprising soft Alluvium with interbedded peat layers. No olfactory or visual signs of contamination were observed.

Soil samples from all three boreholes were analysed for a range of contaminants including TPH, PAH and VOCs. Hydrocarbons were only detected within one sample; this was taken from the sand layer between the block paving and concrete hardstanding. Hydrocarbons within this sample were thought to relate to surface diesel spillage that did not appear to have impacted soils beneath the concrete layer.

Groundwater samples were only collected from two of the three boreholes as one monitoring well was dry. The samples were analysed for TPH and VOCs. 1,2,4-trimethylbenzene was detected within one sample; none of the other hydrocarbon contaminants of concern were detected within the water samples.

Overall, it was considered that there was no evidence of significant hydrocarbon contamination within soil or groundwater in this area of the site. Furthermore, the low permeability of the underlying Alluvium was considered likely to restrict migration of any contamination from this area.

London City Airport Ledger Building Site Investigation, by Keltbray Environmental, dated June 2011

Keltbray Environmental undertook an intrusive ground investigation during June 2011 in the southwest of the Airport across the Hartmann Road staff car park. This included land adjacent to the east of the tank farm and to the southwest of the Ledger Building. The investigation was undertaken to assess the potential for contamination to exist in soils in this area in relation to proposals to construct additional office space to replace the former Ledger Building (now demolished).

A total of eight probeholes were drilled to a maximum depth of 3.00m bgl using a hand held geoprobe. Beneath a concrete slab, ground conditions were described as sandy, ashy, slightly clayey, gravelly fill with man-made fragments including brick to approximately 1.30m bgl. This Made Ground was underlain by soft to firm, grey clay with occasional black mottling and a slight hydrocarbon odour, interpreted as Alluvium.

A total of 31 soil samples were collected and analysed for a range of contaminants including TPH, PAH, metals and asbestos. However, an assessment of the analytical results was not included within the report.

Environmental Site Assessment Report – BP Northair Fuel Storage and Distribution Areas, London City Airport, Royal Docks, London E16 2PB, ref 807880106, by ARCADIS (UK Ltd), dated February 2013

ARCADIS (UK) Ltd was commissioned by Air BP Limited and London City Airport to carry out a desk study and intrusive site investigation for the Landside Jet A1 Fuel Storage Area (Landside Site) and the Airside Fuel Distribution and Storage Area (Airside Site). The objective of the investigation was to assess whether hydrocarbon contaminants of concern may be present in soil or groundwater beneath the site and to undertake a risk based evaluation of the findings. The report makes reference to the investigations carried out by Subadra, as summarised above.

The intrusive investigation included the drilling of four boreholes to a maximum depth of 6.00m at each of the Landside and Airside sites. Ground conditions comprised Made Ground to a depth of 2.40m bgl, underlain by silty clayey sand (Alluvium). Analysis for potential hydrocarbon contaminants was completed on soil and groundwater samples and the results were screened against generic assessment criteria derived by ARCADIS for the protection of human health and controlled waters.

None of the measured concentrations exceeded the generic assessment criteria for the protection of human health. However, a number of the measured concentrations exceeded the generic assessment criteria for the protection of controlled waters. It was concluded that further assessment of the risks to controlled waters was required, and this was subsequently carried out by ARCADIS with the findings detailed in the report summarised below.

Detailed Quantitative Risk Assessment – London City Airport, by ARCADIS, dated March 2013

ARCADIS (UK) Ltd was commissioned by Air BP Limited and London City Airport to carry out a Detailed Quantitative Risk Assessment (DQRA) for the Landside Jet A1 Fuel Storage Area (Landside Site) and the Airside Fuel Distribution and Storage Area (Airside Site) between December 2012 and February 2013. The assessment was carried out to further characterise and evaluate the risks associated with petroleum hydrocarbon-related impacts on the site.

The DQRA was undertaken using CLEA v.1.06, RBCA v. 2.5 and RTW 3.1 in order to provide risk-based assessment criteria to determine whether the measured concentrations of contaminants would pose a risk to watercourses or off-site human health receptors. Following comparison of the data to the Site Specific Assessment Criteria, none of the measured concentrations exceeded the criteria for the protection of human health. Although some concentrations measured were in exceedance of the screening criteria for the protection of controlled waters, it was considered that these did not pose an unacceptable risk to water resource receptors.

London City Airport Aircraft City Airport Development Programme – Phase 1 Preliminary Risk Assessment, by RPS, Ref: HLEI19695/001R, dated May 2013

A Phase 1 Preliminary Risk Assessment was undertaken by RPS in May 2013, in support of the application for the development of a new western extension, arrivals building, forecourt, hotel and car parking under the CADP. It was considered that there was potential for ground contamination to exist beneath the site, originating from Made Ground as a result of previous demolition/construction activity and the infilling of Woolwich Reach inlet, the previous industrial uses of the site, off-site historical industrial land uses and the current use of the site as an Airport.

It was considered that provided appropriate mitigation measures were incorporated into the proposed development (if required) the risks to on site human health receptors would be low. The risk to controlled waters and other off-site receptors was considered to be low to moderate.

An intrusive site investigation was subsequently to determine whether any significant contamination was present beneath the site and to further assess the risk to the identified receptors. A summary of the site investigation is provided below.

City Airport Development Programme, London City Airport – Phase 2 Environmental Site Investigation, by RPS, Ref: HLEI24974/001R Rev 2/004R, dated April 2013

Twenty-one window sample boreholes were advanced to depths between 0.50m and 5.00m bgl; seven hand dug trial pits were excavated; and thirteen groundwater/ground gas monitoring were installed. Made Ground was encountered in all of the boreholes and typically consisted of reworked natural materials (alluvium and River Terrace Deposits). Depths to water during monitoring in the boreholes ranged from 1.96m bgl at the eastern extent of the site to up to 4.22m bgl in the vicinity of the existing terminal building. Groundwater flow appeared to be towards the west.

A total of 30 samples of Made Ground were analysed for a broad range of contaminants of concern. None of the determinands tested for were recorded at concentrations in excess of RPS derived screening values protective of on site human health receptors. Arsenic was recorded above the relevant screening criteria

within groundwater samples collected from two monitoring wells. Copper was detected at concentrations marginally in excess of relevant assessment criteria within a number of groundwater samples. However, the risk to groundwater from contaminants of contamination sourced from the site was considered to be low.

Ground gas monitoring was undertaken on three occasions. Under CIRIA Report C665, the ground gas regime for the site corresponded to Characteristic Situation 1 (CS1), whereby gas protection measures would not be required for new developments. However, as the carbon dioxide concentrations exceeded 5% and methane concentrations exceeded 1%, CIRIA C665 recommends that consideration should be given to increasing the classification to Characteristic Situation 2 (CS2), where basic specific gas protection measures would be required for new buildings.

London City Airport Western Terminal Extension – Phase 2 Environmental and Geotechnical Site Investigation Report, by RPS, Ref: HLEI32363/001R, dated December 2014

The investigation comprised five cable percussion boreholes to depths ranging from 20.00m to 25.00m bgl with the installation of groundwater/ground gas monitoring wells. Made Ground was encountered in each borehole underlain by Alluvium, River Terrace Deposits and the Thanet Formation (encountered at depth).

Lead and asbestos were recorded within Made Ground sampled from beneath the site. However, it was considered that as following redevelopment, this area would comprise building cover, the pathways of dermal contact or ingestion to future site users would not be active. The potential for air-borne migration of soil or dust to impact neighbouring receptors would also be negligible. Based on the available information, the potential risk to human health receptors from potential contaminants of concern sourced from the site was considered to be low.

Sulphate, selenium, cyanide, TPH CWG and PAH were recorded at concentrations in excess of their relevant AC, within groundwater samples collected from beneath the site. All of these exceedances were in relation to UK DWS screening criteria, which were considered overly conservative, given the limited resource potential of the Secondary and Principal Aquifers in the vicinity of the site.

The nearest surface water receptors to the site were considered to be the KGV and Royal Albert Docks. These feed into the River Thames, which, due to its large dilution potential, was not considered to be at significant risk from the relatively minor concentrations of contaminants of concern within groundwater samples collected from beneath the site. On the basis of the above, the potential for concentrations of contaminants of concern sourced from the site to pose a significant risk to groundwater receptors was considered to be low.

Ground gas monitoring undertaken as part of the investigation indicated that CIRIA Characteristic Situation 3 (CS3) was applicable to the site, whereby ground gas protection measures would be required. However,

taking into account ground gas concentrations within wells screened within the Made Ground and Alluvium only (and not taking into account flooded response zones) the ground gas regime at the site was considered to correspond to Characteristic Situation 2 (CS2), whereby nominal gas protection measures would be required. It was considered that these could comprise a well-constructed floor slab with minimal service penetrations and a gas proof membrane or passive underfloor venting. This characterisation was therefore deemed more appropriate, based on likely sources of ground gas associated with the site. Assuming the recommended mitigation measures were adopted, the risk posed by ground gas to on site human health receptors and infrastructure was considered to be low.

RPS cannot vouch for the accuracy of the information provided within third party reports and legal reliance should be sought from the original authors of these reports where their content is considered material to the characterisation of the site.



APPENDIX E

Laboratory Certificates



Michael Andrews

RPS Group
14 Cornhill
London
EC3V 3ND

i2 Analytical Ltd.
Building 19,
BRE,
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WD25 9XX

t: 02072803200
f: 020 7928 0708
e:

t: 01923 67 00 20
f: 01923 67 00 30
e: reception@i2analytical.com

Analytical Report Number : 13-39893

Project / Site name: London City Airport, HLEI 24974

Samples received on: 20/02/2013

Your job number: HLEI 24974

Samples instructed on: 20/02/2013

Your order number:

Analysis completed by: 07/03/2013

Report Issue Number: 1

Report issued on: 07/03/2013

Samples Analysed: 27 soil samples

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248123	248124	248125	248126	248127
Sample Reference				WS1	WS3	WS3	WS4	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	1.50	0.80	2.00
Date Sampled				12/02/2013	11/02/2013	11/02/2013	11/02/2013	11/02/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	42	37
Moisture Content	%	N/A	NONE	21	13	11	7.9	5.2
Total mass of sample received	kg	0.001	NONE	0.48	0.50	0.50	0.42	0.50

General Inorganics

pH	pH Units	N/A	MCERTS	10.1	8.4	8.5	8.2	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	3.2	0.84	1.4	0.21	0.22
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	3200	840	1400	210	220
Sulphide	mg/kg	1	MCERTS	43	9.8	7.0	18	1.4
Organic Matter	%	0.1	MCERTS	2.9	1.4	1.4	6.8	0.7

Total Phenols

Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.38	0.52	< 0.05	1.2	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	0.22	0.20	0.29	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	0.22	0.59	0.27	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	0.31	0.46	0.41	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	3.1	3.6	4.3	7.5	< 0.20
Anthracene	mg/kg	0.1	MCERTS	0.74	1.0	1.3	2.5	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	6.2	6.6	7.1	12	< 0.20
Pyrene	mg/kg	0.2	MCERTS	5.4	5.8	6.5	12	< 0.20
Benzo(a)anthracene	mg/kg	0.2	MCERTS	3.4	3.8	3.9	6.9	< 0.20
Chrysene	mg/kg	0.05	MCERTS	2.8	2.9	3.3	6.8	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.3	3.2	3.5	10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	2.5	2.7	2.9	3.6	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	2.9	3.2	3.4	7.3	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	1.3	1.3	1.5	3.7	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	0.46	0.40	0.46	1.0	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5	1.5	1.7	4.3	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	35	38	41	79	< 1.6
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	44	18	25	40	13
Boron (water soluble)	mg/kg	0.2	MCERTS	5.6	1.2	2.3	3.0	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.2	0.4	0.6	1.9	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	72	32	36	49	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	130	79	81	450	17
Lead (aqua regia extractable)	mg/kg	2	MCERTS	320	220	300	620	24
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	15	1.4	2.6	18	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	30	27	34	61	36
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	470	300	280	870	47

Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248123	248124	248125	248126	248127
Sample Reference				WS1	WS3	WS3	WS4	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	1.50	0.80	2.00
Date Sampled				12/02/2013	11/02/2013	11/02/2013	11/02/2013	11/02/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	1.1	1.3	< 1.0	44	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	2.1	< 2.0	< 2.0	1600	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	16	11	< 8.0	2900	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	160	56	58	2000	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	180	69	58	6500	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	4.5	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	560	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	12	17	21	1400	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	41	31	26	920	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	52	48	47	2900	< 10

Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248128	248129	248130	248131	248132
Sample Reference				WS6	WS6	WS7	WS7	WS8
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				3.00	4.50	0.50	2.80	0.50
Date Sampled				15/02/2013	15/02/2013	19/02/2013	19/02/2013	15/02/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	44	< 0.1	44
Moisture Content	%	N/A	NONE	48	21	7.9	18	6.4
Total mass of sample received	kg	0.001	NONE	0.41	0.48	0.50	0.51	0.51

General Inorganics

pH	pH Units	N/A	MCERTS	8.0	7.8	9.0	7.5	8.8
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	1.4	0.25	0.14	0.13	0.14
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	1400	250	140	130	140
Sulphide	mg/kg	1	MCERTS	87	7.5	5.2	< 1.0	< 1.0
Organic Matter	%	0.1	MCERTS	14	0.6	0.7	1.7	< 0.1

Total Phenols

Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	0.71	< 0.20	0.40	< 0.20	< 0.20
Anthracene	mg/kg	0.1	MCERTS	0.25	< 0.10	0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	1.2	< 0.20	0.98	< 0.20	< 0.20
Pyrene	mg/kg	0.2	MCERTS	1.0	< 0.20	0.95	< 0.20	< 0.20
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.61	< 0.20	0.67	< 0.20	< 0.20
Chrysene	mg/kg	0.05	MCERTS	0.55	< 0.05	0.58	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.68	< 0.10	0.69	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.25	< 0.20	0.57	< 0.20	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.49	< 0.10	0.66	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	0.29	< 0.20	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.40	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	5.8	< 1.6	6.4	< 1.6	< 1.6
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	37	12	8.3	13	5.8
Boron (water soluble)	mg/kg	0.2	MCERTS	19	3.1	< 0.2	0.6	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	< 0.2	0.3	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	35	43	19	34	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	31	16	21	58	13
Lead (aqua regia extractable)	mg/kg	2	MCERTS	42	22	130	51	5.1
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.4	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	21	28	13	26	8.3
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	2.4	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	210	88	250	69	40

Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248128	248129	248130	248131	248132
Sample Reference				WS6	WS6	WS7	WS7	WS8
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				3.00	4.50	0.50	2.80	0.50
Date Sampled				15/02/2013	15/02/2013	19/02/2013	19/02/2013	15/02/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	15	< 8.0	27	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	15	< 10	27	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	17	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	17	< 10	< 10	< 10	< 10

Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248133	248134	248135	248136	248137
Sample Reference				WS8	WS9	WS10	WS10	WS11(A)
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				3.10	1.20	2.30	3.90	0.80
Date Sampled				15/02/2013	15/02/2013	15/02/2013	15/02/2013	15/02/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	23	40	29	74	5.5
Total mass of sample received	kg	0.001	NONE	0.38	0.42	0.48	0.33	0.58

General Inorganics

pH	pH Units	N/A	MCERTS	7.8	5.2	6.9	6.4	7.2
Total Cyanide	mg/kg	1	MCERTS	< 1	2	< 1	< 1	< 1
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	0.59	6.9	0.37	2.2	0.099
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	590	6900	370	2200	98
Sulphide	mg/kg	1	MCERTS	7.8	2.0	49	42	< 1.0
Organic Matter	%	0.1	MCERTS	7.1	16	6.5	40	< 0.1

Total Phenols

Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	1.1	< 0.05	0.26	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	0.15	< 0.10	0.37	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	0.28	< 0.20	0.35	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	2.5	0.77	3.8	< 0.20	< 0.20
Anthracene	mg/kg	0.1	MCERTS	0.60	0.22	0.75	< 0.10	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	5.0	1.1	5.8	< 0.20	< 0.20
Pyrene	mg/kg	0.2	MCERTS	4.6	1.1	5.2	< 0.20	< 0.20
Benzo(a)anthracene	mg/kg	0.2	MCERTS	3.8	0.81	3.4	< 0.20	< 0.20
Chrysene	mg/kg	0.05	MCERTS	3.2	0.56	2.6	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.7	0.75	3.1	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	3.0	0.59	2.5	< 0.20	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	3.6	0.70	2.9	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	1.7	0.36	1.3	< 0.20	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	0.46	< 0.20	0.38	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.8	0.42	1.5	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	36	7.4	34	< 1.6	< 1.6
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	120	21	26	10	11
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	4.1	4.6	15	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.6	0.2	0.4	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	60	40	78	35	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	2200	58	100	19	5.1
Lead (aqua regia extractable)	mg/kg	2	MCERTS	1500	82	300	13	5.4
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	2.3	0.3	0.9	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	72	21	39	25	18
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.7	< 1.0	1.3	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	640	87	290	60	21

Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248133	248134	248135	248136	248137
Sample Reference				WS8	WS9	WS10	WS10	WS11(A)
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				3.10	1.20	2.30	3.90	0.80
Date Sampled				15/02/2013	15/02/2013	15/02/2013	15/02/2013	15/02/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	26	< 8.0	13	23	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	26	< 10	13	23	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	13	< 10	18	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	26	< 10	54	32	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	39	< 10	72	32	< 10

Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248138	248139	248140	248141	248142
Sample Reference				WS11(A)	WS13	WS13	WS16	WS17
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	1.30	3.70	0.80	1.20
Date Sampled				15/02/2013	12/02/2013	12/02/2013	14/02/2013	17/02/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	69	< 0.1	69	57	51
Moisture Content	%	N/A	NONE	11	27	6.1	4.6	9.6
Total mass of sample received	kg	0.001	NONE	0.87	0.53	0.59	0.53	0.31

General Inorganics

pH	pH Units	N/A	MCERTS	4.3	6.7	7.1	8.2	8.3
Total Cyanide	mg/kg	1	MCERTS	2	< 1	< 1	< 1	< 1
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	3.4	0.25	0.053	0.032	0.059
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	3400	250	53	32	59
Sulphide	mg/kg	1	MCERTS	3.6	38	1.8	13	< 1.0
Organic Matter	%	0.1	MCERTS	4.6	4.2	0.7	< 0.1	< 0.1

Total Phenols

Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(a)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.4	12	13	9.1	21
Boron (water soluble)	mg/kg	0.2	MCERTS	1.6	1.3	< 0.2	< 0.2	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.3	< 0.2	< 0.2	0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	30	25	23	35
Copper (aqua regia extractable)	mg/kg	1	MCERTS	8.2	23	10	10	15
Lead (aqua regia extractable)	mg/kg	2	MCERTS	9.3	24	14	20	9.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	26	42	27	22	35
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.2	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	47	89	39	36	180

Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248138	248139	248140	248141	248142
Sample Reference				WS11(A)	WS13	WS13	WS16	WS17
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	1.30	3.70	0.80	1.20
Date Sampled				15/02/2013	12/02/2013	12/02/2013	14/02/2013	17/02/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	11	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	22	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	11	17	< 8.0	< 8.0	11
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	11	50	< 10	< 10	11
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	4.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	11	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	15	< 10	< 10	< 10

Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248143	248144	248145	248146	248147
Sample Reference				WS17	WS21	WS22	WS23	WS23
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	0.50	1.60	1.00-1.20	2.00-2.20
Date Sampled				13/02/2013	13/02/2013	13/02/2013	14/02/2013	14/02/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	29	5.3	24	21	25
Total mass of sample received	kg	0.001	NONE	0.44	0.51	0.47	0.54	0.56

General Inorganics

pH	pH Units	N/A	MCERTS	7.7	8.6	7.8	7.5	8.0
Total Cyanide	mg/kg	1	MCERTS	1	< 1	< 1	< 1	< 1
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	0.77	1.0	0.21	0.49	0.52
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	770	1000	210	490	520
Sulphide	mg/kg	1	MCERTS	120	160	18	75	97
Organic Matter	%	0.1	MCERTS	5.4	4.1	3.8	2.7	3.3

Total Phenols

Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.55	< 0.05	< 0.05	1.2	0.93
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	0.43	< 0.20	0.26	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	0.40	0.67	< 0.10	1.0	0.99
Fluorene	mg/kg	0.2	MCERTS	0.55	0.47	< 0.20	1.0	0.69
Phenanthrene	mg/kg	0.2	MCERTS	2.9	7.7	< 0.20	6.1	2.6
Anthracene	mg/kg	0.1	MCERTS	0.78	2.5	< 0.10	1.7	0.81
Fluoranthene	mg/kg	0.2	MCERTS	5.8	16	< 0.20	9.0	3.9
Pyrene	mg/kg	0.2	MCERTS	4.9	14	< 0.20	8.0	3.3
Benzo(a)anthracene	mg/kg	0.2	MCERTS	3.3	8.5	< 0.20	5.4	2.2
Chrysene	mg/kg	0.05	MCERTS	2.6	5.9	< 0.05	4.3	1.7
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.0	6.6	< 0.10	4.5	1.6
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	2.3	5.7	< 0.20	3.6	1.3
Benzo(a)pyrene	mg/kg	0.1	MCERTS	2.7	7.0	< 0.10	4.3	1.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	1.3	3.0	< 0.20	1.6	0.59
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	0.39	0.88	< 0.20	0.61	0.23
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.4	3.4	< 0.05	1.8	0.72

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	33	83	< 1.6	54	23
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	41	12	14	24	19
Boron (water soluble)	mg/kg	0.2	MCERTS	4.1	1.0	2.4	1.3	3.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	0.3	2.1	0.3	0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	29	25	27	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	130	41	670	91	140
Lead (aqua regia extractable)	mg/kg	2	MCERTS	510	130	640	680	410
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	3.7	0.4	1.7	2.9	2.2
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	38	20	29	21	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	250	140	1400	140	91

Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248143	248144	248145	248146	248147
Sample Reference				WS17	WS21	WS22	WS23	WS23
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.10	0.50	1.60	1.00-1.20	2.00-2.20
Date Sampled				13/02/2013	13/02/2013	13/02/2013	14/02/2013	14/02/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	2.5	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	17	< 8.0	< 8.0	26	29
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	51	220	< 8.0	9.6	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	71	220	< 10	36	29
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	2.3	6.2	< 2.0	4.3	2.5
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	24	75	< 10	58	64
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	66	710	29	87	78
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	92	790	29	150	140

Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248148	248149			
Sample Reference				WS18	WS19			
Sample Number				None Supplied	None Supplied			
Depth (m)				1.00	1.80			
Date Sampled				19/02/2013	19/02/2013			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	5.2	19			
Total mass of sample received	kg	0.001	NONE	0.51	1.1			

General Inorganics

pH	pH Units	N/A	MCERTS	5.0	8.1			
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	0.53	0.11			
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	530	110			
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0			
Organic Matter	%	0.1	MCERTS	0.4	0.5			

Total Phenols

Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0			
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Benzo(a)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10			
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.6	< 1.6			
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	3.5			
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	21			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	7.6	11			
Lead (aqua regia extractable)	mg/kg	2	MCERTS	9.7	4.9			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	11	19			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	17	34			

Analytical Report Number: 13-39893

Project / Site name: London City Airport, HLEI 24974

Lab Sample Number				248148	248149			
Sample Reference				WS18	WS19			
Sample Number				None Supplied	None Supplied			
Depth (m)				1.00	1.80			
Date Sampled				19/02/2013	19/02/2013			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0			

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0			
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0			
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10			

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10			
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10			
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10			

Analytical Report Number : 13-39893

Project / Site name: London City Airport, HLEI 24974

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content

of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
248123	WS1	None Supplied	0.50	Brown sandy clay with rubble.
248124	WS3	None Supplied	0.50	Brown clay and sand with rubble.
248125	WS3	None Supplied	1.50	Brown topsoil and sand with rubble.
248126	WS4	None Supplied	0.80	Brown topsoil and sand with gravel and stones.
248127	WS4	None Supplied	2.00	Brown sandy gravel with stones.
248128	WS6	None Supplied	3.00	Brown sandy topsoil.
248129	WS6	None Supplied	4.50	Grey sandy clay.
248130	WS7	None Supplied	0.50	Brown sandy gravel with stones.
248131	WS7	None Supplied	2.80	Brown sandy clay.
248132	WS8	None Supplied	0.50	Light brown gravelly sand with stones.
248133	WS8	None Supplied	3.10	Brown topsoil and sand with gravel and coal.
248134	WS9	None Supplied	1.20	Brown sandy topsoil.
248135	WS10	None Supplied	2.30	Brown sandy clay.
248136	WS10	None Supplied	3.90	Brown sandy topsoil.
248137	WS11(A)	None Supplied	0.80	Brown gravelly sand.
248138	WS11(A)	None Supplied	2.00	Light brown topsoil and sand with stones.
248139	WS13	None Supplied	1.30	Brown clay and sand with gravel.
248140	WS13	None Supplied	3.70	Brown clay and gravel with stones.
248141	WS16	None Supplied	0.80	Light brown gravelly sand with stones.
248142	WS17	None Supplied	1.20	Light brown gravelly sand with stones.
248143	WS17	None Supplied	2.10	4.16.3.17
248144	WS21	None Supplied	0.50	Brown topsoil and sand with rubble.
248145	WS22	None Supplied	1.60	Brown clay and sand with gravel.
248146	WS23	None Supplied	1.00-1.20	Grey sandy clay with gravel.
248147	WS23	None Supplied	2.00-2.20	Grey sandy clay with gravel.
248148	WS18	None Supplied	1.00	Light brown sandy gravel.
248149	WS19	None Supplied	1.80	Light brown sandy clay.

Analytical Report Number : 13-39893

Project / Site name: London City Airport, HLEI 24974

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.



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Analytical Report Number : 13-40361

Project / Site name: LCA

Samples received on: 25/02/2013

Your job number:

Samples instructed on: 25/02/2013

Your order number:

Analysis completed by: 14/03/2013

Report Issue Number: 1

Report issued on: 14/03/2013

Samples Analysed: 3 soil samples - 9 water samples

Signed:

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Rexona Rahman
Customer Services Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250710	250711	250712		
Sample Reference				WS2	WS14	WS15		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	1.00	2.70		
Date Sampled				Deviating	Deviating	Deviating		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	14	< 0.1		
Moisture Content	%	N/A	NONE	24	5.3	42		
Total mass of sample received	kg	0.001	NONE	2.0	2.0	2.0		

General Inorganics

pH	pH Units	N/A	MCERTS	7.9	8.1	7.6		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	2		
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	2.9	0.036	1.3		
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	2900	36	1300		
Sulphide	mg/kg	1	MCERTS	7.4	4.7	110		
Organic Matter	%	0.1	MCERTS	4.6	0.1	4.7		

Total Phenols

Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
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Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250710	250711	250712		
Sample Reference				WS2	WS14	WS15		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	1.00	2.70		
Date Sampled				Deviating	Deviating	Deviating		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20		
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.46		
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	0.36		
Phenanthrene	mg/kg	0.2	MCERTS	0.86	< 0.20	2.5		
Anthracene	mg/kg	0.1	MCERTS	0.19	< 0.10	0.91		
Fluoranthene	mg/kg	0.2	MCERTS	2.2	< 0.20	6.9		
Pyrene	mg/kg	0.2	MCERTS	1.9	< 0.20	5.2		
Benzo(a)anthracene	mg/kg	0.2	MCERTS	1.1	< 0.20	3.3		
Chrysene	mg/kg	0.05	MCERTS	1.1	< 0.05	3.3		
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	1.2	< 0.10	4.1		
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.61	< 0.20	1.3		
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.92	< 0.10	2.6		
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	0.47	< 0.20	1.1		
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	0.25		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.56	< 0.05	1.3		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	11	< 1.6	34		
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Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250710	250711	250712		
Sample Reference				WS2	WS14	WS15		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	1.00	2.70		
Date Sampled				Deviating	Deviating	Deviating		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	13	55		
Boron (water soluble)	mg/kg	0.2	MCERTS	4.9	< 0.2	4.1		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	< 0.2	0.8		
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	21	67		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	57	22	140		
Lead (aqua regia extractable)	mg/kg	2	MCERTS	140	18	420		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	2.2	< 0.3	6.6		
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	25	22	35		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	1.5		
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	170	59	400		



Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250710	250711	250712		
Sample Reference				WS2	WS14	WS15		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	1.00	2.70		
Date Sampled				Deviating	Deviating	Deviating		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		

Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250710	250711	250712		
Sample Reference				WS2	WS14	WS15		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	1.00	2.70		
Date Sampled				Deviating	Deviating	Deviating		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	8.6		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	51		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	8.2	< 8.0	110		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	170		
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	2.1		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	36		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	83		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	120		



Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250700	250701	250702	250703	250704
Sample Reference				WS3	WS4	WS6	WS7	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH Units	N/A	ISO 17025	7.3	7.9	7.4	7.0	6.9
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO ₄	ug/l	45	ISO 17025	977000	209000	674000	622000	352000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	I/S

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
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Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250700	250701	250702	250703	250704
Sample Reference				WS3	WS4	WS6	WS7	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status		

Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	I/S

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	I/S
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Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250700	250701	250702	250703	250704
Sample Reference				WS3	WS4	WS6	WS7	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	9.2	40	12	1300	90
Boron (dissolved)	µg/l	10	ISO 17025	560	570	370	480	720
Cadmium (dissolved)	µg/l	0.1	ISO 17025	0.76	< 0.10	< 0.10	< 0.10	< 0.10
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.3	23	1.2	1.1	5.7
Copper (dissolved)	µg/l	0.7	ISO 17025	15	35	4.0	5.4	12
Lead (dissolved)	µg/l	1	ISO 17025	6.6	32	2.2	11	52
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	20	7.8	9.7	20	4.5
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	490	50	85	76	84



Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250700	250701	250702	250703	250704
Sample Reference				WS3	WS4	WS6	WS7	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)								
	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons



Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250700	250701	250702	250703	250704
Sample Reference				WS3	WS4	WS6	WS7	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					
TPH-CWG - Aliphatic >C5 - C6	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	I/S
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	I/S
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	I/S
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	I/S
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	I/S
TPH-CWG - Aromatic >C5 - C7	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aromatic >C7 - C8	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aromatic >C8 - C10	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	I/S
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	I/S
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	I/S
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	I/S
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	I/S

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



Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250705	250707	250708	250709	
Sample Reference				WS13	WS17	WS18	WS22	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				Deviating	Deviating	Deviating	Deviating	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH Units	N/A	ISO 17025	7.1	7.3	7.5	7.2	
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	
Sulphate as SO ₄	ug/l	45	ISO 17025	93600	259000	83600	49100	
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	
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Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250705	250707	250708	250709	
Sample Reference				WS13	WS17	WS18	WS22	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				Deviating	Deviating	Deviating	Deviating	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	
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Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250705	250707	250708	250709	
Sample Reference				WS13	WS17	WS18	WS22	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				Deviating	Deviating	Deviating	Deviating	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	10	7.7	2.8	33	
Boron (dissolved)	µg/l	10	ISO 17025	370	460	110	740	
Cadmium (dissolved)	µg/l	0.1	ISO 17025	< 0.10	< 0.10	< 0.10	< 0.10	
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	
Chromium (dissolved)	µg/l	0.4	ISO 17025	6.6	2.6	2.1	1.2	
Copper (dissolved)	µg/l	0.7	ISO 17025	7.9	5.5	4.8	16	
Lead (dissolved)	µg/l	1	ISO 17025	4.2	1.8	1.1	24	
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	
Nickel (dissolved)	µg/l	0.3	ISO 17025	20	8.3	7.9	14	
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	
Zinc (dissolved)	µg/l	0.4	ISO 17025	54	38	28	140	



Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250705	250707	250708	250709	
Sample Reference				WS13	WS17	WS18	WS22	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				Deviating	Deviating	Deviating	Deviating	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	

Petroleum Hydrocarbons



Analytical Report Number: 13-40361

Project / Site name: LCA

Lab Sample Number				250705	250707	250708	250709	
Sample Reference				WS13	WS17	WS18	WS22	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				Deviating	Deviating	Deviating	Deviating	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					
TPH-CWG - Aliphatic >C5 - C6	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C5 - C7	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aromatic >C7 - C8	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aromatic >C8 - C10	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10.0	< 10.0	< 10.0	< 10.0	
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	

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



Analytical Report Number : 13-40361

Project / Site name: LCA

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content

of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
250710	WS2	None Supplied	None Supplied	Brown clay and topsoil with gravel.
250711	WS14	None Supplied	1.00	Light brown sand with stones.
250712	WS15	None Supplied	2.70	Brown clay.

Analytical Report Number : 13-40361

Project / Site name: LCA

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Boron in water	Determination of boron by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
BTEX and MTBE in water	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073S-PL	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	D	MCERTS
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS

Analytical Report Number : 13-40361

Project / Site name: LCA

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Stones content of soil	Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L010-PL	W	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
TPH7 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.



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Analytical Report Number : 13-39894

Project / Site name: London City Airport, HLEI 24974

Samples received on: 20/02/2013

Your job number: HLEI 24974

Samples instructed on: 20/02/2013

Your order number:

Analysis completed by: 27/02/2013

Report Issue Number: 1

Report issued on: 27/02/2013

Samples Analysed: 5 wac multi samples

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Rexona Rahman
Customer Services Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

i2 Analytical

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Watford, WD25 9XX

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email: info@i2analytical.com

Waste Acceptance Criteria Analytical Results							
Report No:	13-39894						
				Client: RPSGROUP			
Location	London City Airport, HLEI 24974						
Lab Reference (Sample Number)	248150			Landfill Waste Acceptance Criteria			
				Limits			
Sampling Date	11/02/2013			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID	WS3						
Depth (m)	1.50						
Solid Waste Analysis							
TOC (%)**	0.8			3%	5%	6%	
Loss on Ignition (%) **	4.7			--	--	10%	
BTEX (µg/kg) **	< 10			6000	--	--	
Sum of PCBs (mg/kg)	< 0.30			1	--	--	
Mineral Oil (mg/kg)	59			500	--	--	
Total PAH (WAC-17) (mg/kg)	41			100	--	--	
pH (units)**	8.5			--	>6	--	
Acid Neutralisation Capacity (mol / kg)	10			--	To be evaluated	To be evaluated	
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic	0.028	0.015		0.17	0.5	2	25
Barium	0.062	0.035		0.39	20	100	300
Cadmium	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium	0.0062	0.0047		0.049	0.5	10	70
Copper	0.014	0.011		0.11	2	50	100
Mercury	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum	0.035	0.0095		0.13	0.5	10	30
Nickel	0.0025	0.0018		0.019	0.4	10	40
Lead	0.046	0.010		0.16	0.5	10	50
Antimony	0.0091	0.0073		0.076	0.06	0.7	5
Selenium	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc	0.020	< 0.0010		0.030	4	50	200
Chloride	8.1	< 4.0		17	800	4000	25000
Fluoride	0.45	0.26		2.9	10	150	500
Sulphate	240	31		610	1000	20000	50000
TDS	300	70		1000	4000	60000	100000
Phenol Index	< 0.13	< 0.13		< 0.50	1	-	-
DOC	6.3	5.8		59	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.50						
Dry Matter (%)	89						
Moisture (%)	11						
Stage 1							
Volume Eluate L2 (litres)	0.33						
Filtered Eluate VE1 (litres)	0.26						
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation							

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

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Waste Acceptance Criteria Analytical Results							
Report No:	13-39894						
					Client: RPSGROUP		
Location	London City Airport, HLEI 24974						
Lab Reference (Sample Number)	248151				Landfill Waste Acceptance Criteria		
Sampling Date	15/02/2013				Limits		
Sample ID	WS11(A)				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	2.00						
Solid Waste Analysis							
TOC (%)**	2.7				3%	5%	6%
Loss on Ignition (%) **	5.7				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg)	< 0.30				1	--	--
Mineral Oil (mg/kg)	13				500	--	--
Total PAH (WAC-17) (mg/kg)	< 1.6				100	--	--
pH (units)**	4.3				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-45				--	To be evaluated	To be evaluated
Eluate Analysis					Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium	0.080	0.054		0.57	20	100	300
Cadmium	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium	< 0.0010	< 0.0010		0.0058	0.5	10	70
Copper	0.0017	< 0.0030		< 0.020	2	50	100
Mercury	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum	< 0.0030	< 0.0030		< 0.020	0.5	10	30
Nickel	0.11	0.037		0.46	0.4	10	40
Lead	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc	0.39	0.1377		1.7	4	50	200
Chloride	70	6.7		150	800	4000	25000
Fluoride	0.26	0.11		1.3	10	150	500
Sulphate	1500	360		5100	1000	20000	50000
TDS	1300	390		5100	4000	60000	100000
Phenol Index	< 0.13	< 0.13		< 0.50	1	-	-
DOC	20	9.3		110	500	800	1000
Leach Test Information							
Stone Content (%)	69						
Sample Mass (kg)	0.87						
Dry Matter (%)	89						
Moisture (%)	11						
Stage 1							
Volume Eluate L2 (litres)	0.33						
Filtered Eluate VE1 (litres)	0.24						
Results are expressed on a dry weight basis, after correction for moisture content where applicable							

Results are expressed on a dry weight basis, after correction for moisture content where applicable
(Based directly on the wet mass and 12 cannot be held responsible for any discrepancies with correct legislation)

* = UKAS accredited

** = MCERTS accredited

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Waste Acceptance Criteria ANALYTICAL RESULTS							
Report No:	13-39894						
					Client: RPSGROUP		
Location	London City Airport, HLEI 24974						
Lab Reference (Sample Number)	248152				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	12/02/2013				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS13						
Depth (m)	1.30						
Solid Waste Analysis							
TOC (%)**	3.0				3%	5%	6%
Loss on Ignition (%) **	9.0				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg)	< 0.30				1	--	--
Mineral Oil (mg/kg)	46				500	--	--
Total PAH (WAC-17) (mg/kg)	< 1.6				100	--	--
pH (units)**	6.7				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-2.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic	0.023	< 0.010		0.073	0.5	2	25
Barium	0.069	0.048		0.50	20	100	300
Cadmium	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium	0.036	0.011		0.14	0.5	10	70
Copper	0.032	0.0055		0.081	2	50	100
Mercury	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum	0.011	< 0.0030		< 0.020	0.5	10	30
Nickel	0.040	0.011		0.14	0.4	10	40
Lead	0.030	0.012		0.14	0.5	10	50
Antimony	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc	0.034	0.0171		0.19	4	50	200
Chloride	41	4.1		77	800	4000	25000
Fluoride	0.76	0.19		2.5	10	150	500
Sulphate	33	68		640	1000	20000	50000
TDS	120	80		840	4000	60000	100000
Phenol Index	< 0.13	< 0.13		< 0.50	1	-	-
DOC	94	16		230	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.53						
Dry Matter (%)	73						
Moisture (%)	27						
Stage 1							
Volume Eluate L2 (litres)	0.30						
Filtered Eluate VE1 (litres)	0.18						
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation							

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Waste Acceptance Criteria ANALYTICAL RESULTS							
Report No:	13-39894						
					Client: RPSGROUP		
Location	London City Airport, HLEI 24974						
Lab Reference (Sample Number)	248153				Landfill Waste Acceptance Criteria		
Sampling Date	14/02/2013				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS16						
Depth (m)	0.80						
Solid Waste Analysis							
TOC (%)**	< 0.1				3%	5%	6%
Loss on Ignition (%) **	1.0				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg)	< 0.30				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 1.6				100	--	--
pH (units)**	8.2				--	>6	--
Acid Neutralisation Capacity (mol / kg)	10				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium	0.023	0.0074		0.099	20	100	300
Cadmium	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium	0.0025	0.0015		0.017	0.5	10	70
Copper	< 0.0010	< 0.0030		< 0.020	2	50	100
Mercury	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum	< 0.0030	< 0.0030		< 0.020	0.5	10	30
Nickel	0.0010	< 0.0010		< 0.0050	0.4	10	40
Lead	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium	< 0.010	< 0.010		0.045	0.1	0.5	7
Zinc	< 0.0010	< 0.0010		< 0.020	4	50	200
Chloride	28	< 4.0		57	800	4000	25000
Fluoride	0.67	0.28		3.5	10	150	500
Sulphate	2.0	0.61		8.2	1000	20000	50000
TDS	100	30		410	4000	60000	100000
Phenol Index	< 0.13	< 0.13		< 0.50	1	-	-
DOC	2.5	2.6		26	500	800	1000
Leach Test Information							
Stone Content (%)	57						
Sample Mass (kg)	0.53						
Dry Matter (%)	95						
Moisture (%)	4.6						
Stage 1							
Volume Eluate L2 (litres)	0.34						
Filtered Eluate VE1 (litres)	0.28						
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation							

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Waste Acceptance Criteria ANALYTICAL RESULTS							
Report No:	13-39894						
					Client: RPSGROUP		
Location	London City Airport, HLEI 24974						
Lab Reference (Sample Number)	248154				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	19/02/2013				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS19						
Depth (m)	1.80						
Solid Waste Analysis							
TOC (%)**	0.3				3%	5%	6%
Loss on Ignition (%) **	2.9				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg)	< 0.30				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 1.6				100	--	--
pH (units)**	8.1				--	>6	--
Acid Neutralisation Capacity (mol / kg)	17				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium	0.046	0.020		0.24	20	100	300
Cadmium	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium	0.0012	< 0.0010		0.0071	0.5	10	70
Copper	< 0.0010	< 0.0030		< 0.020	2	50	100
Mercury	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum	< 0.0030	< 0.0030		< 0.020	0.5	10	30
Nickel	< 0.0010	< 0.0010		< 0.0050	0.4	10	40
Lead	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc	< 0.0010	< 0.0010		< 0.020	4	50	200
Chloride	< 4.0	6.1		52	800	4000	25000
Fluoride	0.56	0.40		4.3	10	150	500
Sulphate	29	3.5		75	1000	20000	50000
TDS	120	40		520	4000	60000	100000
Phenol Index	< 0.13	< 0.13		< 0.50	1	-	-
DOC	2.7	2.3		23	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.1						
Dry Matter (%)	81						
Moisture (%)	19						
Stage 1							
Volume Eluate L2 (litres)	0.32						
Filtered Eluate VE1 (litres)	0.27						
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation							

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Analytical Report Number : 13-39894

Project / Site name: London City Airport, HLEI 24974

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content

of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
248150	WS3	None Supplied	1.50	Brown topsoil and sand with rubble.
248151	WS11(A)	None Supplied	2.00	Light brown topsoil and sand with stones.
248152	WS13	None Supplied	1.30	Brown clay and sand with gravel.
248153	WS16	None Supplied	0.80	Light brown gravelly sand with stones.
248154	WS19	None Supplied	1.80	Light brown sandy clay.



Analytical Report Number : 13-39894

Project / Site name: London City Airport, HLEI 24974

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of chloride in leachate by Gallery discrete analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L082-PL	W	NONE
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1 ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
Mineral Oil in Soil	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's by GC-MS in soil	Determination of PCB by extraction with DCM and analysis by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	NONE
Sociated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	NONE



Analytical Report Number : 13-39894

Project / Site name: London City Airport, HLEI 24974

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L004-PL	W	NONE
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



Certificate of Analysis

Certificate Number 14-20237-2

10-Dec-14

Client RPS Group
1st Floor West
Cottons Centre
Cottons Lane
London
SE1 1QG

Our Reference 14-20237-2

Client Reference MLE132363

Contract Title London City Airport Western Terminal Extension

Description 15 Soil samples, 8 Leachate samples.

Date Received 07-Nov-14

Date Started 07-Nov-14

Date Completed 02-Dec-14

Test Procedures Identified by prefix DETSn (details on request), Asbestos Analysis DETSC 1101.

Notes This report supersedes 14-20237-1, Extra Testing

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

Approved By

Rob Brown
Business Manager



2139

Summary of Chemical Analysis

Soil Samples

Our Ref 14-20237-2

Client Ref MLE132363

Contract Title London City Airport Western Terminal Extension

Lab No	727501	727502	727503	727504	727505	727506
Sample ID	BH1	BH1	BH1	BH2	BH2	BH2
Depth	0.40	3.00	10.00	0.60	4.00	9.30
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	22/10/14	22/10/14	24/10/14	24/10/14	24/10/14	24/10/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	12	17	4.3	37	12	5.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.7	0.3	1.1	0.6	0.3
Chromium	DETSC 2301#	0.15	mg/kg	20	36	30	29	43	21
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	40	83	8.8	83	25	6.8
Lead	DETSC 2301#	0.3	mg/kg	91	140	6.1	110	62	7.6
Mercury	DETSC 2325#	0.05	mg/kg	0.47	0.38	< 0.05	0.45	0.50	< 0.05
Nickel	DETSC 2301#	1	mg/kg	16	32	19	40	28	12
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	100	110	13	290	130	34
Inorganics									
pH	DETSC 2008#			10.1	8.0	8.6	10.1	8.0	8.2
Cyanide total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	0.5	< 0.1	< 0.1	0.4
Organic matter	DETSC 2002#	0.1	%	2.2	4.6	0.8	19	11	4.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	400	290	31	87	160	72
Sulphide	DETSC 2024#	10	mg/kg	61	41	< 10	41	65	28
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	1.9	< 0.6	< 0.6	4.2	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	3.7	< 1.4	< 1.4	13	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	17	< 10	< 10
TPH Ali/Aro	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	17	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 14-20237-2

Client Ref MLE132363

Contract Title London City Airport Western Terminal Extension

Lab No	727501	727502	727503	727504	727505	727506
Sample ID	BH1	BH1	BH1	BH2	BH2	BH2
Depth	0.40	3.00	10.00	0.60	4.00	9.30
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	22/10/14	22/10/14	24/10/14	24/10/14	24/10/14	24/10/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.3	0.1	< 0.1	0.4	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	0.4	0.3	< 0.1	0.2	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.9	0.4	< 0.1	1.5	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	0.4	0.1	< 0.1	0.5	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	1.7	0.8	< 0.1	3.6	0.2	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	1.7	0.7	< 0.1	3.3	0.2	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	1.0	0.3	< 0.1	1.8	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	0.9	0.4	< 0.1	1.9	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	3.8	< 0.1	< 0.1	3.7	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.7	0.4	< 0.1	1.0	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	1.3	0.4	< 0.1	2.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.3	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.4	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.7	< 0.1	< 0.1
PAH	DETSC 3301	1.6	mg/kg	13	4.1	< 1.6	24	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 14-20237-2

Client Ref MLE132363

Contract Title London City Airport Western Terminal Extension

Lab No	727507	727508	727509	727510	727511	727512
Sample ID	BH3	BH3	BH3	BH4	BH4	BH4
Depth	0.80	3.40	22.50	0.45	1.30	3.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	30/10/14	30/10/14	31/10/14	28/10/14	28/10/14	28/10/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	13	13	4.2		16	58
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.6	0.3		0.9	1.0
Chromium	DETSC 2301#	0.15	mg/kg	95	44	29		27	65
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0		< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	30	20	3.9		92	93
Lead	DETSC 2301#	0.3	mg/kg	79	21	3.3		750	400
Mercury	DETSC 2325#	0.05	mg/kg	0.24	< 0.05	< 0.05		0.81	5.8
Nickel	DETSC 2301#	1	mg/kg	13	29	8.1		28	27
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5		< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	69	58	30		200	330
Inorganics									
pH	DETSC 2008#			11.1	9.0	8.3	11.8	9.6	7.9
Cyanide total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	0.1		< 0.1	1.1
Organic matter	DETSC 2002#	0.1	%	0.9	2.3	0.7		1.2	6.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	690	250	170	87	1500	720
Sulphide	DETSC 2024#	10	mg/kg	150	32	32		28	130
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5		< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	2.4	< 1.2	< 1.2		< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	41	< 1.5	< 1.5		< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	330	< 3.4	< 3.4		27	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	380	< 10	< 10		28	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	0.01	< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9		< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5		< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	30	< 0.6	< 0.6		12	5.4
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	180	< 1.4	< 1.4		63	14
Aromatic C5-C35	DETSC 3072*	10	mg/kg	210	< 10	< 10		74	19
TPH Ali/Aro	DETSC 3072*	10	mg/kg	590	< 10	< 10		100	19
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 14-20237-2

Client Ref MLE132363

Contract Title London City Airport Western Terminal Extension

Lab No	727507	727508	727509	727510	727511	727512
Sample ID	BH3	BH3	BH3	BH4	BH4	BH4
Depth	0.80	3.40	22.50	0.45	1.30	3.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	30/10/14	30/10/14	31/10/14	28/10/14	28/10/14	28/10/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1		< 0.1	0.4
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1		0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1		< 0.1	0.4
Fluorene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1		0.3	0.4
Phenanthrene	DETSC 3301	0.1	mg/kg	1.5	< 0.1	< 0.1		1.1	1.0
Anthracene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1		0.3	0.5
Fluoranthene	DETSC 3301	0.1	mg/kg	1.7	< 0.1	< 0.1		2.2	3.1
Pyrene	DETSC 3301	0.1	mg/kg	0.9	< 0.1	< 0.1		2.3	2.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		1.2	1.6
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		1.2	0.9
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		0.9	0.5
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		0.2	0.4
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		1.4	0.9
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		0.9	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		0.2	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		1.2	< 0.1
PAH	DETSC 3301	1.6	mg/kg	4.9	< 1.6	< 1.6		13	12
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	1.6	< 0.3	< 0.3		< 0.3	0.5

Summary of Chemical Analysis

Soil Samples

Our Ref 14-20237-2

Client Ref MLE132363

Contract Title London City Airport Western Terminal Extension

Lab No	727513	727514	727515
Sample ID	BH4	BH5	BH5
Depth	9.50	0.60	4.10
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	28/10/14	04/11/14	04/11/14
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	19	19	33
Cadmium	DETSC 2301#	0.1	mg/kg	0.9	0.8	2.4
Chromium	DETSC 2301#	0.15	mg/kg	58	22	27
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	110	210	11000
Lead	DETSC 2301#	0.3	mg/kg	41	120	25000
Mercury	DETSC 2325#	0.05	mg/kg	0.05	1.2	0.60
Nickel	DETSC 2301#	1	mg/kg	48	27	130
Selenium	DETSC 2301#	0.5	mg/kg	0.6	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	67	200	1700
Inorganics						
pH	DETSC 2008#			7.2	10.4	7.6
Cyanide total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	0.1
Organic matter	DETSC 2002#	0.1	%	21	3.6	25
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	350	360	110
Sulphide	DETSC 2024#	10	mg/kg	76	28	65
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	2.5	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	10	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	13	< 10
TPH Ali/Aro	DETSC 3072*	10	mg/kg	< 10	13	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 14-20237-2

Client Ref MLE132363

Contract Title London City Airport Western Terminal Extension

Lab No	727513	727514	727515
Sample ID	BH4	BH5	BH5
Depth	9.50	0.60	4.10
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	28/10/14	04/11/14	04/11/14
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.3
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	0.5	2.0
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	0.4
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	1.1	2.9
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	1.2	2.8
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.7	1.3
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	0.8	1.5
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.8	1.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.4	0.7
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	0.7	1.5
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	0.6	1.0
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	0.2
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	0.7	1.3
PAH	DETSC 3301	1.6	mg/kg	< 1.6	7.7	17
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.3	0.5

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 14-20237-2

Client Ref MLE132363

Contract Title London City Airport Western Terminal Extension

Lab No	727501	727507	727508	727510	727514
Sample ID	BH1	BH3	BH3	BH4	BH5
Depth	0.40	0.80	3.40	0.45	0.60
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	22/10/14	30/10/14	30/10/14	28/10/14	04/11/14
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
VOCs								
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.01
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 14-20237-2

Client Ref MLE132363

Contract Title London City Airport Western Terminal Extension

Lab No	727501	727507	727508	727510	727514
Sample ID	BH1	BH3	BH3	BH4	BH5
Depth	0.40	0.80	3.40	0.45	0.60
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	22/10/14	30/10/14	30/10/14	28/10/14	04/11/14
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs								
Phenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433*	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433*	0.1	mg/kg	0.1	0.3	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 14-20237-2

Client Ref MLE132363

Contract Title London City Airport Western Terminal Extension

Lab No	727501	727507	727508	727510	727514
Sample ID	BH1	BH3	BH3	BH4	BH5
Depth	0.40	0.80	3.40	0.45	0.60
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	22/10/14	30/10/14	30/10/14	28/10/14	04/11/14
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	0.2	0.4	< 0.1	< 0.1	< 0.1

Summary of Asbestos Analysis

Soil Samples

Our Ref 14-20237-2

Client Ref MLE132363

Contract Title London City Airport Western Terminal Extension

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
727501	BH1 0.40	SOIL	NAD	none	Andrew Little
727504	BH2 0.60	SOIL	NAD	none	Andrew Little
727507	BH3 0.80	SOIL	Chrysotile	Free Chrysotile fibres present	Andrew Little
727511	BH4 1.30	SOIL	NAD	none	Andrew Little
727512	BH4 3.50	SOIL	NAD	none	Andrew Little
727514	BH5 0.60	SOIL	Chrysotile	Free Chrysotile fibres present	Andrew Little
727515	BH5 4.10	SOIL	Chrysotile	Free Chrysotile fibres present	Andrew Little

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 14-20237-2

Client Ref MLE132363

Contract Title London City Airport Western Terminal Extension

Lab No	727507	727514	727515
Sample ID	BH3	BH5	BH5
Depth	0.80	0.60	4.10
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	30/10/14	04/11/14	04/11/14
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na	na	na
Quantification by PCOM (c)	DETSC 1102	Mass %	< 0.001	< 0.001	< 0.001
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na
Breakdown of Gravimetric Analysis (a)					
Mass of Sample		g	350.09	102.28	212.15
ACMs present*		type			
Mass of ACM in sample		g			
% ACM by mass		%			
% asbestos in ACM		%			
% asbestos in sample		%			
Breakdown of Detailed Gravimetric Analysis (b)					
% Amphibole bundles in sample		Mass %	na	na	na
% Serpentine bundles in sample		Mass %	na	na	na
Breakdown of PCOM Analysis (c)					
% Amphibole fibres in sample		Mass %	<0.001	<0.001	<0.001
% Serpentine fibres in sample		Mass %	<0.001	<0.001	<0.001
Breakdown of Potentially Respirable Fibre Analysis (d)					
Amphibole fibres		Fibres/g	0	0	0
Chrysotile fibres		Fibres/g	33218	45327	48988

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 14-20237-2
Client Ref MLE132363
Contract Title London City Airport Western Terminal Extension
Sample Id BH1 0.40

Sample Numbers 727501 727516
Date Analysed 17/11/2014

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084* Total Organic Carbon	%	1.3
DETSC 2003# Loss On Ignition	%	3.0
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	210
DETSC 3301 PAHs	mg/kg	13
DETSC 2008# pH	pH Units	10.1
DETS 073* Acid Neutralisation Capacity (pH4)	mol/kg	2.1
DETS 073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	1.6	0.02
DETSC 2306 Barium as Ba	15	0.2
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	0.73	< 0.1
DETSC 2306 Copper as Cu	1.4	< 0.02
DETSC 2306 Mercury as Hg	0.02	< 0.002
DETSC 2306 Molybdenum as Mo	2	< 0.1
DETSC 2306 Nickel as Ni	< 0.5	< 0.1
DETSC 2306 Lead as Pb	0.71	< 0.05
DETSC 2306 Antimony as Sb	0.81	< 0.05
DETSC 2306 Selenium as Se	0.64	< 0.03
DETSC 2306 Zinc as Zn	< 1.25	< 0.01
DETSC 2055 Chloride as Cl	1700	< 100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	13000	130
DETSC 2009* Total Dissolved Solids	45000	450
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	< 2000	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	6.1
DETSC 2009 Conductivity uS/cm	64.5
* Temperature*	15

Mass of Sample Kg	0.100
Mass of dry Sample Kg	0.092

Stage 1

Volume of Leachant L2	0.91
Volume of Eluate VE1	0.82

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions.
Values are correct at time of issue.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 14-20237-2

Client Ref HLEI 32363

Contract Title London City Airport Western Terminal Extension

Sample Id BH1 10.00

Sample Numbers 727503 727517

Date Analysed 17/11/2014

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084* Total Organic Carbon	%	0.5
DETSC 2003# Loss On Ignition	%	0.49
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	< 10
DETSC 3301 PAHs	mg/kg	< 1.6
DETSC 2008# pH	pH Units	8.6
DETS 073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETS 073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	0.43	< 0.01
DETSC 2306 Barium as Ba	6.3	< 0.1
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	0.27	< 0.1
DETSC 2306 Copper as Cu	< 0.4	< 0.02
DETSC 2306 Mercury as Hg	< 0.01	< 0.002
DETSC 2306 Molybdenum as Mo	< 1.05	< 0.1
DETSC 2306 Nickel as Ni	< 0.5	< 0.1
DETSC 2306 Lead as Pb	< 0.09	< 0.05
DETSC 2306 Antimony as Sb	0.24	< 0.05
DETSC 2306 Selenium as Se	0.25	< 0.03
DETSC 2306 Zinc as Zn	< 1.25	< 0.01
DETSC 2055 Chloride as Cl	1200	< 100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	1400	< 100
DETSC 2009* Total Dissolved Solids	15000	150
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	< 2000	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	6.8
DETSC 2009 Conductivity uS/cm	21.7
* Temperature*	15
Mass of Sample Kg	0.100
Mass of dry Sample Kg	0.096
Stage 1	
Volume of Leachant L2	0.954
Volume of Eluate VE1	0.89

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions.
Values are correct at time of issue.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 14-20237-2

Client Ref HLEI 32363

Contract Title London City Airport Western Terminal Extension

Sample Id BH2 9.30

Sample Numbers 727506 727518

Date Analysed 17/11/2014

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084* Total Organic Carbon	%	2.6
DETSC 2003# Loss On Ignition	%	3.9
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	82
DETSC 3301 PAHs	mg/kg	< 1.6
DETSC 2008# pH	pH Units	8.2
DETS 073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETS 073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	3.6	0.04
DETSC 2306 Barium as Ba	18	0.2
DETSC 2306 Cadmium as Cd	0.06	< 0.02
DETSC 2306 Chromium as Cr	13	0.1
DETSC 2306 Copper as Cu	9.1	0.09
DETSC 2306 Mercury as Hg	0.02	< 0.002
DETSC 2306 Molybdenum as Mo	2.3	< 0.1
DETSC 2306 Nickel as Ni	3.9	< 0.1
DETSC 2306 Lead as Pb	3.8	< 0.05
DETSC 2306 Antimony as Sb	0.82	< 0.05
DETSC 2306 Selenium as Se	2	< 0.03
DETSC 2306 Zinc as Zn	17.3	0.17
DETSC 2055 Chloride as Cl	24000	240
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	6800	< 100
DETSC 2009* Total Dissolved Solids	92000	920
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	12000	120

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	8.5
DETSC 2009 Conductivity uS/cm	132
* Temperature*	15
Mass of Sample Kg	0.120
Mass of dry Sample Kg	0.094
Stage 1	
Volume of Leachant L2	0.919
Volume of Eluate VE1	0.8

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions.
Values are correct at time of issue.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 14-20237-2

Client Ref HLEI 32363

Contract Title London City Airport Western Terminal Extension

Sample Id BH3 3.40

Sample Numbers 727508 727519

Date Analysed 17/11/2014

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084* Total Organic Carbon	%	1.3
DETSC 2003# Loss On Ignition	%	2.0
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	< 10
DETSC 3301 PAHs	mg/kg	< 1.6
DETSC 2008# pH	pH Units	9.0
DETS 073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETS 073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	1.5	0.02
DETSC 2306 Barium as Ba	12	0.1
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	0.82	< 0.1
DETSC 2306 Copper as Cu	0.4	< 0.02
DETSC 2306 Mercury as Hg	< 0.01	< 0.002
DETSC 2306 Molybdenum as Mo	1.7	< 0.1
DETSC 2306 Nickel as Ni	< 0.5	< 0.1
DETSC 2306 Lead as Pb	< 0.09	< 0.05
DETSC 2306 Antimony as Sb	0.48	< 0.05
DETSC 2306 Selenium as Se	4.4	0.04
DETSC 2306 Zinc as Zn	< 1.25	< 0.01
DETSC 2055 Chloride as Cl	4900	< 100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	20000	200
DETSC 2009* Total Dissolved Solids	58000	580
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	< 2000	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	8.9
DETSC 2009 Conductivity uS/cm	82.7
* Temperature*	15
Mass of Sample Kg	0.110
Mass of dry Sample Kg	0.094
Stage 1	
Volume of Leachant L2	0.929
Volume of Eluate VE1	0.84

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 14-20237-2

Client Ref HLEI 32363

Contract Title London City Airport Western Terminal Extension

Sample Id BH3 22.50

Sample Numbers 727509 727520

Date Analysed 17/11/2014

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084* Total Organic Carbon	%	0.4
DETSC 2003# Loss On Ignition	%	0.02
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	< 10
DETSC 3301 PAHs	mg/kg	< 1.6
DETSC 2008# pH	pH Units	8.3
DETS 073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETS 073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	0.47	< 0.01
DETSC 2306 Barium as Ba	27	0.3
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	< 0.4	< 0.02
DETSC 2306 Mercury as Hg	< 0.01	< 0.002
DETSC 2306 Molybdenum as Mo	< 1.05	< 0.1
DETSC 2306 Nickel as Ni	0.8	< 0.1
DETSC 2306 Lead as Pb	< 0.09	< 0.05
DETSC 2306 Antimony as Sb	0.2	< 0.05
DETSC 2306 Selenium as Se	0.6	< 0.03
DETSC 2306 Zinc as Zn	7.55	0.08
DETSC 2055 Chloride as Cl	66000	660
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	11000	110
DETSC 2009* Total Dissolved Solids	180000	1800
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	< 2000	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	8
DETSC 2009 Conductivity uS/cm	262
* Temperature*	15
Mass of Sample Kg	0.130
Mass of dry Sample Kg	0.098
Stage 1	
Volume of Leachant L2	0.952
Volume of Eluate VE1	0.86

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 14-20237-2

Client Ref HLEI 32363

Contract Title London City Airport Western Terminal Extension

Sample Id BH4 9.50

Sample Numbers 727513 727521

Date Analysed 17/11/2014

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084* Total Organic Carbon	%	12
DETSC 2003# Loss On Ignition	%	39
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	680
DETSC 3301 PAHs	mg/kg	< 1.6
DETSC 2008# pH	pH Units	7.2
DETS 073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETS 073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	1.7	0.02
DETSC 2306 Barium as Ba	26	0.3
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	0.79	< 0.1
DETSC 2306 Copper as Cu	2.4	0.02
DETSC 2306 Mercury as Hg	< 0.01	< 0.002
DETSC 2306 Molybdenum as Mo	4.2	< 0.1
DETSC 2306 Nickel as Ni	1.9	< 0.1
DETSC 2306 Lead as Pb	0.68	< 0.05
DETSC 2306 Antimony as Sb	0.86	< 0.05
DETSC 2306 Selenium as Se	3	0.03
DETSC 2306 Zinc as Zn	4.15	0.04
DETSC 2055 Chloride as Cl	120000	1200
DETSC 2055* Fluoride as F	630	6.3
DETSC 2055 Sulphate as SO4	21000	210
DETSC 2009* Total Dissolved Solids	370000	3700
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	19000	190

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	7.7
DETSC 2009 Conductivity uS/cm	526
* Temperature*	15
Mass of Sample Kg	0.140
Mass of dry Sample Kg	0.048
Stage 1	
Volume of Leachant L2	0.39
Volume of Eluate VE1	0.31

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions.
Values are correct at time of issue.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 14-20237-2

Client Ref HLEI 32363

Contract Title London City Airport Western Terminal Extension

Sample Id BH5 0.60

Sample Numbers 727514 727522

Date Analysed 17/11/2014

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084* Total Organic Carbon	%	2.1
DETSC 2003# Loss On Ignition	%	3.5
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	130
DETSC 3301 PAHs	mg/kg	7.7
DETSC 2008# pH	pH Units	10.4
DETS 073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETS 073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	15	0.15
DETSC 2306 Barium as Ba	13	0.1
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	3.4	< 0.1
DETSC 2306 Copper as Cu	26	0.26
DETSC 2306 Mercury as Hg	0.08	< 0.002
DETSC 2306 Molybdenum as Mo	2.3	< 0.1
DETSC 2306 Nickel as Ni	1	< 0.1
DETSC 2306 Lead as Pb	0.53	< 0.05
DETSC 2306 Antimony as Sb	3.4	< 0.05
DETSC 2306 Selenium as Se	0.78	< 0.03
DETSC 2306 Zinc as Zn	< 1.25	< 0.01
DETSC 2055 Chloride as Cl	3800	< 100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	17000	170
DETSC 2009* Total Dissolved Solids	94000	940
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	13000	130

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	10.2
DETSC 2009 Conductivity uS/cm	135
* Temperature*	15
Mass of Sample Kg	0.110
Mass of dry Sample Kg	0.093
Stage 1	
Volume of Leachant L2	0.918
Volume of Eluate VE1	0.83

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions.
Values are correct at time of issue.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 14-20237-2

Client Ref HLEI 32363

Contract Title London City Airport Western Terminal Extension

Sample Id BH5 4.10

Sample Numbers 727515 727523

Date Analysed 17/11/2014

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084* Total Organic Carbon	%	14
DETSC 2003# Loss On Ignition	%	28
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	310
DETSC 3301 PAHs	mg/kg	17
DETSC 2008# pH	pH Units	7.6
DETS 073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETS 073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	0.72	< 0.01
DETSC 2306 Barium as Ba	100	1
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	5.8	0.06
DETSC 2306 Mercury as Hg	< 0.01	< 0.002
DETSC 2306 Molybdenum as Mo	< 1.05	< 0.1
DETSC 2306 Nickel as Ni	1	< 0.1
DETSC 2306 Lead as Pb	1.7	< 0.05
DETSC 2306 Antimony as Sb	0.94	< 0.05
DETSC 2306 Selenium as Se	0.47	< 0.03
DETSC 2306 Zinc as Zn	6.6	0.07
DETSC 2055 Chloride as Cl	4000	< 100
DETSC 2055* Fluoride as F	380	3.8
DETSC 2055 Sulphate as SO4	10000	100
DETSC 2009* Total Dissolved Solids	68000	680
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	< 2000	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	8.7
DETSC 2009 Conductivity uS/cm	97.1
* Temperature*	15
Mass of Sample Kg	0.130
Mass of dry Sample Kg	0.097
Stage 1	
Volume of Leachant L2	0.936
Volume of Eluate VE1	0.8

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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Values are correct at time of issue.

Information in Support of the Analytical Results

Our Ref 14-20237-2
 Client Ref MLE132363
 Contract London City Airport Western Terminal Extension

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
727501	BH1 0.40 SOIL	22/10/14	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH FID (14 days), pH (7 days), SVOC (14 days), EPH/TPH (14 days)	
727502	BH1 3.00 SOIL	22/10/14	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX (14 days), Naphthalene (14 days), PAH FID (14 days), pH (7 days)	
727503	BH1 10.00 SOIL	24/10/14	PB 1L x2	pH (7 days)	Aliphatics/Aromatics, BTEX, Naphthalene, PAH FID, PCB, EPH/TPH
727504	BH2 0.60 SOIL	24/10/14	GJ 250ml, GV, PT 1L	pH (7 days)	
727505	BH2 4.00 SOIL	24/10/14	GJ 250ml, GV, PT 1L	pH (7 days)	
727506	BH2 9.30 SOIL	24/10/14	GJ 250ml, GV, PT 1L	pH (7 days)	
727507	BH3 0.80 SOIL	30/10/14	GJ 250ml, GJ 60ml, PT 1L	pH (7 days)	
727508	BH3 3.40 SOIL	30/10/14	No containers logged	pH (7 days)	Cannot evaluate
727509	BH3 22.50 SOIL	31/10/14	GJ 250ml, GJ 60ml, PT 1L		
727510	BH4 0.45 SOIL	28/10/14	GJ 250ml, GJ 60ml, PT 1L	pH (7 days)	
727511	BH4 1.30 SOIL	28/10/14	GJ 250ml, GJ 60ml, PT 1L	pH (7 days)	
727512	BH4 3.50 SOIL	28/10/14	GJ 250ml, GJ 60ml, PT 1L	pH (7 days)	
727513	BH4 9.50 SOIL	28/10/14	GJ 250ml, GJ 60ml, PT 1L	pH (7 days)	
727514	BH5 0.60 SOIL	04/11/14	GJ 250ml, GJ 60ml, PT 1L		
727515	BH5 4.10 SOIL	04/11/14	GJ 250ml, GJ 60ml, PT 1L		
727516	BH1 0.40 LEACHATE	22/10/14	GJ 250ml, GJ 60ml, PT 1L		
727517	BH1 10.00 LEACHATE	24/10/14	PB 1L x2		
727518	BH2 9.30 LEACHATE	24/10/14	GJ 250ml, GV, PT 1L		
727519	BH3 3.40 LEACHATE	30/10/14	No containers logged		Cannot evaluate
727520	BH3 22.50 LEACHATE	31/10/14	GJ 250ml, GJ 60ml, PT 1L		
727521	BH4 9.50 LEACHATE	28/10/14	GJ 250ml, GJ 60ml, PT 1L		
727522	BH5 0.60 LEACHATE	04/11/14	GJ 250ml, GJ 60ml, PT 1L		
727523	BH5 4.10 LEACHATE	04/11/14	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub B-Bottle V-Vial

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

Information in Support of the Analytical Results

Our Ref 14-20237-2
Client Ref MLE132363
Contract London City Airport Western Terminal Extension

Soil Analysis Notes

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

Disposal

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

Determinand (laboratory concentrations)		BH															
Classification Result	Unit	BH1 Potentially Hazardous	BH1[1] Non-Hazardous	BH1[2] Potential/Hazardous	BH2 Potential/Hazardous	BH2[1] Non-Hazardous	BH2[2] Potential/Hazardous	BH3 Potential/Hazardous	BH3[1] Non-Hazardous	BH3[2] Potential/Hazardous	BH4 Potential/Hazardous	BH4[1] Potential/Hazardous	BH4[2] Potential/Hazardous	BH4[3] Potential/Hazardous	BH5 Potential/Hazardous	BH5[1] Hazardous	
Depth	m	0.4	3	10	0.6	4	9.3	0.8	3.4	22.5	0.45	1.3	3.5	9.5	0.6	4.1	
Conform	TPH has NOT arisen from Diesel or Petrol																
Arsenic (Arsenic trioxide)	mg/kg	12		17	4.3	37	12	5.2	13	13			16	58	19	33	
Cadmium (Cadmium sulphate)	mg/kg	0.5	0.7	36	0.3	1.1	0.6	0.3	0.4	0.6			0.9	1	0.9	0.8	
Chromium in Chromium(VI) compounds (Chromium(VI) oxide)	mg/kg	20		36	30	29	43	21	95	44			27	65	58	22	
Chromium in Chromium(III) compounds (Chromium(III) oxide)	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	
Copper (Copper (I) oxide)	mg/kg	40		83	8.8	83	25	6.8	30	20			92	93	110	210	
Lead (Lead chromate)	mg/kg	91		140	6.1	110	62	7.6	79	21			750	400	41	120	
Mercury (Mercury dichloride)	mg/kg	0.47	0.38	40.05	6.1	0.45	0.5	0.05	0.24	0.05			0.81	5.8	0.05	1.2	
Nickel (Nickel dithionite)	mg/kg	16		32	19	40	28	12	13	29			28	27	48	27	
Selenium (Selenium compounds (with the exception of zinc selenide))	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	0.6	<0.5	
Zinc (Zinc chromate)	mg/kg	100	110		13	290	130	34	69	58			200	330	67	200	
pH	pH	10.1	8		8.6	10.1	8	8.2	11.1	9		<0.1	9.6	7.9	7.2	10.4	
Cyanides (with the exception of complex cyanides)	mg/kg	<10	<0.1	<10	0.5	<0.1	<10	0.4	0.1	<0.1		<0.1	100	1.1	0.2	<0.1	
TPH (C6 to C40) Petroleum Group	mg/kg	<10	<0.1	<10	<0.1	17	<10	<0.1	590	<10		<0.1	<0.1	19	<10	13	
Benzene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01	
ethylbenzene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01	
Toluene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01	
Xylene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01	
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.2	<0.1		<0.1	0.4	<0.1	<0.1	0.3	
Acenaphthylene	mg/kg	0.3	0.1	<0.1	<0.1	0.4	<0.1	<0.1	0.2	<0.1		<0.1	0.1	<0.1	<0.1	<0.1	
Anthracene	mg/kg	0.4	0.1	<0.1	<0.1	0.5	<0.1	<0.1	0.2	<0.1		<0.1	0.3	0.5	<0.1	0.1	
Benzo[a]anthracene	mg/kg	1	0.3	<0.1	<0.1	1.8	<0.1	<0.1	<0.1	<0.1		<0.1	1.2	1.6	<0.1	0.7	
Benzo[a]pyrene: benzo[def]chrysene	mg/kg	1.3	0.4	<0.1	<0.1	2.1	<0.1	<0.1	<0.1	<0.1		<0.1	1.4	0.9	<0.1	1.5	
Benzo[b]fluoranthene	mg/kg	3.8	<0.1	<0.1	<0.1	3.7	<0.1	<0.1	<0.1	<0.1		<0.1	1.4	0.9	<0.1	0.8	
Benzo[k]fluoranthene	mg/kg	0.7	0.4	<0.1	<0.1	1	<0.1	<0.1	<0.1	<0.1		<0.1	0.2	0.4	<0.1	0.4	
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.3	<0.1	<0.1	<0.1	<0.1		<0.1	0.9	<0.1	0.6	1.1	
Benzofluoranthene	mg/kg	0.9	0.4	<0.1	<0.1	1.9	<0.1	<0.1	<0.1	<0.1		<0.1	1.2	0.9	<0.1	0.6	
Benzofluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1		<0.1	1.2	0.9	<0.1	0.6	
Fluoranthene	mg/kg	1.7	0.8	<0.1	<0.1	3.6	0.2	<0.1	1.7	<0.1		<0.1	2.2	3.1	<0.1	1.1	
Fluorene	mg/kg	0.4	0.3	<0.1	<0.1	0.2	<0.1	<0.1	0.2	<0.1		<0.1	0.3	0.4	<0.1	0.2	
Indened 123-cd]pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.7	<0.1	<0.1	0.2	<0.1		<0.1	1.2	<0.1	<0.1	0.7	
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	0.1	<0.1		<0.1	0.4	<0.1	<0.1	<0.1	
Phenanthrene	mg/kg	0.9	0.4	<0.1	<0.1	1.5	<0.1	<0.1	0.1	<0.1		<0.1	1.1	0.4	<0.1	0.5	
Pyrene	mg/kg	1.7	0.7	<0.1	<0.1	3.3	0.2	<0.1	0.9	<0.1		<0.1	2.1	<0.1	<0.1	2	
Phenol	mg/kg	<0.3	<0.3	<0.3	<0.3	0.2	<0.3	<0.3	1.6	<0.3		<0.3	2.3	0.5	<0.3	0.5	



Certificate of Analysis

Certificate Number 14-21420

01-Dec-14

Client RPS Group
14 Cornhill
London
EC3V 3ND

Our Reference 14-21420

Client Reference (not supplied)

Contract Title London City Airport

Description 8 Water samples.

Date Received 24-Nov-14

Date Started 24-Nov-14

Date Completed 01-Dec-14

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

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

Approved By

A handwritten signature in black ink, appearing to read 'Rob Brown'.

Rob Brown
Business Manager



Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736261	736262	736263	736264	736265	736266
Sample ID	BH1 (D)	BH2 (S)	BH2 (D)	BH3 (S)	BH3 (D)	BH4 (S)
Depth						
Other ID						
Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Sampling Date	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	19	16	9.5	2.0	9.4	5.1
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.08	0.04	0.03	0.04	0.05	0.05
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	1.2	0.73	< 0.25	< 0.25	0.36
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.7	0.7	0.8	5.0	< 0.4	10
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	0.34	< 0.09	< 0.09	< 0.09	0.11
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	4.8	6.6	6.2	7.0	6.7	7.1
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.7	1.6	1.0	8.6	2.2	21
Zinc, Dissolved	DETSC 2306	1.25	ug/l	48.1	8.65	26.5	4.02	73.8	12.2
Inorganics									
pH	DETSC 2008			8.0	7.6	7.6	7.3	7.5	7.2
Cyanide total	DETSC 2130	40	ug/l	89	< 40	< 40	< 40	< 40	< 40
Hardness	DETSC 2303	0.1	mg/l	965	682	661	589	843	599
Sulphate as SO4	DETSC 2055	0.1	mg/l	390	250	260	320	510	230
Sulphide	DETSC 2208	10	ug/l	11	10	< 10	10	12	12
Total Organic Carbon	DETSC 2085*	1	mg/l	8.7	15	22	7.6	8.6	8.7
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	2.8	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	2.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	49	12	16	1.4	21	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	450	< 1.0	110	54	640	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	510	12	130	55	670	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	0.9	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	18	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	560	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	580	< 10
TPH Ali/Aro	DETSC 3072*	10	ug/l	510	12	130	56	1200	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736261	736262	736263	736264	736265	736266
Sample ID	BH1 (D)	BH2 (S)	BH2 (D)	BH3 (S)	BH3 (D)	BH4 (S)
Depth						
Other ID						
Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Sampling Date	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	DETS 074*	0.01	ug/l	0.11	< 0.01	< 0.01	< 0.01	< 0.01	0.04
Anthracene	DETS 074*	0.01	ug/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	DETS 074*	0.01	ug/l	0.11	0.03	< 0.01	< 0.01	< 0.01	0.07
Pyrene	DETS 074*	0.01	ug/l	0.15	0.03	< 0.01	< 0.01	< 0.01	0.04
Benzo(a)anthracene	DETS 074*	0.01	ug/l	0.05	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	DETS 074*	0.01	ug/l	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETS 074*	0.01	ug/l	0.06	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETS 074*	0.01	ug/l	0.04	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETS 074*	0.01	ug/l	0.07	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAH	DETS 074*	0.2	ug/l	0.65	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenols									
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100	< 100	< 100	< 100	< 100	< 100

Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736261	736262	736263	736264	736265	736266
Sample ID	BH1 (D)	BH2 (S)	BH2 (D)	BH3 (S)	BH3 (D)	BH4 (S)
Depth						
Other ID						
Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Sampling Date	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
VOCs									
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736261	736262	736263	736264	736265	736266
Sample ID	BH1 (D)	BH2 (S)	BH2 (D)	BH3 (S)	BH3 (D)	BH4 (S)
Depth						
Other ID						
Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Sampling Date	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736261	736262	736263	736264	736265	736266
Sample ID	BH1 (D)	BH2 (S)	BH2 (D)	BH3 (S)	BH3 (D)	BH4 (S)
Depth						
Other ID						
Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Sampling Date	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
SVOCs									
Phenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
3-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitrophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibenzofuran	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Diethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Diphenylamine	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736261	736262	736263	736264	736265	736266
Sample ID	BH1 (D)	BH2 (S)	BH2 (D)	BH3 (S)	BH3 (D)	BH4 (S)
Depth						
Other ID						
Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Sampling Date	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14	20/11/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Azobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Carbazole	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736267	736268
Sample ID	BH4 (D)	BH5
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	20/11/14	20/11/14
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	3.6	16
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.31	0.50
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.4	< 0.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	9.8	6.9
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.4	< 0.25
Zinc, Dissolved	DETSC 2306	1.25	ug/l	43.9	413
Inorganics					
pH	DETSC 2008			7.3	7.5
Cyanide total	DETSC 2130	40	ug/l	< 40	< 40
Hardness	DETSC 2303	0.1	mg/l	854	708
Sulphate as SO4	DETSC 2055	0.1	mg/l	340	220
Sulphide	DETSC 2208	10	ug/l	< 10	< 10
Total Organic Carbon	DETSC 2085*	1	mg/l	4.8	9.5
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10
TPH Ali/Aro	DETSC 3072*	10	ug/l	< 10	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736267	736268
Sample ID	BH4 (D)	BH5
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	20/11/14	20/11/14
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
PAHs					
Naphthalene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Acenaphthylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Acenaphthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Fluorene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Phenanthrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Benzo(a)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Chrysene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Benzo(b)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Benzo(k)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Benzo(a)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
PAH	DETS 074*	0.2	ug/l	< 0.20	< 0.20
Phenols					
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100	< 100

Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736267	736268
Sample ID	BH4 (D)	BH5
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	20/11/14	20/11/14
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1

Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736267	736268
Sample ID	BH4 (D)	BH5
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	20/11/14	20/11/14
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1

Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736267	736268
Sample ID	BH4 (D)	BH5
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	20/11/14	20/11/14
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
SVOCs					
Phenol	DETS 071*	1	ug/l	< 1.0	< 1.0
Aniline	DETS 071*	1	ug/l	< 1.0	< 1.0
2-Chlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.0	< 1.0
2-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.0	< 1.0
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0
2-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0
3-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0
4-Nitrophenol	DETS 071*	1	ug/l	< 1.0	< 1.0
Dibenzofuran	DETS 071*	1	ug/l	< 1.0	< 1.0
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0
Diethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0
Diphenylamine	DETS 071*	1	ug/l	< 1.0	< 1.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0

Summary of Chemical Analysis

Water Samples

Our Ref 14-21420

Client Ref

Contract Title London City Airport

Lab No	736267	736268
Sample ID	BH4 (D)	BH5
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	20/11/14	20/11/14
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Azobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0
Carbazole	DETS 071*	1	ug/l	< 1.0	< 1.0

Information in Support of the Analytical Results

Our Ref 14-21420
 Client Ref
 Contract London City Airport

Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
736261	BH1 (D) WATER	20/11/14		GB 1L, GV, PB 1L	Hexavalent Chromium (1 days)	
736262	BH2 (S) WATER	20/11/14		GB 1L, GV, PB 1L	Hexavalent Chromium (1 days)	
736263	BH2 (D) WATER	20/11/14		GB 1L, GV, PB 1L	Hexavalent Chromium (1 days)	
736264	BH3 (S) WATER	20/11/14		GB 1L, GV, PB 1L	Hexavalent Chromium (1 days)	
736265	BH3 (D) WATER	20/11/14		GB 1L, GV, PB 1L	Hexavalent Chromium (1 days)	
736266	BH4 (S) WATER	20/11/14		GJ 1L, GV, PB 1L	Hexavalent Chromium (1 days)	
736267	BH4 (D) WATER	20/11/14		GB 1L, GV, PB 1L	Hexavalent Chromium (1 days)	
736268	BH5 WATER	20/11/14		GB 1L, PB 1L	Hexavalent Chromium (1 days)	

Key: G-Glass P-Plastic B-Bottle V-Vial J-Jar

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 16-09568

Issue: 1

Date of Issue: 23/11/2016

Contact: Evangelos Kafantaris

Customer Details: Concept Engineering Consultants Ltd
Unit 8, Warple Mews
Warples Way
London
W3 0RF

Quotation No: Q16-00626

Order No: CL847

Customer Reference: 16/2900

Date Received: 18/11/2016

Date Approved: 23/11/2016

Details: London City Airport

Approved by:

John Wilson, Operations Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)



Sample Summary

Report No.: 16-09568

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
80864	BH3 11.70	16/11/2016	18/11/2016	Silty loam	
80865	BH3 12.70	16/11/2016	18/11/2016	Silty loam	
80866	BH3 13.70	16/11/2016	18/11/2016	sand + stones	
80867	BH3 14.70	16/11/2016	18/11/2016	sand + stones	
80868	BH3 15.70	16/11/2016	18/11/2016	sand + stones	
80869	BH3 16.70	16/11/2016	18/11/2016	sand + stones	
80870	BH34 11.50	16/11/2016	18/11/2016	Silty loam	
80871	BH34 13.70	16/11/2016	18/11/2016	Sandy silty loam	
80872	BH34 14.10	16/11/2016	18/11/2016	sand + stones	

Results Summary

Report No.: 16-09568

ELAB Reference	80864	80865	80866	80867	80868	80869
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	BH3	BH3	BH3	BH3	BH3	BH3
Sample Depth (m)	11.70	12.70	13.70	14.70	15.70	16.70
Sampling Date	16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	124	116	^ 6.4	^ 2.3	^ 3.1	^ 3.8
Barium	U	mg/kg	10	616	1280	26.5	13.2	13.7	14.3
Beryllium	U	mg/kg	1	1.9	1.9	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium	M	mg/kg	0.5	7.9	5.0	^ < 0.5	^ < 0.5	^ < 0.5	^ < 0.5
Chromium	M	mg/kg	5	110	90.2	^ 16.5	^ 14.3	^ 15.7	^ 16.8
Copper	M	mg/kg	5	753	512	^ 18.0	^ 8.1	^ 6.8	^ 6.5
Lead	M	mg/kg	5	1630	969	^ 16.6	^ 6.0	^ < 5.0	^ < 5.0
Mercury	M	mg/kg	0.5	47.8	31.8	^ < 0.5	^ < 0.5	^ < 0.5	^ < 0.5
Nickel	M	mg/kg	5	62.6	59.3	^ 9.3	^ 5.2	^ 6.8	^ 7.9
Selenium	M	mg/kg	1	5.4	3.5	^ < 1.0	^ < 1.0	^ < 1.0	^ < 1.0
Vanadium	M	mg/kg	5	88.8	81.4	^ 11.5	^ < 5.0	^ 6.0	^ 9.4
Boron (Total)	N	mg/kg	10	36.5	33.2	< 10.0	< 10.0	< 10.0	< 10.0
Zinc	M	mg/kg	5	3070	2030	^ 45.6	^ 16.8	^ 26.3	^ 14.2
Inorganics									
Complex Cyanide	N	mg/kg	1	2.9	2.8	< 1.0	< 1.0	< 1.0	< 1.0
Elemental Sulphur	N	mg/kg	20	20900	9940	99	34	40	31
Free Cyanide	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Cyanide	M	mg/kg	1	2.9	2.8	^ < 1.0	^ < 1.0	^ < 1.0	^ < 1.0
Miscellaneous									
Acid Neutralisation Capacity	N	mol/kg	0.1	< 0.1	n/t	< 0.1	n/t	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01	19.4	n/t	^ 0.31	n/t	n/t	n/t
pH	M	pH units	0.1	8.1	8.1	^ 8.3	^ 8.6	^ 8.6	^ 8.5
Soil Organic Matter	U	%	0.1	17	14	0.5	0.4	0.4	0.1
Total Organic Carbon	N	%	0.01	17	n/t	0.07	n/t	n/t	n/t
Phenols									
Phenol	M	mg/kg	1	< 1	n/t	n/t	^ < 1	n/t	^ < 1
M,P-Cresol	N	mg/kg	1	< 1	n/t	n/t	< 1	n/t	< 1
O-Cresol	N	mg/kg	1	< 1	n/t	n/t	< 1	n/t	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	n/t	n/t	< 1	n/t	< 1
2,3-Dimethylphenol	M	mg/kg	1	< 1	n/t	n/t	^ < 1	n/t	^ < 1
2,3,5-trimethylphenol	M	mg/kg	1	< 1	n/t	n/t	^ < 1	n/t	^ < 1
Total Monohydric Phenols	N	mg/kg	5	< 5	n/t	n/t	< 5	n/t	< 5

Results Summary

Report No.: 16-09568

2683

ELAB Reference	80864	80865	80866	80867	80868	80869
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	BH3	BH3	BH3	BH3	BH3	BH3
Sample Depth (m)	11.70	12.70	13.70	14.70	15.70	16.70
Sampling Date	16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016

Determinand	Codes	Units	LOD						
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	12.8	3.7	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Acenaphthylene	M	mg/kg	0.1	24.2	6.3	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Acenaphthene	M	mg/kg	0.1	15.8	4.0	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Fluorene	M	mg/kg	0.1	24.1	4.5	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Phenanthrene	M	mg/kg	0.1	71.2	9.6	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Anthracene	M	mg/kg	0.1	21.2	2.9	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Fluoranthene	M	mg/kg	0.1	130	16.5	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Pyrene	M	mg/kg	0.1	104	13.7	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Benzo(a)anthracene	M	mg/kg	0.1	77.2	10.1	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Chrysene	M	mg/kg	0.1	83.4	14.5	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	58.3	8.8	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	56.7	10.9	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Benzo (a) pyrene	M	mg/kg	0.1	91.8	12.7	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	56.0	14.1	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	17.1	3.9	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	46.2	12.8	^ < 0.1	^ < 0.1	^ < 0.1	^ < 0.1
Total PAH(16)	M	mg/kg	0.4	890	149	^ < 0.4	^ < 0.4	^ < 0.4	^ < 0.4
Total PAH (Including Coronene)	N	mg/kg	2	906	n/t	< 2	n/t	n/t	n/t
BTEX									
Benzene	M	ug/kg	10	306	65.5	^ < 10.0	^ < 10.0	^ < 10.0	^ < 10.0
Toluene	M	ug/kg	10	218	28.0	^ < 10.0	^ < 10.0	^ < 10.0	^ < 10.0
Ethylbenzene	M	ug/kg	10	151	28.0	^ < 10.0	^ < 10.0	^ < 10.0	^ < 10.0
Xylenes	M	ug/kg	10	369	74.4	^ < 10.0	^ < 10.0	^ < 10.0	^ < 10.0
MTBE	N	ug/kg	10	99.9	23.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	M	mg/kg	0.01	1.04	n/t	^ < 0.01	n/t	n/t	n/t
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	0.76	0.15	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	0.22	0.02	0.04	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	158	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	615	75.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	1800	313	1.5	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	161	43.4	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	0.31	0.07	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	0.22	0.03	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	50.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	469	60.7	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	1130	160	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	2720	475	2.6	2.1	2.2	1.4
>C35-C40 Aromatic	N	mg/kg	1	225	76.2	< 1.0	< 1.0	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	7320	1200	4.1	2.1	2.2	1.4
Total Petroleum Hydrocarbons									
Mineral Oil	U	mg/kg	5	7220	n/t	9	n/t	n/t	n/t



Results Summary

Report No.: 16-09568

ELAB Reference	80864	80865	80866	80867	80868	80869
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	BH3	BH3	BH3	BH3	BH3	BH3
Sample Depth (m)	11.70	12.70	13.70	14.70	15.70	16.70
Sampling Date	16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016

Determinand	Codes	Units	LOD						
PCB (ICES 7 congeners)									
PCB 28	M	mg/kg	0.01	n/t	< 0.01	n/t	^ < 0.01	^ < 0.01	^ < 0.01
PCB 52	M	mg/kg	0.01	n/t	< 0.01	n/t	^ < 0.01	^ < 0.01	^ < 0.01
PCB 101	M	mg/kg	0.01	n/t	< 0.01	n/t	^ < 0.01	^ < 0.01	^ < 0.01
PCB 118	M	mg/kg	0.01	n/t	< 0.01	n/t	^ < 0.01	^ < 0.01	^ < 0.01
PCB 153	M	mg/kg	0.01	n/t	< 0.01	n/t	^ < 0.01	^ < 0.01	^ < 0.01
PCB 138	M	mg/kg	0.01	n/t	< 0.01	n/t	^ < 0.01	^ < 0.01	^ < 0.01
PCB 180	M	mg/kg	0.01	n/t	< 0.01	n/t	^ < 0.01	^ < 0.01	^ < 0.01
PCB (Total of 7 Congeners)	M	mg/kg	0.03	< 0.03	< 0.03	^ < 0.03	^ < 0.03	^ < 0.03	^ < 0.03

Results Summary

Report No.: 16-09568

ELAB Reference	80870	80871	80872
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	BH34	BH34	BH34
Sample Depth (m)	11.50	13.70	14.10
Sampling Date	16/11/2016	16/11/2016	16/11/2016

Determinand	Codes	Units	LOD			
Metals						
Arsenic	M	mg/kg	1	22.4	4.8	^ 3.7
Barium	U	mg/kg	10	147	21.5	11.8
Beryllium	U	mg/kg	1	1.6	< 1.0	< 1.0
Cadmium	M	mg/kg	0.5	4.3	< 0.5	^ < 0.5
Chromium	M	mg/kg	5	130	20.9	^ 15.2
Copper	M	mg/kg	5	129	13.9	^ < 5.0
Lead	M	mg/kg	5	187	16.9	^ < 5.0
Mercury	M	mg/kg	0.5	3.3	< 0.5	^ < 0.5
Nickel	M	mg/kg	5	57.7	8.6	^ 8.1
Selenium	M	mg/kg	1	1.6	< 1.0	^ < 1.0
Vanadium	M	mg/kg	5	71.7	11.2	^ 8.0
Boron (Total)	N	mg/kg	10	45.4	< 10.0	< 10.0
Zinc	M	mg/kg	5	585	52.7	^ 18.5
Inorganics						
Complex Cyanide	N	mg/kg	1	2.3	< 1.0	< 1.0
Elemental Sulphur	N	mg/kg	20	2070	131	< 20
Free Cyanide	N	mg/kg	1	< 1.0	< 1.0	< 1.0
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8
Total Cyanide	M	mg/kg	1	2.3	< 1.0	^ < 1.0
Miscellaneous						
Acid Neutralisation Capacity	N	mol/kg	0.1	< 0.1	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01	7.33	n/t	n/t
pH	M	pH units	0.1	7.7	8.3	^ 8.5
Soil Organic Matter	U	%	0.1	7.4	0.9	0.3
Total Organic Carbon	N	%	0.01	3.8	n/t	n/t
Phenols						
Phenol	M	mg/kg	1	n/t	n/t	n/t
M,P-Cresol	N	mg/kg	1	n/t	n/t	n/t
O-Cresol	N	mg/kg	1	n/t	n/t	n/t
3,4-Dimethylphenol	N	mg/kg	1	n/t	n/t	n/t
2,3-Dimethylphenol	M	mg/kg	1	n/t	n/t	n/t
2,3,5-trimethylphenol	M	mg/kg	1	n/t	n/t	n/t
Total Monohydric Phenols	N	mg/kg	5	n/t	n/t	n/t

Results Summary

Report No.: 16-09568

2683

ELAB Reference	80870	80871	80872
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	BH34	BH34	BH34
Sample Depth (m)	11.50	13.70	14.10
Sampling Date	16/11/2016	16/11/2016	16/11/2016

Determinand	Codes	Units	LOD			
Polyaromatic hydrocarbons						
Naphthalene	M	mg/kg	0.1	0.4	< 0.1	^ < 0.1
Acenaphthylene	M	mg/kg	0.1	0.3	< 0.1	^ < 0.1
Acenaphthene	M	mg/kg	0.1	0.2	< 0.1	^ < 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	^ < 0.1
Phenanthrene	M	mg/kg	0.1	1.1	< 0.1	^ < 0.1
Anthracene	M	mg/kg	0.1	0.8	< 0.1	^ < 0.1
Fluoranthene	M	mg/kg	0.1	1.5	< 0.1	^ < 0.1
Pyrene	M	mg/kg	0.1	2.6	0.1	^ < 0.1
Benzo(a)anthracene	M	mg/kg	0.1	1.1	< 0.1	^ < 0.1
Chrysene	M	mg/kg	0.1	1.5	0.1	^ < 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	1.7	< 0.1	^ < 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	0.8	< 0.1	^ < 0.1
Benzo (a) pyrene	M	mg/kg	0.1	1.6	< 0.1	^ < 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	3.1	< 0.1	^ < 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	0.8	< 0.1	^ < 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	3.9	< 0.1	^ < 0.1
Total PAH(16)	M	mg/kg	0.4	21.5	< 0.4	^ < 0.4
Total PAH (Including Coronene)	N	mg/kg	2	23	n/t	n/t
BTEX						
Benzene	M	ug/kg	10	40.7	< 10.0	^ < 10.0
Toluene	M	ug/kg	10	22.4	< 10.0	^ < 10.0
Ethylbenzene	M	ug/kg	10	17.2	< 10.0	^ < 10.0
Xylenes	M	ug/kg	10	43.6	< 10.0	^ < 10.0
MTBE	N	ug/kg	10	12.5	< 10.0	< 10.0
Total BTEX	M	mg/kg	0.01	0.12	n/t	n/t
TPH CWG						
>C5-C6 Aliphatic	N	mg/kg	0.01	0.06	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	0.02	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	3.2	< 1.0	3.1
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	0.04	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	0.02	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	2.3	1.3
>C16-C21 Aromatic	N	mg/kg	1	5.8	6.4	3.4
>C21-C35 Aromatic	N	mg/kg	1	12.6	15.1	7.7
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	1.2	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	21.7	25.0	15.5
Total Petroleum Hydrocarbons						
Mineral Oil	U	mg/kg	5	< 5	n/t	n/t



Results Summary

Report No.: 16-09568

ELAB Reference	80870	80871	80872
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	BH34	BH34	BH34
Sample Depth (m)	11.50	13.70	14.10
Sampling Date	16/11/2016	16/11/2016	16/11/2016

Determinand	Codes	Units	LOD			
PCB (ICES 7 congeners)						
PCB 28	M	mg/kg	0.01	< 0.01	n/t	^ < 0.01
PCB 52	M	mg/kg	0.01	0.05	n/t	^ < 0.01
PCB 101	M	mg/kg	0.01	0.03	n/t	^ < 0.01
PCB 118	M	mg/kg	0.01	0.02	n/t	^ < 0.01
PCB 153	M	mg/kg	0.01	0.02	n/t	^ < 0.01
PCB 138	M	mg/kg	0.01	0.02	n/t	^ < 0.01
PCB 180	M	mg/kg	0.01	0.01	n/t	^ < 0.01
PCB (Total of 7 Congeners)	M	mg/kg	0.03	0.15	n/t	^ < 0.03



2683



Results Summary

Report No.: 16-09568

ELAB Reference				80864	80866	80869	80870	80871	80872
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				BH3	BH3	BH3	BH34	BH34	BH34
Sample Depth (m)				11.70	13.70	16.70	11.50	13.70	14.10
Sampling Date				16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016
Determinand	Codes	Units	LOD						
VOC									
Heptane	N	ug/kg	10	93.9	34.8	< 10.0	13.1	< 10.0	< 10.0
Octane	N	ug/kg	10	124	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Nonane	N	ug/kg	10	21.2	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Benzene	M	ug/kg	10	306	^ < 10.0	^ < 10.0	40.7	< 10.0	^ < 10.0
Toluene	M	ug/kg	10	218	^ < 10.0	^ < 10.0	22.4	< 10.0	^ < 10.0
Ethylbenzene	M	ug/kg	10	151	^ < 10.0	^ < 10.0	17.2	< 10.0	^ < 10.0
m+p-xylene	M	ug/kg	10	251	^ < 10.0	^ < 10.0	28.5	< 10.0	^ < 10.0
o-xylene	M	ug/kg	10	118	^ < 10.0	^ < 10.0	15.1	< 10.0	^ < 10.0
cis-1,2-dichloroethene	M	ug/kg	10	30.3	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
1,1-Dichloroethane	M	ug/kg	10	< 10.0	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
Chloroform	M	ug/kg	10	45.4	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
Tetrachloromethane	M	ug/kg	10	18.2	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
1,1,1-Trichloroethane	M	ug/kg	10	24.2	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
Trichloroethylene	M	ug/kg	10	< 10.0	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
Tetrachloroethylene	M	ug/kg	10	27.3	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
1,1,1,2-Tetrachloroethane	M	ug/kg	10	15.1	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
1,1,2,2-Tetrachloroetha	M	ug/kg	10	33.3	^ < 10.0	^ < 10.0	13.1	< 10.0	^ < 10.0
Chlorobenzene	M	ug/kg	10	< 10.0	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
Bromobenzene	M	ug/kg	10	< 10.0	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
Bromodichloromethane	M	ug/kg	10	30.3	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
Methylethylbenzene	M	ug/kg	10	24.2	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
1,1-Dichloro-1-propene	M	ug/kg	10	27.3	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
Trans - 1-2 -dichloroethylene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
2,2-Dichloropropane	N	ug/kg	10	15.1	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Bromochloromethane	N	ug/kg	10	42.4	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
1,2-Dichloroethane	N	ug/kg	10	33.3	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Dibromomethane	M	ug/kg	10	12.1	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
1,2-Dichloropropane	M	ug/kg	10	18.2	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
cis-1,3-Dichloro-1-propene	M	ug/kg	10	15.1	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
trans-1,3-Dichloro-1-propene	M	ug/kg	10	< 10.0	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
1,1,2-Trichloroethane	N	ug/kg	10	21.2	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Dibromochloromethane	N	ug/kg	10	12.1	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
1,3-Dichloropropane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
1,2-dibromoethane	M	ug/kg	10	< 10.0	^ < 10.0	^ < 10.0	< 10.0	< 10.0	^ < 10.0
Styrene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Propylbenzene	N	ug/kg	10	24.2	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
2-Chlorotoluene	N	ug/kg	10	21.2	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
1,2,4-Trimethylbenzene	N	ug/kg	10	24.2	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
4-Chlorotoluene	N	ug/kg	10	12.1	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
t-butylbenzene	N	ug/kg	10	15.1	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
1,3,5-Trimethylbenzene	N	ug/kg	10	78.7	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
1-methylpropylbenzene	N	ug/kg	10	12.1	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
o-cymene	N	ug/kg	10	45.4	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
1,3-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Butylbenzene	N	ug/kg	10	15.1	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
1,2-Dibromo-3-chloropropane	N	ug/kg	10	15.1	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Hexachlorobutadiene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	11.1	< 10.0	< 10.0
1,2,3-Trichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Naphthalene	N	ug/kg	10	194	< 10.0	< 10.0	16.3	< 10.0	< 10.0
1,2,4-Trichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	18.9	< 10.0	< 10.0
1,4-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
1,2-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Bromoform	N	ug/kg	10	33.3	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
VOC TIC									
Various	N	ug/kg	10	None Detected	None Detected	None Detected	None Detected	None Detected	None Detected

ELAB Reference				80864	80866	80869	80870	80871	80872
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				BH3	BH3	BH3	BH34	BH34	BH34
Sample Depth (m)				11.70	13.70	16.70	11.50	13.70	14.10
Sampling Date				16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016
Determinand	Codes	Units	LOD						
SVOC									
Phenol	N	mg/kg	0.01	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	1.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	0.90	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Methylnaphthalene	N	mg/kg	0.01	1.12	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.96	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	1.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	0.43	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	1.32	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	7.79	< 0.01	0.02	0.02	0.02	0.01
Anthracene	N	mg/kg	0.01	2.45	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	12.6	< 0.01	0.05	0.05	0.06	0.03
Pyrene	N	mg/kg	0.01	10.6	< 0.01	0.04	0.05	0.04	0.02
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	4.41	< 0.01	0.01	0.02	0.03	< 0.01
Chrysene	N	mg/kg	0.01	6.76	< 0.01	0.02	0.03	0.03	0.01
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	3.62	< 0.01	< 0.01	0.01	0.02	< 0.01
Benzo(k)fluoranthene	N	mg/kg	0.01	4.22	< 0.01	< 0.01	0.02	0.01	< 0.01
Benzo(a)pyrene	N	mg/kg	0.01	6.69	< 0.01	< 0.01	0.03	0.03	< 0.01
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	3.26	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(ah)anthracene	N	mg/kg	0.01	1.11	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[g,h,i]perylene	N	mg/kg	0.01	3.96	< 0.01	< 0.01	0.02	0.02	< 0.01

ELAB Reference				80864	80866	80869	80870	80871	80872
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				BH3	BH3	BH3	BH34	BH34	BH34
Sample Depth (m)				11.70	13.70	16.70	11.50	13.70	14.10
Sampling Date				16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016	16/11/2016
Determinand	Codes	Units	LOD						
SVOC									
SVOCTIC									
Various	N	mg/kg	0.01	Y	Y	Y	Y	Y	Y
TIC									
1,12-Bis(2-nitrophenoxy)dodecane	N	mg/kg	0.01	0.28	-	-	-	-	-
1-Eicosene	N	mg/kg	0.01	0.86	-	-	-	-	-
10,18-Bisnorabieta-5,7,9(10),11,13-pentaene	N	mg/kg	0.01	5.9	-	0.29	-	0.57	-
11,13-Dimethyl-12-tetradecen-1-ol acetate	N	mg/kg	0.01	4.41	-	-	-	-	-
13-Methyl-Z-14-nonacosene	N	mg/kg	0.01	0.07	-	-	-	-	-
13-Tetradecen-1-ol acetate	N	mg/kg	0.01	1.36	-	-	-	-	-
17-Pentatriacontene	N	mg/kg	0.01	1.63	-	-	-	-	-
2,6,10,14,18,22-Tetracosahexaene, 2,6,10,15,19,23-hexamethyl-, (all-E)-	N	mg/kg	0.01	-	15.99	-	-	9.83	-
2-Dodecen-1-yl(-)succinic anhydride	N	mg/kg	0.01	8.97	-	-	-	-	-
2-Ethylhexyl mercaptoacetate	N	mg/kg	0.01	-	3.78	-	-	-	-
2-Methyl-Z-4-tetradecene	N	mg/kg	0.01	1.28	-	-	-	-	-
28-Nor-17.alpha.(H)-hopane	N	mg/kg	0.01	0.5	-	-	-	-	-
3,13-Dihydroxy-5,8,11,18,23-pentaoxa-1,15-diazabicyclo[13.5.5]pentacosane	N	mg/kg	0.01	-	-	-	0.22	-	0.21
Cyclohexane, 2-butyl-1,1,3-trimethyl-	N	mg/kg	0.01	0.27	-	-	-	-	-
Cyclopentane, (4-octyldodecyl)-	N	mg/kg	0.01	2.71	-	-	-	-	-
Cyclotetradecane, 1,7,11-trimethyl-4-(1-methylethyl)-	N	mg/kg	0.01	3.43	-	-	-	-	-
Cyclotriacontane	N	mg/kg	0.01	6.61	-	-	-	-	-
D-Homoandrostane, (5.alpha.,13.alpha.)-	N	mg/kg	0.01	10.74	-	-	-	-	-
Eicosane	N	mg/kg	0.01	-	3.01	-	0.64	-	-
Hexadecane, 1-chloro-	N	mg/kg	0.01	3.58	-	-	-	-	-
Hexadecane, 2,6,10,14-tetramethyl-	N	mg/kg	0.01	7.18	-	-	-	-	-
Naphthalene, 1,6,7-trimethyl-	N	mg/kg	0.01	1.39	-	-	-	-	-
Octadecane, 1-chloro-	N	mg/kg	0.01	2.32	-	-	-	-	-
Pentadec-7-ene, 7-bromomethyl-	N	mg/kg	0.01	10.2	-	-	-	-	-
Pentadecane, 2,6,10,14-tetramethyl-	N	mg/kg	0.01	9.71	-	-	-	-	-
Pyridine-3-carboxamide, oxime, N-(2-trifluoromethylphenyl)-	N	mg/kg	0.01	0.22	-	-	-	-	-
Squalene	N	mg/kg	0.01	-	-	4.52	4.98	-	-
Tricosane	N	mg/kg	0.01	-	2.76	-	-	-	-
Undecane, 3,6-dimethyl-	N	mg/kg	0.01	1.17	-	-	-	-	-
m,p'-DDD	N	mg/kg	0.01	-	-	0.38	-	-	-
trans-2,3-Epoxydecane	N	mg/kg	0.01	3.54	-	-	-	-	-

Results Summary

Report No.: 16-09568

2683

WAC Analysis

Elab Ref:	80870					Landfill Waste Acceptance Criteria Limits		
Sample Date:	16/11/2016					Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:	BH34							
Depth (m)	11.5							
Site:	London City Airport							
Determinand		Code	Units					
Total Organic Carbon		N	%		3.80	3	5	6
Loss on Ignition		M	%		7.3	--	--	10
Total BTEX		M	mg/kg		0.12	6	--	--
Total PCBs (7 congeners)		M	mg/kg		0.15	1	--	--
TPH Total WAC		M	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		23.0	100	--	--
pH		M			7.7	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate

Eluate Analysis

		10:1	10:1	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
		mg/l	mg/kg			
Arsenic	N	0.012	0.12	0.5	2	25
Barium	N	0.019	0.19	20	100	300
Cadmium	N	< 0.001	< 0.01	0.04	1	5
Chromium	N	< 0.005	< 0.05	0.5	10	70
Copper	N	0.008	0.08	2	50	100
Mercury	N	< 0.005	< 0.01	0.01	0.2	2
Molybdenum	N	0.033	0.33	0.5	10	30
Nickel	N	0.012	0.12	0.4	10	40
Lead	N	0.002	< 0.05	0.5	10	50
Antimony	N	0.012	0.12	0.06	0.7	5
Selenium	N	< 0.005	< 0.05	0.1	0.5	7
Zinc	N	0.011	0.11	4	50	200
Chloride	N	861	8610.00	800	15000	25000
Fluoride	N	< 5	< 10	10	150	500
Sulphate	N	40	402.00	1000	20000	50000
Total Dissolved Solids	N	1710	17100.00	4000	60000	100000
Phenol Index	N	< 0.01	< 0.10	1	-	-
Dissolved Organic Carbon	N	48.200	482.00	500	800	1000

Leach Test Information

pH	N	8.0				
Conductivity (uS/cm)	N	3250				
Dry mass of test portion (g)		101.000				
Dry Matter (%)		33				
Moisture (%)		200				
Eluent Volume (ml)		779				

Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ELAB cannot be held responsible for any discrepancies with current legislation

Results Summary

Report No.: 16-09568

2683

WAC Analysis

Elab Ref:	80866					Landfill Waste Acceptance Criteria Limits		
Sample Date:	16/11/2016					Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:	BH3							
Depth (m)	13.7							
Site:	London City Airport							
Determinand		Code	Units					
Total Organic Carbon		N	%		0.07	3	5	6
Loss on Ignition		M	%		0.3	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		9	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			8.3	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate

Eluate Analysis

					Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
			10:1 mg/l	10:1 mg/kg			
Arsenic		N	< 0.005	< 0.05	0.5	2	25
Barium		N	< 0.005	< 0.05	20	100	300
Cadmium		N	< 0.001	< 0.01	0.04	1	5
Chromium		N	< 0.005	< 0.05	0.5	10	70
Copper		N	< 0.005	< 0.05	2	50	100
Mercury		N	< 0.005	< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005	< 0.05	0.5	10	30
Nickel		N	0.002	< 0.05	0.4	10	40
Lead		N	< 0.001	< 0.05	0.5	10	50
Antimony		N	< 0.005	< 0.05	0.06	0.7	5
Selenium		N	< 0.005	< 0.05	0.1	0.5	7
Zinc		N	0.006	0.06	4	50	200
Chloride		N	35	353.00	800	15000	25000
Fluoride		N	< 5	< 10	10	150	500
Sulphate		N	10	103.00	1000	20000	50000
Total Dissolved Solids		N	< 100	1000.00	4000	60000	100000
Phenol Index		N	< 0.01	< 0.10	1	-	-
Dissolved Organic Carbon		N	13.500	135.00	500	800	1000

Leach Test Information

pH		N	7.6				
Conductivity (uS/cm)		N	185				
Dry mass of test portion (g)			105.000				
Dry Matter (%)			96				
Moisture (%)			4				
Eluent Volume (ml)			1020				

Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ELAB cannot be held responsible for any discrepancies with current legislation

Results Summary

Report No.: 16-09568

2683

WAC Analysis

Elab Ref:	80864					Landfill Waste Acceptance Criteria Limits		
Sample Date:	16/11/2016					Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:	BH3							
Depth (m)	11.7							
Site:	London City Airport							
Determinand		Code	Units					
Total Organic Carbon		N	%		17.00	3	5	6
Loss on Ignition		M	%		19.4	--	--	10
Total BTEX		M	mg/kg		1.04	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		7220	500	--	--
Total (of 17) PAHs		N	mg/kg		906.0	100	--	--
pH		M			8.1	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate

Eluate Analysis

		10:1	10:1	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
		mg/l	mg/kg			
Arsenic	N	0.009	0.09	0.5	2	25
Barium	N	0.033	0.33	20	100	300
Cadmium	N	< 0.001	< 0.01	0.04	1	5
Chromium	N	< 0.005	< 0.05	0.5	10	70
Copper	N	< 0.005	< 0.05	2	50	100
Mercury	N	< 0.005	< 0.01	0.01	0.2	2
Molybdenum	N	0.116	1.16	0.5	10	30
Nickel	N	0.004	< 0.05	0.4	10	40
Lead	N	< 0.001	< 0.05	0.5	10	50
Antimony	N	0.006	0.06	0.06	0.7	5
Selenium	N	< 0.005	< 0.05	0.1	0.5	7
Zinc	N	0.006	0.06	4	50	200
Chloride	N	837	8370.00	800	15000	25000
Fluoride	N	< 5	< 10	10	150	500
Sulphate	N	176	1760.00	1000	20000	50000
Total Dissolved Solids	N	1860	18600.00	4000	60000	100000
Phenol Index	N	< 0.01	< 0.10	1	-	-
Dissolved Organic Carbon	N	66.800	668.00	500	800	1000

Leach Test Information

pH	N	8.1				
Conductivity (uS/cm)	N	3570				
Dry mass of test portion (g)		59.000				
Dry Matter (%)		31				
Moisture (%)		221				
Eluent Volume (ml)		439				

Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ELAB cannot be held responsible for any discrepancies with current legislation



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Results Summary

Report No.: 16-09568

Asbestos Qualitative Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Result
80864	11.70	BH3	Silty loam	No asbestos detected
80865	12.70	BH3	Silty loam	No asbestos detected
80866	13.70	BH3	sand + stones	No asbestos detected
80867	14.70	BH3	sand + stones	No asbestos detected
80868	15.70	BH3	sand + stones	No asbestos detected
80869	16.70	BH3	sand + stones	No asbestos detected
80870	11.50	BH34	Silty loam	No asbestos detected
80871	13.70	BH34	Sandy silty loam	No asbestos detected
80872	14.10	BH34	sand + stones	No asbestos detected

Method Summary

Report No.: 16-09568

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Free cyanide	N	As submitted sample	21/11/2016		Colorimetry
VOC in solids	M	As submitted sample	18/11/2016		GC-MS
Free cyanide	N	As submitted sample	21/11/2016	107	Colorimetry
Hexavalent chromium	N	As submitted sample	21/11/2016	110	Colorimetry
Aqua regia extractable metals	M	Air dried sample	22/11/2016	118	ICPMS
Phenols in solids	M	As submitted sample	18/11/2016	121	HPLC
Elemental Sulphur	N	Air dried sample	21/11/2016	122	HPLC
PAH (GC-FID)	M	As submitted sample	21/11/2016	133	GC-FID
SVOC in solids	N	As submitted sample	21/11/2016	167	GC-MS
VOC in solids	M	As submitted sample	18/11/2016	181	GC-MS
Total cyanide	M	As submitted sample	21/11/2016	204	Colorimetry
Aliphatic hydrocarbons in soil	N	As submitted sample	21/11/2016	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	23/11/2016	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	21/11/2016	214	GC-FID
Low range Aliphatic hydrocarbons soil	N	As submitted sample	21/11/2016	214	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	21/11/2016	214	GC-MS
Soil organic matter	U	Air dried sample	22/11/2016	BS1377:P3	Titrimetry
Asbestos identification	U	As submitted sample	21/11/2016	PMAN	Microscopy
Leachate					
Arsenic*	N		23/11/2016	101	ICPMS
Cadmium*	N		23/11/2016	101	ICPMS
Chromium*	N		23/11/2016	101	ICPMS
Lead*	N		23/11/2016	101	ICPMS
Nickel*	N		23/11/2016	101	ICPMS
Copper*	N		23/11/2016	101	ICPMS
Zinc*	N		23/11/2016	101	ICPMS
Mercury*	N		23/11/2016	101	ICPMS
Selenium*	N		23/11/2016	101	ICPMS
Antimony	N		23/11/2016	101	ICPMS
Barium*	N		23/11/2016	101	ICPMS
Molybdenum*	N		23/11/2016	101	ICPMS
pH Value*	N		23/11/2016	113	Electrometric
Electrical Conductivity*	N		23/11/2016	136	Probe
Dissolved Organic Carbon	N		23/11/2016	102	TOC analyser
Chloride*	N		23/11/2016	131	Ion Chromatography
Fluoride*	N		23/11/2016	131	Ion Chromatography
Sulphate*	N		23/11/2016	131	Ion Chromatography
Total Dissolved Solids	N		23/11/2016	144	Gravimetric
Phenol index	N		23/11/2016	121	HPLC
WAC Solids analysis	N				
pH Value**	M	Air dried sample	22/11/2016	113	Electrometric
Total Organic Carbon	N	Air dried sample	22/11/2016	210	IR
Loss on Ignition**	M	Air dried sample	22/11/2016	129	Gravimetric
Acid Neutralization Capacity to pH 7	N	Air dried sample	22/11/2016	NEN 737	Electrometric
Total BTEX**	M	As submitted sample	21/11/2016	181	GCMS
Mineral Oil**	U	As submitted sample	21/11/2016	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	22/11/2016	120	GCMS
Total PAH (17)**	N	As submitted sample	22/11/2016	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 16-09568

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"

Soil sample results are expressed on an air dried basis (dried at < 30°C)

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Deviation Codes

-
- | | |
|---|--|
| a | No date of sampling supplied |
| b | No time of sampling supplied (Waters Only) |
| c | Sample not received in appropriate containers |
| d | Sample not received in cooled condition |
| e | The container has been incorrectly filled |
| f | Sample age exceeds stability time (sampling to receipt) |
| g | Sample age exceeds stability time (sampling to analysis) |

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 16-09650

Issue: 1

Date of Issue: 01/12/2016

Contact: Evangelos Kafantaris

Customer Details: Concept Engineering Consultants Ltd
Unit 8, Warple Mews
Warples Way
London
W3 0RF

Quotation No: Q16-00716

Order No: CL850

Customer Reference: 16/2900

Date Received: 23/11/2016

Date Approved: 01/12/2016

Details: London City Airport

Approved by: 

John Wilson, Operations Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)



Sample Summary

Report No.: 16-09650

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
81360	BH31 12.00	17/11/2016	23/11/2016	Silty loam	
81361	BH31 12.50	17/11/2016	23/11/2016	Sand + stones	
81362	BH31 13.50	17/11/2016	23/11/2016	Sand + stones	
81363	BH17 11.90	21/11/2016	23/11/2016	Silty clayey loam	
81364	BH17 12.90	21/11/2016	23/11/2016		
81365	BH17 13.90	21/11/2016	23/11/2016	Sand + stones	

Results Summary

Report No.: 16-09650

ELAB Reference	81360	81361	81362	81363	81365
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	BH31	BH31	BH31	BH17	BH17
Sample Depth (m)	12.00	12.50	13.50	11.90	13.90
Sampling Date	17/11/2016	17/11/2016	17/11/2016	21/11/2016	21/11/2016

Determinand	Codes	Units	LOD					
Metals								
Arsenic	M	mg/kg	1	43.7	^ 6.6	^ 4.8	21.0	^ 9.9
Cadmium	M	mg/kg	0.5	9.3	^ < 0.5	^ < 0.5	0.7	^ < 0.5
Chromium	M	mg/kg	5	171	^ 25.6	^ 19.7	51.4	^ 45.8
Copper	M	mg/kg	5	256	^ 16.0	^ 5.8	50.2	^ 22.1
Lead	M	mg/kg	5	415	^ 35.6	^ 6.8	56.7	^ 17.6
Mercury	M	mg/kg	0.5	8.1	^ < 0.5	^ < 0.5	1.9	^ 0.6
Nickel	M	mg/kg	5	78.7	^ 12.1	^ 8.5	30.8	^ 20.9
Zinc	M	mg/kg	5	979	^ 114	^ 29.9	126	^ 49.0
Anions								
Water Soluble Sulphate	M	g/l	0.02	0.39	^ 0.12	^ 0.05	0.43	^ 0.13
Inorganics								
Total Cyanide	M	mg/kg	1	2.3	^ < 1.0	^ < 1.0	< 1.0	^ < 1.0
Water Soluble Boron	N	mg/kg	0.5	7.0	0.7	< 0.5	3.7	1.4
Miscellaneous								
Soil Organic Matter	U	%	0.1	9.8	0.5	0.1	3.7	0.6
Phenols								
Phenol	M	mg/kg	1	< 1	n/t	n/t	n/t	n/t
M,P-Cresol	N	mg/kg	1	< 1	n/t	n/t	n/t	n/t
O-Cresol	N	mg/kg	1	< 1	n/t	n/t	n/t	n/t
3,4-Dimethylphenol	N	mg/kg	1	< 1	n/t	n/t	n/t	n/t
2,3-Dimethylphenol	M	mg/kg	1	< 1	n/t	n/t	n/t	n/t
2,3,5-trimethylphenol	M	mg/kg	1	< 1	n/t	n/t	n/t	n/t
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6
Total Monohydric Phenols	N	mg/kg	5	< 5	n/t	n/t	n/t	n/t
Polyaromatic hydrocarbons								
Naphthalene	M	mg/kg	0.1	2.2	^ < 0.1	^ < 0.1	0.1	^ < 0.1
Acenaphthylene	M	mg/kg	0.1	3.1	^ 0.1	^ < 0.1	0.2	^ < 0.1
Acenaphthene	M	mg/kg	0.1	0.8	^ < 0.1	^ < 0.1	0.3	^ < 0.1
Fluorene	M	mg/kg	0.1	0.9	^ < 0.1	^ < 0.1	0.3	^ < 0.1
Phenanthrene	M	mg/kg	0.1	2.7	^ < 0.1	^ < 0.1	1.2	^ < 0.1
Anthracene	M	mg/kg	0.1	2.7	^ < 0.1	^ < 0.1	0.5	^ < 0.1
Fluoranthene	M	mg/kg	0.1	5.0	^ 0.2	^ < 0.1	3.5	^ < 0.1
Pyrene	M	mg/kg	0.1	6.3	^ 0.2	^ < 0.1	3.0	^ < 0.1
Benzo(a)anthracene	M	mg/kg	0.1	3.3	^ 0.1	^ < 0.1	2.4	^ < 0.1
Chrysene	M	mg/kg	0.1	5.7	^ 0.2	^ < 0.1	2.7	^ < 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	4.1	^ 0.2	^ < 0.1	2.3	^ < 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	3.3	^ 0.2	^ < 0.1	2.5	^ < 0.1
Benzo (a) pyrene	M	mg/kg	0.1	4.8	^ 0.1	^ < 0.1	2.8	^ < 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	7.1	^ 0.3	^ < 0.1	2.5	^ < 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	1.2	^ < 0.1	^ < 0.1	0.6	^ < 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	4.2	^ 0.2	^ < 0.1	1.8	^ < 0.1
Total PAH(16)	M	mg/kg	0.4	57.5	^ 2.2	^ < 0.4	26.7	^ < 0.4

Results Summary

Report No.: 16-09650

ELAB Reference	81360	81361	81362	81363	81365
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	BH31	BH31	BH31	BH17	BH17
Sample Depth (m)	12.00	12.50	13.50	11.90	13.90
Sampling Date	17/11/2016	17/11/2016	17/11/2016	21/11/2016	21/11/2016

Determinand	Codes	Units	LOD					
BTEX								
Benzene	M	ug/kg	10	< 10.0	^ < 10.0	^ < 10.0	< 10.0	^ < 10.0
Toluene	M	ug/kg	10	< 10.0	^ < 10.0	^ < 10.0	< 10.0	^ < 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	^ < 10.0	^ < 10.0	< 10.0	^ < 10.0
Xylenes	M	ug/kg	10	< 10.0	^ < 10.0	^ < 10.0	< 10.0	^ < 10.0
MTBE	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	20.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	269	5.7	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	742	17.6	< 1.0	< 1.0	1.2
>C21-C35 Aliphatic	N	mg/kg	1	2100	50.1	4.6	< 1.0	8.2
>C35-C40 Aliphatic	N	mg/kg	1	292	7.1	< 1.0	< 1.0	1.1
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	134	3.5	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	473	13.7	< 1.0	< 1.0	1.2
>C21-C35 Aromatic	N	mg/kg	1	1410	40.8	4.8	< 1.0	7.5
>C35-C40 Aromatic	N	mg/kg	1	189	5.6	< 1.0	< 1.0	1.6
Total (>C5-C40) Ali/Aro	N	mg/kg	1	5620	144	9.5	< 1.0	20.6
PCB (ICES 7 congeners)								
PCB 28	M	mg/kg	0.01	< 0.01	n/t	n/t	n/t	n/t
PCB 52	M	mg/kg	0.01	0.06	n/t	n/t	n/t	n/t
PCB 101	M	mg/kg	0.01	0.04	n/t	n/t	n/t	n/t
PCB 118	M	mg/kg	0.01	0.05	n/t	n/t	n/t	n/t
PCB 153	M	mg/kg	0.01	0.04	n/t	n/t	n/t	n/t
PCB 138	M	mg/kg	0.01	0.04	n/t	n/t	n/t	n/t
PCB 180	M	mg/kg	0.01	0.04	n/t	n/t	n/t	n/t
PCB (Total of 7 Congeners)	M	mg/kg	0.03	0.28	n/t	n/t	n/t	n/t

Results Summary

Report No.: 16-09650

ELAB Reference	81360	81362	81363	81365
Customer Reference				
Sample ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sample Location	BH31	BH31	BH17	BH17
Sample Depth (m)	12.00	13.50	11.90	13.90
Sampling Date	17/11/2016	17/11/2016	21/11/2016	21/11/2016

Determinand	Codes	Units	LOD				
VOC							
Heptane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Octane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Nonane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Benzene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Toluene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
m+p-xylene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
o-xylene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
cis-1,2-dichloroethene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
1,1-Dichloroethane	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Chloroform	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Tetrachloromethane	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
1,1,1-Trichloroethane	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Trichloroethylene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Tetrachloroethylene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
1,1,1,2-Tetrachloroethane	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
1,1,2,2-Tetrachloroetha	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Chlorobenzene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Bromobenzene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Bromodichloromethane	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Methylethylbenzene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
1,1-Dichloro-1-propene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Trans - 1-2 -dichloroethylene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
2,2-Dichloropropane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Bromochloromethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2-Dichloroethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Dibromomethane	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
1,2-Dichloropropane	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
cis-1,3-Dichloro-1-propene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
trans-1,3-Dichloro-1-propene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
1,1,2-Trichloroethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Dibromochloromethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,3-Dichloropropane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2-dibromoethane	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	^ < 10.0
Styrene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Propylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
2-Chlorotoluene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2,4-Trimethylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
4-Chlorotoluene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
t-butylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,3,5-Trimethylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1-methylpropylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
o-cymene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,3-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Butylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2-Dibromo-3-chloropropane	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Hexachlorobutadiene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2,3-Trichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Naphthalene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2,4-Trichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,4-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
1,2-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Bromoform	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0

Results Summary

Report No.: 16-09650

ELAB Reference	81360	81362	81363	81365
Customer Reference				
Sample ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sample Location	BH31	BH31	BH17	BH17
Sample Depth (m)	12.00	13.50	11.90	13.90
Sampling Date	17/11/2016	17/11/2016	21/11/2016	21/11/2016

Determinand	Codes	Units	LOD				
SVOC							
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	0.32	0.07	0.22	< 0.01
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	0.19	0.02	0.12	< 0.01
1-Methylnaphthalene	N	mg/kg	0.01	0.15	0.01	0.08	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.66	< 0.01	0.34	< 0.01
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	0.31	< 0.01	0.06	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01	< 0.01	0.07	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	0.16	< 0.01	0.03	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01

Results Summary

Report No.: 16-09650

ELAB Reference	81360	81362	81363	81365
Customer Reference				
Sample ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sample Location	BH31	BH31	BH17	BH17
Sample Depth (m)	12.00	13.50	11.90	13.90
Sampling Date	17/11/2016	17/11/2016	21/11/2016	21/11/2016

Determinand	Codes	Units	LOD				
SVOC							
Phenanthrene	N	mg/kg	0.01	1.77	0.03	0.30	< 0.01
Anthracene	N	mg/kg	0.01	0.97	< 0.01	0.41	< 0.01
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	6.23	0.04	2.79	0.01
Pyrene	N	mg/kg	0.01	5.36	0.04	2.43	0.01
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	2.61	0.02	1.28	< 0.01
Chrysene	N	mg/kg	0.01	2.34	0.02	1.87	< 0.01
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	3.86	0.01	1.37	< 0.01
Benzo(k)fluoranthene	N	mg/kg	0.01	2.62	0.01	1.49	< 0.01
Benzo(a)pyrene	N	mg/kg	0.01	3.30	0.01	1.71	< 0.01
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	1.97	0.01	0.91	< 0.01
Dibenz(ah)anthracene	N	mg/kg	0.01	0.54	< 0.01	0.30	< 0.01
Benzo[g,h,i]perylene	N	mg/kg	0.01	3.88	0.02	1.11	< 0.01



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Results Summary
Report No.: 16-09650

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
81360	12.00	BH31	clay, stones, glass	No asbestos detected	n/t	n/t	n/t	n/t
81361	12.50	BH31	Sandy silt loam, stones	No asbestos detected	n/t	n/t	n/t	n/t
81362	13.50	BH31	sand, stones	No asbestos detected	n/t	n/t	n/t	n/t
81363	11.90	BH17	Clay, stones, wood, clinker	No asbestos detected	n/t	n/t	n/t	n/t
81365	13.90	BH17	sand, stones	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 16-09650

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Aqua regia extractable metals	M	Air dried sample	29/11/2016	118	ICPMS
PCB (ICES 7 congeners)	M	Air dried sample	29/11/2016	120	GC-MS
Phenols in solids	M	As submitted sample	25/11/2016	121	HPLC
PAH (GC-FID)	M	As submitted sample	25/11/2016	133	GC-FID
SVOC in solids	N	As submitted sample	25/11/2016	167	GC-MS
Water soluble anions	M	Air dried sample	29/11/2016	172	Ion Chromatography
VOC in solids	M	As submitted sample	24/11/2016	181	GC-MS
BTEX in solids	M	As submitted sample	28/11/2016	181A	GC-MS
Water soluble boron	N	Air dried sample	28/11/2016	202	Colorimetry
Total cyanide	M	As submitted sample	28/11/2016	204	Colorimetry
Aliphatic hydrocarbons in soil	N	As submitted sample	25/11/2016	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	28/11/2016	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	25/11/2016	214	GC-FID
Low range Aliphatic hydrocarbons soil	N	As submitted sample	28/11/2016	214	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	28/11/2016	214	GC-MS
Soil organic matter	U	Air dried sample	29/11/2016	BS1377:P3	Titrimetry
Asbestos identification	U	As submitted sample	28/11/2016	PMAN	Microscopy

Tests marked N are not UKAS accredited

Report Information

Report No.: 16-09650

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"

Soil sample results are expressed on an air dried basis (dried at < 30°C)

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Deviation Codes

-
- | | |
|---|--|
| a | No date of sampling supplied |
| b | No time of sampling supplied (Waters Only) |
| c | Sample not received in appropriate containers |
| d | Sample not received in cooled condition |
| e | The container has been incorrectly filled |
| f | Sample age exceeds stability time (sampling to receipt) |
| g | Sample age exceeds stability time (sampling to analysis) |

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 16-09701

Issue: 1

Date of Issue: 02/12/2016

Contact: Evangelos Kafantaris

Customer Details: Concept Engineering Consultants Ltd
Unit 8, Warple Mews
Warple Way
London
W3 0RF

Quotation No: Q16-00716

Order No: CL854

Customer Reference: 16/2900

Date Received: 24/11/2016

Date Approved: 02/12/2016

Details: London City Airport

Approved by: 

John Wilson, Operations Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)



Sample Summary

Report No.: 16-09701

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
81751	BH28 12.00	21/11/2016	25/11/2016	Silty loam	
81752	BH28 13.20	21/11/2016	25/11/2016		
81753	BH28 13.50	21/11/2016	25/11/2016	Stones	
81754	BH25 11.90	22/11/2016	25/11/2016	Silty loam	
81755	BH25 12.50	22/11/2016	25/11/2016		
81756	BH25 13.70	22/11/2016	25/11/2016	Sand + Stones	



Results Summary

Report No.: 16-09701

ELAB Reference	81751	81753	81754	81756
Customer Reference				
Sample ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sample Location	BH28	BH28	BH25	BH25
Sample Depth (m)	12.00	13.50	11.90	13.70
Sampling Date	21/11/2016	21/11/2016	22/11/2016	22/11/2016

Determinand	Codes	Units	LOD				
Metals							
Arsenic	M	mg/kg	1	47.3	^ 3.8	24.7	^ 5.5
Cadmium	M	mg/kg	0.5	9.1	^ < 0.5	2.2	^ < 0.5
Chromium	M	mg/kg	5	164	^ 19.0	49.1	^ 16.3
Copper	M	mg/kg	5	347	^ 8.2	99.6	^ 5.8
Lead	M	mg/kg	5	378	^ 6.8	195	^ 5.9
Mercury	M	mg/kg	0.5	9.9	^ < 0.5	4.9	^ < 0.5
Nickel	M	mg/kg	5	92.9	^ 7.7	25.6	^ 8.6
Zinc	M	mg/kg	5	1470	^ 20.4	361	^ 18.2
Anions							
Water Soluble Sulphate	M	g/l	0.02	0.49	^ 0.07	0.36	^ 0.06
Inorganics							
Total Cyanide	M	mg/kg	1	2.0	^ < 1.0	1.1	^ < 1.0
Water Soluble Boron	N	mg/kg	0.5	7.6	< 0.5	2.2	< 0.5
Miscellaneous							
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	< 0.1	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01	n/t	^ 0.82	n/t	n/t
pH	M	pH units	0.1	n/t	^ 8.7	n/t	n/t
Soil Organic Matter	U	%	0.1	13	0.3	4.4	< 0.1
Total Organic Carbon	N	%	0.01	n/t	0.08	n/t	n/t
Phenols							
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons							
Naphthalene	M	mg/kg	0.1	1.0	^ < 0.1	0.7	^ < 0.1
Acenaphthylene	M	mg/kg	0.1	1.3	^ < 0.1	1.2	^ < 0.1
Acenaphthene	M	mg/kg	0.1	0.6	^ < 0.1	0.5	^ < 0.1
Fluorene	M	mg/kg	0.1	0.6	^ < 0.1	0.6	^ < 0.1
Phenanthrene	M	mg/kg	0.1	0.3	^ 0.4	0.5	^ < 0.1
Anthracene	M	mg/kg	0.1	1.3	^ < 0.1	0.4	^ < 0.1
Fluoranthene	M	mg/kg	0.1	1.8	^ 0.5	3.7	^ < 0.1
Pyrene	M	mg/kg	0.1	2.1	^ 0.5	3.5	^ < 0.1
Benzo(a)anthracene	M	mg/kg	0.1	1.3	^ 0.3	1.9	^ < 0.1
Chrysene	M	mg/kg	0.1	2.3	^ 0.4	2.2	^ < 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	^ 0.3	2.0	^ < 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	^ 0.2	1.9	^ < 0.1
Benzo (a) pyrene	M	mg/kg	0.1	2.5	^ 0.3	3.3	^ < 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	^ 0.3	2.6	^ < 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.6	^ < 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	^ 0.2	1.9	^ < 0.1
Total PAH(16)	M	mg/kg	0.4	15.1	^ 3.8	27.5	^ < 0.4
Total PAH (Including Coronene)	N	mg/kg	2	n/t	4	n/t	n/t

Results Summary

Report No.: 16-09701

ELAB Reference	81751	81753	81754	81756
Customer Reference				
Sample ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sample Location	BH28	BH28	BH25	BH25
Sample Depth (m)	12.00	13.50	11.90	13.70
Sampling Date	21/11/2016	21/11/2016	22/11/2016	22/11/2016

Determinand	Codes	Units	LOD				
BTEX							
Benzene	M	ug/kg	10	n/t	n/t	< 10.0	^ < 10.0
Toluene	M	ug/kg	10	n/t	n/t	< 10.0	^ < 10.0
Ethylbenzene	M	ug/kg	10	n/t	n/t	< 10.0	^ < 10.0
Xylenes	M	ug/kg	10	n/t	n/t	< 10.0	^ < 10.0
MTBE	N	ug/kg	10	n/t	n/t	< 10.0	< 10.0
Total BTEX	M	mg/kg	0.01	n/t	^ < 0.01	n/t	n/t
TPH CWG							
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	29.5	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	345	< 1.0	33.3	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	1060	1.8	80.1	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	3520	21.0	224	2.7
>C35-C40 Aliphatic	N	mg/kg	1	493	1.8	19.4	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	131	< 1.0	10.6	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	826	2.8	50.4	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	3160	24.2	183	4.3
>C35-C40 Aromatic	N	mg/kg	1	517	3.5	21.5	2.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	10100	55.0	623	9.0
Total Petroleum Hydrocarbons							
Mineral Oil	U	mg/kg	5	n/t	24	n/t	n/t
PCB (ICES 7 congeners)							
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	^ < 0.03	n/t	n/t

Results Summary

Report No.: 16-09701

ELAB Reference	81751	81753
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	BH28	BH28
Sample Depth (m)	12.00	13.50
Sampling Date	21/11/2016	21/11/2016

Determinand	Codes	Units	LOD		
VOC					
Heptane	N	ug/kg	10	< 10.0	< 10.0
Octane	N	ug/kg	10	< 10.0	< 10.0
Nonane	N	ug/kg	10	< 10.0	< 10.0
Benzene	M	ug/kg	10	< 10.0	^ < 10.0
Toluene	M	ug/kg	10	< 10.0	^ < 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	^ < 10.0
m+p-xylene	M	ug/kg	10	< 10.0	^ < 10.0
o-xylene	M	ug/kg	10	< 10.0	^ < 10.0
cis-1,2-dichloroethene	M	ug/kg	10	< 10.0	^ < 10.0
1,1-Dichloroethane	M	ug/kg	10	< 10.0	^ < 10.0
Chloroform	M	ug/kg	10	< 10.0	^ < 10.0
Tetrachloromethane	M	ug/kg	10	< 10.0	^ < 10.0
1,1,1-Trichloroethane	M	ug/kg	10	< 10.0	^ < 10.0
Trichloroethylene	M	ug/kg	10	< 10.0	^ < 10.0
Tetrachloroethylene	M	ug/kg	10	< 10.0	^ < 10.0
1,1,1,2-Tetrachloroethane	M	ug/kg	10	< 10.0	^ < 10.0
1,1,2,2-Tetrachloroetha	M	ug/kg	10	< 10.0	^ < 10.0
Chlorobenzene	M	ug/kg	10	< 10.0	^ < 10.0
Bromobenzene	M	ug/kg	10	< 10.0	^ < 10.0
Bromodichloromethane	M	ug/kg	10	< 10.0	^ < 10.0
Methylethylbenzene	M	ug/kg	10	< 10.0	^ < 10.0
1,1-Dichloro-1-propene	M	ug/kg	10	< 10.0	^ < 10.0
Trans - 1-2 -dichloroethylene	N	ug/kg	10	< 10.0	< 10.0
2,2-Dichloropropane	N	ug/kg	10	< 10.0	< 10.0
Bromochloromethane	N	ug/kg	10	< 10.0	< 10.0
1,2-Dichloroethane	N	ug/kg	10	< 10.0	< 10.0
Dibromomethane	M	ug/kg	10	< 10.0	^ < 10.0
1,2-Dichloropropane	M	ug/kg	10	< 10.0	^ < 10.0
cis-1,3-Dichloro-1-propene	M	ug/kg	10	< 10.0	^ < 10.0
trans-1,3-Dichloro-1-propene	M	ug/kg	10	< 10.0	^ < 10.0
1,1,2-Trichloroethane	N	ug/kg	10	< 10.0	< 10.0
Dibromochloromethane	N	ug/kg	10	< 10.0	< 10.0
1,3-Dichloropropane	N	ug/kg	10	< 10.0	< 10.0
1,2-dibromoethane	M	ug/kg	10	< 10.0	^ < 10.0
Styrene	N	ug/kg	10	< 10.0	< 10.0
Propylbenzene	N	ug/kg	10	< 10.0	< 10.0
2-Chlorotoluene	N	ug/kg	10	< 10.0	< 10.0
1,2,4-Trimethylbenzene	N	ug/kg	10	< 10.0	< 10.0
4-Chlorotoluene	N	ug/kg	10	< 10.0	< 10.0
t-butylbenzene	N	ug/kg	10	< 10.0	< 10.0
1,3,5-Trimethylbenzene	N	ug/kg	10	< 10.0	< 10.0
1-methylpropylbenzene	N	ug/kg	10	< 10.0	< 10.0
o-cymene	N	ug/kg	10	< 10.0	< 10.0
1,3-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0
Butylbenzene	N	ug/kg	10	< 10.0	< 10.0
1,2-Dibromo-3-chloropropane	N	ug/kg	10	< 10.0	< 10.0
Hexachlorobutadiene	N	ug/kg	10	< 10.0	< 10.0
1,2,3-Trichlorobenzene	N	ug/kg	10	< 10.0	< 10.0
Naphthalene	N	ug/kg	10	< 10.0	< 10.0
1,2,4-Trichlorobenzene	N	ug/kg	10	< 10.0	< 10.0
1,4-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0
1,2-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0
Bromoform	N	ug/kg	10	< 10.0	< 10.0

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Results Summary

Report No.: 16-09701

ELAB Reference	81751	81753
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	BH28	BH28
Sample Depth (m)	12.00	13.50
Sampling Date	21/11/2016	21/11/2016

Determinand	Codes	Units	LOD		
SVOC					
Phenol	N	mg/kg	0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	0.19	0.02
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	0.14	0.02
1-Methylnaphthalene	N	mg/kg	0.01	0.10	0.03
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.48	< 0.01
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	0.21	0.06
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	0.09	0.02
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	0.11	0.03
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01

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Results Summary

Report No.: 16-09701

ELAB Reference	81751	81753
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	BH28	BH28
Sample Depth (m)	12.00	13.50
Sampling Date	21/11/2016	21/11/2016

Determinand	Codes	Units	LOD		
SVOC					
Phenanthrene	N	mg/kg	0.01	0.43	0.33
Anthracene	N	mg/kg	0.01	0.29	0.08
Carbazole	N	mg/kg	0.01	< 0.01	0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	4.05	0.49
Pyrene	N	mg/kg	0.01	4.22	0.47
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	1.22	0.14
Chrysene	N	mg/kg	0.01	2.32	0.23
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	2.84	0.18
Benzo(k)fluoranthene	N	mg/kg	0.01	1.84	0.16
Benzo(a)pyrene	N	mg/kg	0.01	2.44	0.17
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.77	0.08
Dibenz(ah)anthracene	N	mg/kg	0.01	0.29	0.03
Benzo[g,h,i]perylene	N	mg/kg	0.01	1.73	0.11

Report No.: 16-09701

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



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Results Summary

Report No.: 16-09701

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
81751	12.00	BH28	Brown clay loam	No asbestos detected	n/t	n/t	n/t	n/t
81753	13.50	BH28	Stones with sand	No asbestos detected	n/t	n/t	n/t	n/t
81754	11.90	BH25	Brown clay loam	No asbestos detected	n/t	n/t	n/t	n/t
81756	13.70	BH25	Stones with sand	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 16-09701

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Aqua regia extractable metals	M	Air dried sample	30/11/2016	118	ICPMS
Phenols in solids	N	As submitted sample	29/11/2016	121	HPLC
PAH (GC-FID)	M	As submitted sample	29/11/2016	133	GC-FID
SVOC in solids	N	As submitted sample	29/11/2016	167	GC-MS
Water soluble anions	M	Air dried sample	30/11/2016	172	Ion Chromatography
VOC in solids	M	As submitted sample	29/11/2016	181	GC-MS
Water soluble boron	N	Air dried sample	30/11/2016	202	Colorimetry
Total cyanide	M	As submitted sample	29/11/2016	204	Colorimetry
Aliphatic hydrocarbons in soil	N	As submitted sample	29/11/2016	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	30/11/2016	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	29/11/2016	214	GC-FID
Low range Aliphatic hydrocarbons soil	N	As submitted sample	30/11/2016	214	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	30/11/2016	214	GC-MS
Soil organic matter	U	Air dried sample	01/12/2016	BS1377:P3	Titrimetry
Asbestos identification	U	As submitted sample	29/11/2016	PMAN	Microscopy
Leachate					
Arsenic*	N		01/12/2016	101	ICPMS
Cadmium*	N		01/12/2016	101	ICPMS
Chromium*	N		01/12/2016	101	ICPMS
Lead*	N		01/12/2016	101	ICPMS
Nickel*	N		01/12/2016	101	ICPMS
Copper*	N		01/12/2016	101	ICPMS
Zinc*	N		01/12/2016	101	ICPMS
Mercury*	N		01/12/2016	101	ICPMS
Selenium*	N		01/12/2016	101	ICPMS
Antimony	N		01/12/2016	101	ICPMS
Barium*	N		01/12/2016	101	ICPMS
Molybdenum*	N		01/12/2016	101	ICPMS
pH Value*	N		01/12/2016	113	Electrometric
Electrical Conductivity*	N		01/12/2016	136	Probe
Dissolved Organic Carbon	N		01/12/2016	102	TOC analyser
Chloride*	N		01/12/2016	131	Ion Chromatography
Fluoride*	N		01/12/2016	131	Ion Chromatography
Sulphate*	N		01/12/2016	131	Ion Chromatography
Total Dissolved Solids	N		01/12/2016	144	Gravimetric
Phenol index	N		01/12/2016	121	HPLC
WAC Solids analysis	N				
pH Value**	M	Air dried sample	01/12/2016	113	Electrometric
Total Organic Carbon	N	Air dried sample	30/11/2016	210	IR
Loss on Ignition**	M	Air dried sample	02/12/2016	129	Gravimetric
Acid Neutralization Capacity to pH 7	N	Air dried sample	01/12/2016	NEN 737	Electrometric
Total BTEX**	M	As submitted sample	30/11/2016	181	GCMS
Mineral Oil**	U	As submitted sample	29/11/2016	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	30/11/2016	120	GCMS
Total PAH (17)**	N	As submitted sample	30/11/2016	133	GCFID

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