Borehole Log

Status: DRAFT

WS7

Sheet 1 of 1

Project: Filling Station, Kings Cross

Project No: 5679

Ground Level: -

Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample / Test Type	Sample / Test Depth (m)	Test Results	Casing (Water) Depth (m)	Installations
CONCRETE with rebar								
MADE GROUND Soft brown sandy gravelly CLAY with medium cobble content. gravel is angular brick and concrete.		0.30						
Soft becoming firm dark brown CLAY with a hydrocarbon sheen and strong hydrocarbon odour. (LONDON CLAY FORMATION).		1.70		PID ES	1.80 1.80	1.00ppm		
Borehole Complete at 3.00 m		3.00		ES	3.00			

Water Level Observations

Hole Diameter Detail			Chiselling / Slow Progress			Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
Diameter (mm)	Depth (m)	Casing Depth (m)	From (m)	To (m)	Time (hours)						

Progress

Date	Hole Depth	Casing Depth	Water Depth	Remarks

Client:	Carillion
Consultant:	ARUP
Dates Drilled:	17/02/2015
Plant:	Terrier
SPT Hammer:	N/A
Date Printed:	19/02/2015
Drilled By:	GT
Logged By:	JC
Checked By:	DB

Remarks: First 1.2mbgl excavated by 5 ton machine.

Borehole Log

Status: DRAFT

WS8

Sheet 1 of 1

Project: Filling Station, Kings Cross

Project No: 5679

Ground Level: -

Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample / Test Type	Sample / Test Depth (m)	Sample / Test Test Results	Casing (Water) Depth (m)	Installations
CONCRETE with rebar		0.20						
MADE GROUND: Soft to firm dark brown slightly sandy very gravelly CLAY with high cobble content. Gravel is fine to coarse angular brick and concrete. Cobbles are angular brick and concrete. Sand is medium and coarse.				PID ES	2.00 2.00	6.90ppm		
Soft to firm dark brown CLAY. (LONDON CLAY FORMATION)		2.60						
Borehole Complete at 3.00 m		3.00						

Water Level Observations

Hole Diameter Detail			Chiselling / Slow Progress			Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
Diameter (mm)	Depth (m)	Casing Depth (m)	From (m)	To (m)	Time (hours)						

Progress

Date	Hole Depth	Casing Depth	Water Depth	Remarks

Client:	Carillion
Consultant:	ARUP
Dates Drilled:	18/02/2015
Plant:	Terrier
SPT Hammer:	N/A
Date Printed:	19/02/2015
Drilled By:	GT
Logged By:	JC
Checked By:	DB

Remarks: First 1.2mbgl excavated by 5 ton machine.

Borehole Log

Status: DRAFT

WS9

Sheet 1 of 1

Project: Filling Station, Kings Cross

Project No: 5679

Ground Level: -

Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample / Test Type	Sample / Test Depth (m)	Test Results	Casing (Water) Depth (m)	Installations
CONCRETE with rebar								
MADE GROUND: Soft to firm dark brown slightly sandy very gravelly CLAY with medium cobble content and frequent scrap metal. Gravel is fine to coarse angular brick and concrete. Cobbles are angular concrete. Sand is fine to coarse.		0.30						
MADE GROUND: Soft mottled dark brown and black slightly gravelly CLAY with strong hydrocarbon odour. Gravel is fine and medium angular brick.		1.80		PID ES	2.00 2.00	2.00ppm		
				PID ES	3.00 3.00	5.80ppm		
Soft to firm dark brown CLAY. (LONDON CLAY FORMATION)		3.60		PID ES	3.60 3.60	3.40ppm		
Borehole Complete at 4.00 m		4.00						

Water Level Observations

Hole Diameter Detail			Chiselling / Slow Progress		
Diameter (mm)	Depth (m)	Casing Depth (m)	From (m)	To (m)	Time (hours)

Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
18/02/15	1.70	0	1.70	-	
18/02/15	1.70	20	1.70	-	

Progress

Date	Hole Depth	Casing Depth	Water Depth	Remarks

Client:	Carillion
Consultant:	ARUP
Dates Drilled:	18/02/2015
Plant:	Terrier
SPT Hammer:	N/A
Date Printed:	19/02/2015
Drilled By:	GT
Logged By:	JC
Checked By:	DB

Remarks: First 1.2mbgl excavated by 5 ton machine.

Borehole Log

Status: DRAFT

WS10

Sheet 1 of 1

Project: Filling Station, Kings Cross

Project No: 5679

Ground Level: -

Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample / Test Type	Sample / Test Depth (m)	Test Results	Casing (Water) Depth (m)	Installations
CONCRETE with rebar								
MADE GROUND: Soft mottled dark brown and black slightly sandy very gravelly CLAY with medium cobble content. Gravel is fine to coarse angular to subrounded brick and concrete. Sand is fine to coarse.		0.30						
MADE GROUND: Soft to firm dark brown slightly gravelly CLAY. Gravel is fine and medium angular and subangular brick.		1.60		PID	1.80	1.40ppm		
CONCRETE.		1.75		ES	1.80			
Borehole Complete at 1.80 m		1.80						

Hole Diameter Detail

Diameter (mm)	Depth (m)	Casing Depth (m)

Chiselling / Slow Progress

From (m)	To (m)	Time (hours)

Water Level Observations

Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)

Progress

Date	Hole Depth	Casing Depth	Water Depth	Remarks

Client: Carillion
Consultant: ARUP
Dates Drilled: 18/02/2015
Plant: Terrier
SPT Hammer: N/A
Date Printed: 19/02/2015
Drilled By: GT
Logged By: JC
Checked By: DB

Remarks: First 1.20mbgl excavated by machine. Hole refused at 1.80mbgl on concrete.

Borehole Log

Status: DRAFT

WS11

Sheet 1 of 1

Project: Filling Station, Kings Cross

Project No: 5679

Ground Level: -

Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample / Test Type	Sample / Test Depth (m)	Test Results	Casing (Water) Depth (m)	Installations
CONCRETE with rebar.		0.20						
MADE GROUND Soft dark brown slightly sandy very gravelly CLAY with low cobble content. Gravel is fine to coarse angular to subrounded brick and concrete. Cobbles are angular concrete. Sand is fine to coarse.								
Black fine to coarse GRAVEL with wood fragments. Gravel is fine and medium angular brick.		1.70		PID	1.80	0.20ppm		
CONCRETE.		1.75		ES	1.80			
Borehole Complete at 1.80 m		1.80						

Hole Diameter Detail

Diameter (mm)	Depth (m)	Casing Depth (m)

Chiselling / Slow Progress

From (m)	To (m)	Time (hours)

Water Level Observations

Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)

Progress

Date	Hole Depth	Casing Depth	Water Depth	Remarks

Client:	Carillion
Consultant:	ARUP
Dates Drilled:	18/02/2015
Plant:	Terrier
SPT Hammer:	N/A
Date Printed:	19/02/2015
Drilled By:	GT
Logged By:	JC
Checked By:	DB

Remarks: First 1.20mbgl excavated by machine. Hole refused at 1.80mbgl on concrete.

Borehole Log

Status: DRAFT

WS12

Sheet 1 of 1

Project: Filling Station, Kings Cross

Project No: 5679

Ground Level: -

Coordinates:

Description	Legend	Depth (m)	O.D. Level (m)	Sample / Test Type	Sample / Test Depth (m)	Test Results	Casing (Water) Depth (m)	Installations
CONCRETE with rebar.		0.20		PID	0.00	0.00ppm		
MADE GROUND: Soft dark brown slightly sandy very gravelly CLAY with medium cobble content. Gravel is fine to coarse angular to subangular brick and concrete. Cobbles are angular to subrounded concrete.		1.40						
Firm to stiff mottled bark brown and greyish brown CLAY. (LONDON CLAY FORMATION)		2.00		ES	1.80			
Borehole Complete at 2.00 m								

Hole Diameter Detail

Diameter (mm)	Depth (m)	Casing Depth (m)

Chiselling / Slow Progress

From (m)	To (m)	Time (hours)

Water Level Observations

Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)

Progress

Date	Hole Depth	Casing Depth	Water Depth	Remarks

Client: Carillion
Consultant: ARUP
Dates Drilled: 18/02/2015
Plant: Terrier
SPT Hammer: N/A
Date Printed: 19/02/2015
Drilled By: GT
Logged By: JC
Checked By: DB

Remarks: First 1.20mbgl excavated by 5 ton machine.

Jack Clayton
BAM Ritchies
Ray Lamb Way
Off Manor Road
Erith
Kent
DA8 2LB

t: 01322 345272
f: 01322 345832
e: jack.clayton@bamnuttall.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 15-67382

Project / Site name:	Kings Cross Filling Station	**Samples received on:**	20/02/2015
Your job number:	5679	**Samples instructed on:**	20/02/2015
Your order number:		**Analysis completed by:**	27/02/2015
Report Issue Number:	1	**Report issued on:**	27/02/2015
Samples Analysed:	11 soil samples		

Signed:

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

Signed:

Emma Winter
Assistant Reporting 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.

Analytical Report Number: 15-67382

Project / Site name: Kings Cross Filling Station

Lab Sample Number				419387	419388	419389	419390	419391
Sample Reference				WS4	WS5	WS6	WS7	WS7
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80	2.50	2.80	1.80	3.00
Date Sampled				17/02/2015	17/02/2015	17/02/2015	17/02/2015	17/02/2015
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	26	23	24	21
Total mass of sample received	kg	0.001	NONE	2.0	2.0	2.0	2.0	2.0
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	Not-detected	-
General Inorganics								
pH	pH Units	N/A	MCERTS	-	6.8	-	6.9	-
Total Cyanide	mg/kg	1	MCERTS	-	1	-	< 1	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	< 0.1	-	< 0.1	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.23	0.39	-	0.15	1.0
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	-	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	-	0.83	2.1
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	-	1.1	2.7
Phenanthrene	mg/kg	0.1	MCERTS	1.1	0.85	-	2.5	8.5
Anthracene	mg/kg	0.1	MCERTS	0.14	0.16	-	0.25	0.84
Fluoranthene	mg/kg	0.1	MCERTS	0.84	1.7	-	2.0	3.1
Pyrene	mg/kg	0.1	MCERTS	0.65	1.4	-	1.2	1.9
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.33	0.75	-	0.23	0.34
Chrysene	mg/kg	0.05	MCERTS	0.31	0.98	-	0.35	0.41
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.31	0.92	-	0.25	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.14	0.43	-	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.21	0.63	-	0.13	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	0.38	-	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	-	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.53	-	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	4.21	9.10	-	8.94	20.9
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	4.1	-	2.1	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	14	-	9.6	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	2.0	-	1.8	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	2.8	-	4.2	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	49	-	48	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	71	-	34	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	270	-	13	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.4	-	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	47	-	43	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	110	-	100	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	180	-	58	-

Analytical Report Number: 15-67382

Project / Site name: Kings Cross Filling Station

Lab Sample Number				419387	419388	419389	419390	419391
Sample Reference				WS4	WS5	WS6	WS7	WS7
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80	2.50	2.80	1.80	3.00
Date Sampled				17/02/2015	17/02/2015	17/02/2015	17/02/2015	17/02/2015
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	1.9	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	2.4	< 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	12	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	31	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	28	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	75	< 10	< 10	< 10
TPH-CWG - Aliphatic (EC5 - EC44)	mg/kg	10	NONE	< 10	75	< 10	< 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	0.7	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	1.8	< 1.0	< 1.0	1.2
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	3.9	< 2.0	3.0	18
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	19	< 10	< 10	23
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	25	< 10	< 10	42
TPH-CWG - Aromatic (EC5 - EC44)	mg/kg	10	NONE	< 10	25	< 10	< 10	42
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
PCB Congener 081	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
PCB Congener 105	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
PCB Congener 114	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
PCB Congener 118	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
PCB Congener 123	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
PCB Congener 126	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
PCB Congener 156	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
PCB Congener 157	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
PCB Congener 167	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
PCB Congener 169	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
PCB Congener 189	mg/kg	0.001	NONE	-	< 0.001	-	< 0.001	-
Total PCBs	mg/kg	0.012	NONE	-	< 0.012	-	< 0.012	-

Analytical Report Number: 15-67382

Project / Site name: Kings Cross Filling Station

Lab Sample Number				419392	419393	419394	419395	419396
Sample Reference				WS8	WS9	WS9	WS10	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	3.00	3.60	1.80	1.80
Date Sampled				18/02/2015	18/02/2015	18/02/2015	18/02/2015	18/02/2015
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	22	29	26	26	47
Total mass of sample received	kg	0.001	NONE	2.0	2.0	2.0	2.0	2.0
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	-	-
General Inorganics								
pH	pH Units	N/A	MCERTS	-	7.1	-	-	-
Total Cyanide	mg/kg	1	MCERTS	-	< 1	-	-	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	1.0	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.15	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.27	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.35	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	0.32	1.3	0.55	< 0.10	0.34
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.11	0.12	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	0.21	0.58	0.27	0.22	0.55
Pyrene	mg/kg	0.1	MCERTS	0.16	0.43	0.19	0.23	0.54
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.19	0.52
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.17	0.42
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.27	0.39
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.12	0.19
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.12	0.26
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
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	< 1.60	3.22	< 1.60	< 1.60	3.21
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-	2.9	-	-	-
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	10	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	1.6	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	4.6	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	41	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	48	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	110	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.3	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	31	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	85	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	81	-	-	-

Analytical Report Number: 15-67382

Project / Site name: Kings Cross Filling Station

Lab Sample Number				419392	419393	419394	419395	419396
Sample Reference				WS8	WS9	WS9	WS10	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	3.00	3.60	1.80	1.80
Date Sampled				18/02/2015	18/02/2015	18/02/2015	18/02/2015	18/02/2015
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	3.4
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	11	< 8.0	< 8.0	20
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	98
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	14
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	11	< 10	< 10	120
TPH-CWG - Aliphatic (EC5 - EC44)	mg/kg	10	NONE	< 10	11	< 10	< 10	140
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	3.1
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	22
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	140
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	41
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	160
TPH-CWG - Aromatic (EC5 - EC44)	mg/kg	10	NONE	< 10	< 10	< 10	< 10	200
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	< 0.001	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	< 0.012	-	-	-

Analytical Report Number: 15-67382

Project / Site name: Kings Cross Filling Station

Lab Sample Number				419397				
Sample Reference				WS12				
Sample Number				None Supplied				
Depth (m)				1.80				
Date Sampled				18/02/2015				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	26				
Total mass of sample received	kg	0.001	NONE	2.0				
Asbestos in Soil	Type	N/A	ISO 17025	-				
General Inorganics								
pH	pH Units	N/A	MCERTS	-				
Total Cyanide	mg/kg	1	MCERTS	-				
Total Organic Carbon (TOC)	%	0.1	MCERTS	-				
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-				
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-				
Acenaphthylene	mg/kg	0.1	MCERTS	-				
Acenaphthene	mg/kg	0.1	MCERTS	-				
Fluorene	mg/kg	0.1	MCERTS	-				
Phenanthrene	mg/kg	0.1	MCERTS	-				
Anthracene	mg/kg	0.1	MCERTS	-				
Fluoranthene	mg/kg	0.1	MCERTS	-				
Pyrene	mg/kg	0.1	MCERTS	-				
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-				
Chrysene	mg/kg	0.05	MCERTS	-				
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-				
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-				
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-				
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-				
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-				
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-				
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	-				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-				
Boron (water soluble)	mg/kg	0.2	MCERTS	-				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-				

Analytical Report Number: 15-67382

Project / Site name: Kings Cross Filling Station

Lab Sample Number				419397				
Sample Reference				WS12				
Sample Number				None Supplied				
Depth (m)				1.80				
Date Sampled				18/02/2015				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-xylene	µg/kg	1	MCERTS	< 1.0				
o-xylene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aliphatic (EC5 - EC44)	mg/kg	10	NONE	< 10				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC44)	mg/kg	10	NONE	< 10				
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-				
PCB Congener 081	mg/kg	0.001	NONE	-				
PCB Congener 105	mg/kg	0.001	NONE	-				
PCB Congener 114	mg/kg	0.001	NONE	-				
PCB Congener 118	mg/kg	0.001	NONE	-				
PCB Congener 123	mg/kg	0.001	NONE	-				
PCB Congener 126	mg/kg	0.001	NONE	-				
PCB Congener 156	mg/kg	0.001	NONE	-				
PCB Congener 157	mg/kg	0.001	NONE	-				
PCB Congener 167	mg/kg	0.001	NONE	-				
PCB Congener 169	mg/kg	0.001	NONE	-				
PCB Congener 189	mg/kg	0.001	NONE	-				
Total PCBs	mg/kg	0.012	NONE	-				

Analytical Report Number : 15-67382

Project / Site name: Kings Cross Filling Station

* 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 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
419387	WS4	None Supplied	2.80	Brown clay and sand.
419388	WS5	None Supplied	2.50	Brown clay and sand.
419389	WS6	None Supplied	2.80	Brown clay and sand.
419390	WS7	None Supplied	1.80	Brown clay and sand.
419391	WS7	None Supplied	3.00	Brown clay and sand.
419392	WS8	None Supplied	2.00	Brown clay and sand.
419393	WS9	None Supplied	3.00	Brown clay and sand.
419394	WS9	None Supplied	3.60	Brown clay and sand.
419395	WS10	None Supplied	1.80	Brown clay and sand.
419396	WS11	None Supplied	1.80	Brown clay and sand with vegetation.
419397	WS12	None Supplied	1.80	Brown clay and sand.

Analytical Report Number : 15-67382

Project / Site name: Kings Cross Filling Station

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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	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
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
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) 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
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	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	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 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
TPH in (Soil)	Determination of TPH bands by GC-MS/GC-FID	In-house method, TPH with carbon banding.	L064-PL		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 30oC.

Jack Clayton
BAM Ritchies
Ray Lamb Way
Off Manor Road
Erith
Kent
DA8 2LB

t: 01322 345272
f: 01322 345832
e: jack.clayton@bamnuttall.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 15-67387

Project / Site name:	Kings Cross Filling Station	**Samples received on:**	20/02/2015
Your job number:	5679	**Samples instructed on:**	20/02/2015
Your order number:		**Analysis completed by:**	27/02/2015
Report Issue Number:	1	**Report issued on:**	27/02/2015
Samples Analysed:	3 wac multi samples		

Signed:

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

Signed:

Emma Winter
Assistant Reporting 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
7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**15-67387**						
					Client:	**RITCHIES**	
Location	**Kings Cross Filling Station**						
Lab Reference (Sample Number)	419418				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	17/02/2015				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS5						
Depth (m)	2.50						
Solid Waste Analysis							
TOC (%)**	-				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	-				6000	--	--
Sum of PCBs (mg/kg) **	-				1	--	--
Mineral Oil (mg/kg)	-				500	--	--
Total PAH (WAC-17) (mg/kg)	-				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.16	0.098		1.0	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0011	< 0.0010		< 0.0050	0.5	10	70
Copper *	0.0040	0.0030		0.031	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.026	0.015		0.16	0.5	10	30
Nickel *	0.010	0.0023		0.029	0.4	10	40
Lead *	0.0090	0.0054		0.057	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 *	0.0064	0.0042		0.044	4	50	200
Chloride *	95	16		220	800	4000	25000
Fluoride	2.9	2.2		22	10	150	500
Sulphate *	30	12		140	1000	20000	50000
TDS	330	140		1500	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	16	5.3		62	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	74						
Moisture (%)	26						
Stage 1							
Volume Eluate L2 (litres)	0.30						
Filtered Eluate VE1 (litres)	0.14						

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 discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

i2 Analytical
7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**15-67387**						
					Client:	**RITCHIES**	
Location	**Kings Cross Filling Station**						
Lab Reference (Sample Number)	419419				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	17/02/2015				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS7						
Depth (m)	1.80						
Solid Waste Analysis							
TOC (%)**	-				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	-				6000	--	--
Sum of PCBs (mg/kg) **	-				1	--	--
Mineral Oil (mg/kg)	-				500	--	--
Total PAH (WAC-17) (mg/kg)	-				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.053	0.042		0.43	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0024	< 0.0010		0.010	0.5	10	70
Copper *	0.020	0.0079		0.093	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.025	0.012		0.14	0.5	10	30
Nickel *	0.0028	0.0019		0.020	0.4	10	40
Lead *	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050		0.034	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.0046	0.0046		0.046	4	50	200
Chloride *	22	< 4.0		46	800	4000	25000
Fluoride	2.3	2.1		21	10	150	500
Sulphate *	73	27		330	1000	20000	50000
TDS	150	90		970	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	11	7.1		75	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	76						
Moisture (%)	24						
Stage 1							
Volume Eluate L2 (litres)	0.31						
Filtered Eluate VE1 (litres)	0.20						

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 (liquid eluate analysis only)
** = MCERTS accrediited

i2 Analytical
7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**15-67387**						
					Client:	**RITCHIES**	
Location	**Kings Cross Filling Station**						
Lab Reference (Sample Number)	419420				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	17/02/2015				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS9						
Depth (m)	3.00						
Solid Waste Analysis							
TOC (%)**	-				3%	5%	6%
Loss on Ignition (%) **	-				--	--	10%
BTEX (µg/kg) **	-				6000	--	--
Sum of PCBs (mg/kg) **	-				1	--	--
Mineral Oil (mg/kg)	-				500	--	--
Total PAH (WAC-17) (mg/kg)	-				100	--	--
pH (units)**	-				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.061	0.035		0.37	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0020	0.0011		0.012	0.5	10	70
Copper *	0.018	0.017		0.17	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.068	0.017		0.21	0.5	10	30
Nickel *	0.0037	0.0018		0.020	0.4	10	40
Lead *	0.0057	< 0.0050		0.026	0.5	10	50
Antimony *	< 0.0050	< 0.0050		0.045	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.0087	0.0045		0.049	4	50	200
Chloride *	21	< 4.0		34	800	4000	25000
Fluoride	4.2	2.7		29	10	150	500
Sulphate *	170	37		480	1000	20000	50000
TDS	230	100		1100	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	14	9.5		99	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	71						
Moisture (%)	29						
Stage 1							
Volume Eluate L2 (litres)	0.30						
Filtered Eluate VE1 (litres)	0.15						

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 discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

Analytical Report Number : 15-67387

Project / Site name: Kings Cross Filling Station

* 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 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
419418	WS5	None Supplied	2.50	Brown clay and sand.
419419	WS7	None Supplied	1.80	Brown clay and sand.
419420	WS9	None Supplied	3.00	Brown clay and sand.

Analytical Report Number : 15-67387

Project / Site name: Kings Cross Filling Station

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
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	ISO 17025
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 1:1ratio 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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
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	ISO 17025
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. 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	ISO 17025
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

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.

KINGS CROSS

4 Stable Street
London
N1C 4AB
T +44 (0)20 3664 0200
www.kingscross.co.uk