



Mouchel
Ground Engineering
Rowan House
Lloyd Drive
Cheshire
CH65 9HQ

Attention: Neil Balderstone

CERTIFICATE OF ANALYSIS

Date: 16 December 2011
Customer: D_MOUCHEL_ELE
Sample Delivery Group (SDG): 111028-44
Your Reference:
Location: Limerick Gasworks
Report No: 164061

This report has been revised and directly supersedes 159168 in its entirety.

We received 9 samples on Wednesday October 26, 2011 and 9 of these samples were scheduled for analysis which was completed on Friday December 16, 2011. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

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Approved By:

Sonia McWhan
Operations Manager





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
4595525	A10		0.50 - 0.70	25/10/2011
4595527	A10		2.30 - 2.60	25/10/2011
4595522	A9		0.00 - 0.70	25/10/2011
4595523	A9		0.70 - 0.95	25/10/2011
4595528	B10		0.00 - 0.40	25/10/2011
4595532	B9		0.30 - 0.50	25/10/2011
4595535	B9		1.00 - 1.80	25/10/2011
4595536	B9		2.00 - 2.20	25/10/2011
4595537	B9		2.50 - 2.80	25/10/2011

Only received samples which have had analysis scheduled will be shown on the following pages.

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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
4595522	A9	0.00 - 0.70	Dark Brown	Gravel	2 - 10 mm	None	None
4595523	A9	0.70 - 0.95	Light Brown	Sandy Loam	0.1 - 2 mm	Stones	None
4595525	A10	0.50 - 0.70	Light Brown	Sandy Loam	0.1 - 2 mm	Stones	None
4595527	A10	2.30 - 2.60	Light Brown	Clay	0.063 - 0.1 mm	Stones	None
4595532	B9	0.30 - 0.50	Dark Brown	Sandy Clay	0.063 - 0.1 mm	Stones	N/A
4595535	B9	1.00 - 1.80	Dark Brown	Sand	0.1 - 2 mm	Stones	None
4595536	B9	2.00 - 2.20	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones	None
4595537	B9	2.50 - 2.80	Light Brown	Sandy Loam	0.1 - 2 mm	Stones	N/A
4595528	B10	0.00 - 0.40	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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Results Legend		Customer Sample Ref.	A9	A10	A10	B9	B9	B9
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.70 - 0.95	0.50 - 0.70	2.30 - 2.60	0.30 - 0.50	2.00 - 2.20	2.50 - 2.80
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
S	Deviating sample.		25/10/2011	25/10/2011	25/10/2011	25/10/2011	25/10/2011	25/10/2011
aq	Aqueous / settled sample.		26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011
diss.filt	Dissolved / filtered sample.		111028-44	111028-44	111028-44	111028-44	111028-44	111028-44
tot.unfilt	Total / unfiltered sample.		4595523	4595525	4595527	4595532	4595536	4595537
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
Ammoniacal Nitrogen, exchangeable as NH4	<15 mg/kg	TM024	<15	<15	<15	<15	<15	51.8
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15	<15	<15	<15	40.3
Catechol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	0.011	0.319	7.12
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	0.0329	0.177	8.1
Resorcinol	<0.05 mg/kg	TM062 (S)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	6.16
1-Naphthol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015	1.98
Phenols, Total Detected 8 Speciated	<0.12 mg/kg	TM062 (S)	<0.12	<0.12	<0.12	<0.12	0.496	23.4
pH	1 pH Units	TM133	9.74	9.65	7.43	8.5	11.5	10.7
Hexavalent Chromium	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Cyanide, Total	<1 mg/kg	TM153	<1	<1	38.5	<1	4.69	2.39
PCB congener 28	<3 µg/kg	TM168			<3			
PCB congener 52	<3 µg/kg	TM168			<3			
PCB congener 101	<3 µg/kg	TM168			<3			
PCB congener 118	<3 µg/kg	TM168			<3			
PCB congener 138	<3 µg/kg	TM168			<3			
PCB congener 153	<3 µg/kg	TM168			<3			
PCB congener 180	<3 µg/kg	TM168			<3			
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168			<21			
Easily Liberated Sulphide	<15 mg/kg	TM180	<15	<15	<15	<15	<15	19.9
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	<15	<15	<15	21.8
Arsenic	<0.6 mg/kg	TM181	7.06	8.9	16.4	12.7	28.3	7.11
Cadmium	<0.02 mg/kg	TM181	0.205	0.369	0.387	0.371	0.492	0.416
Chromium	<0.9 mg/kg	TM181	20.5	13	28	13.4	25.7	9.18
Copper	<1.4 mg/kg	TM181	15.1	20.4	26.9	16	24.3	4.28
Lead	<0.7 mg/kg	TM181	24	58.7	54.6	112	94	5.13
Mercury	<0.14 mg/kg	TM181	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Nickel	<0.2 mg/kg	TM181	24.1	16.3	41.8	18.6	31.2	10.8
Selenium	<1 mg/kg	TM181	<1	<1	<1	<1	<1	<1
Zinc	<1.9 mg/kg	TM181	49.1	81.7	61.9	95.3	234	21.6
Sulphate, Total	<48 mg/kg	TM221	5890	1720	236	736	4210	680



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Superseded Report: 159168

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	A9	B9	B10			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.70 Soil/Solid 25/10/2011 26/10/2011 111028-44 4595522	1.00 - 1.80 Soil/Solid 25/10/2011 26/10/2011 111028-44 4595535	0.00 - 0.40 Soil/Solid 25/10/2011 26/10/2011 111028-44 4595528			
M	mCERTS accredited.							
S	Deviating sample.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units					Method		
GRO >C5-C12	<44 µg/kg	TM089	75	176	468			
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	#	#	#
Benzene	<10 µg/kg	TM089	<10	<10	<10	#	M	M
Toluene	<2 µg/kg	TM089	8.96	24.6	11.2	#	M	M
Ethylbenzene	<3 µg/kg	TM089	<3	4.92	<3	#	M	M
m,p-Xylene	<6 µg/kg	TM089	6.72	16	12.3	#	M	M
o-Xylene	<3 µg/kg	TM089	3.36	6.15	4.48	#	M	M
sum of detected mpo xylene by GC	<9 µg/kg	TM089	10.1	22.2	16.8			
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	51.7	28			
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	18.5	29.1			
Aliphatics >C6-C8	<10 µg/kg	TM089	10.1	43.1	39.2			
Aliphatics >C8-C10	<10 µg/kg	TM089	12.3	17.2	65			
Aliphatics >C10-C12	<10 µg/kg	TM089	10.1	13.5	150			
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	11.1	10.1			
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	24.6	11.2			
Aromatics >EC8-EC10	<10 µg/kg	TM089	20.2	38.1	62.7			
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	101			
Total Aliphatics >C5-C12	<10 µg/kg	TM089	37	93.5	283			
Total Aromatics >EC5-EC12	<10 µg/kg	TM089	38.1	83.6	185			

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PAH by GCMS

Results Legend		Customer Sample Ref.	A9	A10	A10	B9	B9	B9
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.70 - 0.95	0.50 - 0.70	2.30 - 2.60	0.30 - 0.50	2.00 - 2.20	2.50 - 2.80
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
S	Deviating sample.		25/10/2011	25/10/2011	25/10/2011	25/10/2011	25/10/2011	25/10/2011
aq	Aqueous / settled sample.		26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011
diss.filt	Dissolved / filtered sample.		111028-44	111028-44	111028-44	111028-44	111028-44	111028-44
tot.unfilt	Total / unfiltered sample.		4595523	4595525	4595527	4595532	4595536	4595537
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
Naphthalene	<9 µg/kg	TM218	169	740	<9	1030	1170	24400
Acenaphthylene	<12 µg/kg	TM218	65.9	1210	<12	6140	298	5190
Acenaphthene	<8 µg/kg	TM218	14.8	119	<8	1190	348	1240
Fluorene	<10 µg/kg	TM218	20	424	<10	4300	499	4930
Phenanthrene	<15 µg/kg	TM218	127	4590	<15	13800	3820	15200
Anthracene	<16 µg/kg	TM218	39.3	1960	<16	6690	1310	5090
Fluoranthene	<17 µg/kg	TM218	194	10300	<17	18400	4520	12400
Pyrene	<15 µg/kg	TM218	172	8880	<15	12900	3130	7960
Benz(a)anthracene	<14 µg/kg	TM218	134	6510	<14	7880	2100	4650
Chrysene	<10 µg/kg	TM218	98.6	4390	<10	4930	1670	3030
Benzo(b)fluoranthene	<15 µg/kg	TM218	220	9580	<15	8570	2270	4160
Benzo(k)fluoranthene	<14 µg/kg	TM218	60.6	3240	<14	2680	778	1620
Benzo(a)pyrene	<15 µg/kg	TM218	169	7650	<15	6710	1340	3400
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	105	4330	<18	3170	646	1440
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	1340	<23	870	227	424
Benzo(g,h,i)perylene	<24 µg/kg	TM218	124	4920	<24	3280	781	1540
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	1710	70200	<118	103000	24900	96700

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TPH CWG (S)

Results Legend		Customer Sample Ref.	A9	A10	A10	B9	B9	B9
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.70 - 0.95	0.50 - 0.70	2.30 - 2.60	0.30 - 0.50	2.00 - 2.20	2.50 - 2.80
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
S	Deviating sample.		25/10/2011	25/10/2011	25/10/2011	25/10/2011	25/10/2011	25/10/2011
aq	Aqueous / settled sample.		26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011
diss.filt	Dissolved / filtered sample.		111028-44	111028-44	111028-44	111028-44	111028-44	111028-44
tot.unfilt	Total / unfiltered sample.		4595523	4595525	4595527	4595532	4595536	4595537
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
GRO >C5-C12	<44 µg/kg	TM089	164	153	<44	643	620	23000
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	62.5	189
Toluene	<2 µg/kg	TM089	22	12.9	<2	11	96.8	268
Ethylbenzene	<3 µg/kg	TM089	3.3	3.51	<3	<3	10.6	131
m,p-Xylene	<6 µg/kg	TM089	18.7	12.9	<6	12	49.6	1480
o-Xylene	<3 µg/kg	TM089	6.6	<3	<3	8.76	27.1	701
sum of detected mpo xylene by GC	<9 µg/kg	TM089	25.3	12.9	<9	20.8	76.7	2180
sum of detected BTEX by GC	<24 µg/kg	TM089	50.6	29.3	<24	31.8	247	2770
Aliphatics >C5-C6	<10 µg/kg	TM089	19.8	<10	<10	13.1	62.5	39.4
Aliphatics >C6-C8	<10 µg/kg	TM089	39.6	25.7	<10	30.7	179	1010
Aliphatics >C8-C10	<10 µg/kg	TM089	16.5	24.6	<10	74.5	49.6	4160
Aliphatics >C10-C12	<10 µg/kg	TM089	13.2	26.9	<10	261	30.7	7350
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	7840	<100	11800	11100	14700
Aliphatics >C16-C21	<100 µg/kg	TM173	<100	2400	<100	27600	24300	25500
Aliphatics >C21-C35	<100 µg/kg	TM173	<100	27800	<100	457000	82400	41300
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	6820	<100	44100	18600	7660
Total Aliphatics >C12-C44	<100 µg/kg	TM173	<100	54900	<100	540000	136000	89200
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	62.5	189
Aromatics >EC7-EC8	<10 µg/kg	TM089	22	12.9	<10	11	96.8	268
Aromatics >EC8-EC10	<10 µg/kg	TM089	39.6	31.6	<10	71.2	120	5080
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	18.7	<10	174	20.1	4900
Aromatics >EC12-EC16	<100 µg/kg	TM173	3420	14000	<100	26600	21300	35100
Aromatics >EC16-EC21	<100 µg/kg	TM173	5290	65300	<100	104000	58600	104000
Aromatics >EC21-EC35	<100 µg/kg	TM173	23100	228000	<100	336000	147000	178000
Aromatics >EC35-EC44	<100 µg/kg	TM173	10300	70800	<100	72500	25400	38100
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	42100	378000	<100	540000	252000	355000
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	42100	433000	<100	1080000	389000	467000
Total Aliphatics >C5-35	<100 µg/kg	TM173	<100	48200	<100	497000	118000	94100
Total Aromatics >C5-35	<100 µg/kg	TM173	31900	308000	<100	468000	227000	327000
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	31900	356000	<100	964000	345000	421000
Total Aliphatics >C5-C12	<10 µg/kg	TM089	89.1	85.4	<10	380	321	12600
Total Aromatics >EC5-EC12	<10 µg/kg	TM089	74.8	67.9	<10	263	299	10400
Total Aliphatics >C5-C44	<100 µg/kg	TM173	<100	55000	<100	541000	137000	102000
Total Aromatics >C6-C44	<100 µg/kg	TM173	42100	378000	<100	540000	252000	366000



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Validated

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TPH CWG (S)

Table with columns for Results Legend, Customer Sample Ref., Depth (m), Sample Type, Date Sampled, Date Received, SDG Ref, Lab Sample No.(s), AGS Reference, Component, LOD/Units, Method, and concentration values for A9, A10, B9.

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VOC MS (S)

Results Legend		Customer Sample Ref.	B9	B10			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.		2.50 - 2.80	0.00 - 0.40			
S	Deviating sample.		Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		25/10/2011	25/10/2011			
diss.filt	Dissolved / filtered sample.		26/10/2011	26/10/2011			
tot.unfilt	Total / unfiltered sample.		111028-44	111028-44			
*	Subcontracted test.		4595537	4595528			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
Component	LOD/Units		Method				
Dibromofluoromethane**	%	TM116	40.3	0.78			
Toluene-d8**	%	TM116	98.4	104			
4-Bromofluorobenzene**	%	TM116	116	136			
Dichlorodifluoromethane	<4 µg/kg	TM116	<4	<40			
Chloromethane	<7 µg/kg	TM116	<7	<70			
Vinyl Chloride	<10 µg/kg	TM116	<10	<100			
Bromomethane	<13 µg/kg	TM116	<13	<130			
Chloroethane	<14 µg/kg	TM116	<14	<140			
Trichlorofluoromethane	<6 µg/kg	TM116	<6	<60			
1.1-Dichloroethene	<10 µg/kg	TM116	<10	<100			
Carbon Disulphide	<7 µg/kg	TM116	41.3	<70			
Dichloromethane	<10 µg/kg	TM116	<10	<100			
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11	<110			
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<11	<110			
1.1-Dichloroethane	<8 µg/kg	TM116	<8	<80			
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<5	<50			
2.2-Dichloropropane	<12 µg/kg	TM116	<12	<120			
Bromochloromethane	<14 µg/kg	TM116	<14	<140			
Chloroform	<8 µg/kg	TM116	<8	<80			
1.1.1-Trichloroethane	<7 µg/kg	TM116	<7	<70			
1.1-Dichloropropene	<11 µg/kg	TM116	<11	<110			
Carbontetrachloride	<14 µg/kg	TM116	<14	<140			
1.2-Dichloroethane	<5 µg/kg	TM116	<5	<50			
Benzene	<9 µg/kg	TM116	167	<90			
Trichloroethene	<9 µg/kg	TM116	<9	<90			
1.2-Dichloropropane	<12 µg/kg	TM116	<12	<120			
Dibromomethane	<9 µg/kg	TM116	<9	<90			
Bromodichloromethane	<7 µg/kg	TM116	<7	<70			
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<140			
Toluene	<5 µg/kg	TM116	162	<50			
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<140			
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10	<100			
1.3-Dichloropropane	<7 µg/kg	TM116	<7	<70			
Tetrachloroethene	<5 µg/kg	TM116	<5	<50			
Dibromochloromethane	<13 µg/kg	TM116	<13	<130			



SDG: 111028-44
 Job: D_MOUCHEL_ELE-1
 Client Reference:

Location: Limerick Gasworks
 Customer: Mouchel
 Attention: Neil Balderstone

Order Number: 4700000740
 Report Number: 164061
 Superseded Report: 159168

VOC MS (S)

Results Legend		Customer Sample Ref.	B9	B10					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	2.50 - 2.80 Soil/Solid 25/10/2011 26/10/2011 111028-44 4995537	0.00 - 0.40 Soil/Solid 25/10/2011 26/10/2011 111028-44 4995528					
M	mCERTS accredited.								
S	Deviating sample.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted test.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
Component	LOD/Units				Method				
1,2-Dibromoethane	<12 µg/kg	TM116	<12	<120	M	M			
Chlorobenzene	<5 µg/kg	TM116	<5	<50	M	M			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<100	M	M			
Ethylbenzene	<4 µg/kg	TM116	48.9	<40	M	M			
p/m-Xylene	<14 µg/kg	TM116	424	<140	#	#			
o-Xylene	<10 µg/kg	TM116	191	<100	M	M			
Styrene	<10 µg/kg	TM116	<10	<100	M	M			
Bromoform	<10 µg/kg	TM116	<10	<100	M	M			
Isopropylbenzene	<5 µg/kg	TM116	<5	<50	M	M			
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<100	#	#			
1,2,3-Trichloropropane	<17 µg/kg	TM116	<17	<170	M	M			
Bromobenzene	<10 µg/kg	TM116	<10	<100	M	M			
Propylbenzene	<11 µg/kg	TM116	38.5	<110	M	M			
2-Chlorotoluene	<9 µg/kg	TM116	<9	<90	M	M			
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	246	<80	#	#			
4-Chlorotoluene	<12 µg/kg	TM116	<12	<120	M	M			
tert-Butylbenzene	<12 µg/kg	TM116	<12	<120	#	#			
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	1020	<90	#	#			
sec-Butylbenzene	<10 µg/kg	TM116	<10	<100	M	M			
4-Isopropyltoluene	<11 µg/kg	TM116	<11	<110	M	M			
1,3-Dichlorobenzene	<6 µg/kg	TM116	<6	<60	M	M			
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5	<50	M	M			
n-Butylbenzene	<10 µg/kg	TM116	87	<100	M	M			
1,2-Dichlorobenzene	<12 µg/kg	TM116	<12	<120	M	M			
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	<140	M	M			
Tert-amyl methyl ether	<15 µg/kg	TM116	<15	<150					
1,2,4-Trichlorobenzene	<6 µg/kg	TM116	<6	<60	#	#			
Hexachlorobutadiene	<12 µg/kg	TM116	<12	<120					
Naphthalene	<13 µg/kg	TM116	42400	1710	M	M			
1,2,3-Trichlorobenzene	<6 µg/kg	TM116	<6	<60	M	M			



SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Asbestos Identification - Bulk

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	A10 NS Z 2.30 - 2.60 SOLID 25/10/2011 00:00:00 111028-44 4,595,527 TM048	03/11/11	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	A9 NS Z 0.00 - 0.70 SOLID 25/10/2011 00:00:00 111028-44 4,595,522 TM048	03/11/11	Lauren Sargeant	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	B10 NS Z 0.00 - 0.40 SOLID 25/10/2011 00:00:00 111028-44 4,595,528 TM048	03/11/11	Lauren Sargeant	Loose fibres in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	B9 NS Z 1.00 - 1.80 SOLID 25/10/2011 00:00:00 111028-44 4,595,535 TM048	03/11/11	Lauren Sargeant	Loose fibres in soil	Detected (#)	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

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SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4627882	A10	0.50 - 0.70	SOLID	pH	pH	Sample holding time exceeded
4628008	B9	2.50 - 2.80	SOLID	pH	pH	Sample holding time exceeded
4631922	A9	0.70 - 0.95	SOLID	pH	pH	Sample holding time exceeded
4632212	B9	0.30 - 0.50	SOLID	pH	pH	Sample holding time exceeded
4632289	B9	2.00 - 2.20	SOLID	pH	pH	Sample holding time exceeded
4634801	A10	2.30 - 2.60	SOLID	pH	pH	Sample holding time exceeded

Note : Test results may be compromised

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SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Notification of NDPs (No determination possible)

Date Received : 28/10/2011 13:08:44

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
4595522	A9	0.00 - 0.70	Metals by iCap-OES (Soil)	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	Cyanide Comp/Free/Total/Thiocyanate	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	Ammonium Soil by Titration	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	Total Sulphate	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	Easily Liberated Sulphide	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	pH	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	PAH by GCMS	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	Phenols by HPLC (S)	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	TPH CWG GC (S)	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	Hexavalent Chromium (s)	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	EPH CWG (Aromatic) GC (S)	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	EPH CWG (Aliphatic) GC (S)	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	PCBs by GCMS	Asbestos Fibres Detected
4595522	A9	0.00 - 0.70	Sample description	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	Metals by iCap-OES (Soil)	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	Cyanide Comp/Free/Total/Thiocyanate	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	Ammonium Soil by Titration	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	Total Sulphate	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	Easily Liberated Sulphide	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	pH	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	PAH by GCMS	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	Phenols by HPLC (S)	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	TPH CWG GC (S)	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	Hexavalent Chromium (s)	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	EPH CWG (Aromatic) GC (S)	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	EPH CWG (Aliphatic) GC (S)	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	PCBs by GCMS	Asbestos Fibres Detected
4595528	B10	0.00 - 0.40	Sample description	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	Metals by iCap-OES (Soil)	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	Cyanide Comp/Free/Total/Thiocyanate	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	Ammonium Soil by Titration	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	Total Sulphate	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	Easily Liberated Sulphide	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	pH	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	PAH by GCMS	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	Phenols by HPLC (S)	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	TPH CWG GC (S)	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	Hexavalent Chromium (s)	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	EPH CWG (Aromatic) GC (S)	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	EPH CWG (Aliphatic) GC (S)	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	PCBs by GCMS	Asbestos Fibres Detected
4595535	B9	1.00 - 1.80	Sample description	Asbestos Fibres Detected



SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Table of Results - Appendix

REPORT KEY

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10⁻⁷

NDP	No Determination Possible	#	ISO 17025 Accredited	*	Subcontracted Test	M	MCERTS Accredited
NFD	No Fibres Detected	PFD	Possible Fibres Detected	»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Test Completion Dates

Lab Sample No(s)	4595522	4595523	4595525	4595527	4595532	4595535	4595536	4595537	4595528
Customer Sample Ref.	A9	A9	A10	A10	B9	B9	B9	B9	B10
AGS Ref.									
Depth	0.00 - 0.70	0.70 - 0.95	0.50 - 0.70	2.30 - 2.60	0.30 - 0.50	1.00 - 1.80	2.00 - 2.20	2.50 - 2.80	0.00 - 0.40
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration		07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011		07-Nov-2011	07-Nov-2011	
Asbestos Identification (Soil)	03-Nov-2011			03-Nov-2011		03-Nov-2011			03-Nov-2011
Cyanide Comp/Free/Total/Thiocyanate		04-Nov-2011	04-Nov-2011	08-Nov-2011	04-Nov-2011		04-Nov-2011	04-Nov-2011	
Easily Liberated Sulphide		04-Nov-2011	08-Nov-2011	08-Nov-2011	07-Nov-2011		08-Nov-2011	08-Nov-2011	
EPH CWG (Aliphatic) GC (S)		07-Nov-2011	07-Nov-2011	07-Nov-2011	08-Nov-2011		07-Nov-2011	07-Nov-2011	
EPH CWG (Aromatic) GC (S)		07-Nov-2011	07-Nov-2011	07-Nov-2011	08-Nov-2011		07-Nov-2011	07-Nov-2011	
GRO by GC-FID (S)	08-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	08-Nov-2011	07-Nov-2011	07-Nov-2011	08-Nov-2011
Hexavalent Chromium (s)		05-Nov-2011	05-Nov-2011	05-Nov-2011	05-Nov-2011		05-Nov-2011	05-Nov-2011	
Metals by iCap-OES (Soil)		08-Nov-2011	07-Nov-2011	08-Nov-2011	07-Nov-2011		07-Nov-2011	07-Nov-2011	
PAH by GCMS		06-Nov-2011	06-Nov-2011	08-Nov-2011	06-Nov-2011		06-Nov-2011	06-Nov-2011	
PCBs by GCMS				07-Nov-2011					
pH		04-Nov-2011	03-Nov-2011	07-Nov-2011	04-Nov-2011		07-Nov-2011	03-Nov-2011	
Phenols by HPLC (S)		07-Nov-2011	04-Nov-2011	08-Nov-2011	07-Nov-2011		07-Nov-2011	04-Nov-2011	
Sample description	09-Nov-2011	03-Nov-2011	03-Nov-2011	04-Nov-2011	03-Nov-2011	09-Nov-2011	03-Nov-2011	03-Nov-2011	09-Nov-2011
Total Sulphate		07-Nov-2011	07-Nov-2011	04-Nov-2011	07-Nov-2011		07-Nov-2011	07-Nov-2011	
TPH CWG GC (S)		07-Nov-2011	07-Nov-2011	07-Nov-2011	08-Nov-2011		07-Nov-2011	07-Nov-2011	
VOC MS (S)								10-Nov-2011	11-Nov-2011

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SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

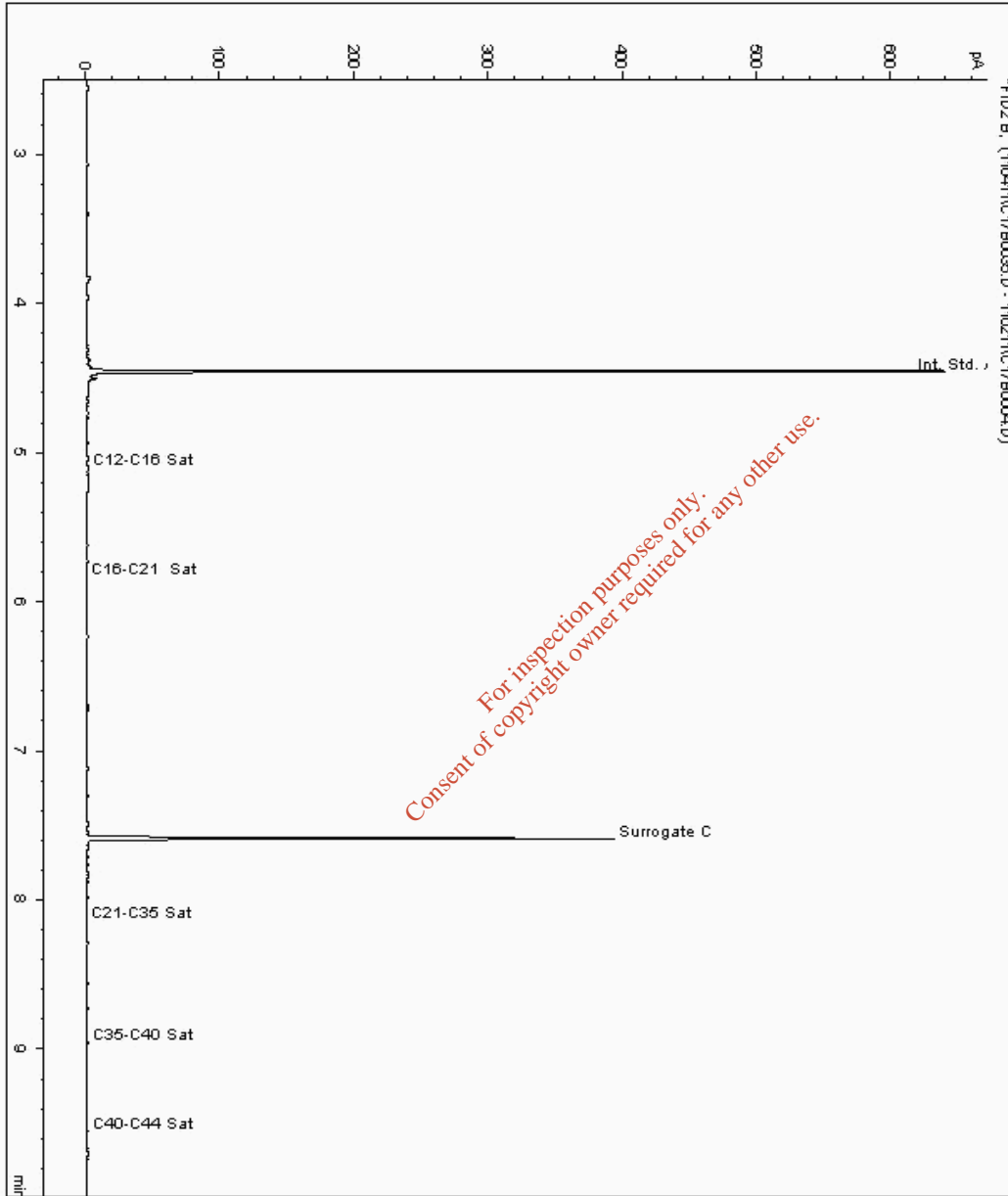
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4635280
Sample ID : A10

Depth : 2.30 - 2.60

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4566362-4635280
Date Acquired : 07/11/11 08:40:05 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.035





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
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Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

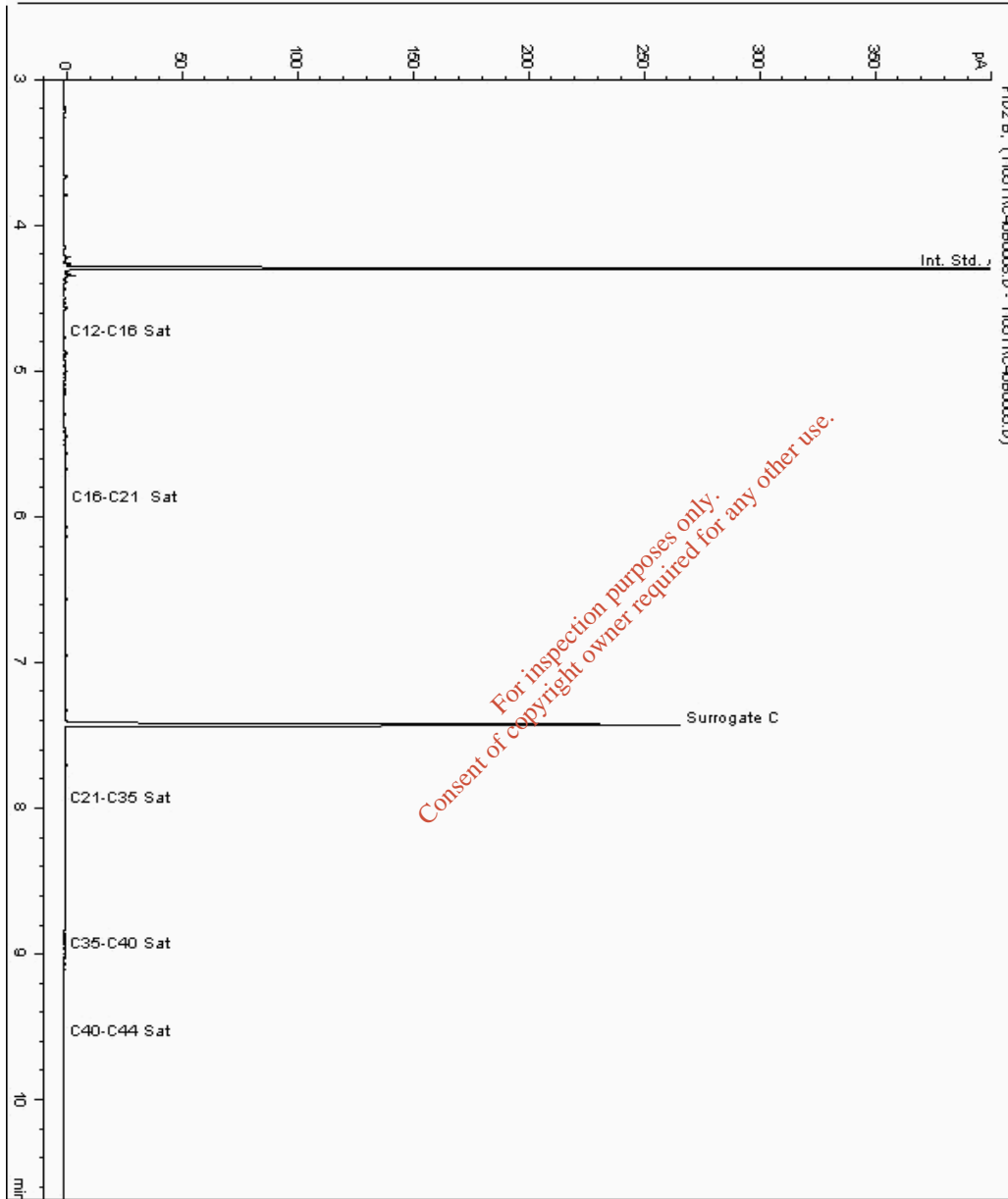
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4636643
Sample ID : A9

Depth : 0.70 - 0.95

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4566316-4636643
Date Acquired : 06/11/11 08:36:16 PM
Units : ppb
Dilution:





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

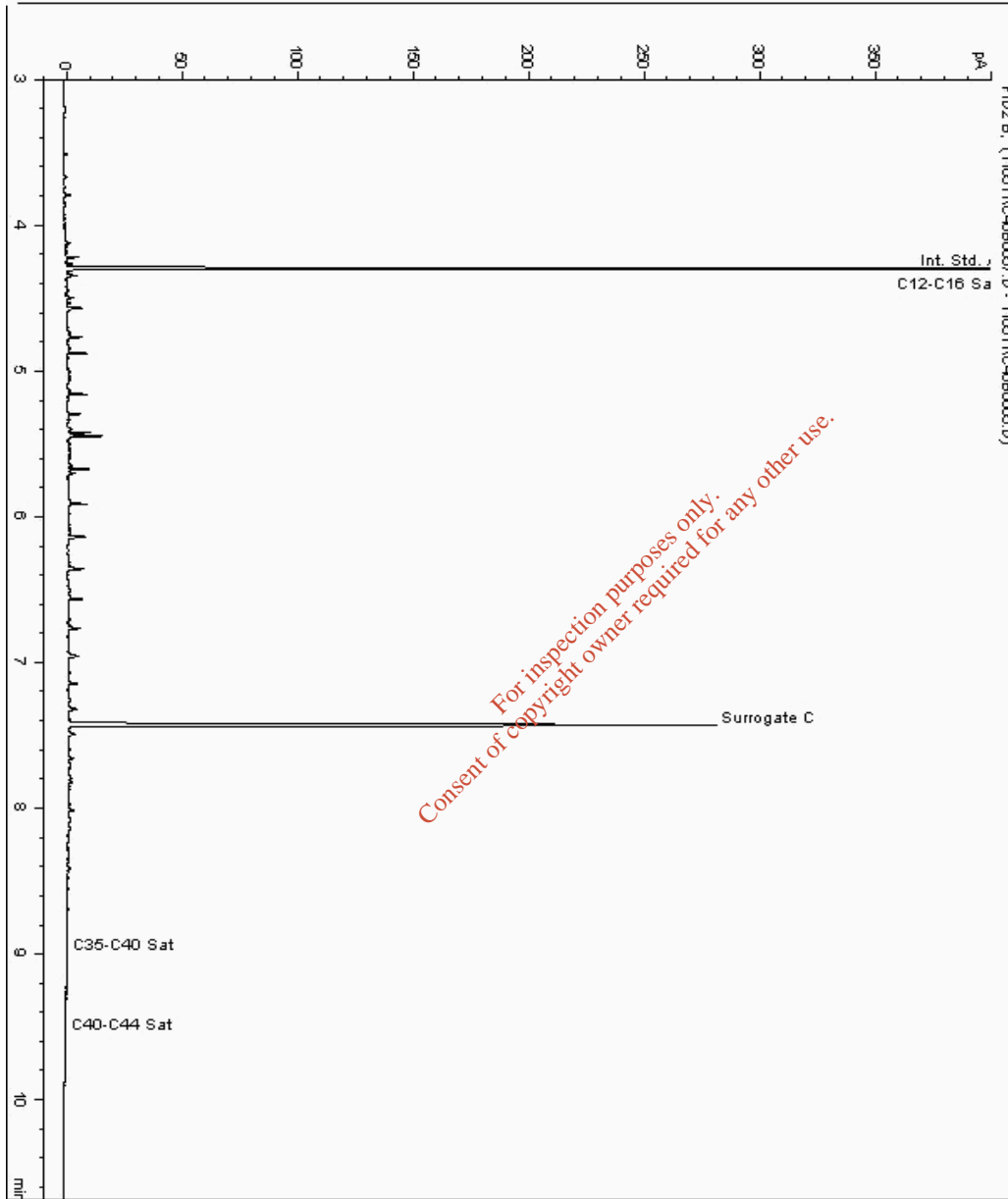
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4636810
Sample ID : B9

Depth : 2.50 - 2.80

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4566489-4636810
Date Acquired : 06/11/11 05:33:32 PM
Units : ppb
Dilution:





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

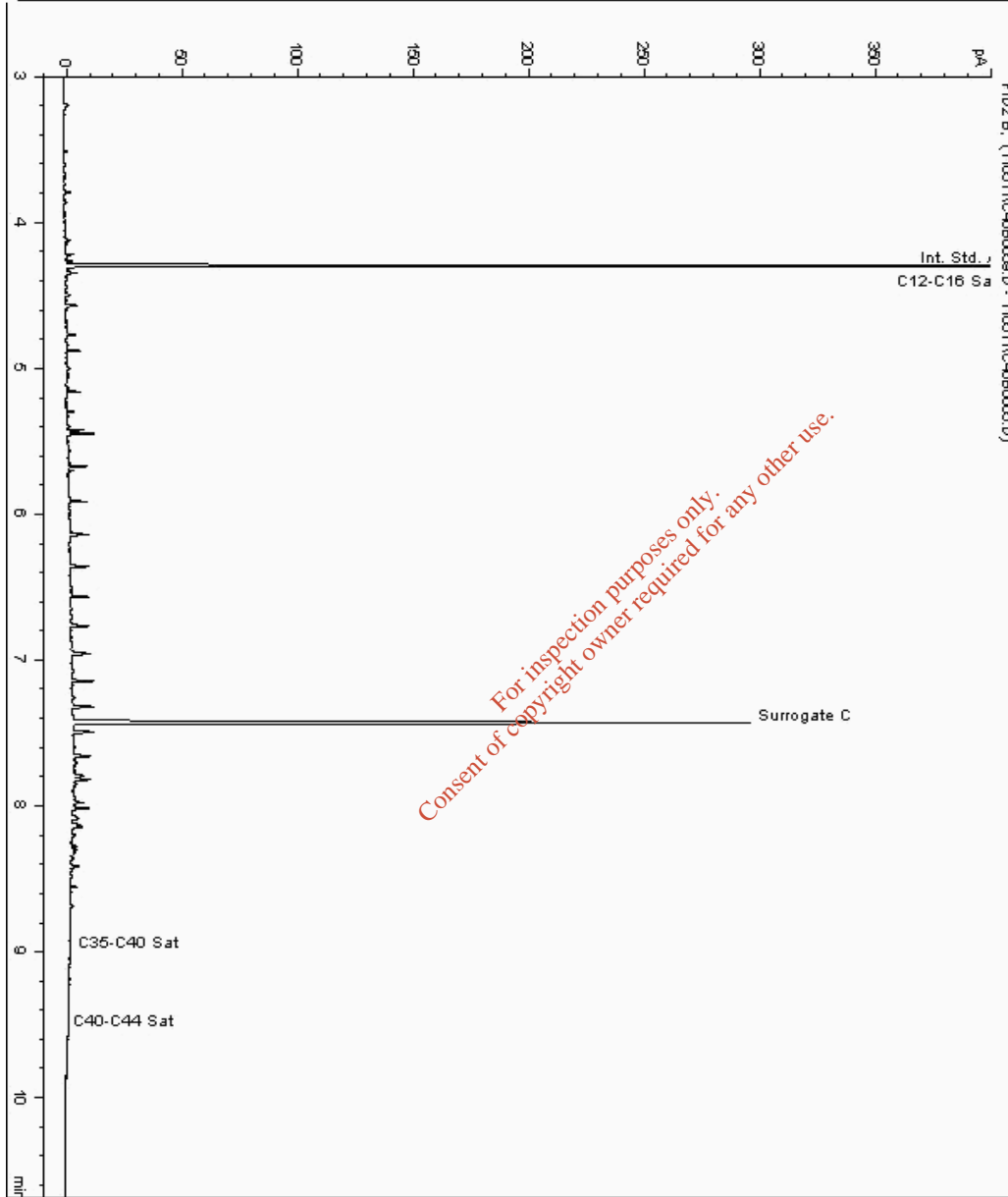
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4636857
Sample ID : B9

Depth : 2.00 - 2.20

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4566472-4636857
Date Acquired : 06/11/11 06:04:06 PM
Units : ppb
Dilution:





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

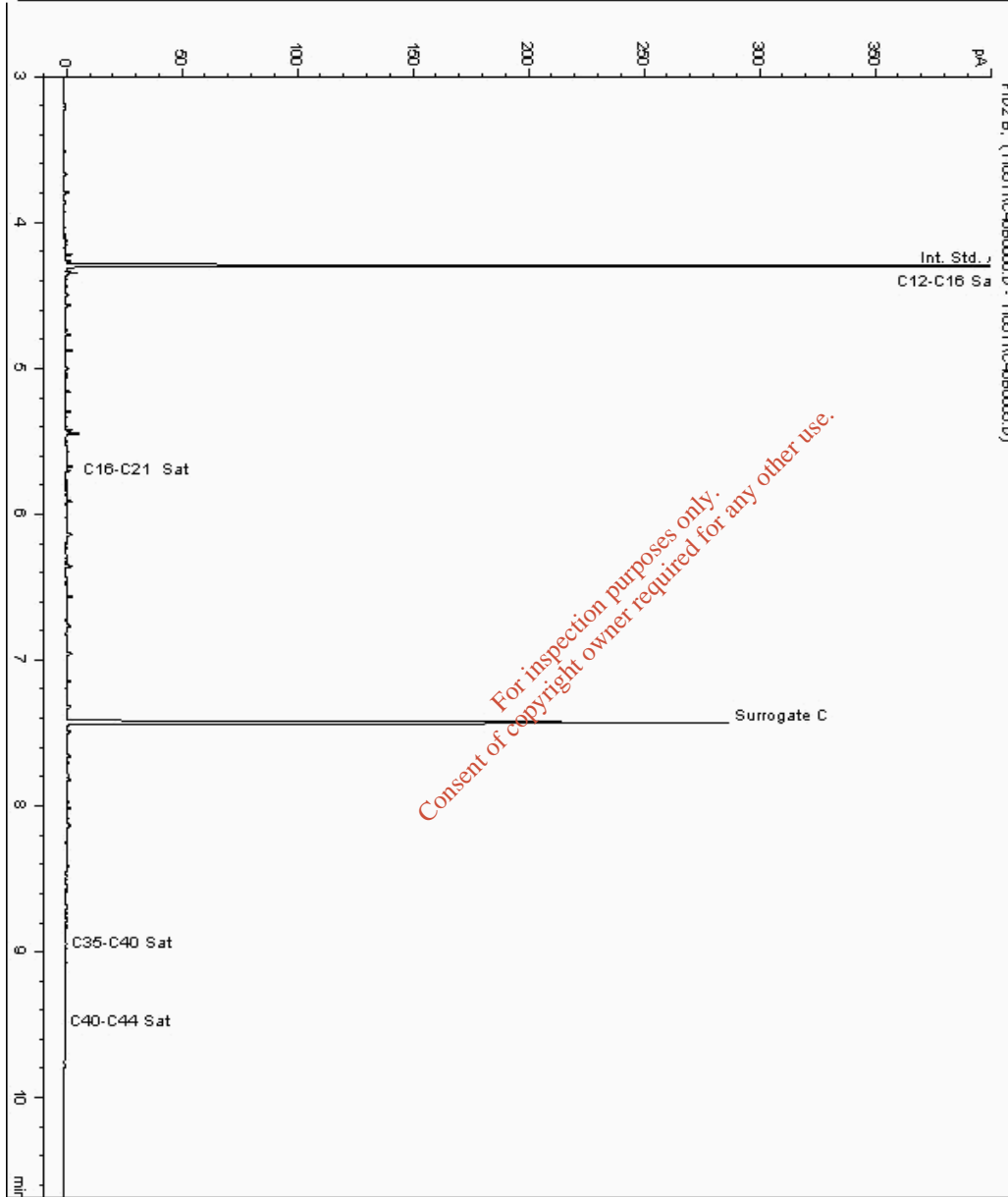
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4636955
Sample ID : A10

Depth : 0.50 - 0.70

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4566336-4636955
Date Acquired : 06/11/11 06:24:26 PM
Units : ppb
Dilution:





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

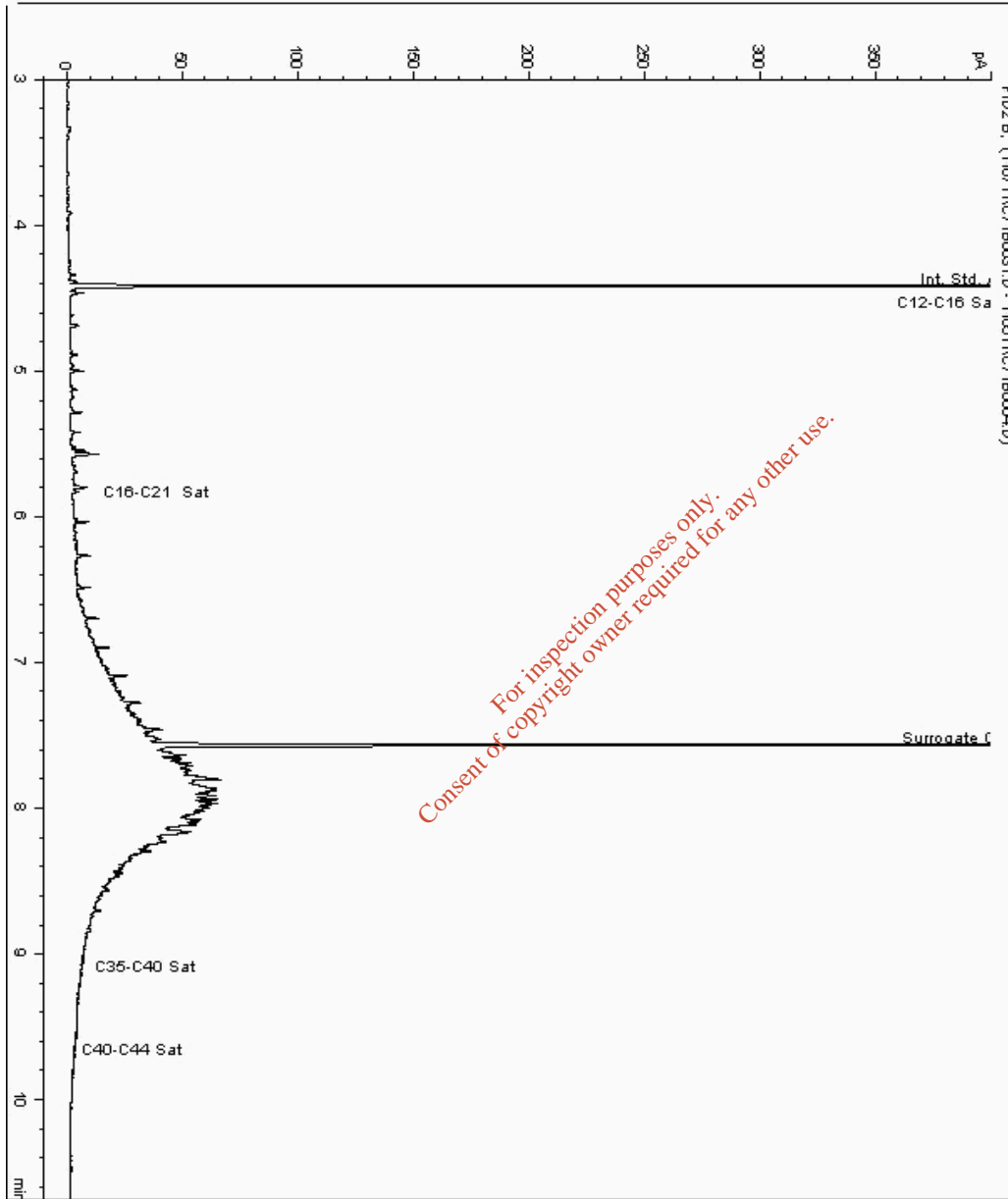
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4639704
Sample ID : B9

Depth : 0.30 - 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4566436-4639704
Date Acquired : 07/11/2011 18:17:02 PM
Units : ppb
Dilution:





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

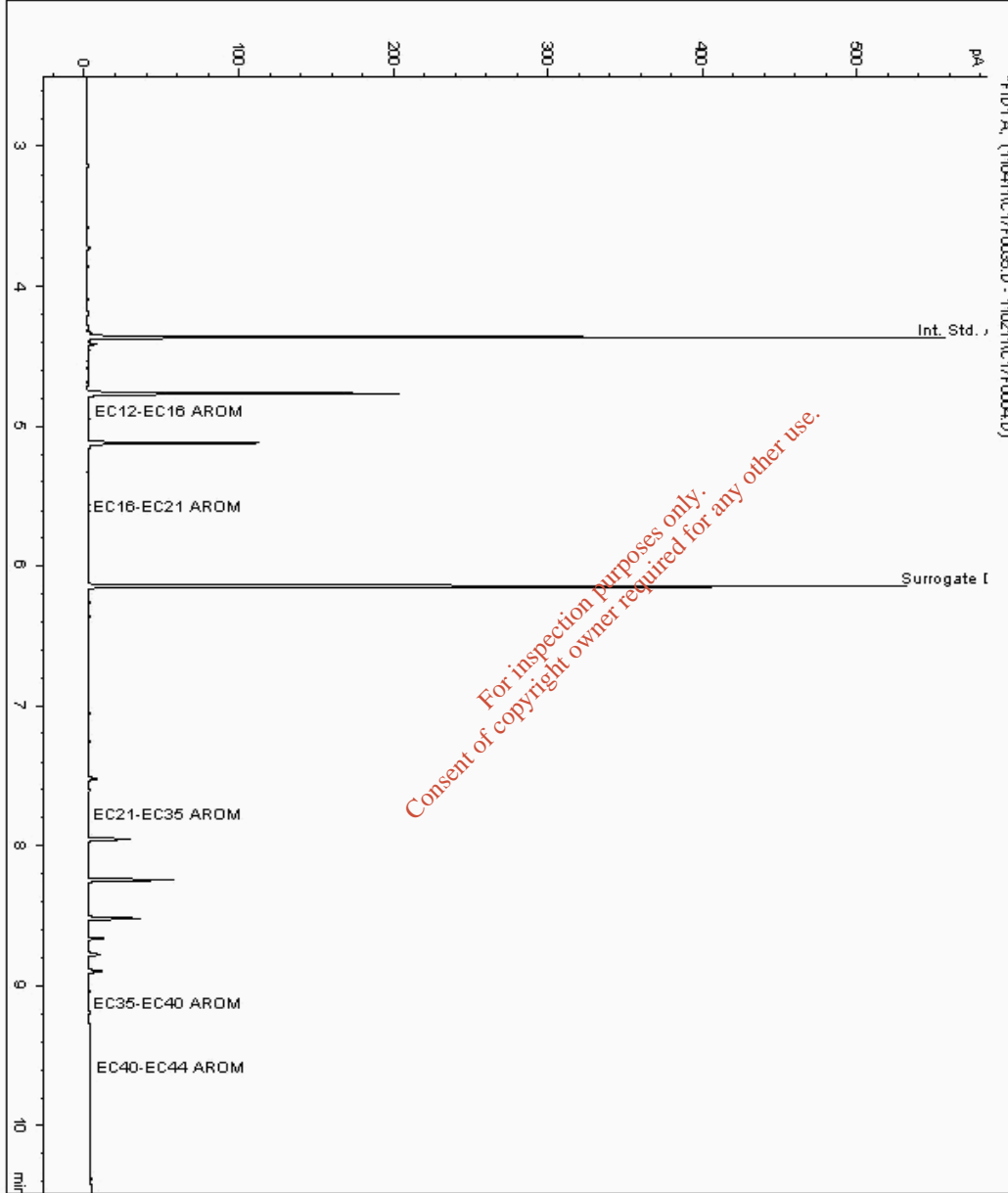
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4635280
Sample ID : A10

Depth : 2.30 - 2.60

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4566361-4635280
Date Acquired : 07/11/11 08:40:04 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.035





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

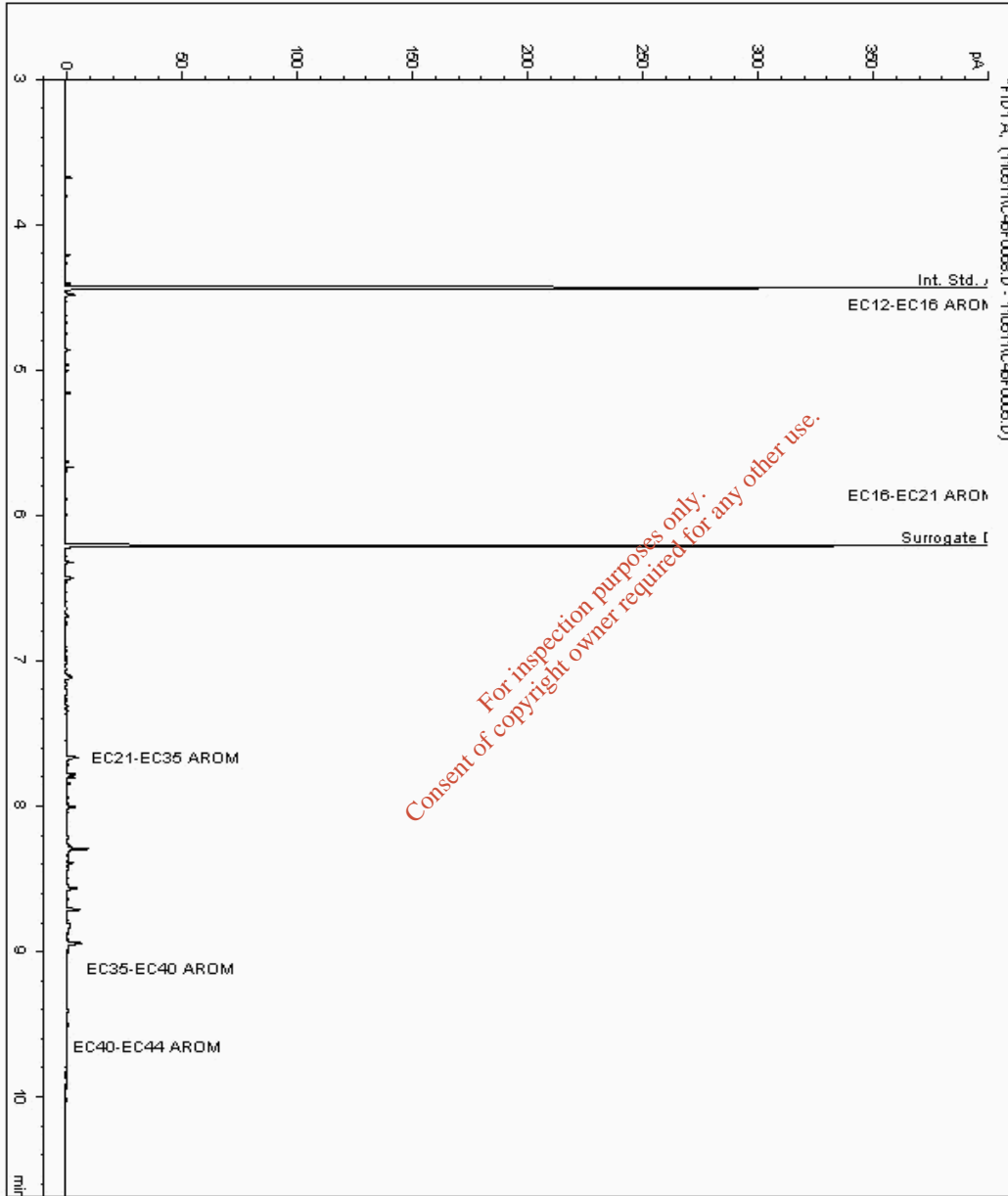
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4636643
Sample ID : A9

Depth : 0.70 - 0.95

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4566315-4636643
Date Acquired : 06/11/11 08:36:16 PM
Units : ppb
Dilution:





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

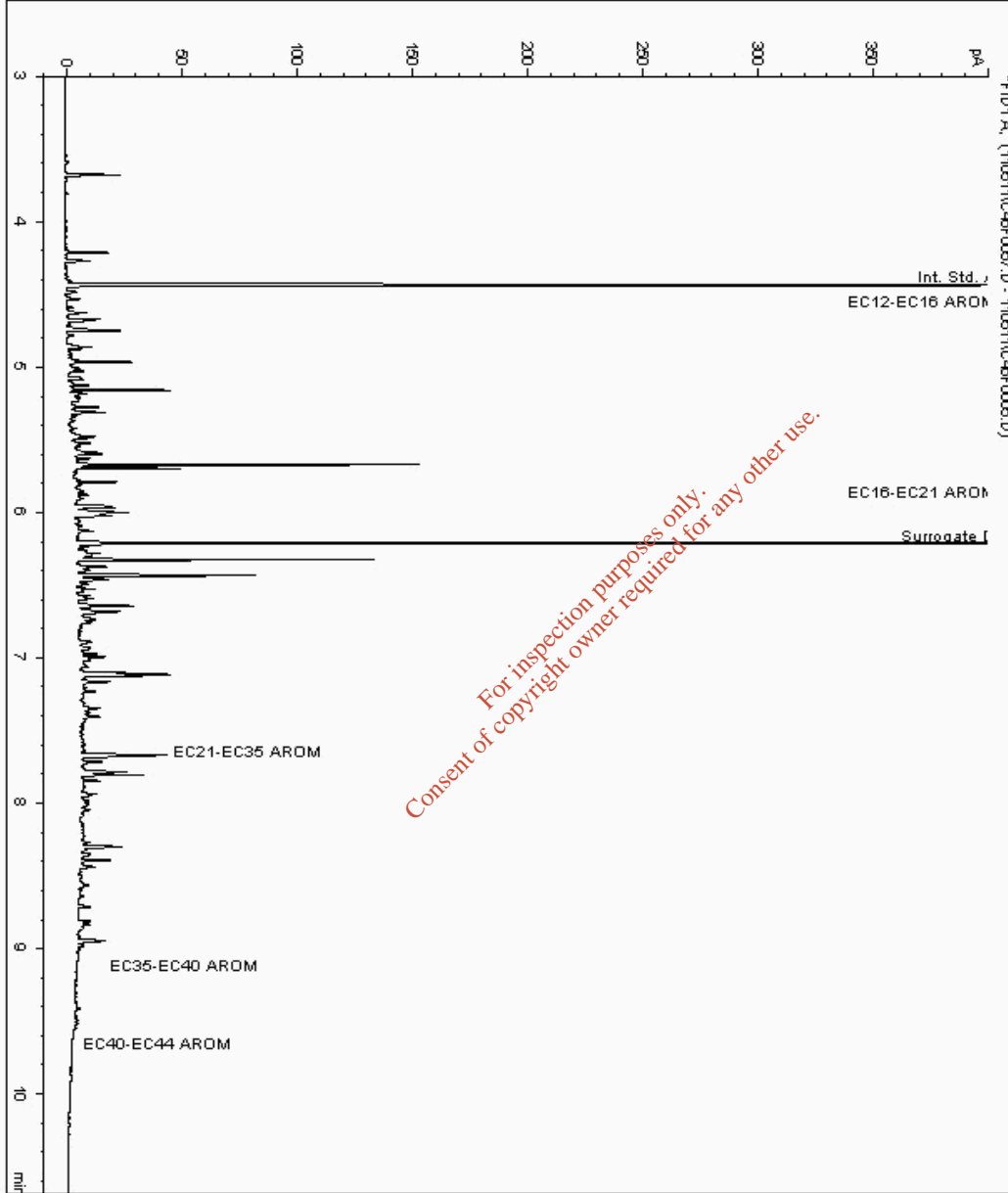
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4636810
Sample ID : B9

Depth : 2.50 - 2.80

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4566488-4636810
Date Acquired : 06/11/11 05:33:32 PM
Units : ppb
Dilution:





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

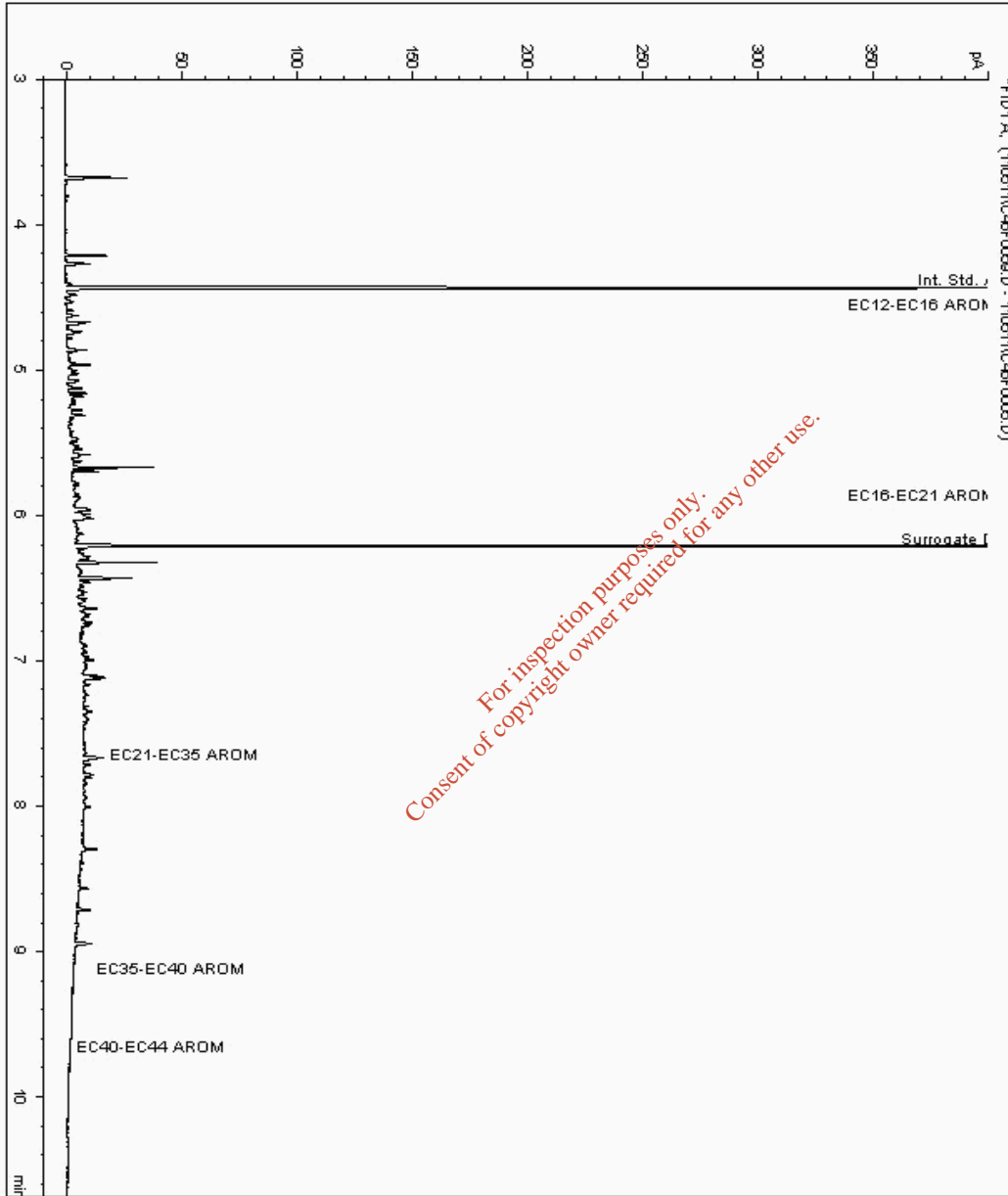
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4636857
Sample ID : B9

Depth : 2.00 - 2.20

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4566471-4636857
Date Acquired : 06/11/11 06:04:06 PM
Units : ppb
Dilution:





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

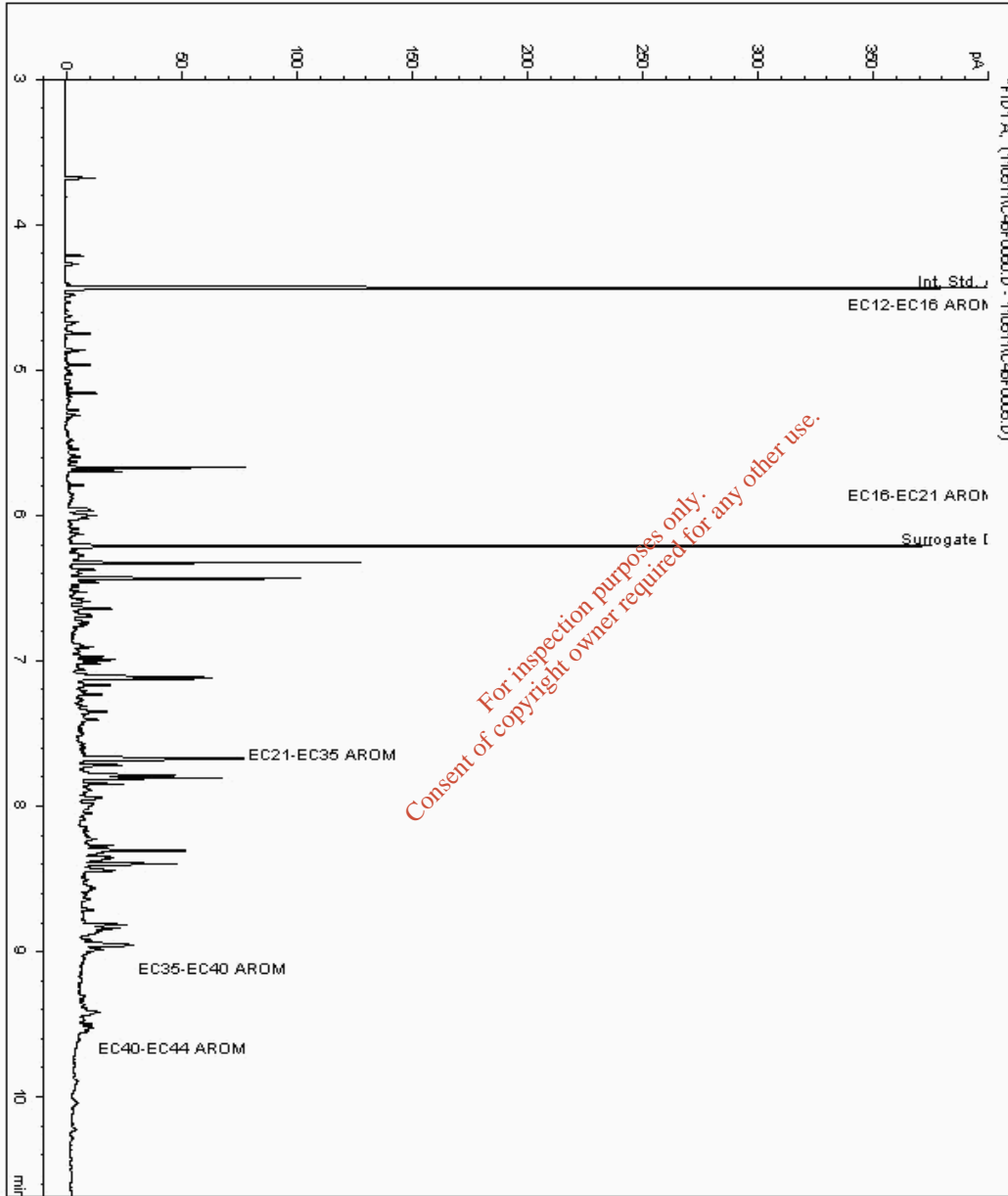
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4636955
Sample ID : A10

Depth : 0.50 - 0.70

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4566335-4636955
Date Acquired : 06/11/11 06:24:26 PM
Units : ppb
Dilution:





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

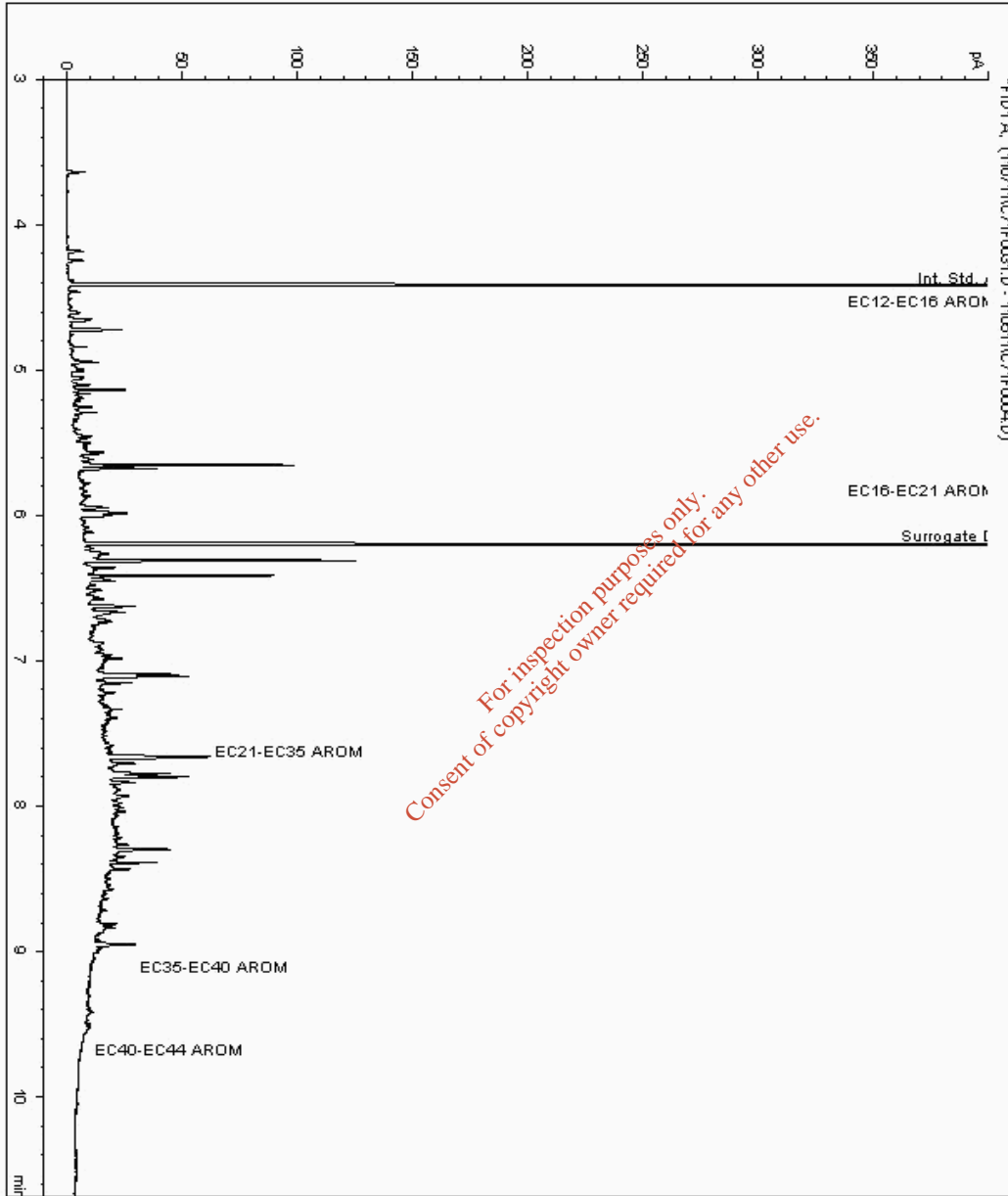
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4639704
Sample ID : B9

Depth : 0.30 - 0.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4566435-4639704
Date Acquired : 07/11/2011 18:17:02 PM
Units : ppb
Dilution:





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

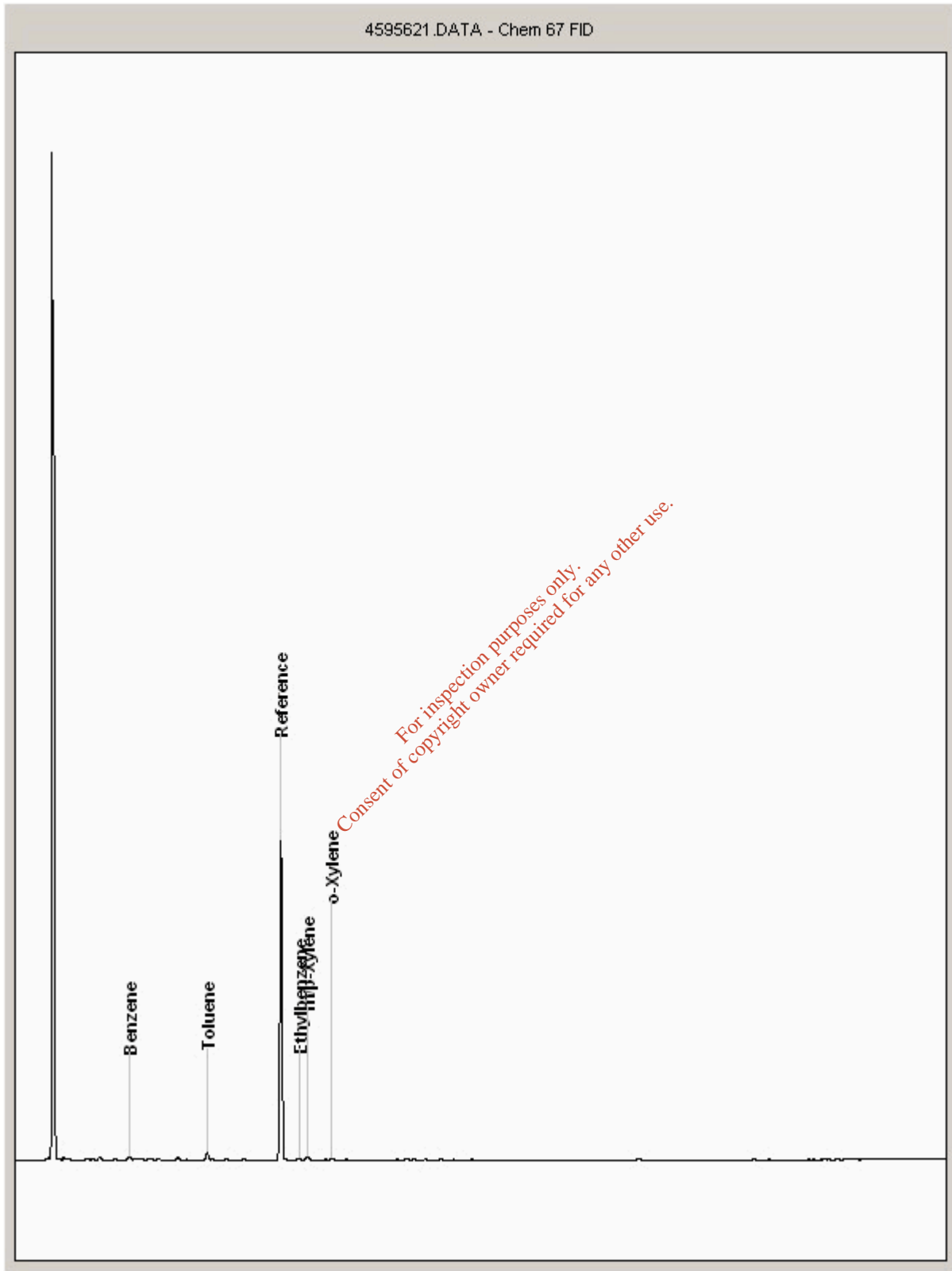
Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4595621
Sample ID : B9

Depth : 1.00 - 1.80





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

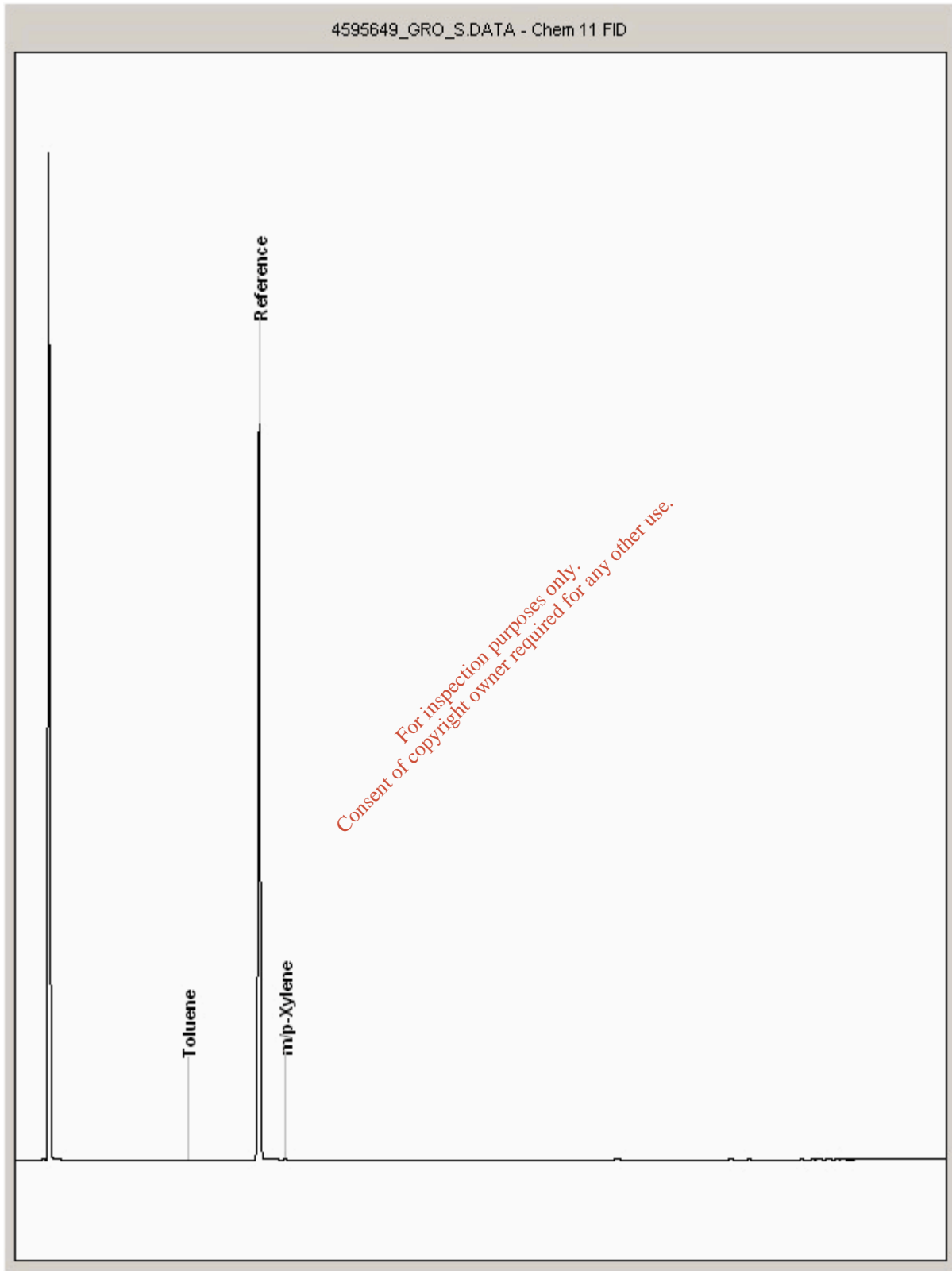
Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4595649
Sample ID : A10

Depth : 2.30 - 2.60





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

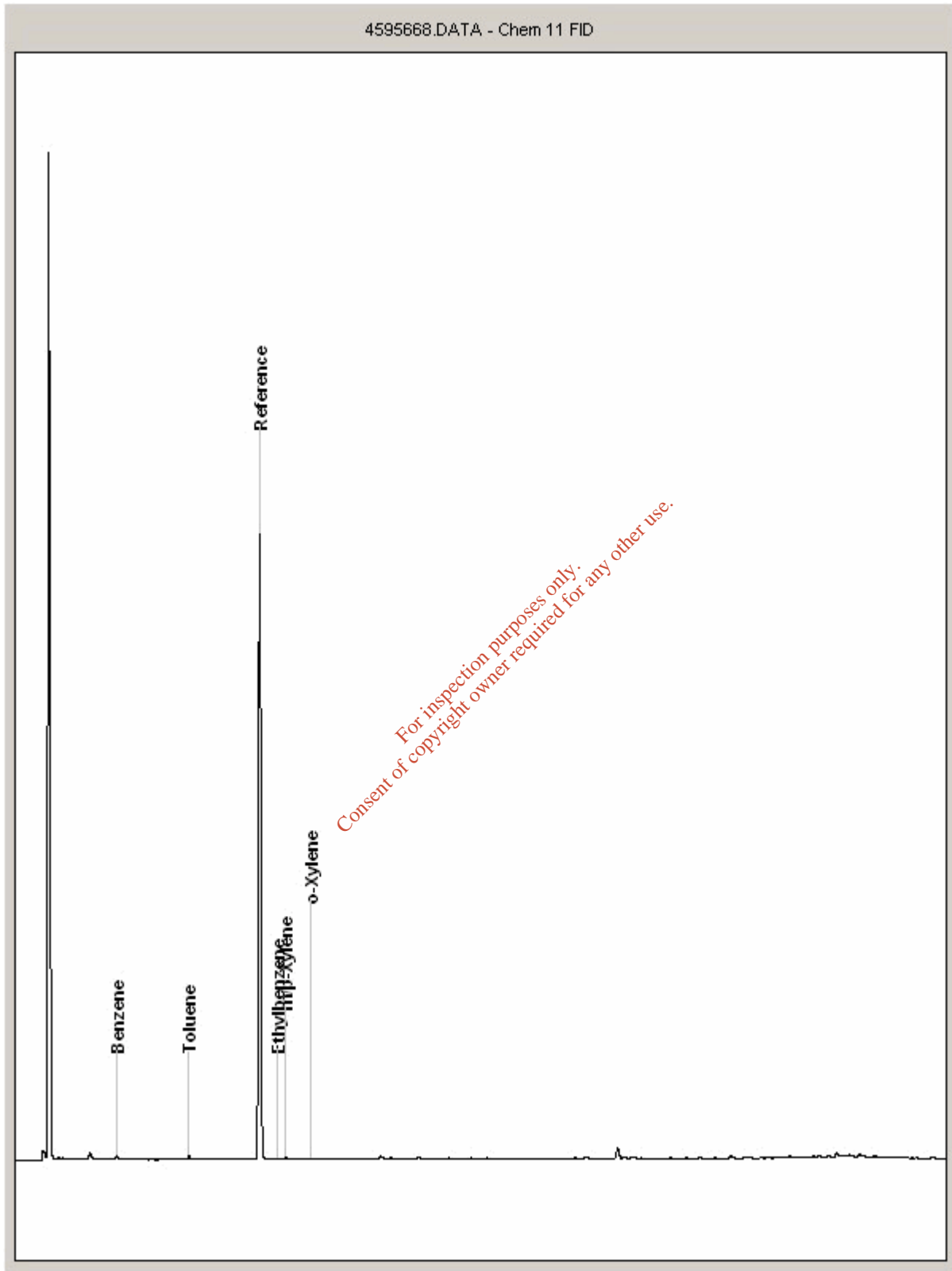
Order Number: 470000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4595668
Sample ID : B10

Depth : 0.00 - 0.40





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

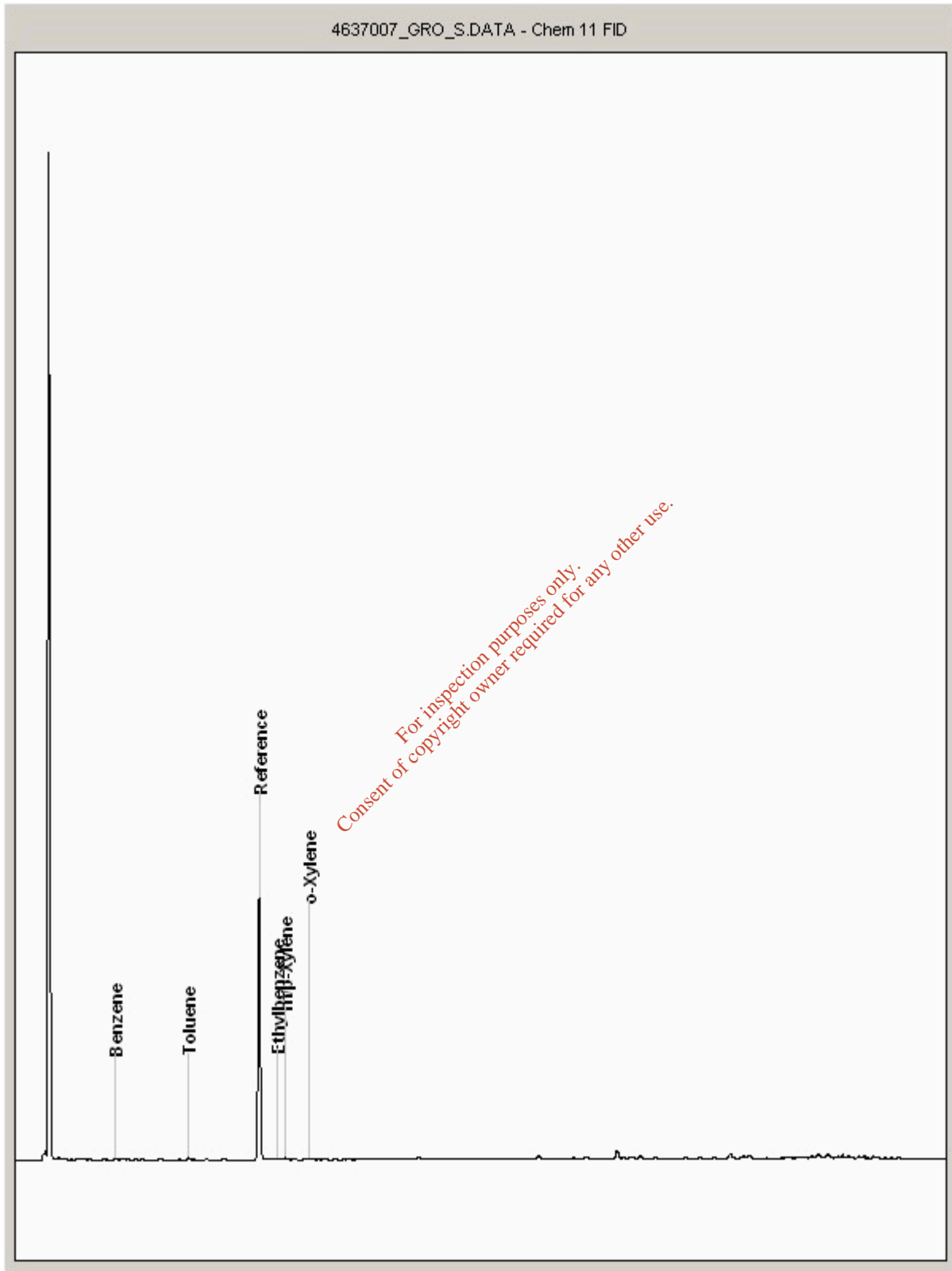
Order Number: 470000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4637007
Sample ID : B9

Depth : 0.30 - 0.50





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

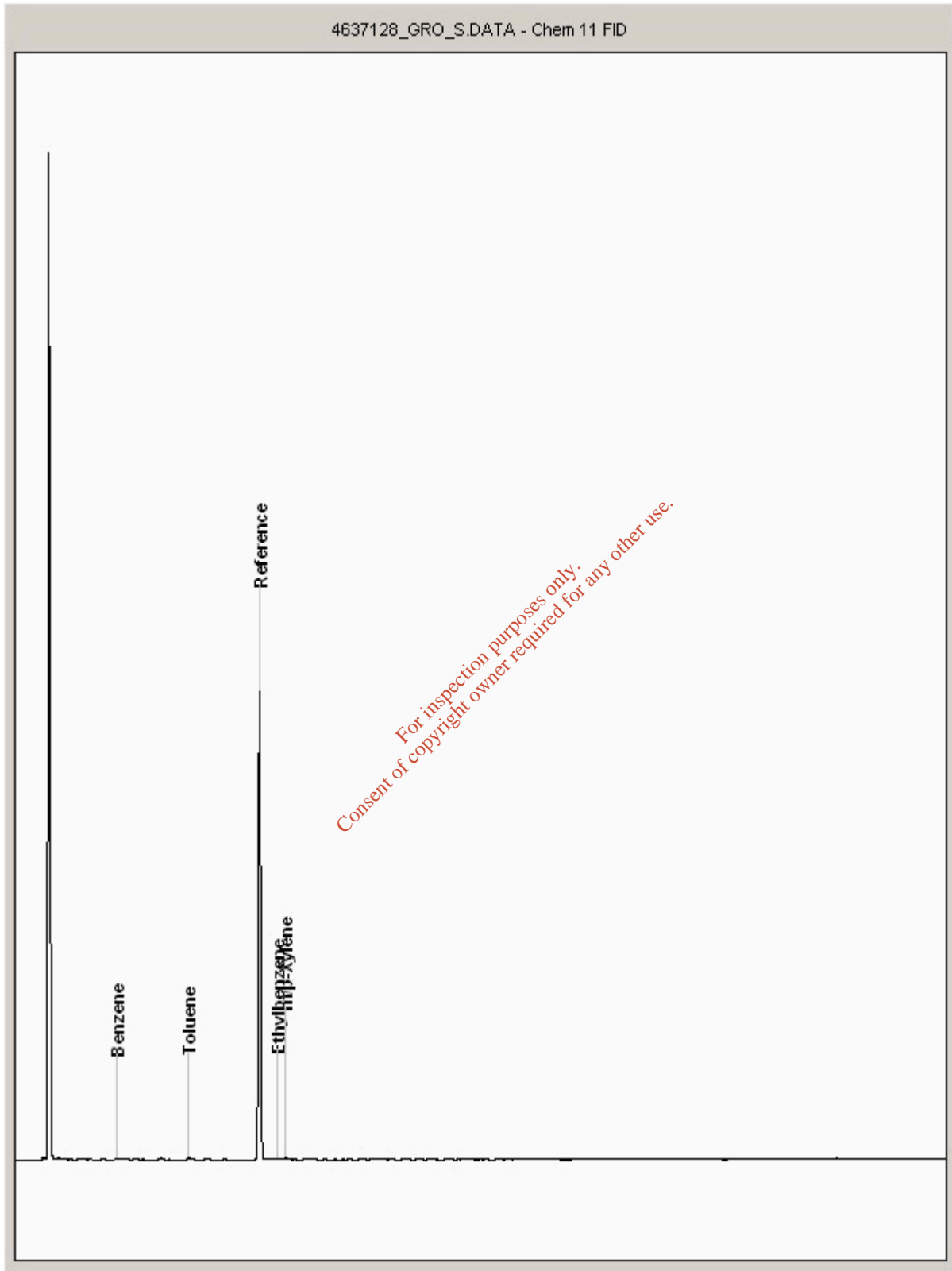
Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4637128
Sample ID : A10

Depth : 0.50 - 0.70





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

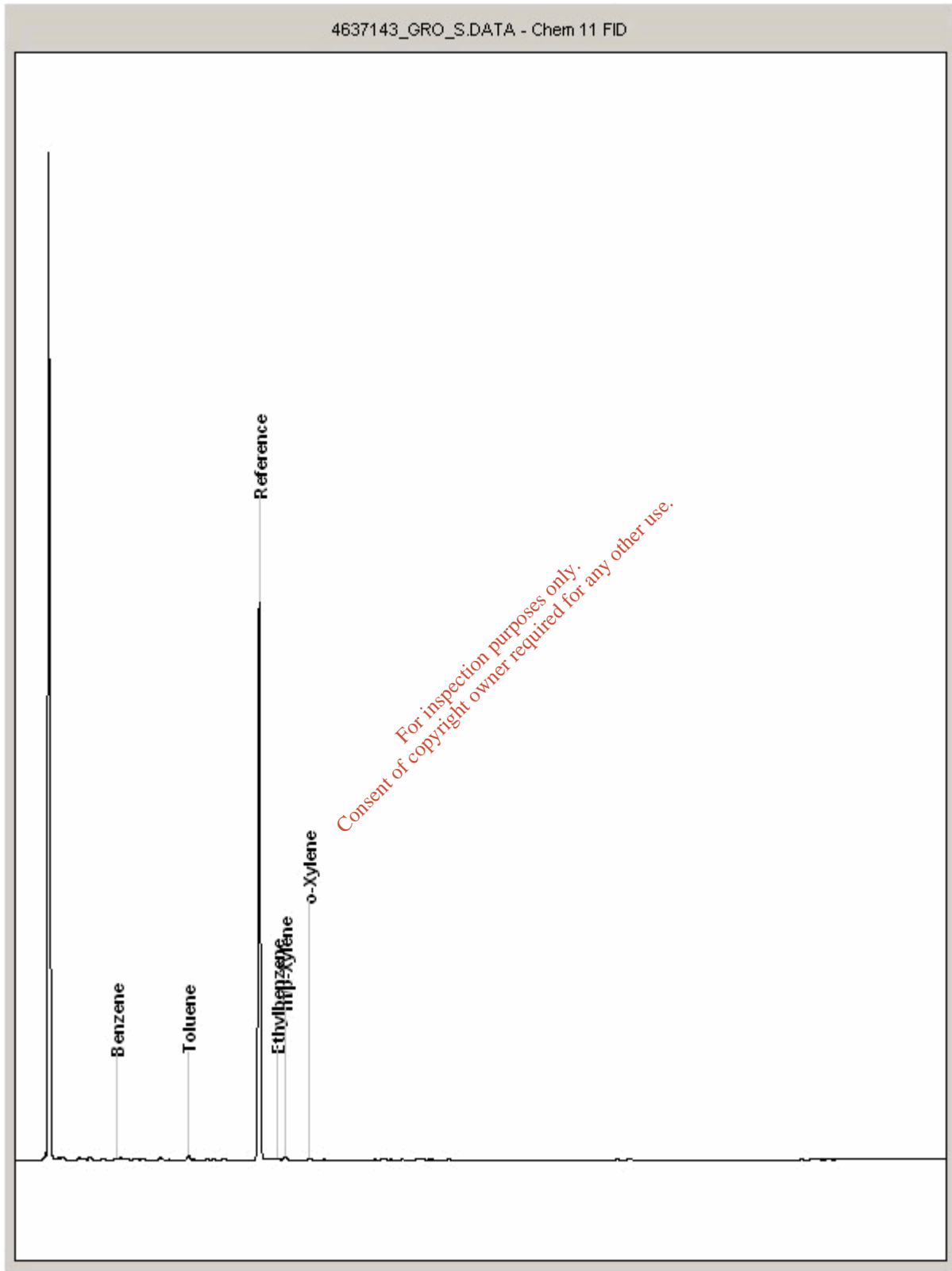
Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4637143
Sample ID : A9

Depth : 0.70 - 0.95





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

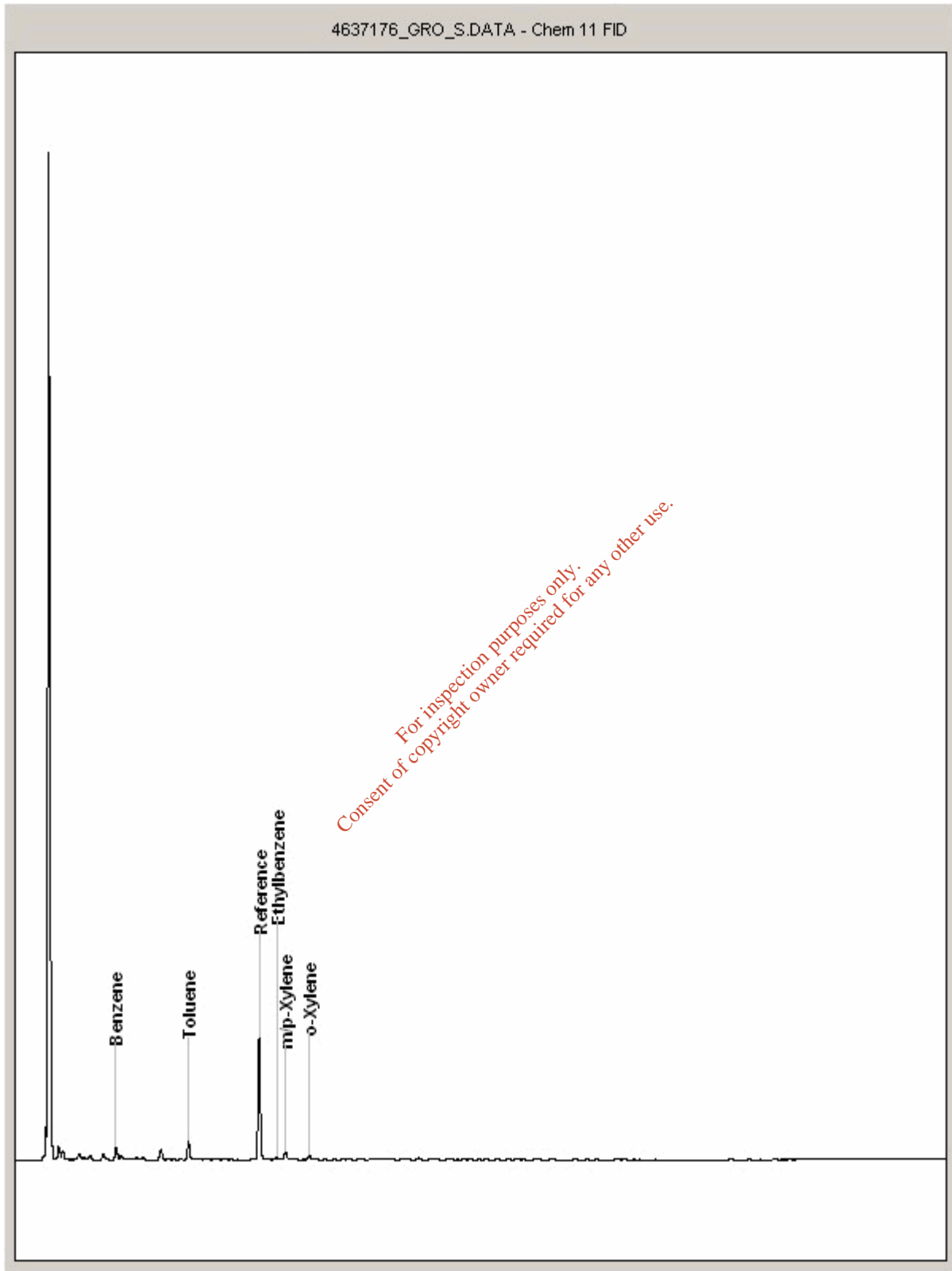
Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4637176
Sample ID : B9

Depth : 2.00 - 2.20





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

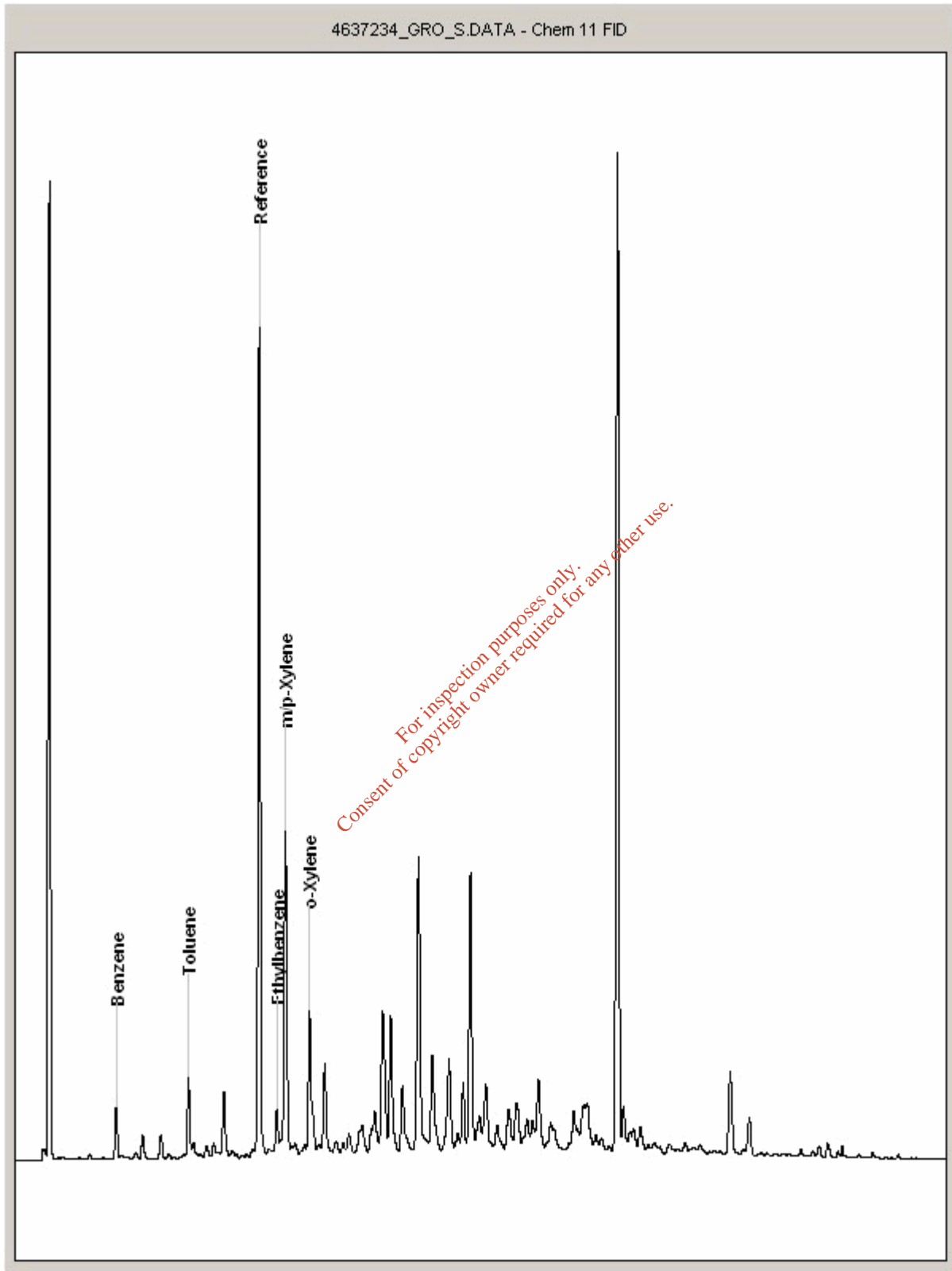
Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4637234
Sample ID : B9

Depth : 2.50 - 2.80





SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

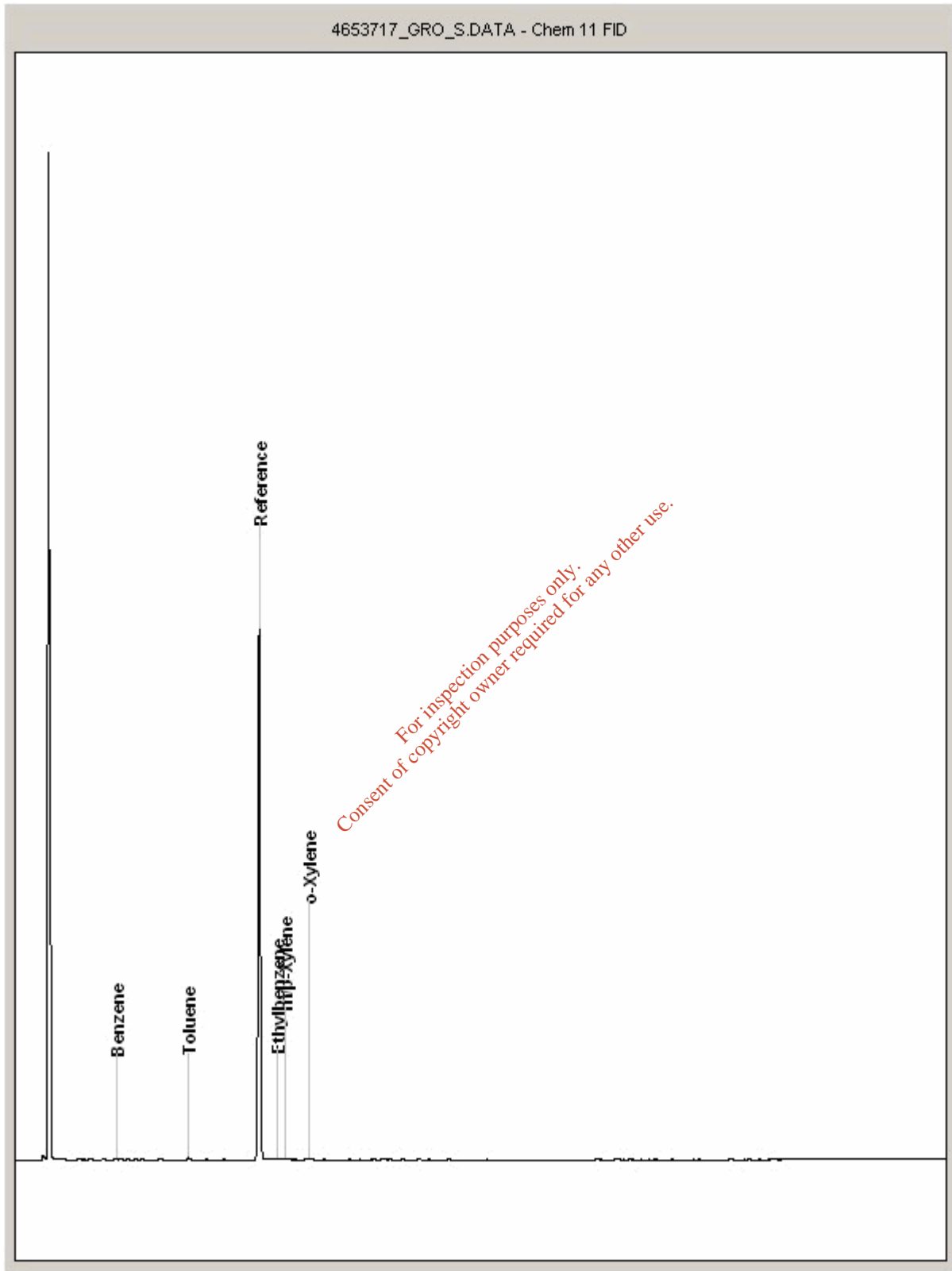
Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4653717
Sample ID : A9

Depth : 0.00 - 0.70



SDG: 111028-44
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164061
Superseded Report: 159168

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). If asbestos is present either as asbestos containing material or loose fibres no further analysis will be undertaken. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DCM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DCM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DCM	SOXTHERM	GC-MS
HEBICIDES	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (MIN QI)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (CLEANED UP)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG BY GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB TOT / PCB CON	D&C	HEXANE:ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE:ACETONE	MI CROWAVE TM 218	GC-MS
C8-C10 (G8-C10) EZ FLASH	WET	HEXANE:ACETONE	SHAKER	GC-EZ
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DCM:ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY			
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GCMS
EPH	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GC FD
EPH CWG	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GC FD
MINERAL OIL	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GC FD
PCB CONGENERS	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GCMS
PCB TOTAL	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GCMS
SVOC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPIOPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRAZNE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLSMS	DCM	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (R)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by R	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Mouchel
Ground Engineering
Rowan House
Lloyd Drive
Cheshire
CH65 9HQ

Attention: Neil Balderstone

CERTIFICATE OF ANALYSIS

Date: 16 December 2011
Customer: D_MOUCHEL_ELE
Sample Delivery Group (SDG): 111028-105
Your Reference:
Location: Limerick Gasworks
Report No: 164065

This report has been revised and directly supersedes 159074 in its entirety.

We received 7 samples on Thursday October 27, 2011 and 7 of these samples were scheduled for analysis which was completed on Friday December 16, 2011. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

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Consent of copyright owner required for any other use.*

Approved By:

Sonia McWhan
Operations Manager





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
4599207	B2		0.20 - 0.80	27/10/2011
4599208	B2		0.80 - 1.30	27/10/2011
4599209	B2		1.30 - 2.00	27/10/2011
4599206	C2		1.50 - 2.00	26/10/2011
4599201	D2		0.50 - 1.00	26/10/2011
4599202	D2		1.00 - 1.50	26/10/2011
4599204	D2		2.00 - 2.50	26/10/2011

Only received samples which have had analysis scheduled will be shown on the following pages.

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Consent of copyright owner required for any other use.*



SDG: 111028-105
 Job: D_MOUCHEL_ELE-1
 Client Reference:

Location: Limerick Gasworks
 Customer: Mouchel
 Attention: Neil Balderstone

Order Number: 4700000740
 Report Number: 164065
 Superseded Report: 159074

SOLID Results Legend X Test N No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		4599204	D2		2.00 - 2.50	TUB (D) JAR (D) 60a VOC (ALE215)
		4599202	D2		1.00 - 1.50	TUB (D) JAR (D) 60a VOC (ALE215)
		4599201	D2		0.50 - 1.00	TUB (D) JAR (D) 60a VOC (ALE215)
		4599206	C2		1.50 - 2.00	TUB (D) JAR (D) 60a VOC (ALE215)
	4599209	B2		1.30 - 2.00	TUB (D) JAR (D) 60a VOC (ALE215)	
	4599208	B2		0.80 - 1.30	TUB (D) JAR (D) 60a VOC (ALE215)	
	4599207	B2		0.20 - 0.80	TUB (D) JAR (D) 60a VOC (ALE215)	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 7				
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 2				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				
Easily Liberated Sulphide	All	NDPs: 0 Tests: 7				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 7				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 7				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 7				
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 7				
Metals by iCap-OES (Soil)	Arsenic	NDPs: 0 Tests: 7				
	Cadmium	NDPs: 0 Tests: 7				
	Chromium	NDPs: 0 Tests: 7				
	Copper	NDPs: 0 Tests: 7				
	Lead	NDPs: 0 Tests: 7				
	Mercury	NDPs: 0 Tests: 7				
	Nickel	NDPs: 0 Tests: 7				

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SDG: 111028-105
 Job: D_MOUCHEL_ELE-1
 Client Reference:

Location: Limerick Gasworks
 Customer: Mouchel
 Attention: Neil Balderstone

Order Number: 4700000740
 Report Number: 164065
 Superseded Report: 159074

SOLID Results Legend X Test N No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container							
	4599207	B2		0.20 - 0.80	60g VOC (ALE215) JAR (D) TUB (D)							
	4599208	B2		0.80 - 1.30	60g VOC (ALE215) JAR (D) TUB (D)							
	4599209	B2		1.30 - 2.00	60g VOC (ALE215) JAR (D) TUB (D)							
	4599206	C2		1.50 - 2.00	60g VOC (ALE215) JAR (D) TUB (D)							
	4599201	D2		0.50 - 1.00	60g VOC (ALE215) JAR (D) TUB (D)							
4599202	D2		1.00 - 1.50	60g VOC (ALE215) JAR (D) TUB (D)								
4599204	D2		2.00 - 2.50	60g VOC (ALE215) JAR (D) TUB (D)								
Metals by iCap-OES (Soil)	Selenium	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
	Zinc	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
PAH by GCMS	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
PCBs by GCMS	All	NDPs: 0 Tests: 2		X					X			
pH	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
Sample description	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
Total Sulphate	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
TPH CWG GC (S)	All	NDPs: 0 Tests: 7	X	X	X	X	X	X	X	X	X	X
VOC MS (S)	All	NDPs: 0 Tests: 4		X	X				X		X	

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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
4599207	B2	0.20 - 0.80	Grey	Silty Sand	0.1 - 2 mm	Stones	None
4599208	B2	0.80 - 1.30	Light Brown	Silty Sand	0.1 - 2 mm	Brick	Vegetation
4599209	B2	1.30 - 2.00	Grey	Silty Sand	0.1 - 2 mm	Stones	Fibres
4599206	C2	1.50 - 2.00	Light Brown	Silty Sand	0.1 - 2 mm	Stones	None
4599201	D2	0.50 - 1.00	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones	None
4599202	D2	1.00 - 1.50	Light Brown	Silty Sand	0.1 - 2 mm	Ash/Soot	Stones
4599204	D2	2.00 - 2.50	Grey	Gravel	> 10 mm	Tar	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Results Legend			Customer Sample Ref.		B2	B2	B2	C2	D2	D2
#	ISO17025 accredited.		Depth (m)		0.20 - 0.80	0.80 - 1.30	1.30 - 2.00	1.50 - 2.00	0.50 - 1.00	1.00 - 1.50
M	mCERTS accredited.		Sample Type		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
S	Deviating sample.		Date Sampled		27/10/2011	27/10/2011	27/10/2011	26/10/2011	26/10/2011	26/10/2011
aq	Aqueous / settled sample.		Date Received		27/10/2011	27/10/2011	27/10/2011	27/10/2011	27/10/2011	27/10/2011
diss.filt	Dissolved / filtered sample.		SDG Ref		111028-105	111028-105	111028-105	111028-105	111028-105	111028-105
tot.unfilt	Total / unfiltered sample.		Lab Sample No.(s)		4599207	4599208	4599209	4599206	4599201	4599202
*	Subcontracted test.		AGS Reference							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
Component	LOD/Units	Method								
Ammoniacal Nitrogen, exchangeable as NH4	<15 mg/kg	TM024	<15							
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15							
Catechol	<0.01 mg/kg	TM062 (S)	<0.01							
Phenol	<0.01 mg/kg	TM062 (S)	0.0238							
Cresols	<0.01 mg/kg	TM062 (S)	0.0595							
Resorcinol	<0.05 mg/kg	TM062 (S)	<0.05							
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015							
1-Naphthol	<0.01 mg/kg	TM062 (S)	<0.01							
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01							
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015							
Phenols, Total Detected 8 Speciated	<0.12 mg/kg	TM062 (S)	<0.12							
pH	1 pH Units	TM133	8.46		7.95		8.27		8.75	8.49
Hexavalent Chromium	<0.6 mg/kg	TM151	<0.6		<0.6		<0.6		<0.6	<0.6
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6		<0.6		<0.6		<0.6	<0.6
Cyanide, Total	<1 mg/kg	TM153	<1		7.82		19.3		<1	2.72
PCB congener 28	<3 µg/kg	TM168	<3		<3					<3
PCB congener 52	<3 µg/kg	TM168	<3		<3					<3
PCB congener 101	<3 µg/kg	TM168	<3		<3					<3
PCB congener 118	<3 µg/kg	TM168	<3		<3					<3
PCB congener 138	<3 µg/kg	TM168	<3		<3					<3
PCB congener 153	<3 µg/kg	TM168	<3		<3					<3
PCB congener 180	<3 µg/kg	TM168	<3		<3					<3
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21		<21					<21
Easily Liberated Sulphide	<15 mg/kg	TM180	<15		<15	17	<15		<15	<15
Sulphide, Easily liberated	<15 mg/kg	TM180	<15		<15	19.9	<15		<15	<15
Arsenic	<0.6 mg/kg	TM181	31.2		7.89	25.6	21.9		25.9	14.6
Cadmium	<0.02 mg/kg	TM181	0.351		0.401	0.612	0.51		0.463	0.496
Chromium	<0.9 mg/kg	TM181	14.1		11.8	10	11		23.7	20.1
Copper	<1.4 mg/kg	TM181	21.9		119	626	37.5		48.7	23.8
Lead	<0.7 mg/kg	TM181	76.9		47.2	59.8	102		292	245
Mercury	<0.14 mg/kg	TM181	<0.14		<0.14	0.962	<0.14		<0.14	<0.14
Nickel	<0.2 mg/kg	TM181	22.7		15.1	12.4	14.7		29.6	24.9
Selenium	<1 mg/kg	TM181	<1		<1	<1	<1		<1	<1
Zinc	<1.9 mg/kg	TM181	90.4		82.2	192	75.7		147	51
Sulphate, Total	<48 mg/kg	TM221	759		317	357	849		1240	826



SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Results Legend		Customer Sample Ref.	D2					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	2.00 - 2.50 Soil/Solid 26/10/2011 27/10/2011 111028-105 4599204					
M	mCERTS accredited.							
S	Deviating sample.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units			Method				
Ammoniacal Nitrogen, exchangeable as NH4	<15 mg/kg	TM024	35.2	#				
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	27.3					
Catechol	<0.01 mg/kg	TM062 (S)	<0.01					
Phenol	<0.01 mg/kg	TM062 (S)	0.0109	#				
Cresols	<0.01 mg/kg	TM062 (S)	0.0435	#				
Resorcinol	<0.05 mg/kg	TM062 (S)	<0.05					
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	#				
1-Naphthol	<0.01 mg/kg	TM062 (S)	<0.01					
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	#				
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	#				
Phenols, Total Detected & Speciated	<0.12 mg/kg	TM062 (S)	<0.12					
pH	1 pH Units	TM133	8.18	§ #				
Hexavalent Chromium	<0.6 mg/kg	TM151	<1.2	#				
Chromium, Hexavalent	<0.6 mg/kg	TM151	<1.2	#				
Cyanide, Total	<1 mg/kg	TM153	217	#				
Easily Liberated Sulphide	<15 mg/kg	TM180	879	#				
Sulphide, Easily liberated	<15 mg/kg	TM180	956	#				
Arsenic	<0.6 mg/kg	TM181	12.2	#				
Cadmium	<0.02 mg/kg	TM181	0.627	#				
Chromium	<0.9 mg/kg	TM181	9.23	#				
Copper	<1.4 mg/kg	TM181	16.9	#				
Lead	<0.7 mg/kg	TM181	24.6	#				
Mercury	<0.14 mg/kg	TM181	<0.14	#				
Nickel	<0.2 mg/kg	TM181	23.2	#				
Selenium	<1 mg/kg	TM181	<1	#				
Zinc	<1.9 mg/kg	TM181	84.5	#				
Sulphate, Total	<48 mg/kg	TM221	1260	#				



SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

PAH by GCMS

Results Legend		Customer Sample Ref.	B2	B2	B2	C2	D2	D2
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.20 - 0.80	0.80 - 1.30	1.30 - 2.00	1.50 - 2.00	0.50 - 1.00	1.00 - 1.50
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
S	Deviating sample.		27/10/2011	27/10/2011	27/10/2011	26/10/2011	26/10/2011	26/10/2011
aq	Aqueous / settled sample.		27/10/2011	27/10/2011	27/10/2011	27/10/2011	27/10/2011	27/10/2011
diss.filt	Dissolved / filtered sample.		111028-105	111028-105	111028-105	111028-105	111028-105	111028-105
tot.unfilt	Total / unfiltered sample.		4599207	4599208	4599209	4599206	4599201	4599202
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
Naphthalene	<9 µg/kg	TM218	70500	268	12700	5910	312	1330
Acenaphthylene	<12 µg/kg	TM218	2480	166	1100	501	207	3480
Acenaphthene	<8 µg/kg	TM218	7870	111	5470	673	43.7	2070
Fluorene	<10 µg/kg	TM218	6860	102	3280	584	159	11500
Phenanthrene	<15 µg/kg	TM218	70400	2530	5480	6860	3510	116000
Anthracene	<16 µg/kg	TM218	14500	590	2530	1750	743	32100
Fluoranthene	<17 µg/kg	TM218	90500	5380	45800	13700	7180	147000
Pyrene	<15 µg/kg	TM218	71200	4620	48800	11400	6370	117000
Benz(a)anthracene	<14 µg/kg	TM218	51000	2660	27500	9990	5700	67200
Chrysene	<10 µg/kg	TM218	42100	2230	21400	7810	4650	48800
Benzo(b)fluoranthene	<15 µg/kg	TM218	62900	3040	21100	14700	11700	82500
Benzo(k)fluoranthene	<14 µg/kg	TM218	19800	1210	6250	4650	3940	29500
Benzo(a)pyrene	<15 µg/kg	TM218	49400	2550	15500	11100	6940	64600
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	23700	1190	4880	5930	6060	35400
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	7980	4170	1870	2140	1790	10200
Benzo(g,h,i)perylene	<24 µg/kg	TM218	25700	1450	5610	6060	6540	37500
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	617000	28500	229000	104000	65800	807000

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CERTIFICATE OF ANALYSIS

Validated

SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

PAH by GCMS

Table with columns: Component, LOD/Units, Method, and numerical results. Includes a Results Legend and Customer Sample Ref. section at the top.

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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

TPH CWG (S)

Results Legend		Customer Sample Ref.	B2	B2	B2	C2	D2	D2
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.20 - 0.80	0.80 - 1.30	1.30 - 2.00	1.50 - 2.00	0.50 - 1.00	1.00 - 1.50
M	mCERTS accredited.							
S	Deviating sample.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units	Method						
GRO >C5-C12	<44 µg/kg	TM089	2190	432	44100	379	75	505
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kg	TM089	<10	<10	19.9	16.2	<10	13.9
Toluene	<2 µg/kg	TM089	4.76	5.8	<2	8.12	3.63	2.32
Ethylbenzene	<3 µg/kg	TM089	9.52	<3	92.4	4.64	<3	<3
m,p-Xylene	<6 µg/kg	TM089	20.2	9.28	1160	15.1	<6	<6
o-Xylene	<3 µg/kg	TM089	17.9	4.64	<3	10.4	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg	TM089	38.1	13.9	1160	25.5	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	52.4	<24	1270	54.5	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	36.3	27.8	19.4	22
Aliphatics >C6-C8	<10 µg/kg	TM089	27.4	11.6	1830	26.7	14.5	46.4
Aliphatics >C8-C10	<10 µg/kg	TM089	119	49.9	9320	39.4	<10	59.2
Aliphatics >C10-C12	<10 µg/kg	TM089	1140	183	15200	123	<10	188
Aliphatics >C12-C16	<100 µg/kg	TM173	4130	1650	103000	6000	9190	15000
Aliphatics >C16-C21	<100 µg/kg	TM173	7600	3620	138000	8330	24600	22300
Aliphatics >C21-C35	<100 µg/kg	TM173	10800	17000	75600	12700	42400	23900
Aliphatics >C35-C44	<100 µg/kg	TM173	3460	<100	<100	2600	9820	2210
Total Aliphatics >C12-C44	<100 µg/kg	TM173	26000	28200	317000	29600	86000	63400
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	19.9	16.2	<10	13.9
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	127	48.7	7470	56.8	12.1	47.6
Aromatics >EC10-EC12	<10 µg/kg	TM089	760	122	10200	82.4	<10	125
Aromatics >EC12-EC16	<100 µg/kg	TM173	200000	8530	92900	9210	4390	229000
Aromatics >EC16-EC21	<100 µg/kg	TM173	270000	72200	291000	47700	30100	1580000
Aromatics >EC21-EC35	<100 µg/kg	TM173	731000	192000	529000	216000	142000	2750000
Aromatics >EC35-EC44	<100 µg/kg	TM173	177000	54800	89100	61000	61100	723000
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	1380000	328000	1000000	334000	238000	5290000
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	1410000	356000	1360000	364000	324000	5350000
Total Aliphatics >C5-35	<100 µg/kg	TM173	23800	28500	343000	27200	76200	61500
Total Aromatics >C5-35	<100 µg/kg	TM173	1200000	273000	931000	273000	176000	4560000
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	1230000	302000	1270000	300000	253000	4630000
Total Aliphatics >C5-C12	<10 µg/kg	TM089	1290	253	26400	217	49.6	314
Total Aromatics >EC5-EC12	<10 µg/kg	TM089	894	179	17700	162	25.4	188
Total Aliphatics >C5-C44	<100 µg/kg	TM173	27300	28500	343000	29800	86100	63800
Total Aromatics >C6-C44	<100 µg/kg	TM173	1380000	328000	1020000	334000	238000	5290000



CERTIFICATE OF ANALYSIS

SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

TPH CWG (S)

Table with columns for Component, LOD/Units, Method, and six sample locations (B2, B2, B2, C2, D2, D2). Includes a Results Legend and a large red watermark: 'For inspection purposes only. Consent of copyright owner required for any other use.'



SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

TPH CWG (S)

Results Legend		Customer Sample Ref.	D2					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	2.00 - 2.50 Soil/Solid 26/10/2011 27/10/2011 111028-105 4599204					
M	mCERTS accredited.							
S	Deviating sample.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units			Method				
GRO >C5-C12	<44 µg/kg	TM089	29300					
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	#				
Benzene	<10 µg/kg	TM089	100	#				
Toluene	<2 µg/kg	TM089	60.9	#				
Ethylbenzene	<3 µg/kg	TM089	152	#				
m,p-Xylene	<6 µg/kg	TM089	802	#				
o-Xylene	<3 µg/kg	TM089	498	#				
sum of detected mpo xylene by GC	<9 µg/kg	TM089	1300					
sum of detected BTEX by GC	<24 µg/kg	TM089	1610					
Aliphatics >C5-C6	<10 µg/kg	TM089	135					
Aliphatics >C6-C8	<10 µg/kg	TM089	2350					
Aliphatics >C8-C10	<10 µg/kg	TM089	6160					
Aliphatics >C10-C12	<10 µg/kg	TM089	8990					
Aliphatics >C12-C16	<100 µg/kg	TM173	9700					
Aliphatics >C16-C21	<100 µg/kg	TM173	32700					
Aliphatics >C21-C35	<100 µg/kg	TM173	37800					
Aliphatics >C35-C44	<100 µg/kg	TM173	21400					
Total Aliphatics >C12-C44	<100 µg/kg	TM173	102000					
Aromatics >EC5-EC7	<10 µg/kg	TM089	100					
Aromatics >EC7-EC8	<10 µg/kg	TM089	60.9					
Aromatics >EC8-EC10	<10 µg/kg	TM089	5560					
Aromatics >EC10-EC12	<10 µg/kg	TM089	5990					
Aromatics >EC12-EC16	<100 µg/kg	TM173	18400					
Aromatics >EC16-EC21	<100 µg/kg	TM173	65800					
Aromatics >EC21-EC35	<100 µg/kg	TM173	110000					
Aromatics >EC35-EC44	<100 µg/kg	TM173	32800					
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	226000					
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	357000					
Total Aliphatics >C5-35	<100 µg/kg	TM173	97800					
Total Aromatics >C5-35	<100 µg/kg	TM173	205000					
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	303000					
Total Aliphatics >C5-C12	<10 µg/kg	TM089	17600					
Total Aromatics >EC5-EC12	<10 µg/kg	TM089	11700					
Total Aliphatics >C5-C44	<100 µg/kg	TM173	119000					
Total Aromatics >C6-C44	<100 µg/kg	TM173	238000					

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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

VOC MS (S)

Results Legend		Customer Sample Ref.	B2	B2	D2	D2		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80 - 1.30 Soil/Solid 27/10/2011 27/10/2011 111028-105 4599208	1.30 - 2.00 Soil/Solid 27/10/2011 27/10/2011 111028-105 4599209	1.00 - 1.50 Soil/Solid 26/10/2011 27/10/2011 111028-105 4599202	2.00 - 2.50 Soil/Solid 26/10/2011 27/10/2011 111028-105 4599204		
M	mCERTS accredited.							
S	Deviating sample.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units						Method	
Dibromofluoromethane**	%	TM116	34.8	75.3	41.5	58.5		
Toluene-d8**	%	TM116	99.5	92.1	95.5	101		
4-Bromofluorobenzene**	%	TM116	137	131	150	120		
Dichlorodifluoromethane	<4 µg/kg	TM116	<4	<4	<4	<4		
Chloromethane	<7 µg/kg	TM116	<7	<7	<7	<7		
Vinyl Chloride	<10 µg/kg	TM116	<10	<10	<10	<10		
Bromomethane	<13 µg/kg	TM116	<13	<13	<13	<13		
Chloroethane	<14 µg/kg	TM116	<14	<14	<14	<14		
Trichlorofluoromethane	<6 µg/kg	TM116	<6	<6	<6	<6		
1.1-Dichloroethene	<10 µg/kg	TM116	<10	<10	<10	<10		
Carbon Disulphide	<7 µg/kg	TM116	<7	73.8	<7	95.4		
Dichloromethane	<10 µg/kg	TM116	<10	<10	<10	<10		
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11	<11	<11	<11		
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<11	<11	<11	<11		
1.1-Dichloroethane	<8 µg/kg	TM116	<8	<8	<8	<8		
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<5	<5	<5	<5		
2.2-Dichloropropane	<12 µg/kg	TM116	<12	<12	<12	<12		
Bromochloromethane	<14 µg/kg	TM116	<14	<14	<14	<14		
Chloroform	<8 µg/kg	TM116	<8	<8	<8	<8		
1.1.1-Trichloroethane	<7 µg/kg	TM116	<7	<7	<7	<7		
1.1-Dichloropropene	<11 µg/kg	TM116	<11	<11	<11	<11		
Carbontetrachloride	<14 µg/kg	TM116	<14	<14	<14	<14		
1.2-Dichloroethane	<5 µg/kg	TM116	<5	<5	<5	<5		
Benzene	<9 µg/kg	TM116	<9	55.1	51	253		
Trichloroethene	<9 µg/kg	TM116	<9	<9	<9	<9		
1.2-Dichloropropane	<12 µg/kg	TM116	<12	<12	<12	<12		
Dibromomethane	<9 µg/kg	TM116	<9	<9	<9	<9		
Bromodichloromethane	<7 µg/kg	TM116	<7	<7	<7	<7		
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<14	<14	<14		
Toluene	<5 µg/kg	TM116	12.8	36.4	12.8	73.6		
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<14	<14	<14		
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10	<10	<10	<10		
1.3-Dichloropropane	<7 µg/kg	TM116	<7	<7	<7	<7		
Tetrachloroethene	<5 µg/kg	TM116	<5	<5	<5	<5		
Dibromochloromethane	<13 µg/kg	TM116	<13	<13	<13	<13		



CERTIFICATE OF ANALYSIS

SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

VOC MS (S)

Results Legend		Customer Sample Ref.	B2	B2	D2	D2		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		0.80 - 1.30	1.30 - 2.00	1.00 - 1.50	2.00 - 2.50		
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		27/10/2011	27/10/2011	26/10/2011	26/10/2011		
diss.filt	Dissolved / filtered sample.		27/10/2011	27/10/2011	27/10/2011	27/10/2011		
tot.unfilt	Total / unfiltered sample.		27/10/2011	27/10/2011	27/10/2011	27/10/2011		
**	Subcontracted test.		111028-105	111028-105	111028-105	111028-105		
*	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		4599208	4599209	4599202	4599204		
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
1,2-Dibromoethane	<12 µg/kg	TM116	<12	<12	<12	<12		#
Chlorobenzene	<5 µg/kg	TM116	<5	<5	<5	<5		#
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<10	<10	<10		#
Ethylbenzene	<4 µg/kg	TM116	7.71	470	5.83	208		#
p/m-Xylene	<14 µg/kg	TM116	20.1	2830	<14	732		#
o-Xylene	<10 µg/kg	TM116	<10	110	<10	334		#
Styrene	<10 µg/kg	TM116	<10	<10	<10	<10		#
Bromoform	<10 µg/kg	TM116	<10	<10	<10	<10		#
Isopropylbenzene	<5 µg/kg	TM116	<5	463	<5	74.7		#
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<10	<10	<10		#
1,2,3-Trichloropropane	<17 µg/kg	TM116	<17	<17	<17	<17		#
Bromobenzene	<10 µg/kg	TM116	<10	<10	<10	<10		#
Propylbenzene	<11 µg/kg	TM116	<11	671	<11	124		#
2-Chlorotoluene	<9 µg/kg	TM116	<9	<9	<9	<9		#
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8	2780	<8	440		#
4-Chlorotoluene	<12 µg/kg	TM116	<12	<12	<12	<12		#
tert-Butylbenzene	<12 µg/kg	TM116	<12	<12	<12	<12		#
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9	6320	<9	1720		#
sec-Butylbenzene	<10 µg/kg	TM116	<10	326	<10	57.5		#
4-Isopropyltoluene	<11 µg/kg	TM116	<11	972	<11	171		#
1,3-Dichlorobenzene	<6 µg/kg	TM116	<6	<6	<6	<6		#
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5	<5	<5	<5		#
n-Butylbenzene	<10 µg/kg	TM116	<10	1100	<10	181		#
1,2-Dichlorobenzene	<12 µg/kg	TM116	<12	<12	<12	<12		#
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	<14	<14	<14		#
Tert-amyl methyl ether	<15 µg/kg	TM116	<15	<15	<15	<15		#
1,2,4-Trichlorobenzene	<6 µg/kg	TM116	<6	<6	<6	<6		#
Hexachlorobutadiene	<12 µg/kg	TM116	<12	<12	<12	<12		#
Naphthalene	<13 µg/kg	TM116	<13	32100	2450	30400		#
1,2,3-Trichlorobenzene	<6 µg/kg	TM116	<6	<6	<6	<6		#



SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Asbestos Identification - Bulk

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	B2 NS Z 0.20 - 0.80 SOLID 27/10/2011 00:00:00 111028-105 4,599,207 TM048	03/11/2011	Kevin Bowron	No Asbestos Detected	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	D2 NS Z 0.50 - 1.00 SOLID 26/10/2011 00:00:00 111028-105 4,599,201 TM048	03/11/2011	Kevin Bowron	No Asbestos Detected	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4632701	D2	0.50 - 1.00	SOLID	pH	pH	Sample holding time exceeded
4632718	D2	1.00 - 1.50	SOLID	pH	pH	Sample holding time exceeded
4632732	D2	2.00 - 2.50	SOLID	pH	pH	Sample holding time exceeded
4632772	C2	1.50 - 2.00	SOLID	pH	pH	Sample holding time exceeded
4632799	B2	0.20 - 0.80	SOLID	pH	pH	Sample holding time exceeded
4633679	B2	0.80 - 1.30	SOLID	pH	pH	Sample holding time exceeded
4633835	B2	1.30 - 2.00	SOLID	pH	pH	Sample holding time exceeded

Note : Test results may be compromised

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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Table of Results - Appendix

REPORT KEY

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10⁻⁷

NDP	No Determination Possible	#	ISO 17025 Accredited	*	Subcontracted Test	M	MCERTS Accredited
NFD	No Fibres Detected	PFD	Possible Fibres Detected	»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM001	In - house Method	Determination of asbestos containing material by screening on solids		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Test Completion Dates

Lab Sample No(s)	4599207	4599208	4599209	4599206	4599201	4599202	4599204
Customer Sample Ref.	B2	B2	B2	C2	D2	D2	D2
AGS Ref.							
Depth	0.20 - 0.80	0.80 - 1.30	1.30 - 2.00	1.50 - 2.00	0.50 - 1.00	1.00 - 1.50	2.00 - 2.50
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011
Asbestos Containing Material Screen		04-Nov-2011	04-Nov-2011				
Asbestos Identification (Soil)	03-Nov-2011				03-Nov-2011		
Cyanide Comp/Free/Total/Thiocyanate	04-Nov-2011	06-Nov-2011	06-Nov-2011	04-Nov-2011	04-Nov-2011	04-Nov-2011	04-Nov-2011
Easily Liberated Sulphide	08-Nov-2011	08-Nov-2011	08-Nov-2011	07-Nov-2011	08-Nov-2011	07-Nov-2011	07-Nov-2011
EPH CWG (Aliphatic) GC (S)	07-Nov-2011	08-Nov-2011	08-Nov-2011	08-Nov-2011	07-Nov-2011	08-Nov-2011	08-Nov-2011
EPH CWG (Aromatic) GC (S)	07-Nov-2011	08-Nov-2011	08-Nov-2011	08-Nov-2011	07-Nov-2011	08-Nov-2011	08-Nov-2011
GRO by GC-FID (S)	08-Nov-2011	08-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011
Hexavalent Chromium (s)	05-Nov-2011	07-Nov-2011	07-Nov-2011	05-Nov-2011	05-Nov-2011	05-Nov-2011	05-Nov-2011
Metals by iCap-OES (Soil)	04-Nov-2011	10-Nov-2011	10-Nov-2011	08-Nov-2011	04-Nov-2011	08-Nov-2011	08-Nov-2011
PAH by GCMS	07-Nov-2011	06-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011
PCBs by GCMS		07-Nov-2011				07-Nov-2011	
pH	04-Nov-2011	07-Nov-2011	07-Nov-2011	04-Nov-2011	07-Nov-2011	04-Nov-2011	04-Nov-2011
Phenols by HPLC (S)	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011
Sample description	03-Nov-2011	03-Nov-2011	03-Nov-2011	03-Nov-2011	03-Nov-2011	03-Nov-2011	03-Nov-2011
Total Sulphate	04-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	04-Nov-2011	07-Nov-2011	07-Nov-2011
TPH CWG GC (S)	08-Nov-2011	08-Nov-2011	08-Nov-2011	08-Nov-2011	07-Nov-2011	08-Nov-2011	08-Nov-2011
VOC MS (S)		10-Nov-2011	11-Nov-2011			08-Nov-2011	10-Nov-2011

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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

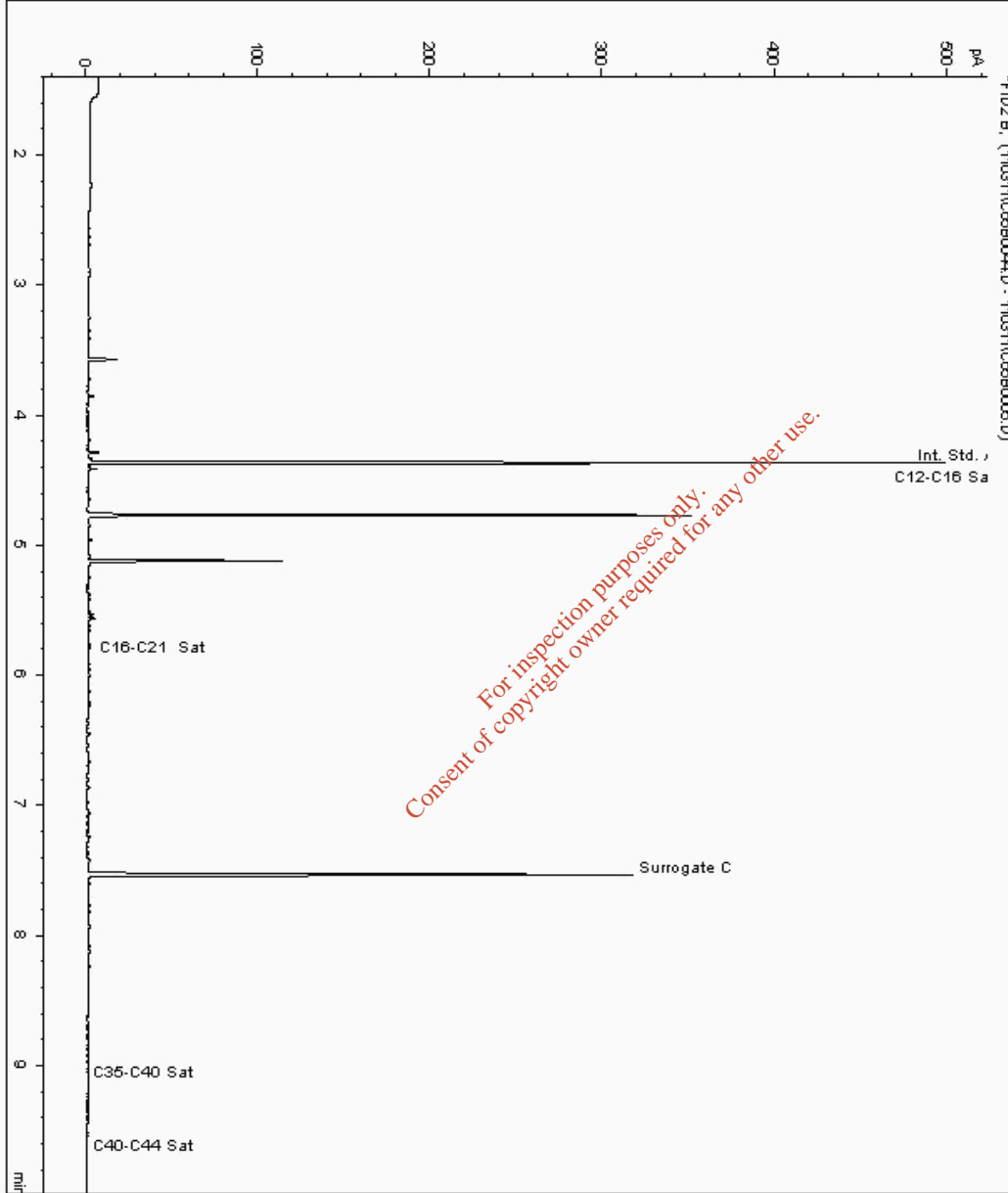
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4630547
Sample ID : B2

Depth : 0.20 - 0.80

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4567400-4630547
Date Acquired : 05/11/11 19:42:55 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.000





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 470000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

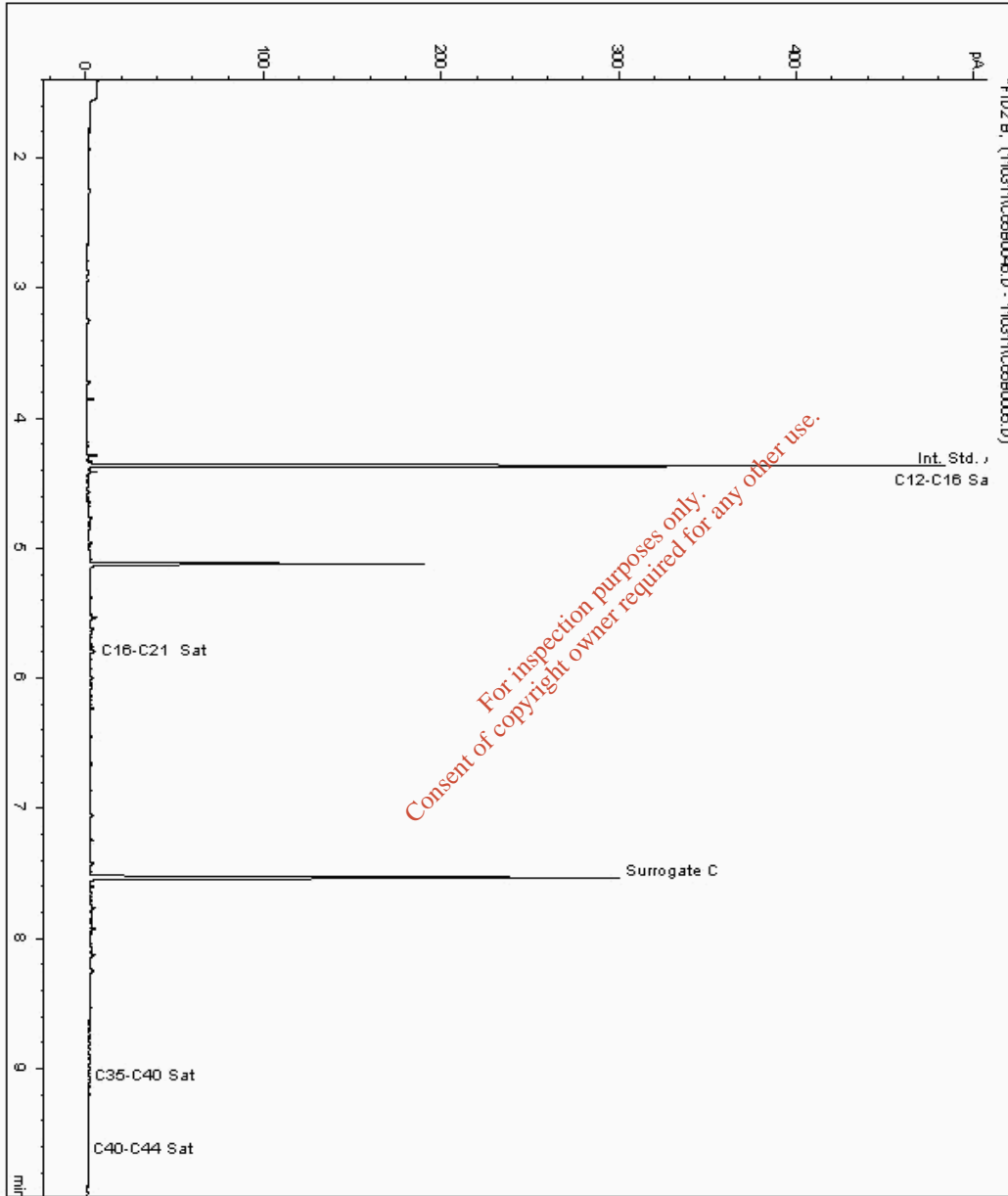
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4630576
Sample ID : D2

Depth : 0.50 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4567317-4630576
Date Acquired : 05/11/11 20:15:39 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.000





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

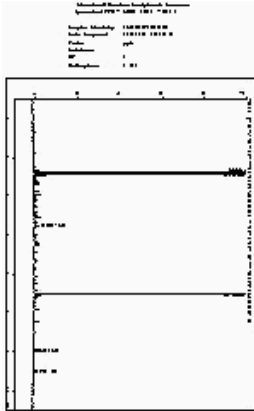
Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4642438
Sample ID : C2

Depth : 1.50 - 2.00



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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

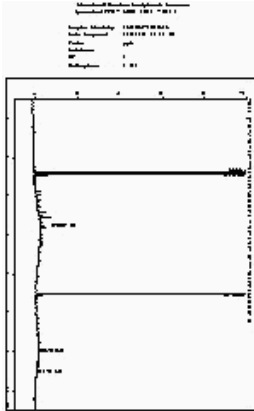
Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4642519
Sample ID : D2

Depth : 2.00 - 2.50



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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

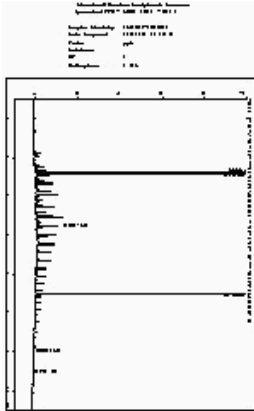
Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4642608
Sample ID : D2

Depth : 1.00 - 1.50



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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

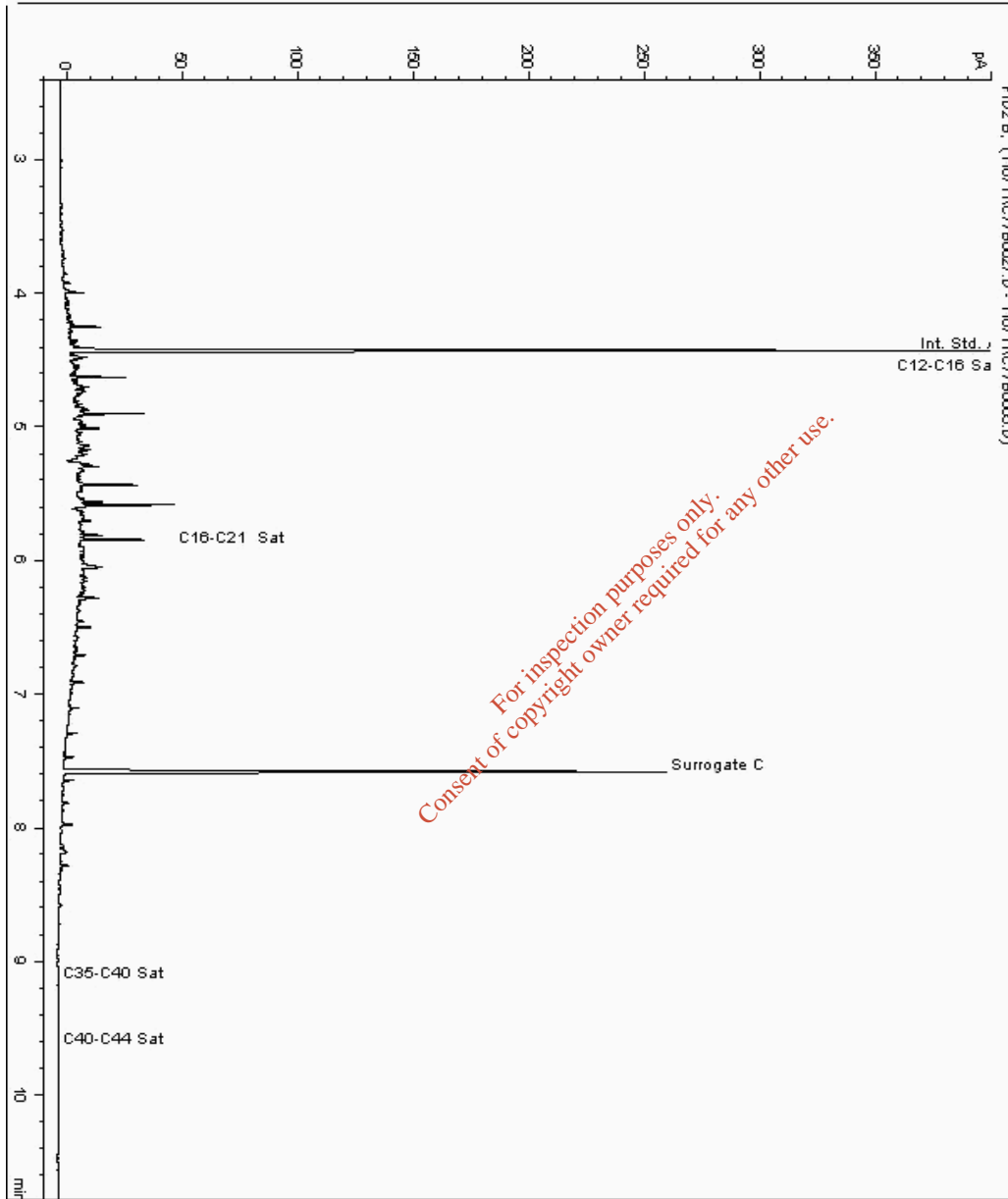
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4643628
Sample ID : B2

Depth : 1.30 - 2.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4567439-4643628
Date Acquired : 07/11/11 19:10:22 PM
Units : ppb
Dilution:





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

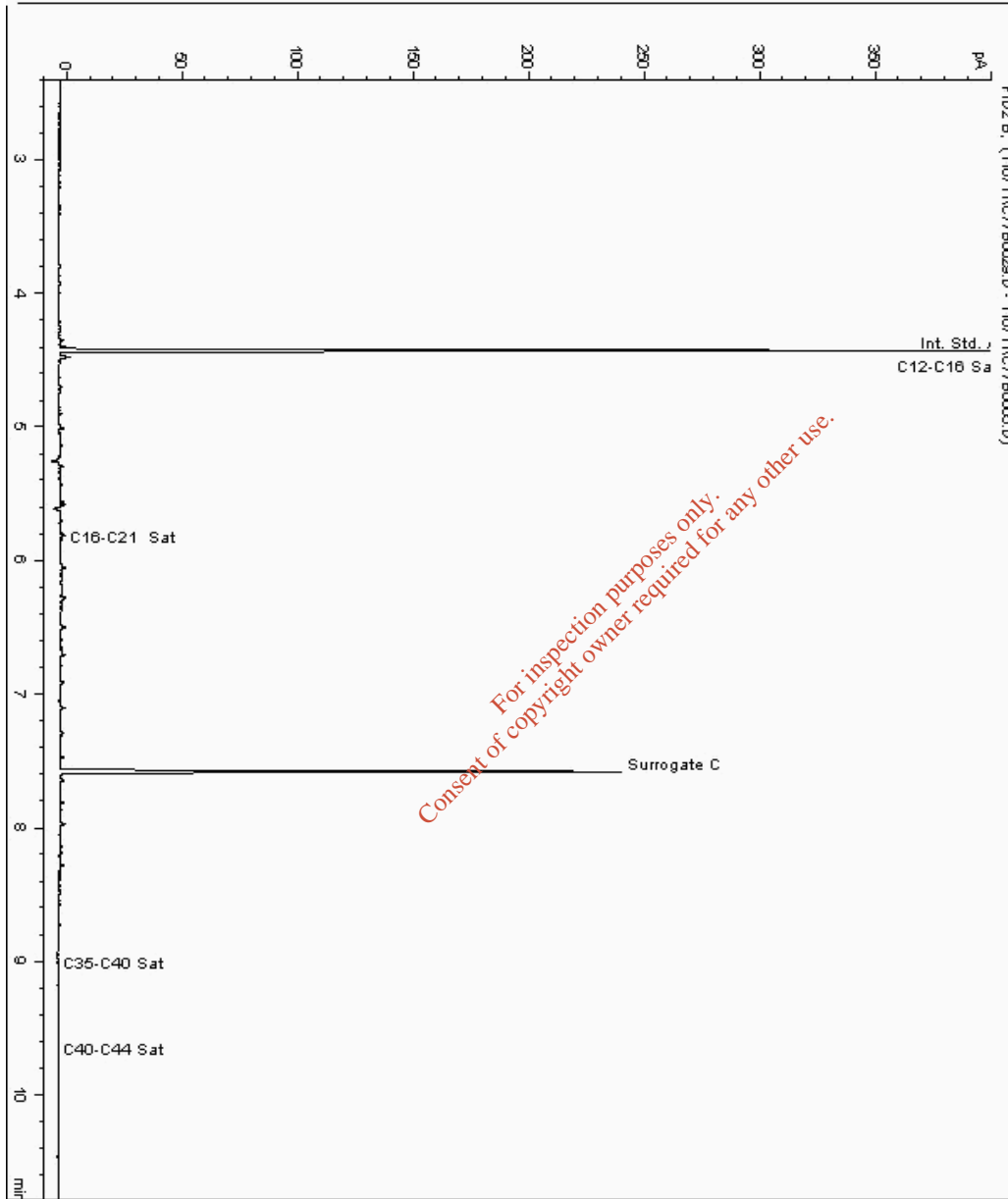
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4643670
Sample ID : B2

Depth : 0.80 - 1.30

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4567420-4643670
Date Acquired : 07/11/11 19:40:44 PM
Units : ppb
Dilution:





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

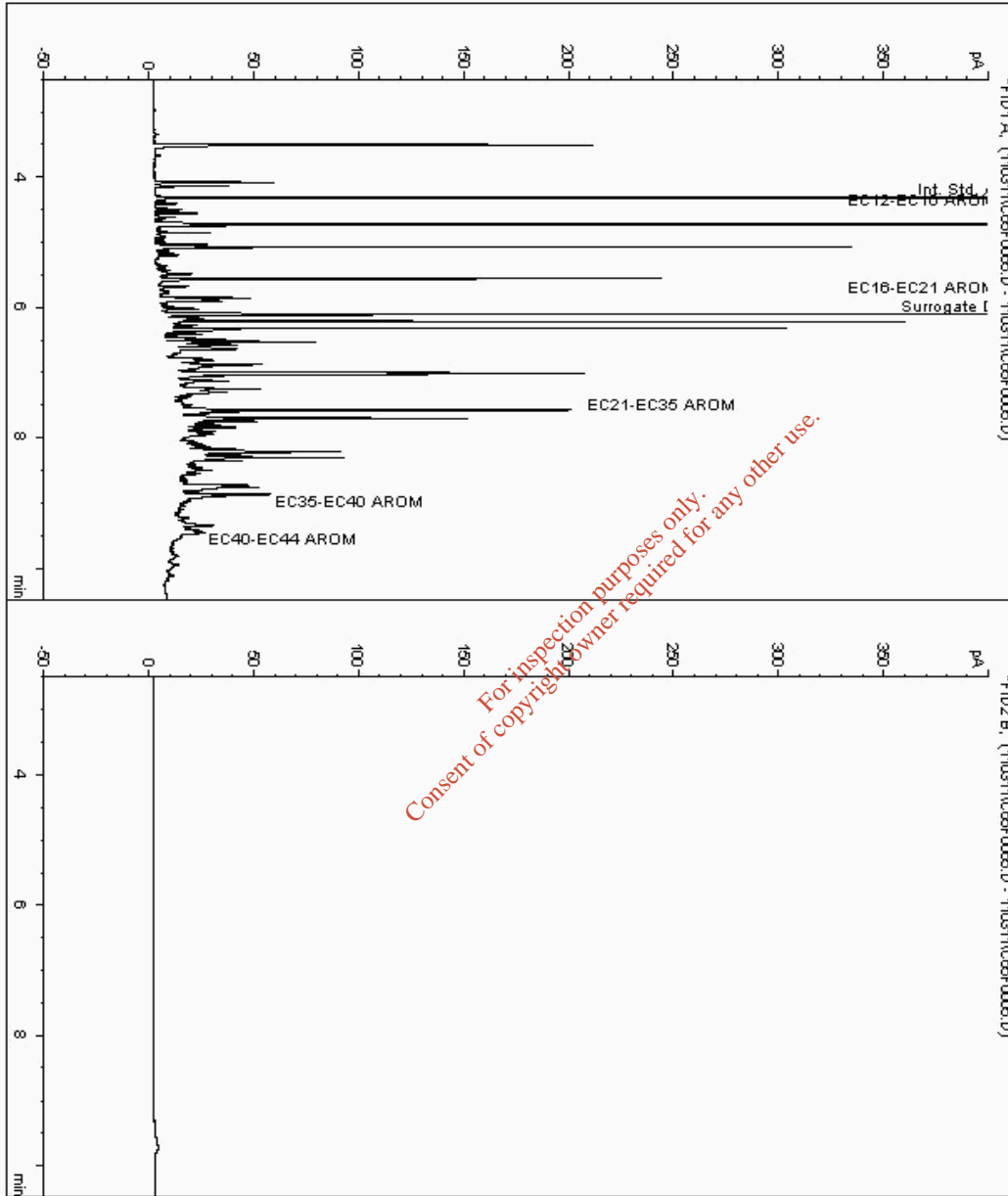
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4630547
Sample ID : B2

Depth : 0.20 - 0.80

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4567399-4630547
Date Acquired : 07/11/11 11:59:22 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.967





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

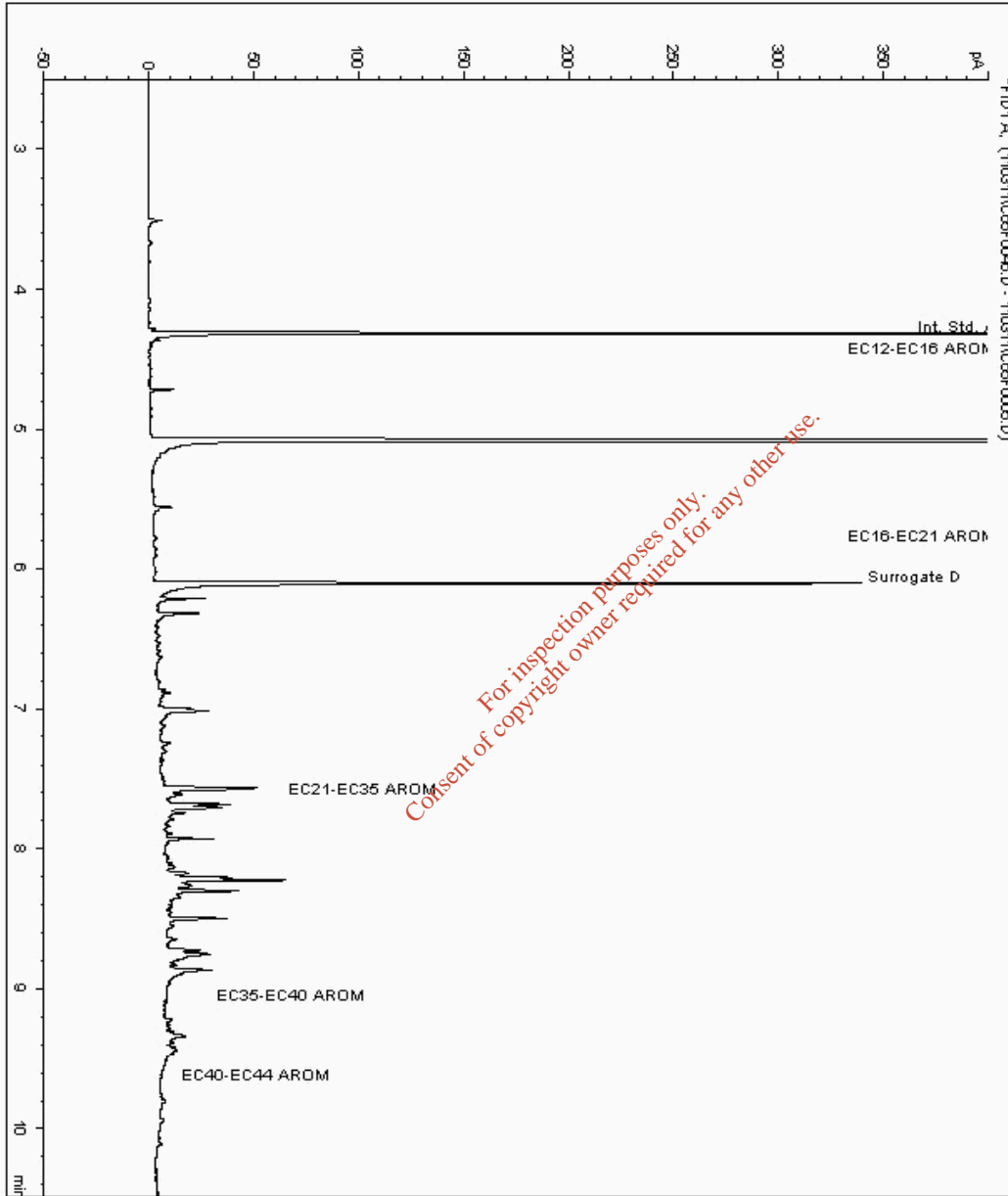
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4630576
Sample ID : D2

Depth : 0.50 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4567316-4630576
Date Acquired : 05/11/11 20:15:39 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.000





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

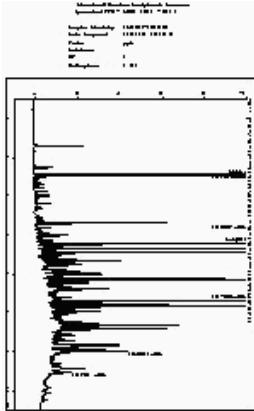
Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4642438
Sample ID : C2

Depth : 1.50 - 2.00



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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

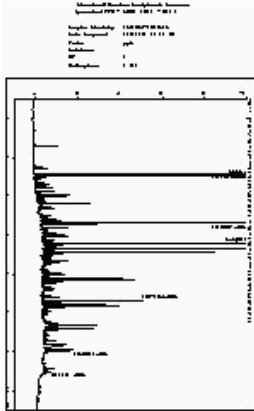
Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4642519
Sample ID : D2

Depth : 2.00 - 2.50



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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

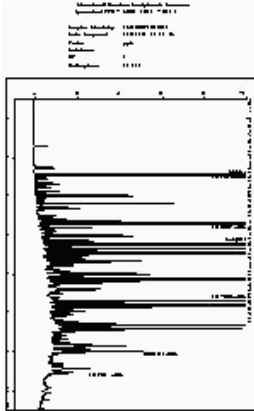
Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4642608
Sample ID : D2

Depth : 1.00 - 1.50



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SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

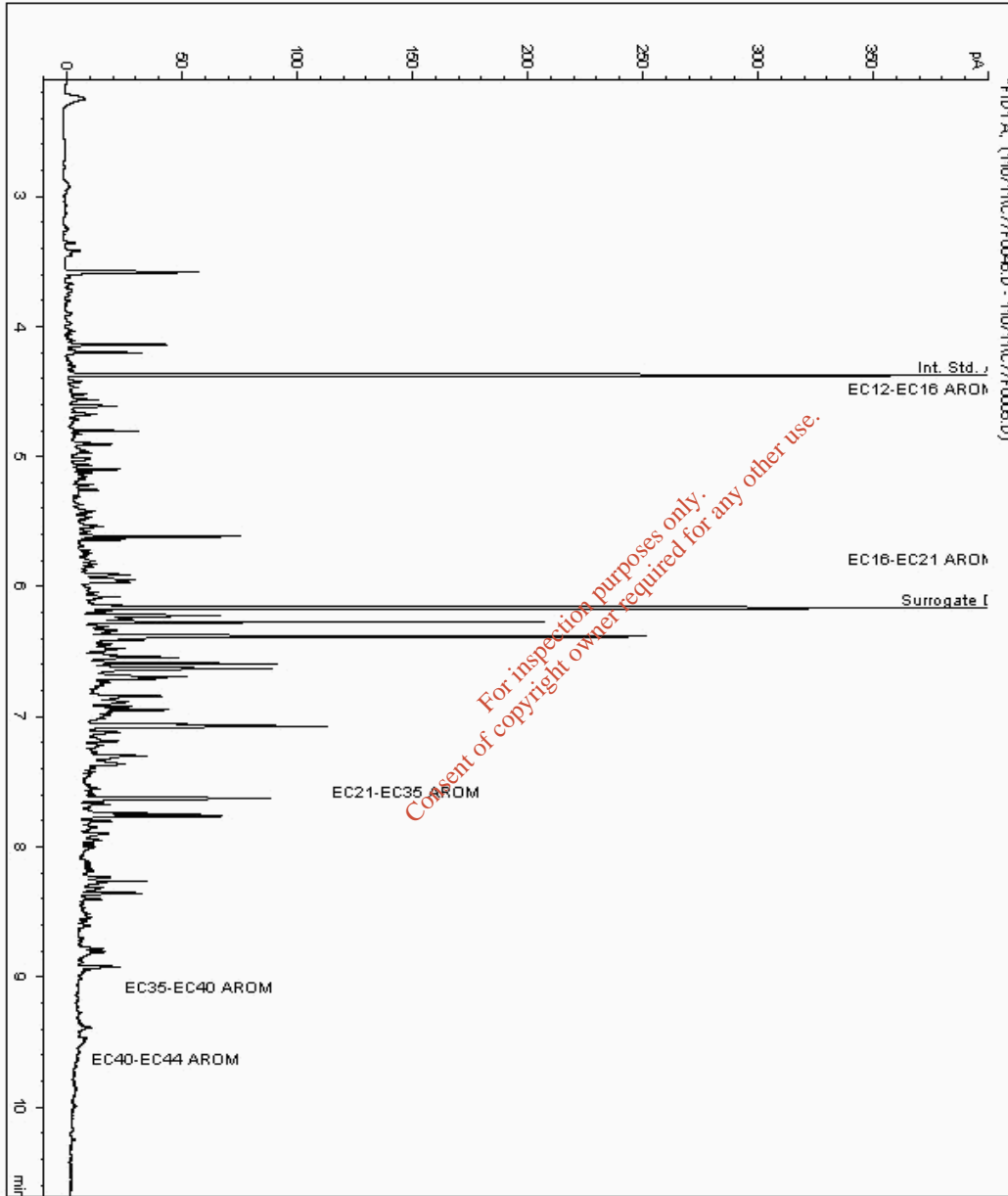
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4643628
Sample ID : B2

Depth : 1.30 - 2.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4567438-4643628
Date Acquired : 08/11/11 09:06:19 PM
Units : ppb
Dilution:





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

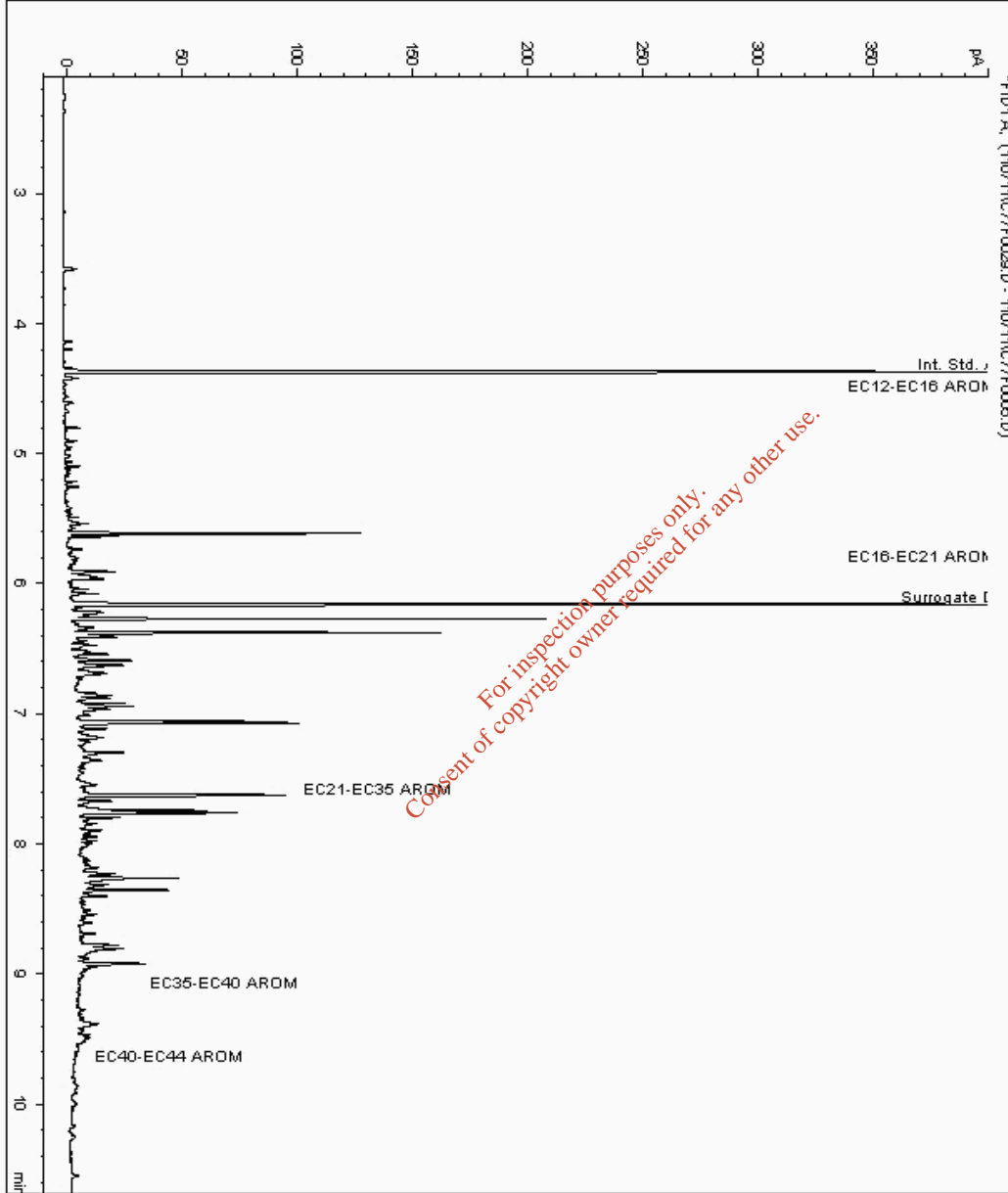
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4643670
Sample ID : B2

Depth : 0.80 - 1.30

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4567419-4643670
Date Acquired : 07/11/11 19:40:44 PM
Units : ppb
Dilution:





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

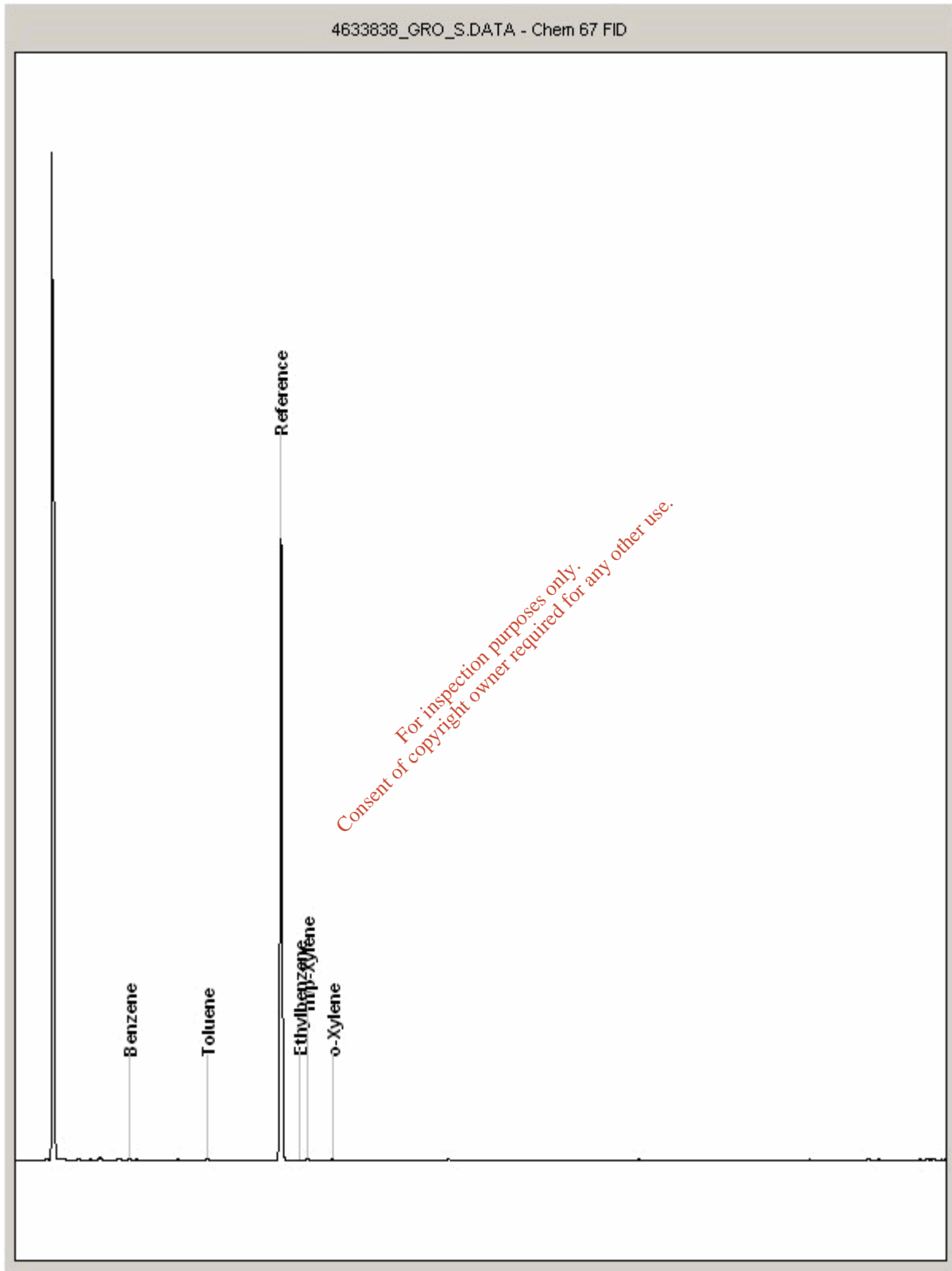
Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4633838
Sample ID : D2

Depth : 0.50 - 1.00





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

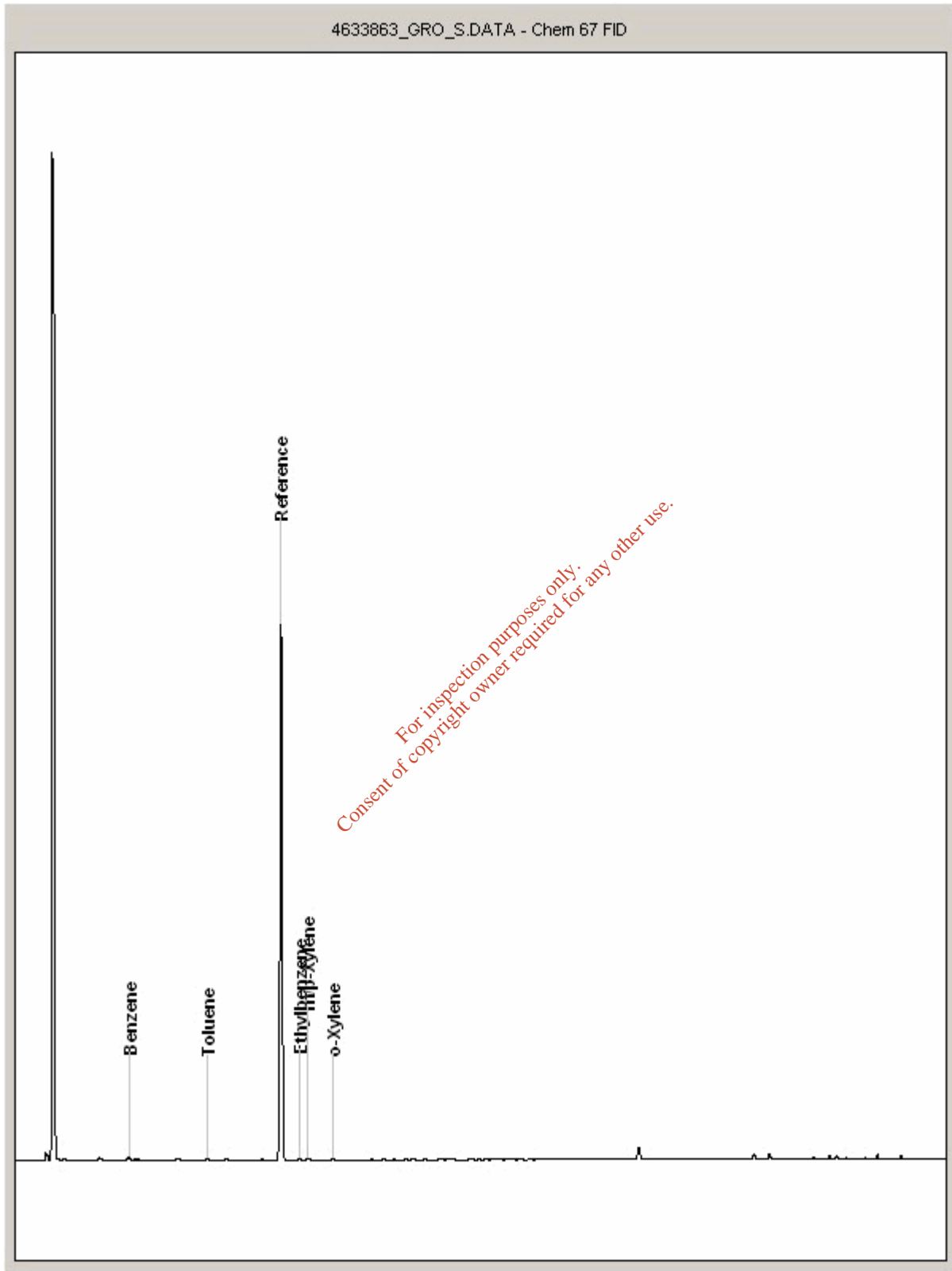
Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4633863
Sample ID : D2

Depth : 1.00 - 1.50





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

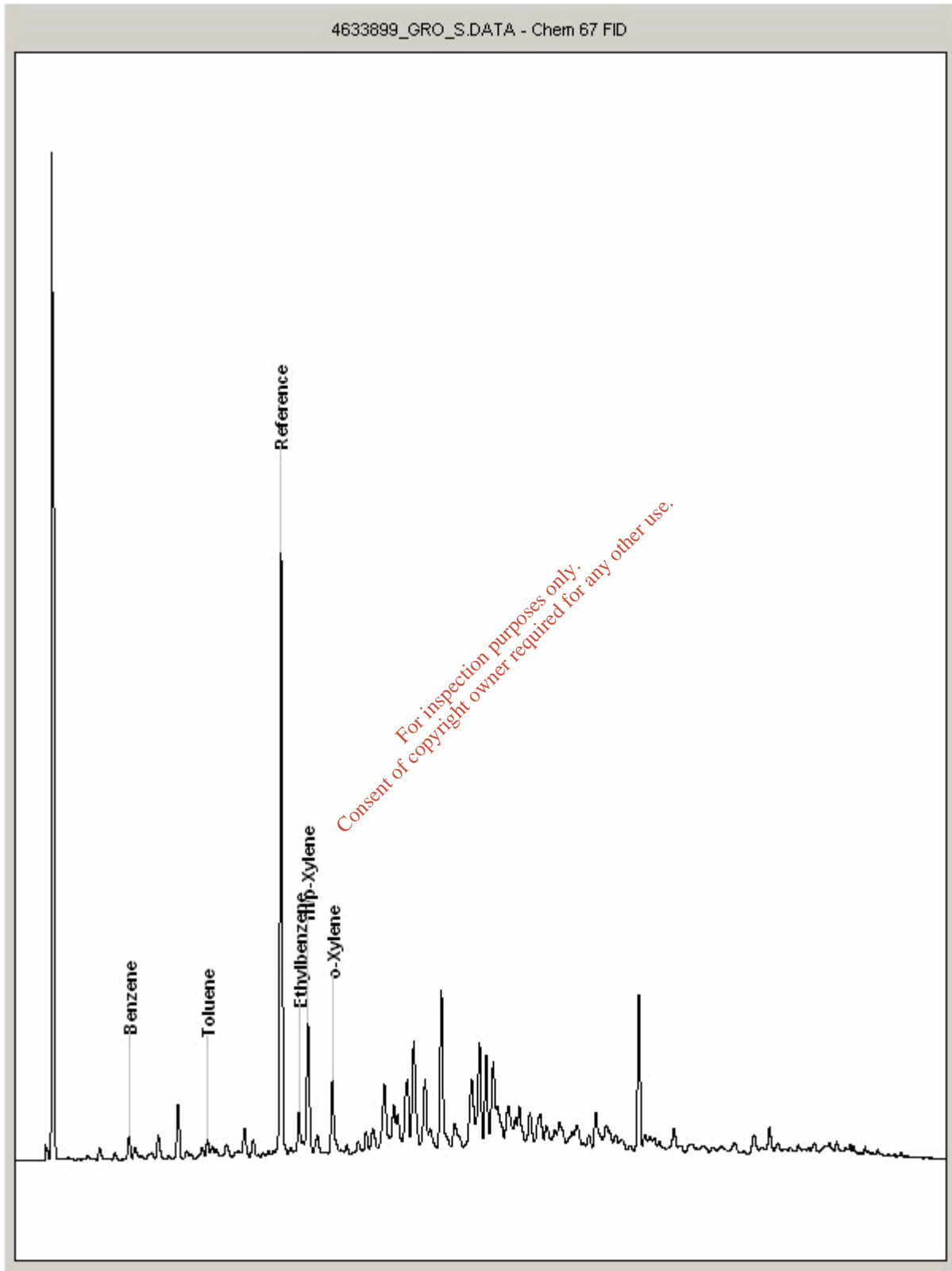
Order Number: 470000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4633899
Sample ID : D2

Depth : 2.00 - 2.50





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

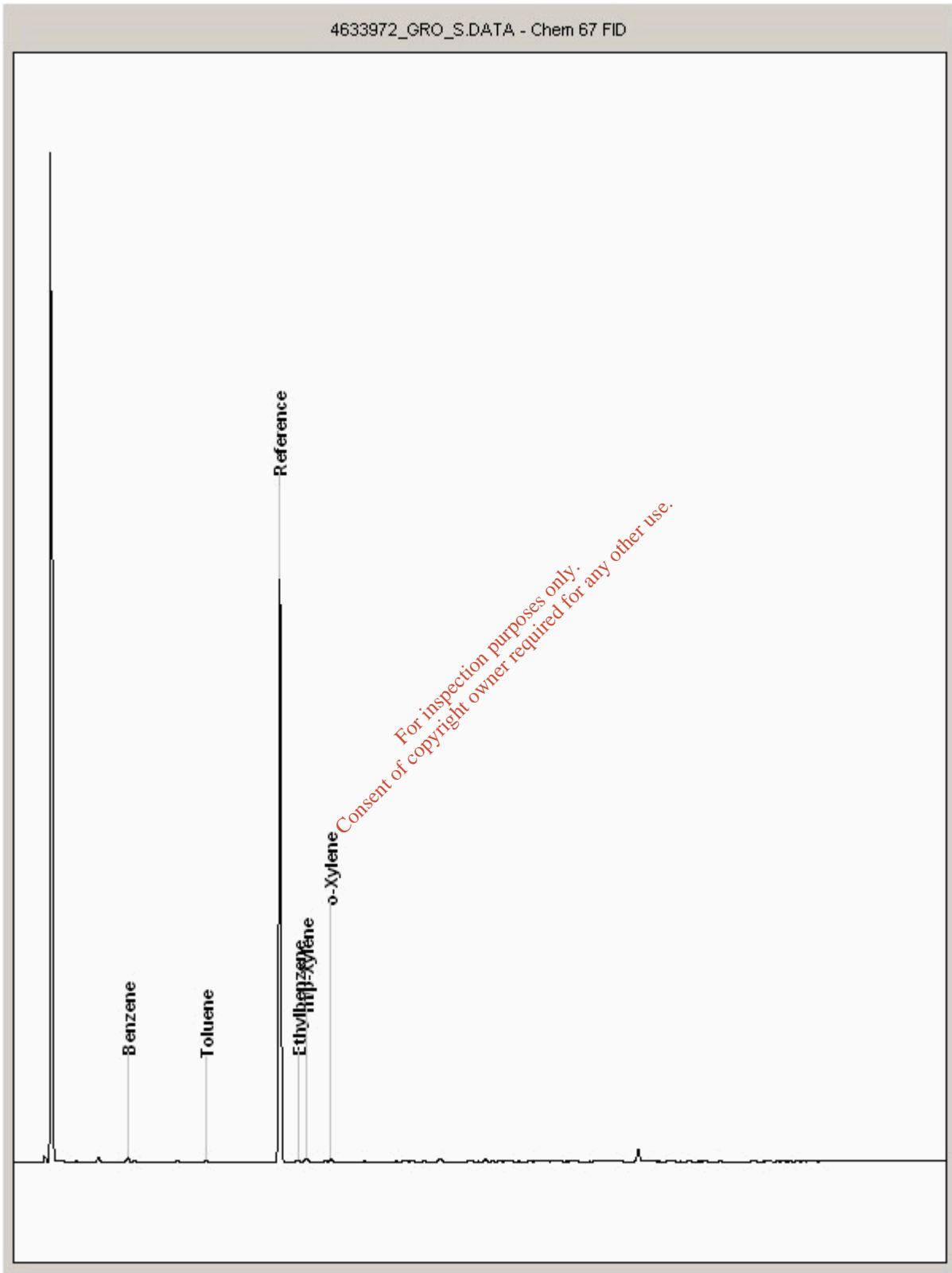
Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4633972
Sample ID : C2

Depth : 1.50 - 2.00





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

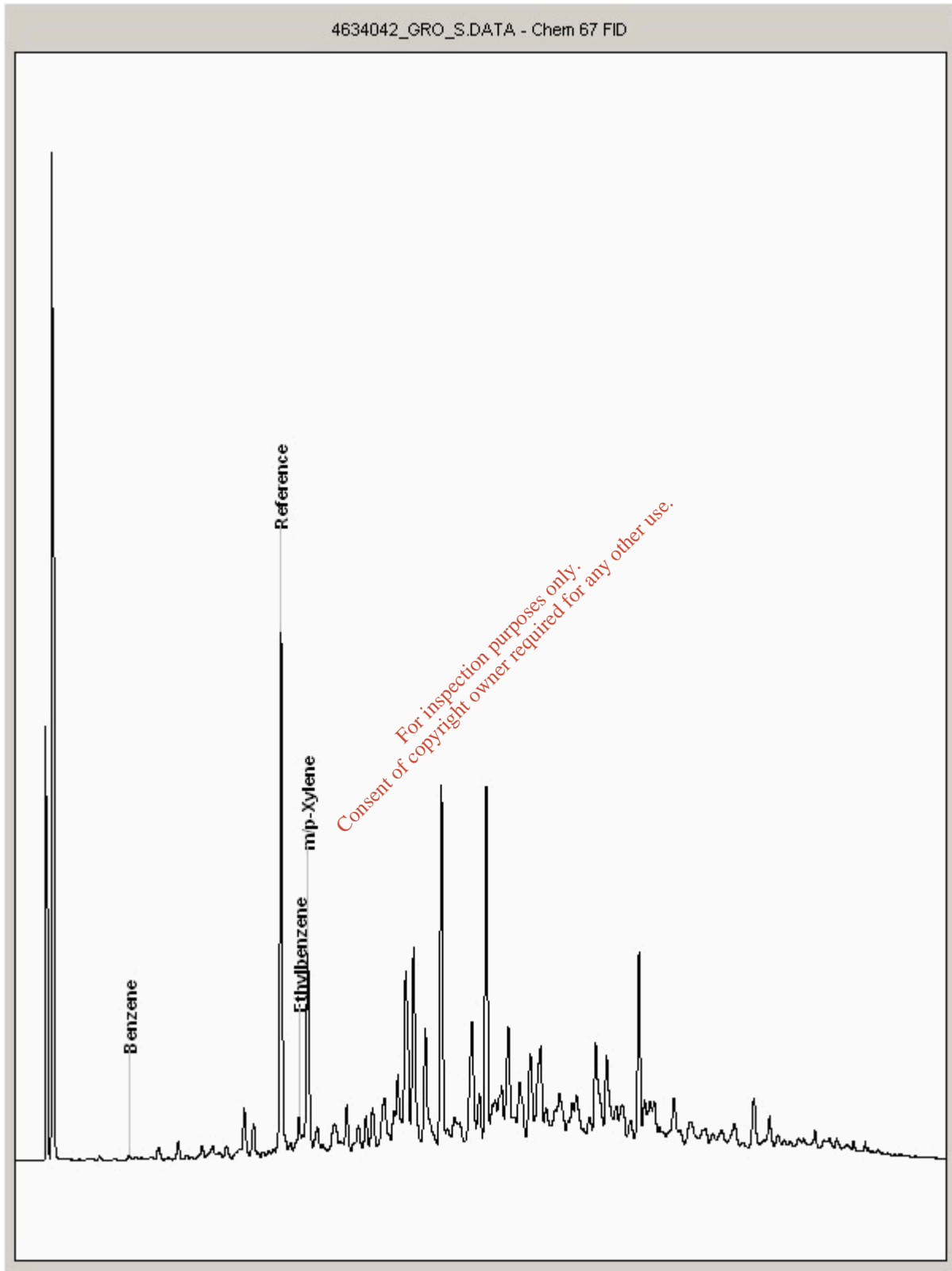
Order Number: 470000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4634042
Sample ID : B2

Depth : 1.30 - 2.00





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

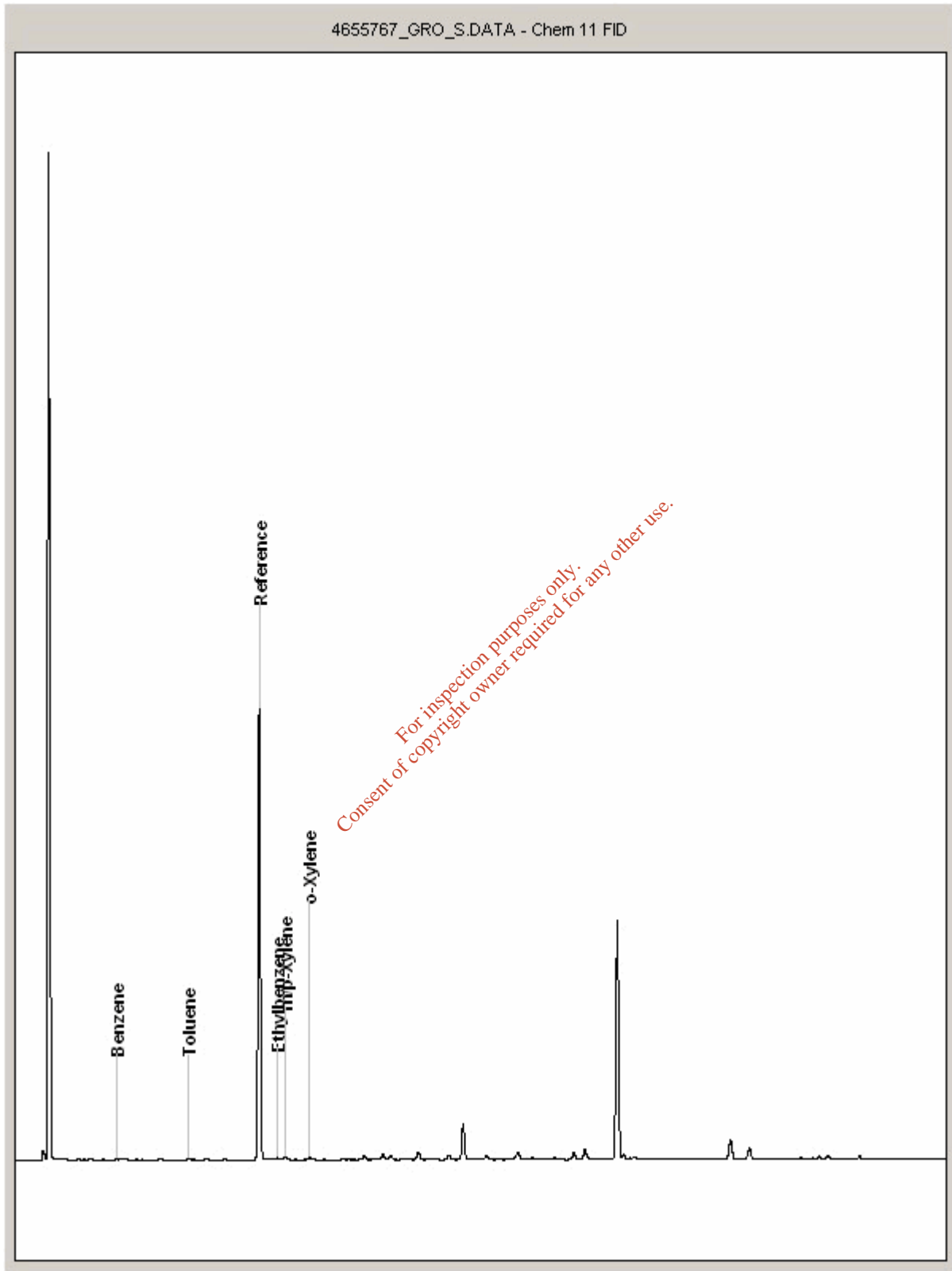
Order Number: 470000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4655775
Sample ID : B2

Depth : 0.20 - 0.80





SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

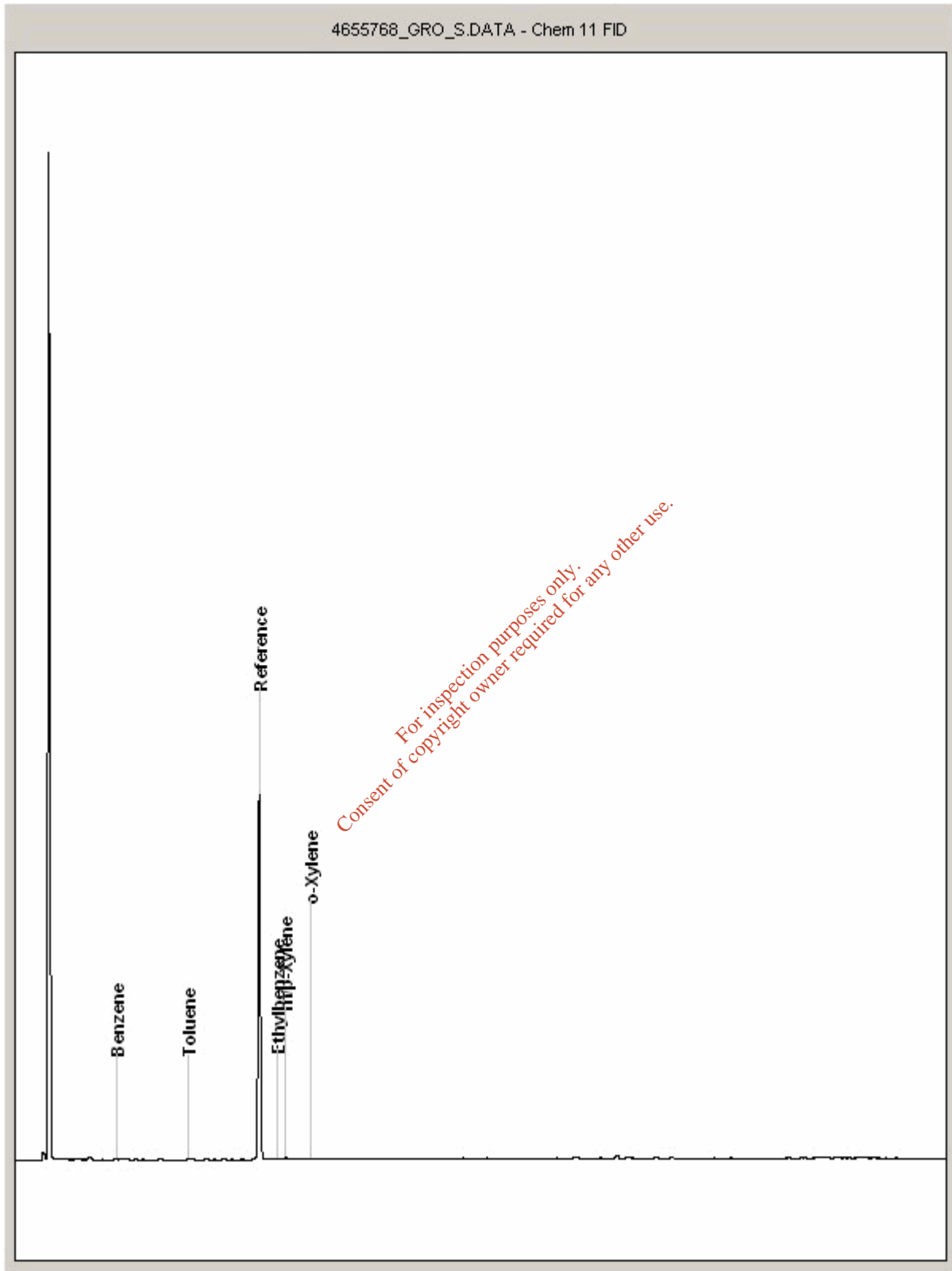
Order Number: 470000740
Report Number: 164065
Superseded Report: 159074

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4655785
Sample ID : B2

Depth : 0.80 - 1.30



SDG: 111028-105
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164065
Superseded Report: 159074

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). If asbestos is present either as asbestos containing material or loose fibres no further analysis will be undertaken. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DCM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DCM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DCM	SOXTHERM	GC-MS
HEBICIDES	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (MIN QI)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (CLEANED UP)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG BY GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB TOT / PCB CON	D&C	HEXANE:ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE:ACETONE	MI CROVAVE TM 218	GC-MS
C8-C10 (G8-C10) EZ FLASH	WET	HEXANE:ACETONE	SHAKER	GC-EZ
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DCM:ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY			
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GCMS
EPH	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GC FD
EPH CWG	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GC FD
MINERAL OIL	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GC FD
PCB 7COGENERS	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GCMS
PCB TOTAL	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GCMS
SVOC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPIOPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOL SMS	DCM	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (R)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by R	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Mouchel
Ground Engineering
Rowan House
Lloyd Drive
Cheshire
CH65 9HQ

Attention: Neil Balderstone

CERTIFICATE OF ANALYSIS

Date: 16 December 2011
Customer: D_MOUCHEL_ELE
Sample Delivery Group (SDG): 111028-110
Your Reference:
Location: Limerick Gasworks
Report No: 164063

This report has been revised and directly supersedes 159093 in its entirety.

We received 13 samples on Thursday October 27, 2011 and 9 of these samples were scheduled for analysis which was completed on Friday December 16, 2011. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

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Consent of copyright owner required for any other use.*

Approved By:

Sonia McWhan
Operations Manager





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
4599760	A1		0.30 - 1.00	26/10/2011
4599761	A1		1.00 - 2.00	26/10/2011
4599755	A2		0.00 - 1.00	26/10/2011
4599756	A2		1.00 - 2.00	26/10/2011
4599757	A2		2.00 - 2.50	26/10/2011
4599758	A2		3.80 - 4.00	26/10/2011
4599759	A2		5.44 - 5.47	26/10/2011
4599762	B1		0.20 - 1.00	26/10/2011
4599763	B1		2.10 - 2.30	26/10/2011
4599764	B1		3.90 - 3.95	26/10/2011
4599765	C1		0.20 - 1.00	26/10/2011
4599766	C1		2.80 - 3.00	26/10/2011
4599767	C1		3.00 - 3.50	26/10/2011

Only received samples which have had analysis scheduled will be shown on the following pages.

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 Consent of copyright owner required for any other use.



SDG: 111028-110
 Job: D_MOUCHEL_ELE-1
 Client Reference:

Location: Limerick Gasworks
 Customer: Mouchel
 Attention: Neil Balderstone

Order Number: 4700000740
 Report Number: 164063
 Superseded Report: 159093

SOLID Results Legend	Lab Sample No(s)	4599760	4599761	4599762	4599763	4599765	4599766	4599767	4599765	4599756
	Customer Sample Reference	A1	A1	B1	B1	C1	C1	C1	A2	A2
AGS Reference										
Depth (m)		0.30 - 1.00	1.00 - 2.00	0.20 - 1.00	2.10 - 2.30	0.20 - 1.00	2.80 - 3.00	3.00 - 3.50	0.00 - 1.00	1.00 - 2.00
Container		60g VOC (ALE215) JAR (D)	60g VOC (ALE215) JAR (D)	60g VOC (ALE215) JAR (D)	60g VOC (ALE215) TUB (D)	60g VOC (ALE215) JAR (D)	60g VOC (ALE215) TUB (D)	60g VOC (ALE215) JAR (D)	60g VOC (ALE215) TUB (D)	60g VOC (ALE215) TUB (D)
Ammonium Soil by Titration	All	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 4	X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
Easily Liberated Sulphide	All	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
Metals by iCap-OES (Soil)	Arsenic	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
	Cadmium	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
	Chromium	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
	Copper	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
	Lead	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
	Mercury	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X
	Nickel	NDPs: 0 Tests: 9	X	X	X	X	X	X	X	X



SDG: 111028-110
 Job: D_MOUCHEL_ELE-1
 Client Reference:

Location: Limerick Gasworks
 Customer: Mouchel
 Attention: Neil Balderstone

Order Number: 4700000740
 Report Number: 164063
 Superseded Report: 159093

SOLID Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container														
	4599760	4599761	4599762	4599763	4599765	4599766	4599767	4599765	4599756										
X Test N No Determination Possible		A1		0.30 - 1.00	TUB (D) JAR (D) 60g VOC (ALE215)														
		A1		1.00 - 2.00	TUB (D) JAR (D) 60g VOC (ALE215)														
		B1		0.20 - 1.00	TUB (D) JAR (D) 60g VOC (ALE215)														
		B1		2.10 - 2.30	TUB (D) JAR (D) 60g VOC (ALE215)														
		C1		0.20 - 1.00	TUB (D) JAR (D) 60g VOC (ALE215)														
		C1		2.80 - 3.00	TUB (D) JAR (D) 60g VOC (ALE215)														
		C1		3.00 - 3.50	TUB (D) JAR (D) 60g VOC (ALE215)														
		A2		0.00 - 1.00	TUB (D) JAR (D) 60g VOC (ALE215)														
		A2		1.00 - 2.00	TUB (D) JAR (D) 60g VOC (ALE215)														
Metals by iCap-OES (Soil)	Selenium	NDPs: 0 Tests: 9				X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Zinc	NDPs: 0 Tests: 9				X	X	X	X	X	X	X	X	X	X	X	X	X	X
PAH by GCMS	All	NDPs: 0 Tests: 9				X	X	X	X	X	X	X	X	X	X	X	X	X	X
PCBs by GCMS	All	NDPs: 0 Tests: 4				X					X								X
pH	All	NDPs: 0 Tests: 9				X	X	X	X	X	X	X	X	X	X	X	X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 9				X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sample description	All	NDPs: 0 Tests: 9				X	X	X	X	X	X	X	X	X	X	X	X	X	X
Total Sulphate	All	NDPs: 0 Tests: 9				X	X	X	X	X	X	X	X	X	X	X	X	X	X
TPH CWG GC (S)	All	NDPs: 0 Tests: 9				X	X	X	X	X	X	X	X	X	X	X	X	X	X
VOC MS (S)	All	NDPs: 0 Tests: 3					X					X							X

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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
4599760	A1	0.30 - 1.00	Light Brown	Sand	0.1 - 2 mm	Crushed Brick	Concrete/Aggregate
4599761	A1	1.00 - 2.00	Light Brown	Silty Sand	0.1 - 2 mm	Stones	None
4599755	A2	0.00 - 1.00	Light Brown	Loamy Sand	0.1 - 2 mm	Stones	None
4599756	A2	1.00 - 2.00	Light Brown	Silty Sand	0.1 - 2 mm	Stones	None
4599762	B1	0.20 - 1.00	Light Brown	Silty Clay	0.063 - 0.1 mm	Stones	None
4599763	B1	2.10 - 2.30	Red	Sandy Clay	0.1 - 2 mm	Stones	Crushed Brick
4599765	C1	0.20 - 1.00	Light Brown	Silty Sand	0.1 - 2 mm	Stones	None
4599766	C1	2.80 - 3.00	Grey	Silty Sand	0.1 - 2 mm	Stones	None
4599767	C1	3.00 - 3.50	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones	N/A

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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CERTIFICATE OF ANALYSIS

SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Results Legend			Customer Sample Ref.		A1	A1	A2	A2	B1	B1
#	ISO17025 accredited.		Depth (m)		0.30 - 1.00	1.00 - 2.00	0.00 - 1.00	1.00 - 2.00	0.20 - 1.00	2.10 - 2.30
M	mCERTS accredited.		Sample Type		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
S	Deviating sample.		Date Sampled		26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011
aq	Aqueous / settled sample.		Date Received		27/10/2011	27/10/2011	27/10/2011	27/10/2011	27/10/2011	27/10/2011
diss.filt	Dissolved / filtered sample.		SDG Ref		111028-110	111028-110	111028-110	111028-110	111028-110	111028-110
tot.unfilt	Total / unfiltered sample.		Lab Sample No.(s)		4599760	4599761	4599755	4599756	4599762	4599763
-	Subcontracted test.		AGS Reference							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
Component	LOD/Units	Method								
Ammoniacal Nitrogen, exchangeable as NH4	<15 mg/kg	TM024	<15	M	<15	M	<15	M	<15	M
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15		<15		<15		<15	
Catechol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01		<0.01		<0.01	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	<0.01	M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	<0.01	M
Resorcinol	<0.05 mg/kg	TM062 (S)	<0.05		<0.05		<0.05		<0.05	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M	<0.015	M	<0.015	M	<0.015	M
1-Naphthol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01		<0.01		<0.01	
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	<0.01	M
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	M	<0.015	M	<0.015	M	<0.015	M
Phenols, Total Detected 8 Speciated	<0.12 mg/kg	TM062 (S)	<0.12		<0.12		<0.12		<0.12	
pH	1 pH Units	TM133	6.69	§ M	8.25	M	9.58	§ M	8.12	§ M
Hexavalent Chromium	<0.6 mg/kg	TM151	<0.6	#	<0.6	#	<0.6	#	<0.6	#
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	#	<0.6	#	<0.6	#	<0.6	#
Cyanide, Total	<1 mg/kg	TM153	<1	M	1.7	M	<1	M	2.37	M
PCB congener 28	<3 µg/kg	TM168	<3				<3		<3	
PCB congener 52	<3 µg/kg	TM168	<3				<3		<3	
PCB congener 101	<3 µg/kg	TM168	<3	M			<3	M	<3	M
PCB congener 118	<3 µg/kg	TM168	<3	M			<3	M	<3	M
PCB congener 138	<3 µg/kg	TM168	<3	M			<3	M	<3	M
PCB congener 153	<3 µg/kg	TM168	<3	M			<3	M	<3	M
PCB congener 180	<3 µg/kg	TM168	<3	M			<3	M	<3	M
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21				<21			
Easily Liberated Sulphide	<15 mg/kg	TM180	<15	#	<15	#	<15	#	17.1	#
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	#	<15	#	<15	#	19.7	#
Arsenic	<0.6 mg/kg	TM181	16.9	M	7.04	M	8.45	M	8.87	M
Cadmium	<0.02 mg/kg	TM181	0.168	M	0.43	M	0.297	M	0.408	M
Chromium	<0.9 mg/kg	TM181	22.5	M	10.7	M	9.06	M	11.6	M
Copper	<1.4 mg/kg	TM181	63.1	M	10.7	M	9.47	M	18.4	M
Lead	<0.7 mg/kg	TM181	42.6	M	32.4	M	13	M	32.2	M
Mercury	<0.14 mg/kg	TM181	<0.14	M	<0.14	M	<0.14	M	<0.14	M
Nickel	<0.2 mg/kg	TM181	19.5	M	12.9	M	8.86	M	19.1	M
Selenium	<1 mg/kg	TM181	<1	#	<1	#	<1	#	<1	#
Zinc	<1.9 mg/kg	TM181	67.7	M	33.4	M	28.3	M	33	M
Sulphate, Total	<48 mg/kg	TM221	863	M	415	M	734	M	393	M



SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Results Legend		Customer Sample Ref.	C1	C1	C1			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		0.20 - 1.00	2.80 - 3.00	3.00 - 3.50			
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		26/10/2011	26/10/2011	26/10/2011			
diss.filt	Dissolved / filtered sample.		27/10/2011	27/10/2011	27/10/2011			
tot.unfilt	Total / unfiltered sample.		111028-110	111028-110	111028-110			
*	Subcontracted test.		4599765	4599766	4599767			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
Ammoniacal Nitrogen, exchangeable as NH4	<15 mg/kg	TM024	<15	<15	58.3			
Ammoniacal Nitrogen as N	<15 mg/kg	TM024	<15	<15	45.3			
Catechol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.05			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	0.0456	0.298			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	0.228	5.88			
Resorcinol	<0.05 mg/kg	TM062 (S)	<0.05	<0.05	<0.25			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	1.73	49.9			
1-Naphthol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	3.33			
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	16.7			
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	4.12	<0.075			
Phenols, Total Detected 8 Speciated	<0.12 mg/kg	TM062 (S)	<0.12	6.12	76.1			
pH	1 pH Units	TM133	8.4	9.93	8.01			
Hexavalent Chromium	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6			
Cyanide, Total	<1 mg/kg	TM153	7.16	1.93	18.9			
PCB congener 28	<3 µg/kg	TM168			<3			
PCB congener 52	<3 µg/kg	TM168			<3			
PCB congener 101	<3 µg/kg	TM168			<3			
PCB congener 118	<3 µg/kg	TM168			<3			
PCB congener 138	<3 µg/kg	TM168			<3			
PCB congener 153	<3 µg/kg	TM168			<3			
PCB congener 180	<3 µg/kg	TM168			<3			
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168			<21			
Easily Liberated Sulphide	<15 mg/kg	TM180	<15	38	82.2			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	43.3	97.8			
Arsenic	<0.6 mg/kg	TM181	6.31	6.38	8.19			
Cadmium	<0.02 mg/kg	TM181	0.244	0.302	0.376			
Chromium	<0.9 mg/kg	TM181	7.41	8.72	10.7			
Copper	<1.4 mg/kg	TM181	9.29	7.96	17.9			
Lead	<0.7 mg/kg	TM181	21.6	24.5	33.2			
Mercury	<0.14 mg/kg	TM181	<0.14	<0.14	<0.14			
Nickel	<0.2 mg/kg	TM181	8.77	9.58	13.8			
Selenium	<1 mg/kg	TM181	<1	<1	<1			
Zinc	<1.9 mg/kg	TM181	17.8	27.1	55.5			
Sulphate, Total	<48 mg/kg	TM221	633	635	686			



CERTIFICATE OF ANALYSIS

SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

PAH by GCMS

Results Legend		Customer Sample Ref.	A1	A1	A2	A2	B1	B1
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.30 - 1.00	1.00 - 2.00	0.00 - 1.00	1.00 - 2.00	0.20 - 1.00	2.10 - 2.30
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
S	Deviating sample.		26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011
aq	Aqueous / settled sample.		27/10/2011	27/10/2011	27/10/2011	27/10/2011	27/10/2011	27/10/2011
diss.filt	Dissolved / filtered sample.		111028-110	111028-110	111028-110	111028-110	111028-110	111028-110
tot.unfilt	Total / unfiltered sample.		4599760	4599761	4599755	4599756	4599762	4599763
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
Naphthalene	<9 µg/kg	TM218	909	480	13.9	60.5	149	40.8
Acenaphthylene	<12 µg/kg	TM218	212	205	<12	58.8	74.7	19.9
Acenaphthene	<8 µg/kg	TM218	140	277	<8	63.5	33.8	<8
Fluorene	<10 µg/kg	TM218	167	493	<10	66.4	47.7	14.4
Phenanthrene	<15 µg/kg	TM218	3230	2640	27.8	99.1	595	133
Anthracene	<16 µg/kg	TM218	875	568	<16	27.3	256	39.6
Fluoranthene	<17 µg/kg	TM218	7260	2280	48.4	34.3	1850	225
Pyrene	<15 µg/kg	TM218	5600	1660	43	21.5	1550	176
Benz(a)anthracene	<14 µg/kg	TM218	4180	1200	53.4	<14	1720	216
Chrysene	<10 µg/kg	TM218	3520	968	47.2	<10	1310	178
Benzo(b)fluoranthene	<15 µg/kg	TM218	5770	1400	85.9	<15	2470	326
Benzo(k)fluoranthene	<14 µg/kg	TM218	2020	547	35.4	<14	943	134
Benzo(a)pyrene	<15 µg/kg	TM218	4250	1060	54.5	<15	2000	248
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	2430	497	31	<18	1060	154
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	753	210	<23	<23	413	63.9
Benzo(g,h,i)perylene	<24 µg/kg	TM218	2740	520	36.8	<24	1100	182
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	44100	15000	477	431	15600	2150

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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

PAH by GCMS

Results Legend		Customer Sample Ref.	C1	C1	C1			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		0.20 - 1.00	2.80 - 3.00	3.00 - 3.50			
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		26/10/2011	26/10/2011	26/10/2011			
diss.filt	Dissolved / filtered sample.		27/10/2011	27/10/2011	27/10/2011			
tot.unfilt	Total / unfiltered sample.		111028-110	111028-110	111028-110			
*	Subcontracted test.		4599765	4599766	4599767			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
Naphthalene	<9 µg/kg	TM218	115	137000	112000			
Acenaphthylene	<12 µg/kg	TM218	29.6	19600	13300			
Acenaphthene	<8 µg/kg	TM218	36.6	8990	4870			
Fluorene	<10 µg/kg	TM218	27.2	20500	12700			
Phenanthrene	<15 µg/kg	TM218	471	55200	33400			
Anthracene	<16 µg/kg	TM218	104	17100	9460			
Fluoranthene	<17 µg/kg	TM218	901	37600	21900			
Pyrene	<15 µg/kg	TM218	731	24800	14100			
Benz(a)anthracene	<14 µg/kg	TM218	886	12600	6150			
Chrysene	<10 µg/kg	TM218	829	9040	4830			
Benzo(b)fluoranthene	<15 µg/kg	TM218	1840	13500	6290			
Benzo(k)fluoranthene	<14 µg/kg	TM218	754	4890	2580			
Benzo(a)pyrene	<15 µg/kg	TM218	1490	10400	4810			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	973	4650	2280			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	368	1330	667			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	1070	5180	2640			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	10600	382000	252000			

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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

TPH CWG (S)

Results Legend		Customer Sample Ref.	A1	A1	A2	A2	B1	B1
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.30 - 1.00	1.00 - 2.00	0.00 - 1.00	1.00 - 2.00	0.20 - 1.00	2.10 - 2.30
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
S	Deviating sample.		26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011	26/10/2011
aq	Aqueous / settled sample.		27/10/2011	27/10/2011	27/10/2011	27/10/2011	27/10/2011	27/10/2011
diss.filt	Dissolved / filtered sample.		111028-110	111028-110	111028-110	111028-110	111028-110	111028-110
tot.unfilt	Total / unfiltered sample.		4599760	4599761	4599755	4599756	4599762	4599763
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
GRO >C5-C12	<44 µg/kg	TM089	142	578	<44	522	187	132
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kg	TM089	<10	18.9	<10	27.8	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	12.7	3.66
Ethylbenzene	<3 µg/kg	TM089	<3	27.1	<3	19.7	<3	3.66
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	9.2	<6
o-Xylene	<3 µg/kg	TM089	<3	3.54	<3	<3	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	9.2	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	46	<24	47.5	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	10.7	15.3	<10	16.2	18.4	12.2
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	42.5	<10	41.8	39.1	17.1
Aliphatics >C8-C10	<10 µg/kg	TM089	14.3	95.6	10.3	106	28.8	24.4
Aliphatics >C10-C12	<10 µg/kg	TM089	55.9	182	<10	142	27.6	24.4
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	3960	<100	3870	4890	<100
Aliphatics >C16-C21	<100 µg/kg	TM173	<100	4220	<100	4530	4860	<100
Aliphatics >C21-C35	<100 µg/kg	TM173	<100	8580	<100	8380	9270	4740
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	1490	<100	969	1220	<100
Total Aliphatics >C12-C44	<100 µg/kg	TM173	<100	18200	<100	17800	20200	4740
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	18.9	<10	27.8	10.4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	12.7	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	14.3	100	10.3	95.1	32.2	29.3
Aromatics >EC10-EC12	<10 µg/kg	TM089	36.9	122	<10	94	18.4	15.9
Aromatics >EC12-EC16	<100 µg/kg	TM173	6700	6510	<100	5330	4510	<100
Aromatics >EC16-EC21	<100 µg/kg	TM173	68800	17700	<100	21500	10400	2950
Aromatics >EC21-EC35	<100 µg/kg	TM173	224000	44400	12400	46000	46400	36000
Aromatics >EC35-EC44	<100 µg/kg	TM173	68100	12700	3860	10300	12900	13200
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	368000	81300	16300	83200	74300	52100
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	368000	100000	16300	101000	94700	57000
Total Aliphatics >C5-35	<100 µg/kg	TM173	<100	17100	<100	17100	19100	4810
Total Aromatics >C5-35	<100 µg/kg	TM173	300000	68900	12500	73100	61500	39000
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	300000	86000	12500	90200	80600	43800
Total Aliphatics >C5-C12	<10 µg/kg	TM089	88.1	336	33.1	304	114	78.1
Total Aromatics >EC5-EC12	<10 µg/kg	TM089	53.6	242	14.8	217	73.6	53.7
Total Aliphatics >C5-C44	<100 µg/kg	TM173	<100	18600	<100	18100	20400	4810
Total Aromatics >C6-C44	<100 µg/kg	TM173	368000	81500	16300	83400	74400	52200



CERTIFICATE OF ANALYSIS

Validated

SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

TPH CWG (S)

Table with columns: Results Legend, Customer Sample Ref., Depth (m), Sample Type, Date Sampled, Date Received, SDG Ref, Lab Sample No.(s), AGS Reference, Component, LOD/Units, Method, and concentration values for A1, A2, B1.

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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

TPH CWG (S)

Results Legend		Customer Sample Ref.	C1	C1	C1		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.		0.20 - 1.00	2.80 - 3.00	3.00 - 3.50		
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		26/10/2011	26/10/2011	26/10/2011		
diss.filt	Dissolved / filtered sample.		27/10/2011	27/10/2011	27/10/2011		
tot.unfilt	Total / unfiltered sample.		111028-110	111028-110	111028-110		
*	Subcontracted test.		4599765	4599766	4599767		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
Component	LOD/Units		Method				
GRO >C5-C12	<44 µg/kg	TM089	69.9	26600	295000		
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<50	#	#
Benzene	<10 µg/kg	TM089	<10	485	3850	M	M
Toluene	<2 µg/kg	TM089	2.22	1150	14800	M	M
Ethylbenzene	<3 µg/kg	TM089	<3	400	4710	M	M
m,p-Xylene	<6 µg/kg	TM089	<6	2240	33900	M	M
o-Xylene	<3 µg/kg	TM089	<3	1290	12700	M	M
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	3530	46600		
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	5570	70000		
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	75.2	882		
Aliphatics >C6-C8	<10 µg/kg	TM089	12.2	1720	20000		
Aliphatics >C8-C10	<10 µg/kg	TM089	14.4	5160	51700		
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	6400	70600		
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	30400	58700		
Aliphatics >C16-C21	<100 µg/kg	TM173	<100	36700	55500		
Aliphatics >C21-C35	<100 µg/kg	TM173	<100	32500	72000		
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	3260	23800		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	<100	103000	210000		
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	485	3850		
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	1150	14800		
Aromatics >EC8-EC10	<10 µg/kg	TM089	14.4	7370	85800		
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	4270	47100		
Aromatics >EC12-EC16	<100 µg/kg	TM173	696	82000	173000		
Aromatics >EC16-EC21	<100 µg/kg	TM173	10200	142000	284000		
Aromatics >EC21-EC35	<100 µg/kg	TM173	51400	218000	446000		
Aromatics >EC35-EC44	<100 µg/kg	TM173	19700	46400	107000		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	82000	488000	1010000		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	82000	617000	1510000		
Total Aliphatics >C5-35	<100 µg/kg	TM173	<100	113000	329000		
Total Aromatics >C5-35	<100 µg/kg	TM173	62400	454000	1050000		
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	62400	567000	1380000		
Total Aliphatics >C5-C12	<10 µg/kg	TM089	45.5	13400	143000		
Total Aromatics >EC5-EC12	<10 µg/kg	TM089	24.4	13300	152000		
Total Aliphatics >C5-C44	<100 µg/kg	TM173	<100	116000	353000		
Total Aromatics >C6-C44	<100 µg/kg	TM173	82000	501000	1160000		



CERTIFICATE OF ANALYSIS

Validated

SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

TPH CWG (S)

Table with columns for Results Legend, Customer Sample Ref., Depth (m), Sample Type, Date Sampled, Date Received, SDG Ref, Lab Sample No.(s), AGS Reference, Component, LOD/Units, Method, and concentration values for Aliphatics >C16-C35.

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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

VOC MS (S)

Results Legend		Customer Sample Ref.	A1	A2	C1		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.		1.00 - 2.00	1.00 - 2.00	3.00 - 3.50		
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		26/10/2011	26/10/2011	26/10/2011		
diss.filt	Dissolved / filtered sample.		27/10/2011	27/10/2011	27/10/2011		
tot.unfilt	Total / unfiltered sample.		111028-110	111028-110	111028-110		
*	Subcontracted test.		4599761	4599756	4599767		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
Component	LOD/Units		Method				
Dibromofluoromethane**	%	TM116	47.3	68.5	76.2		
Toluene-d8**	%	TM116	95.7	99.7	88.4		
4-Bromofluorobenzene**	%	TM116	123	116	128		
Dichlorodifluoromethane	<4 µg/kg	TM116	<4	<4	<4		
Chloromethane	<7 µg/kg	TM116	<7	<7	<7		
Vinyl Chloride	<10 µg/kg	TM116	<10	<10	<10		
Bromomethane	<13 µg/kg	TM116	<13	<13	<13		
Chloroethane	<14 µg/kg	TM116	<14	<14	<14		
Trichlorofluoromethane	<6 µg/kg	TM116	<6	<6	<6		
1.1-Dichloroethene	<10 µg/kg	TM116	<10	<10	<10		
Carbon Disulphide	<7 µg/kg	TM116	<7	<7	61.1		
Dichloromethane	<10 µg/kg	TM116	<10	<10	<10		
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11	<11	<11		
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<11	<11	<11		
1.1-Dichloroethane	<8 µg/kg	TM116	<8	<8	<8		
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<5	<5	<5		
2.2-Dichloropropane	<12 µg/kg	TM116	<12	<12	<12		
Bromochloromethane	<14 µg/kg	TM116	<14	<14	<14		
Chloroform	<8 µg/kg	TM116	<8	<8	<8		
1.1.1-Trichloroethane	<7 µg/kg	TM116	<7	<7	<7		
1.1-Dichloropropene	<11 µg/kg	TM116	<11	<11	<11		
Carbontetrachloride	<14 µg/kg	TM116	<14	<14	<14		
1.2-Dichloroethane	<5 µg/kg	TM116	<5	<5	<5		
Benzene	<9 µg/kg	TM116	19.9	63.3	<9000		
Trichloroethene	<9 µg/kg	TM116	<9	<9	<9		
1.2-Dichloropropane	<12 µg/kg	TM116	<12	<12	<12		
Dibromomethane	<9 µg/kg	TM116	<9	<9	<9		
Bromodichloromethane	<7 µg/kg	TM116	<7	<7	<7		
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<14	<14		
Toluene	<5 µg/kg	TM116	20.3	<5	13200		
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<14	<14		
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10	<10	<10		
1.3-Dichloropropane	<7 µg/kg	TM116	<7	<7	<7		
Tetrachloroethene	<5 µg/kg	TM116	<5	<5	<5		
Dibromochloromethane	<13 µg/kg	TM116	<13	<13	<13		



CERTIFICATE OF ANALYSIS

SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

VOC MS (S)

Results Legend		Customer Sample Ref.	A1	A2	C1			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		1.00 - 2.00	1.00 - 2.00	3.00 - 3.50			
S	Deviating sample.		Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		26/10/2011	26/10/2011	26/10/2011			
diss.filt	Dissolved / filtered sample.		27/10/2011	27/10/2011	27/10/2011			
tot.unfilt	Total / unfiltered sample.		111028-110	111028-110	111028-110			
*	Subcontracted test.		4599761	4599756	4599767			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units		Method					
1,2-Dibromoethane	<12 µg/kg	TM116	<12 M	<12 M	<12 M			
Chlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<5 M			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Ethylbenzene	<4 µg/kg	TM116	8.33 M	28.5 M	5520 M			
p/m-Xylene	<14 µg/kg	TM116	48.4 #	<14 #	36600 #			
o-Xylene	<10 µg/kg	TM116	30 M	<10 M	13500 M			
Styrene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Bromoform	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Isopropylbenzene	<5 µg/kg	TM116	<5 M	<5 M	639 M			
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10 #	<10 #	<10 #			
1,2,3-Trichloropropane	<17 µg/kg	TM116	<17 M	<17 M	<17 M			
Bromobenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Propylbenzene	<11 µg/kg	TM116	<11 M	<11 M	1040 M			
2-Chlorotoluene	<9 µg/kg	TM116	<9 M	<9 M	<9 M			
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	53.2 #	<8 #	15700 #			
4-Chlorotoluene	<12 µg/kg	TM116	<12 #	<12 M	<12 M			
tert-Butylbenzene	<12 µg/kg	TM116	<12 #	<12 #	<12 #			
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	86.7 #	<9 #	45400 #			
sec-Butylbenzene	<10 µg/kg	TM116	<10 M	<10 M	309 M			
4-Isopropyltoluene	<11 µg/kg	TM116	<11 M	<11 M	1290 M			
1,3-Dichlorobenzene	<6 µg/kg	TM116	<6 M	<6 M	<6 M			
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<5 M			
n-Butylbenzene	<10 µg/kg	TM116	<10 M	<10 M	1240 M			
1,2-Dichlorobenzene	<12 µg/kg	TM116	<12 M	<12 M	<12 M			
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14 M	<14 M	<14 M			
Tert-amyl methyl ether	<15 µg/kg	TM116	<15	<15	<15			
1,2,4-Trichlorobenzene	<6 µg/kg	TM116	<6 #	<6 #	<6 #			
Hexachlorobutadiene	<12 µg/kg	TM116	<12	<12	<12			
Naphthalene	<13 µg/kg	TM116	6070 M	<13 M	938000 M			
1,2,3-Trichlorobenzene	<6 µg/kg	TM116	<6 M	<6 M	<6 M			



SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Asbestos Identification - Bulk

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	A1 NS Z 0.30 - 1.00 SOLID 26/10/2011 00:00:00 111028-110 4,599,760 TM048	03/11/11	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	A2 NS Z 0.00 - 1.00 SOLID 26/10/2011 00:00:00 111028-110 4,599,755 TM048	03/11/11	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	B1 NS Z 2.10 - 2.30 SOLID 26/10/2011 00:00:00 111028-110 4,599,763 TM048	03/11/11	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	C1 NS Z 0.20 - 1.00 SOLID 26/10/2011 00:00:00 111028-110 4,599,765 TM048	03/11/11	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4632180	B1	0.20 - 1.00	SOLID	pH	pH	Sample holding time exceeded
4633599	B1	2.10 - 2.30	SOLID	pH	pH	Sample holding time exceeded
4637993	A1	0.30 - 1.00	SOLID	pH	pH	Sample holding time exceeded
4638079	A2	0.00 - 1.00	SOLID	pH	pH	Sample holding time exceeded

Note : Test results may be compromised

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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Table of Results - Appendix

REPORT KEY

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10⁻⁷

NDP	No Determination Possible	#	ISO 17025 Accredited	*	Subcontracted Test	M	MCERTS Accredited
NFD	No Fibres Detected	PFD	Possible Fibres Detected	»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Test Completion Dates

Lab Sample No(s)	4599760	4599761	4599755	4599756	4599762	4599763	4599765	4599766	4599767
Customer Sample Ref.	A1	A1	A2	A2	B1	B1	C1	C1	C1
AGS Ref.									
Depth	0.30 - 1.00	1.00 - 2.00	0.00 - 1.00	1.00 - 2.00	0.20 - 1.00	2.10 - 2.30	0.20 - 1.00	2.80 - 3.00	3.00 - 3.50
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011
Asbestos Identification (Soil)	03-Nov-2011		03-Nov-2011			03-Nov-2011	03-Nov-2011		
Cyanide Comp/Free/Total/Thiocyanate	08-Nov-2011	04-Nov-2011	08-Nov-2011	04-Nov-2011	04-Nov-2011	07-Nov-2011	07-Nov-2011	04-Nov-2011	04-Nov-2011
Easily Liberated Sulphide	08-Nov-2011	07-Nov-2011	08-Nov-2011	08-Nov-2011	07-Nov-2011	08-Nov-2011	08-Nov-2011	08-Nov-2011	08-Nov-2011
EPH CWG (Aliphatic) GC (S)	07-Nov-2011	08-Nov-2011	07-Nov-2011	08-Nov-2011	08-Nov-2011	07-Nov-2011	07-Nov-2011	08-Nov-2011	07-Nov-2011
EPH CWG (Aromatic) GC (S)	07-Nov-2011	08-Nov-2011	07-Nov-2011	08-Nov-2011	08-Nov-2011	07-Nov-2011	07-Nov-2011	08-Nov-2011	07-Nov-2011
GRO by GC-FID (S)	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	08-Nov-2011
Hexavalent Chromium (s)	07-Nov-2011	05-Nov-2011	07-Nov-2011	05-Nov-2011	05-Nov-2011	05-Nov-2011	05-Nov-2011	05-Nov-2011	05-Nov-2011
Metals by iCap-OES (Soil)	08-Nov-2011	08-Nov-2011	08-Nov-2011	08-Nov-2011	08-Nov-2011	08-Nov-2011	08-Nov-2011	08-Nov-2011	08-Nov-2011
PAH by GCMS	08-Nov-2011	07-Nov-2011	08-Nov-2011	07-Nov-2011	07-Nov-2011	08-Nov-2011	08-Nov-2011	07-Nov-2011	07-Nov-2011
PCBs by GCMS	07-Nov-2011			07-Nov-2011		07-Nov-2011			07-Nov-2011
pH	07-Nov-2011	03-Nov-2011	07-Nov-2011	03-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	03-Nov-2011	03-Nov-2011
Phenols by HPLC (S)	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	07-Nov-2011	08-Nov-2011	08-Nov-2011	07-Nov-2011	04-Nov-2011
Sample description	04-Nov-2011	03-Nov-2011	04-Nov-2011	03-Nov-2011	03-Nov-2011	04-Nov-2011	04-Nov-2011	03-Nov-2011	03-Nov-2011
Total Sulphate	04-Nov-2011	07-Nov-2011	04-Nov-2011	07-Nov-2011	07-Nov-2011	04-Nov-2011	04-Nov-2011	07-Nov-2011	07-Nov-2011
TPH CWG GC (S)	07-Nov-2011	08-Nov-2011	07-Nov-2011	08-Nov-2011	08-Nov-2011	07-Nov-2011	07-Nov-2011	08-Nov-2011	08-Nov-2011
VOC MS (S)		10-Nov-2011		08-Nov-2011					11-Nov-2011

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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

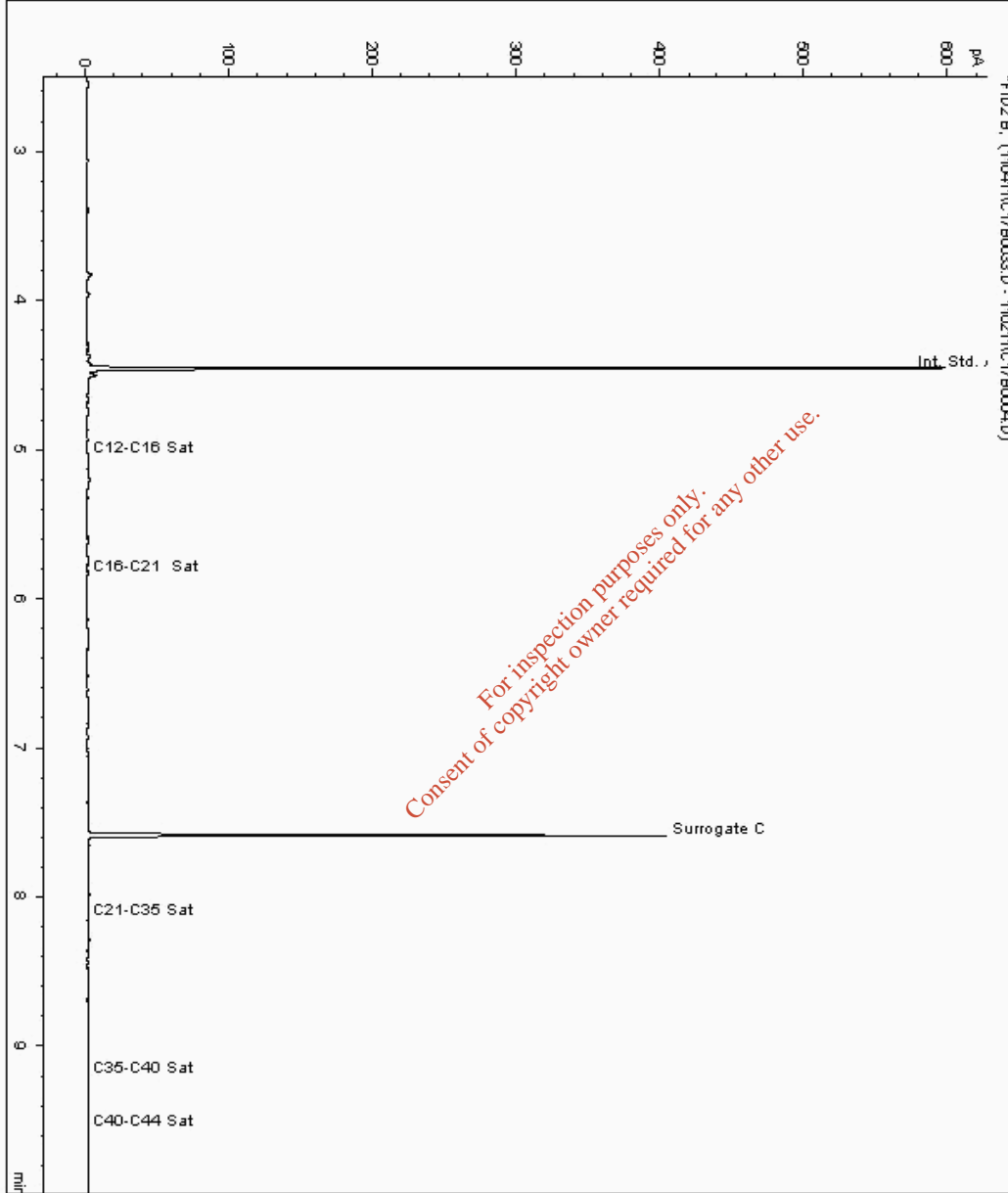
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4635220
Sample ID : A1

Depth : 0.30 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4566885-4635220
Date Acquired : 07/11/11 08:09:44 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.050





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

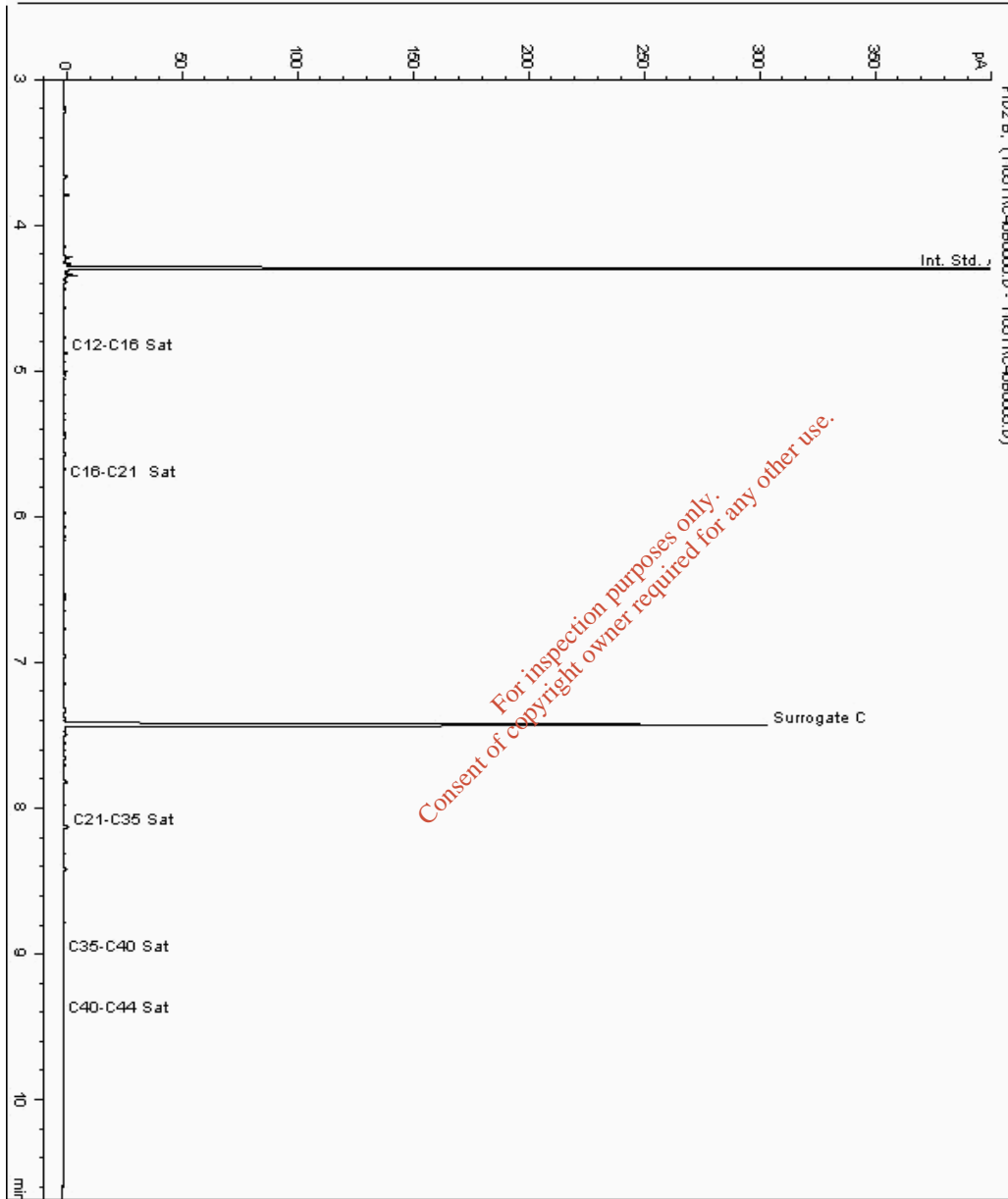
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4635619
Sample ID : B1

Depth : 2.10 - 2.30

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4567010-4635619
Date Acquired : 06/11/11 08:05:53 PM
Units : ppb
Dilution:





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

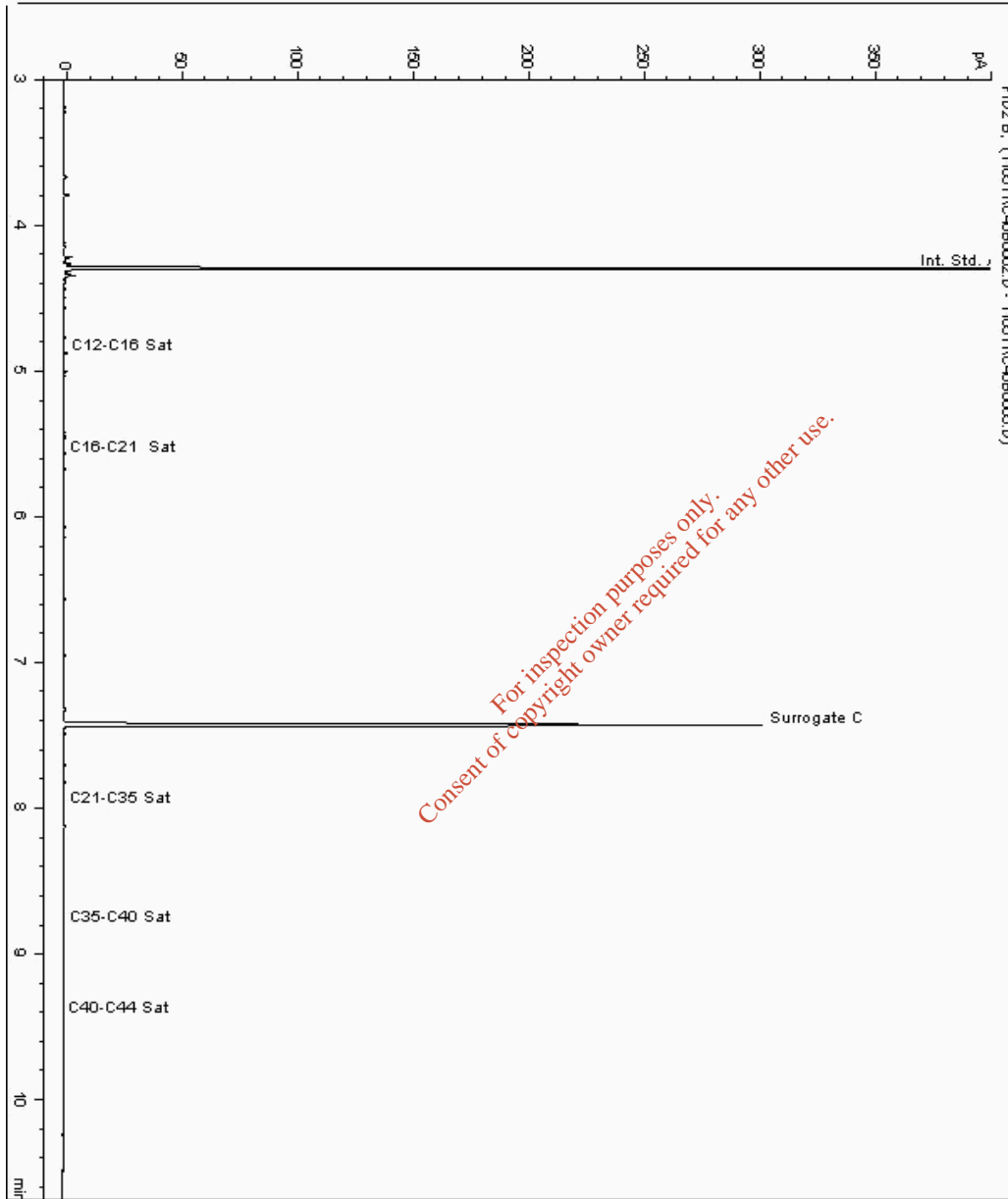
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4635686
Sample ID : C1

Depth : 0.20 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4567074-4635686
Date Acquired : 06/11/11 06:55:08 PM
Units : ppb
Dilution:





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

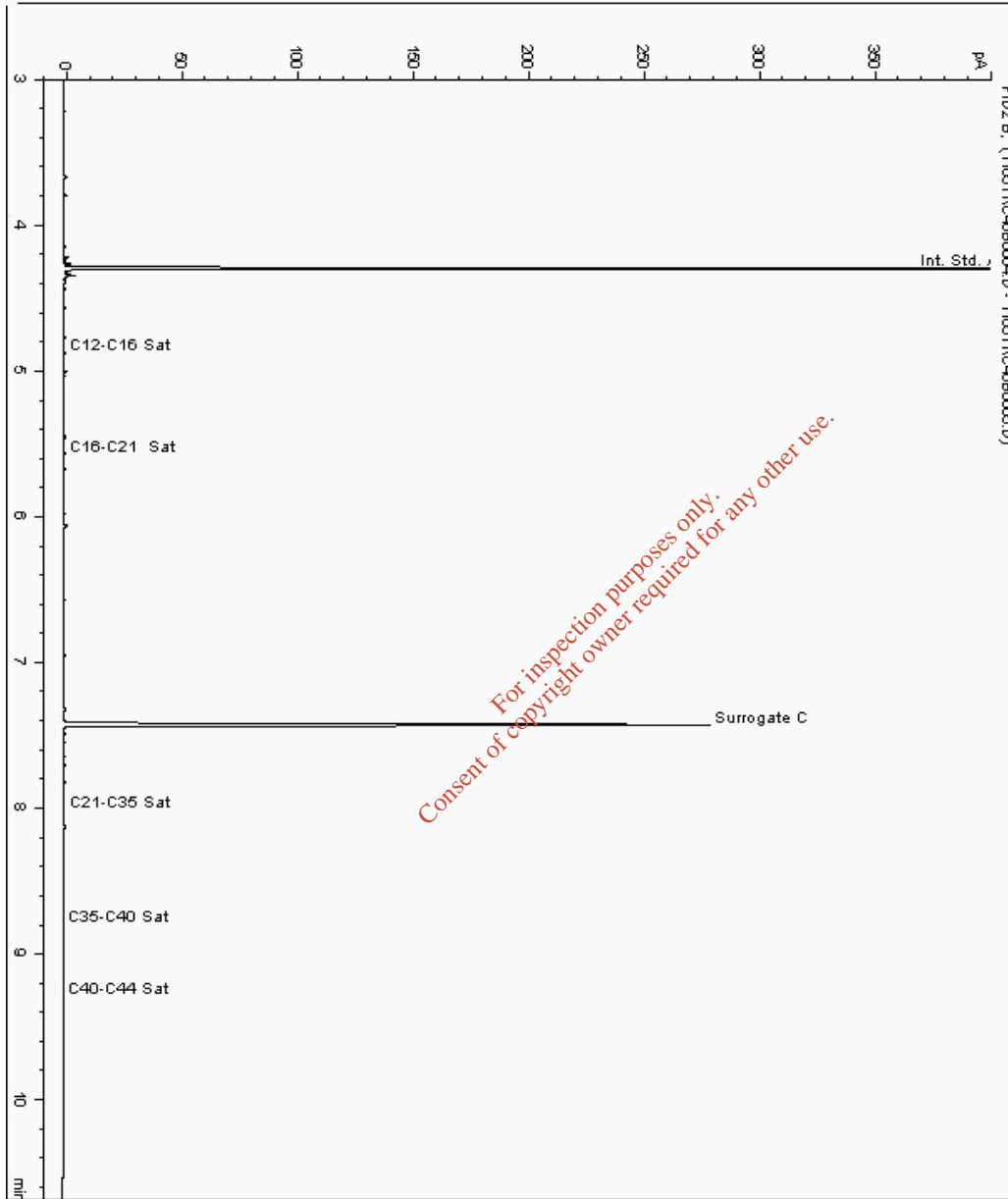
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4635773
Sample ID : A2

Depth : 0.00 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4566781-4635773
Date Acquired : 06/11/11 07:25:32 PM
Units : ppb
Dilution:





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

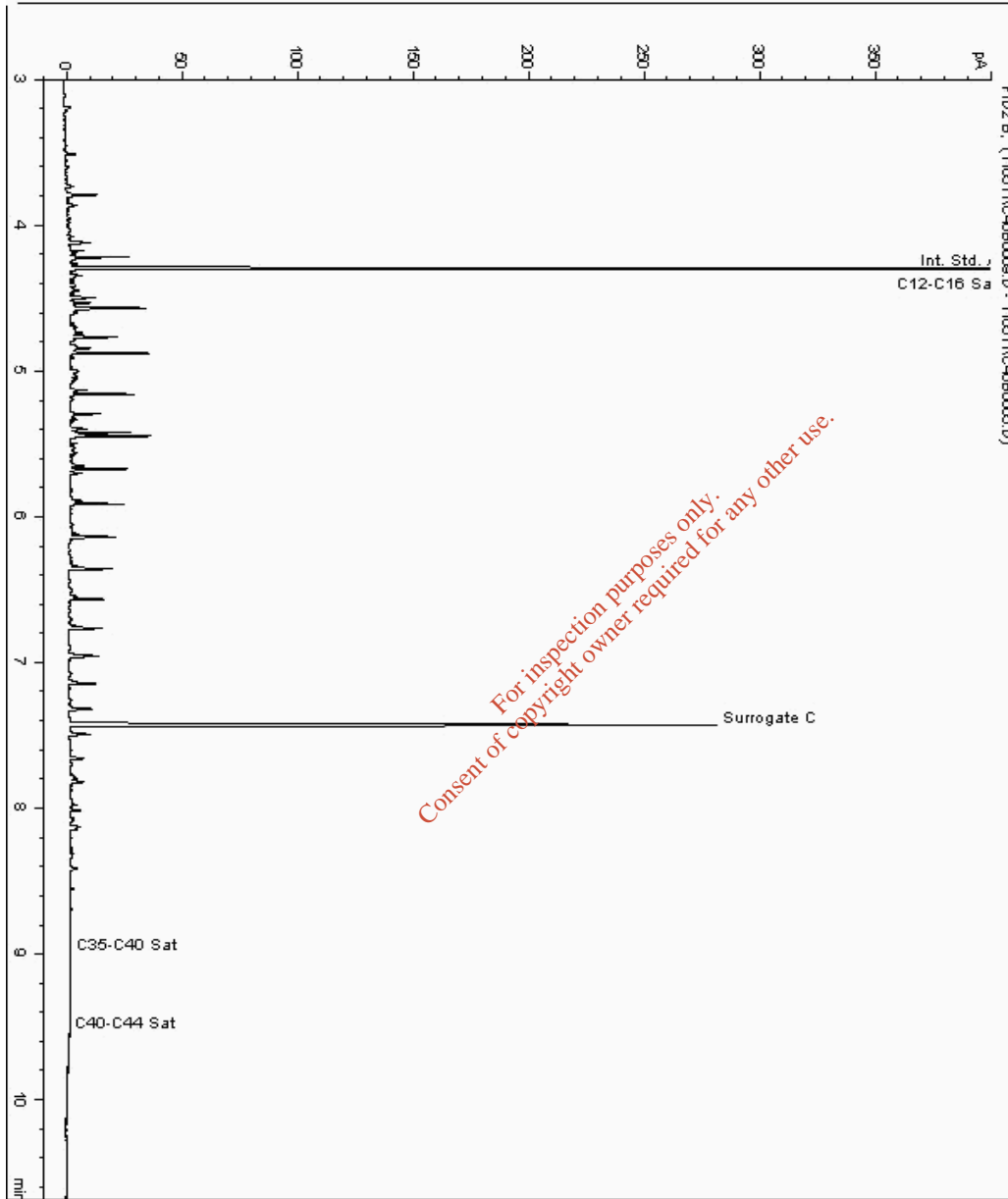
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4636719
Sample ID : C1

Depth : 3.00 - 3.50

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 4567156-4636719
Date Acquired : 06/11/11 08:56:37 PM
Units : ppb
Dilution:





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

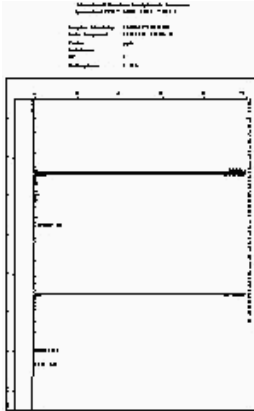
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4642466
Sample ID : B1

Depth : 0.20 - 1.00



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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

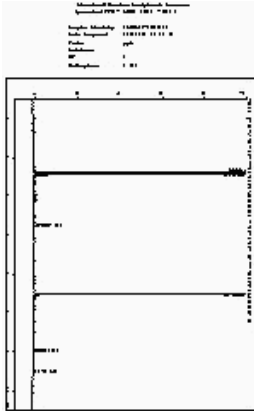
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4642488
Sample ID : A1

Depth : 1.00 - 2.00



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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

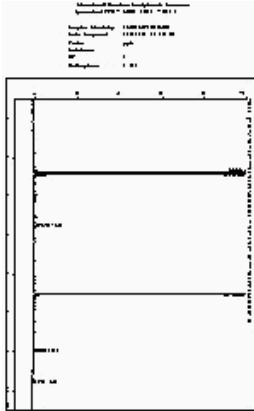
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4642566
Sample ID : A2

Depth : 1.00 - 2.00



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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

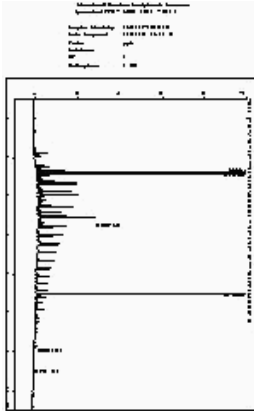
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 4642706
Sample ID : C1

Depth : 2.80 - 3.00



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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

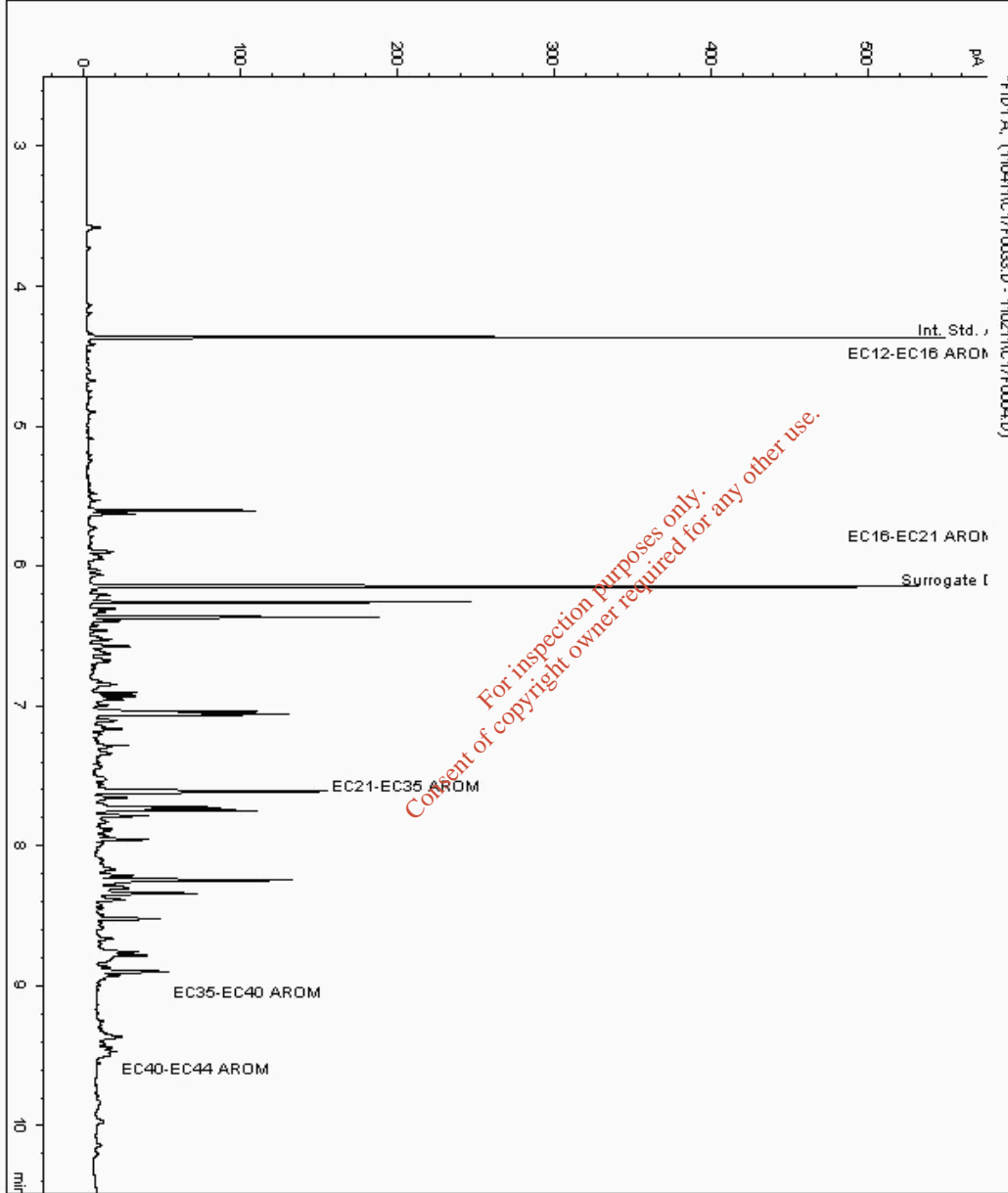
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4635220
Sample ID : A1

Depth : 0.30 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4566884-4635220
Date Acquired : 07/11/11 08:09:45 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.050





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

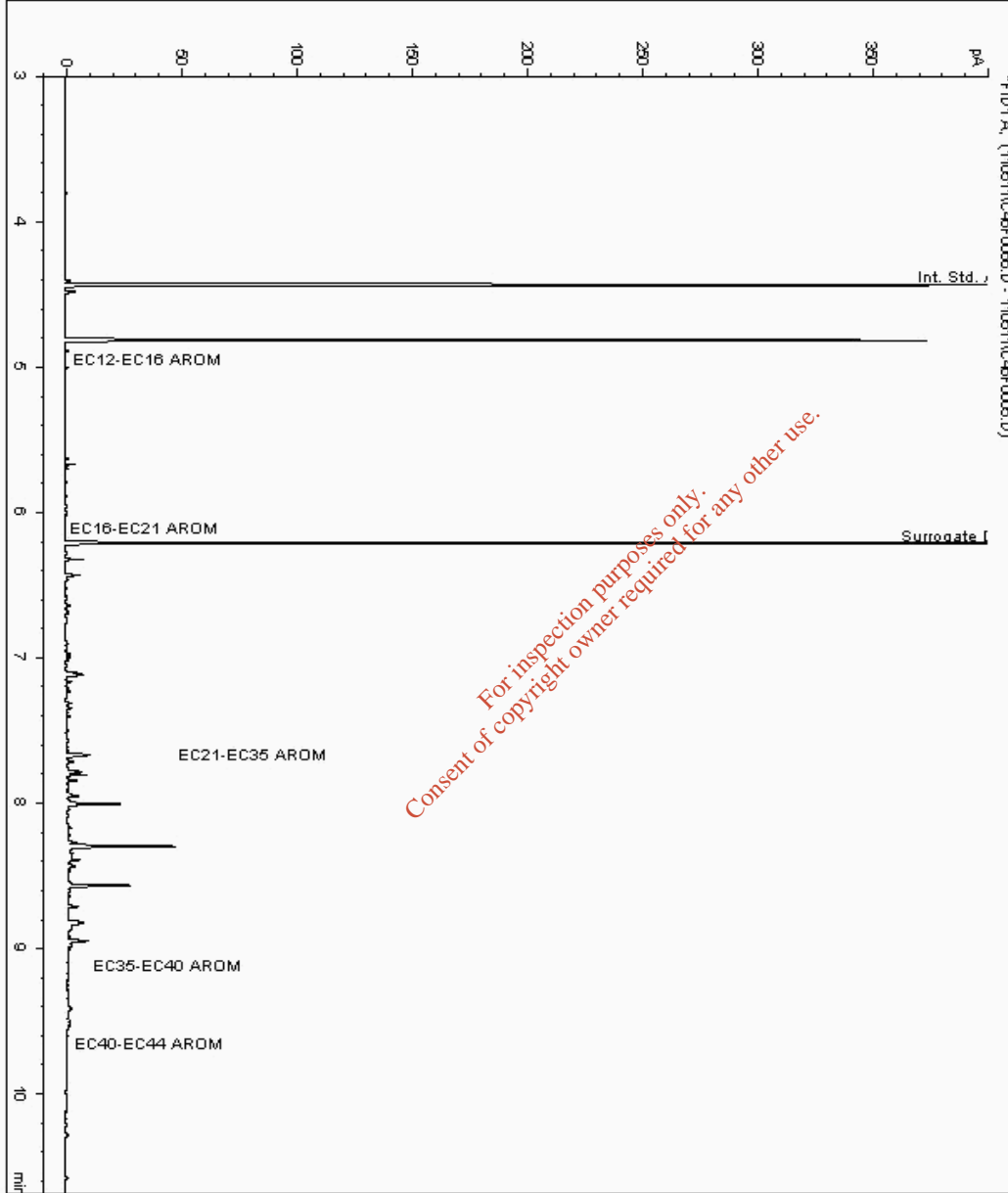
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4635619
Sample ID : B1

Depth : 2.10 - 2.30

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4567009-4635619
Date Acquired : 06/11/11 08:05:53 PM
Units : ppb
Dilution:





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

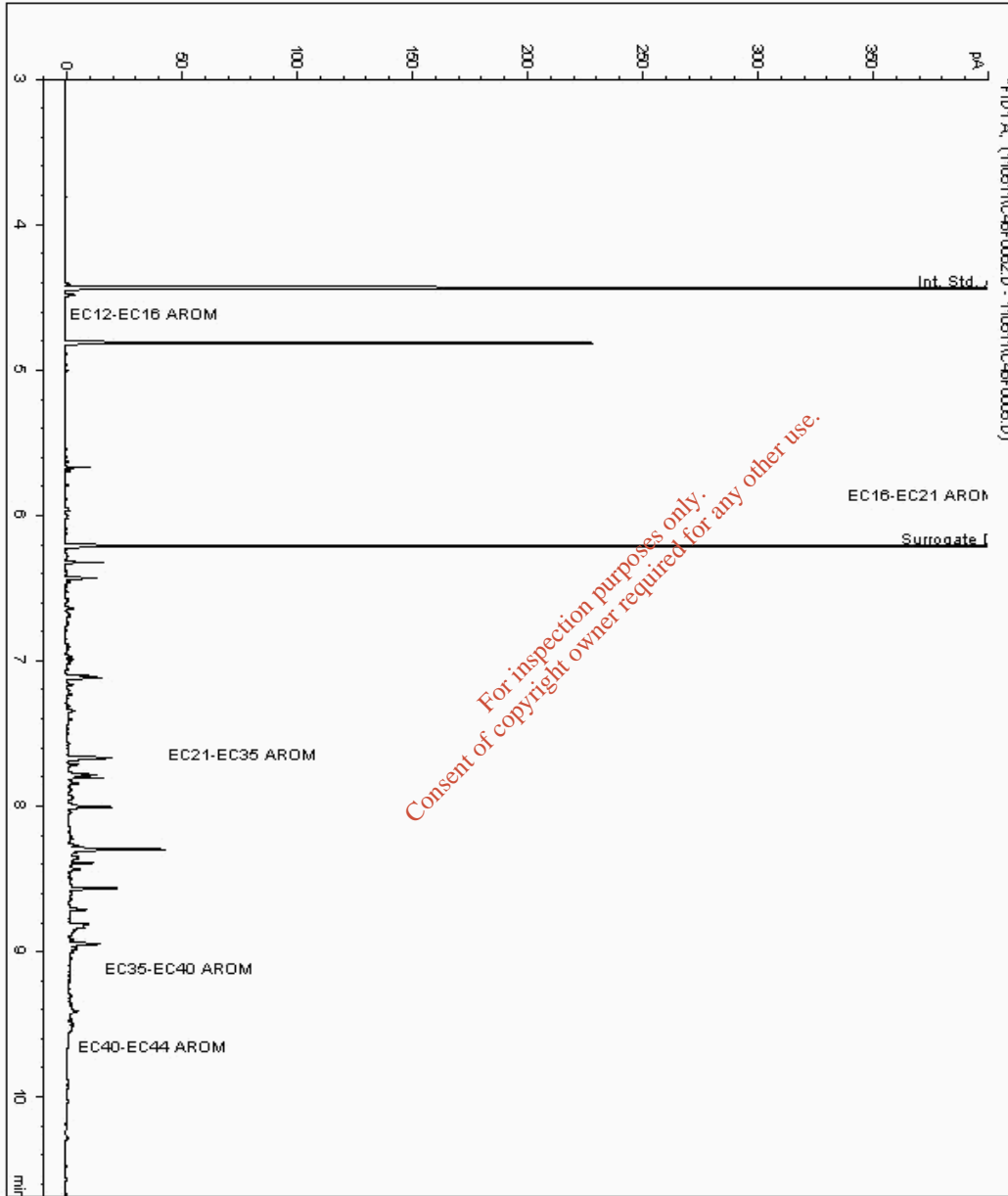
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4635686
Sample ID : C1

Depth : 0.20 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4567073-4635686
Date Acquired : 06/11/11 06:55:08 PM
Units : ppb
Dilution:





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

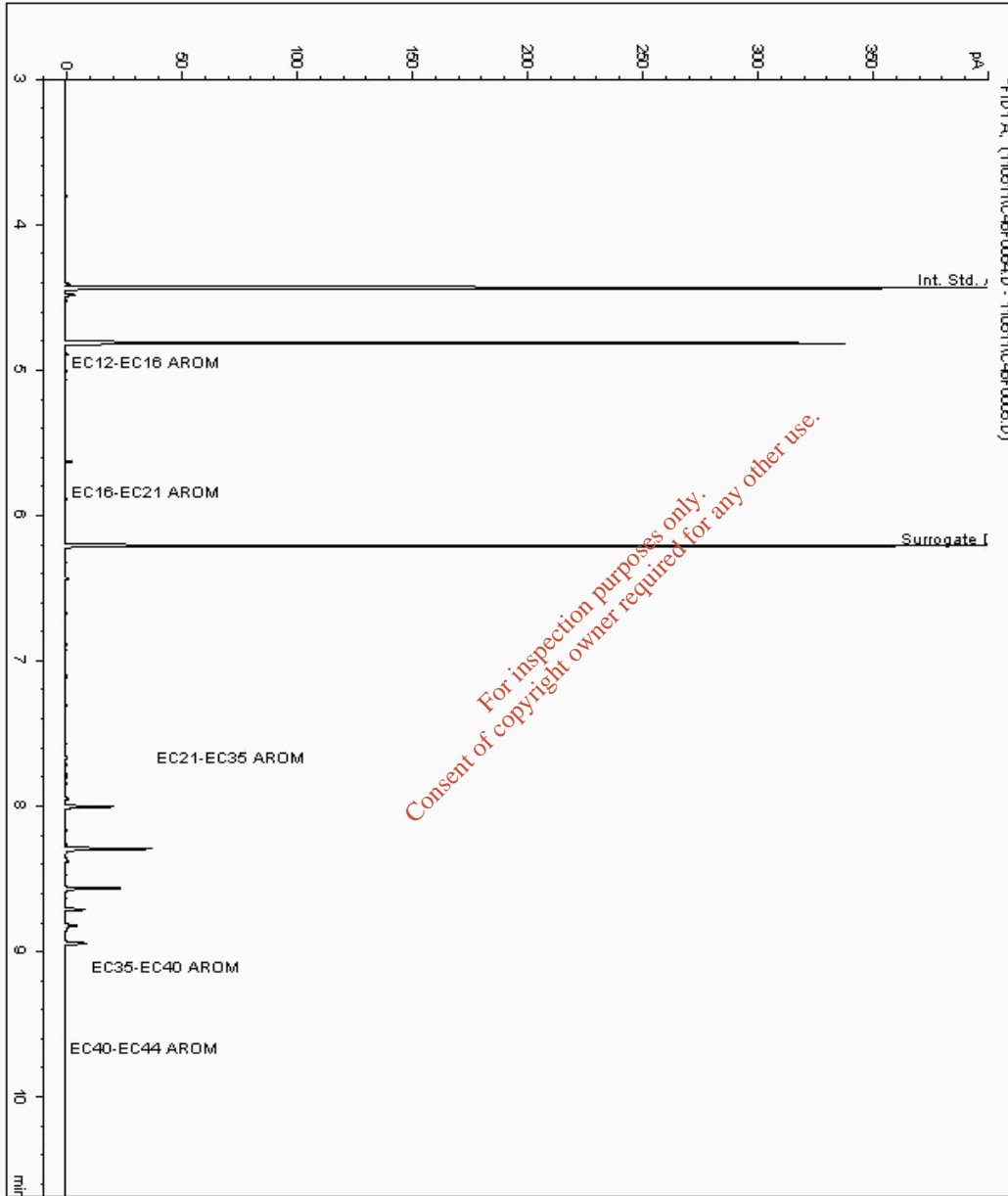
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4635773
Sample ID : A2

Depth : 0.00 - 1.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4566780-4635773
Date Acquired : 06/11/11 07:25:32 PM
Units : ppb
Dilution:





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

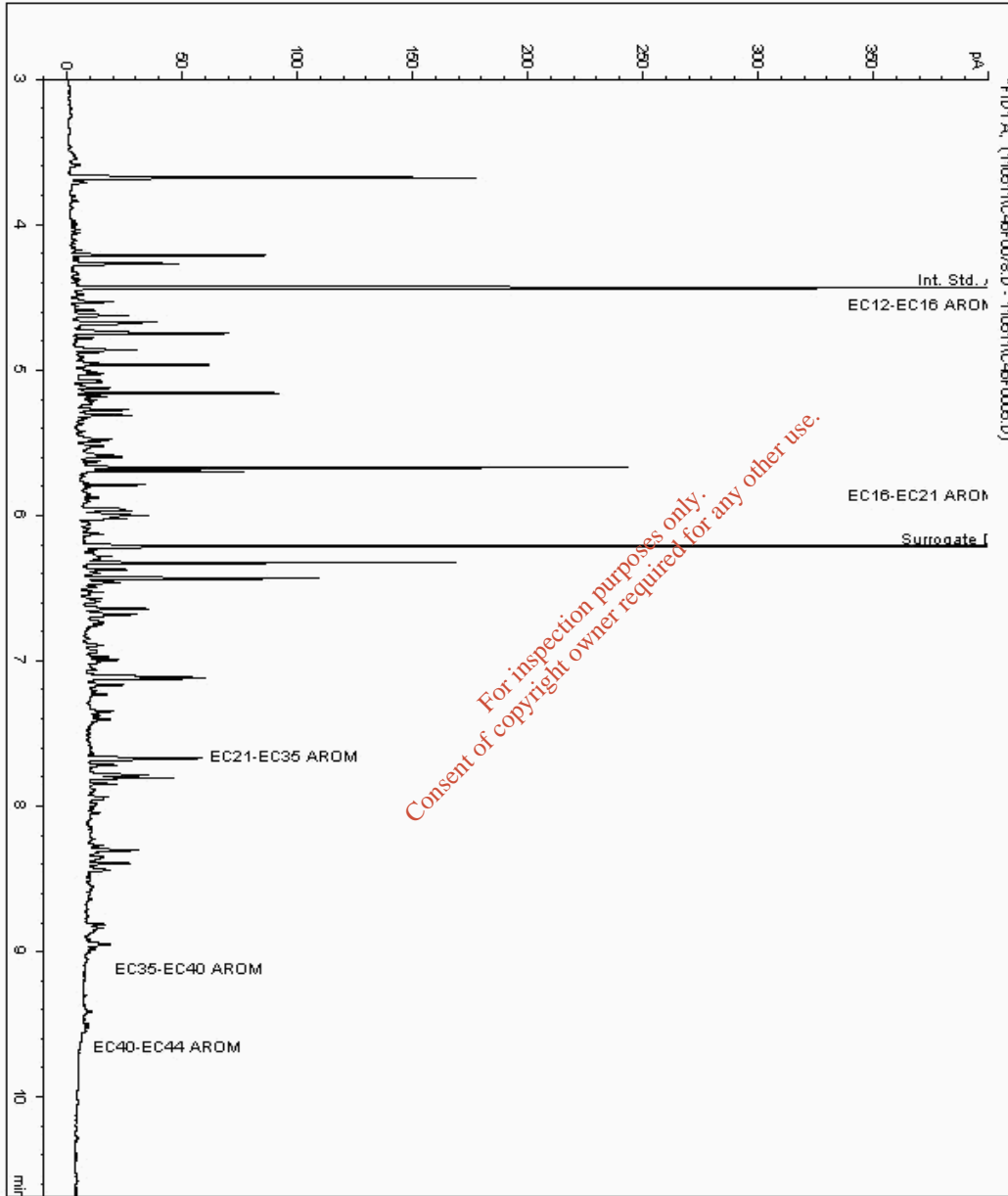
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4636719
Sample ID : C1

Depth : 3.00 - 3.50

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 4567155-4636719
Date Acquired : 07/11/11 11:04:47 PM
Units : ppb
Dilution:





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

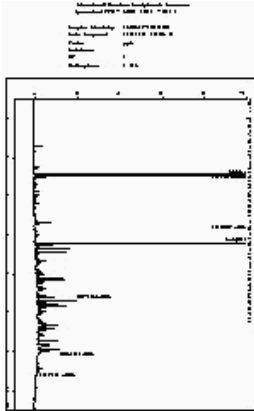
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4642466
Sample ID : B1

Depth : 0.20 - 1.00



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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

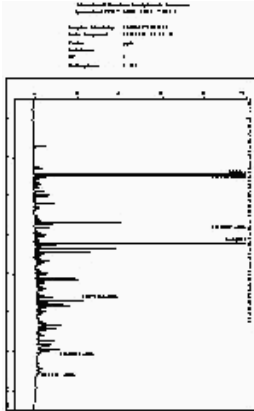
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4642488
Sample ID : A1

Depth : 1.00 - 2.00



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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

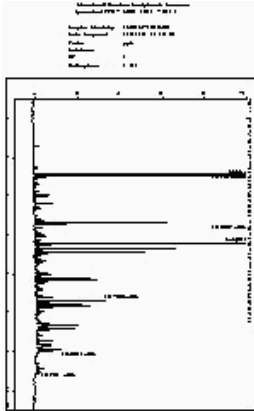
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4642566
Sample ID : A2

Depth : 1.00 - 2.00



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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

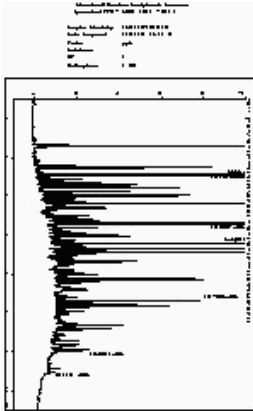
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 4642706
Sample ID : C1

Depth : 2.80 - 3.00



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SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

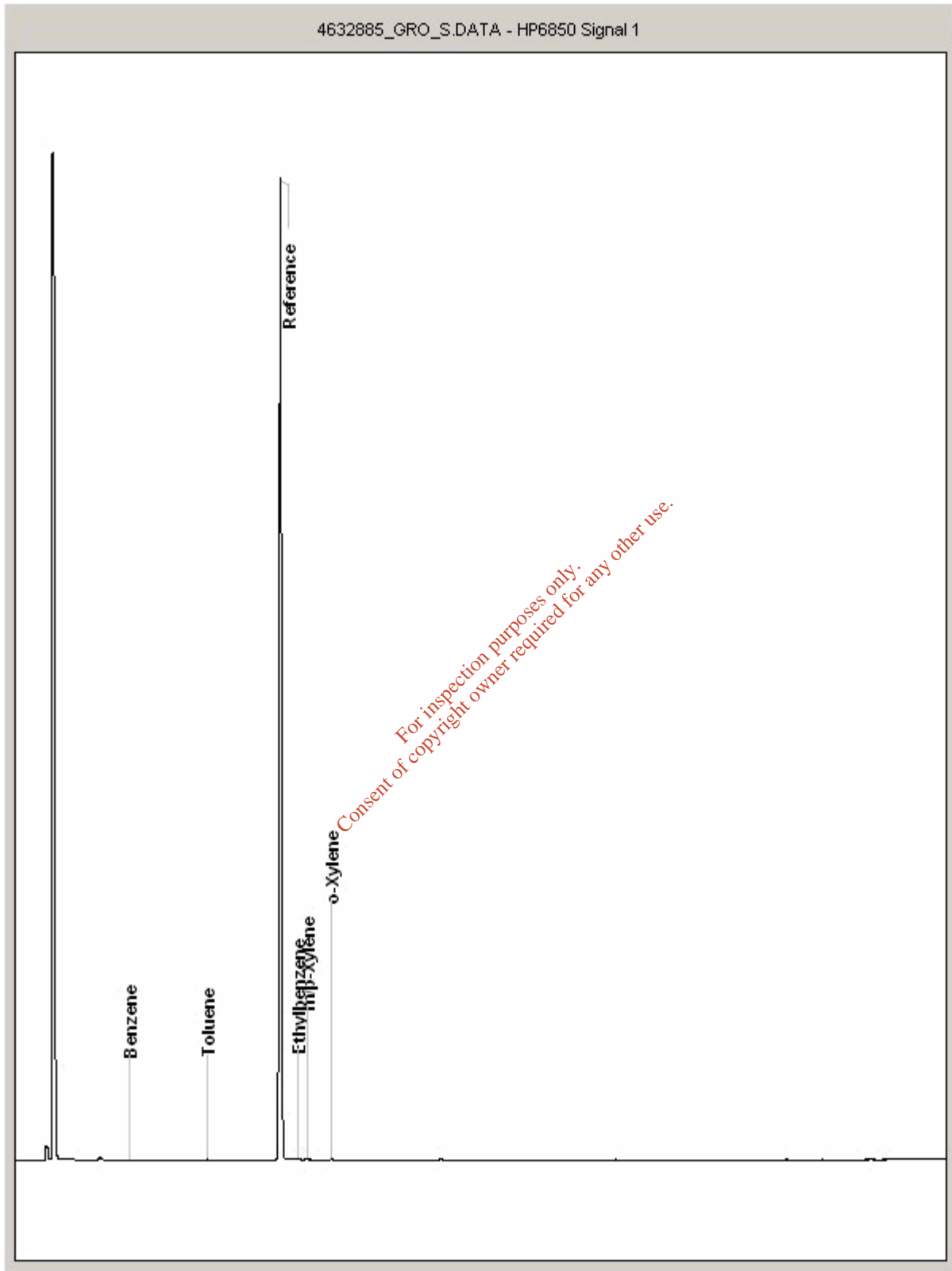
Order Number: 470000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4632885
Sample ID : A2

Depth : 0.00 - 1.00





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

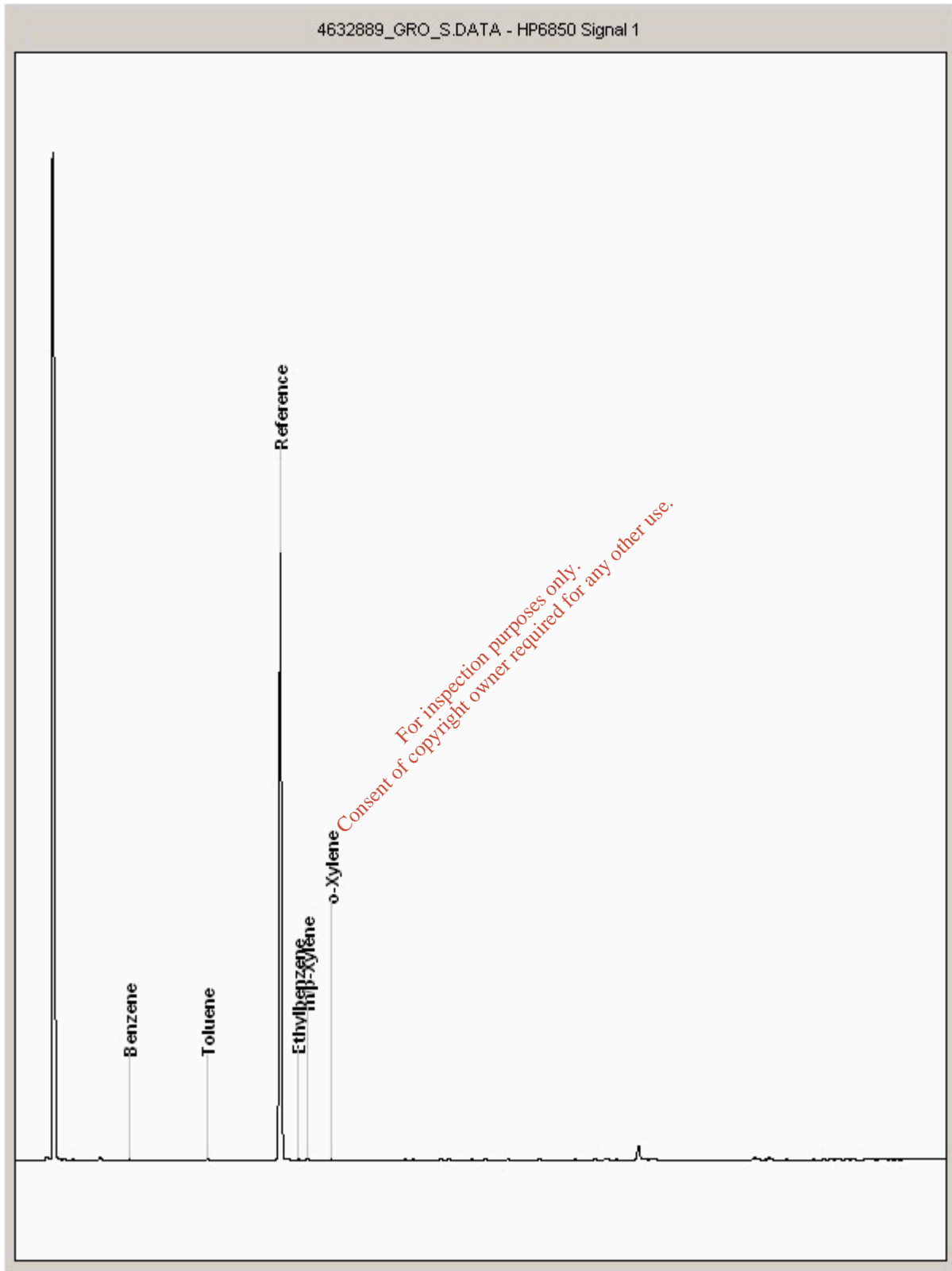
Order Number: 470000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4632889
Sample ID : A1

Depth : 0.30 - 1.00





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

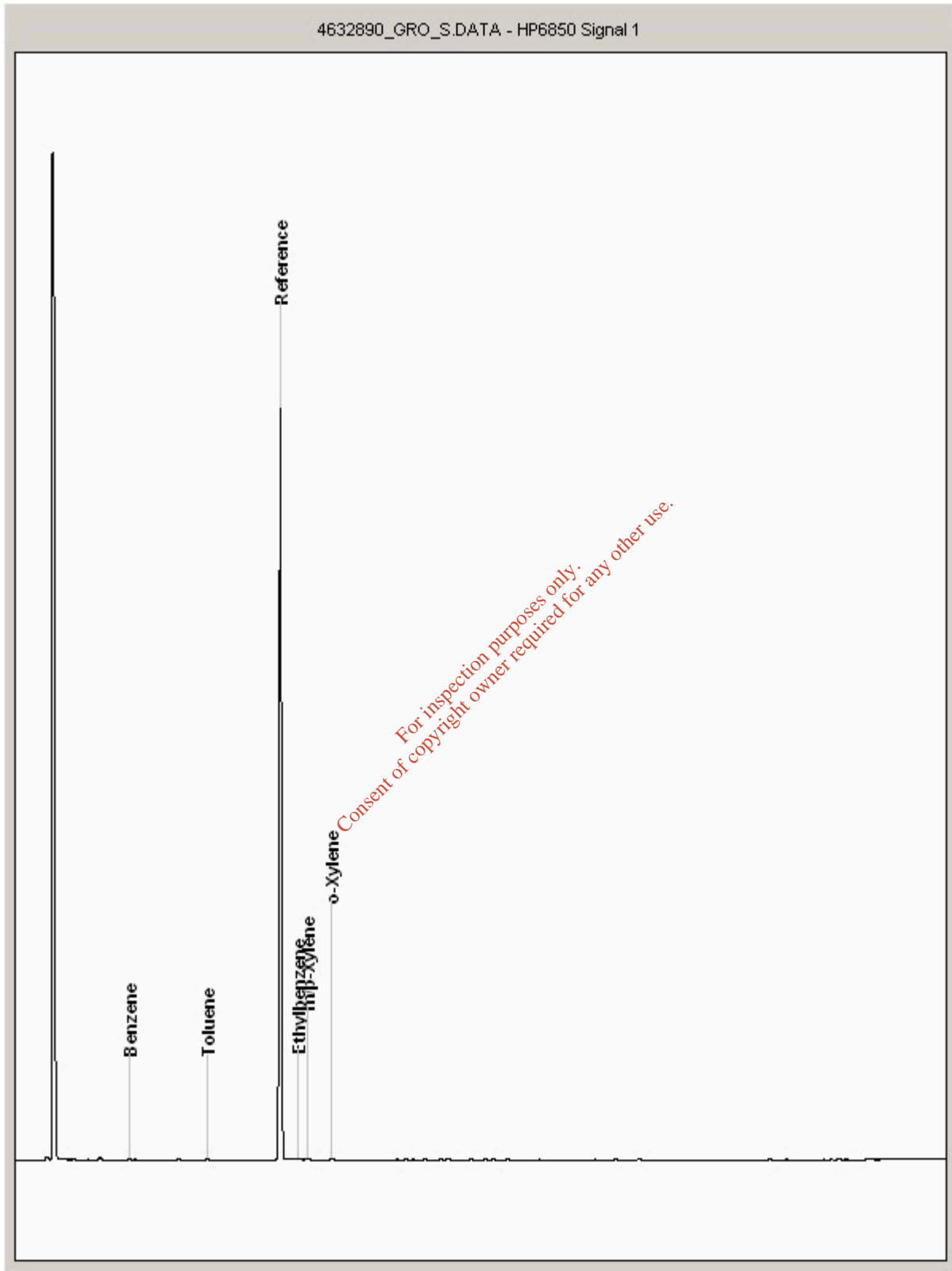
Order Number: 470000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4632890
Sample ID : B1

Depth : 2.10 - 2.30





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

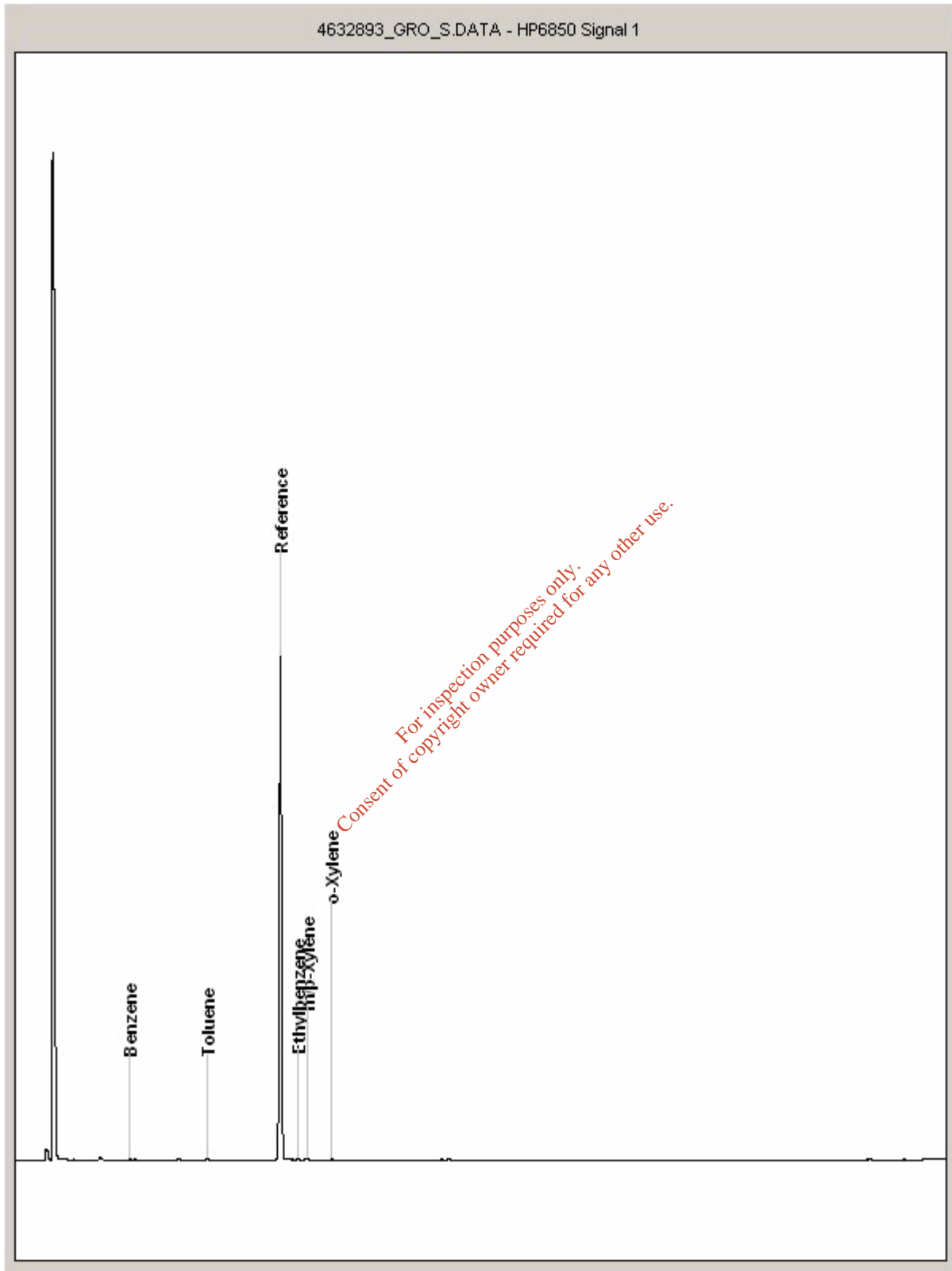
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4632893
Sample ID : C1

Depth : 0.20 - 1.00





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

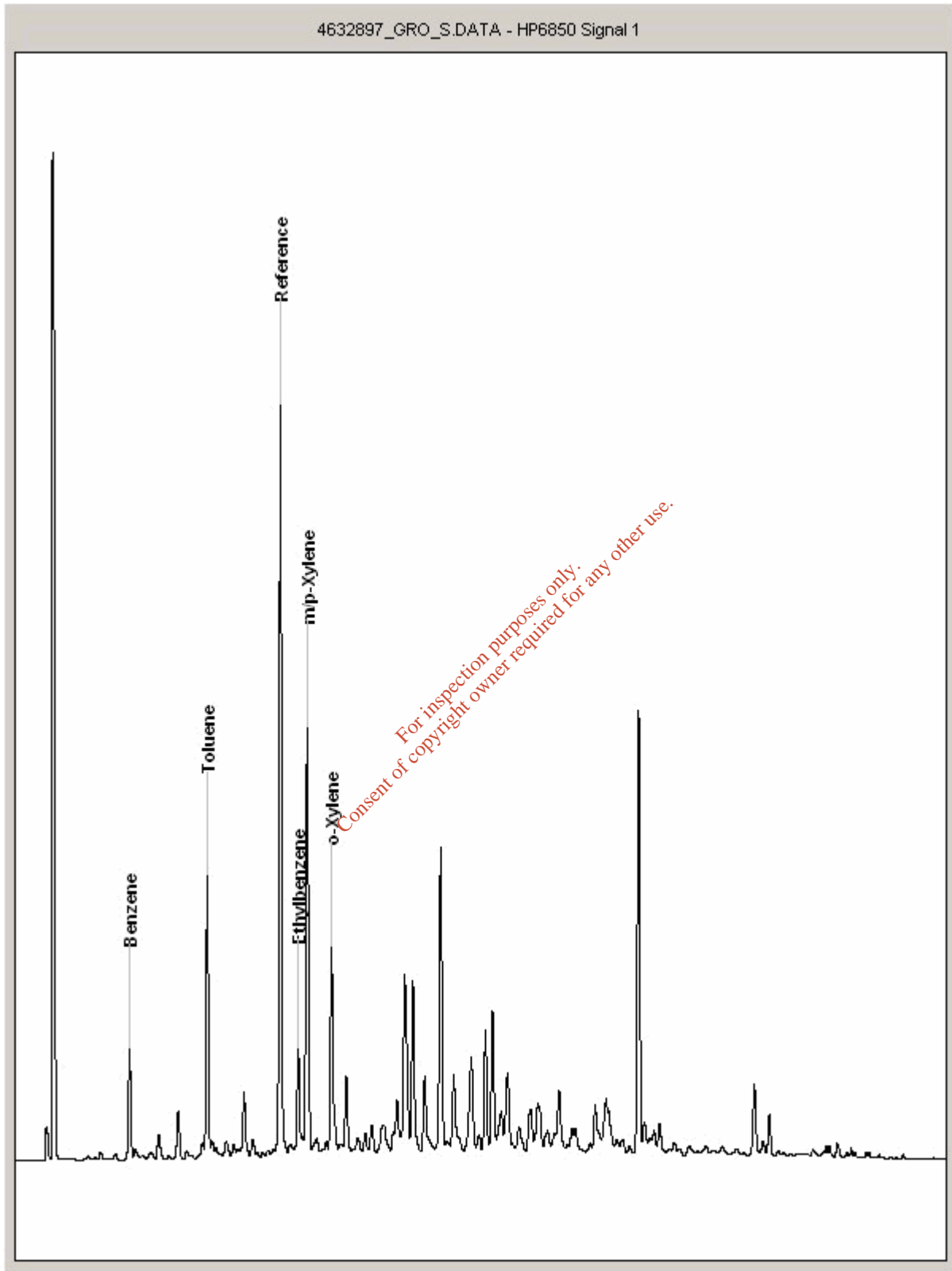
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4632897
Sample ID : C1

Depth : 2.80 - 3.00





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

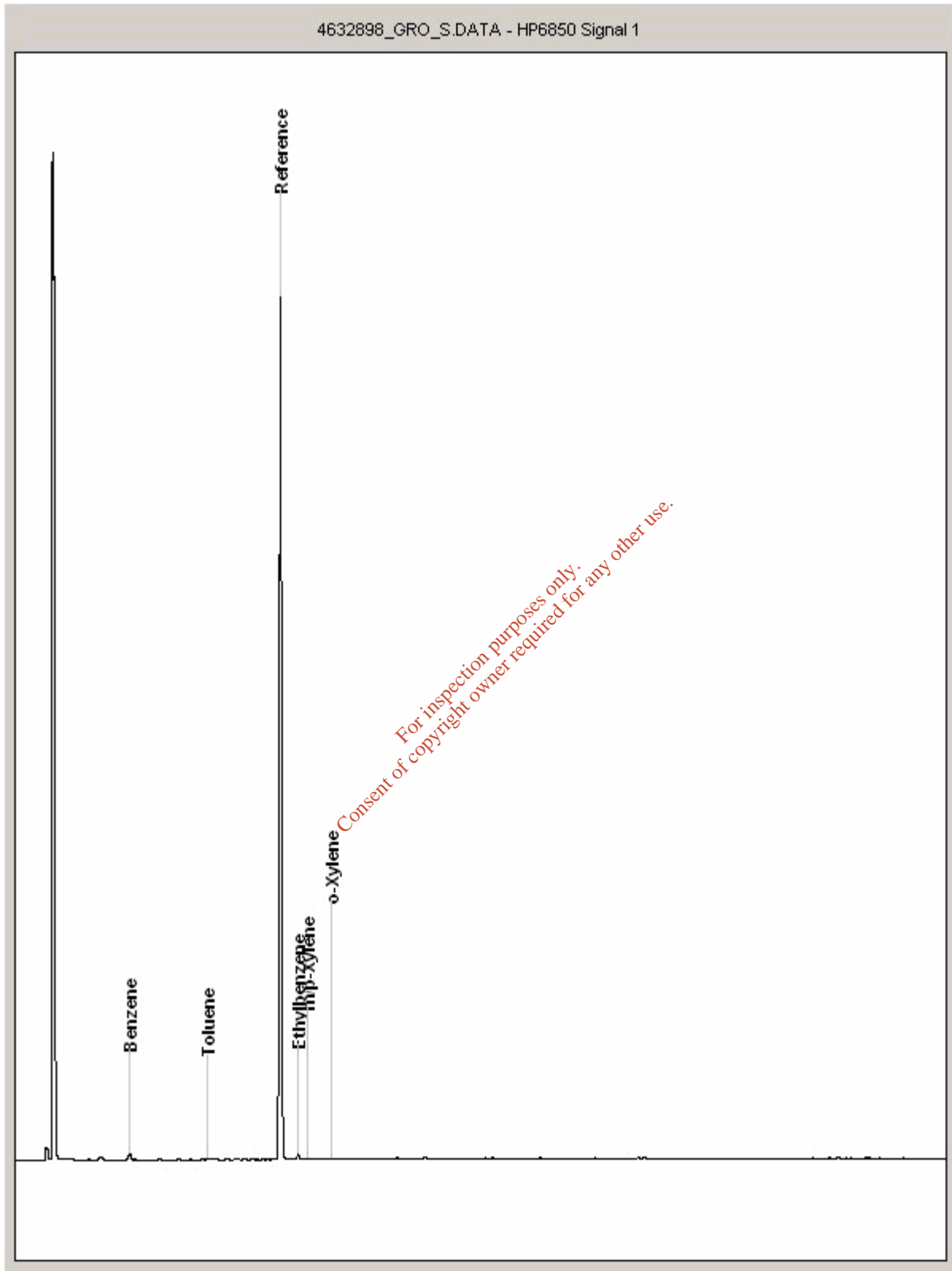
Order Number: 470000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4632898
Sample ID : A2

Depth : 1.00 - 2.00





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

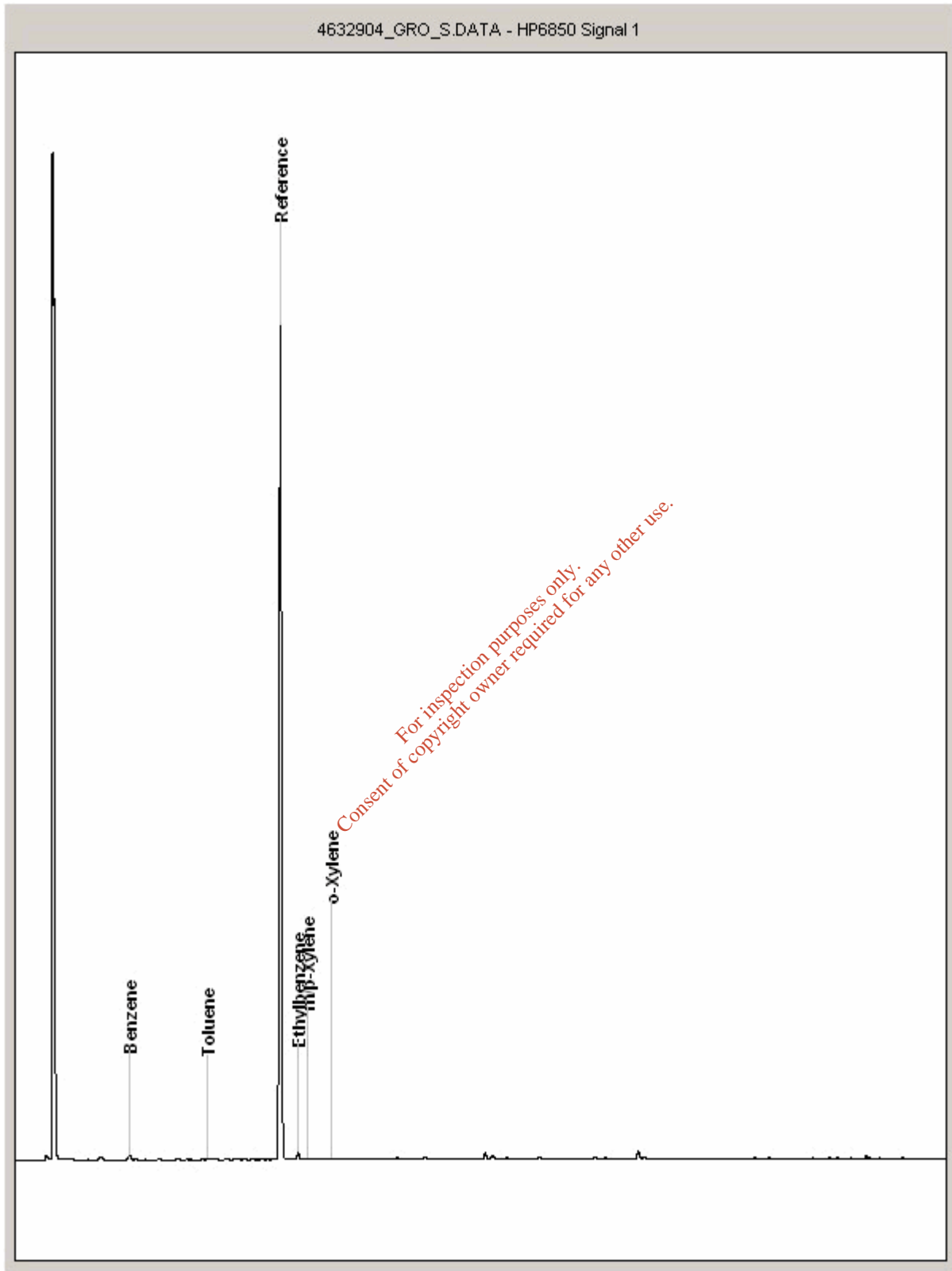
Order Number: 470000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4632904
Sample ID : A1

Depth : 1.00 - 2.00





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

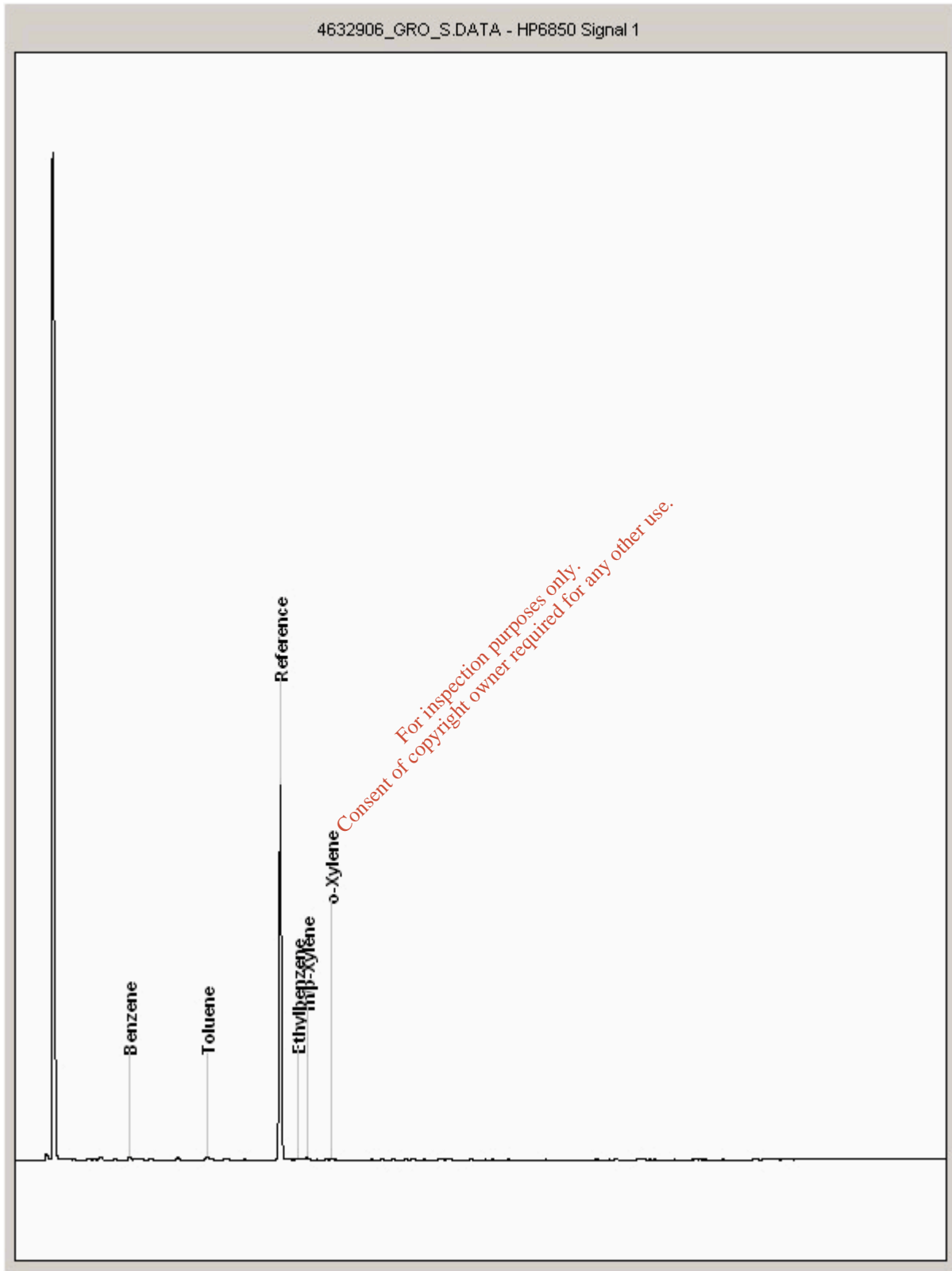
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4632906
Sample ID : B1

Depth : 0.20 - 1.00





SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

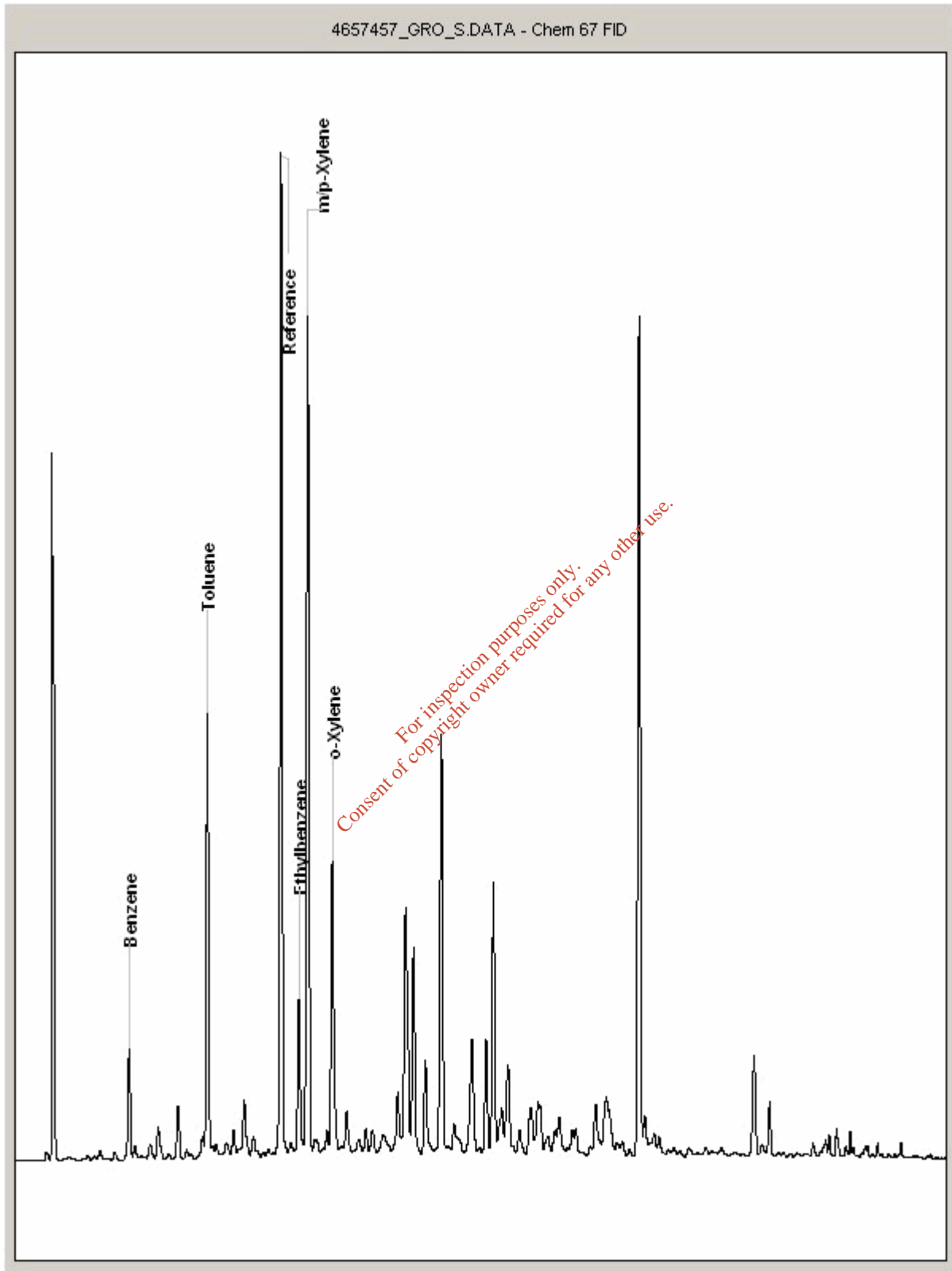
Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 4657457
Sample ID : C1

Depth : 3.00 - 3.50



SDG: 111028-110
Job: D_MOUCHEL_ELE-1
Client Reference:

Location: Limerick Gasworks
Customer: Mouchel
Attention: Neil Balderstone

Order Number: 4700000740
Report Number: 164063
Superseded Report: 159093

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). If asbestos is present either as asbestos containing material or loose fibres no further analysis will be undertaken. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DCM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DCM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DCM	SOXTHERM	GC-MS
HEBICIDES	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (MIN QI)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (CLEANED UP)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG BY GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB TOT / PCB CON	D&C	HEXANE:ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE:ACETONE	MI CROWAVE TM 218	GC-MS
C8-C10 (G8-C10) EZ FLASH	WET	HEXANE:ACETONE	SHAKER	GC-EZ
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DCM:ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY			
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GCMS
EPH	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GC FD
EPH CWG	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GC FD
MINERAL OIL	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GC FD
PCB 7COGENERS	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GCMS
PCB TOTAL	HEXANE	STIRREDEXTRACTION (STIR -BAR)	GCMS
SVOC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPIOPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRAZNE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOL SMS	DCM	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (R)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by R	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Human Health screen - Mouchel 2011 - Dutch intervention values

Key:	Exceeds screen and is potential outlier
	Does not exceed screen but may be outlier
	Exceeds screen but is not an outlier

CAS REG No	Determinand	Units	Screening Value	Source of screening value	Sample Ref																												LEVEL 1 CHECK												
					Depth																												No of samples in the averaging area	Degrees of freedom	Arithmetic Mean	standard deviation	Coefficient of variation	*confidence bound required (%)	t value	normalised upper bound on confidence limit of population	Normalised upper bound (95% UCL of mean)	Soil Guideline Value	Source for SGV	Upper Bound less than the guideline value?	Action - note if no further action indicated still do maximum value test
					A1	A1	A2	A2	A9	A9	A10	A10	B1	B1	B2	B2	B2	B9	B9	B9	B9	B10	C1	C1	C1	C2	D2	D2	D2																
Metals and Inorganics																																													
	Arsenic	mg/kg	55	Dutch intervention value	16.90	7.04	8.45	5.03		7.06	8.90	16.40	8.87	11.20	31.20	7.89	25.60	12.70		28.30	7.11		6.31	6.38	8.19	21.90	25.90	14.60	12.20	22	21	13.55	8.04	0.13	95	1.721	1.218	16.50	55	Dutch intervention value	YES	No action warranted			
	Cadmium	mg/kg	12	Dutch intervention value	0.17	0.43	0.30	0.23		0.21	0.37	0.39	0.41	0.39	0.35	0.40	0.61	0.37		0.49	0.42		0.24	0.30	0.38	0.51	0.46	0.50	0.63	22	21	0.39	0.12	0.07	95	1.721	1.113	0.43	12	Dutch intervention value	YES	No action warranted			
	Total Chromium	mg/kg	380	Dutch intervention value	0.60	0.60	0.60	0.60		0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60		0.60	0.60		0.60	0.60	0.60	0.60	0.60	0.60	1.20	22	21	0.63	0.13	0.04	95	1.721	1.075	0.67	380	Dutch intervention value	YES	No action warranted			
	Copper	mg/kg	190	Dutch intervention value	83.10	10.70	9.47	26.20		15.10	20.40	26.90	18.40	16.70	21.90	119.00	83.30	16.00		24.30	4.28		9.29	7.96	17.90	37.50	48.70	23.80	16.90	22	21	53.66	130.20	0.52	95	1.721	1.890	101.42	190	Dutch intervention value	YES	No action warranted			
	Lead	mg/kg	530	Dutch intervention value	42.60	32.40	13.00	75.50		24.00	58.70	54.60	32.20	46.60	76.90	47.20	59.80	112.00		94.00	5.13		21.60	24.50	33.20	102.00	292.00	245.00	24.60	22	21	46.88	71.00	0.32	95	1.721	1.556	72.93	530	Dutch intervention value	YES	No action warranted			
	Mercury (inorganic)	mg/kg	10	Dutch intervention value	0.14	0.14	0.14	0.14		0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14		0.14	0.14		0.14	0.14	0.14	0.14	0.14	0.14	0.14	22	21	0.18	0.18	0.21	95	1.721	1.362	0.24	10	Dutch intervention value	YES	No action warranted			
	Nickel	mg/kg	210	Dutch intervention value	19.50	12.90	8.86	11.20		24.10	16.30	41.80	19.10	16.30	22.70	15.10	12.40	18.60		31.20	10.80		8.77	9.58	13.80	14.70	29.60	24.90	23.20	22	21	18.43	8.30	0.10	95	1.721	1.165	21.47	210	Dutch intervention value	YES	No action warranted			
	Zinc	mg/kg	720	Dutch intervention value	67.70	33.40	28.30	30.30		49.10	81.70	61.90	33.00	39.50	90.40	82.20	192.00	95.30		234.00	21.60		17.80	27.10	55.50	75.70	147.00	51.00	84.50	22	21	72.68	55.24	0.16	95	1.721	1.279	92.95	720	Dutch intervention value	YES	No action warranted			
	Cyanide	mg/kg	70	Dutch intervention value (free + complex CN @ pH > 5)	1.00	1.70	1.00	2.37		1.00	1.00	38.50	1.00	1.00	1.00	7.82	1.00	1.00		4.69	2.39		7.16	1.93	18.90	19.30	1.00	2.72	217.00	22	21	15.20	45.97	0.64	95	1.721	2.109	32.07	70	Dutch intervention value (free + complex CN)	YES	No action warranted			
BTEX																																													
	Benzene	mg/kg	1	Dutch intervention value	0.01	0.02	0.01	0.03	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	0.01	0.01	0.01	0.01	0.01	0.01	0.10	25	24	0.20	0.77	0.78	95	1.711	2.331	0.46	1	Dutch intervention value	YES	No action warranted			
	Toluene	mg/kg	130	Dutch intervention value	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.02	0.10	0.27	0.01	0.00	1.15	14.80	0.01	0.00	0.00	0.06	25	24	0.66	2.95	0.89	95	1.711	2.530	1.67	130	Dutch intervention value	YES	No action warranted			
	Ethylbenzene	mg/kg	50	Dutch intervention value	0.00	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.13	0.00	0.00	0.40	4.71	0.00	0.00	0.00	0.15	25	24	0.22	0.94	0.84	95	1.711	2.432	0.55	50	Dutch intervention value	YES	No action warranted				
	Xylenes	mg/kg	25	Dutch intervention value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25	24	0.00	0.00	#DIV/0!	95	1.711	#DIV/0!	0.00	25	Dutch intervention value	YES	No action warranted				
	PAH																												0																
	Naphthalene	mg/kg			0.91	0.48	0.01	0.06		0.17	0.74	0.01	0.15	0.04	70.50	0.27	12.70	1.03		1.17	24.40		0.12	137.00	112.00	5.91	0.31	1.33	24.90	22	21	17.92	38.20	0.45	95	1.721	1.782	31.93	0		0	NO	Remediation or further testing required		
	Fluorene	mg/kg			0.17	0.49	0.01	0.07		0.02	0.42	0.01	0.05	0.01	6.86	0.10	3.28	4.30		0.50	4.93		0.03	20.50	12.70	0.58	0.16	11.50	7.97	22	21	3.39	5.46	0.34	95	1.721	1.590	5.40	0		0	NO	Remediation or further testing required		
	Phenanthrene	mg/kg			3.23	2.64	0.03	0.10		0.13	4.59	0.02	0.60	0.13	70.40	2.53	5.48	13.80		3.82	15.20		0.47	55.20	33.40	6.86	3.51	116.00	23.60	22	21	16.44	29.08	0.38	95	1.721	1.649	27.11	0		0	NO	Remediation or further testing required		
	Anthracene	mg/kg			0.88	0.57	0.02	0.03		0.04	1.96	0.02	0.26	0.04	14.50	0.59	2.53	6.69		1.31	5.09		0.10	17.10	9.46	1.75	0.74	32.10	7.57	22	21	4.70	7.81	0.35	95	1.721	1.610	7.56	0		0	NO	Remediation or further testing required		
	Fluoranthene	mg/kg			7.26	2.28	0.05	0.03		0.19	10.30	0.02	1.85	0.23	90.50	5.38	45.80	18.40		4.52	12.40		0.90	37.60	21.90	13.70	7.18	147.00	22.50	22	21	20.45	35.21	0.37	95	1.721	1.632	33.37	0		0	NO	Remediation or further testing required		
	Benzo[a]anthracene	mg/kg			4.18	1.20	0.05	0.01		0.13	6.51	0.01	1.72	0.22	51.00	2.66	27.50	7.88		2.10	4.65		0.89	12.60	6.15	9.99	5.70	67.20	11.70	22	21	10.18	17.21	0.36	95	1.721	1.620	16.50	0		0	NO	Remediation or further testing required		
	Chrysene	mg/kg			3.52	0.97	0.05	0.01		0.10	4.39	0.01	1.31	0.18	42.10	2.23	21.40	4.93		1.67	3.03		0.83	9.04	4.83	7.81	4.65	48.80	7.59	22	21	7.70	13.14	0.36	95	1.721	1.626	12.52	0		0	NO	Remediation or further testing required		
	Benzo[a]pyrene	mg/kg			4.25	1.06	0.05	0.02		0.17	7.65	0.02	2.00	0.25	49.40	2.55	15.50	6.71		1.34	3.40		1.49	10.40	4.81	11.10	6.94	64.80	11.00	22	21	9.30	16.22	0.37	95	1.721	1.639	15.25	0		0	NO	Remediation or further testing required		
	Indeno[1,2,3-c,d]pyrene	mg/kg			2.43	0.50	0.03	0.02		0.11	4.33	0.02	1.06	0.15	23.70	1.19	4.88	3.17		0.65	1.44		0.97	4.65	2.28	5.93	6.06	35.40	6.31	22	21	4.79	8.49	0.38	95	1.721	1.651	7.90	0		0	NO	Remediation or further testing required		
	Benzo[ghi]perylene	mg/kg			2.74	0.52	0.04	0.02		0.12	4.92	0.02	1.10	0.18	25.70	1.45	5.61	3.28		0.78	1.54		1.07	5.18	2.64	6.06	6.54	37.50	6.46	22	21	5.16	9.05	0.37	95	1.721	1.643	8.48	0		0	NO	Remediation or further testing required		
	Sum of 10 PAHs	mg/kg	40	Dutch intervention value	29.56	10.71	0.34	0.37	0.00	1.18	45.81	0.15	10.09	1.43	444.66	18.95	144.68	70.19	0.00	17.86	76.08	0.00	6.87	309.27	210.27	69.89	41.79	561.43	129.60	25	24	88.04	146.91	0.33	95	1.711	1.571	138.30	40	Dutch intervention value	NO	Remediation or further testing required			
Other organics																																													
	Phenol	mg/kg	40	Dutch intervention value	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	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	22	21	0.36	1.51	0.89	95	1.721	2.529	0.92	40	Dutch intervention value	YES	No action warranted			
	Chlorobenzenes	mg/kg	30	Dutch intervention value (sum of 6 mono-, di-, and tri-chlorobenzenes analysed)		0.005		0.005								0.005	0.005					0.005	0.050		0.005		0.005	0.005	9	8	0.01	0.02	0.50	95	1.860	1.930	0.02	30	Dutch intervention value (sum of 6 mono-, di-)	YES	No action warranted				
	1,2-Dichloroethane	mg/kg	4	Dutch intervention value		0.005		0.005								0.005	0.005					0.005	0.050		0.005		0.005	0.005	9	8	0.01	0.02	0.50	95	1.860	1.930	0.02	4	Dutch intervention value	YES	No action warranted				
	Tetrachloroethene	mg/kg	4	Dutch intervention value		0.005		0.005								0.005	0.005					0.005	0.050		0.005		0.005	0.005	9	8	0.01	0.02	0.50	95	1.860	1.930	0.02	4	Dutch intervention value	YES	No action warranted				
	Vinyl Chloride (chloroethene)	mg/kg	0.1	Dutch intervention value		0.010		0.010								0.010	0.010					0.010	0.010		0.010		0.010	0.010	9	8	0.02	0.03	0.50	95	1.860	1.930	0.04	0.1	Dutch intervention value	YES	No action warranted				
	Carbon tetrachloride (tetrachloromethane)	mg/kg	1	Dutch intervention value		0.014		0.014								0.014	0.014					0.014	0.140		0.014		0.014	0.014	9	8	0.03	0.04	0.50	95	1.860	1.930	0.05	1	Dutch intervention value	YES	No action warranted				
	cis 1,2 Dichloroethene	mg/kg	1	Dutch intervention value		0.005		0.005								0.0																													

