



Royal Haskoning  
Rightwell House  
Bretton  
Bretton  
Peterborough  
Cambridgeshire  
PE3 8DW

**Attention:** Declan Fives

## CERTIFICATE OF ANALYSIS

**Date:** 17 June 2014  
**Customer:** H\_RHASKON\_PTB  
**Sample Delivery Group (SDG):** 140606-106  
**Your Reference:** 9Y0074 103 100  
**Location:** Cole Green  
**Report No:** 273797

We received 13 samples on Friday June 06, 2014 and 13 of these samples were scheduled for analysis which was completed on Tuesday June 17, 2014. 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.

Approved By:

**Sonia McWhan**

Operations Manager





**SDG:** 140606-106  
**Job:** H\_RHASKON\_PT8-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
9403160	CG BH03		0.00	04/06/2014
9403158	CG BH09		0.00	04/06/2014
9403159	CG BH10		0.00	04/06/2014
9403146	CG BH11		0.00	04/06/2014
9403153	CG BH12		0.00	04/06/2014
9403346	CG BH13		0.00	04/06/2014
9403348	CG BH14		0.00	04/06/2014
9403342	CG BH16		0.00	03/06/2014
9403161	CG BH18		0.00	04/06/2014
9403163	CG BH19		0.00	04/06/2014
9403343	CG BH20		0.00	03/06/2014
9403341	CG BH21		0.00	03/06/2014
9403164	CG BH22		0.00	04/06/2014

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



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 Client Reference: 9Y0074 103 100

Location: Cole Green  
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Order Number: 9Y0074 003 100  
 Report Number: 273797  
 Superseded Report:

<b>LIQUID</b> <b>Results Legend</b> Test No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	
		9403160	CG BH03		0.00	Vial (ALE297) H2SO4 (ALE244) Dissolved Metals Pr 11 Glass bottle (ALE Vial (ALE297)
		9403158	CG BH09		0.00	H2SO4 (ALE244) Dissolved Metals Pr 11 Glass bottle (ALE Vial (ALE297)
		9403159	CG BH10		0.00	H2SO4 (ALE244) Dissolved Metals Pr 11 Glass bottle (ALE Vial (ALE297)
		9403146	CG BH11		0.00	H2SO4 (ALE244) Dissolved Metals Pr 11 Glass bottle (ALE Vial (ALE297)
	9403153	CG BH12		0.00	H2SO4 (ALE244) Dissolved Metals Pr 11 Glass bottle (ALE Vial (ALE297)	
	9403346	CG BH13		0.00	H2SO4 (ALE244) Dissolved Metals Pr 11 Glass bottle (ALE Vial (ALE297)	
	9403348	CG BH14		0.00	H2SO4 (ALE244) Dissolved Metals Pr 11 Glass bottle (ALE Vial (ALE297)	
	9403342	CG BH16		0.00	H2SO4 (ALE244) Dissolved Metals Pr 11 Glass bottle (ALE Vial (ALE297)	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 13				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 13				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 13				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 13				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 13				
Mercury Dissolved	All	NDPs: 0 Tests: 13				
OC, OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 13				
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 13				
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 13				
pH Value	All	NDPs: 0 Tests: 7				
Phenols by HPLC (W)	All	NDPs: 0 Tests: 13				
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 13				
TPH CWG (W)	All	NDPs: 0 Tests: 13				





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**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

Results Legend		Customer Sample R	CG BH03	CG BH09	CG BH10	CG BH11	CG BH12	CG BH13
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00	0.00	0.00	0.00	0.00	0.00
M	mCERTS accredited.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
aq	Aqueous / settled sample.		04/06/2014	04/06/2014	04/06/2014	04/06/2014	04/06/2014	04/06/2014
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		06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014
(F)	Trigger breach confirmed		140606-106	140606-106	140606-106	140606-106	140606-106	140606-106
1-5&*\$@	Sample deviation (see appendix)		9403160	9403158	9403159	9403146	9403153	9403346
Component	LOD/Units	Method						
Carbon, Organic (diss.filt)	<3 mg/l	TM090	7.56	5.64	19.3	16.5	47.8	29.6
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099	0.767	<0.2	11.3	<0.2	229	94.5
Arsenic (diss.filt)	<0.12 µg/l	TM152	1.09	1.85	2.66	3.81	55.6	8.1
Barium (diss.filt)	<0.03 µg/l	TM152	57.8	146	350	280	418	256
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Boron (diss.filt)	<9.4 µg/l	TM152	283	87.2	931	34.1	2140	2220
Cadmium (diss.filt)	<0.1 µg/l	TM152	<0.1	<0.1	<0.1	<0.1	<0.1	0.111
Chromium (diss.filt)	<0.22 µg/l	TM152	6.03	7.85	12.3	12.2	28.4	22.5
Copper (diss.filt)	<0.85 µg/l	TM152	2.09	1.52	5.04	2.41	2.56	2.45
Lead (diss.filt)	<0.02 µg/l	TM152	0.032	0.034	0.037	0.06	<0.02	0.047
Nickel (diss.filt)	<0.15 µg/l	TM152	7.58	7.79	15.4	21.1	36.2	78.8
Selenium (diss.filt)	<0.39 µg/l	TM152	1.22	18.1	5.88	5.71	2.77	4.51
Vanadium (diss.filt)	<0.24 µg/l	TM152	1.68	2.54	3.51	3.8	7.3	5.91
Zinc (diss.filt)	<0.41 µg/l	TM152	0.587	4.64	2.92	2.2	5.28	8.52
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB congener 28	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105
pH	<1 pH Units	TM256	7.68	7.55		7.37		
Phenol	<0.002 mg/l	TM259	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cresols	<0.006 mg/l	TM259	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Xylenols	<0.008 mg/l	TM259	<0.008	<0.008	<0.008	<0.008	0.01	<0.008
2,3,5-Trimethylphenol	<0.003 mg/l	TM259	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
2-Isopropylphenol	<0.006 mg/l	TM259	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025



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**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

Results Legend		Customer Sample R	CG BH14	CG BH16	CG BH18	CG BH19	CG BH20	CG BH21	
#	ISO17025 accredited.								
M	mCERTS accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sampled Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	0.00	0.00	0.00	0.00	0.00	0.00	
aq	Aqueous / settled sample.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	
diss.filt	Dissolved / filtered sample.		04/06/2014	03/06/2014	04/06/2014	04/06/2014	03/06/2014	03/06/2014	
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		06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014	
(F)	Trigger breach confirmed		140606-106	140606-106	140606-106	140606-106	140606-106	140606-106	
1-5&*\$@	Sample deviation (see appendix)		9403348	9403342	9403161	9403163	9403343	9403341	
Component	LOD/Units		Method						
Carbon, Organic (diss.filt)	<3 mg/l		TM090	43.6	11.6	8.09	3.74	22.7	68.9
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099	59.2	<0.2	2.19	<0.2	0.974	130	
Arsenic (diss.filt)	<0.12 µg/l	TM152	6.32	2.05	1.46	0.419	2.21	8.1	
Barium (diss.filt)	<0.03 µg/l	TM152	66	165	88.3	81.6	137	302	
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	
Boron (diss.filt)	<9.4 µg/l	TM152	2810	154	165	73.4	2340	7900	
Cadmium (diss.filt)	<0.1 µg/l	TM152	0.353	<0.1	0.185	<0.1	<0.1	2.16	
Chromium (diss.filt)	<0.22 µg/l	TM152	23.6	11.4	9.95	4.18	10.7	33.9	
Copper (diss.filt)	<0.85 µg/l	TM152	6.36	2.68	2.55	1.54	5.47	68	
Lead (diss.filt)	<0.02 µg/l	TM152	0.023	<0.02	0.021	0.035	0.05	0.064	
Nickel (diss.filt)	<0.15 µg/l	TM152	85.6	5.65	8.81	2.56	11.4	69.7	
Selenium (diss.filt)	<0.39 µg/l	TM152	14.4	1.11	0.532	0.527	2.65	10.3	
Vanadium (diss.filt)	<0.24 µg/l	TM152	5.6	3.75	2.88	1.51	3.08	12.6	
Zinc (diss.filt)	<0.41 µg/l	TM152	16.1	2.35	2.15	1.01	8.38	15.5	
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	0.0138	<0.01	<0.01	0.177	<0.01	
PCB congener 28	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105	
pH	<1 pH Units	TM256	7.78			8.1	7.65	7.75	
Phenol	<0.002 mg/l	TM259	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Cresols	<0.006 mg/l	TM259	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Xylenols	<0.008 mg/l	TM259	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	
2,3,5-Trimethylphenol	<0.003 mg/l	TM259	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	
2-Isopropylphenol	<0.006 mg/l	TM259	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	



**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

Results Legend		Customer Sample R						
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	CG BH22  0.00 Water(GW/SW) 04/06/2014  06/06/2014 140606-106 9403164					
M	mCERTS accredited.							
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							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units			Method				
Carbon, Organic (diss.filt)	<3 mg/l	TM090	7.48					
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099	2.09	#				
Arsenic (diss.filt)	<0.12 µg/l	TM152	4.65	#				
Barium (diss.filt)	<0.03 µg/l	TM152	164	#				
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07	#				
Boron (diss.filt)	<9.4 µg/l	TM152	86.8	#				
Cadmium (diss.filt)	<0.1 µg/l	TM152	<0.1	#				
Chromium (diss.filt)	<0.22 µg/l	TM152	6.42	#				
Copper (diss.filt)	<0.85 µg/l	TM152	0.994	#				
Lead (diss.filt)	<0.02 µg/l	TM152	0.046	#				
Nickel (diss.filt)	<0.15 µg/l	TM152	9.33	#				
Selenium (diss.filt)	<0.39 µg/l	TM152	1.89	#				
Vanadium (diss.filt)	<0.24 µg/l	TM152	1.83	#				
Zinc (diss.filt)	<0.41 µg/l	TM152	3.11	#				
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	#				
PCB congener 28	<0.015 µg/l	TM197	<0.015					
PCB congener 52	<0.015 µg/l	TM197	<0.015					
PCB congener 101	<0.015 µg/l	TM197	<0.015					
PCB congener 118	<0.015 µg/l	TM197	<0.015					
PCB congener 138	<0.015 µg/l	TM197	<0.015					
PCB congener 153	<0.015 µg/l	TM197	<0.015					
PCB congener 180	<0.015 µg/l	TM197	<0.015					
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105					
Phenol	<0.002 mg/l	TM259	<0.002	#				
Cresols	<0.006 mg/l	TM259	0.01	#				
Xylenols	<0.008 mg/l	TM259	<0.008	#				
2,3,5-Trimethylphenol	<0.003 mg/l	TM259	<0.003	#				
2-Isopropylphenol	<0.006 mg/l	TM259	<0.006	#				
Phenols, Total Detected 5 speciated	<0.025 mg/l	TM259	<0.025					









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**Job:** H\_RHASKON\_PTB-82  
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**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## OC, OP Pesticides and Triazine Herb

Results Legend		Customer Sample R	CG BH22			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 Water(GW/SW) 04/06/2014 . 06/06/2014 140606-106 9403164			
M	mCERTS accredited.					
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					
1-5&*\$@	Sample deviation (see appendix)					
Component	LOD/Units	Method				
Dichlorvos	<0.01 µg/l	TM231	<0.01			
Mevinphos	<0.01 µg/l	TM231	<0.01			
alpha-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231	<0.01			
Diazinon	<0.01 µg/l	TM231	<0.01			
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231	<0.01			
Heptachlor	<0.01 µg/l	TM231	<0.01			
Aldrin	<0.01 µg/l	TM231	<0.01			
beta-Hexachlorocyclohexane (HCH / Lindane)	<0.01 µg/l	TM231	<0.01			
Methyl parathion	<0.01 µg/l	TM231	<0.01			
Malathion	<0.01 µg/l	TM231	<0.01			
Fenitrothion	<0.01 µg/l	TM231	<0.01			
Heptachlor epoxide	<0.01 µg/l	TM231	<0.01			
Parathion	<0.01 µg/l	TM231	<0.01			
o,p-DDE	<0.01 µg/l	TM231	<0.01			
Endosulphan I	<0.01 µg/l	TM231	<0.01			
p,p-DDE	<0.01 µg/l	TM231	<0.01			
Dieldrin	<0.01 µg/l	TM231	<0.01			
o,p-TDE (DDD)	<0.01 µg/l	TM231	<0.01			
Endrin	<0.01 µg/l	TM231	<0.01			
o,p-DDT	<0.01 µg/l	TM231	<0.01			
p,p-TDE (DDD)	<0.01 µg/l	TM231	<0.01			
Ethion	<0.01 µg/l	TM231	<0.01			
Endosulphan II	<0.01 µg/l	TM231	<0.01			
p,p-DDT	<0.01 µg/l	TM231	<0.01			
o,p-Methoxychlor	<0.01 µg/l	TM231	<0.01			
p,p-Methoxychlor	<0.01 µg/l	TM231	<0.01			
Endosulphan sulphate	<0.01 µg/l	TM231	<0.01			
Azinphos-methyl	<0.01 µg/l	TM231	<0.01			



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**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

**PAH Spec MS - Aqueous (W)**

Results Legend		Customer Sample R	CG BH03	CG BH09	CG BH10	CG BH11	CG BH12	CG BH13
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sampled Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	0.00	0.00	0.00	0.00	0.00	0.00
M	mCERTS accredited.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
aq	Aqueous / settled sample.		04/06/2014	04/06/2014	04/06/2014	04/06/2014	04/06/2014	04/06/2014
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		06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014
(F)	Trigger breach confirmed		140606-106	140606-106	140606-106	140606-106	140606-106	140606-106
1-5&*\$@	Sample deviation (see appendix)		9403160	9403158	9403159	9403146	9403153	9403346
Component	LOD/Units		Method					
Naphthalene (aq)	<0.1 µg/l	TM178	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Acenaphthene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.015 #	<0.015 #	<0.015 #	0.196 #	<0.015 #
Acenaphthylene (aq)	<0.011 µg/l	TM178	0.015 #	<0.011 #	<0.011 #	<0.011 #	0.0112 #	<0.011 #
Fluoranthene (aq)	<0.017 µg/l	TM178	0.319 #	0.0349 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #
Anthracene (aq)	<0.015 µg/l	TM178	0.0302 #	<0.015 #	<0.015 #	<0.015 #	0.0225 #	<0.015 #
Phenanthrene (aq)	<0.022 µg/l	TM178	0.0908 #	<0.022 #	<0.022 #	<0.022 #	<0.022 #	<0.022 #
Fluorene (aq)	<0.014 µg/l	TM178	<0.014 #	<0.014 #	<0.014 #	<0.014 #	0.267 #	<0.014 #
Chrysene (aq)	<0.013 µg/l	TM178	0.22 #	0.0159 #	<0.013 #	<0.013 #	<0.013 #	<0.013 #
Pyrene (aq)	<0.015 µg/l	TM178	0.337 #	0.0355 #	0.0165 #	<0.015 #	<0.015 #	<0.015 #
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178	0.199 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178	0.454 #	0.0253 #	<0.023 #	<0.023 #	<0.023 #	<0.023 #
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178	0.214 #	0.0288 #	<0.027 #	<0.027 #	<0.027 #	<0.027 #
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178	0.379 #	0.033 #	0.0164 #	<0.009 #	<0.009 #	<0.009 #
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178	0.0676 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178	0.322 #	0.0251 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178	0.257 #	0.0192 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #
PAH, Total Detected USEPA 16 (aq)	<0.344 µg/l	TM178	2.9 #	<0.344 #	<0.344 #	<0.344 #	0.496 #	<0.344 #



## CERTIFICATE OF ANALYSIS

**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample R	CG BH14	CG BH16	CG BH18	CG BH19	CG BH20	CG BH21
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sampled Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>						
M	mCERTS accredited.		0.00	0.00	0.00	0.00	0.00	0.00
aq	Aqueous / settled sample.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
diss.filt	Dissolved / filtered sample.		04/06/2014	03/06/2014	04/06/2014	04/06/2014	03/06/2014	03/06/2014
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		06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014
(F)	Trigger breach confirmed		140606-106	140606-106	140606-106	140606-106	140606-106	140606-106
1-5&*\$@	Sample deviation (see appendix)		9403348	9403342	9403161	9403163	9403343	9403341
Component	LOD/Units		Method					
Naphthalene (aq)	<0.1 µg/l	TM178	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Acenaphthene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.015 #	0.0224 #	<0.015 #	<0.015 #	<0.015 #
Acenaphthylene (aq)	<0.011 µg/l	TM178	<0.011 #	<0.011 #	<0.011 #	<0.011 #	<0.011 #	<0.011 #
Fluoranthene (aq)	<0.017 µg/l	TM178	<0.017 #	0.029 #	0.717 #	0.0249 #	<0.017 #	0.0394 #
Anthracene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.015 #	0.0559 #	<0.015 #	<0.015 #	<0.015 #
Phenanthrene (aq)	<0.022 µg/l	TM178	<0.022 #	<0.022 #	0.18 #	<0.022 #	<0.022 #	<0.022 #
Fluorene (aq)	<0.014 µg/l	TM178	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #
Chrysene (aq)	<0.013 µg/l	TM178	<0.013 #	0.0229 #	1.12 #	0.023 #	<0.013 #	0.0298 #
Pyrene (aq)	<0.015 µg/l	TM178	<0.015 #	0.0337 #	0.686 #	0.0282 #	<0.015 #	0.0379 #
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178	<0.017 #	<0.017 #	1.08 #	<0.017 #	<0.017 #	0.0179 #
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178	<0.023 #	0.0313 #	2.04 #	0.0269 #	<0.023 #	0.0274 #
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178	<0.027 #	0.0339 #	0.85 #	0.0316 #	<0.027 #	0.0372 #
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178	<0.009 #	0.0368 #	1.74 #	0.0335 #	0.0117 #	0.0316 #
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178	<0.016 #	<0.016 #	0.27 #	<0.016 #	<0.016 #	<0.016 #
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178	<0.016 #	0.0304 #	1.22 #	0.0291 #	<0.016 #	0.0212 #
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l	TM178	<0.014 #	0.0226 #	1.19 #	0.0216 #	<0.014 #	0.0176 #
PAH, Total Detected USEPA 16 (aq)	<0.344 µg/l	TM178	<0.344 #	<0.344 #	11.2 #	<0.344 #	<0.344 #	<0.344 #





**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## SVOC MS (W) - Aqueous

Results Legend		Customer Sample R	CG BH03	CG BH09	CG BH10	CG BH11	CG BH12	CG BH13
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sampled Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	0.00	0.00	0.00	0.00	0.00	0.00
M	mCERTS accredited.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
aq	Aqueous / settled sample.		04/06/2014	04/06/2014	04/06/2014	04/06/2014	04/06/2014	04/06/2014
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		06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014
(F)	Trigger breach confirmed		140606-106	140606-106	140606-106	140606-106	140606-106	140606-106
1-58*\$@	Sample deviation (see appendix)		9403160	9403158	9403159	9403146	9403153	9403346
Component	LOD/Units		Method					
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Nitrophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
3-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chloroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Nitrophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Azobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2 #	<2 #	<2 #	<2 #	<2 #	<2 #
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbazole (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibenzofuran (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #





**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## SVOC MS (W) - Aqueous

Results Legend			Customer Sample R		CG BH14	CG BH16	CG BH18	CG BH19	CG BH20	CG BH21
#	ISO17025 accredited.		<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sampled Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	0.00	0.00	0.00	0.00	0.00	0.00	
M	mCERTS accredited.			Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
aq	Aqueous / settled sample.			04/06/2014	03/06/2014	04/06/2014	04/06/2014	04/06/2014	03/06/2014	03/06/2014
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			06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014
(F)	Trigger breach confirmed			140606-106	140606-106	140606-106	140606-106	140606-106	140606-106	140606-106
1-5&#9@	Sample deviation (see appendix)			9403348	9403342	9403161	9403163	9403343	9403341	9403341
Component	LOD/Units	Method								
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2-Chlorophenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2-Methylphenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2-Nitroaniline (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
2-Nitrophenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
3-Nitroaniline (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
4-Chloroaniline (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
4-Methylphenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
4-Nitroaniline (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
4-Nitrophenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
Azobenzene (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2	<2	4.09	<2	<2	<2	3.47	
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
Carbazole (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
Dibenzofuran (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<1	<1	<1	







**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## SVOC MS (W) - Aqueous

Results Legend		Customer Sample R	CG BH22				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 Water(GW/SW) 04/06/2014 . 06/06/2014 140606-106 9403164				
M	mCERTS accredited.						
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						
1-5&*\$@	Sample deviation (see appendix)						
Component	LOD/Units	Method					
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1	#			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	#			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	#			
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	#			
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1	#			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1	#			
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1	#			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<1	#			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	#			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	#			
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1	#			
2-Chlorophenol (aq)	<1 µg/l	TM176	<1	#			
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1	#			
2-Methylphenol (aq)	<1 µg/l	TM176	<1	#			
2-Nitroaniline (aq)	<1 µg/l	TM176	<1	#			
2-Nitrophenol (aq)	<1 µg/l	TM176	<1	#			
3-Nitroaniline (aq)	<1 µg/l	TM176	<1	#			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<1	#			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1	#			
4-Chloroaniline (aq)	<1 µg/l	TM176	<1	#			
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1	#			
4-Methylphenol (aq)	<1 µg/l	TM176	<1	#			
4-Nitroaniline (aq)	<1 µg/l	TM176	<1	#			
4-Nitrophenol (aq)	<1 µg/l	TM176	<1	#			
Azobenzene (aq)	<1 µg/l	TM176	<1	#			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1	#			
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<1	#			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2	#			
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1	#			
Carbazole (aq)	<1 µg/l	TM176	<1	#			
Dibenzofuran (aq)	<1 µg/l	TM176	<1	#			
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1	#			



SDG: 140606-106
Job: H\_RHASKON\_PTB-82
Client Reference: 9Y0074 103 100

Location: Cole Green
Customer: Royal Haskoning
Attention: Declan Fives

Order Number: 9Y0074 003 100
Report Number: 273797
Superseded Report:

SVOC MS (W) - Aqueous

Table with columns: Component, LOD/Units, Method, and results for various SVOCs like Diethyl phthalate, Dimethyl phthalate, etc. Includes a Results Legend and Customer Sample R details.



## CERTIFICATE OF ANALYSIS

**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## TPH CWG (W)

Results Legend		Customer Sample R	CG BH03	CG BH09	CG BH10	CG BH11	CG BH12	CG BH13	
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00	0.00	0.00	0.00	0.00	0.00	
M	mCERTS accredited.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
aq	Aqueous / settled sample.		04/06/2014	04/06/2014	04/06/2014	04/06/2014	04/06/2014	04/06/2014	04/06/2014
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								
1-5&*\$@	Sample deviation (see appendix)								
Component	LOD/Units		Method						
GRO Surrogate % recovery**	%	TM245	75	80	69	71	70	75	
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	<50	<50	<50	
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3	
Benzene	<7 µg/l	TM245	<7	<7	<7	<7	<7	<7	
Toluene	<4 µg/l	TM245	<4	<4	<4	<4	<4	<4	
Ethylbenzene	<5 µg/l	TM245	<5	<5	<5	<5	<5	<5	
m,p-Xylene	<8 µg/l	TM245	<8	<8	<8	<8	<8	<8	
o-Xylene	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3	
Sum of detected Xylenes	<11 µg/l	TM245	<11	<11	<11	<11	<11	<11	
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28	<28	<28	
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	11	<10	



## CERTIFICATE OF ANALYSIS

**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## TPH CWG (W)

Results Legend		Customer Sample R	CG BH14	CG BH16	CG BH18	CG BH19	CG BH20	CG BH21
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sampled Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	0.00	0.00	0.00	0.00	0.00	0.00
M	mCERTS accredited.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
aq	Aqueous / settled sample.		04/06/2014	03/06/2014	04/06/2014	04/06/2014	03/06/2014	03/06/2014
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		06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014	06/06/2014
(F)	Trigger breach confirmed		140606-106	140606-106	140606-106	140606-106	140606-106	140606-106
1-5&*\$@	Sample deviation (see appendix)		9403348	9403342	9403161	9403163	9403343	9403341
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM245	75	72	84	88	84	70
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	<50	<50	<50
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3
Benzene	<7 µg/l	TM245	<7	<7	<7	<7	<7	<7
Toluene	<4 µg/l	TM245	<4	<4	<4	<4	<4	<4
Ethylbenzene	<5 µg/l	TM245	<5	<5	<5	<5	<5	<5
m,p-Xylene	<8 µg/l	TM245	<8	<8	<8	<8	<8	<8
o-Xylene	<3 µg/l	TM245	<3	<3	<3	<3	<3	<3
Sum of detected Xylenes	<11 µg/l	TM245	<11	<11	<11	<11	<11	<11
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28	<28	<28
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10



**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## TPH CWG (W)

Results Legend		Customer Sample R	CG BH22				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 Water(GW/SW) 04/06/2014 . 06/06/2014 140606-106 9403164				
M	mCERTS accredited.						
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						
1-5&*\$@	Sample deviation (see appendix)						
Component	LOD/Units			Method			
GRO Surrogate % recovery**	%	TM245	75				
GRO >C5-C12	<50 µg/l	TM245	<50	#			
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3	#			
Benzene	<7 µg/l	TM245	<7	#			
Toluene	<4 µg/l	TM245	<4	#			
Ethylbenzene	<5 µg/l	TM245	<5	#			
m,p-Xylene	<8 µg/l	TM245	<8	#			
o-Xylene	<3 µg/l	TM245	<3	#			
Sum of detected Xylenes	<11 µg/l	TM245	<11				
Sum of detected BTEX	<28 µg/l	TM245	<28				
Aliphatics >C5-C6	<10 µg/l	TM245	<10				
Aliphatics >C6-C8	<10 µg/l	TM245	<10				
Aliphatics >C8-C10	<10 µg/l	TM245	<10				
Aliphatics >C10-C12	<10 µg/l	TM245	<10				
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10				
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10				
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10				
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10				
Aromatics >EC5-EC7	<10 µg/l	TM245	<10				
Aromatics >EC7-EC8	<10 µg/l	TM245	<10				
Aromatics >EC8-EC10	<10 µg/l	TM245	<10				
Aromatics >EC10-EC12	<10 µg/l	TM245	<10				
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10				
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10				
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	14				
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	14				
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	14				



**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters		
TM231	Agilent 6890 Gas Chromatograph system using an Agilent 5973 Mass Selective Detector (MSD)	Determination of Organochlorine and Organophosphorus Pesticides and Triazine Herbicides by GCMS		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC		

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



**SDG:** 140606-106  
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**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

### Test Completion Dates

Lab Sample No(s)	9403160	9403158	9403159	9403146	9403153	9403346	9403348	9403342	9403161	9403163
Customer Sample Ref.	CG BH03	CG BH09	CG BH10	CG BH11	CG BH12	CG BH13	CG BH14	CG BH16	CG BH18	CG BH19
AGS Ref.										
Depth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	10-Jun-2014	09-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014
Dissolved Metals by ICP-MS	11-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014
Dissolved Organic/Inorganic Carbon	09-Jun-2014	09-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014	09-Jun-2014	09-Jun-2014
EPH CWG (Aliphatic) Aqueous GC (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014
EPH CWG (Aromatic) Aqueous GC (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014
GRO by GC-FID (W)	15-Jun-2014	16-Jun-2014	16-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	16-Jun-2014	17-Jun-2014	17-Jun-2014
Mercury Dissolved	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014	10-Jun-2014
OC, OP Pesticides and Triazine Herb	16-Jun-2014	12-Jun-2014	12-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	12-Jun-2014	12-Jun-2014	16-Jun-2014
PAH Spec MS - Aqueous (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014
PCB Congeners - Aqueous (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014
pH Value	12-Jun-2014	12-Jun-2014		11-Jun-2014			11-Jun-2014			12-Jun-2014
Phenols by HPLC (W)	12-Jun-2014	11-Jun-2014	11-Jun-2014	12-Jun-2014	11-Jun-2014	11-Jun-2014	12-Jun-2014	11-Jun-2014	11-Jun-2014	11-Jun-2014
SVOC MS (W) - Aqueous	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014	16-Jun-2014
TPH CWG (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014	17-Jun-2014

Lab Sample No(s)	9403343	9403341	9403164
Customer Sample Ref.	CG BH20	CG BH21	CG BH22
AGS Ref.			
Depth	0.00	0.00	0.00
Type	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	10-Jun-2014	10-Jun-2014	10-Jun-2014
Dissolved Metals by ICP-MS	11-Jun-2014	12-Jun-2014	11-Jun-2014
Dissolved Organic/Inorganic Carbon	11-Jun-2014	13-Jun-2014	09-Jun-2014
EPH CWG (Aliphatic) Aqueous GC (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014
EPH CWG (Aromatic) Aqueous GC (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014
GRO by GC-FID (W)	17-Jun-2014	16-Jun-2014	15-Jun-2014
Mercury Dissolved	10-Jun-2014	10-Jun-2014	10-Jun-2014
OC, OP Pesticides and Triazine Herb	16-Jun-2014	12-Jun-2014	12-Jun-2014
PAH Spec MS - Aqueous (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014
PCB Congeners - Aqueous (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014
pH Value	11-Jun-2014	12-Jun-2014	
Phenols by HPLC (W)	12-Jun-2014	12-Jun-2014	12-Jun-2014
SVOC MS (W) - Aqueous	16-Jun-2014	16-Jun-2014	16-Jun-2014
TPH CWG (W)	17-Jun-2014	17-Jun-2014	17-Jun-2014





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

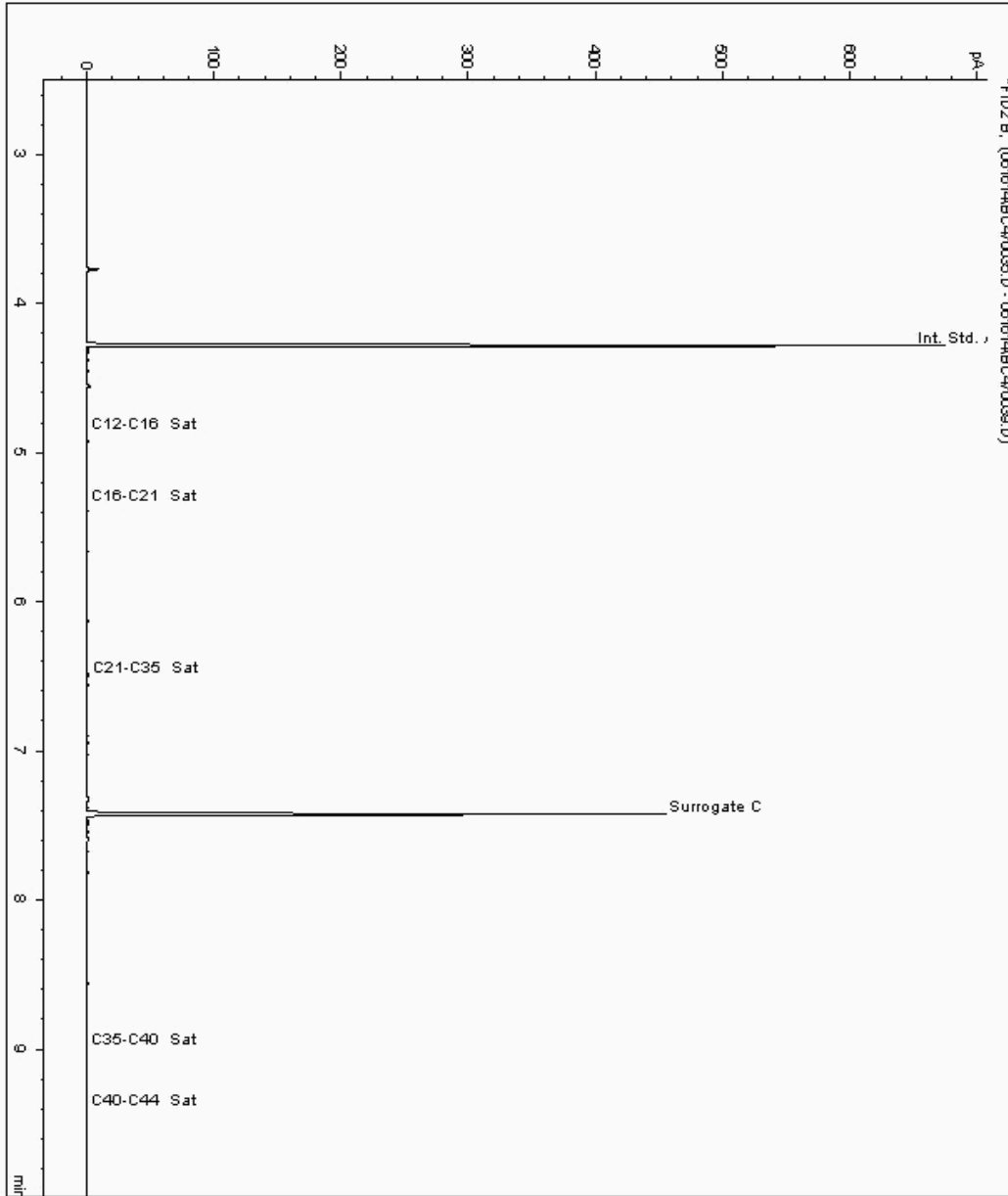
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9405516  
Sample ID : CG BH16

Depth : 0.00

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

Sample Identity: 8933222-9405516  
Date Acquired : 17/06/14 02:34:13 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

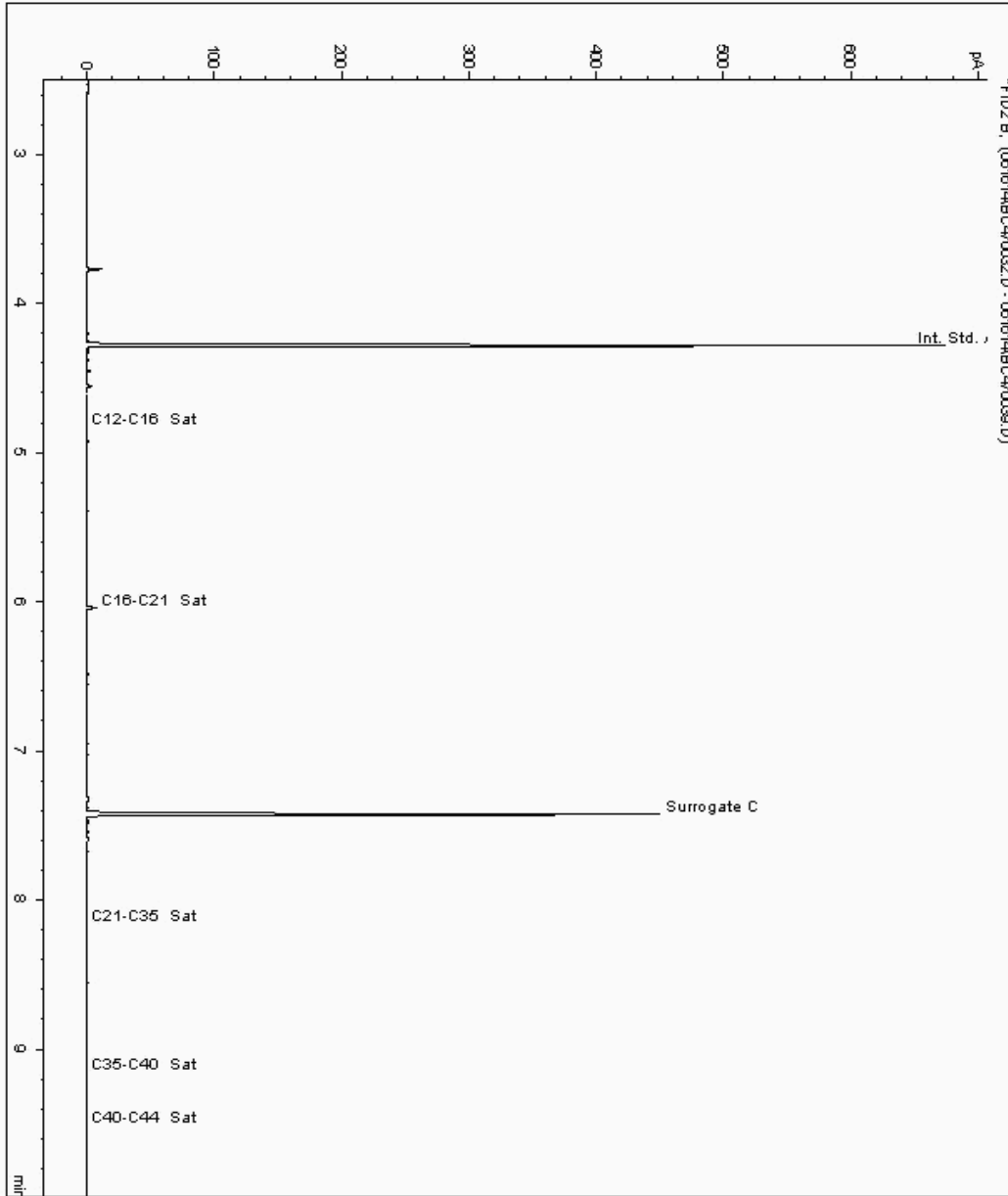
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9405529  
Sample ID : CG BH21

Depth : 0.00

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

Sample Identity: 8933200-9405529  
Date Acquired : 17/06/14 01:36:27 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.009





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

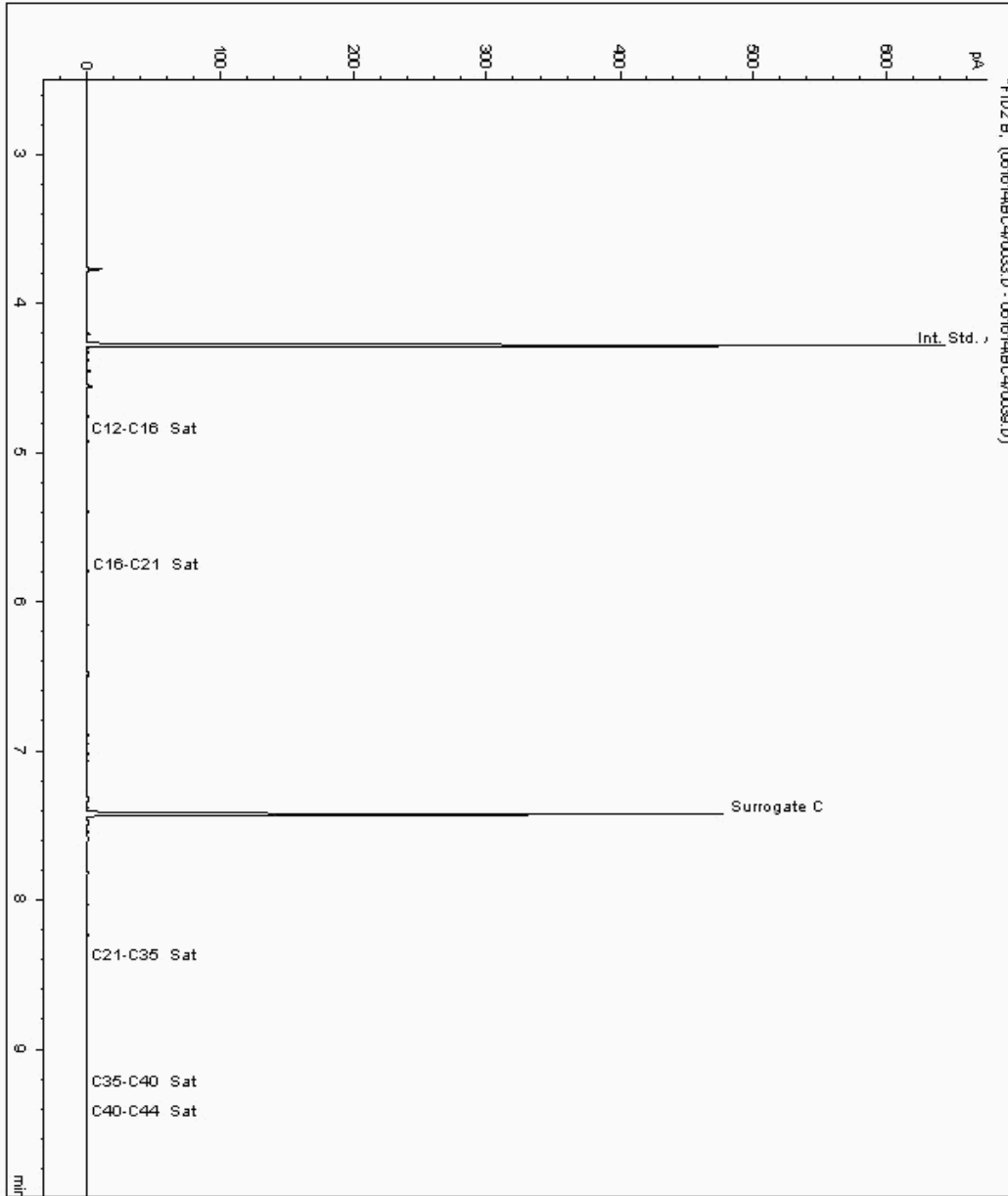
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9405546  
Sample ID : CG BH22

Depth : 0.00

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

Sample Identity: 8933185-9405546  
Date Acquired : 17/06/14 01:55:52 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

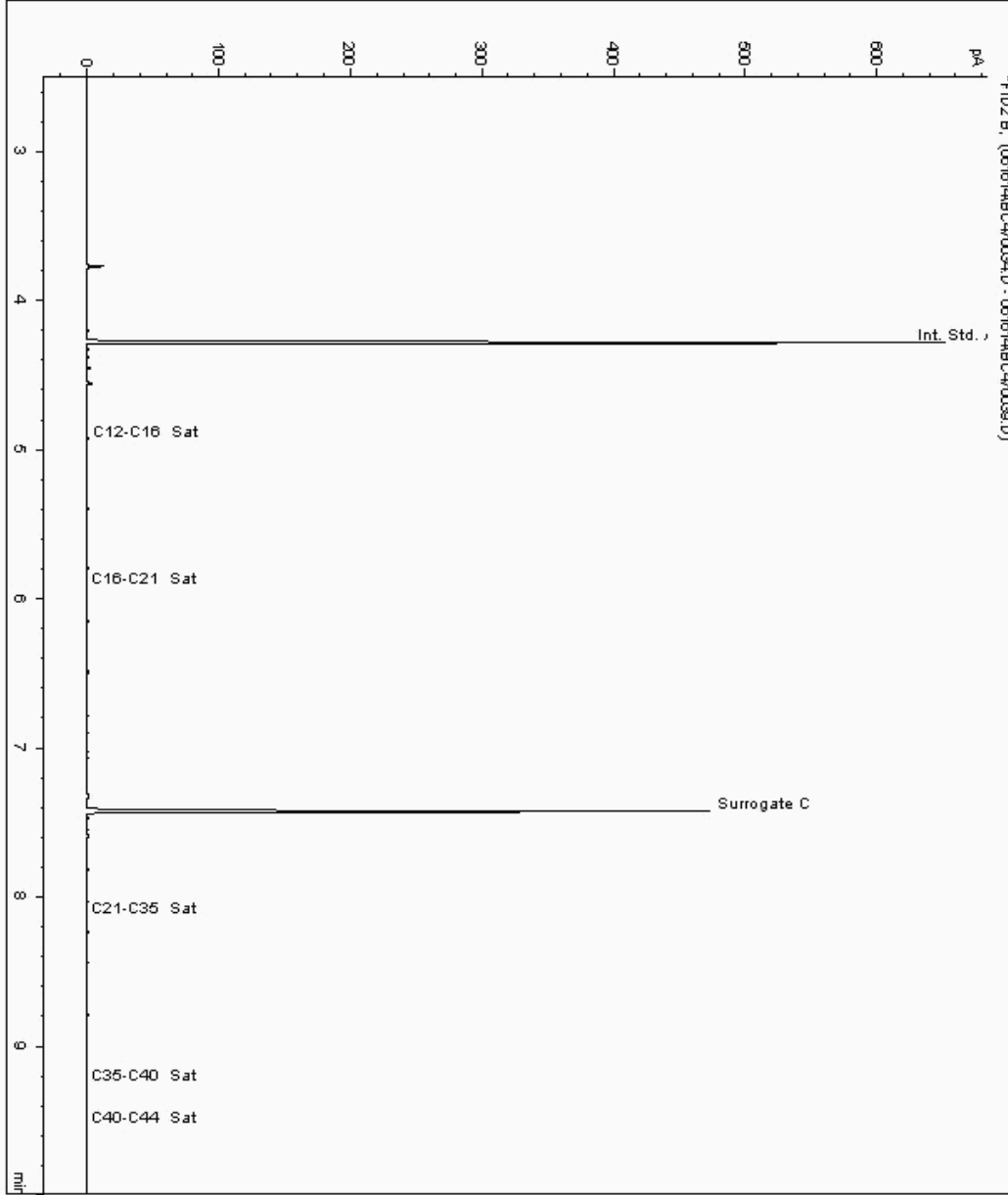
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9405560  
Sample ID : CG BH19

Depth : 0.00

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

Sample Identity: 8933167-9405560  
Date Acquired : 17/06/14 02:15:02 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

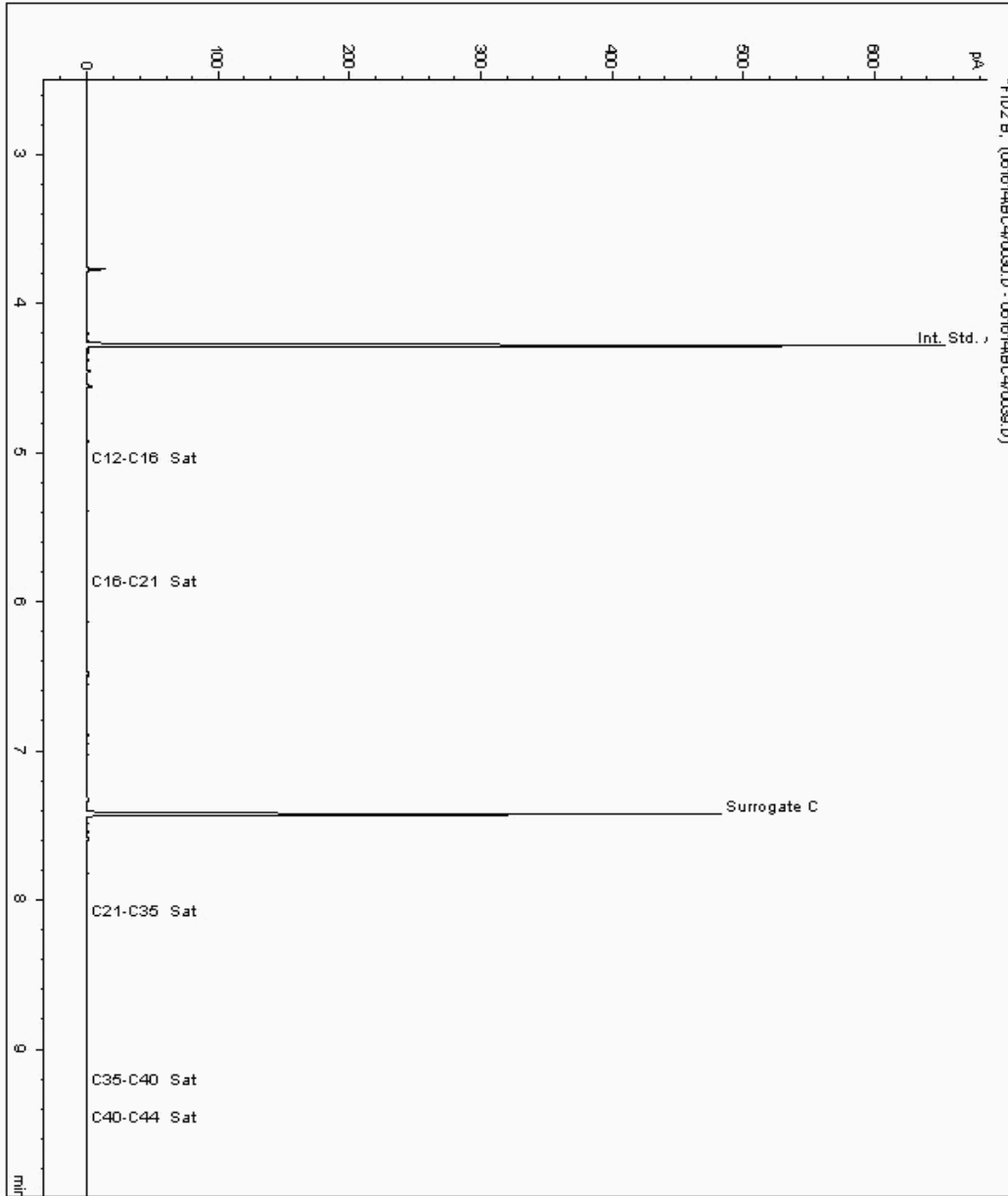
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9406586  
Sample ID : CG BH03

Depth : 0.00

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

Sample Identity: 8933131-9406586  
Date Acquired : 17/06/14 00:58:04 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

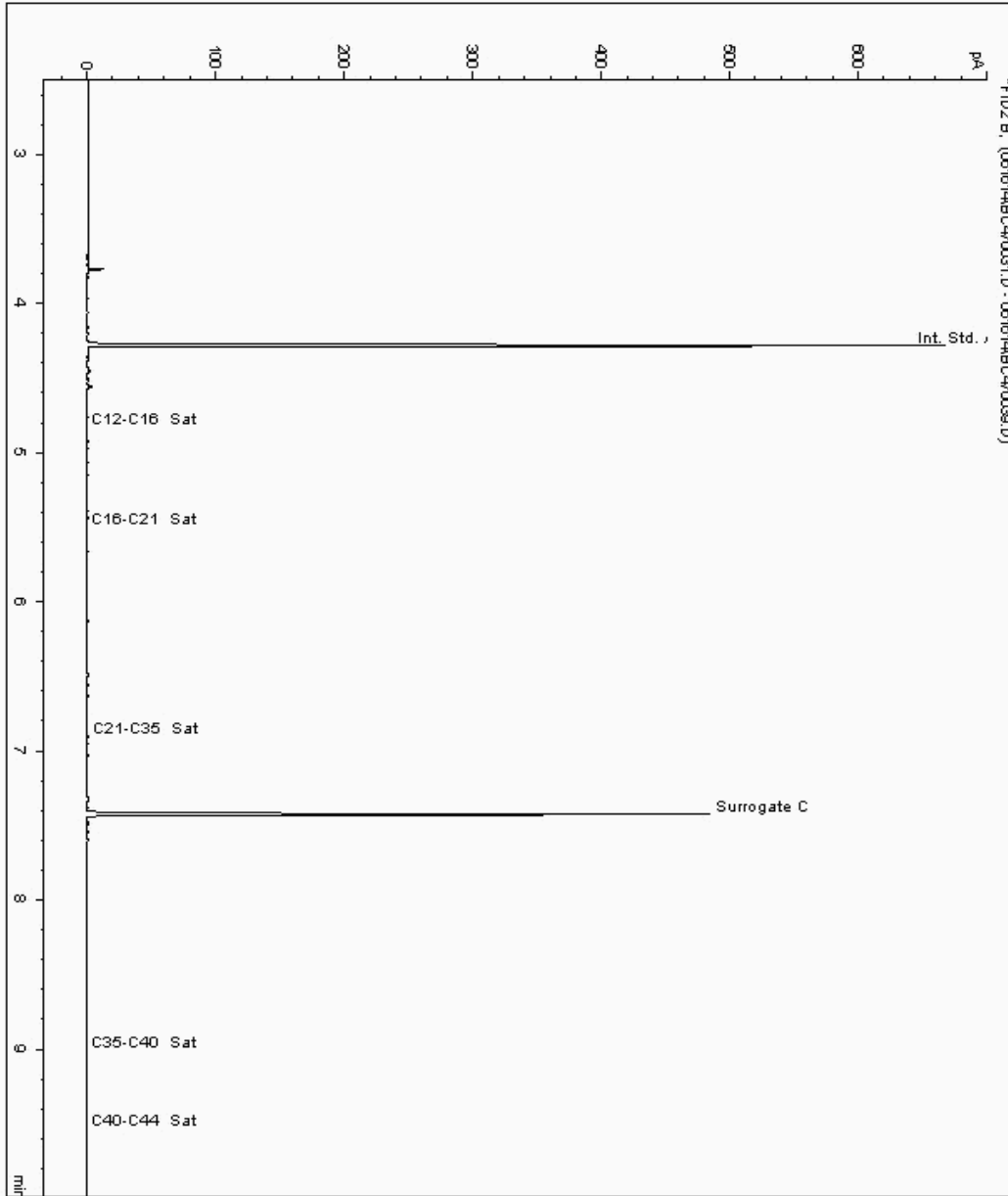
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9406692  
Sample ID : CG BH10

Depth : 0.00

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

Sample Identity: 8933104-9406692  
Date Acquired : 17/06/14 01:17:15 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

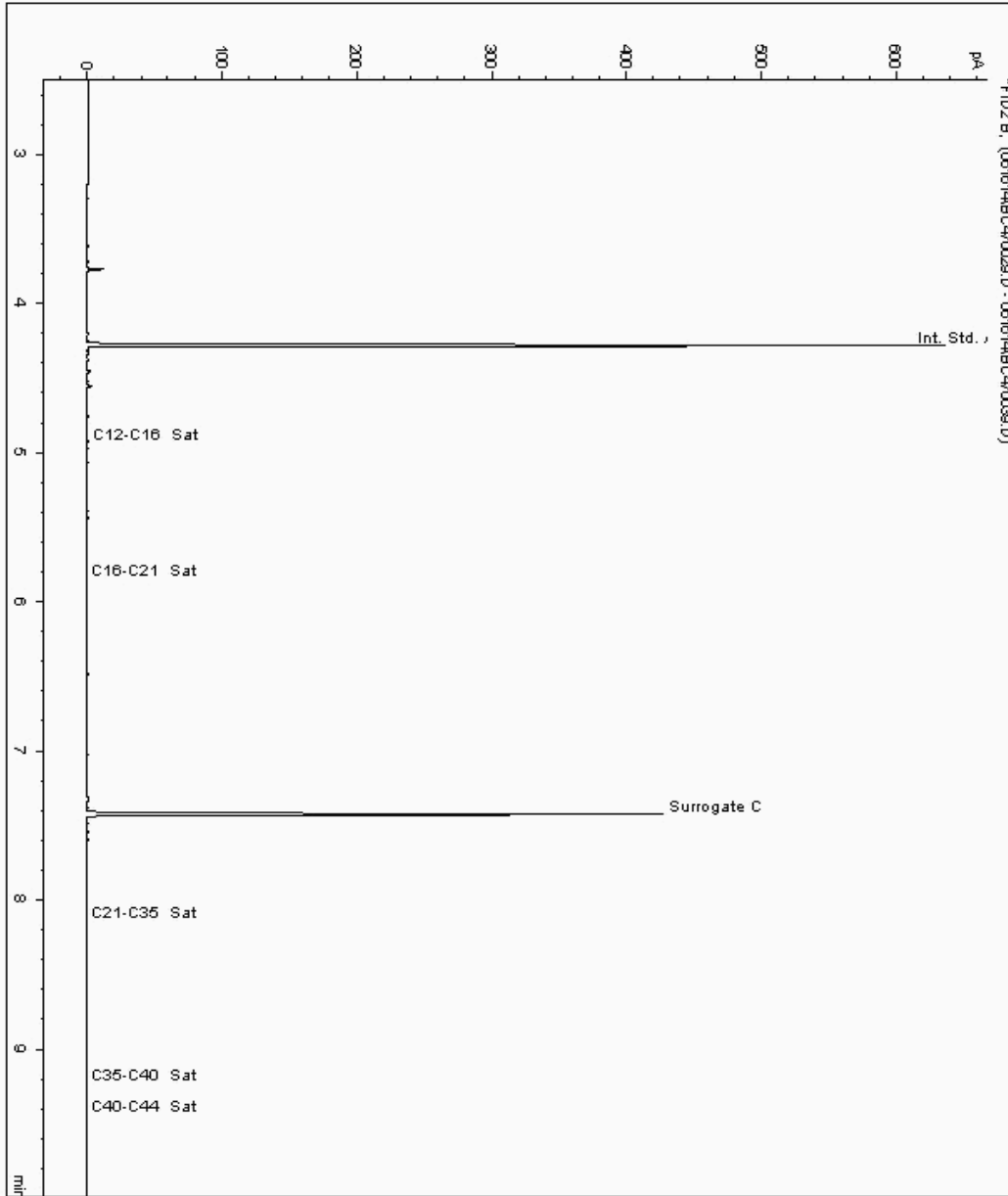
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9406754  
Sample ID : CG BH18

Depth : 0.00

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

Sample Identity: 8933152-9406754  
Date Acquired : 17/06/14 00:38:53 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.009





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

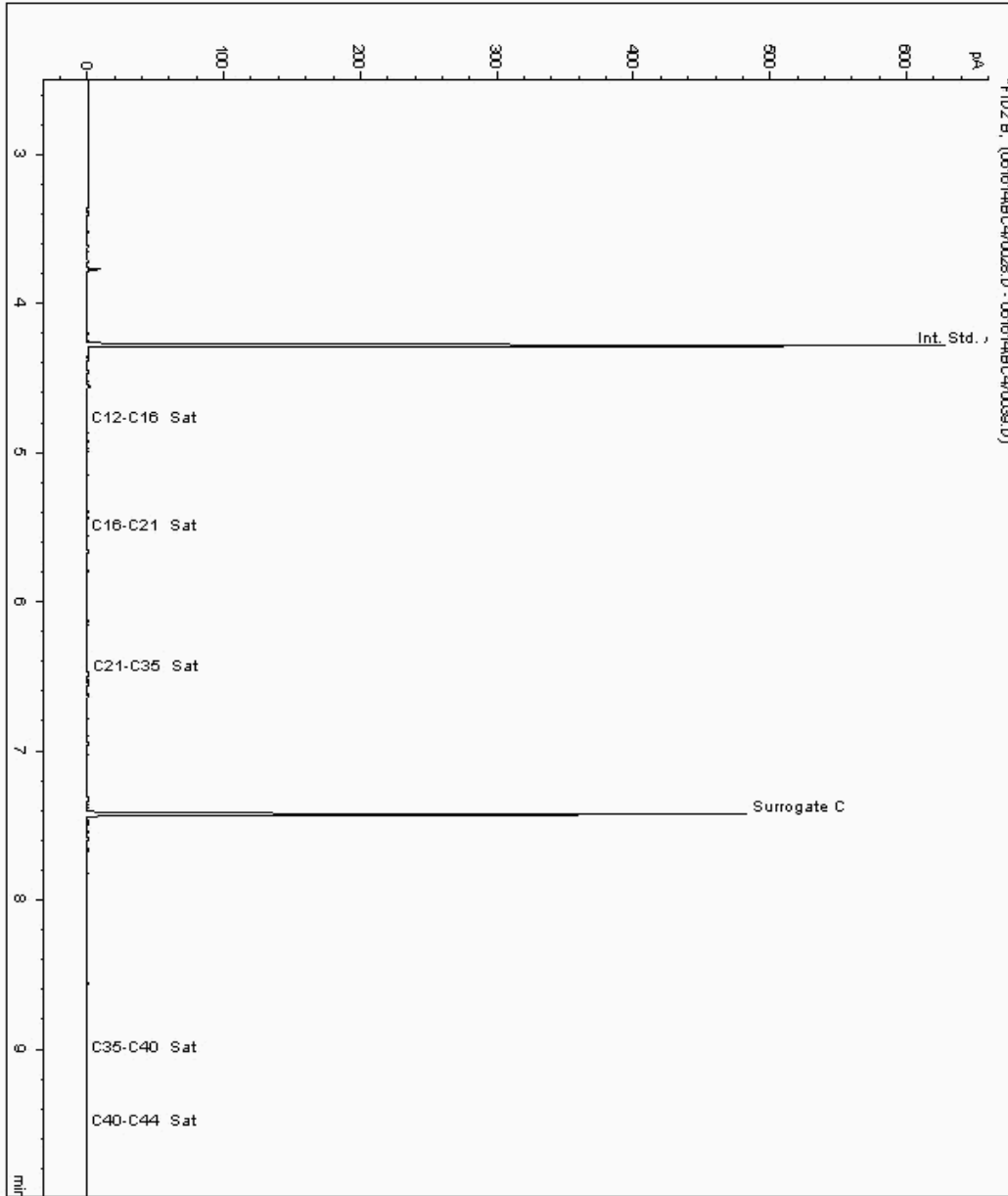
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9406969  
Sample ID : CG BH09

Depth : 0.00

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

Sample Identity: 8933075-9406969  
Date Acquired : 17/06/14 00:19:44 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008







SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

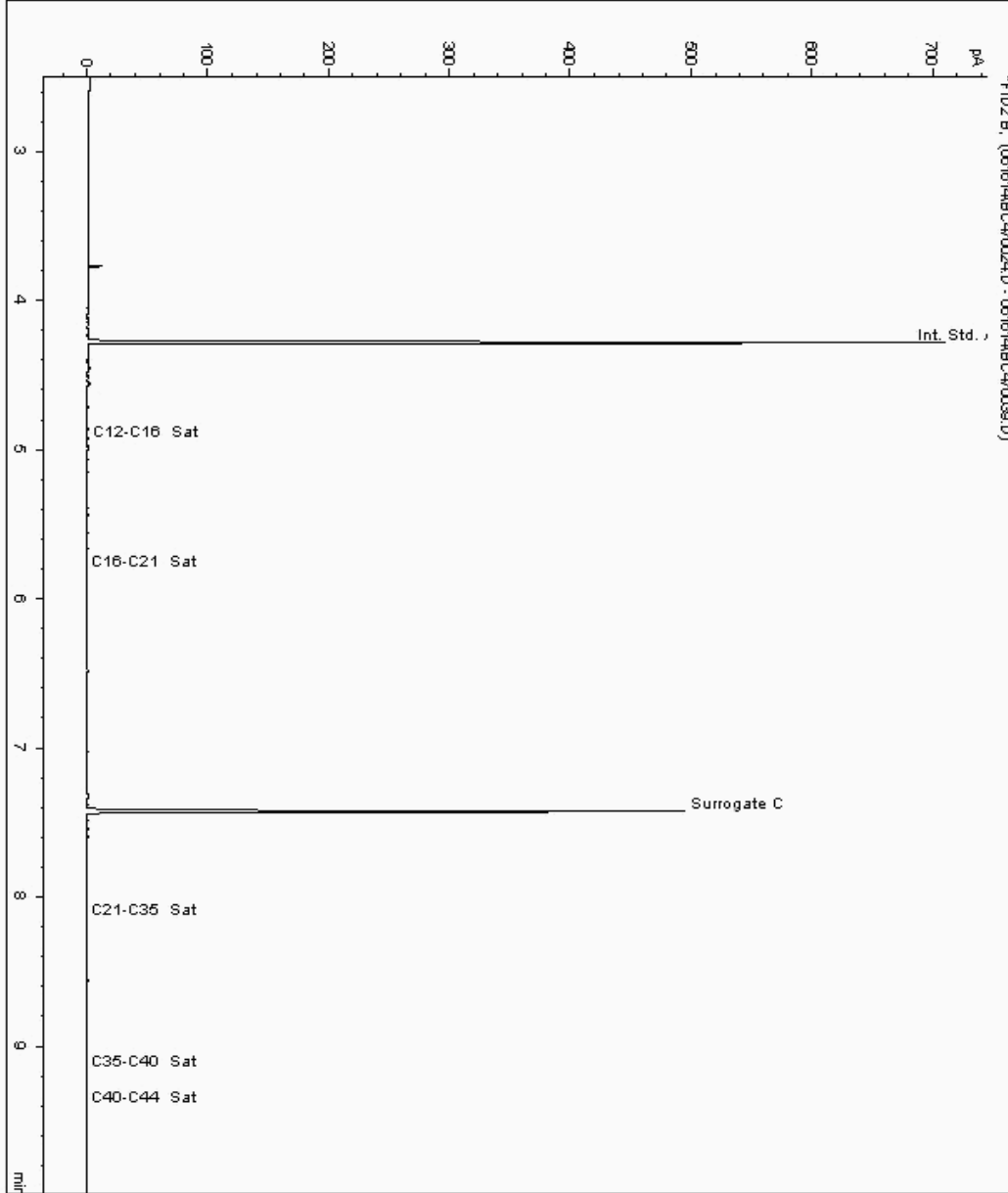
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9410807  
Sample ID : CG BH12

Depth : 0.00

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

Sample Identity: 8933057-9410807  
Date Acquired : 16/06/14 23:02:52 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

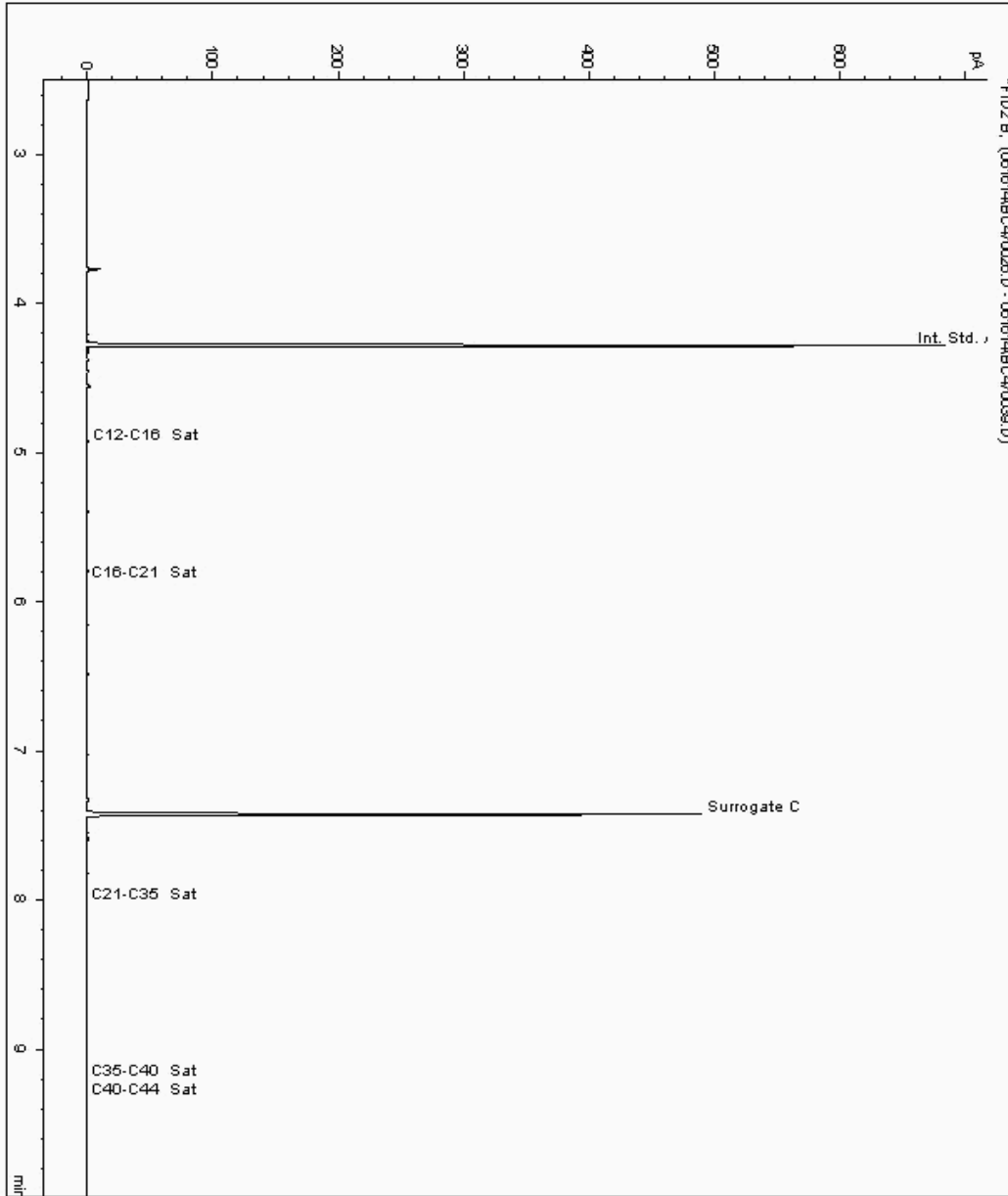
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9410840  
Sample ID : CG BH11

Depth : 0.00

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

Sample Identity: 8933043-9410840  
Date Acquired : 16/06/14 23:41:25 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

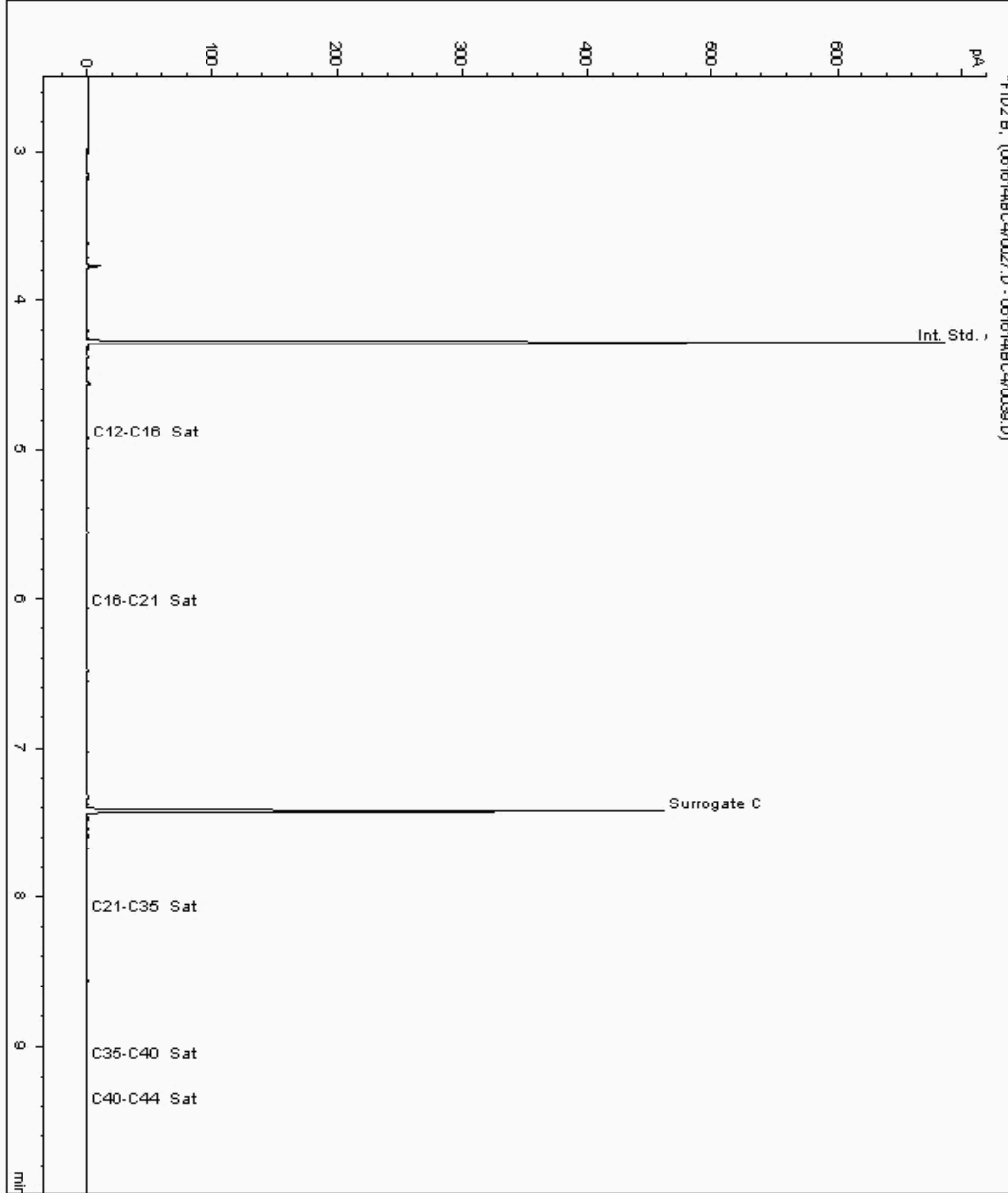
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9410930  
Sample ID : CG BH14

Depth : 0.00

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

Sample Identity: 8933270-9410930  
Date Acquired : 17/06/14 00:00:34 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

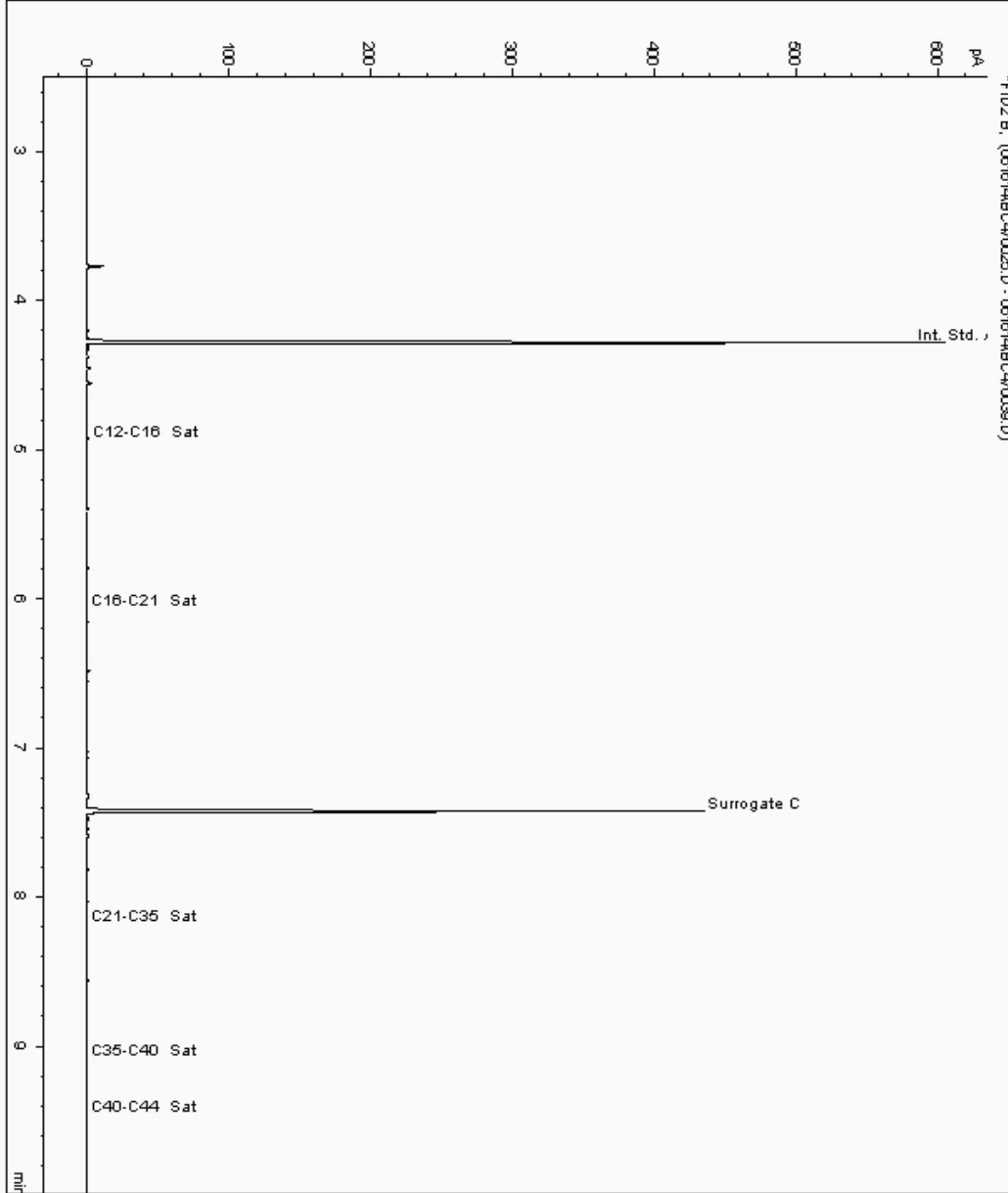
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9410944  
Sample ID : CG BH13

Depth : 0.00

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

Sample Identity: 8933252-9410944  
Date Acquired : 16/06/14 23:22:01 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

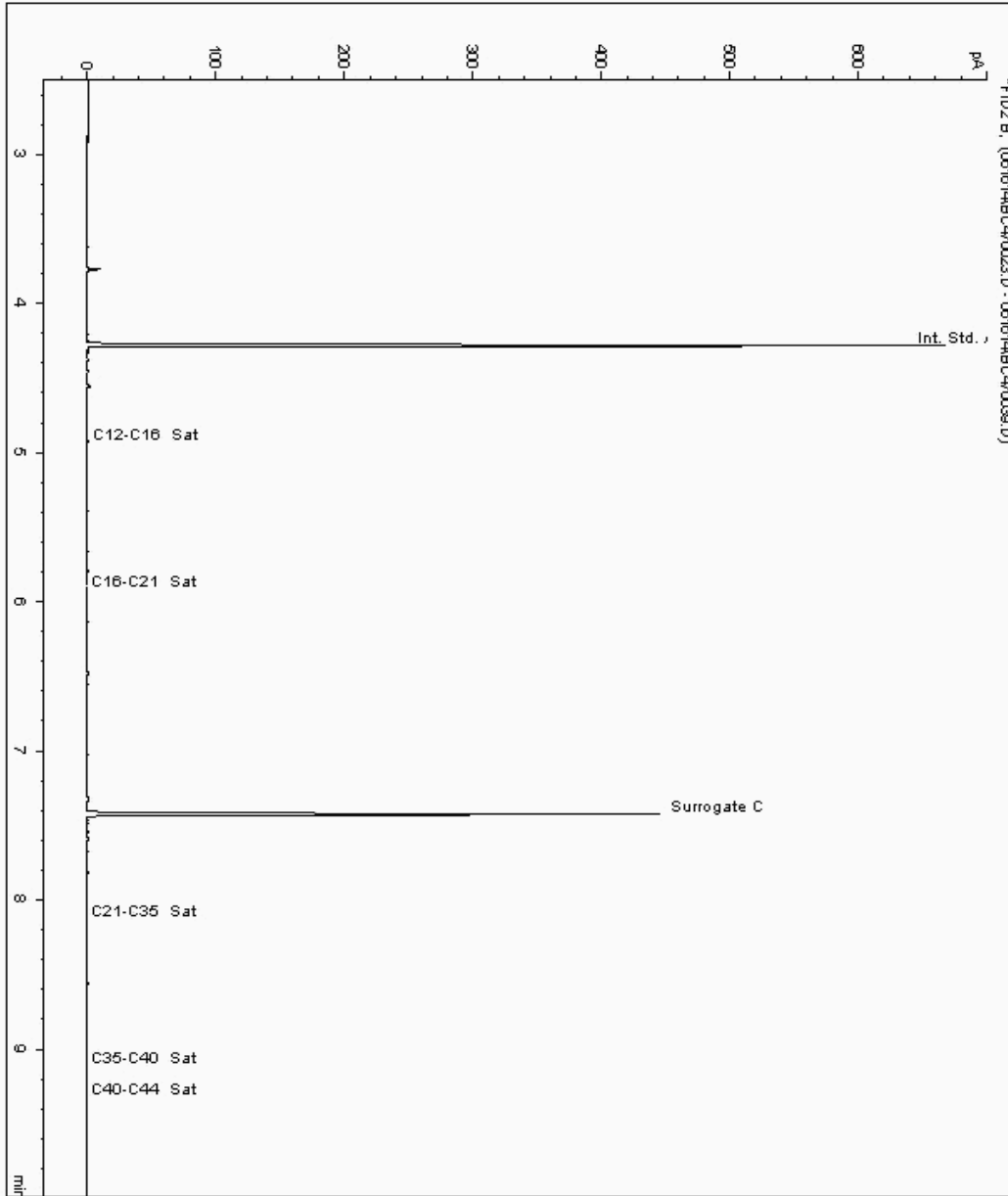
Analysis: EPH CWG (Aliphatic) Aqueous GC (W)

Sample No : 9411068  
Sample ID : CG BH20

Depth : 0.00

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

Sample Identity: 8933238-9411068  
Date Acquired : 16/06/14 22:43:44 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.008





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

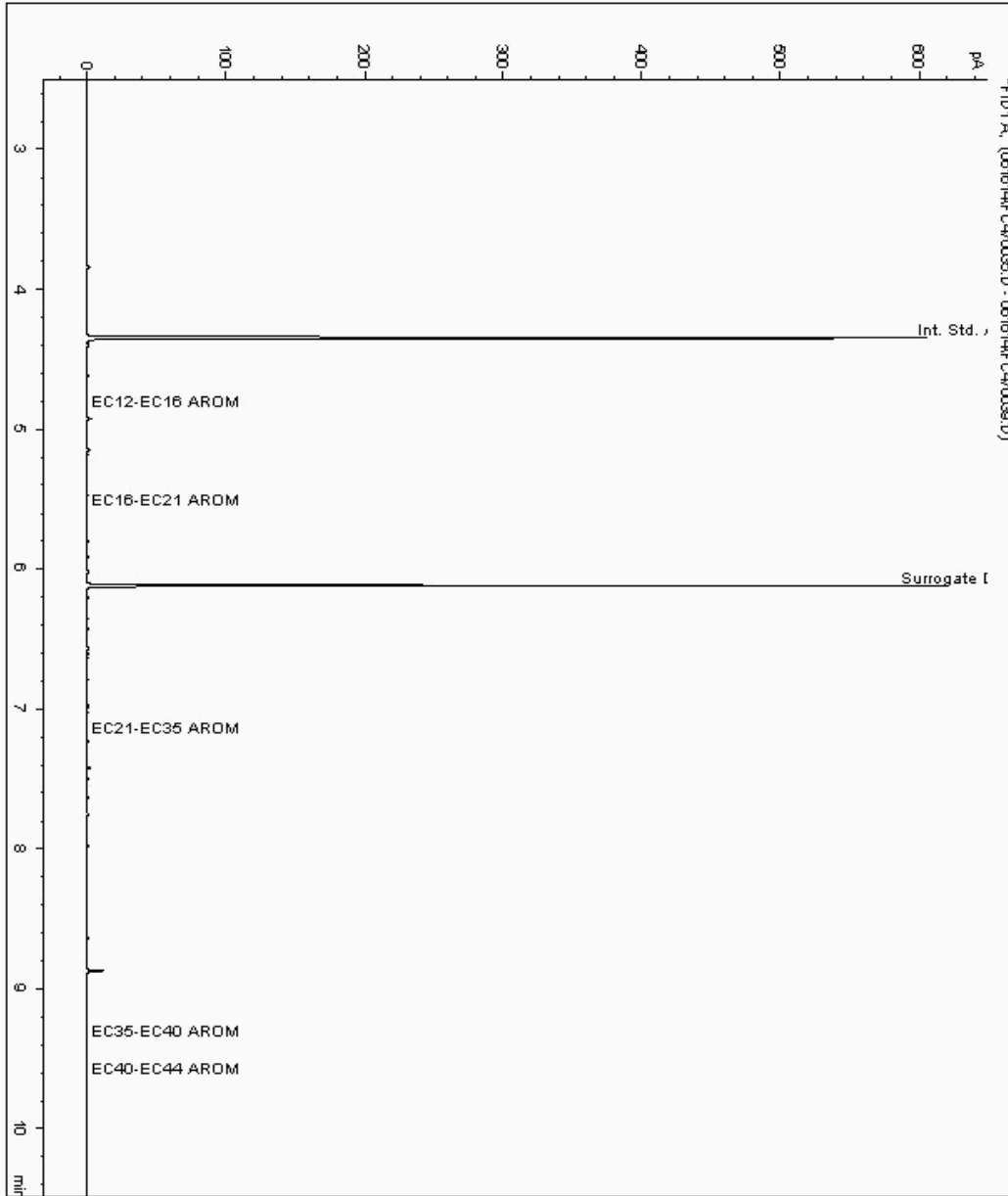
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9405516  
Sample ID : CG BH16

Depth : 0.00

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

Sample Identity: 8933223-9405516  
Date Acquired : 17/06/14 02:34:13 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

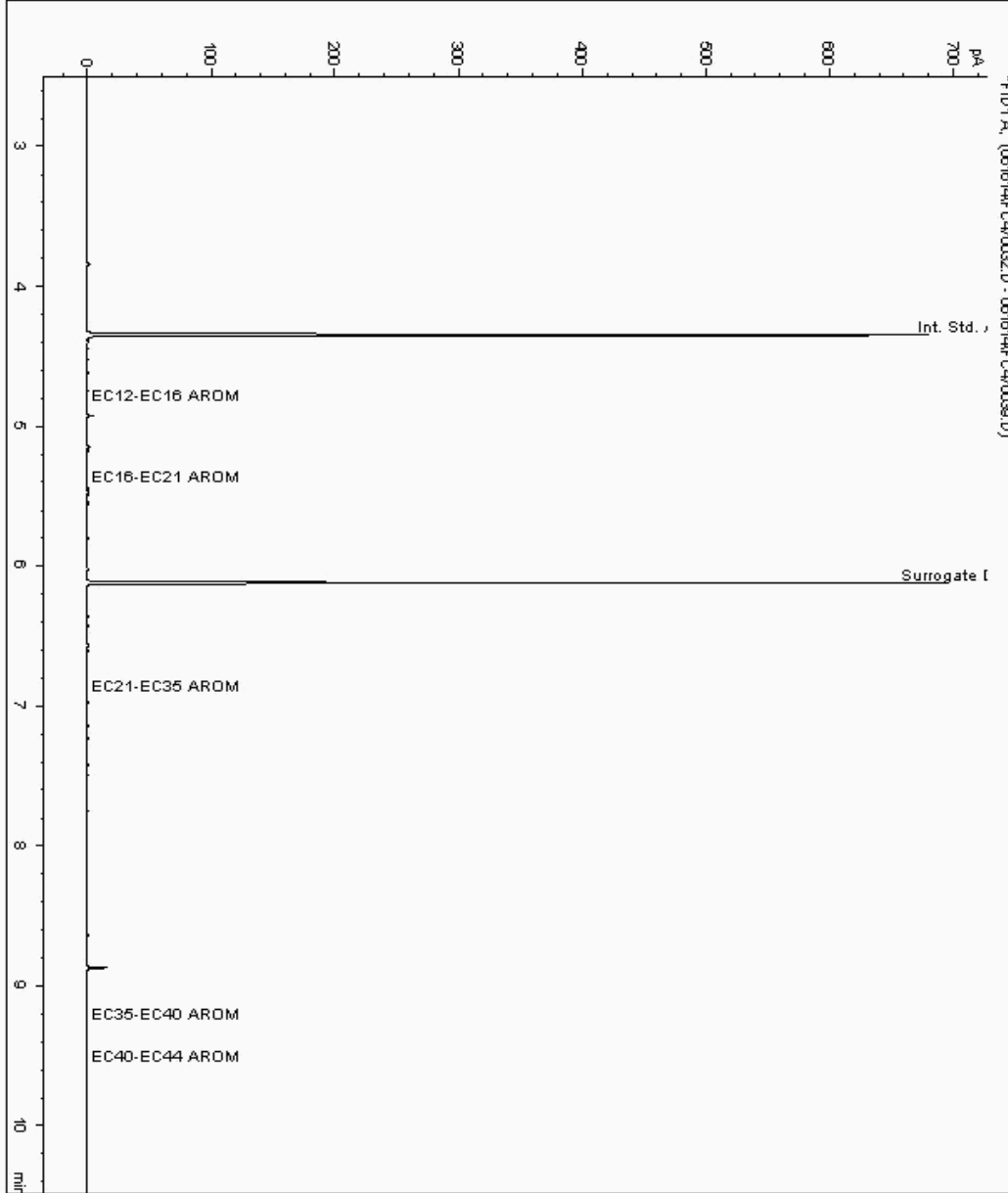
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9405529  
Sample ID : CG BH21

Depth : 0.00

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

Sample Identity: 8933201-9405529  
Date Acquired : 17/06/14 01:36:27 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

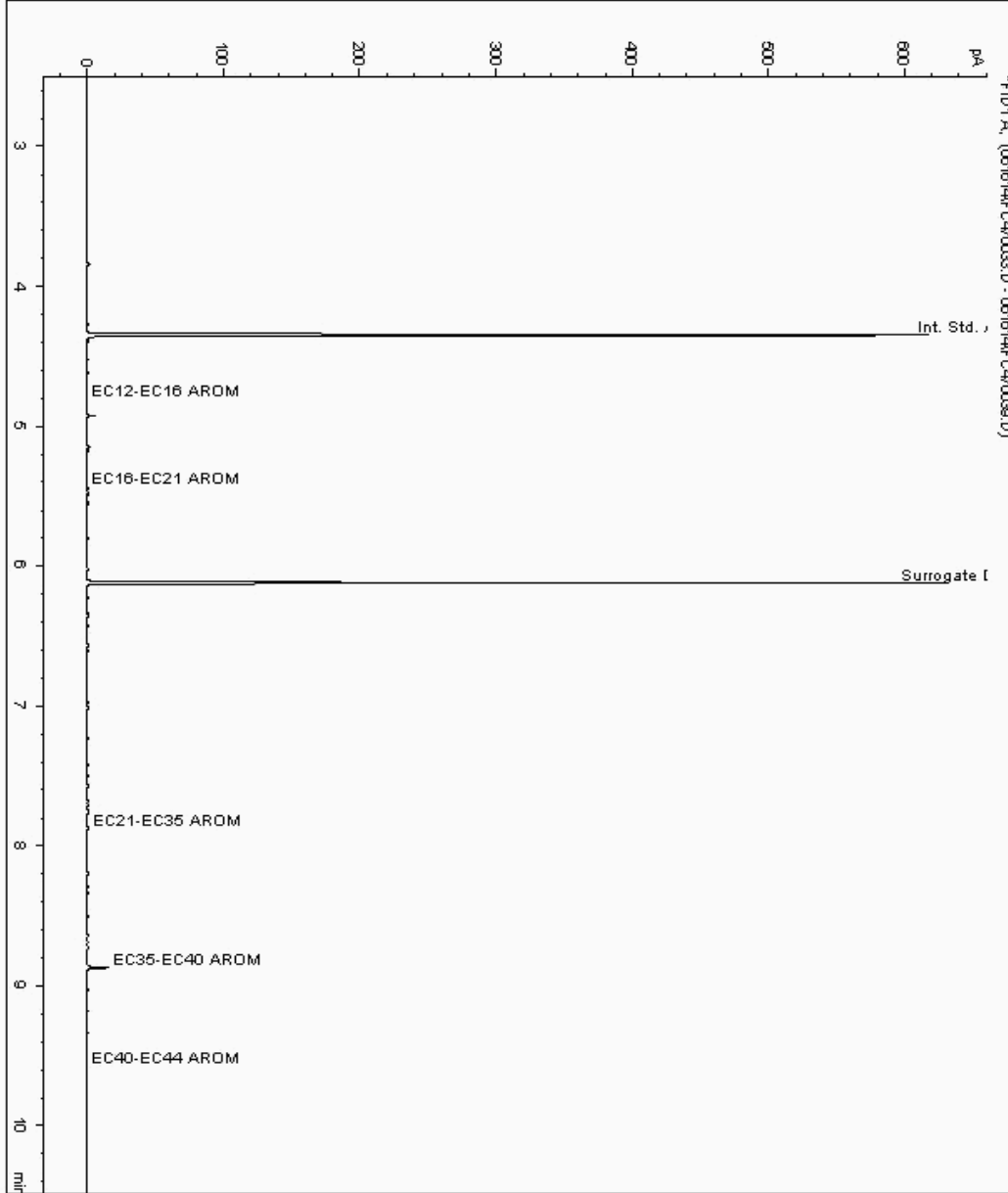
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9405546  
Sample ID : CG BH22

Depth : 0.00

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

Sample Identity: 8933186-9405546  
Date Acquired : 17/06/14 01:55:53 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017







SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

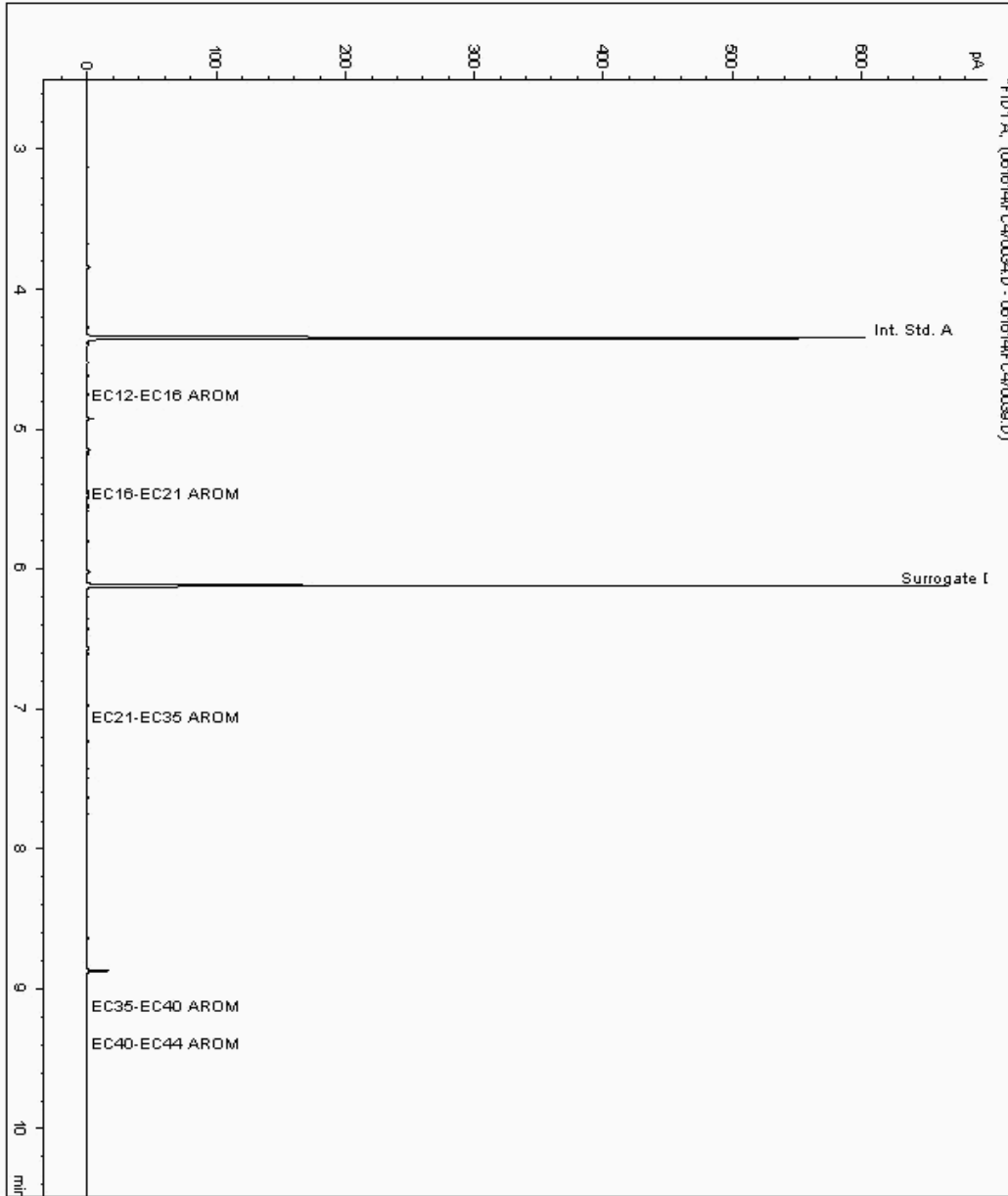
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9405560  
Sample ID : CG BH19

Depth : 0.00

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

Sample Identity: 8933168-9405560  
Date Acquired : 17/06/14 02:15:02 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

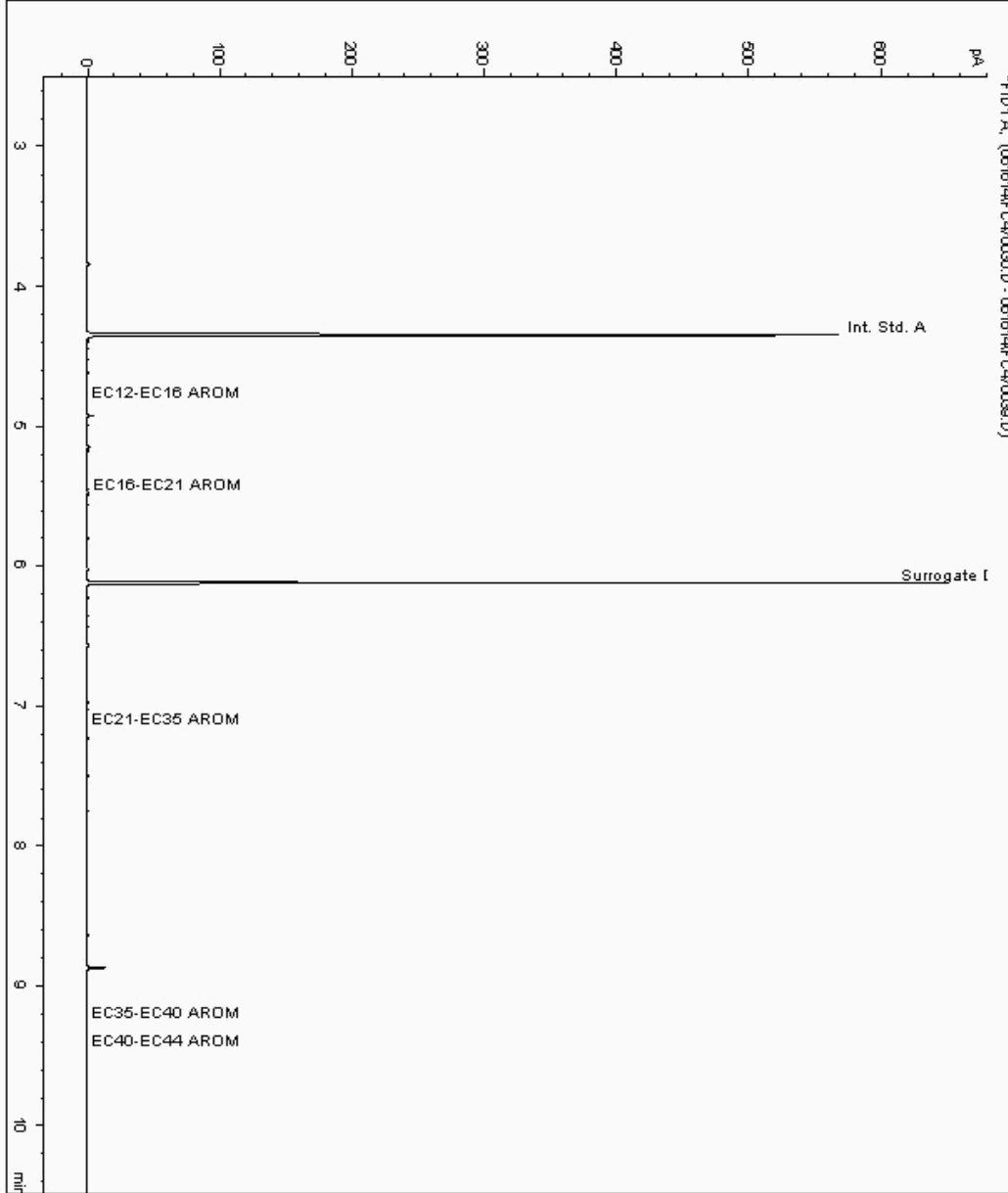
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9406586  
Sample ID : CG BH03

Depth : 0.00

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

Sample Identity: 8933132-9406586  
Date Acquired : 17/06/14 00:58:03 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

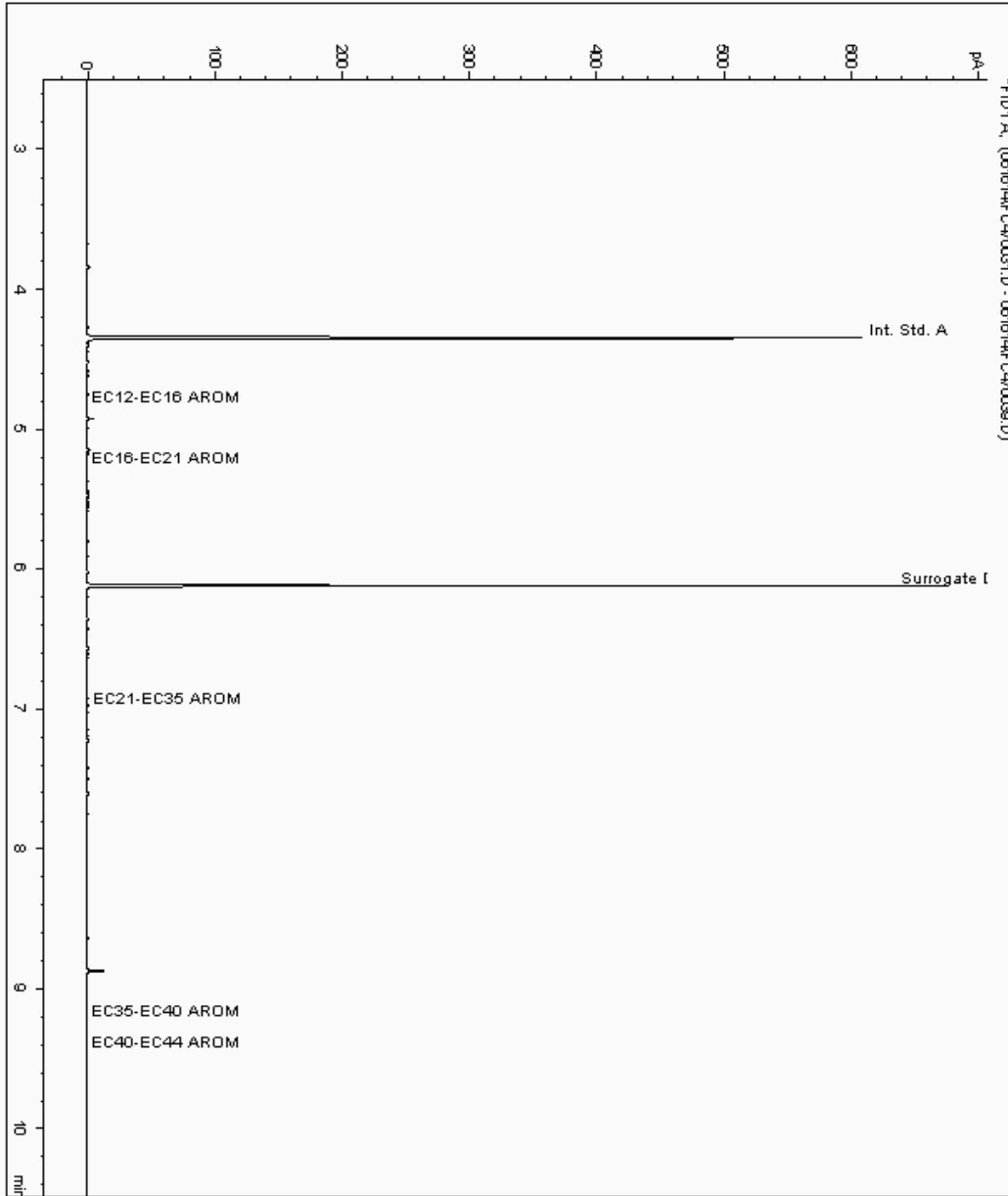
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9406692  
Sample ID : CG BH10

Depth : 0.00

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

Sample Identity: 8933105-9406692  
Date Acquired : 17/06/14 01:17:16 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

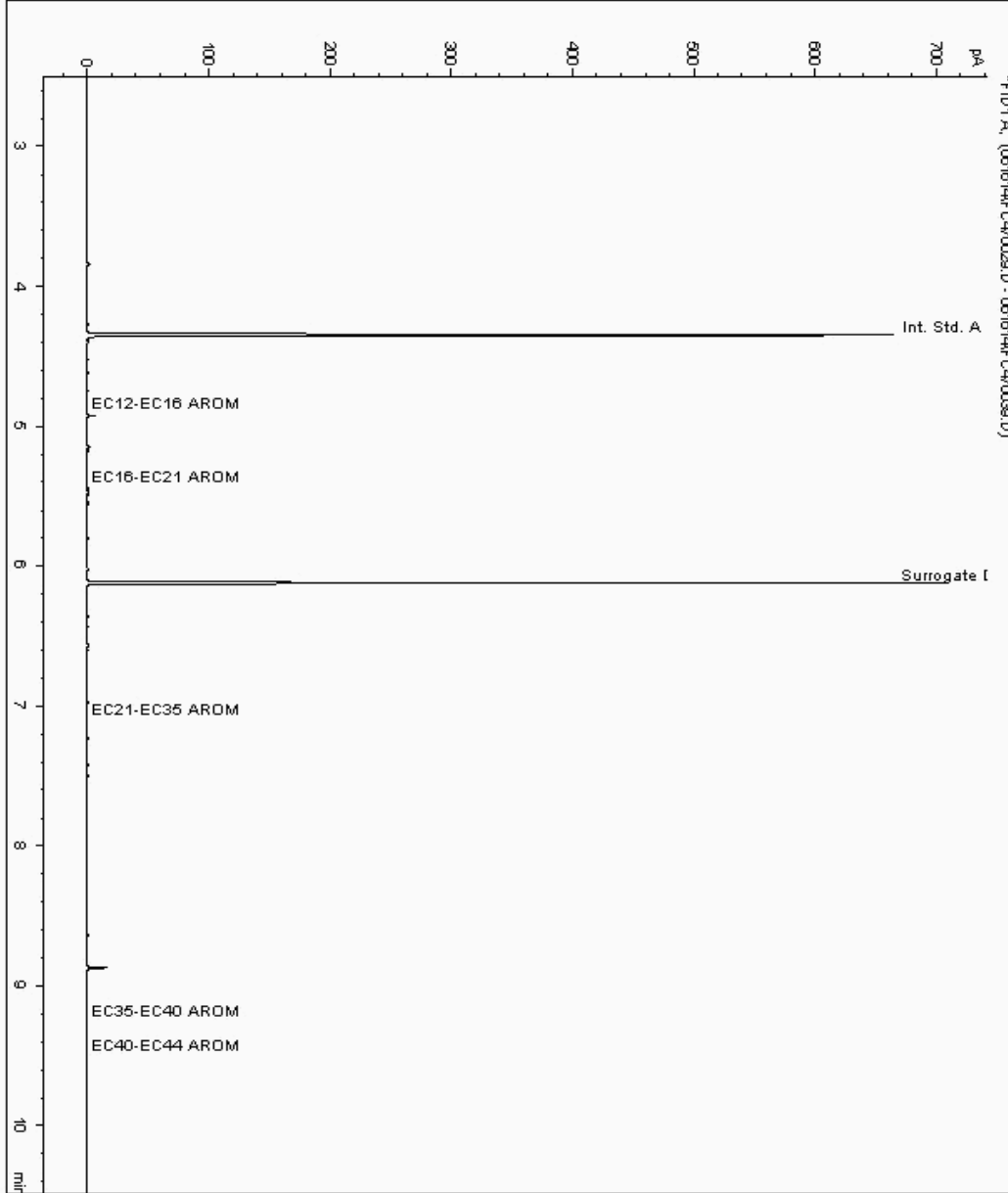
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9406754  
Sample ID : CG BH18

Depth : 0.00

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

Sample Identity: 8933153-9406754  
Date Acquired : 17/06/14 00:38:54 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

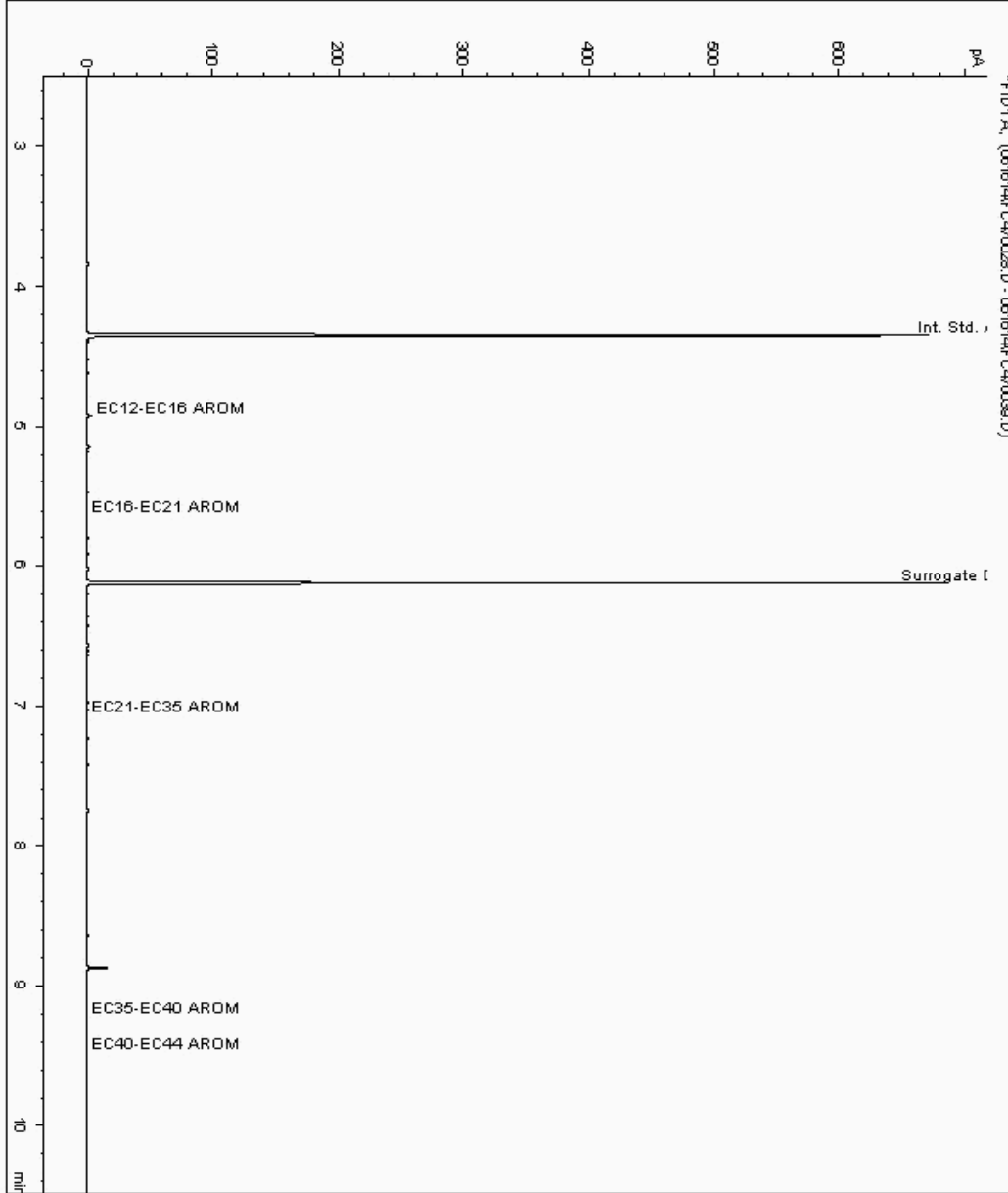
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9406969  
Sample ID : CG BH09

Depth : 0.00

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

Sample Identity: 8933076-9406969  
Date Acquired : 17/06/14 00:19:44 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

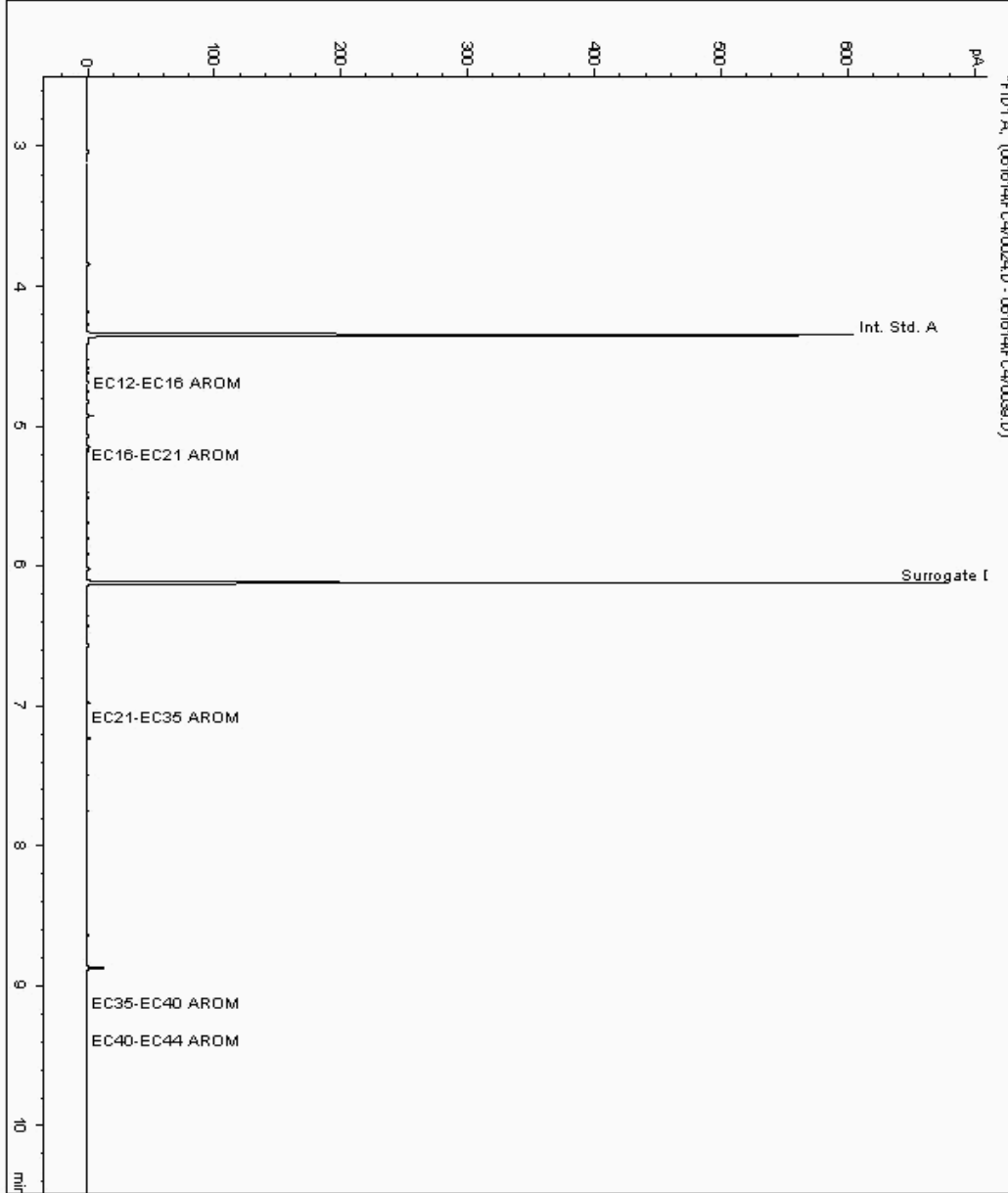
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9410807  
Sample ID : CG BH12

Depth : 0.00

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

Sample Identity: 8933058-9410807  
Date Acquired : 16/06/14 23:02:52 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

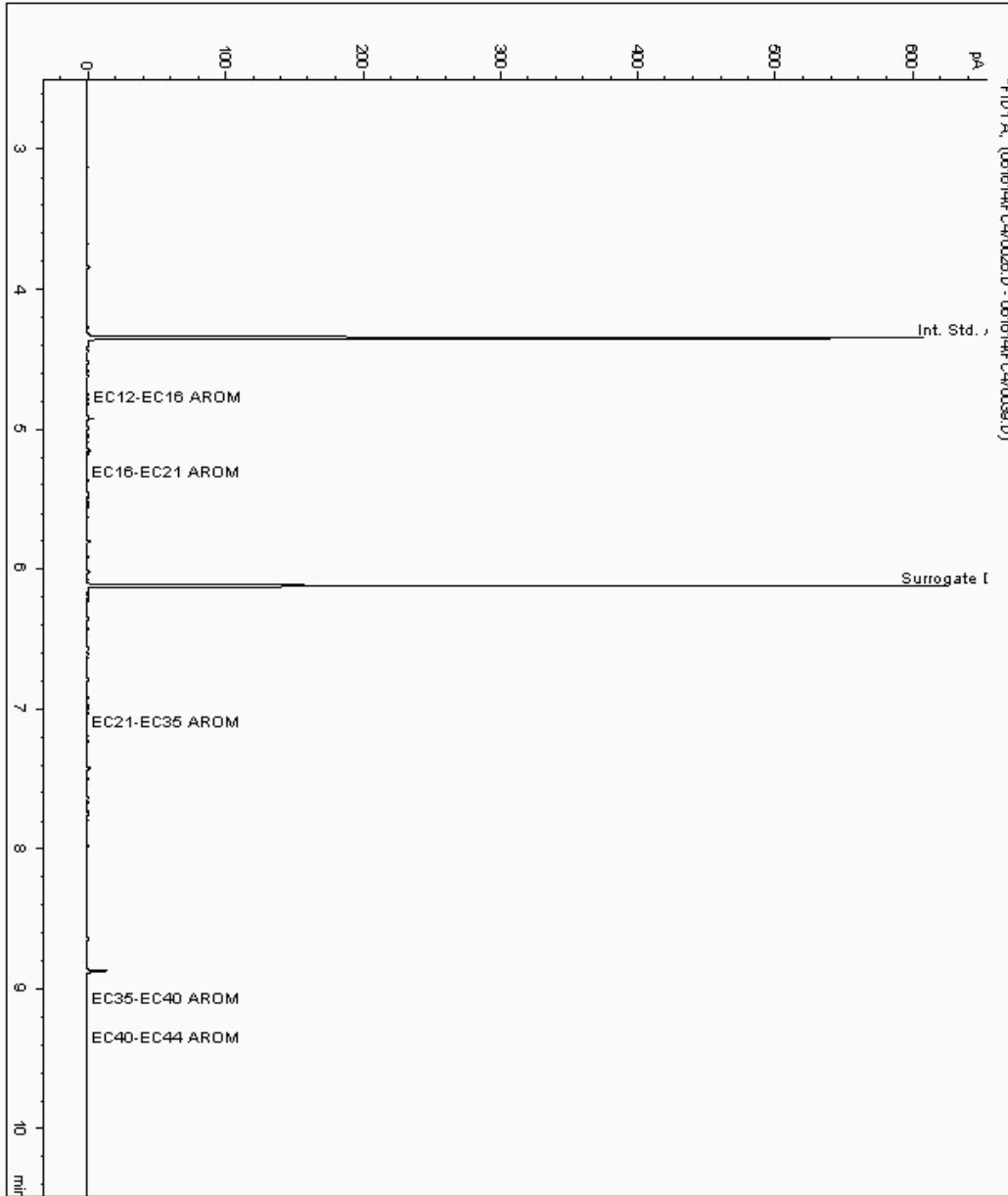
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9410840  
Sample ID : CG BH11

Depth : 0.00

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

Sample Identity: 8933044-9410840  
Date Acquired : 16/06/14 23:41:25 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

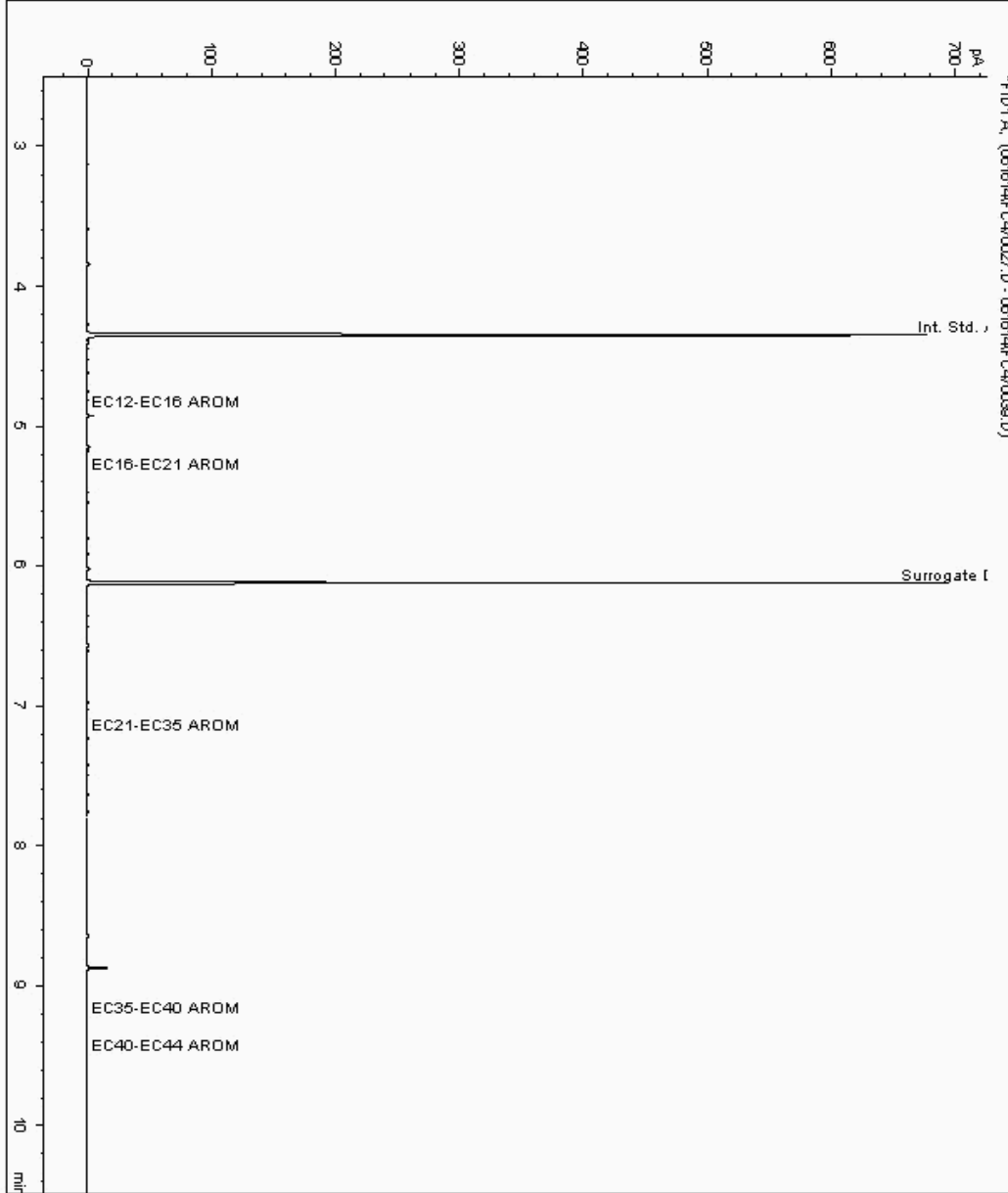
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9410930  
Sample ID : CG BH14

Depth : 0.00

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

Sample Identity: 8933271-9410930  
Date Acquired : 17/06/14 00:00:34 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017







SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

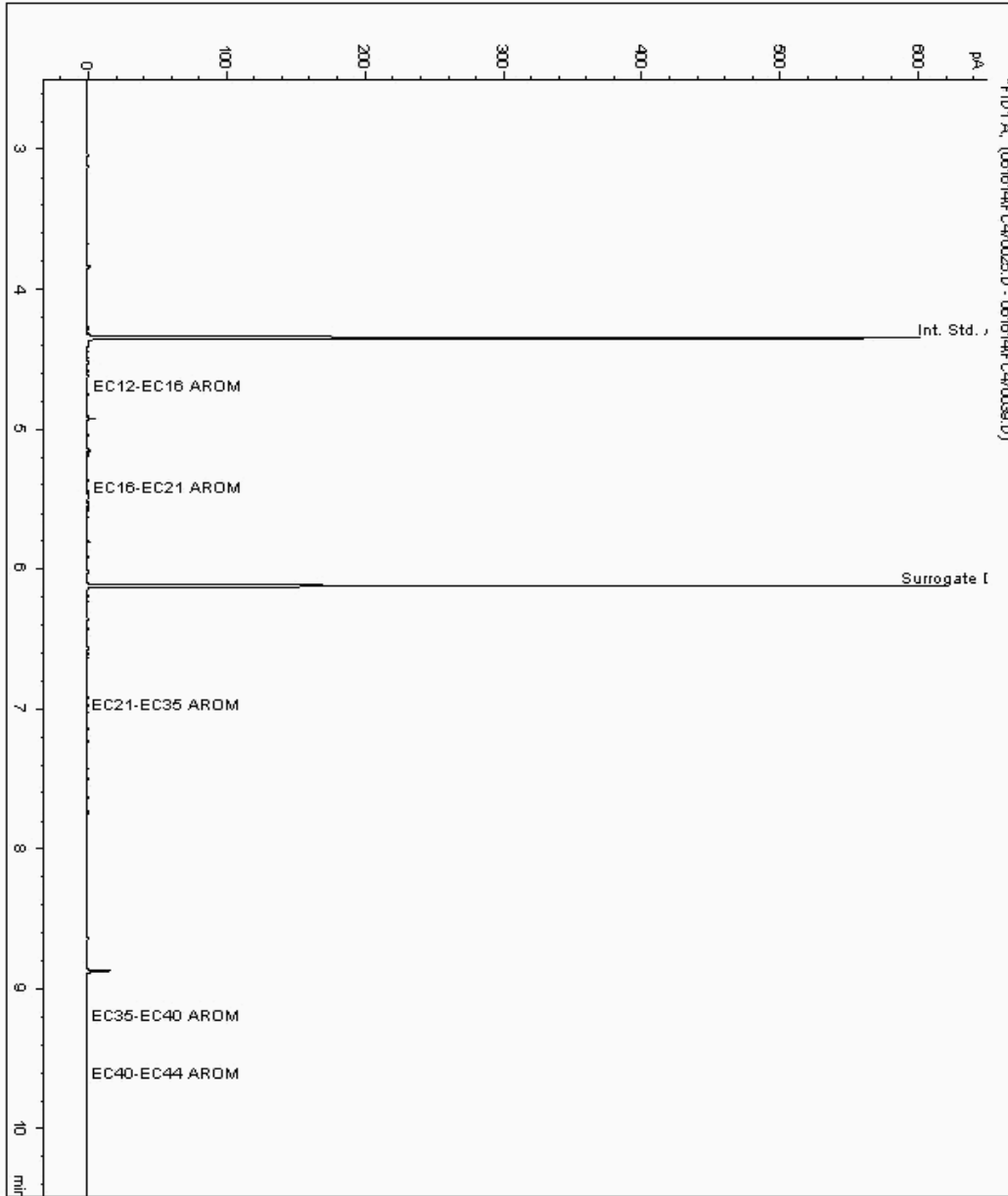
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9410944  
Sample ID : CG BH13

Depth : 0.00

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

Sample Identity: 8933253-9410944  
Date Acquired : 16/06/14 23:22:01 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





SDG: 140606-106  
Job: H\_RHASKON\_PTB-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

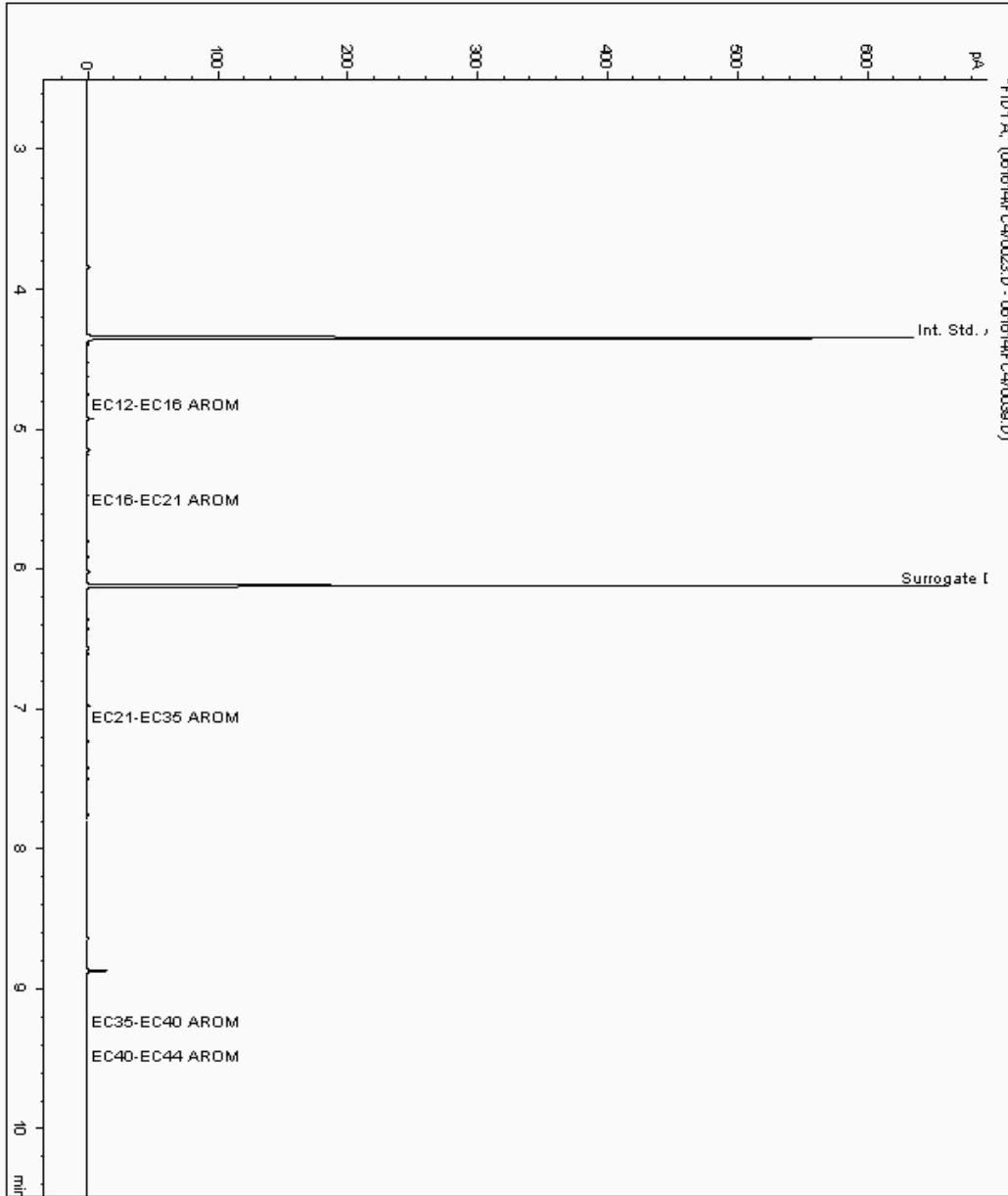
Analysis: EPH CWG (Aromatic) Aqueous GC (W)

Sample No : 9411068  
Sample ID : CG BH20

Depth : 0.00

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

Sample Identity: 8933239-9411068  
Date Acquired : 16/06/14 22:43:44 PM  
Units : ppb  
Dilution :  
CF : 1  
Multiplier : 0.017





**SDG:** 140606-106  
**Job:** H\_RHASKON\_PT8-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

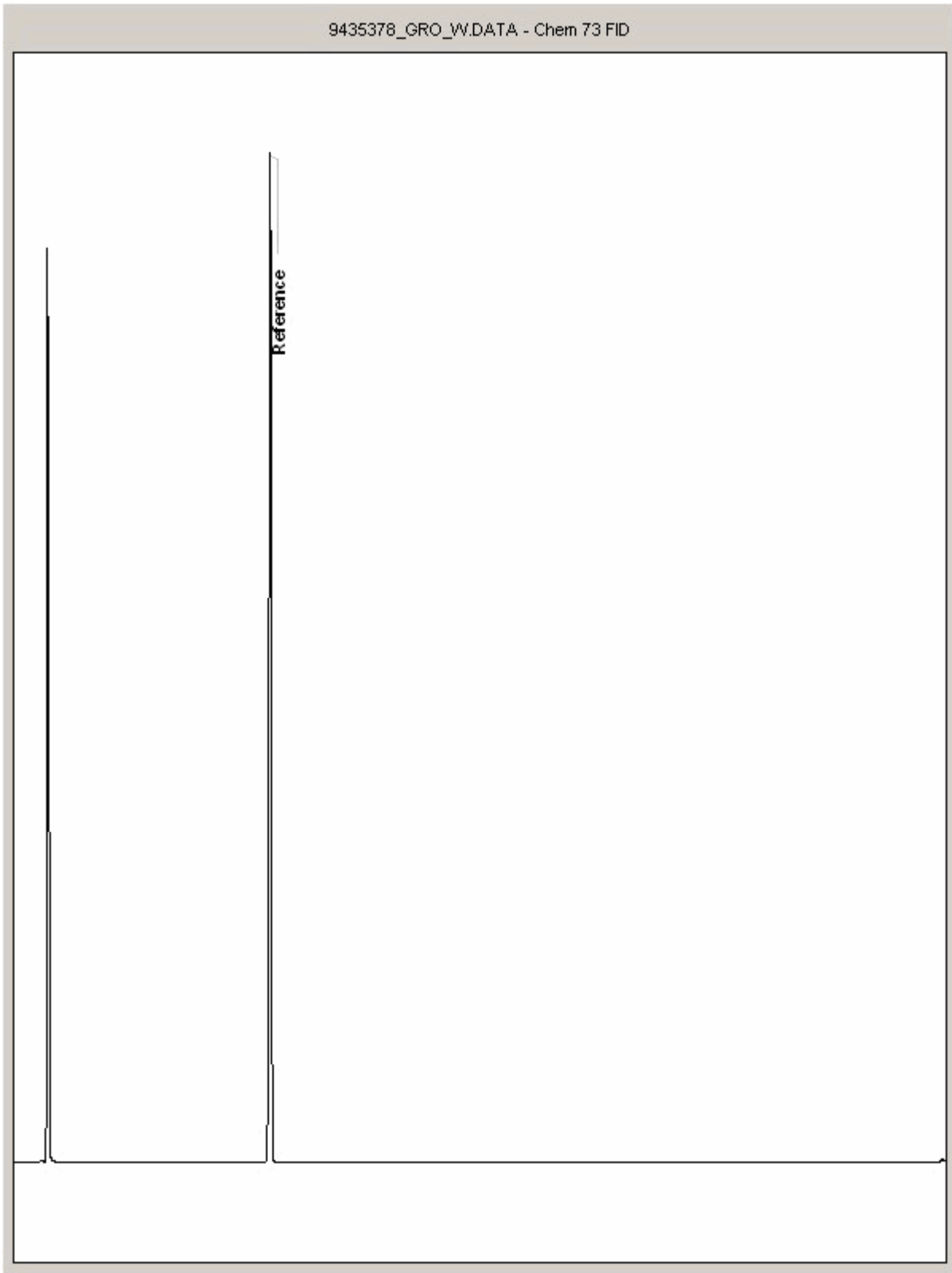
**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

### Chromatogram

**Analysis:** GRO by GC-FID (W)

**Sample No :** 9435378  
**Sample ID :** CG BH03

**Depth :** 0.00





**SDG:** 140606-106  
**Job:** H\_RHASKON\_PT8-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

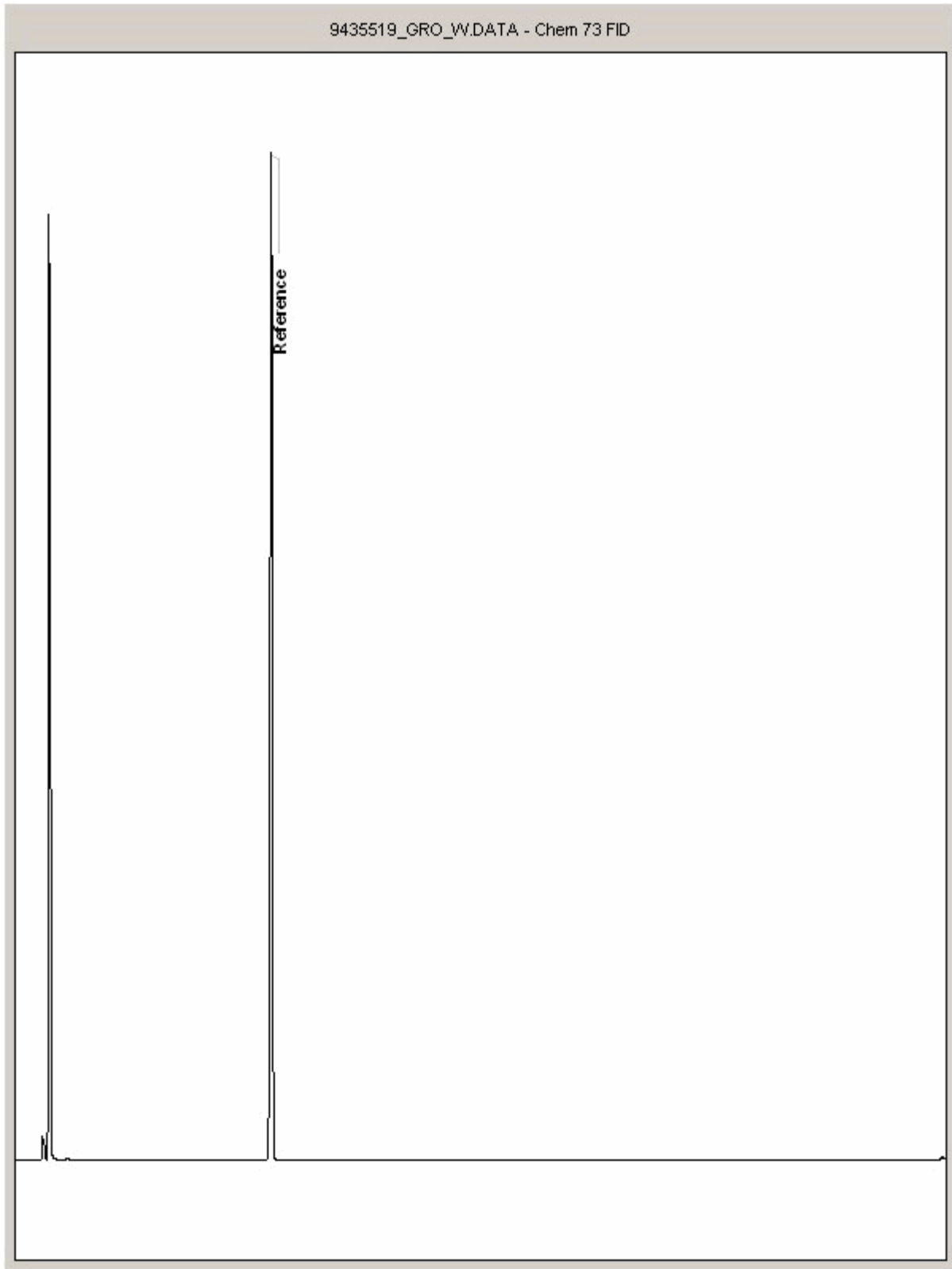
**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

### Chromatogram

**Analysis:** GRO by GC-FID (W)

**Sample No :** 9435519  
**Sample ID :** CG BH22

**Depth :** 0.00





**SDG:** 140606-106  
**Job:** H\_RHASKON\_PT8-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

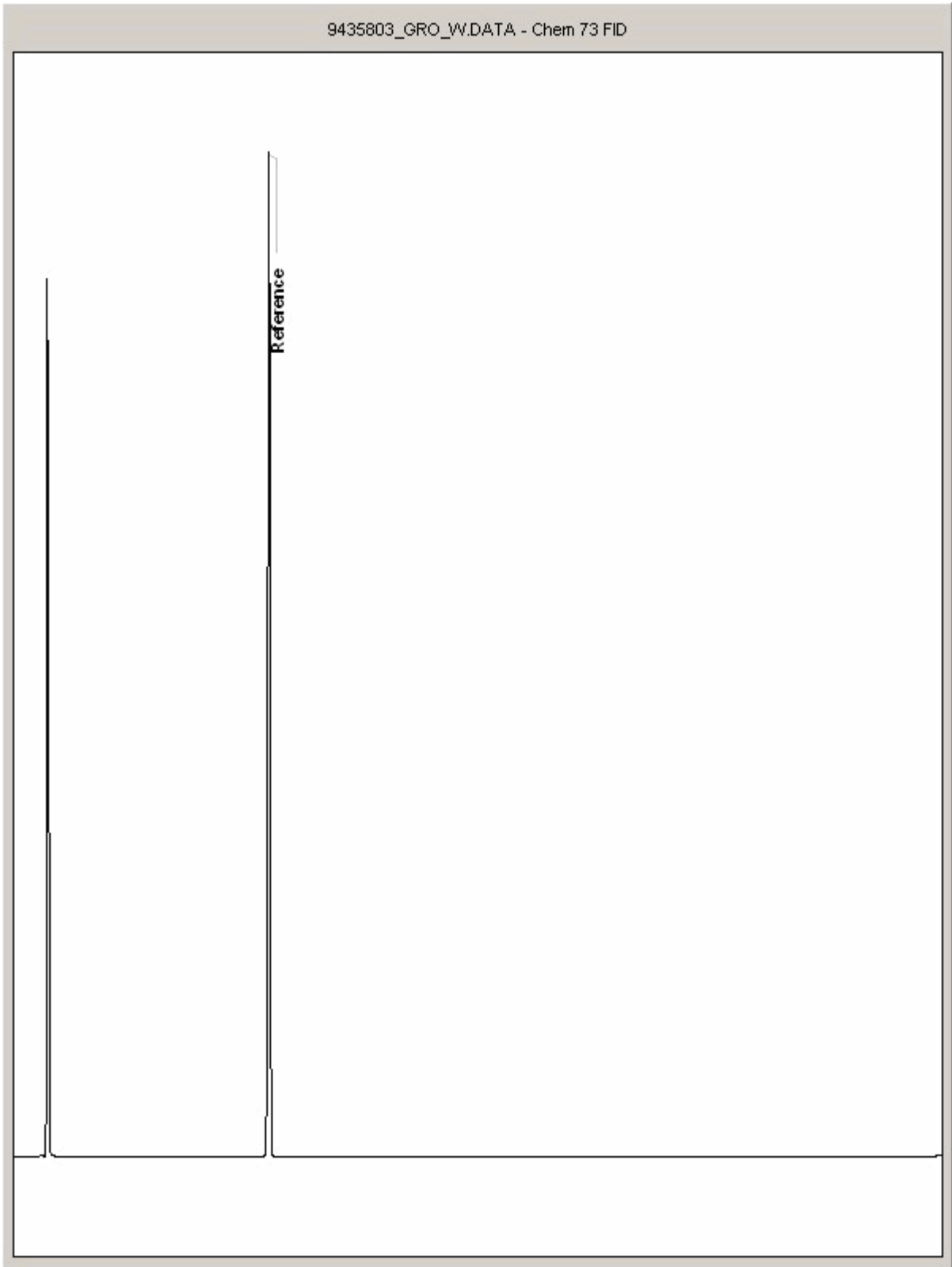
**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

### Chromatogram

**Analysis:** GRO by GC-FID (W)

**Sample No :** 9435803  
**Sample ID :** CG BH16

**Depth :** 0.00





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

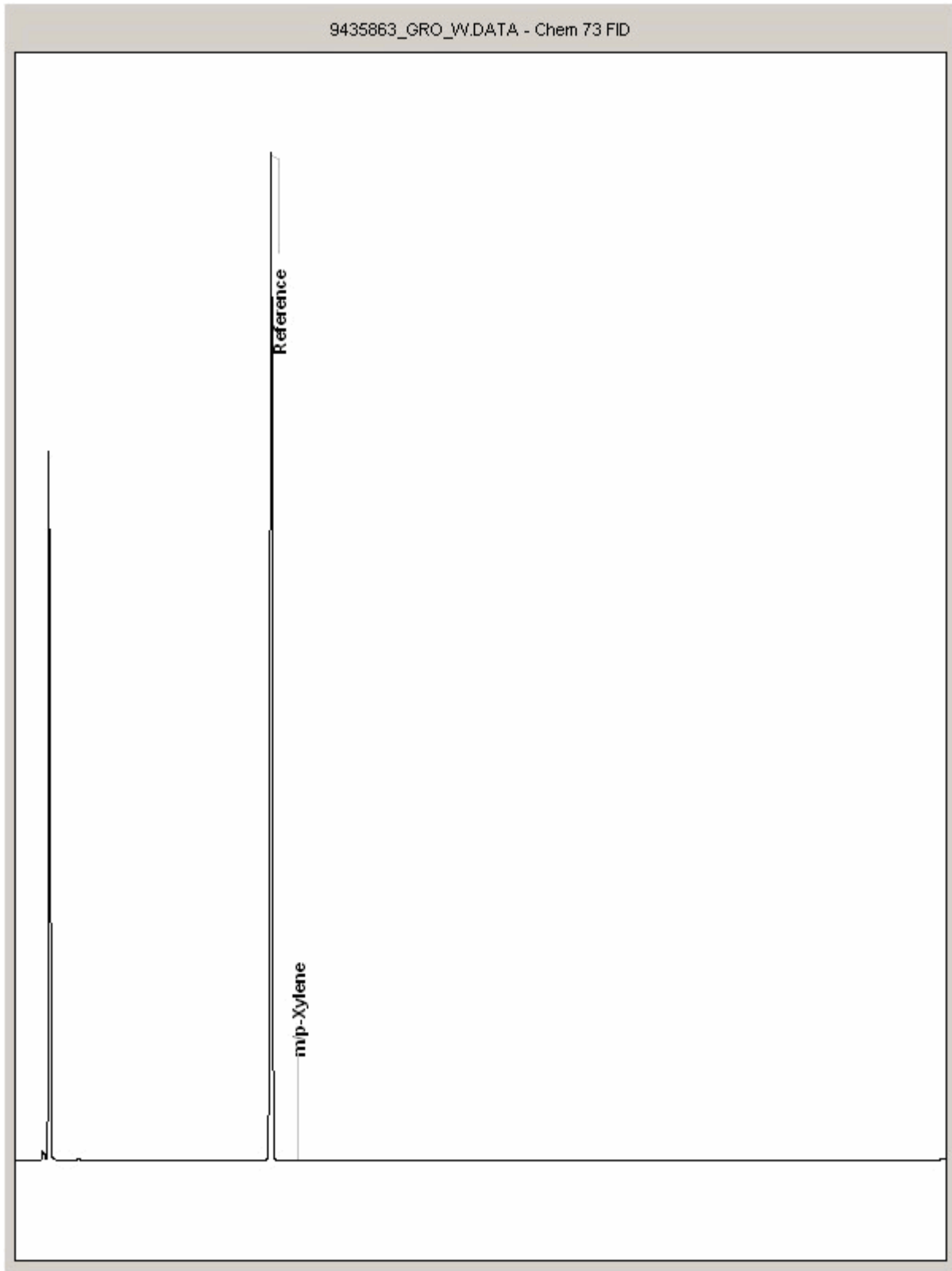
Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9435863  
Sample ID : CG BH21

Depth : 0.00





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

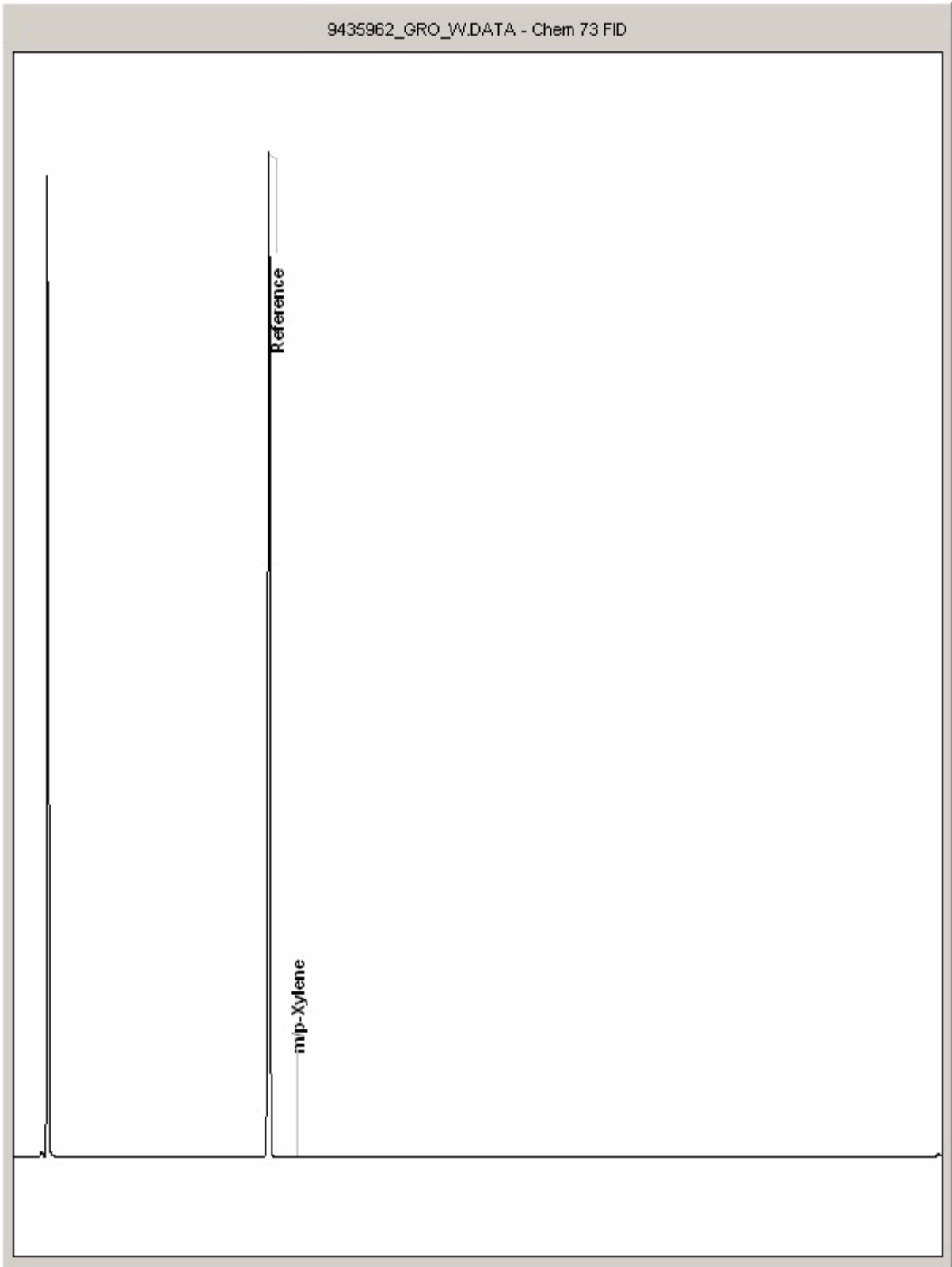
Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9435962  
Sample ID : CG BH10

Depth : 0.00





**SDG:** 140606-106  
**Job:** H\_RHASKON\_PT8-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

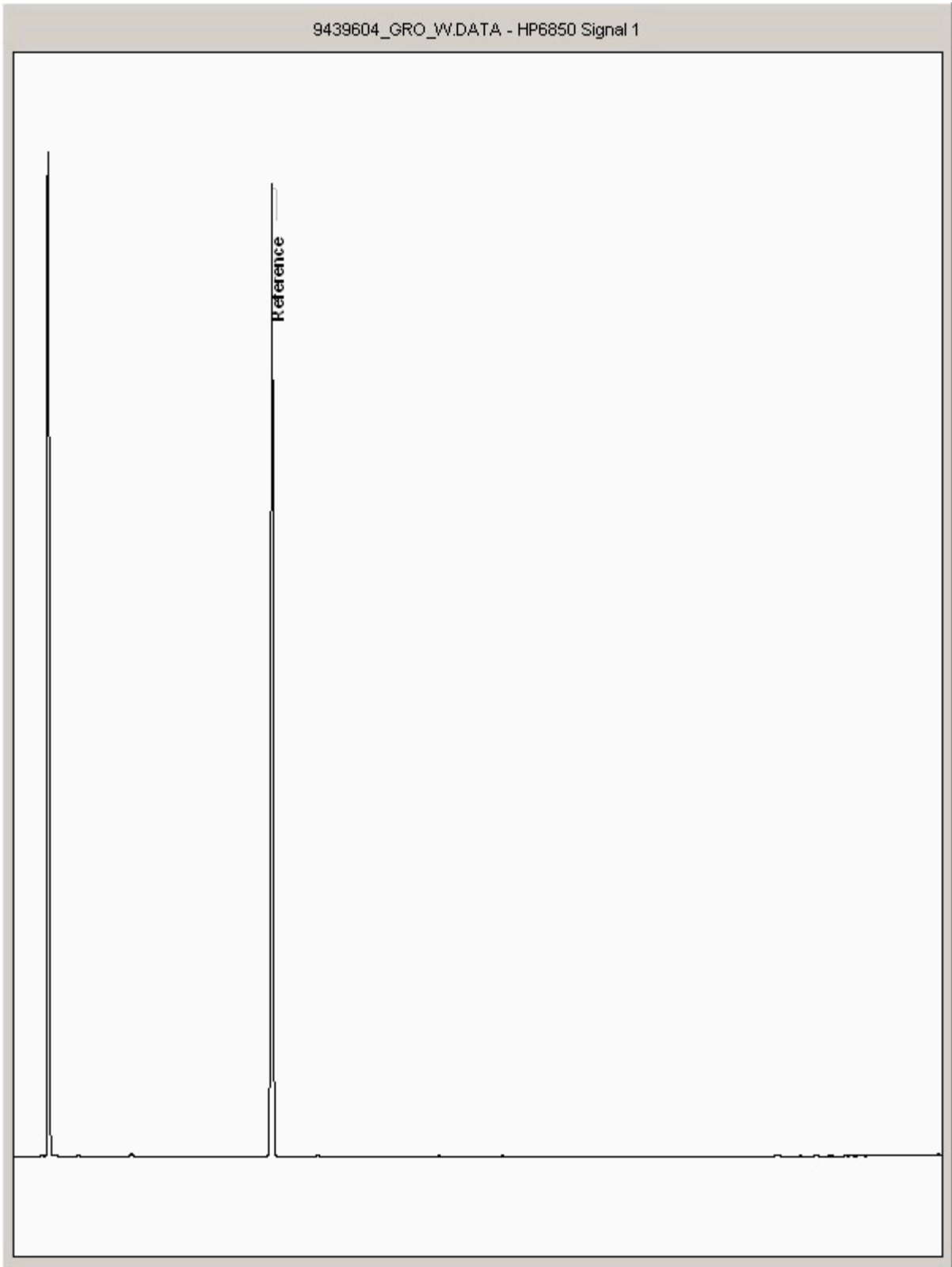
**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

### Chromatogram

**Analysis:** GRO by GC-FID (W)

**Sample No :** 9439604  
**Sample ID :** CG BH09

**Depth :** 0.00







SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

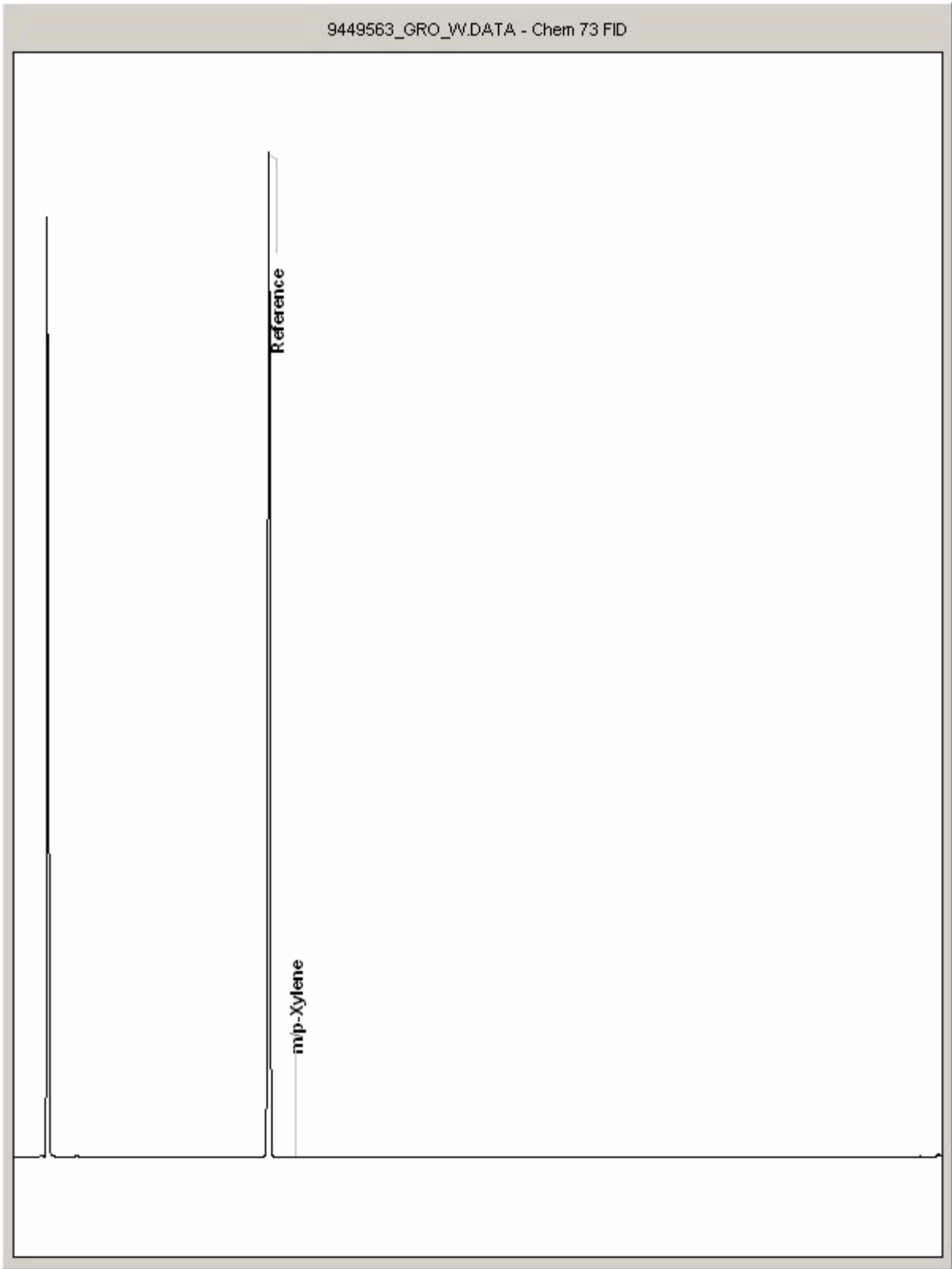
Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9449563  
Sample ID : CG BH11

Depth : 0.00





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

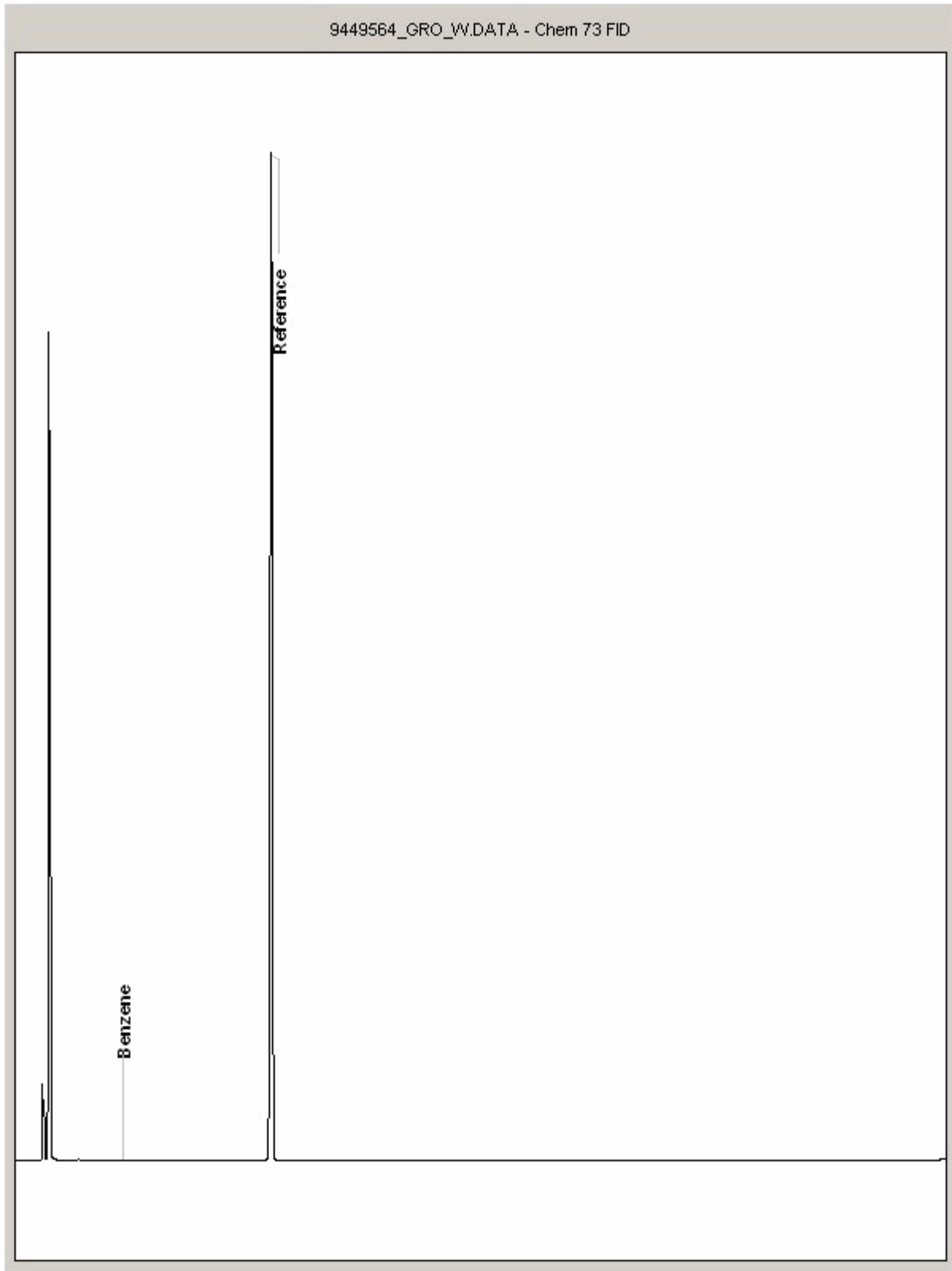
Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9449564  
Sample ID : CG BH13

Depth : 0.00





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

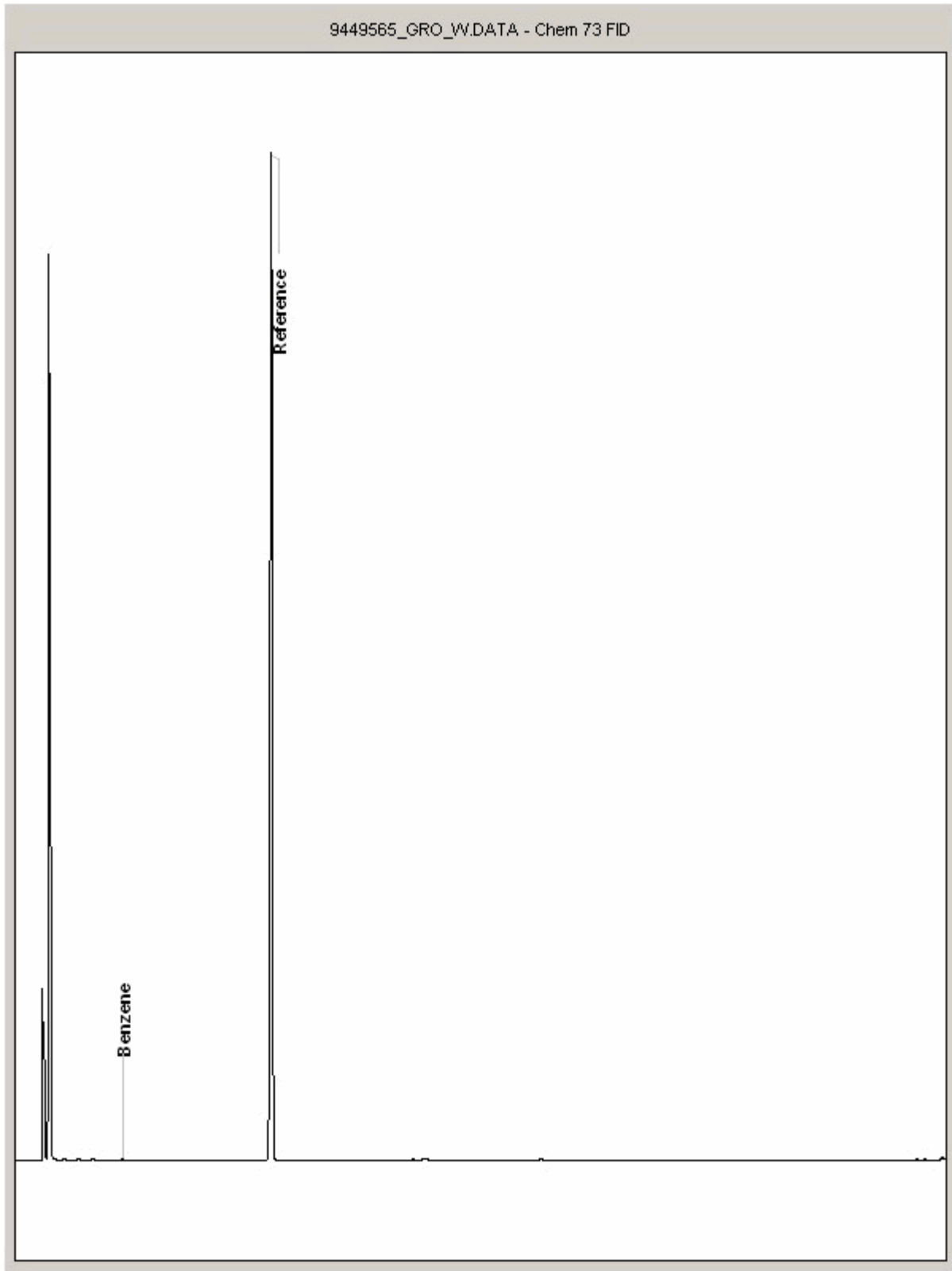
Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9449565  
Sample ID : CG BH12

Depth : 0.00





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

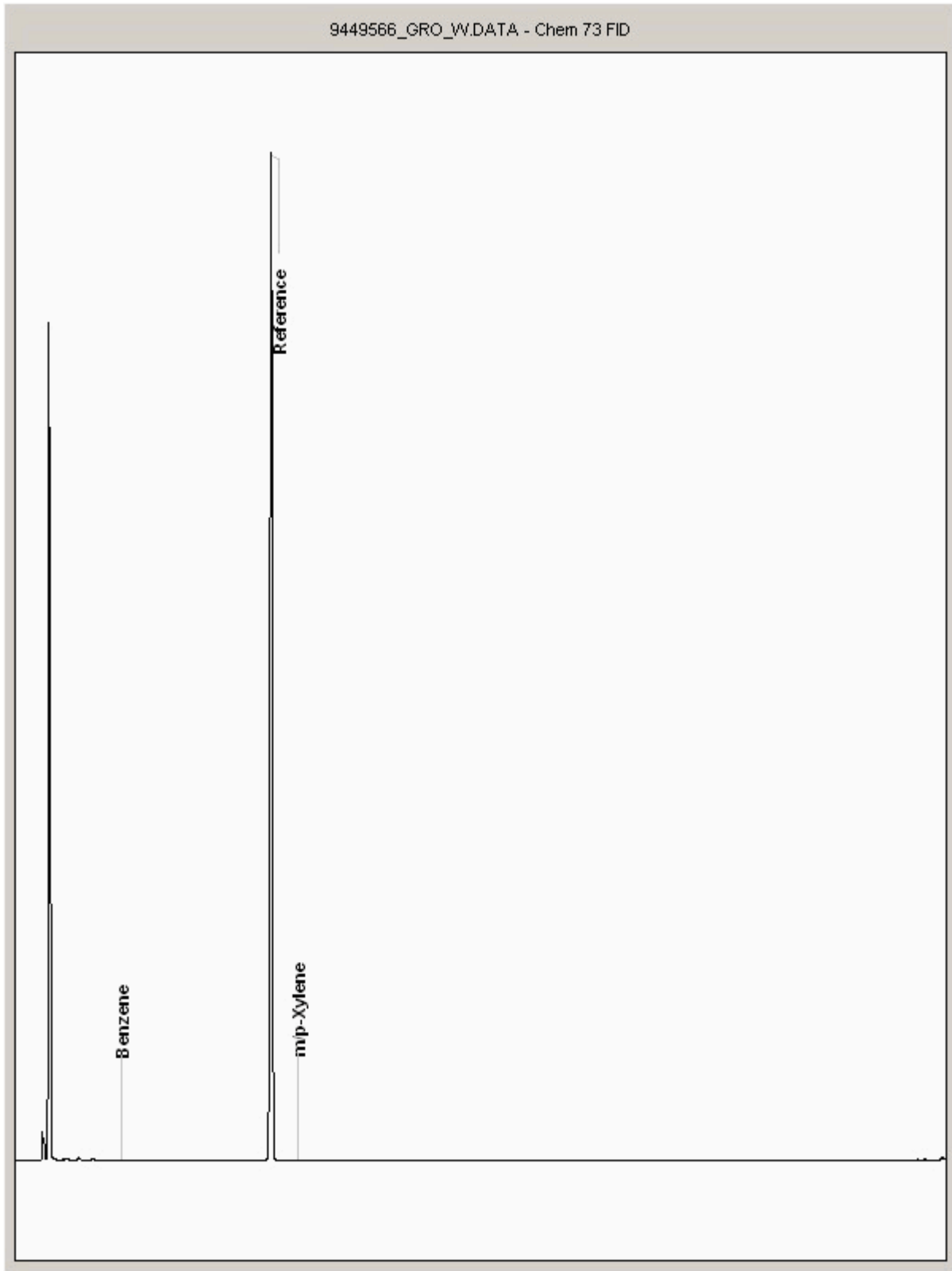
Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9449566  
Sample ID : CG BH14

Depth : 0.00





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

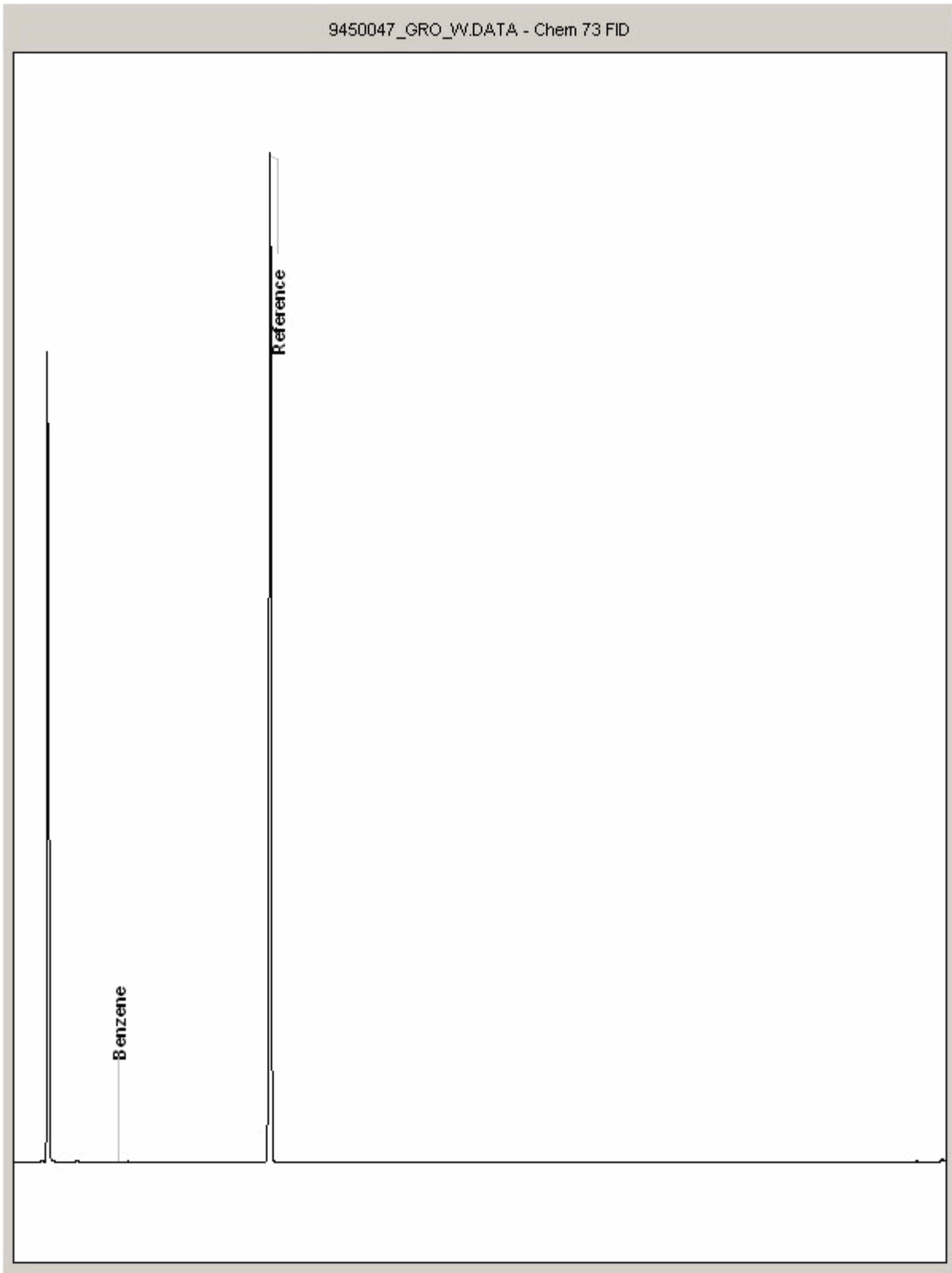
Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9450047  
Sample ID : CG BH20

Depth : 0.00





**SDG:** 140606-106  
**Job:** H\_RHASKON\_PT8-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

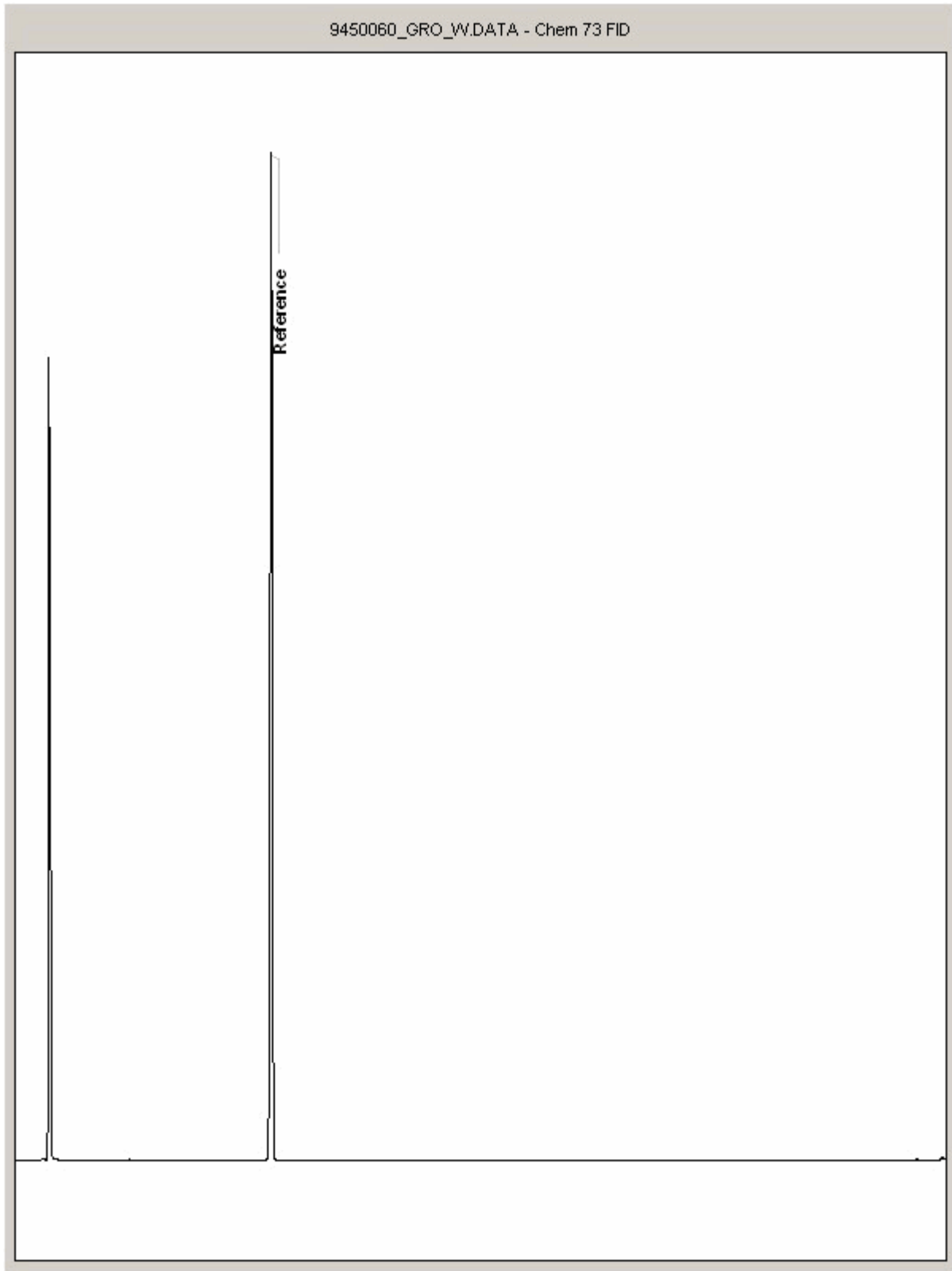
**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

### Chromatogram

**Analysis:** GRO by GC-FID (W)

**Sample No :** 9450060  
**Sample ID :** CG BH18

**Depth :** 0.00





SDG: 140606-106  
Job: H\_RHASKON\_PT8-82  
Client Reference: 9Y0074 103 100

Location: Cole Green  
Customer: Royal Haskoning  
Attention: Declan Fives

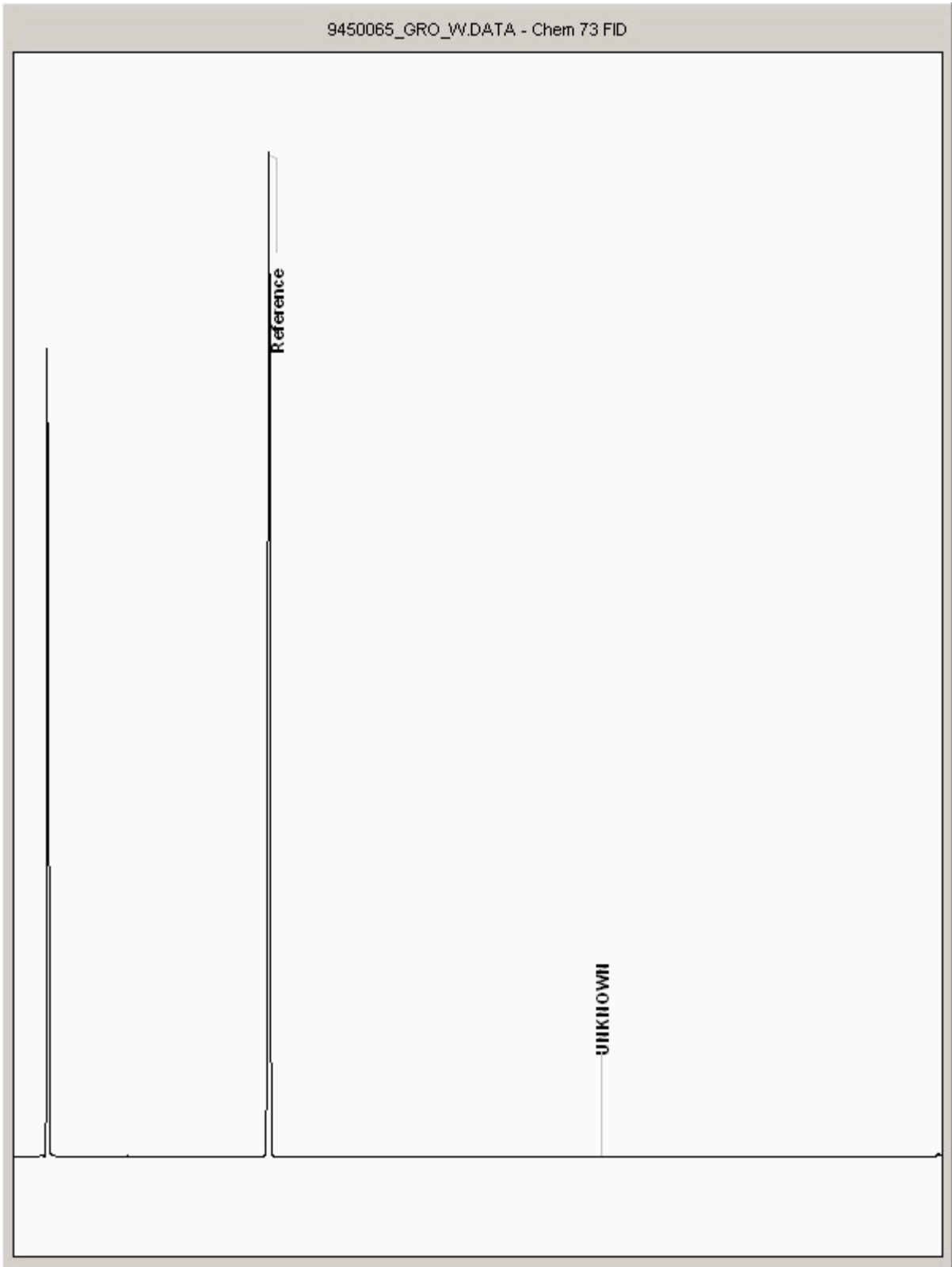
Order Number: 9Y0074 003 100  
Report Number: 273797  
Superseded Report:

### Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 9450065  
Sample ID : CG BH19

Depth : 0.00





**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## 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 NH<sub>4</sub> 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 large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

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. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of 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 14).

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

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene is only not accredited.

19. 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.

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

21. 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.

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

23. 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.

24. 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	DOM	SOXTERM	GRAMMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTERM	GRAMMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTERM	IATROSCAN
ELEMENTAL SULPHUR	D&C	DOM	SOXTERM	HPLC
PHENOLS BY GCMS	WET	DOM	SOXTERM	GCMS
HERBICIDES	D&C	HEXANEACETONE	SOXTERM	GCMS
PESTICIDES	D&C	HEXANEACETONE	SOXTERM	GCMS
EPH (DRO)	D&C	HEXANEACETONE	END OVEREND	GCFID
EPH (MINOL)	D&C	HEXANEACETONE	END OVEREND	GCFID
EPH (CLEANED UP)	D&C	HEXANEACETONE	END OVEREND	GCFID
EPH CWG BY GC	D&C	HEXANEACETONE	END OVEREND	GCFID
PCB TOT / PCB CON	D&C	HEXANEACETONE	END OVEREND	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MICROWAVE TM28.	GCMS
C8-C40 (C6C40) EZ FLASH	WET	HEXANEACETONE	SHAKER	GCEZ
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	GCEZ
SEM VOLATILE ORGANIC COMPOUNDS	WET	DOMACETONE	SONICATE	GCMS

## LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCFID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCFID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCFID
PCB 70 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST COPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	DOM	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

### Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', 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).

### 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 MDHS 100.

The identification of asbestos containing materials 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.



**SDG:** 140606-106  
**Job:** H\_RHASKON\_PTB-82  
**Client Reference:** 9Y0074 103 100

**Location:** Cole Green  
**Customer:** Royal Haskoning  
**Attention:** Declan Fives

**Order Number:** 9Y0074 003 100  
**Report Number:** 273797  
**Superseded Report:**

## Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC 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 all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples 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 analysed 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). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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 of 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 C5-C12 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.

## Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before preservation was performed
§	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

## Asbestos

### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials 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 Anthrophyllite	-
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.**