ALcontrol Laboratories Analytical Services

CEN 2:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-1

Mass Sample taken (kg) =	0.25672	Moisture Content Ratio (%) =	46.60
Mass of dry sample (kg) =	0.175	Dry Matter Content Ratio (%) =	68.21
Particle Size <4mm =	>95%		

Job Number	**200809998**			**Landfill Waste Acceptance Criteria Limits**		
Batch	**4**					
Sample Number(s)	**228-231**			**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Sampled Date	**-**					
Sample Identity	**WS 16**					
Depth (m)	**0.50**					
Solid Waste Analysis						
Total Organic Carbon (%)	-			-	-	-
Loss on Ignition (%)	-			-	-	-
Sum of BTEX (mg/kg)	-			-	-	-
Sum of 7 PCBs (mg/kg)	-			-	-	-
Mineral Oil (mg/kg)	-			-	-	-
PAH Sum of 17(mg/kg)	-			-	-	-
pH (pH Units)	-			-	-	-
ANC to pH 7 (mol/kg)	-			-	-	-
ANC to pH 4 (mol/kg)	-			-	-	-

Eluate Analysis	**Conc^{n} in 2:1 eluate**		**2:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	C_2		**A_2**				
	mg/l		**mg/kg**				
Boron Dissolved (1 Step CEN 2:1)	0.15		0.30		-	-	-
Sulphide (1 Step CEN 2:1)	<0.50		<1		-	-	-
Hexavalent Chromium (1 Step CEN 2:1)	<0.03		<0.06		-	-	-
Thiocyanate (1 Step CEN 2:1)	<0.05		<0.1		-	-	-
Total Cyanide (1 Step CEN 2:1)	<0.05		<0.1		-	-	-
Free Cyanide (1 Step CEN 2:1)	<0.05		<0.1		-	-	-
Free Sulphur (1 Step CEN 2:1)	<0.05		<0.1		-	-	-
GRO (C4-C12) (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
MTBE (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Benzene (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Toluene (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Ethyl benzene (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
m & p Xylene (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
o Xylene (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aliphatics C5-C6 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aliphatics >C6-C8 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aliphatics >C8-C10 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aliphatics >C10-C12 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-

Leach Test Information		
Date Prepared	10/07/08	-
pH (pH Units)	7.344	-
Conductivity (µS/cm)	662	-
Temperature (^{o}C)	22.0	-
Volume Leachant (Litres)	0.268	-
Volume of Eluate VE1 (Litres)	-	

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

Supplemental Report

ALcontrol Laboratories Analytical Services

CEN 2:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-1

Mass Sample taken (kg) =	0.25672	Moisture Content Ratio (%) =	46.60
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Particle Size <4mm =	>95%		

Job Number	**200809998**			**Landfill Waste Acceptance Criteria Limits**		
Batch	**4**					
Sample Number(s)	**228-231**			**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Sampled Date	**-**					
Sample Identity	**WS 16**					
Depth (m)	**0.50**					
Solid Waste Analysis						
Total Organic Carbon (%)	-			-	-	-
Loss on Ignition (%)	-			-	-	-
Sum of BTEX (mg/kg)	-			-	-	-
Sum of 7 PCBs (mg/kg)	-			-	-	-
Mineral Oil (mg/kg)	-			-	-	-
PAH Sum of 17(mg/kg)	-			-	-	-
pH (pH Units)	-			-	-	-
ANC to pH 7 (mol/kg)	-			-	-	-
ANC to pH 4 (mol/kg)	-			-	-	-

Eluate Analysis	**Conc^{n} in 2:1 eluate**		**2:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	C_2		**A_2**				
	mg/l		**mg/kg**				
Aliphatics >C12-C16 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aliphatics >C16-C21 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aliphatics >C21-C35 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Total Aliphatics C5-C35 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aromatics C6-C7 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aromatics >C7-C8 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aromatics >EC8-EC10 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aromatics >EC10-EC12 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aromatics >EC12-EC16 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aromatics >EC16-EC21 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Aromatics >EC21-EC35 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Total Aromatics C6-C35 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
TPH Aliphatics & Aromatics C5-C35 (1 Step CEN 2:1)	<0.01		<0.02		-	-	-
Naphthalene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Acenaphthylene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Acenaphthene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Fluorene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Phenanthrene (1 Step CEN 2:1)	NDP		NDP		-	-	-

Leach Test Information		
Date Prepared	10/07/08	-
pH (pH Units)	7.344	-
Conductivity (µS/cm)	662	-
Temperature (^{o}C)	22.0	-
Volume Leachant (Litres)	0.268	-
Volume of Eluate VE1 (Litres)	-	

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

Supplemental Report

ALcontrol Laboratories Analytical Services

CEN 2:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-1

Mass Sample taken (kg) =	0.25672	Moisture Content Ratio (%) =	46.60
Mass of dry sample (kg) =	0.175	Dry Matter Content Ratio (%) =	68.21
Particle Size <4mm =	>95%		

Job Number	**200809998**	**Landfill Waste Acceptance Criteria Limits**		
Batch	**4**			
Sample Number(s)	**228-231**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Sampled Date	**-**			
Sample Identity	**WS 16**			
Depth (m)	**0.50**			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**Conc^{n} in 2:1 eluate**		**2:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	C_2		**A_2**				
	mg/l		**mg/kg**				
Anthracene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Fluoranthene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Pyrene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Benz(a)anthracene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Chrysene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Benzo(b)fluoranthene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Benzo(k)fluoranthene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Benzo(a)pyrene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Indeno(123cd)pyrene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Dibenzo(ah)anthracene (1 Step CEN 2:1)	NDP		NDP		-	-	-
Benzo(ghi)perylene (1 Step CEN 2:1)	NDP		NDP		-	-	-
PAH 16 Total (1 Step CEN 2:1)	NDP		NDP		-	-	-
					-	-	-
					-	-	-
					-	-	-
					-	-	-
					-	-	-
					-	-	-

Leach Test Information		
Date Prepared	10/07/08	-
pH (pH Units)	7.344	-
Conductivity (µS/cm)	662	-
Temperature (^{o}C)	22.0	-
Volume Leachant (Litres)	0.268	-
Volume of Eluate VE1 (Litres)	-	

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

Supplemental Report

ALcontrol Laboratories Analytical Services

CEN 2:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-1

Mass Sample taken (kg) =	-	Moisture Content Ratio (%) =	14.35
Mass of dry sample (kg) =	0.175	Dry Matter Content Ratio (%) =	87.45
Particle Size <4mm =	>95%		

Job Number	**200809998**	**Landfill Waste Acceptance Criteria Limits**		
Batch	**1**			
Sample Number(s)	**72-73**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Sampled Date	**-**			
Sample Identity	**WS7**			
Depth (m)	**0.7**			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**Conc^{n} in 2:1 eluate**		**2:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	C_2		**A_2**				
	mg/l		**mg/kg**				
Boron Dissolved (1 Step CEN 2:1)	NDP				-	-	-
Sulphide (1 Step CEN 2:1)	NDP				-	-	-
Hexavalent Chromium (1 Step CEN 2:1)	NDP				-	-	-
Thiocyanate (1 Step CEN 2:1)	NDP				-	-	-
Total Cyanide (1 Step CEN 2:1)	NDP				-	-	-
Free Cyanide (1 Step CEN 2:1)	NDP				-	-	-
Free Sulphur (1 Step CEN 2:1)	NDP				-	-	-
GRO (C4-C12) (1 Step CEN 2:1)	NDP				-	-	-
MTBE (1 Step CEN 2:1)	NDP				-	-	-
Benzene (1 Step CEN 2:1)	NDP				-	-	-
Toluene (1 Step CEN 2:1)	NDP				-	-	-
Ethyl benzene (1 Step CEN 2:1)	NDP				-	-	-
m & p Xylene (1 Step CEN 2:1)	NDP				-	-	-
o Xylene (1 Step CEN 2:1)	NDP				-	-	-
Aliphatics C5-C6 (1 Step CEN 2:1)	NDP				-	-	-
Aliphatics >C6-C8 (1 Step CEN 2:1)	NDP				-	-	-
Aliphatics >C8-C10 (1 Step CEN 2:1)	NDP				-	-	-
Aliphatics >C10-C12 (1 Step CEN 2:1)	NDP				-	-	-

Leach Test Information		
Date Prepared	-	-
pH (pH Units)	-	-
Conductivity (µS/cm)	-	-
Temperature (^{o}C)	-	-
Volume Leachant (Litres)	-	-
Volume of Eluate VE1 (Litres)	-	

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

Supplemental Report

ALcontrol Laboratories Analytical Services

CEN 2:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-1

Mass Sample taken (kg) =	-	Moisture Content Ratio (%) =	14.35
Mass of dry sample (kg) =	0.175	Dry Matter Content Ratio (%) =	87.45
Particle Size <4mm =	>95%		

Job Number	**200809998**	**Landfill Waste Acceptance Criteria Limits**		
Batch	**1**			
Sample Number(s)	**72-73**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Sampled Date	**-**			
Sample Identity	**WS7**			
Depth (m)	**0.7**			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**Conc^{n} in 2:1 eluate**		**2:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	C_2		**A_2**				
	mg/l		**mg/kg**				
Aliphatics >C12-C16 (1 Step CEN 2:1)	ndp				-	-	-
Aliphatics >C16-C21 (1 Step CEN 2:1)	ndp				-	-	-
Aliphatics >C21-C35 (1 Step CEN 2:1)	ndp				-	-	-
Total Aliphatics C5-C35 (1 Step CEN 2:1)	ndp				-	-	-
Aromatics C6-C7 (1 Step CEN 2:1)	NDP				-	-	-
Aromatics >C7-C8 (1 Step CEN 2:1)	NDP				-	-	-
Aromatics >EC8-EC10 (1 Step CEN 2:1)	NDP				-	-	-
Aromatics >EC10-EC12 (1 Step CEN 2:1)	NDP				-	-	-
Aromatics >EC12-EC16 (1 Step CEN 2:1)	ndp				-	-	-
Aromatics >EC16-EC21 (1 Step CEN 2:1)	ndp				-	-	-
Aromatics >EC21-EC35 (1 Step CEN 2:1)	ndp				-	-	-
Total Aromatics C6-C35 (1 Step CEN 2:1)	ndp				-	-	-
TPH Aliphatics & Aromatics C5-C35 (1 Step CEN 2:1)	ndp				-	-	-
Naphthalene (1 Step CEN 2:1)	NDP				-	-	-
Acenaphthylene (1 Step CEN 2:1)	NDP				-	-	-
Acenaphthene (1 Step CEN 2:1)	NDP				-	-	-
Fluorene (1 Step CEN 2:1)	NDP				-	-	-
Phenanthrene (1 Step CEN 2:1)	NDP				-	-	-

Leach Test Information		
Date Prepared	-	-
pH (pH Units)	-	-
Conductivity (µS/cm)	-	-
Temperature (^{o}C)	-	-
Volume Leachant (Litres)	-	-
Volume of Eluate VE1 (Litres)	-	

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

Supplemental Report

ALcontrol Laboratories Analytical Services

CEN 2:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-1

Mass Sample taken (kg) =	-	Moisture Content Ratio (%) =	14.35
Mass of dry sample (kg) =	0.175	Dry Matter Content Ratio (%) =	87.45
Particle Size <4mm =	>95%		

Job Number	**200809998**	**Landfill Waste Acceptance Criteria Limits**		
Batch	**1**			
Sample Number(s)	**72-73**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Sampled Date	**-**			
Sample Identity	**WS7**			
Depth (m)	**0.7**			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**Conc^{n} in 2:1 eluate**		**2:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	C_2		**A_2**				
	mg/l		**mg/kg**				
Anthracene (1 Step CEN 2:1)	NDP				-	-	-
Fluoranthene (1 Step CEN 2:1)	NDP				-	-	-
Pyrene (1 Step CEN 2:1)	NDP				-	-	-
Benz(a)anthracene (1 Step CEN 2:1)	NDP				-	-	-
Chrysene (1 Step CEN 2:1)	NDP				-	-	-
Benzo(b)fluoranthene (1 Step CEN 2:1)	NDP				-	-	-
Benzo(k)fluoranthene (1 Step CEN 2:1)	NDP				-	-	-
Benzo(a)pyrene (1 Step CEN 2:1)	NDP				-	-	-
Indeno(123cd)pyrene (1 Step CEN 2:1)	NDP				-	-	-
Dibenzo(ah)anthracene (1 Step CEN 2:1)	NDP				-	-	-
Benzo(ghi)perylene (1 Step CEN 2:1)	NDP				-	-	-
PAH 16 Total (1 Step CEN 2:1)	NDP				-	-	-
					-	-	-
					-	-	-
					-	-	-
					-	-	-
					-	-	-
					-	-	-

Leach Test Information		
Date Prepared	-	-
pH (pH Units)	-	-
Conductivity (µS/cm)	-	-
Temperature (^{o}C)	-	-
Volume Leachant (Litres)	-	-
Volume of Eluate VE1 (Litres)	-	

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

Supplemental Report

ALcontrol Laboratories Analytical Services

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-3

Mass Sample taken (kg) =	0.21161	Moisture Content Ratio (%) =	20.87
Mass of dry sample (kg) =	0.175	Dry Matter Content Ratio (%) =	82.73
Particle Size <4mm =	>95%		

Job Number	**200809998**	**Landfill Waste Acceptance Criteria Limits**		
Batch	**4**			
Sample Number(s)	**224-227**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Sampled Date	**-**			
Sample Identity	**WS 10**			
Depth (m)	**0.50**			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**Conc^{n} in 2:1 eluate**	**Conc^{n} in 8:1 eluate**	**2:1 conc^{n} leached**	**Cumulative conc^{n} leached**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	C_2	**C_8**	**A_2**	**A_{2-10}**			
	mg/l		**mg/kg**				
Boron Dissolved (CEN 10:1C) (ICP-MS)	0.02	<0.02	<0.04	<0.2	-	-	-
					-	-	-
					-	-	-
					-	-	-
					-	-	-
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					-	-	-
					-	-	-

Leach Test Information		
Date Prepared	11/07/08	13/07/08
pH (pH Units)	7.947	7.74
Conductivity (µS/cm)	221	88.9
Temperature (^{o}C)	21.8	20.5
Volume Leachant (Litres)	0.313	1.4
Volume of Eluate VE1 (Litres)	0.2	

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

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepencies with current legislation

Supplemental Report

ALcontrol Laboratories Analytical Services
Table Of Results - Appendix

Job Number: 08/09998/02/01
Client: Geotechnics Ltd
Client Ref. No.: PN081814

Report Key :

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03×10^{-7}

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

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

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample [1]	Surrogate Corrected
TM001	In - house Method	Screening of Soils for Fibres			WET	
TM018	BS 1377: Part 3 1990	Determination of Loss on Ignition	✓	✓	WET	
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)	✓		DRY	
TM062	MEWAM BOOK 124 1988.HMSO/ Method 17.7, Second Site property, March 2003	Determination of Phenolic compounds by HPLC with electro-chemical detection			NA	
TM062	MEWAM BOOK 124 1988.HMSO/ Method 17.7, Second Site property, March 2003	Determination of Phenolic compounds by HPLC with electro-chemical detection	✓		NA	
TM062	MEWAM BOOK 124 1988.HMSO/ Method 17.7, Second Site property, March 2003	Determination of Phenolic compounds by HPLC with electro-chemical detection	✓	✓	WET	
TM068	ASTM D-1552	Total sulphur determination by combustion method	✓		DRY	
TM074	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS. MCERTS Accreditation on Soils for Naphthalene except when Kerosene present.	✓		DRY	
TM074	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS. MCERTS Accreditation on Soils for Naphthalene except when Kerosene present.	✓	✓	DRY	
TM083	Method 3111, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 7610	Determination of Sodium and Potassium by Flame Photometer			NA	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)			WET	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	✓		WET	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	✓	✓	WET	
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			NA	

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

ALcontrol Laboratories Analytical Services
Table Of Results - Appendix

Job Number: 08/09998/02/01
Client: Geotechnics Ltd
Client Ref. No.: PN081814

Report Key :

Results expressed as (e.g.) 1.03E-07 is equivalent to $1.03x10^{-7}$

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

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

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample [1]	Surrogate Corrected
TM097	Modified: US EPA Method 325.1 & 325.2	Determination of Chloride using the Kone Analyser			NA	
TM097	Modified: US EPA Method 325.1 & 325.2	Determination of Chloride using the Kone Analyser	✓		NA	
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser			NA	
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser	✓		NA	
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser	✓	✓	DRY	
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser	✓		NA	
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser			NA	
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser			NA	
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS			WET	
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS	✓		WET	
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS	✓	✓	WET	
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water			NA	
TM129	Method 3120B, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 3050B	Determination of Metal Cations by IRIS Emission Spectrometer			DRY	
TM129	Method 3120B, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 3050B	Determination of Metal Cations by IRIS Emission Spectrometer	✓	✓	DRY	

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

ALcontrol Laboratories Analytical Services
Table Of Results - Appendix

Job Number: 08/09998/02/01
Client: Geotechnics Ltd
Client Ref. No.: PN081814

Report Key :

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03×10^{-7}

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

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

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample [1]	Surrogate Corrected
TM132	In - house Method	ELTRA CS800 Operators Guide	✓	✓	DRY	
TM133	BS 1377: Part 3 1990	Determination of pH in Soil and Water using the GLpH pH Meter	✓		NA	
TM133	BS 1377: Part 3 1990	Determination of pH in Soil and Water using the GLpH pH Meter	✓	✓	WET	
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC			NA	
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC	✓		NA	
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser			NA	
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser	✓		WET	
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS			NA	
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS	✓		NA	
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			WET	
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	✓		NA	
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	✓	✓	WET	
TM157		Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone			WET	
TM168		Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils			DRY	

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

ALcontrol Laboratories Analytical Services
Table Of Results - Appendix

Job Number: 08/09998/02/01
Client: Geotechnics Ltd
Client Ref. No.: PN081814

Report Key :

Results expressed as (e.g.) 1.03E-07 is equivalent to $1.03x10^{-7}$

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

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

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample [1]	Surrogate Corrected
TM173		Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID	✓		DRY	
TM174		Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID			NA	
TM176		Determination of SVOCs in Water by GCMS			NA	
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters			NA	
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	✓		WET	
TM182		Determination of Acid Neutralisation Capacity (ANC) Using Autotitration	✓		DRY	
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			NA	
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	✓		NA	
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters			NA	
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters	✓		NA	
TM213	In-house Method	Rapid Determination of PAHs by GC-FID			WET	
TM61/89		see TM061 and TM089 for details			WET	

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

ALcontrol Laboratories Analytical Services
Table Of Results - Appendix

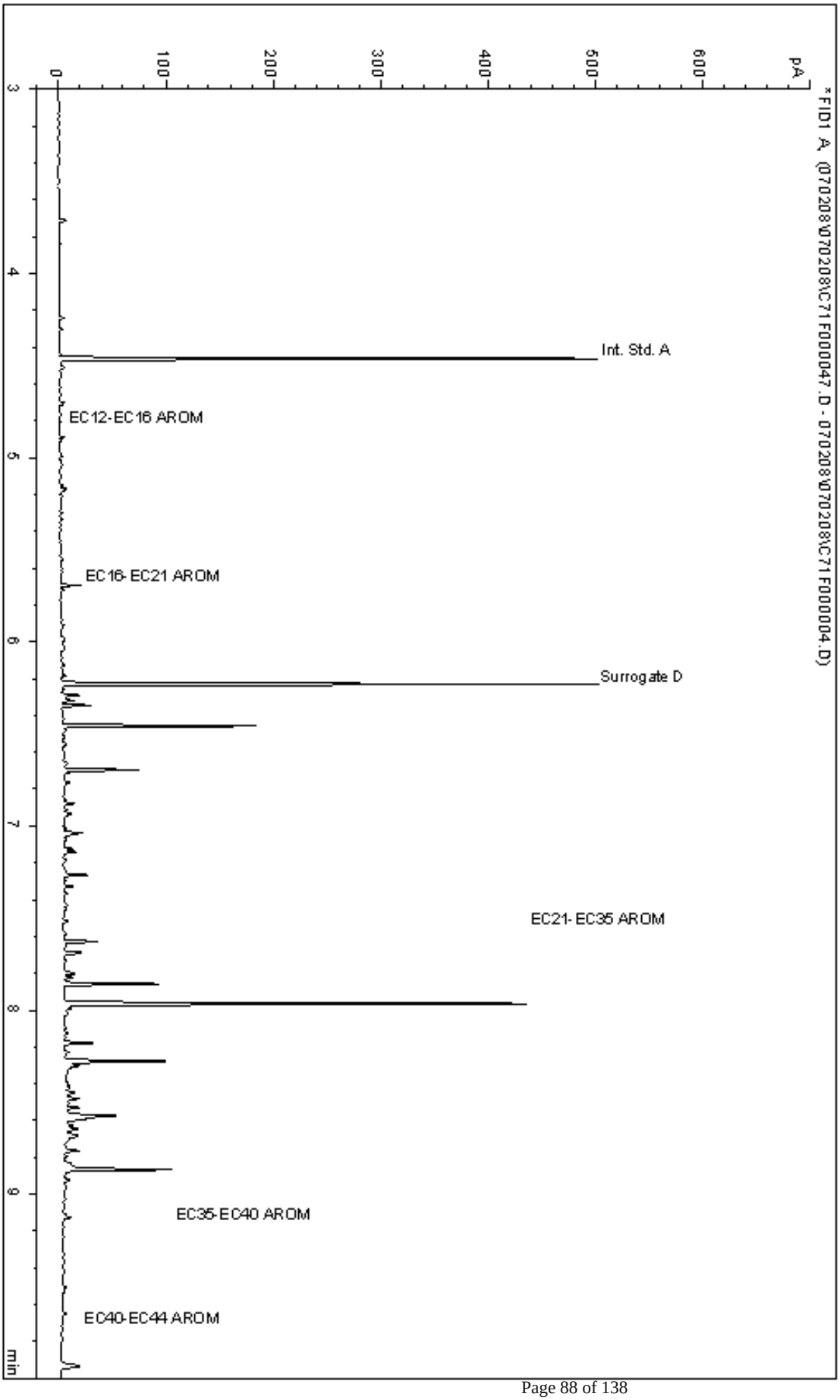
Job Number: 08/09998/02/01
Client: Geotechnics Ltd
Client Ref. No.: PN081814

Summary of Coolbox temperatures

Batch No.	Coolbox Temperature (°C)
1	8.3
2	16
3	12
4	19

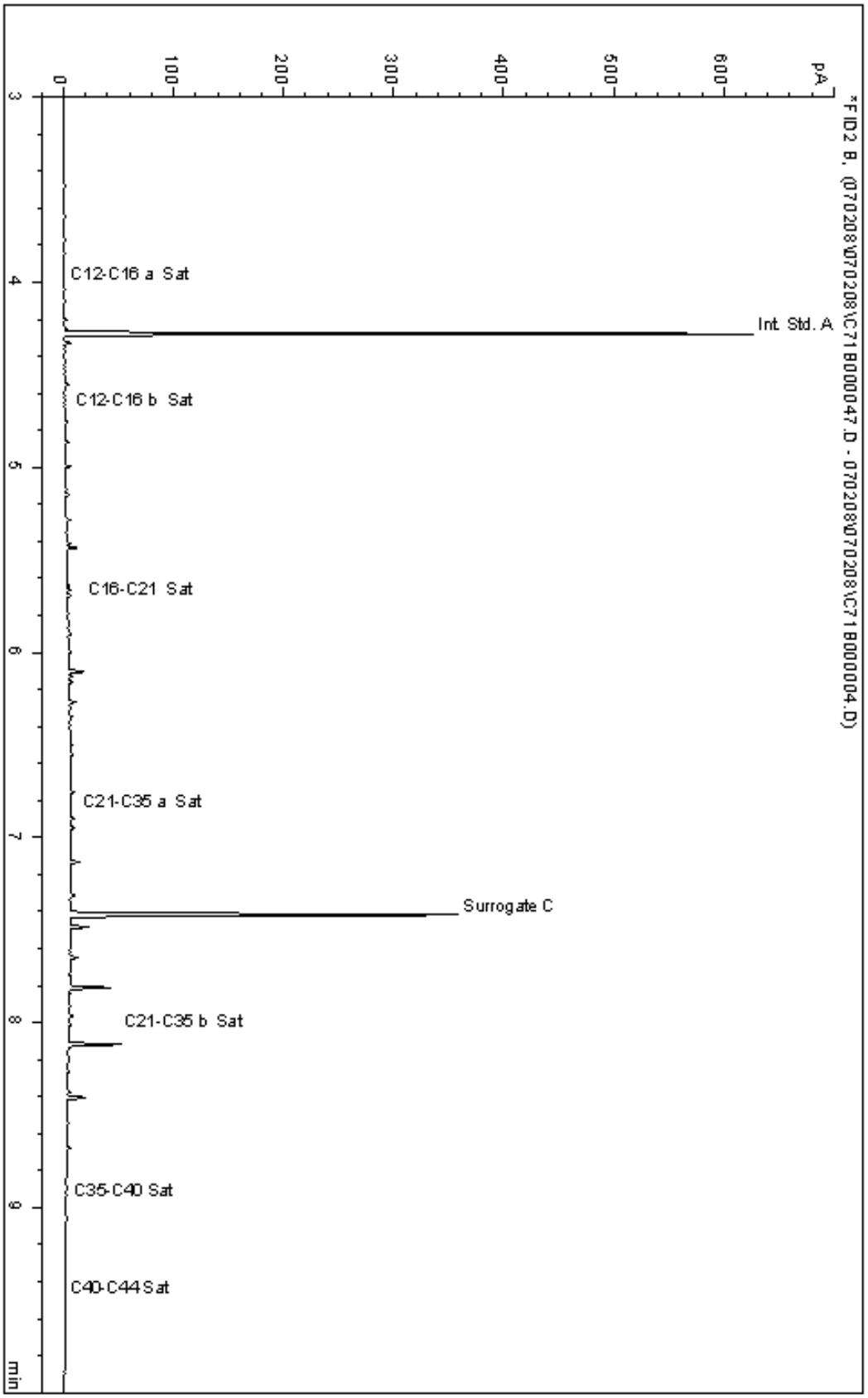
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-66/S
Date Acquired : 03/07/08 04:41:47
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.998



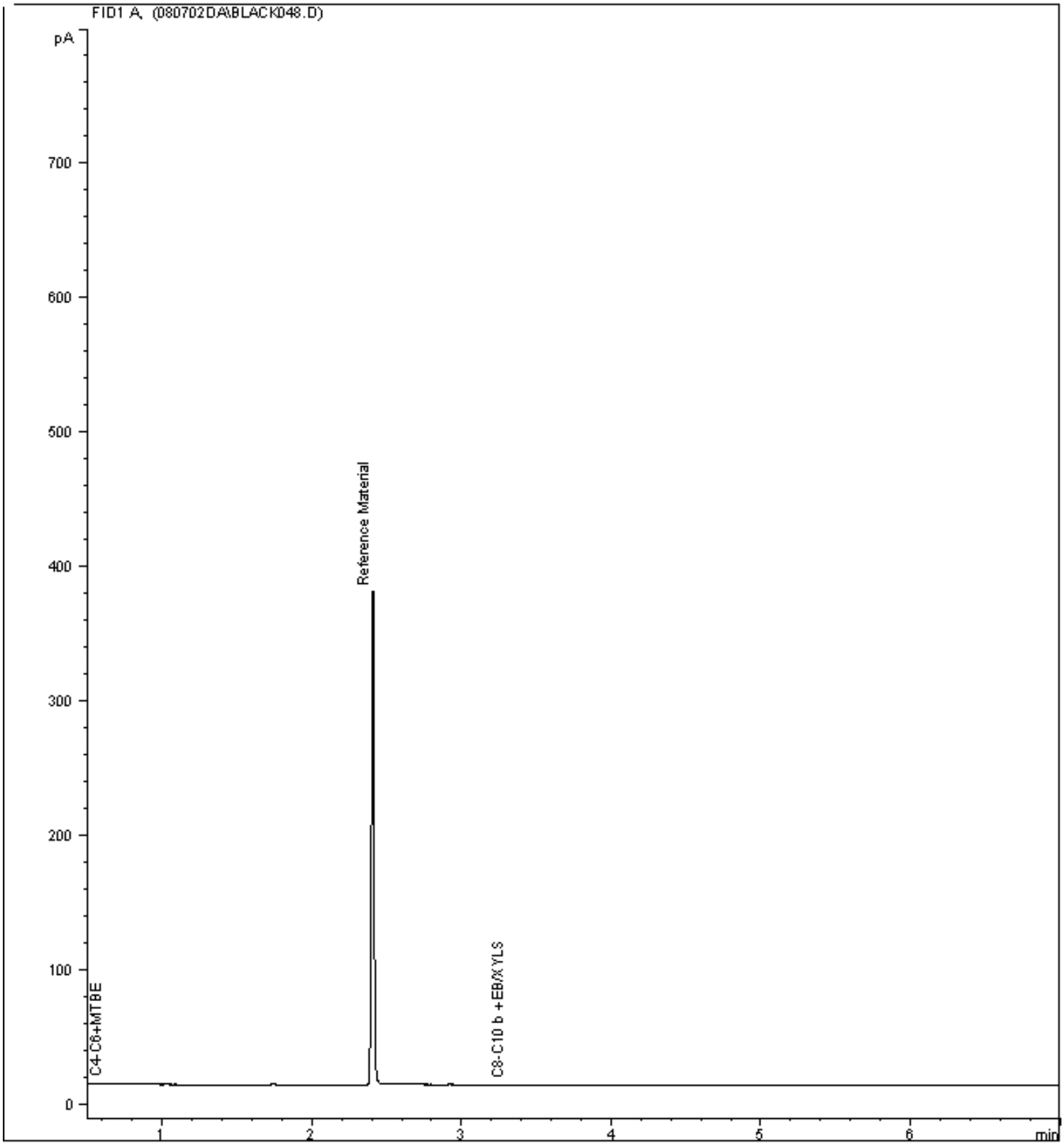
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-66/S
Date Acquired : 03/07/08 04:41:47
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.998



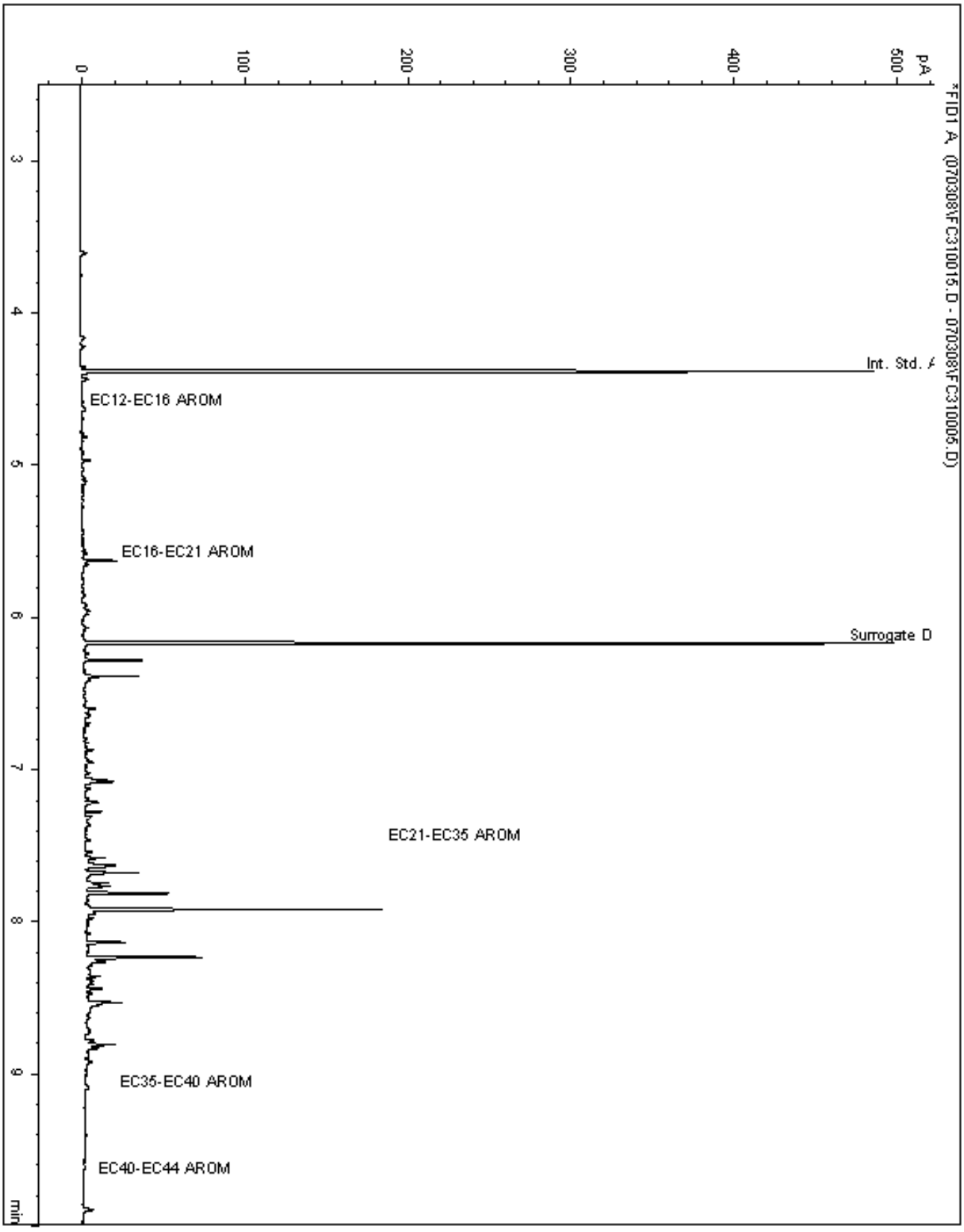
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-67/S
Date Acquired : 03/07/08 02:57:10 PM
Units : ppb
Dilution : 1



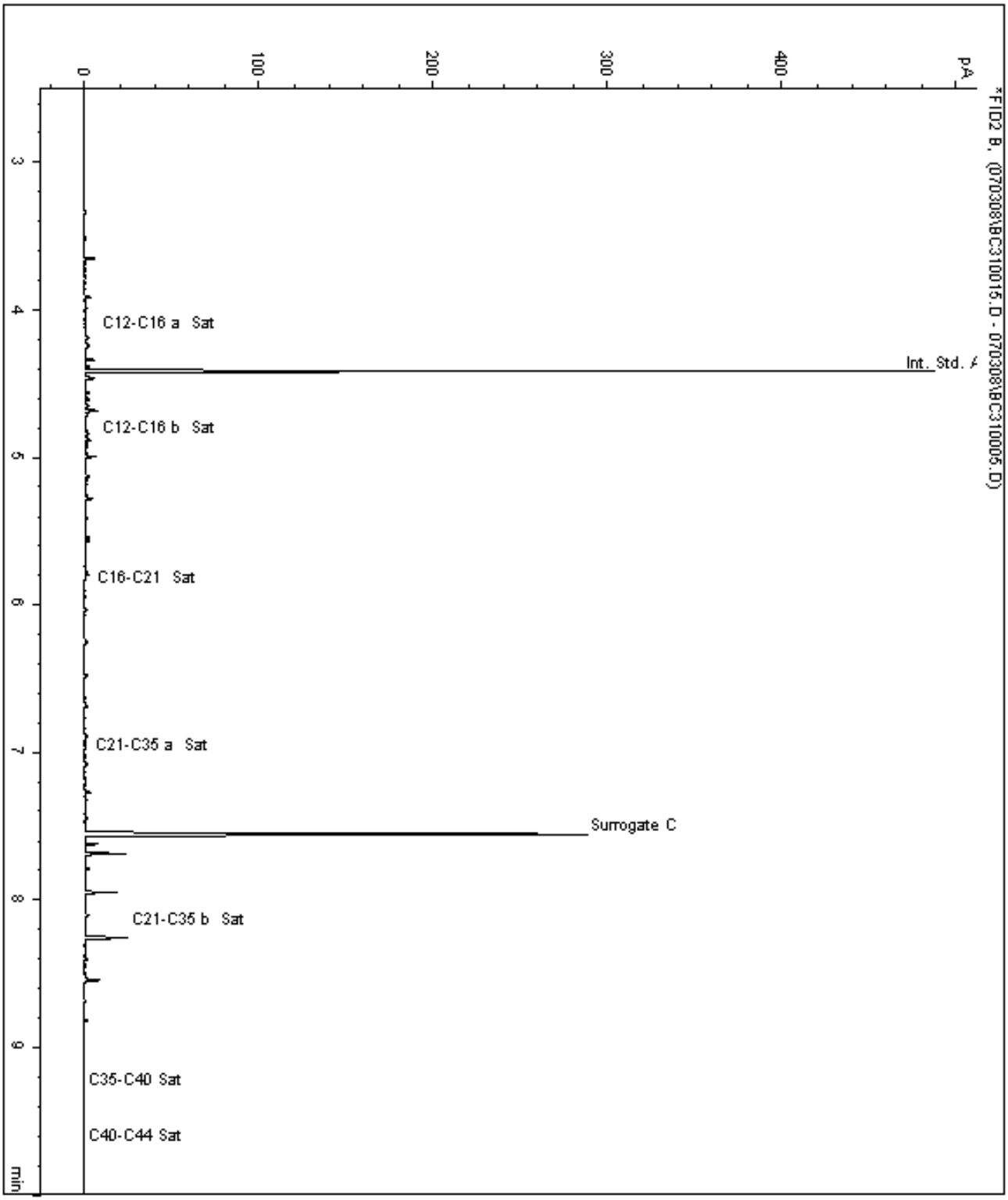
Alcontrol Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-74/S
Date Acquired : 03/07/08 05:27:49 PM
Units : ppb
Dilution:



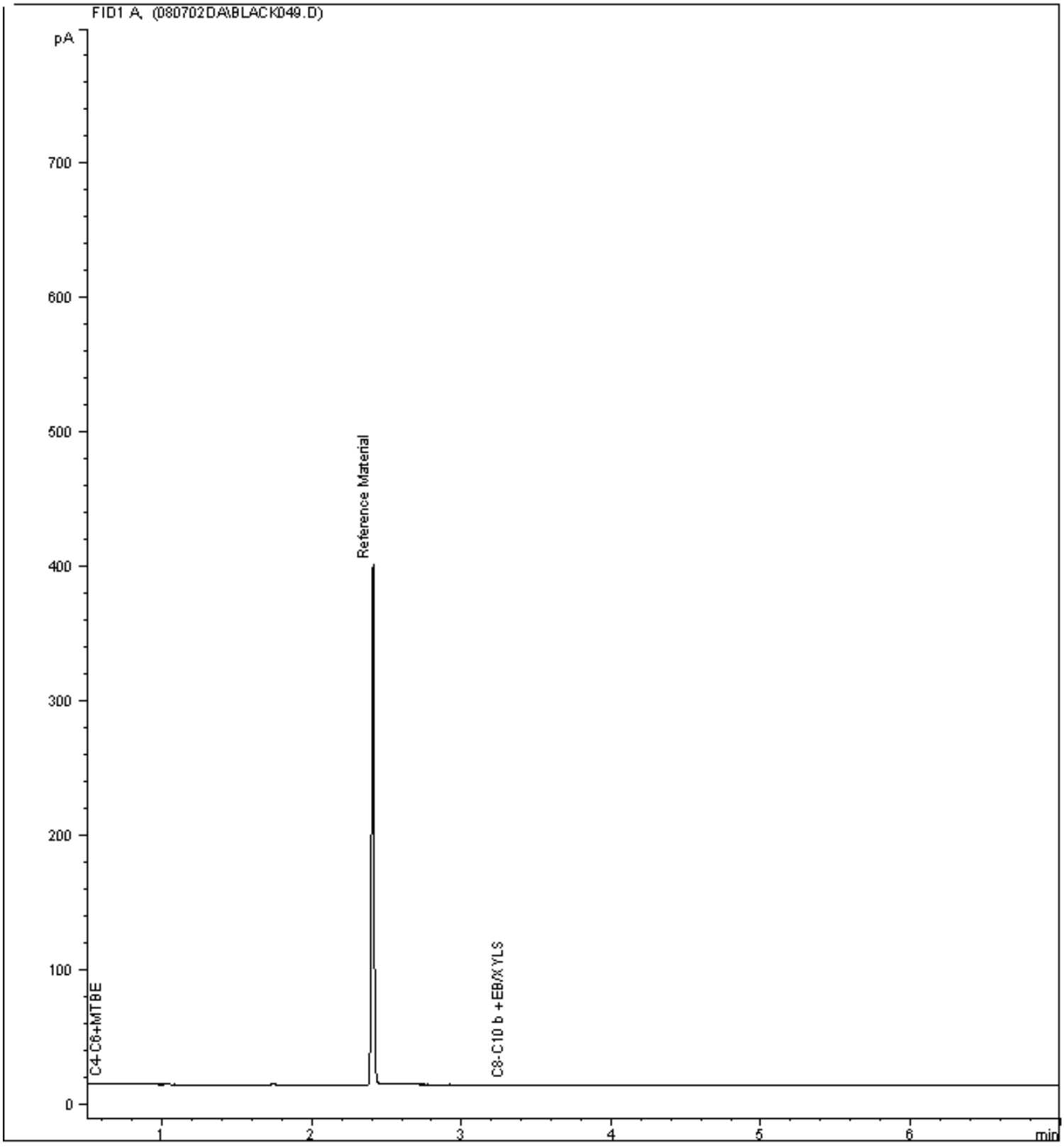
Alcontrol Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-74/S
Date Acquired : 03/07/08 05:27:50 PM
Units : ppb
Dilution:



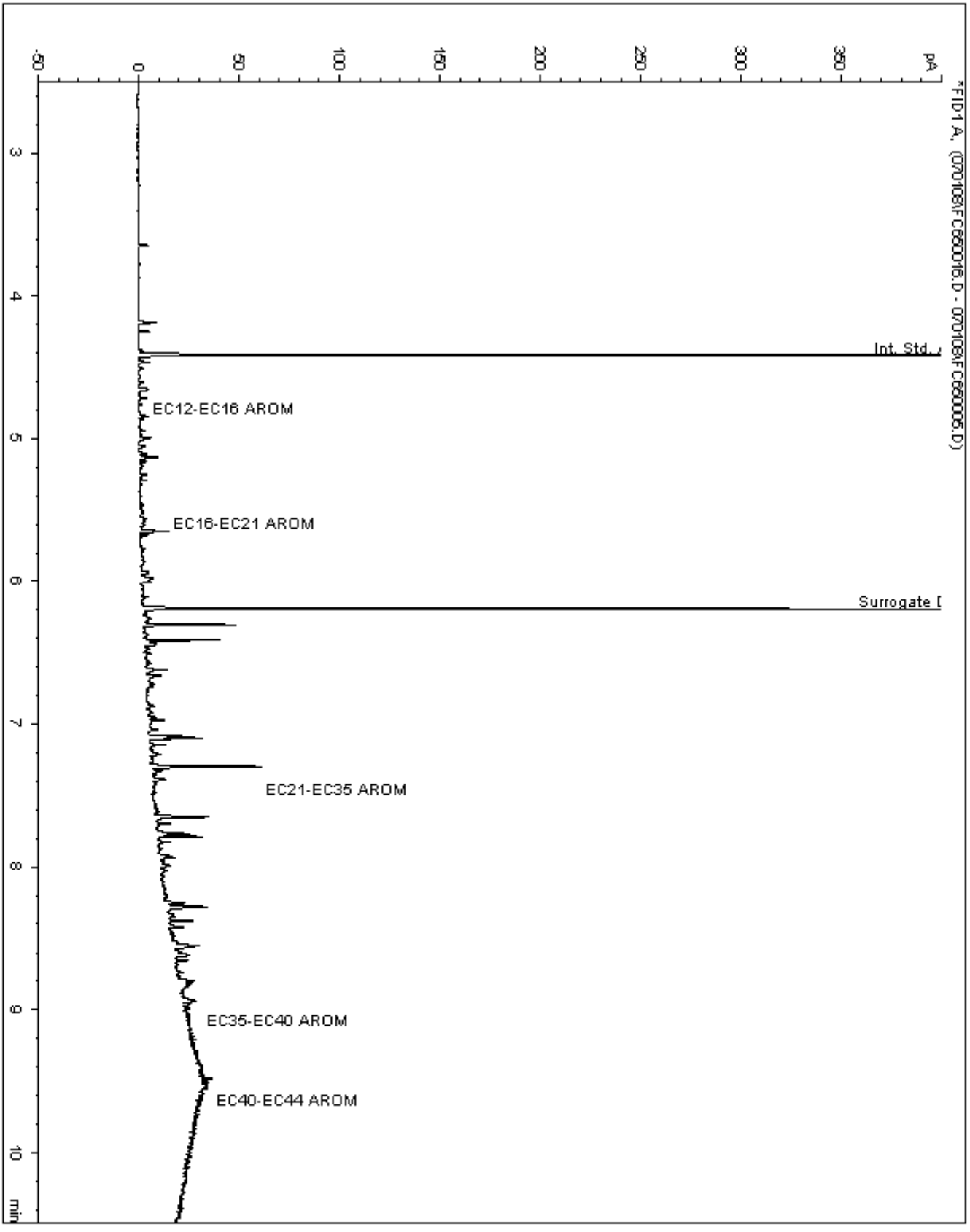
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-75/S
Date Acquired : 03/07/08 03:12:41 PM
Units : ppb
Dilution : 1



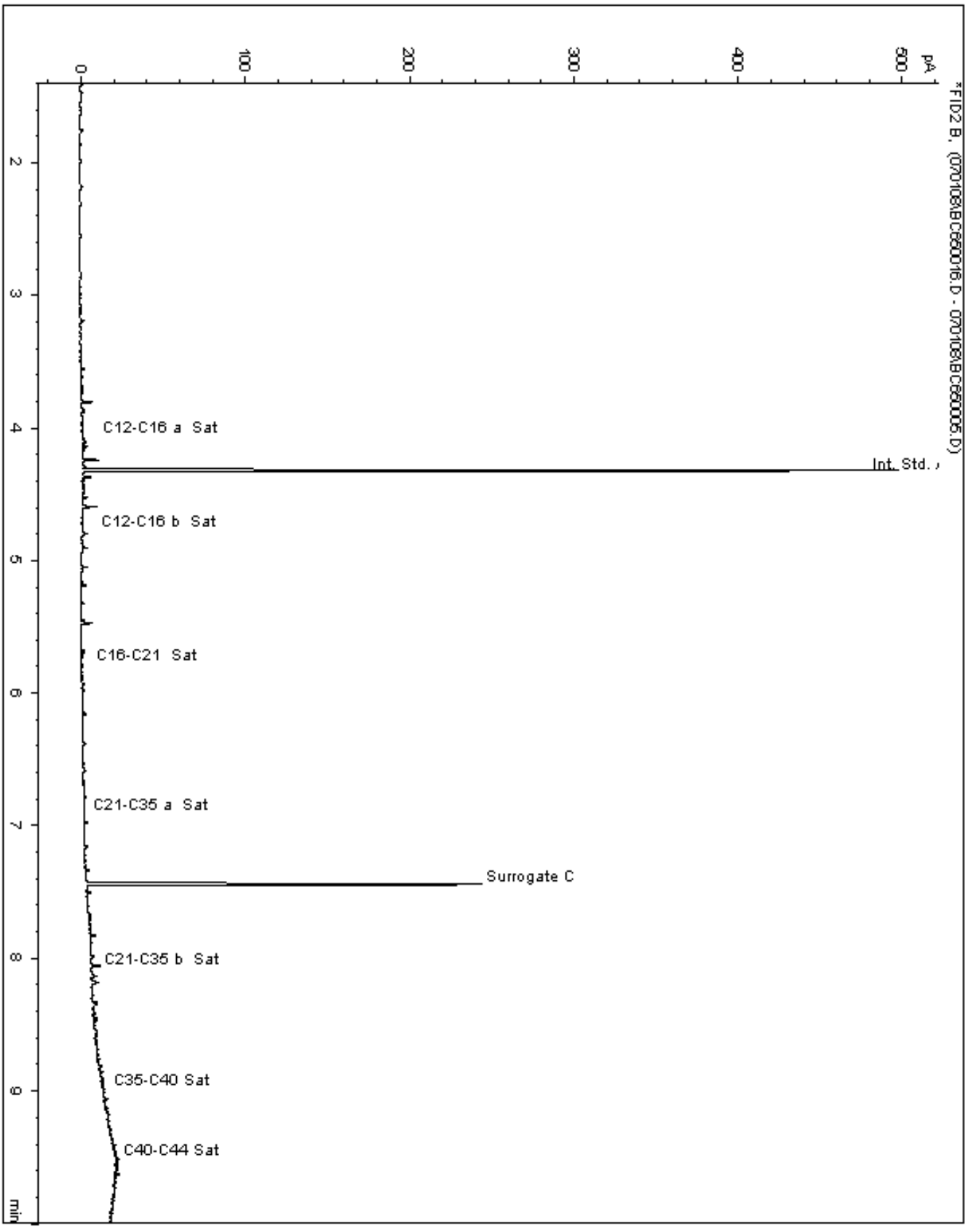
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-82/S
Date Acquired : 02/07/08 10:31:21 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 1.005



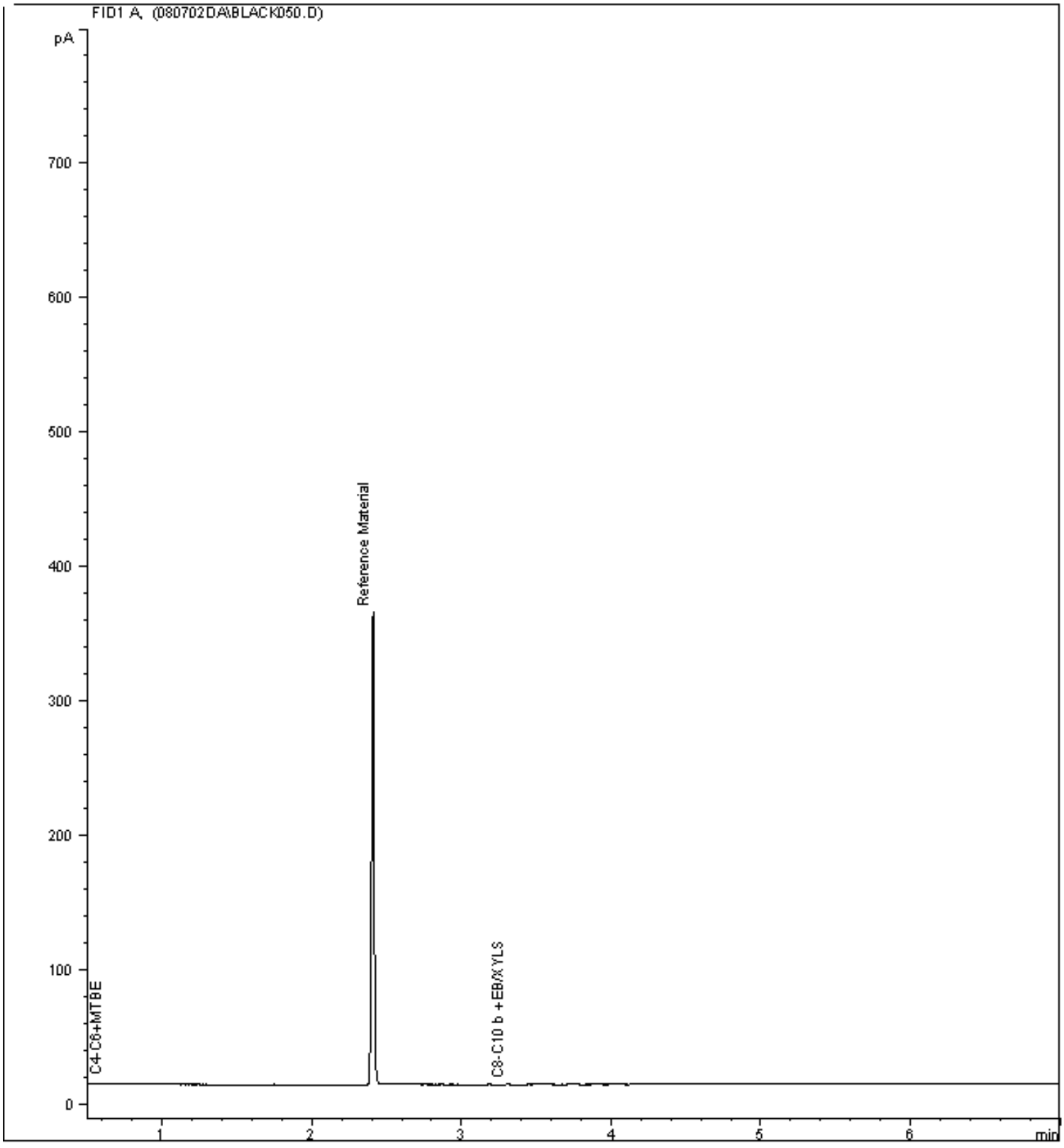
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-82/S
Date Acquired : 02/07/08 10:31:21 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 1.005



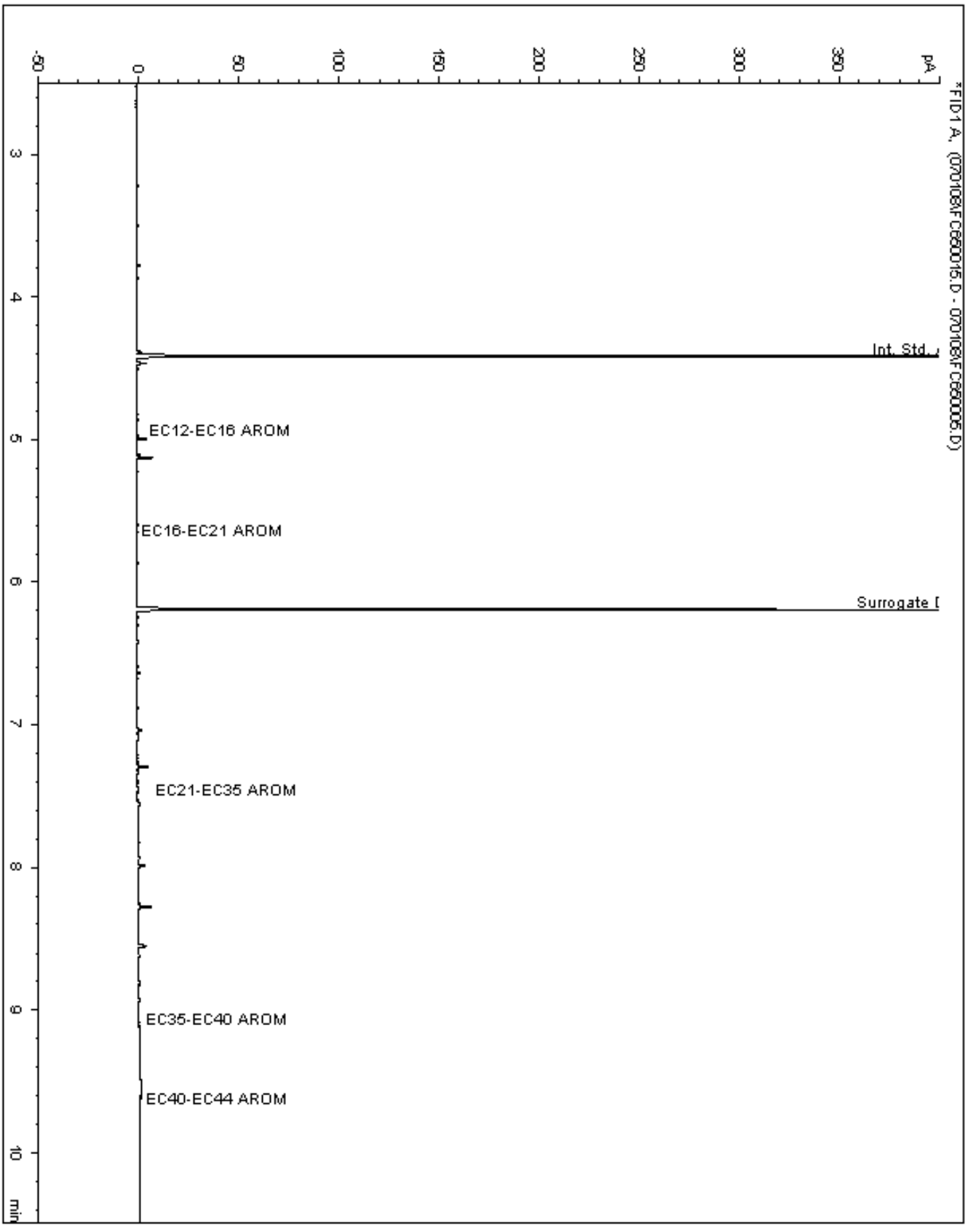
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-83/S
Date Acquired : 03/07/08 03:28:12 PM
Units : ppb
Dilution : 1



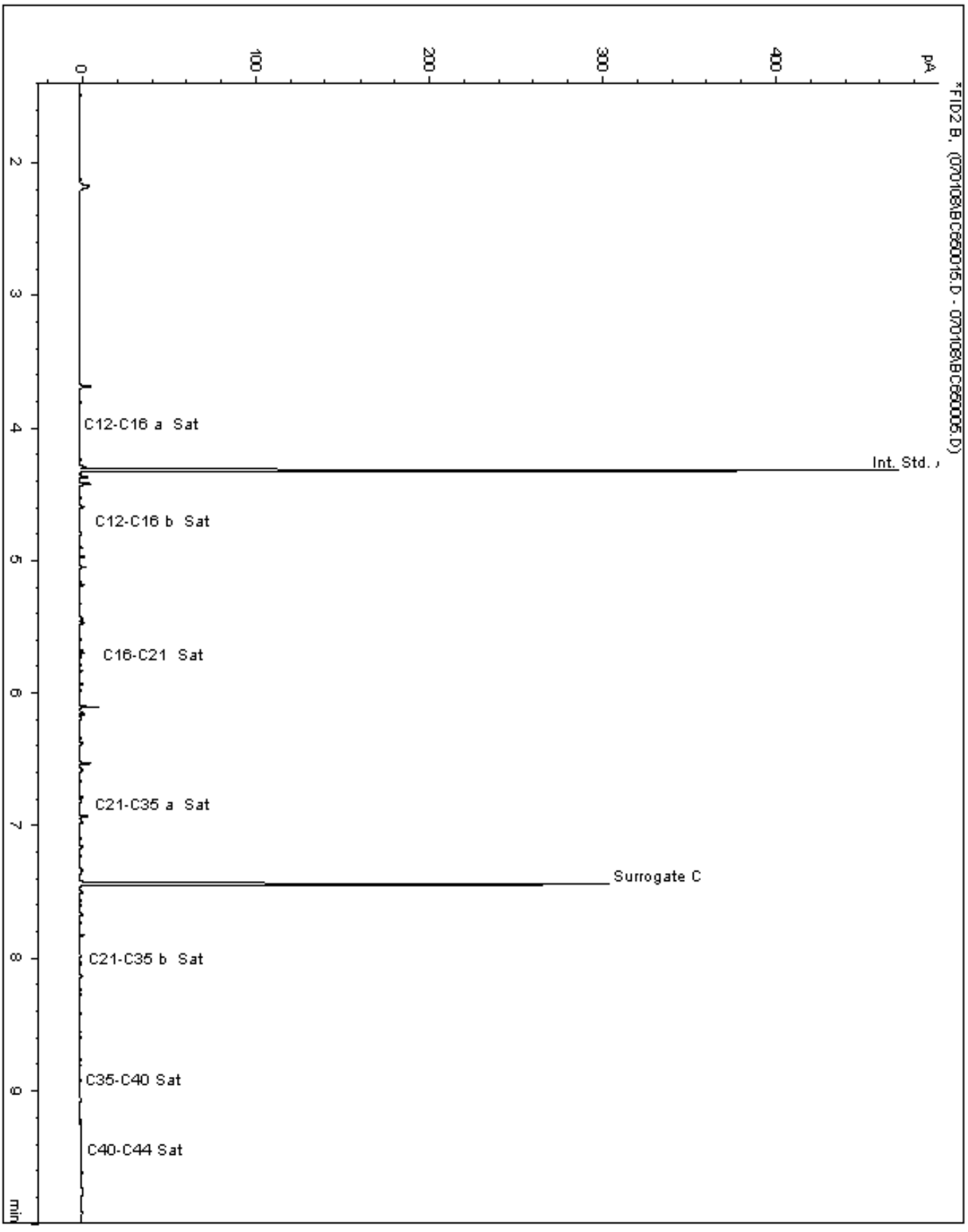
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-93/S
Date Acquired : 02/07/08 23:27:10 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.999



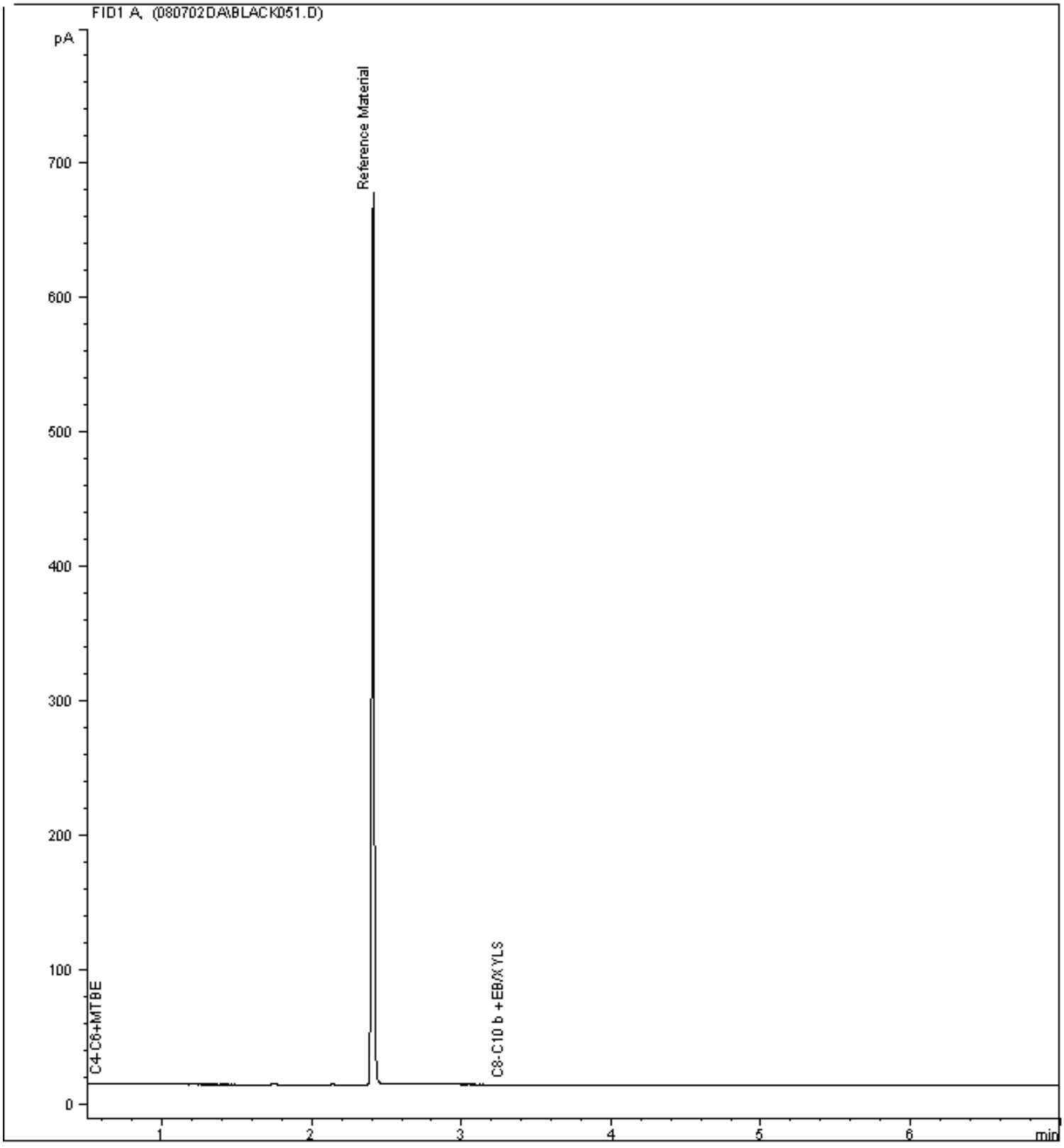
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-93/S
Date Acquired : 02/07/08 23:27:10 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.999



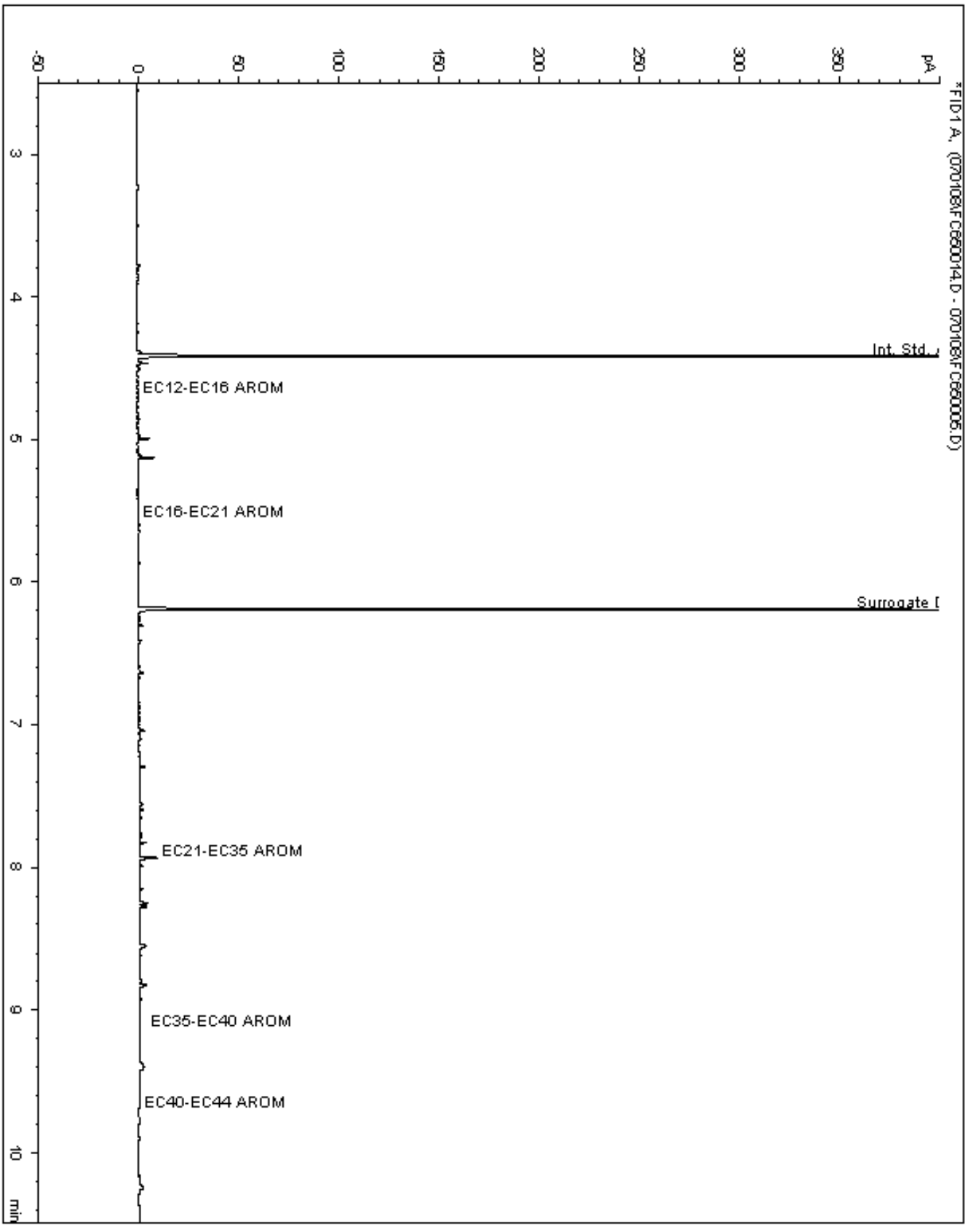
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-94/S
Date Acquired : 03/07/08 03:43:43 PM
Units : ppb
Dilution : 1



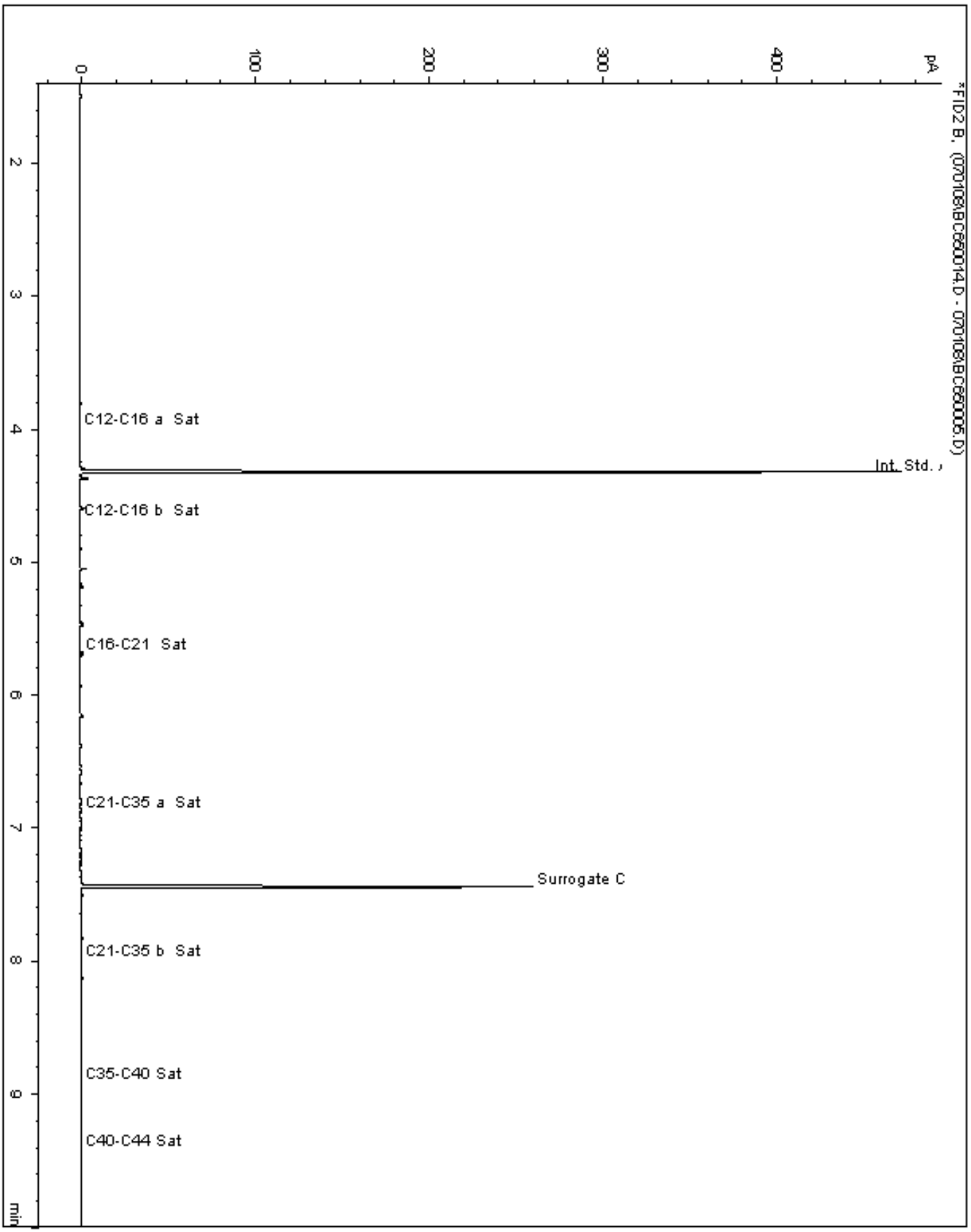
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-98/S
Date Acquired : 02/07/08 09:18:27 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.997



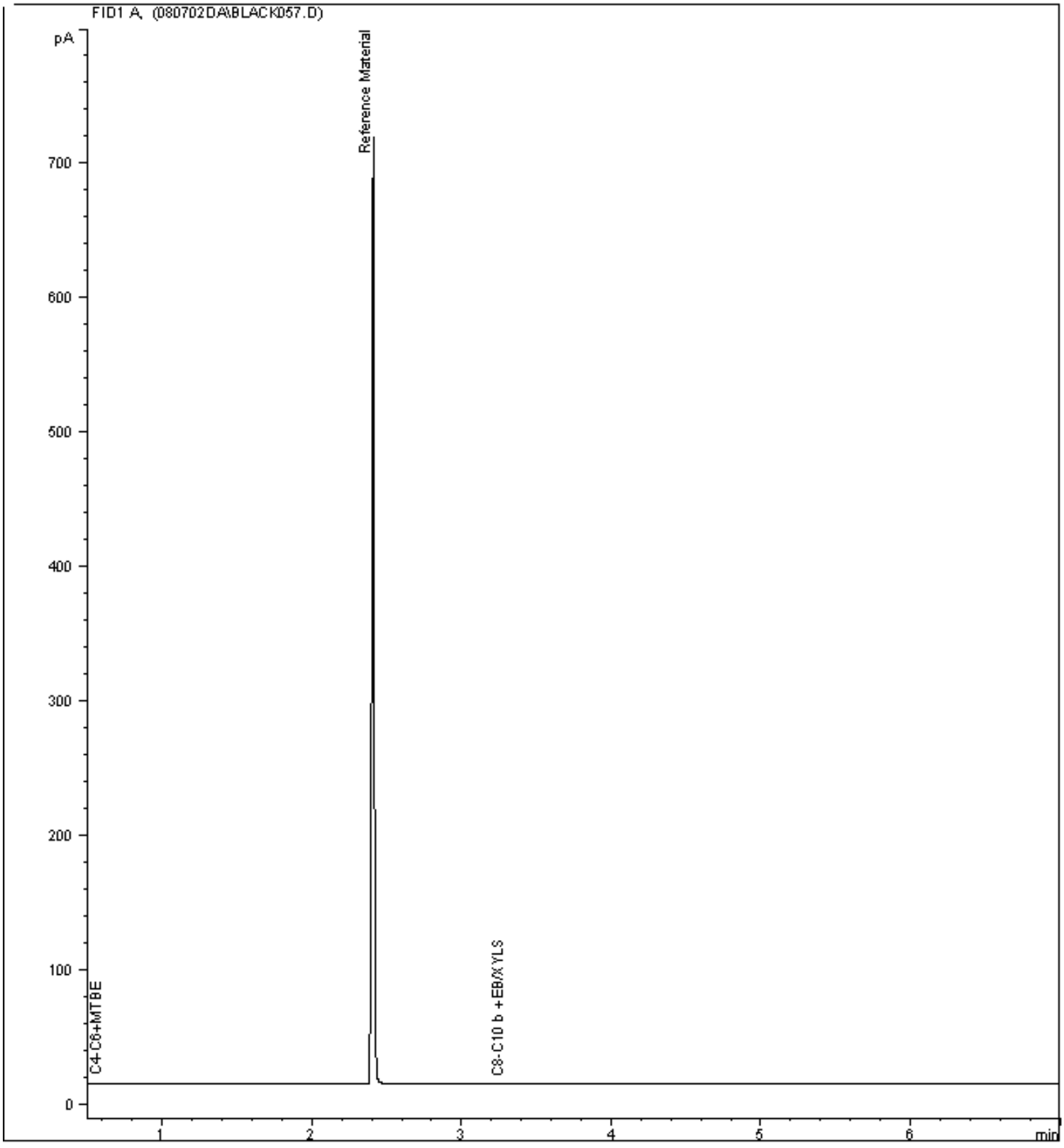
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-98/S
Date Acquired : 02/07/08 09:18:27 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.997



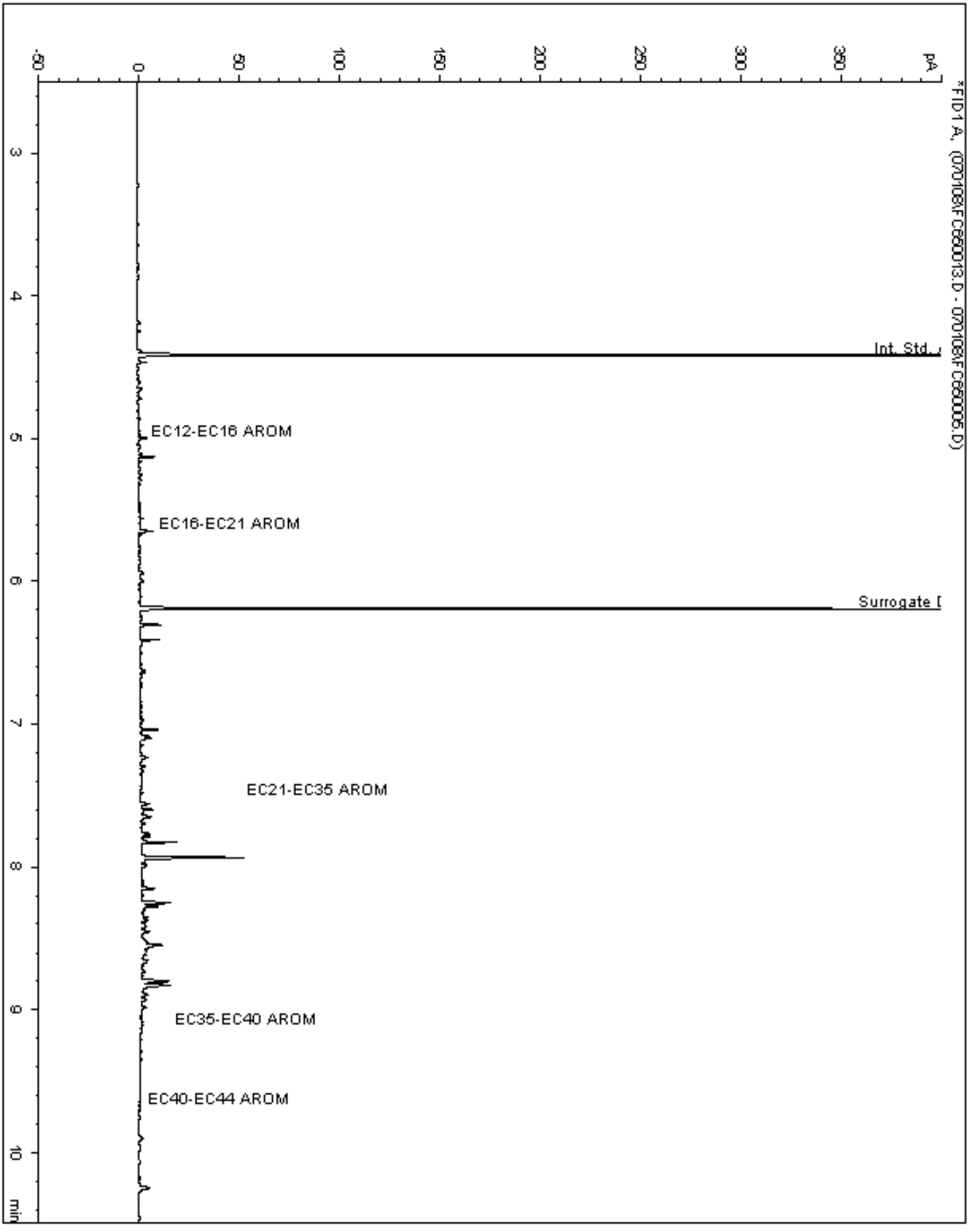
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-99/S
Date Acquired : 03/07/08 05:16:46 PM
Units : ppb
Dilution : 1



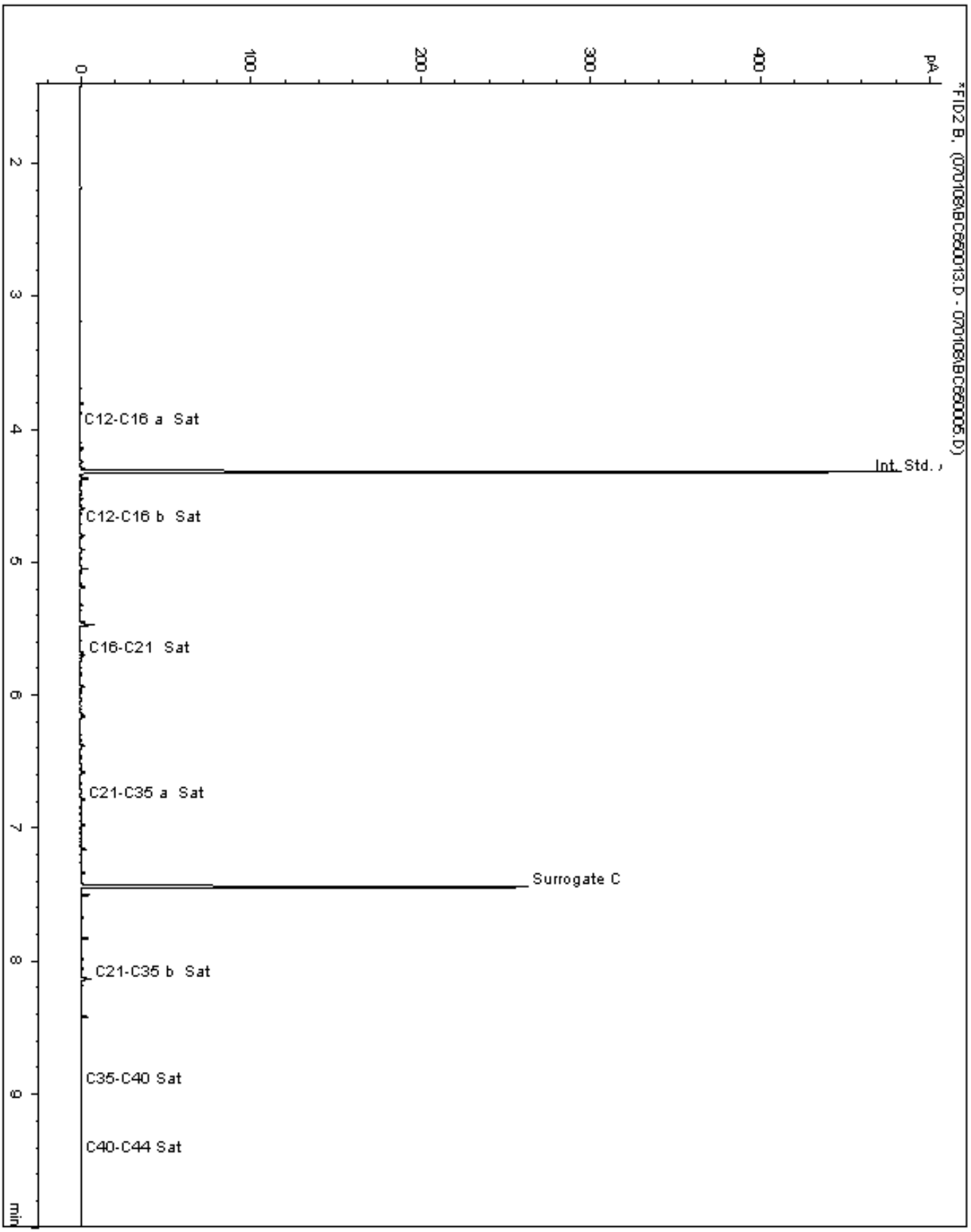
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-120/S
Date Acquired : 02/07/08 08:59:39 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 1.004



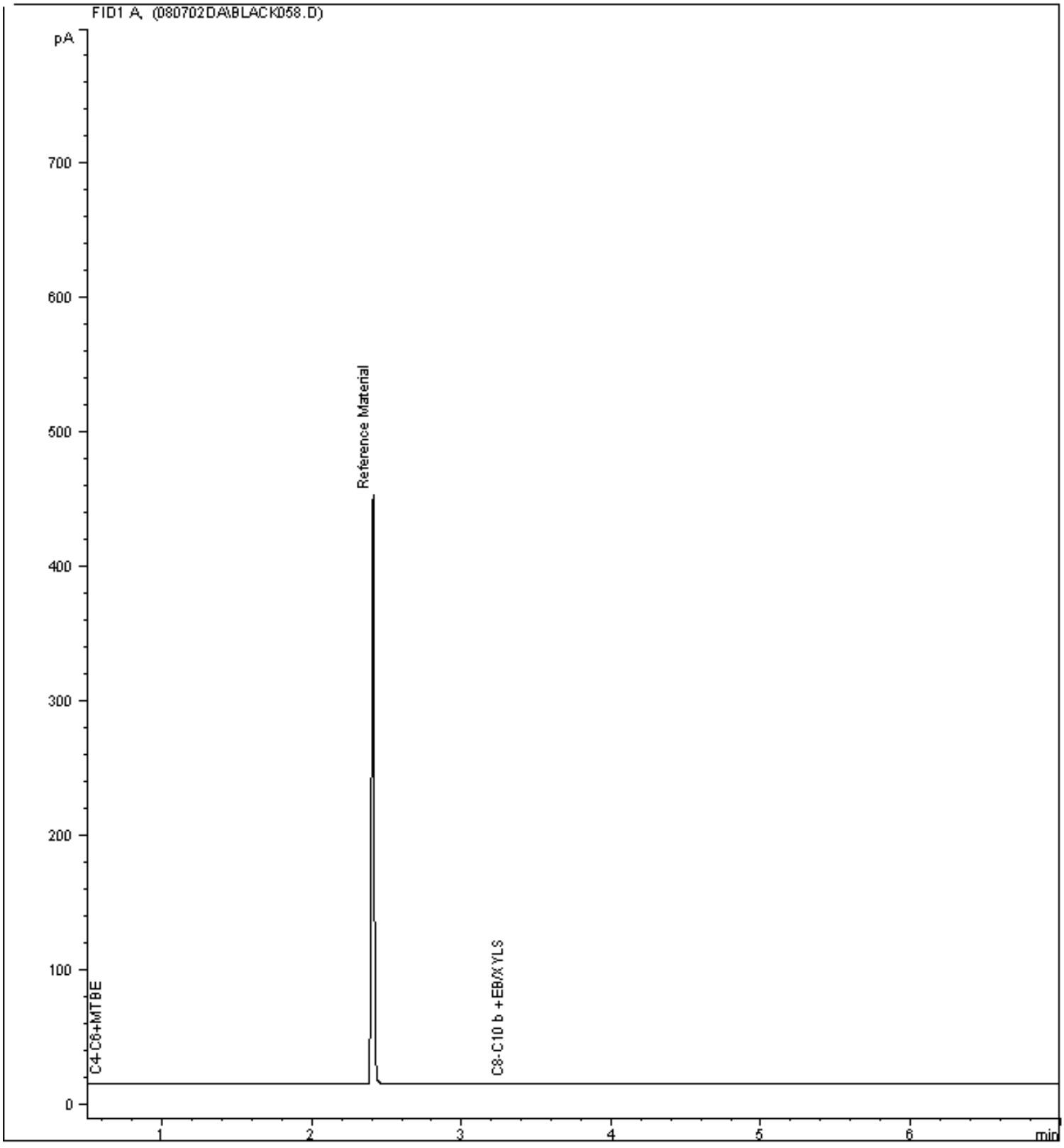
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-120/S
Date Acquired : 02/07/08 08:59:39 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 1.004



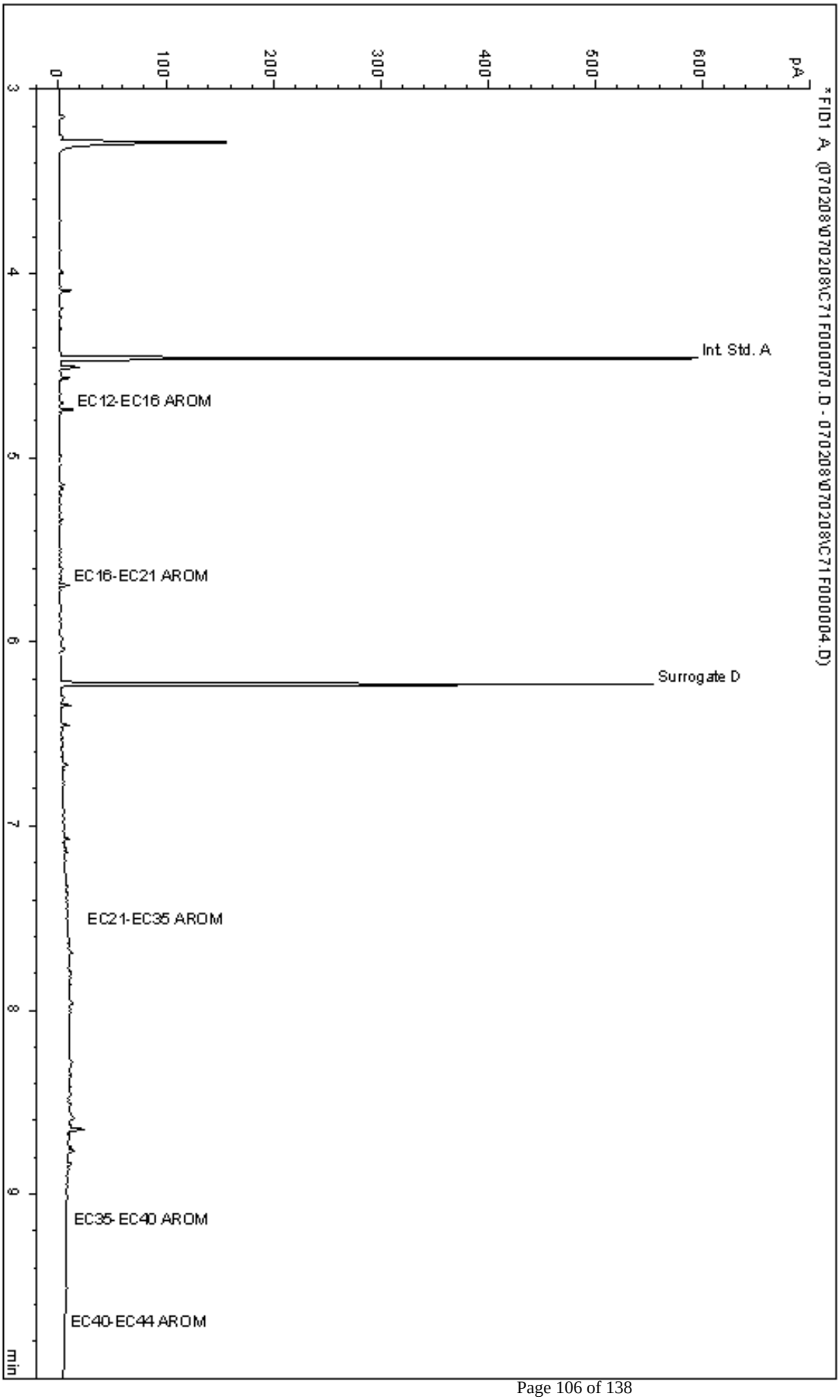
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-121/S
Date Acquired : 03/07/08 05:32:17 PM
Units : ppb
Dilution : 1



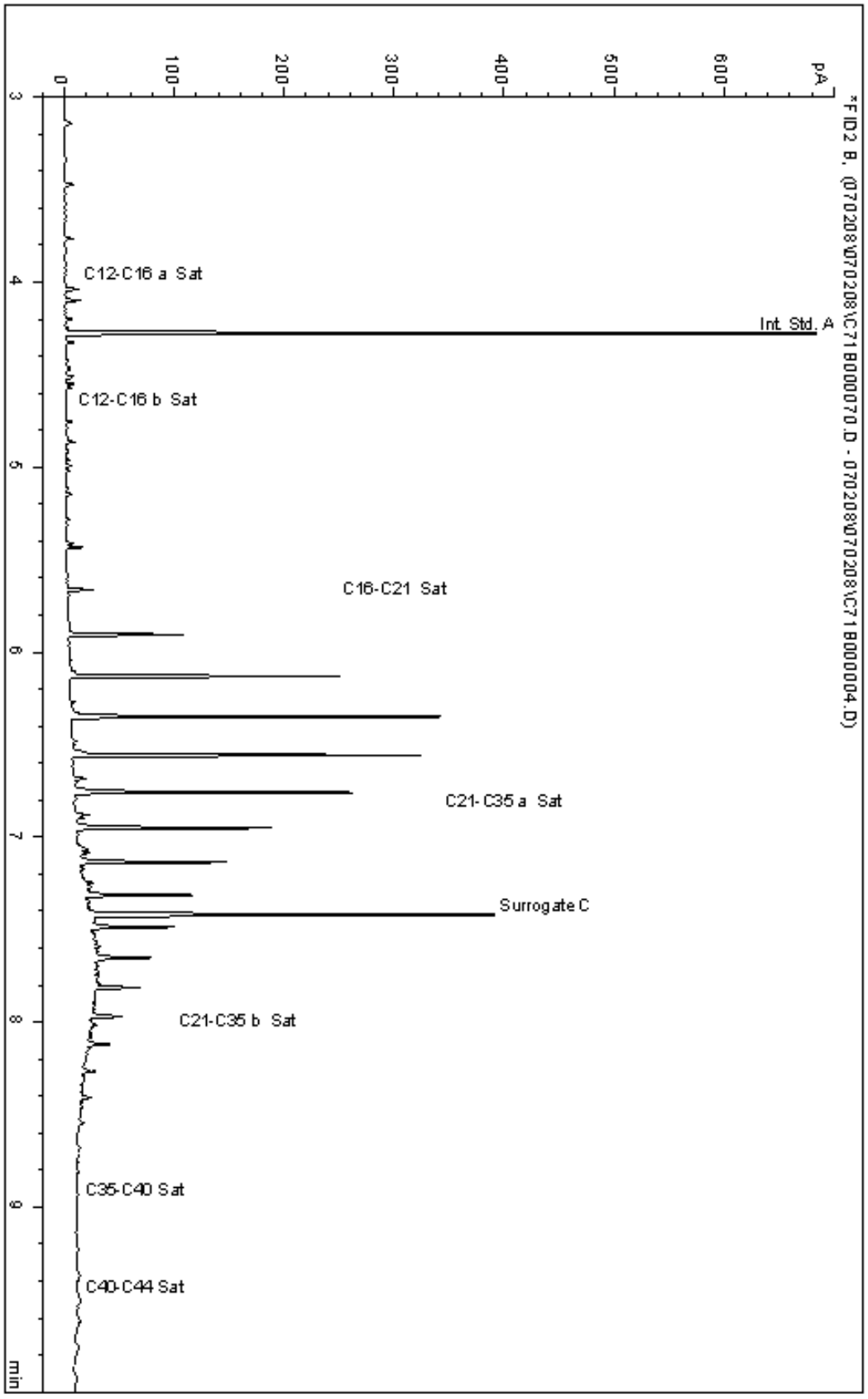
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-130/S
Date Acquired : 03/07/08 20:13:05
Units : ppb
Dilution :
CF : 1000
Multiplier : 1.004



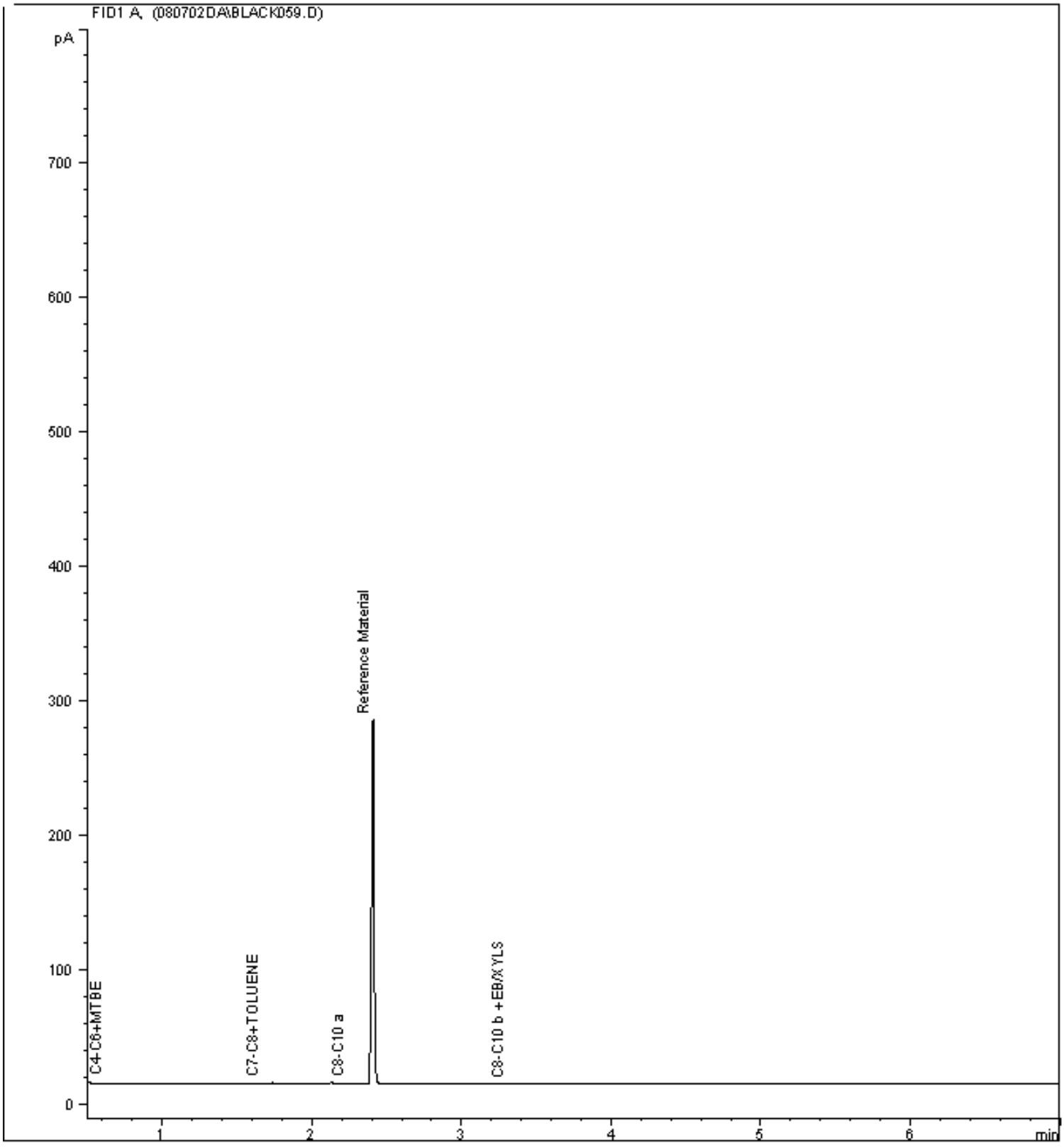
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-130/S
Date Acquired : 03/07/08 20:13:05
Units : ppb
Dilution :
CF : 1000
Multiplier : 1.004



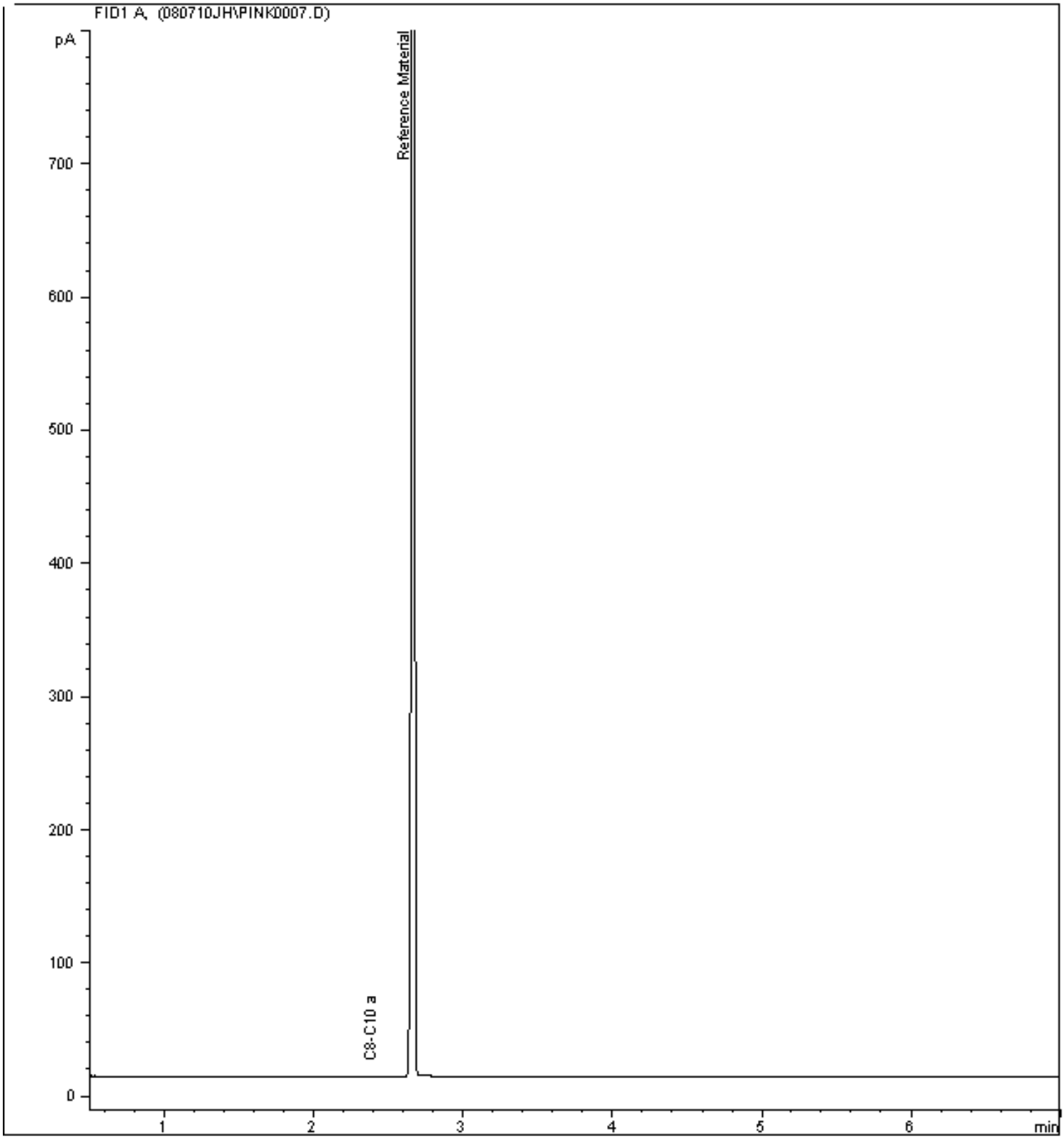
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-131/S
Date Acquired : 03/07/08 05:47:48 PM
Units : ppb
Dilution : 1



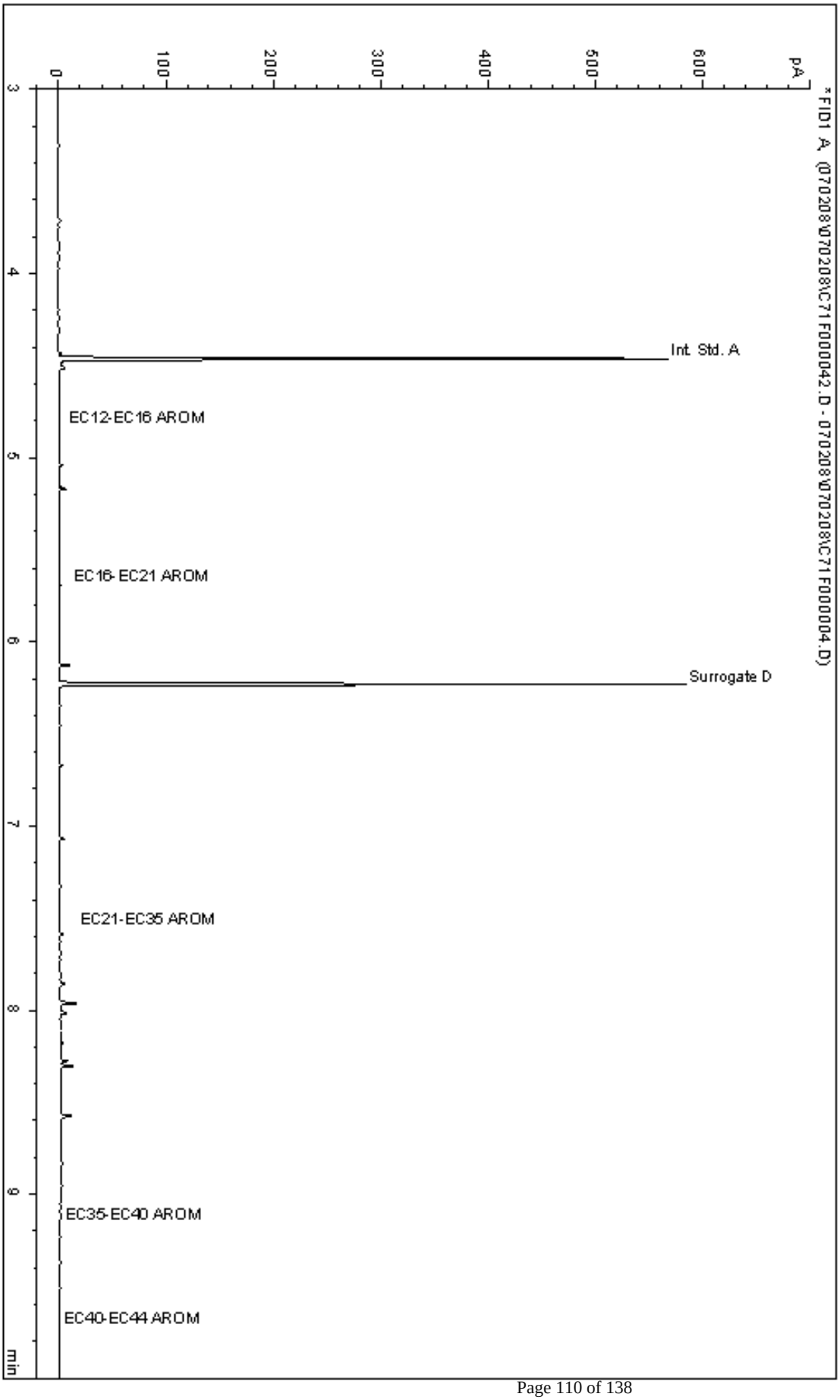
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-162/N
Date Acquired : 10/07/08 13:11:50 PM
Units : ppb
Dilution : 1



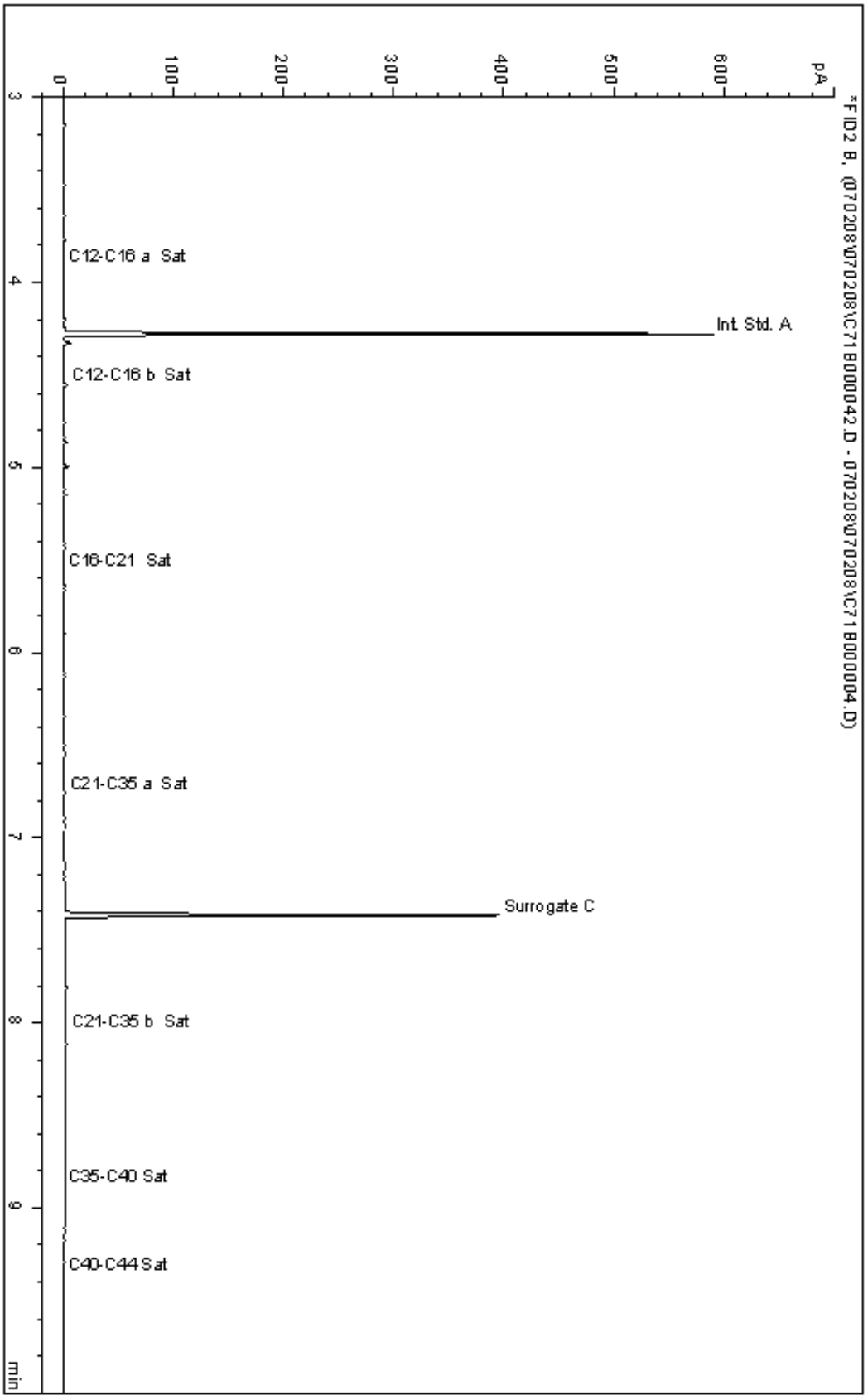
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-204/S
Date Acquired : 03/07/08 03:41:42
Units : ppb
Dilution :
CF : 1000
Multiplier : 1.002



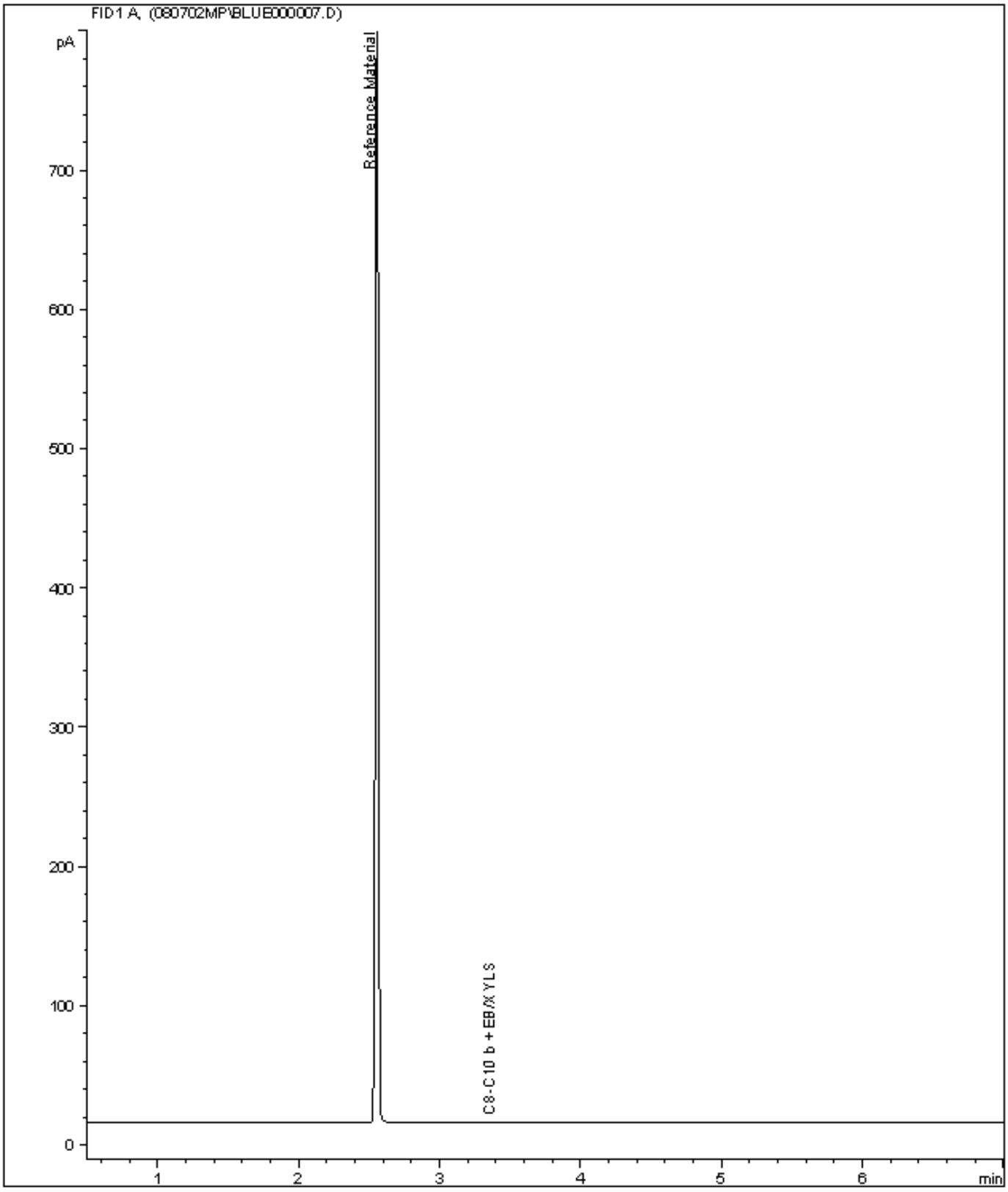
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-204/S
Date Acquired : 03/07/08 03:41:42
Units : ppb
Dilution :
CF : 1000
Multiplier : 1.002



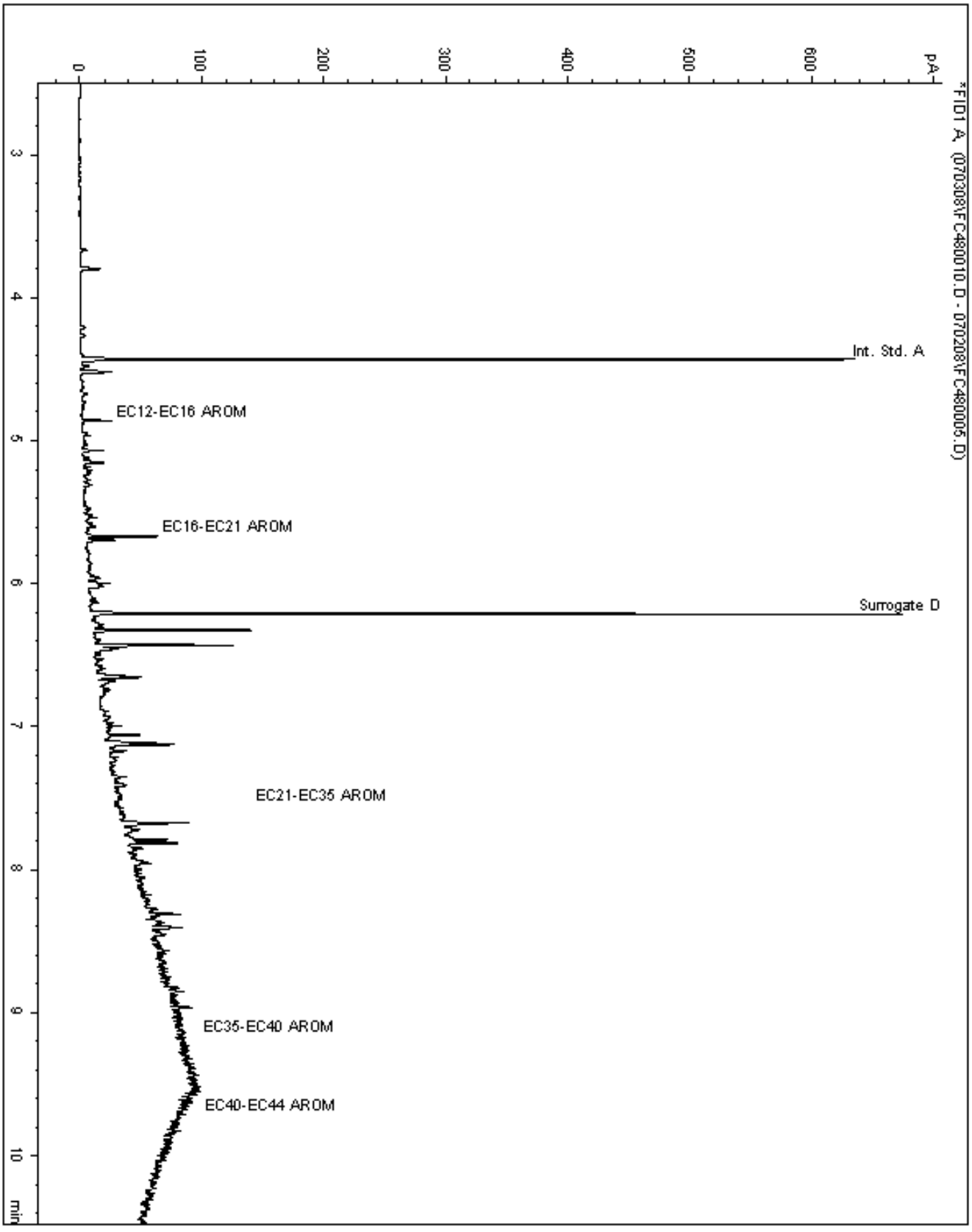
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-205/S
Date Acquired : 02/07/08 18:52:07
Units : ppb
Dilution : 1



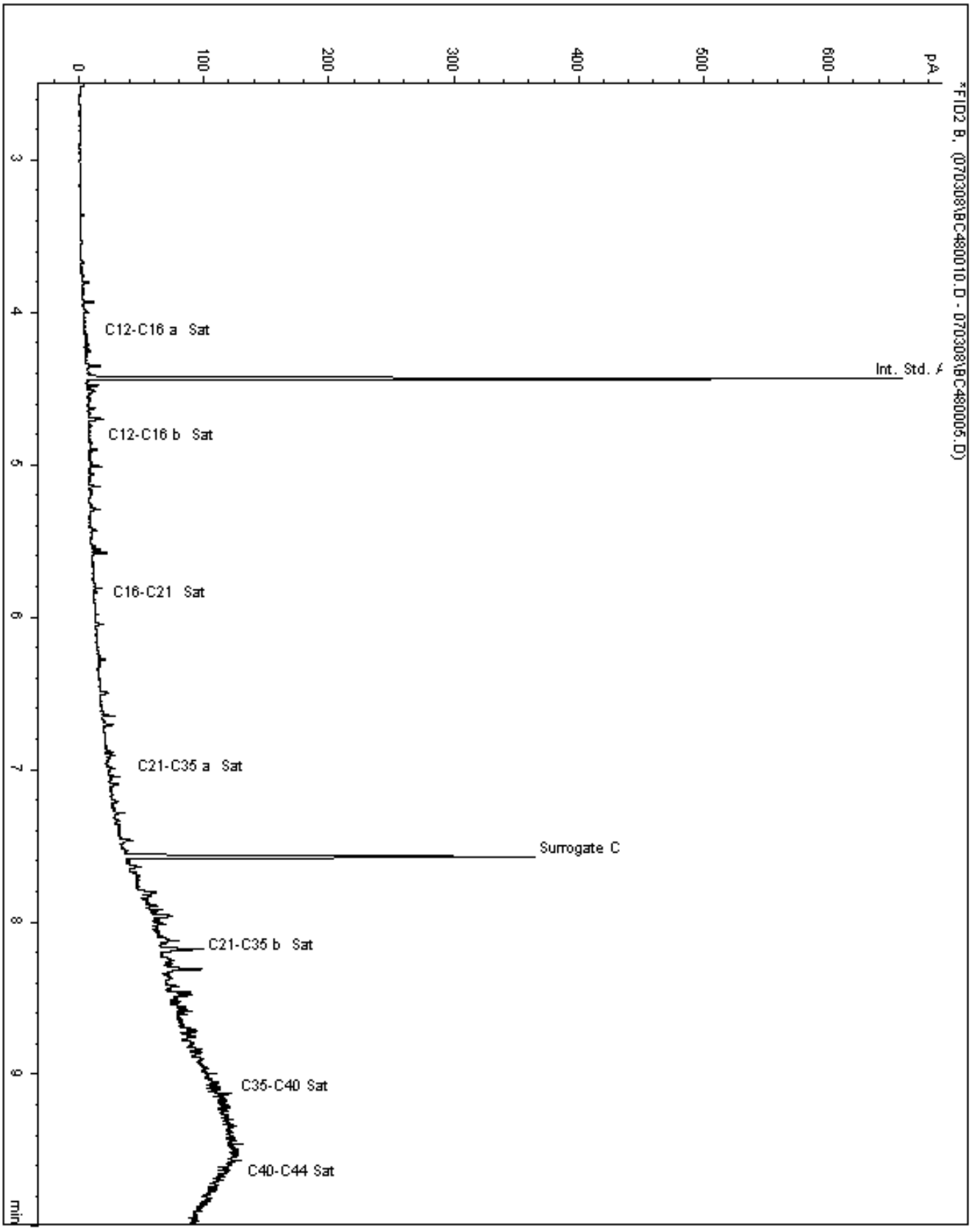
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-212/S
Date Acquired : 03/07/08 13:33:43 PM
Units : ppb
Dilution :
CF : 2000
Multiplier : 0.995



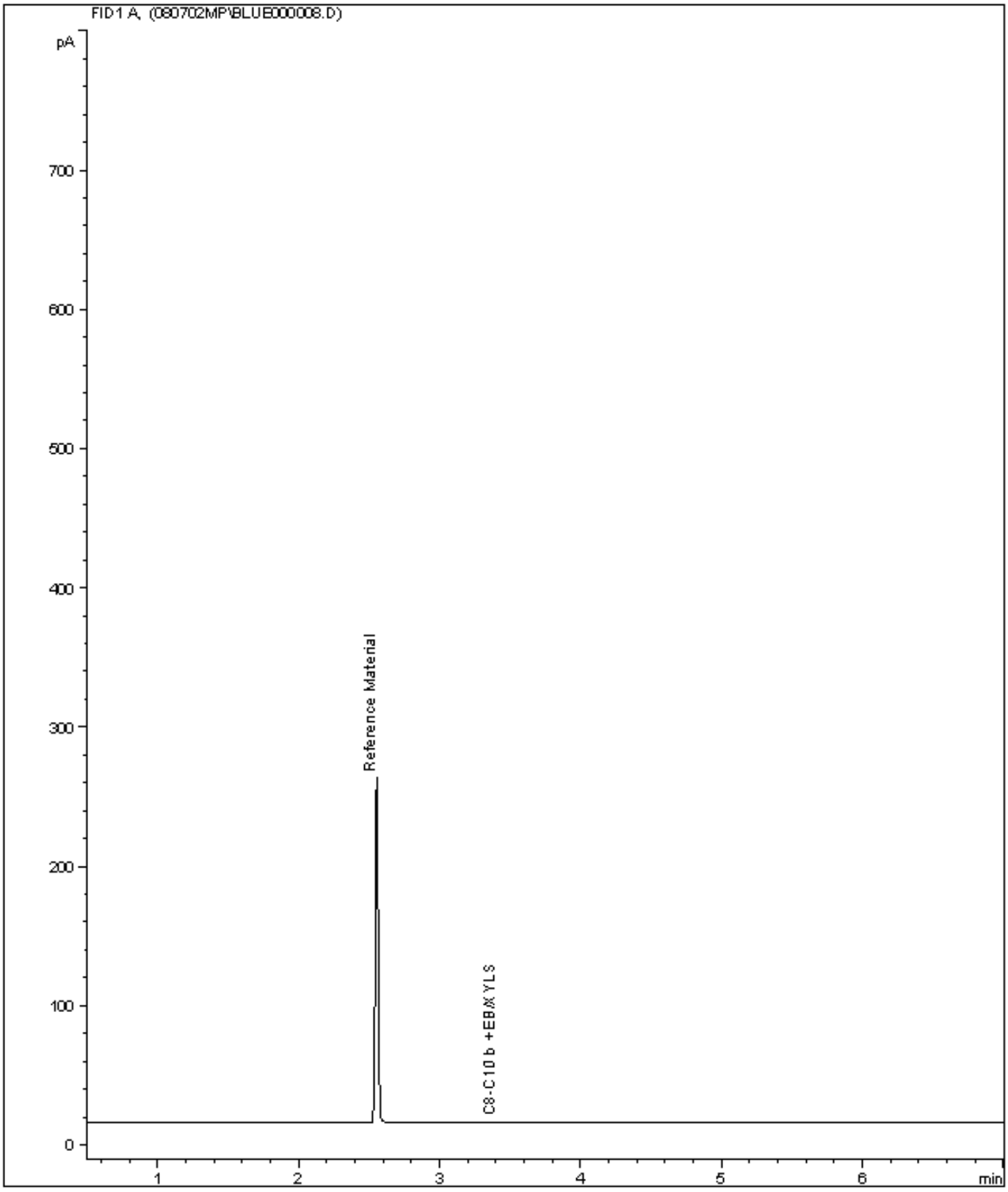
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-212/S
Date Acquired : 03/07/08 13:33:42 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.995



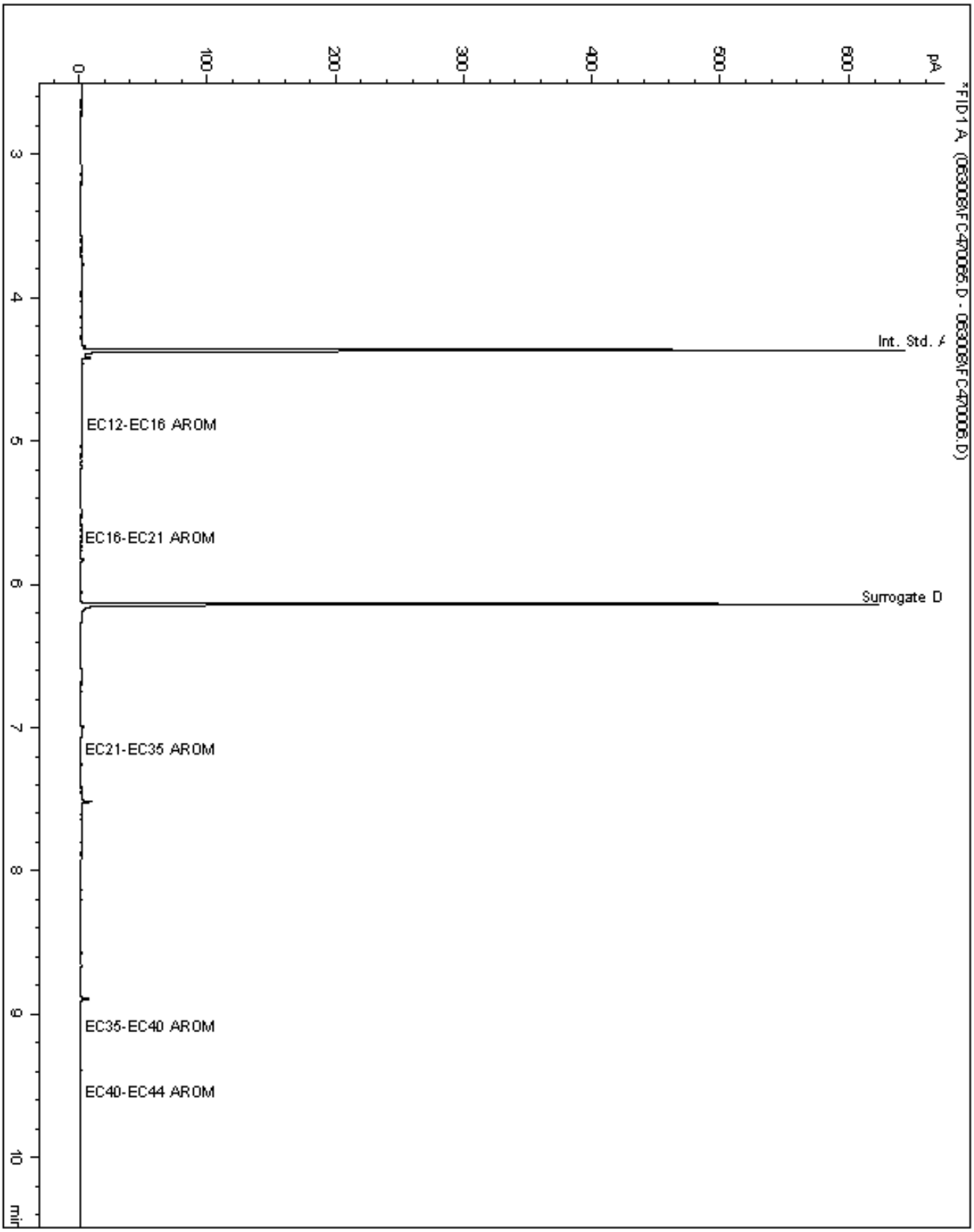
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-213/S
Date Acquired : 02/07/08 19:06:24
Units : ppb
Dilution : 1



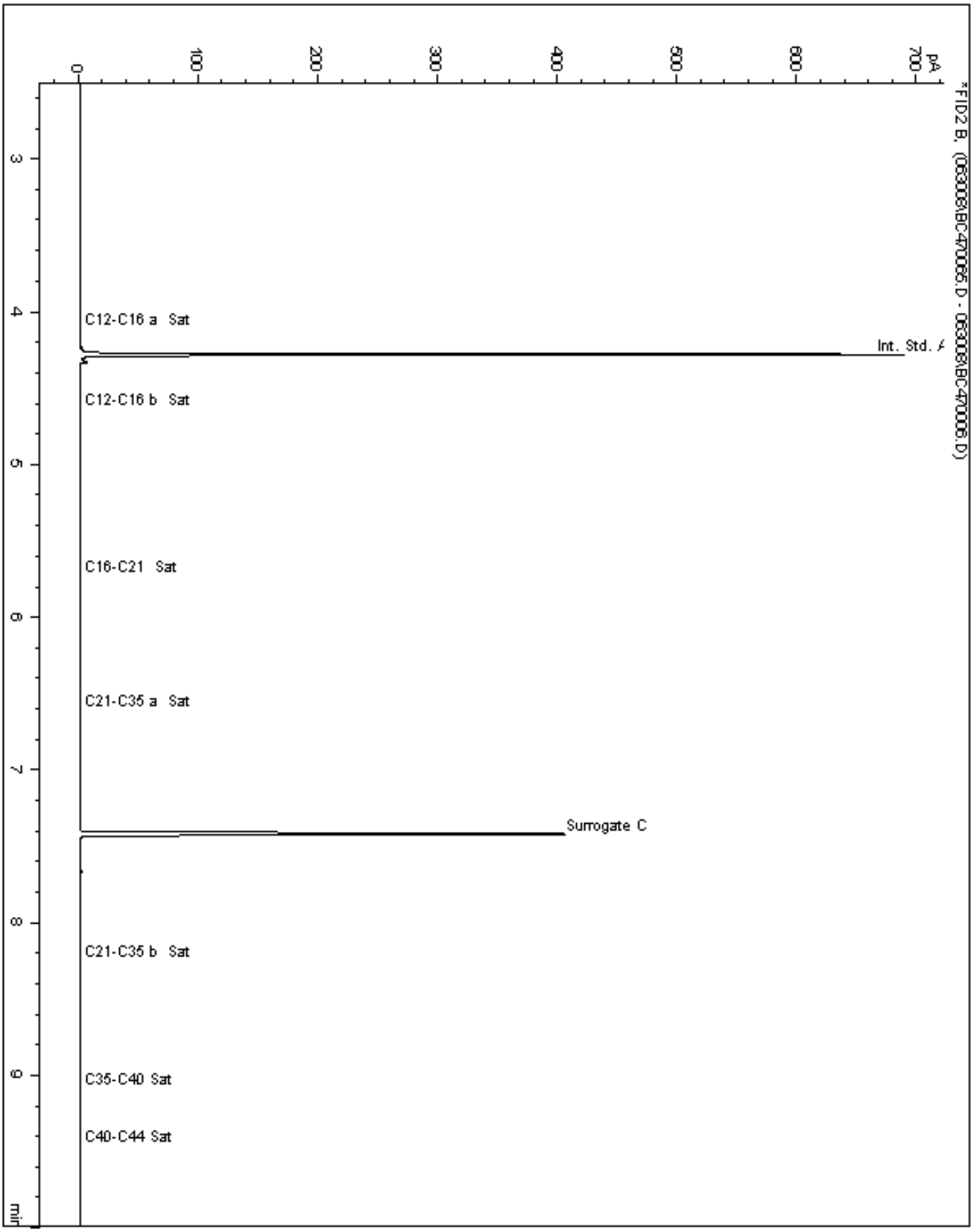
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-219/W
Date Acquired : 01/07/08 16:39:03 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.017



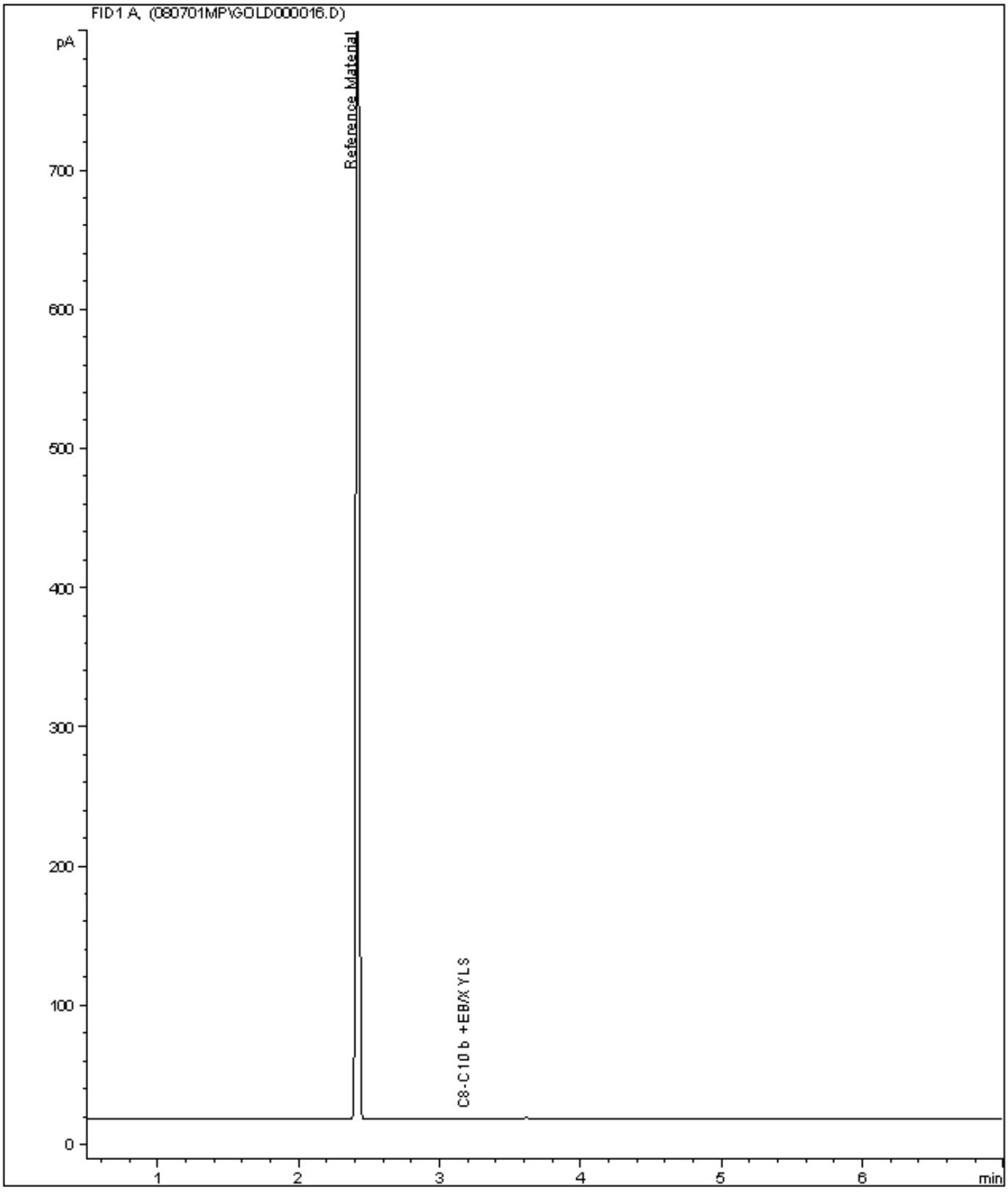
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-219/W
Date Acquired : 01/07/08 16:39:03 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.017



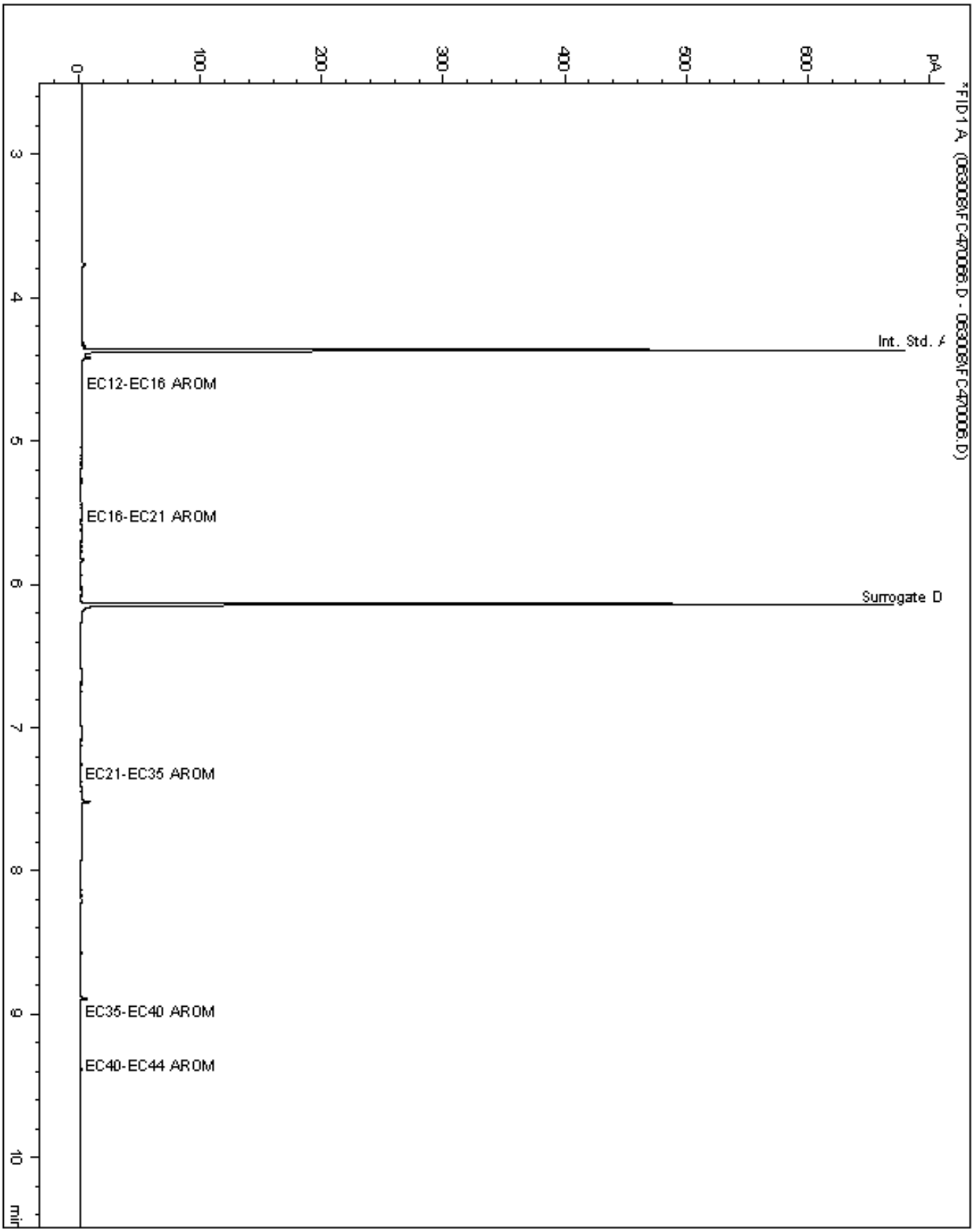
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-219/w
Date Acquired : 01/07/08 20:33:14
Units : ppb
Dilution : 1



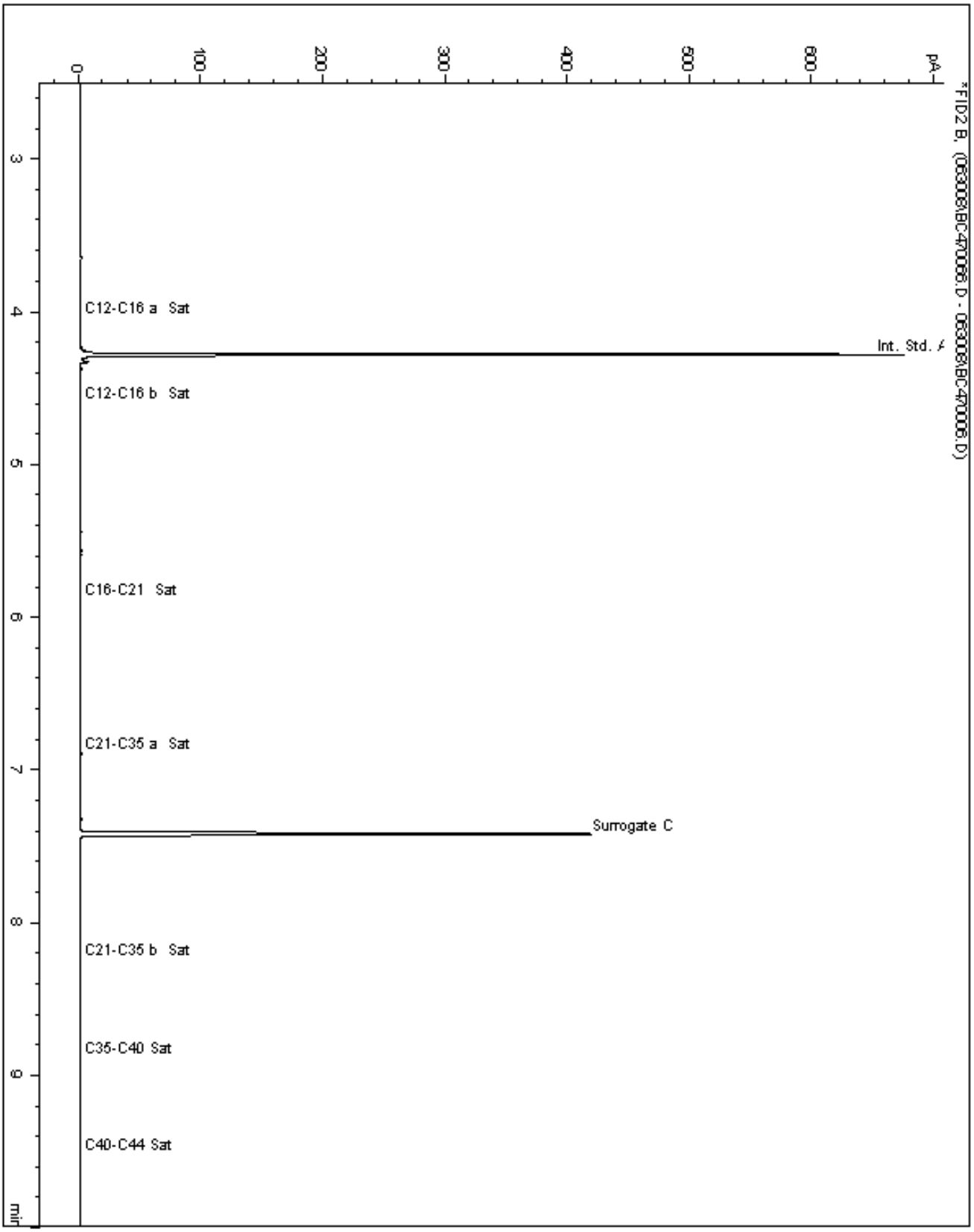
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-221/W
Date Acquired : 01/07/08 16:58:07 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.017



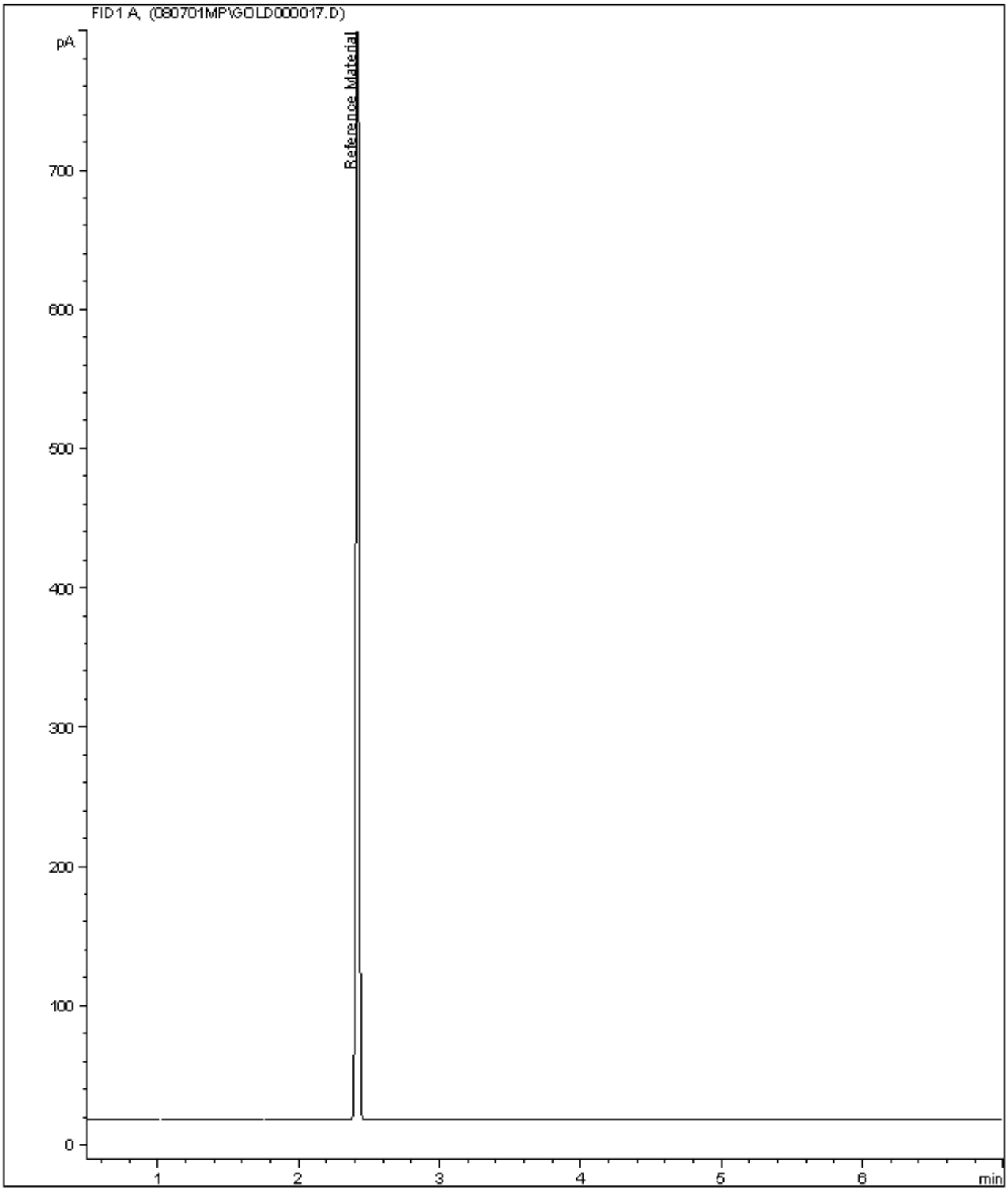
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-221/W
Date Acquired : 01/07/08 16:58:07 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.017



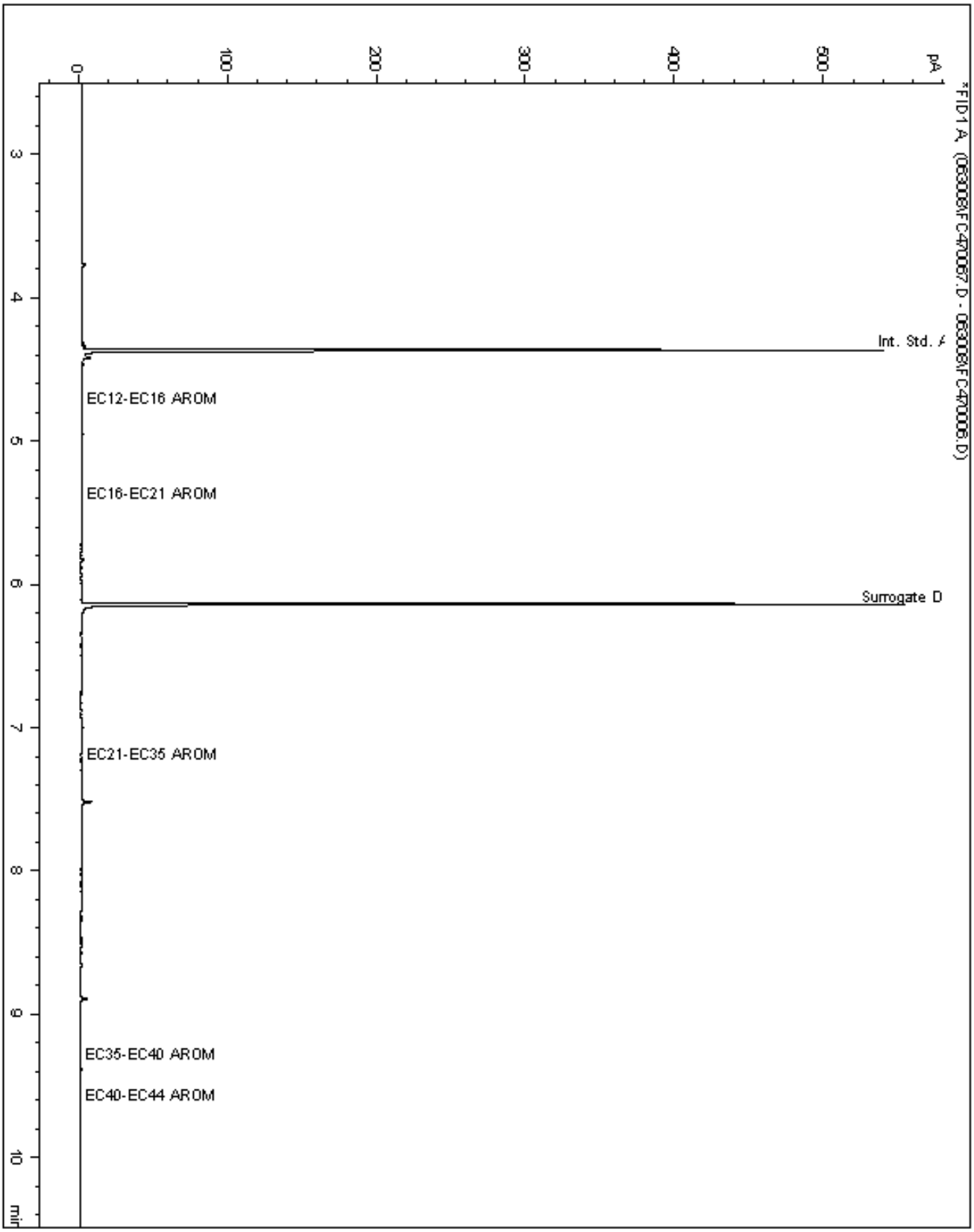
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-221/w
Date Acquired : 01/07/08 20:47:15
Units : ppb
Dilution : 1



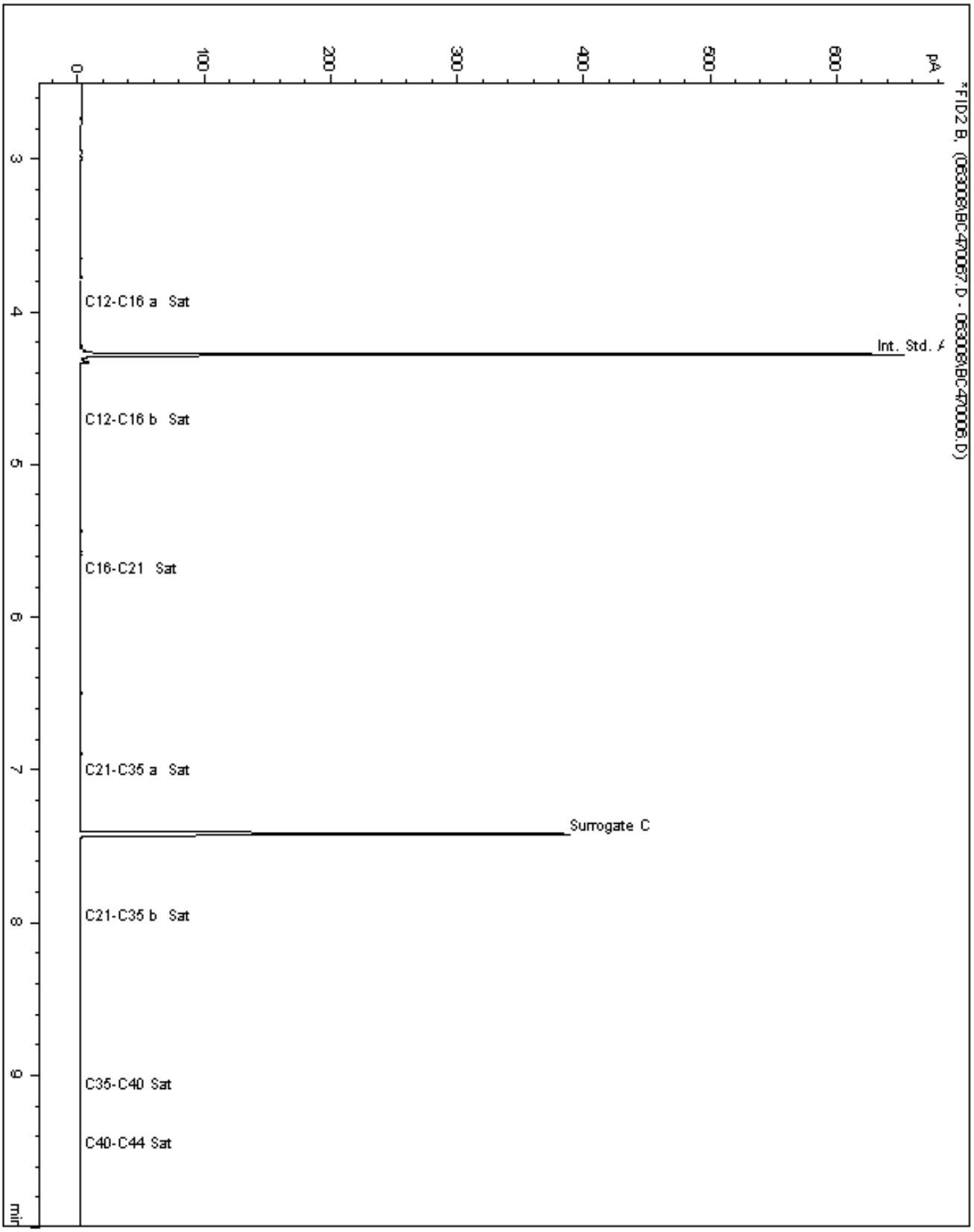
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-223/W
Date Acquired : 01/07/08 17:17:17 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.017



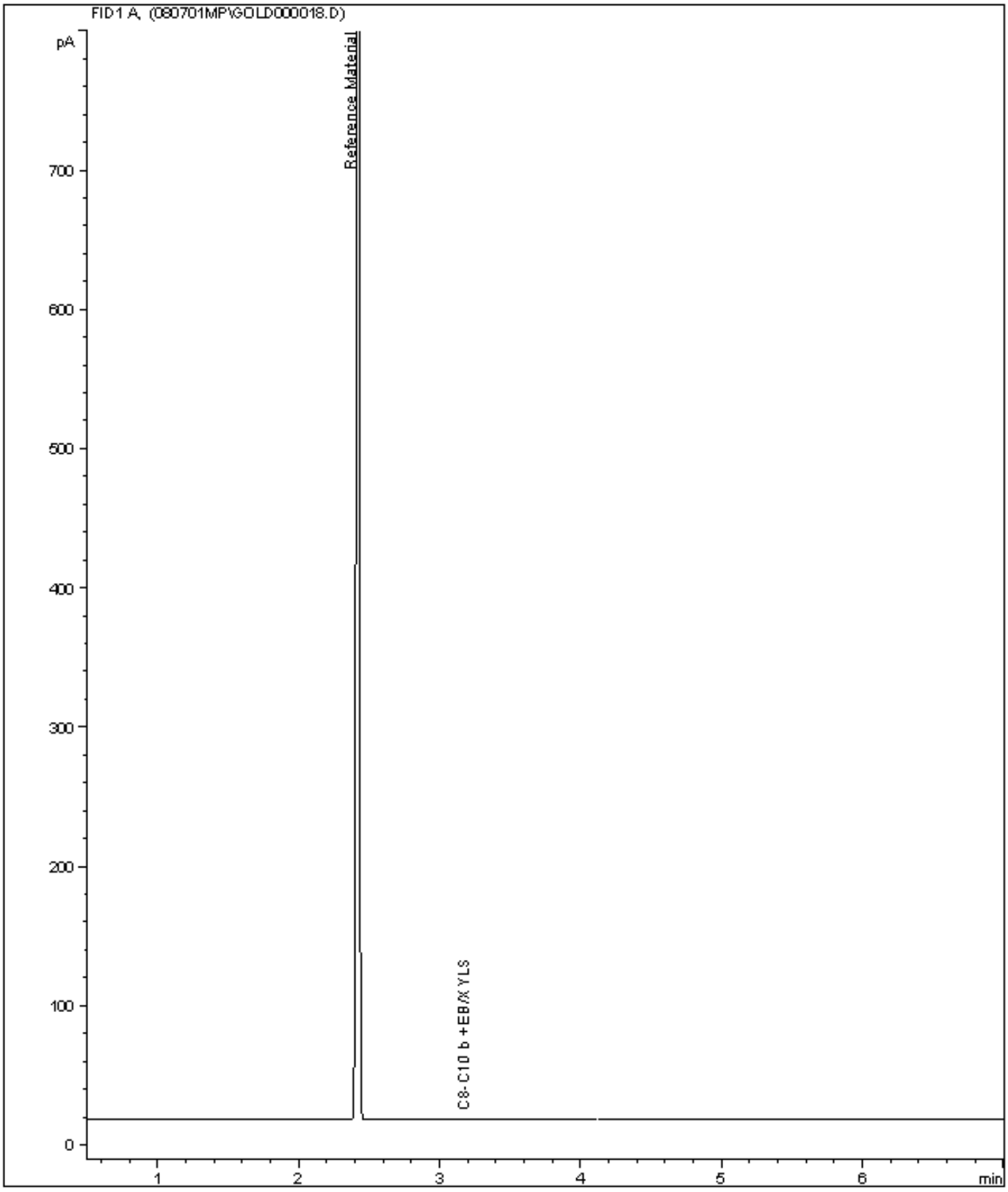
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-223/W
Date Acquired : 01/07/08 17:17:17 PM
Units : ppb
Dilution :
CF : 1000
Multiplier : 0.017



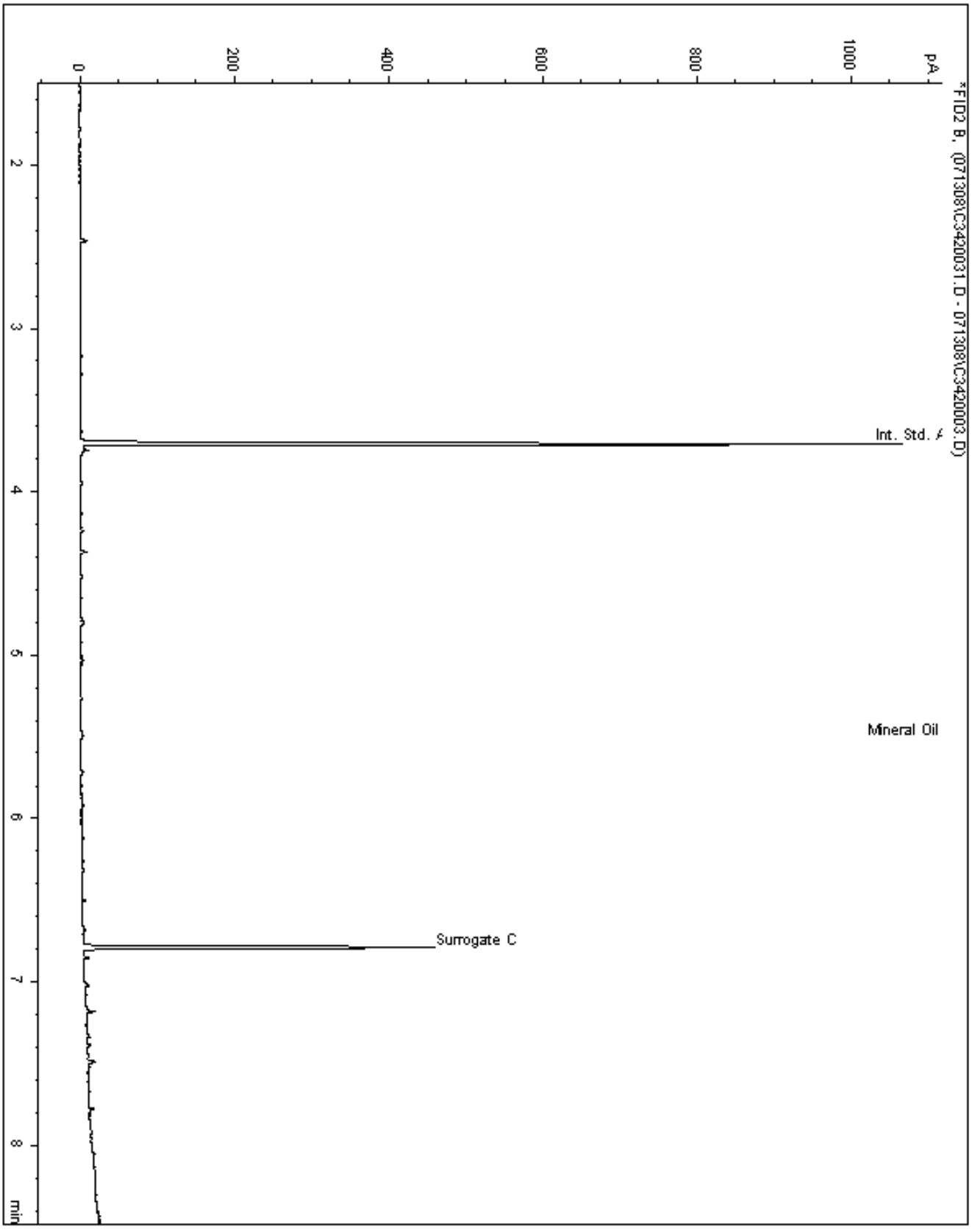
ALcontrol Geochem Analytical Services
Gasoline Range Organics

Sample Identity : 200809998-223/w
Date Acquired : 01/07/08 21:01:23
Units : ppb
Dilution : 1



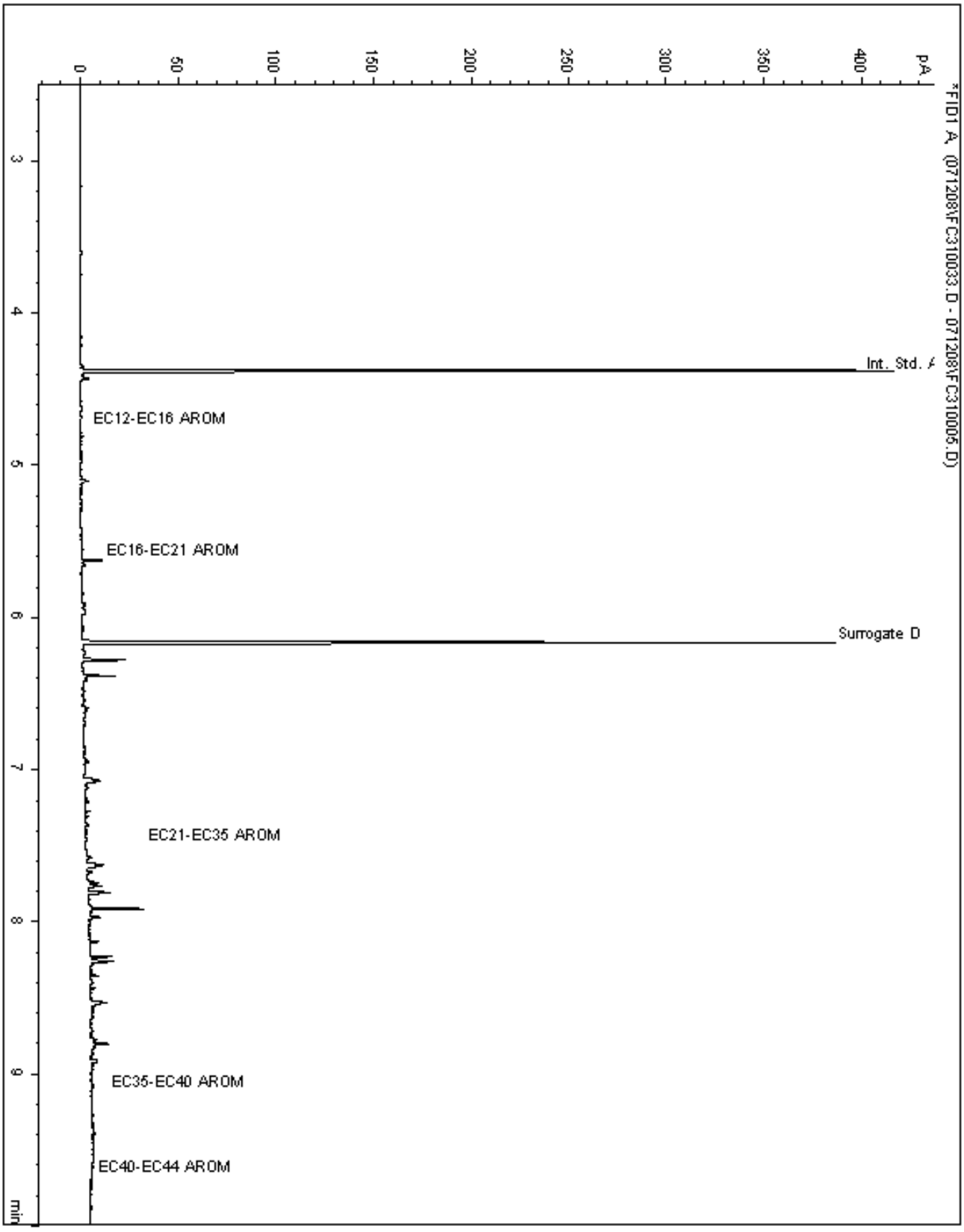
Alcontrol Laboratories
Mineral Oil Range Organics (C10 - C40)

Sample Identity : 200809998-226/S
Date Acquired : 14/07/08 06:19:28 PM
Units : mg/kg
Sample Multiplier : 0.999
Dilution :



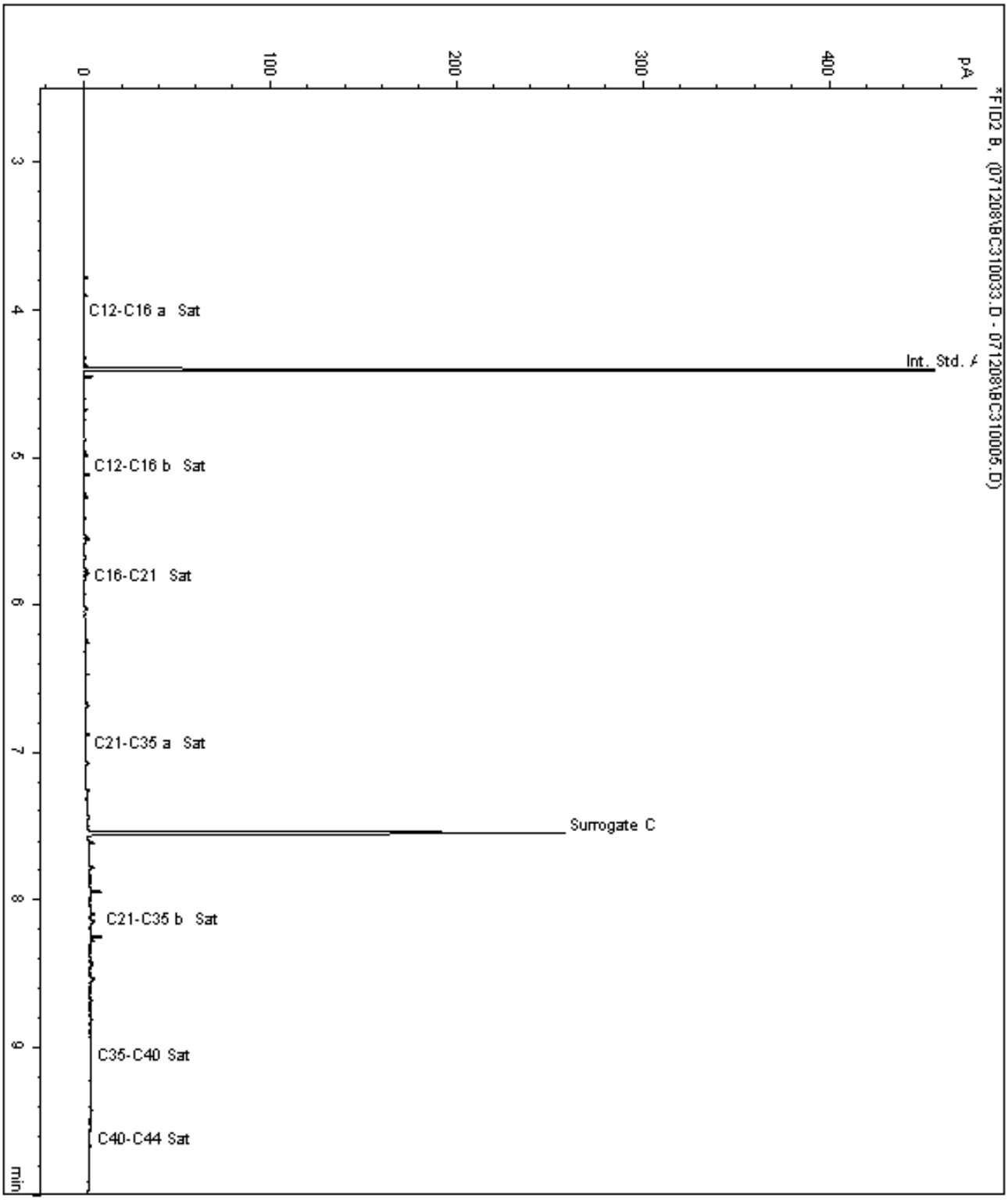
Alcontrol Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 200809998-226/S
Date Acquired : 13/07/08 13:14:27 PM
Units : ppb
Dilution:



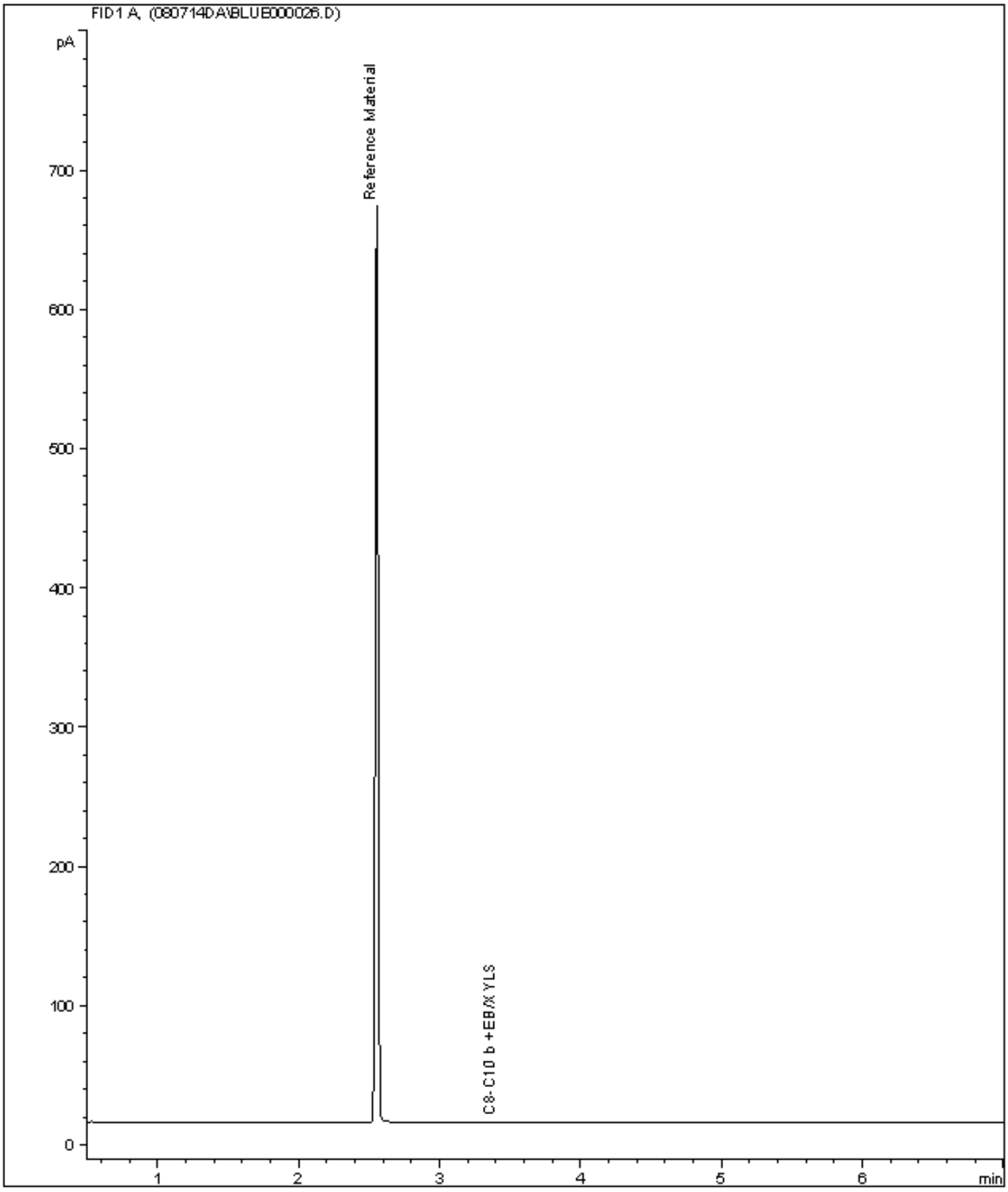
Alcontrol Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 200809998-226/S
Date Acquired : 13/07/08 13:14:26 PM
Units : ppb
Dilution:



ALcontrol Geochem Analytical Services
Gasoline Range Organics

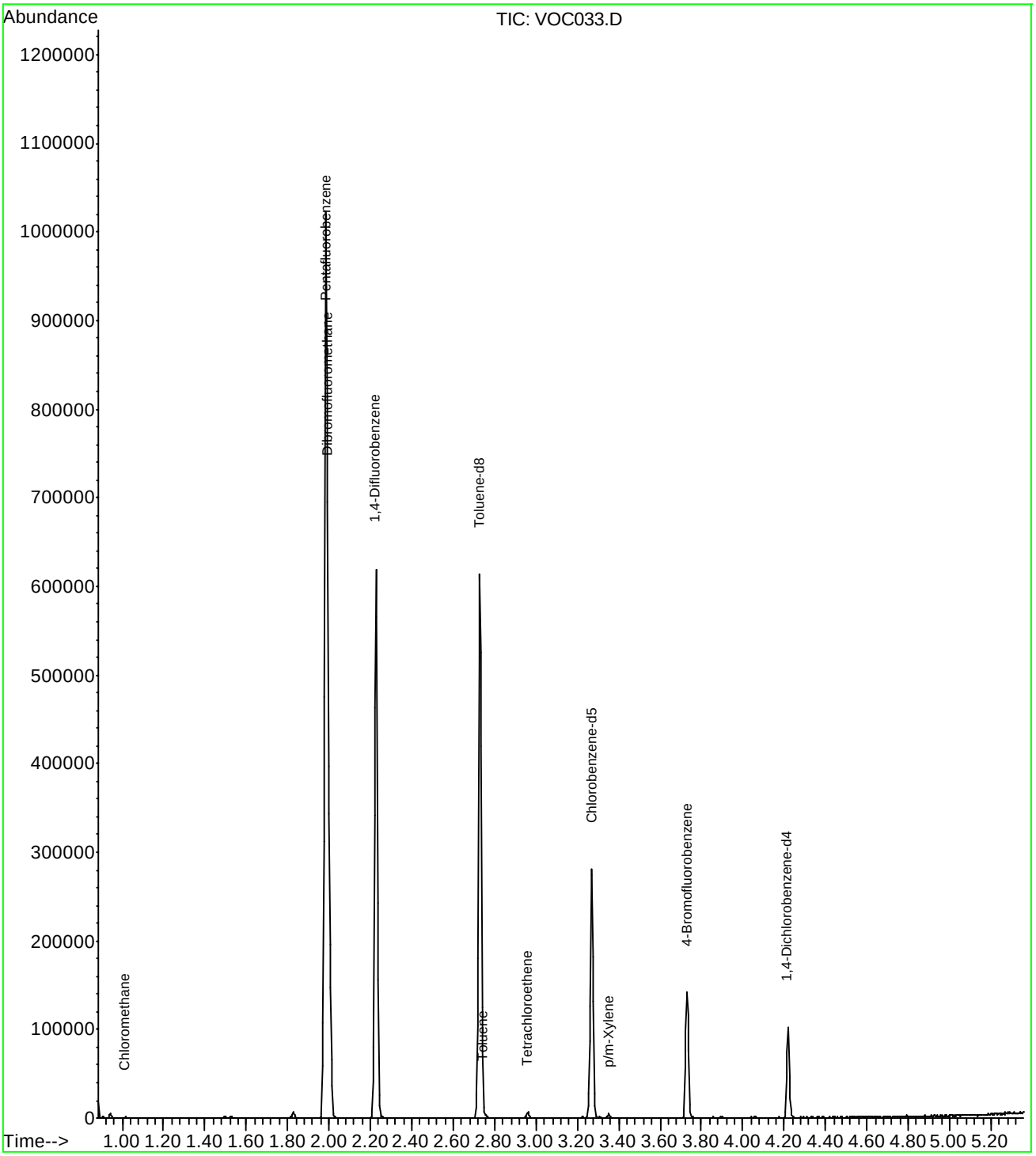
Sample Identity : 200809998-227/S
Date Acquired : 14/07/08 20:20:56
Units : ppb
Dilution : 1



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\070108
Data File : VOC033.D
Acq On : 1 Jul 2008 21:28
Operator : Alcontrol Labs
Sample : 200809998-067
Misc : /soil
ALS Vial : 33 Sample Multiplier: 2

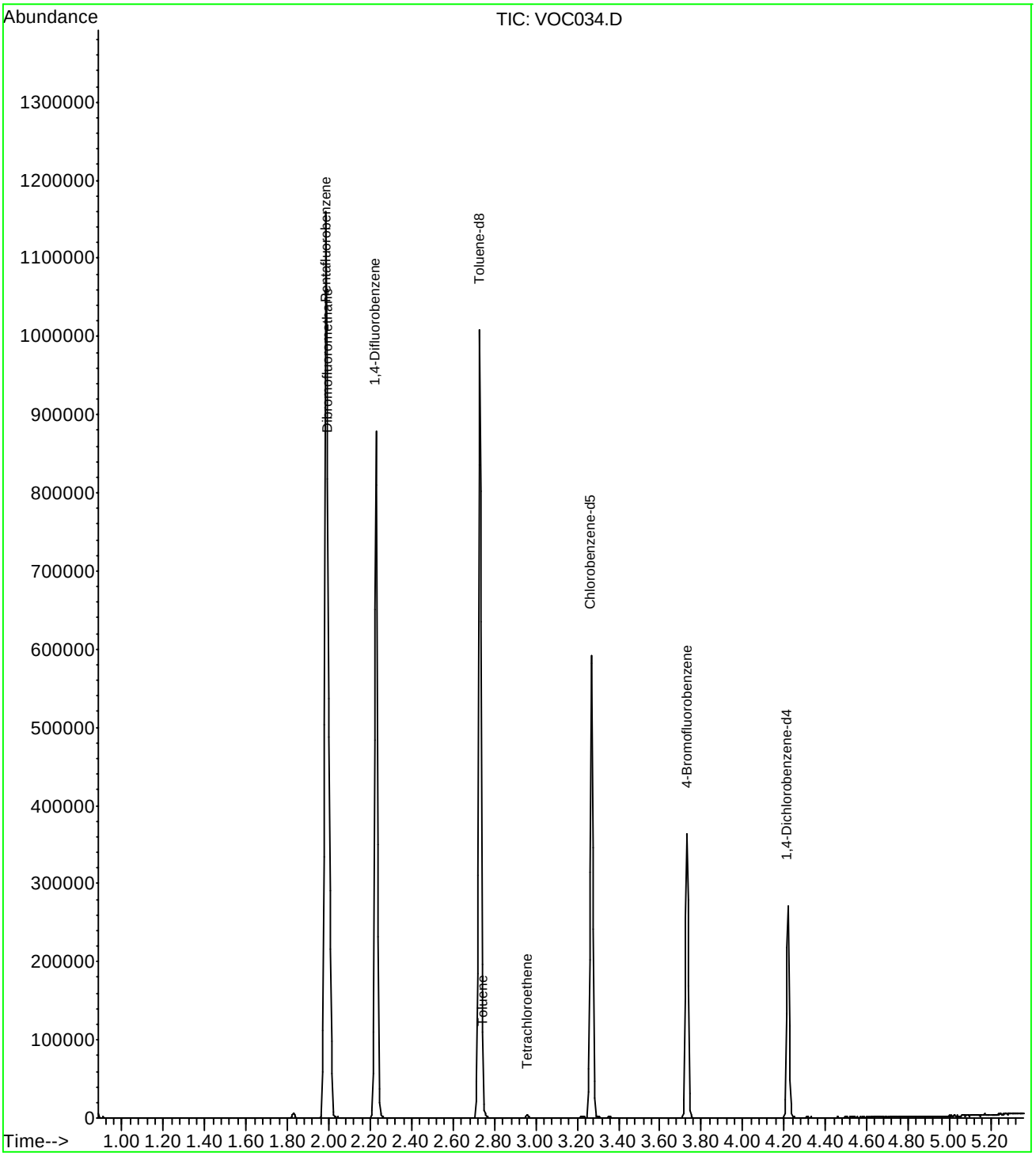
Quant Time: Jul 02 08:41:28 2008
Quant Method : C:\MSDCHEM\1\METHODS\FASTVOC2.M
Quant Title : Volatile Organic Compounds (EPA 624/8260)
QLast Update : Wed Jul 02 08:06:41 2008
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\070108
Data File : VOC034.D
Acq On : 1 Jul 2008 21:39
Operator : Alcontrol Labs
Sample : 200809998-075
Misc : /soil
ALS Vial : 34 Sample Multiplier: 2

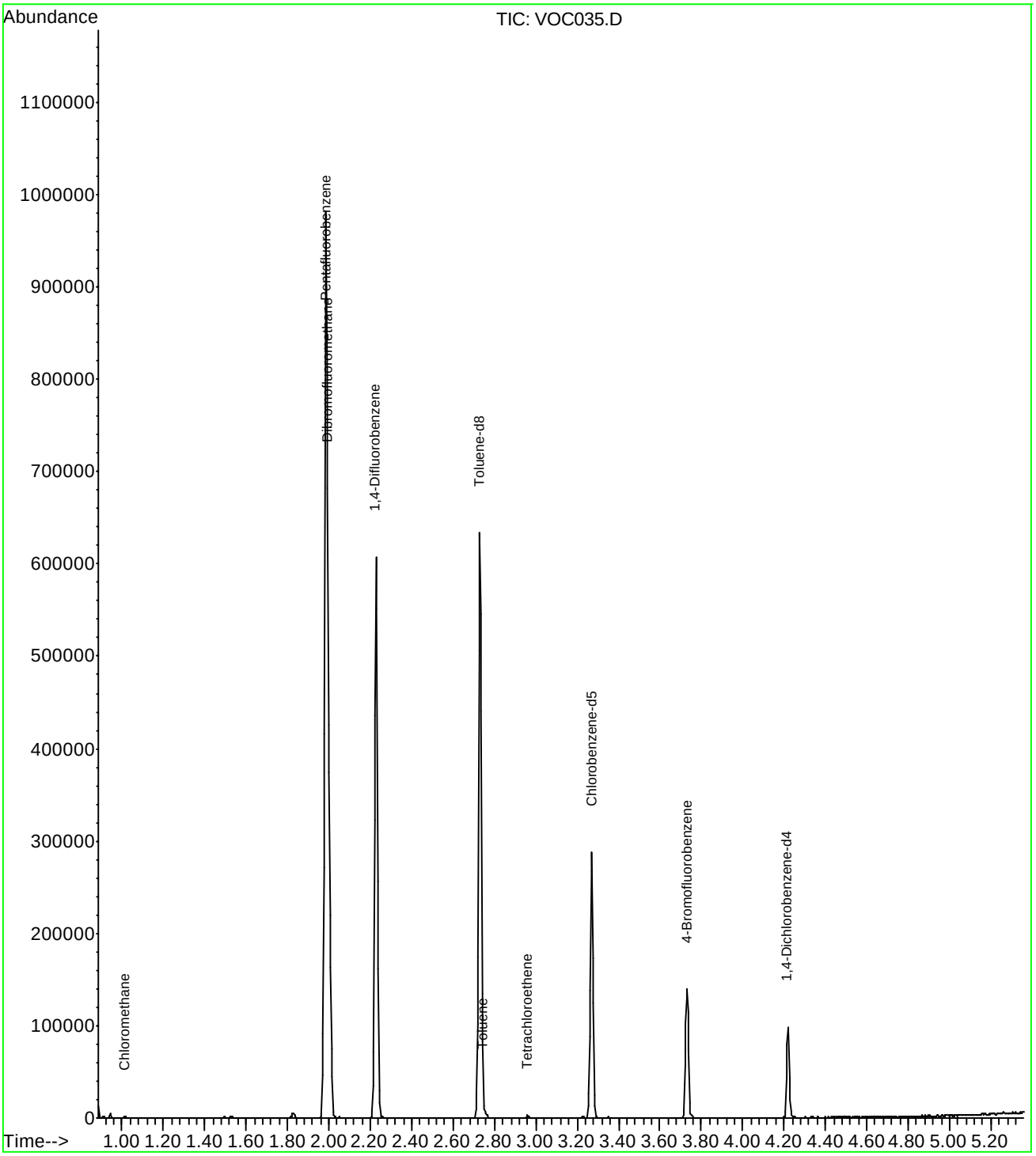
Quant Time: Jul 02 08:08:03 2008
Quant Method : C:\MSDCHEM\1\METHODS\FASTVOC2.M
Quant Title : Volatile Organic Compounds (EPA 624/8260)
QLast Update : Wed Jul 02 08:06:41 2008
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\070108
Data File : VOC035.D
Acq On : 1 Jul 2008 21:50
Operator : Alcontrol Labs
Sample : 200809998-094
Misc : /soil
ALS Vial : 35 Sample Multiplier: 2

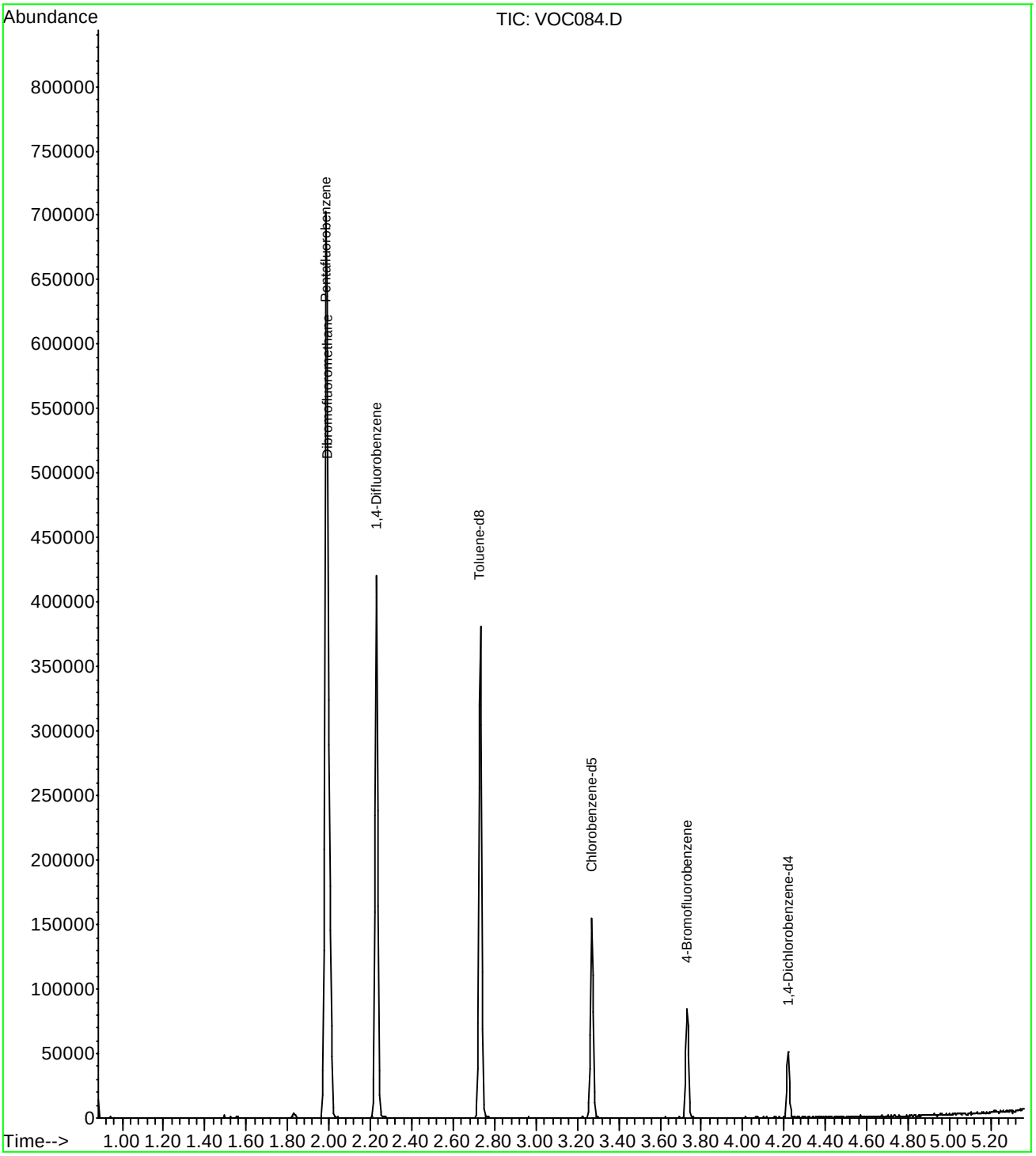
Quant Time: Jul 02 08:41:49 2008
Quant Method : C:\MSDCHEM\1\METHODS\FASTVOC2.M
Quant Title : Volatile Organic Compounds (EPA 624/8260)
QLast Update : Wed Jul 02 08:06:41 2008
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\070208
Data File : VOC084.D
Acq On : 4 Jul 2008 2:23
Operator : Alcontrol Labs
Sample : 200809998-213
Misc : /soil
ALS Vial : 84 Sample Multiplier: 2

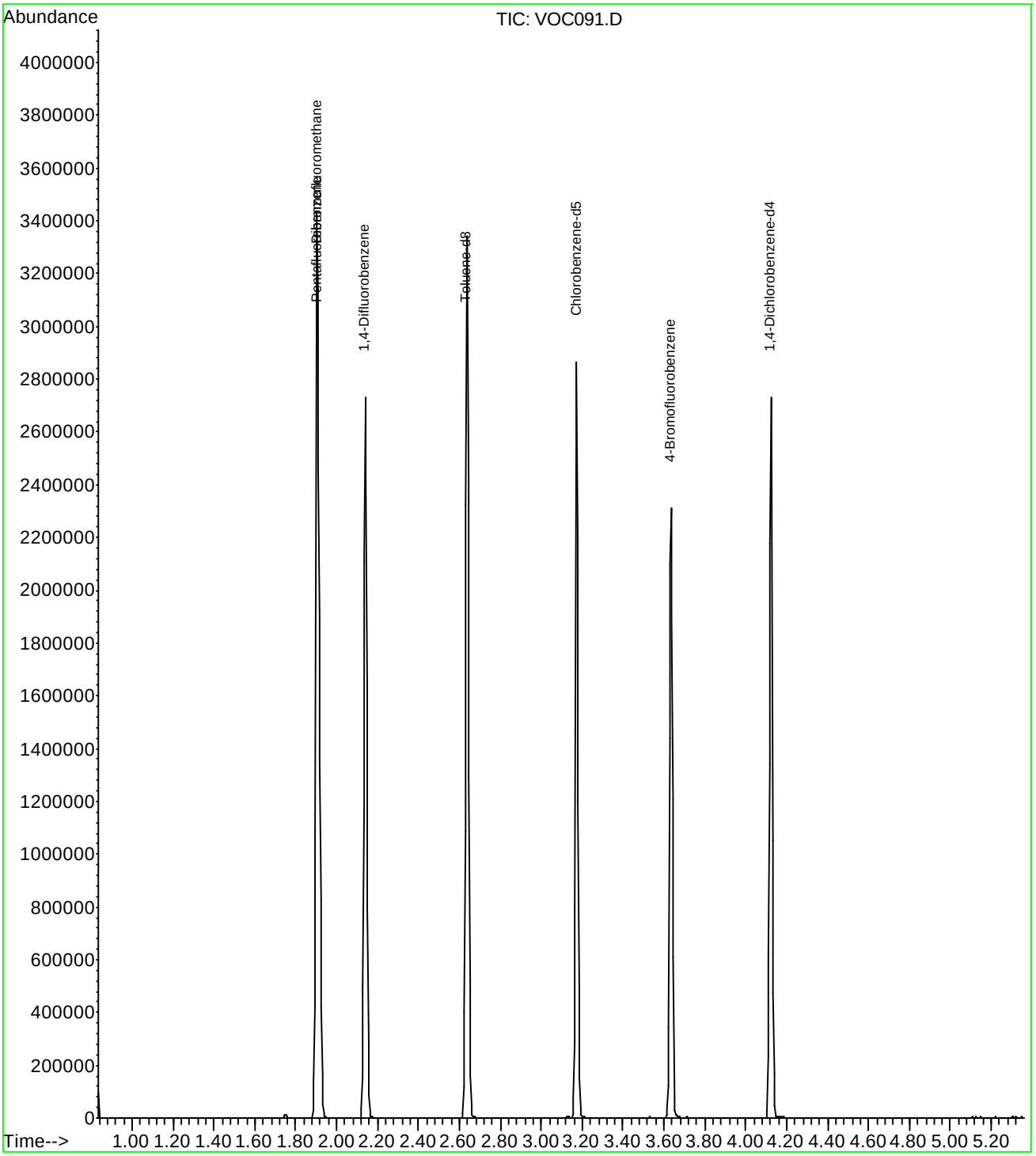
Quant Time: Jul 04 07:56:25 2008
Quant Method : C:\MSDCHEM\1\METHODS\FASTVOC2.M
Quant Title : Volatile Organic Compounds (EPA 624/8260)
QLast Update : Fri Jul 04 07:20:54 2008
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\070108
Data File : VOC091.D
Acq On : 2 Jul 2008 16:44
Operator : Alcontrol Labs
Sample : 200809998-219
Misc : /water
ALS Vial : 91 Sample Multiplier: 1

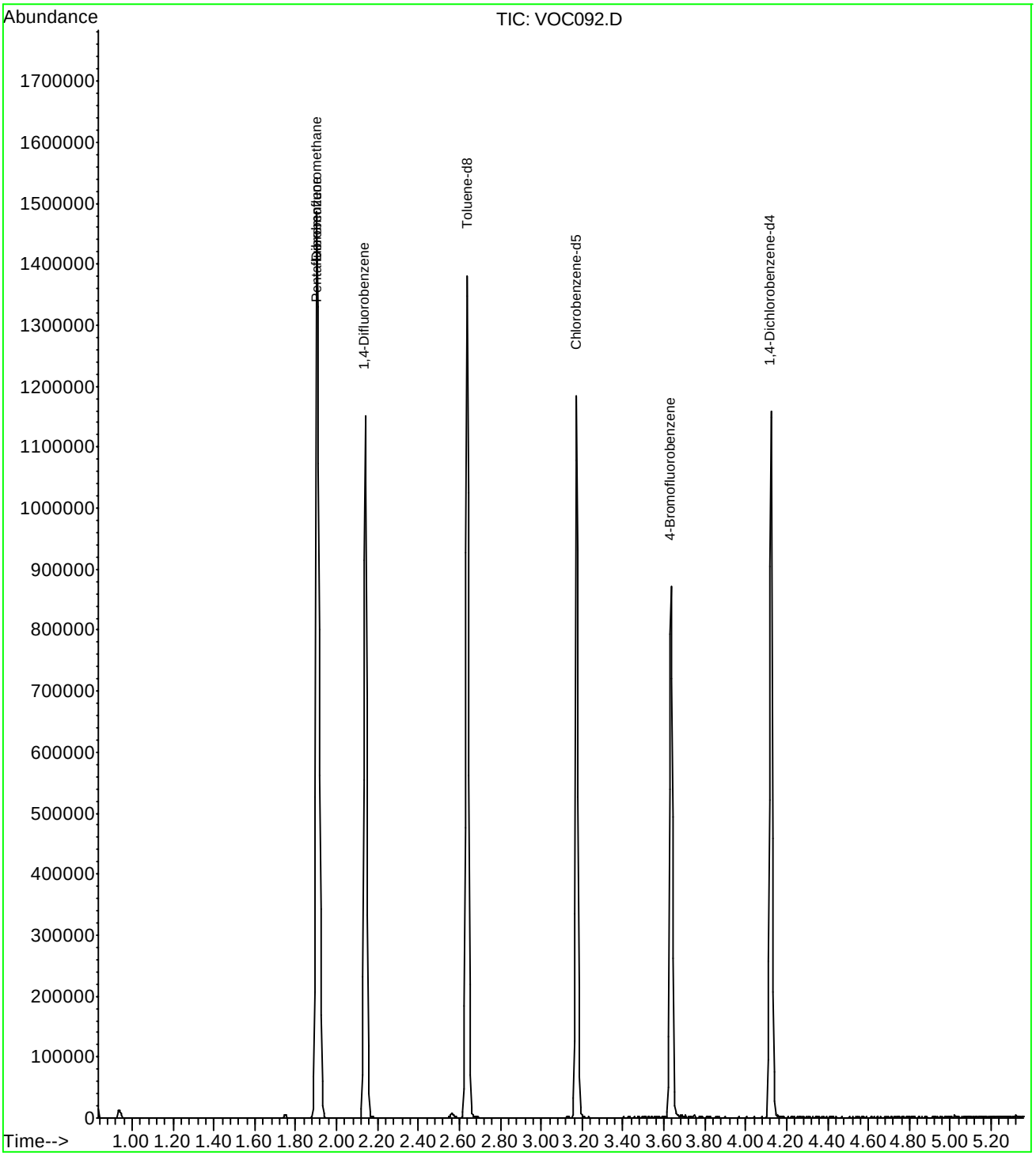
Quant Time: Jul 03 07:59:58 2008
Quant Method : C:\MSDCHEM\1\METHODS\VOCWATER.M
Quant Title : Volatile Organic Compounds (EPA 624/8260)
QLast Update : Wed Jul 02 11:11:07 2008
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\070108
Data File : VOC092.D
Acq On : 2 Jul 2008 16:55
Operator : Alcontrol Labs
Sample : 200809998-221
Misc : /water
ALS Vial : 92 Sample Multiplier: 1

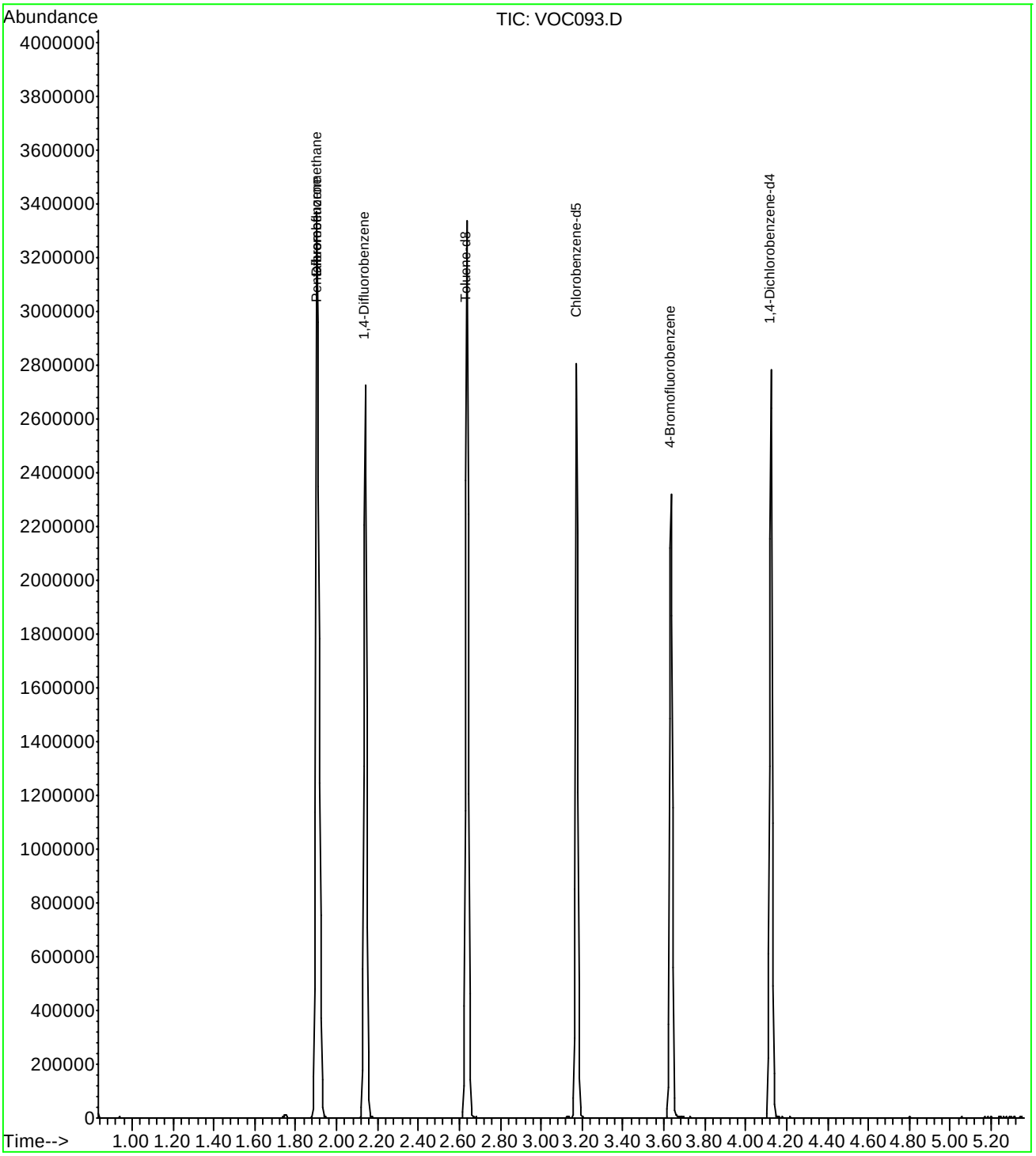
Quant Time: Jul 03 08:00:03 2008
Quant Method : C:\MSDCHEM\1\METHODS\VOCWATER.M
Quant Title : Volatile Organic Compounds (EPA 624/8260)
QLast Update : Wed Jul 02 11:11:07 2008
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\070108
Data File : VOC093.D
Acq On : 2 Jul 2008 17:05
Operator : Alcontrol Labs
Sample : 200809998-223
Misc : /water
ALS Vial : 93 Sample Multiplier: 1

Quant Time: Jul 03 08:00:08 2008
Quant Method : C:\MSDCHEM\1\METHODS\VOCWATER.M
Quant Title : Volatile Organic Compounds (EPA 624/8260)
QLast Update : Wed Jul 02 11:11:07 2008
Response via : Initial Calibration



APPENDIX

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_4 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 a fibre 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 soil sample will be screened for the presence of fibres in-house and if no fibres are found will be reported as NFD – no fibres detected. If fibres are detected, they will be removed and analysed by our documented in house method based on HSG 248(2005). If a sample is suspected of containing asbestos, then further preparation and analysis will be suspended on that sample until the asbestos result is known. If asbestos is present, then no further analysis will be undertaken.
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. **Surrogate recoveries** – Currently the only analysis, which is surrogate corrected, is PAHs on soils.
    For EPH on soils the result is not surrogate corrected, but a percentage recovery is quoted.
13. **Product analyses** – Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
14. 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 Dimethyphenol, 3,5 Dimethylphenol).
15. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
16. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
17. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
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.

Last updated July 2008

LIQUID MATRICES EXTRACTION SUMMARY			
ANALYSIS	**EXTRACTION SOLVENT**	**EXTRACTION METHOD**	**ANALYSIS**
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS
SVOC	DCM	LIQUID/LIQUID SHAKEN SVOC	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM/EA	SOLID PHASE EXTRACTION	GC MS
TRIAZINE HERBS	DCM/EA	SOLID PHASE EXTRACTION	GC MS
PHENOLS MS	DCM	SOLID PHASE EXTRACTION	GC MS
TPH by INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
SAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
UNSAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	DCM	LIQUID/LIQUID EXTRACTION	EZ FLASH

SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	**D/C OR WET**	**EXTRACTION SOLVENT**	**EXTRACTION METHOD**	**ANALYSIS**
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexanes Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	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 oil)	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)	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (FID)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
C8-C40 (C6-C40)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

APPENDIX 6
Monitoring Results

FIELDWORK - *Insitu Gas Monitoring - Instrument Record*

Project **CO-OPERATIVE ACADEMY**

Project No **PN081814**

Borehole **BH1**

Client **LAING O'ROURKE CONSTRUCTION NORTH LTD**

Sheet No. **1 (1 of 2)**

Installation Details

Installation Type **Standpipe**
Depth to Base **15.00m**
Filter Zone **10.00 - 15.00m**
Date Installed **30 May 2008**

Diameter **50mm**
Cover Type **Flush lockable protective cover**
Ground Level

Date	Time	Depth to Water (m bgl)	Explosive Gas CH4 (% LEL)	Peak Explosive Gas CH4 (% VOL)	Carbon Dioxide CO2 (% VOL)	Oxygen O2 (% VOL)	Nitrogen N2 (% VOL)	Hydrogen Sulphide H2S (ppm)	Remarks
10-Jun-2008		15.00	0.0	0.0	0.0	21.5	78.4	0.0	
17-Jun-2008		DRY	3.80	0.50	5.5	2.80	91.1	0.0	
24-Jun-2008		DRY	0.0	0.0.	0.0	21.5	78.4	0.0	
30-Jun-2008		DRY	0.0	0.0	0.0	21.5	78.4	0.0	
29-Jul-2008		DRY	0.2	3.1	1.4	15.7	82.6	0.0	
18-Aug-2008		DRY	0.3	5.3	2.0	12.0	85.6	0.0	

Remarks

geotechnics

FIELDWORK - *Insitu Gas Monitoring - Instrument Record*

Project **CO-OPERATIVE ACADEMY**

Client **LAING O'ROURKE CONSTRUCTION NORTH LTD**

Project No **PN081814**

Borehole **BH1**

Sheet No. **1 (2 of 2)**

Installation Details

Installation Type **Standpipe**
Depth to Base **15.00m**
Filter Zone **10.00 - 15.00m**
Date Installed **30 May 2008**

Diameter **50mm**
Cover Type **Flush lockable protective cover**
Ground Level

Date	Time	Carbon Monoxide CO (ppm)	Barometric Pressure (mBars)	Flow Rate (Peak/Stable) (l/hr)	Remarks
10-Jun-2008		0.0	1015	MAX	
17-Jun-2008		0.0	999	MAX	
24-Jun-2008		0.0	1004	-7.9	
30-Jun-2008		0.0	1008	MAX	
29-Jul-2008		0.0	999	+ve MAX	
18-Aug-2008		0.0	987	+ve MAX	

Remarks

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FIELDWORK - *Insitu Gas Monitoring - Instrument Record*

Project **CO-OPERATIVE ACADEMY**

Client **LAING O'ROURKE CONSTRUCTION NORTH LTD**

Project No **PN081814**

Borehole **BH2**

Sheet No. **1 (1 of 2)**

Installation Details

Installation Type **Standpipe**
Depth to Base **17.00m**
Filter Zone **11.50 - 17.00m**
Date Installed **30 May 2008**

Diameter **50mm**
Cover Type **Flush lockable protective cover**
Ground Level

Date	Time	Depth to Water (m bgl)	Explosive Gas CH4 (% LEL)	Peak Explosive Gas CH4 (% VOL)	Carbon Dioxide CO2 (% VOL)	Oxygen O2 (% VOL)	Nitrogen N2 (% VOL)	Hydrogen Sulphide H2S (ppm)	Remarks
10-Jun-2008		13.40	0.0	0.0	0.0	21.2	78.7	0.0	
17-Jun-2008		13.40	6.0	0.8	10.0	3.3	85.8	0.0	
24-Jun-2008		13.44	0.0	0.0	0.1	21.1	78.7	0.0	
30-Jun-2008		13.40	0.0	0.0	0.0	21.3	78.6	0.0	
7-Jul-2008		13.24	0.6	4.4	12.0	0.8	86.4	0.0	
15-Jul-2008		13.45	0.0	0.0	0.0	21.1	78.8	0.0	
29-Jul-2008		13.32	0.0	0.0	0.8	19.9	79.2	0.0	

Remarks

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FIELDWORK - *Insitu Gas Monitoring - Instrument Record*

Project **CO-OPERATIVE ACADEMY**

Project No **PN081814**

Borehole **BH2**

Client **LAING O'ROURKE CONSTRUCTION NORTH LTD**

Sheet No. **1 (2 of 2)**

Installation Details

Installation Type **Standpipe**
Depth to Base **17.00m**
Filter Zone **11.50 - 17.00m**
Date Installed **30 May 2008**

Diameter **50mm**
Cover Type **Flush lockable protective cover**
Ground Level

Date	Time	Carbon Monoxide CO (ppm)	Barometric Pressure (mBars)	Flow Rate (Peak/Stable) (l/hr)	Remarks
10-Jun-2008		0.0	1015	MAX	
17-Jun-2008		0.0	999	24.8	
24-Jun-2008		0.0	1004	4.6	
30-Jun-2008		0.0	1008	-ve MAX	
7-Jul-2008		0.0	985	14.6	
15-Jul-2008		0.0	1012	-ve MAX	
29-Jul-2008		0.0	999	5.3	

Remarks

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FIELDWORK - *Insitu Gas Monitoring - Instrument Record*

Project **CO-OPERATIVE ACADEMY**

Project No **PN081814**

Borehole **BH3**

Client **LAING O'ROURKE CONSTRUCTION NORTH LTD**

Sheet No. **1 (1 of 2)**

Installation Details

Installation Type **Standpipe**
Depth to Base **10.00m**
Filter Zone **8.00 - 10.00m**
Date Installed **30 May 2008**

Diameter **50mm**
Cover Type **Flush lockable protective cover**
Ground Level

Date	Time	Depth to Water (m bgl)	Explosive Gas CH4 (% LEL)	Peak Explosive Gas CH4 (% VOL)	Carbon Dioxide CO2 (% VOL)	Oxygen O2 (% VOL)	Nitrogen N2 (% VOL)	Hydrogen Sulphide H2S (ppm)	Remarks
10-Jun-2008		10.00	0.0	0.0	0.0	21.2	78.7	0.0	
17-Jun-2008		10.00	19.0	2.0	3.4	6.0	88.5	0.0	
24-Jun-2008		10.00	0.0	0.0	0.0	21.6	78.3	0.0	
30-Jun-2008		9.98	0.0	0.0	0.0	21.2	78.7	0.0	

Remarks

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FIELDWORK - *Insitu Gas Monitoring - Instrument Record*

Project **CO-OPERATIVE ACADEMY**

Project No **PN081814**

Borehole **BH3**

Client **LAING O'ROURKE CONSTRUCTION NORTH LTD**

Sheet No. **1 (2 of 2)**

Installation Details

Installation Type **Standpipe**
Depth to Base **10.00m**
Filter Zone **8.00 - 10.00m**
Date Installed **30 May 2008**

Diameter **50mm**
Cover Type **Flush lockable protective cover**
Ground Level

Date	Time	Carbon Monoxide CO (ppm)	Barometric Pressure (mBars)	Flow Rate (Peak/Stable) (l/hr)	Remarks
10-Jun-2008		0.0	1015	MAX	
17-Jun-2008		0.0	999	27.3	
24-Jun-2008		0.0	1004	-0.21	
30-Jun-2008		0.0	1008	-ve MAX	

Remarks

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Form 003/1

FIELDWORK - *Insitu Gas Monitoring - Instrument Record*

Project **CO-OPERATIVE ACADEMY**

Project No **PN081814**

Borehole **WS1**

Client **LAING O'ROURKE CONSTRUCTION NORTH LTD**

Sheet No. **1 (1 of 2)**

Installation Details

Installation Type **Standpipe**
Depth to Base **5.00m**
Filter Zone **1.00 - 5.00m**
Date Installed **30 May 2008**

Diameter **50mm**
Cover Type **Flush lockable protective cover**
Ground Level

Date	Time	Depth to Water (m bgl)	Explosive Gas CH4 (% LEL)	Peak Explosive Gas CH4 (% VOL)	Carbon Dioxide CO2 (% VOL)	Oxygen O2 (% VOL)	Nitrogen N2 (% VOL)	Hydrogen Sulphide H2S (ppm)	Remarks
10-Jun-2008		3.45	4.1	0.2	2.2	18.9	78.6	0.0	
17-Jun-2008		3.35	5.7	0.3	2.1	19.6	77.9	0.0	
24-Jun-2008		3.44	2.7	0.1	1.9	19.8	78.1	0.0	
30-Jun-2008		2.60	0.2	4.2	1.9	16.0	81.8	0.0	
7-Jul-2008		2.04	1.4	27.9	1.5	15.5	81.5	0.0	
15-Jul-2008		2.40	0.0	0.9	2.2	13.3	84.4	0.0	
29-Jul-2008		3.14	17.0	MAX	8.1	4.2	70.6	0.0	

Remarks

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FIELDWORK - *Insitu Gas Monitoring - Instrument Record*

Project **CO-OPERATIVE ACADEMY**

Client **LAING O'ROURKE CONSTRUCTION NORTH LTD**

Project No **PN081814**

Borehole **WS1**

Sheet No. **1 (2 of 2)**

Installation Details

Installation Type **Standpipe**
Depth to Base **5.00m**
Filter Zone **1.00 - 5.00m**
Date Installed **30 May 2008**

Diameter **50mm**
Cover Type **Flush lockable protective cover**
Ground Level

Date	Time	Carbon Monoxide CO (ppm)	Barometric Pressure (mBars)	Flow Rate (Peak/Stable) (l/hr)	Remarks
10-Jun-2008		0.0	1015	0.0	
17-Jun-2008		0.0	999	0.0	
24-Jun-2008		0.0	1004	0.0	
30-Jun-2008		0.0	1008	0.0	
7-Jul-2008		0.0	985	0.3	
15-Jul-2008		0.0	1012	0.0	
29-Jul-2008		0.0	999	0.0	

Remarks

geotechnics

Co-Operative Academy

Project No: PN081814

SINCLAIR KNIGHT MERZ

Hole No.: WS4

Date	Depth to Base (m)	Depth to Water (m bgl)	Explosive Gas CH4 (% LEL)	Peak Explosive Gas CH4 (% VOL)	Carbon Dioxide CO2 (% VOL)	Oxygen O2 (%VOL)	Nitrogen N2 (% VOL)	Hydrogen Sulphide H2S (ppm)	Carbon Monoxide CO (ppm)	Barometric Pressure (l/hr)	Flow (l/hr)
10/06/2008	3.64	2.40	0.0	0.0	4.3	18.4	77.2	0.0	0.0	1015	0.0
17/06/2008	3.64	2.50	0.0	0.0	3.0	19.5	77.4	0.0	0.0	999	-0.1
24/06/2008	3.64	2.46	0.0	0.0	4.2	18.7	77.0	0.0	0.0	1004	0.0
30/06/2008	3.65	2.22	0.0	0.0	4.2	17.3	78.4	0.0	0.0	1008	0.0
07/07/2008	3.65	3.04	0.0	0.0	5.3	16.0	78.6	0.0	0.0	985	0.0
15/07/2008	3.65	2.32	0.0	0.0	4.8	16.6	78.5	0.0	0.0	1012	0.0
29/08/2008	3.65	2.27	0.0	0.0	5.6	17.0	77.3	0.0	0.0	999	0.0
18/08/2008	3.65	1.83	0.0	0.0	4.8	16.6	78.5	0.0	0.0	987	0.0

Co-Operative Academy

Project No: PN081814

SINCLAIR KNIGHT MERZ

Hole No.: WS16

Date	Depth to Base (m)	Depth to Water (m bgl)	Explosive Gas CH4 (% LEL)	Peak Explosive Gas CH4 (% VOL)	Carbon Dioxide CO2 (% VOL)	Oxygen O2 (%VOL)	Nitrogen N2 (% VOL)	Hydrogen Sulphide H2S (ppm)	Carbon Monoxide CO (ppm)	Barometric Pressure (l/hr)	Flow (l/hr)
10/06/2008	3.87	2.2	0.0	0.0	2.5	19.9	77.5	0.0	0.0	1015	1.1
17/06/2008	3.87	2.26	0.0	0.0	1.6	20.7	77.6	0.0	0.0	999	0.0
24/062008	3.87	2.36	0.0	0.0	0.7	20.8	78.4	0.0	0.0	1004	0.0
30/06/2008	3.87	2.34	0.0	0.0	2.8	19.9	77.2	0.0	0.0	1008	0.0
07/07/2008	3.87	2.23	0.0	0.0	3.3	19.2	77.4	0.0	0.0	985	0.0
15/07/2008	3.88	2.3	0.0	0.0	2.9	19.1	77.9	0.0	0.0	1012	0.0
29/07/2008	3.88	2.27	0.0	0.0	2.8	19.2	77.9	0.0	0.0	999	0.0
18/08/2008	3.87	2.15	0.0	0.0	3.9	18.6	77.4	0.0	0.0	987	0.0

Co-Operative Academy

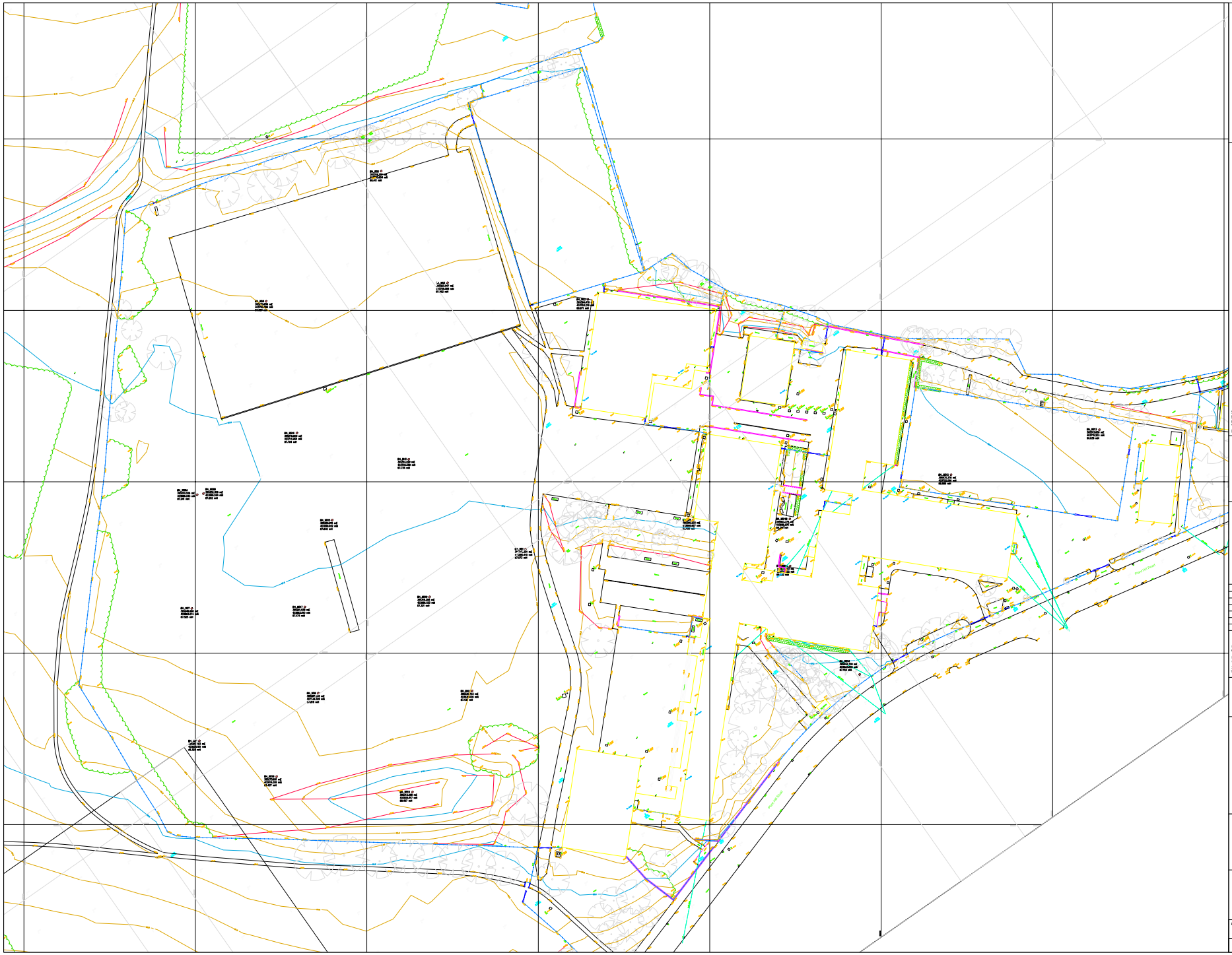
Project No: PN081814

SINCLAIR KNIGHT MERZ

Hole No.: WS19

Date	Depth to Base (m)	Depth to Water (m bgl)	Explosive Gas CH4 (% LEL)	Peak Explosive Gas CH4 (% VOL)	Carbon Dioxide CO2 (% VOL)	Oxygen O2 (%VOL)	Nitrogen N2 (% VOL)	Hydrogen Sulphide H2S (ppm)	Carbon Monoxide CO (ppm)	Barometric Pressure (l/hr)	Flow (l/hr)
17/06/2008	3.8	1.64	0.0	0.0	5.8	18.6	75.5	0.0	0.0	999	0.0
24/06/2008	3.24	1.33	0.0	0.0	7.1	15.8	77.0	0.0	0.0	1004	0.1
30/06/2008	3.74	1.02	0.0	0.0	7.8	16.0	76.1	0.0	0.0	1008	0.0
07/07/2008	3.24	0.95	0.0	0.0	8.6	14.1	77.2	0.0	0.0	985	1.9
15/07/2008	3.74	0.95	0.0	0.0	4.4	17.8	77.7	0.0	0.0	1012	-9.7
29/07/2008	3.2	1.08	0.0	0.0	9.3	12.3	78.3	0.0	0.0	999	0.0
18/08/2008	3.74	0.93	0	0	9.8	11.4	78.7	0.0	0.0	987.0	0.0

APPENDIX 7
Exploratory Hole Location Plan



Site Grid North



Symbols/Abbreviations (Where Applicable):

+ AV:	AIR VALVE
BB:	BELISHA BEACON
BH:	BOREHOLE
BM:	BENCHMARK
BOL:	BOLLARD
B/S:	BUS STOP
+ CAM:	CAMERA
+ CS:	CABLE STAY
CATV:	C.A.T.V INSPECTION CHAMBER
+ CBOX:	ELECTRICITY BOX, CABLE BOX, ETC.
CCTV:	C.C.T.V CAMERA
+ C.PIT:	CATCH PIT
EP:	ELECTRICITY POLE
+ ER:	EARTH ROD
+ FH:	FIRE HYDRANT
FP:	FLAG POLE
G:	GULLY
G:	GULLY (ROUND)
+ GV:	GAS VALVE
+ IC:	INSPECTION COVER
IC:	INSPECTION COVER (ROUND)
+ IL:	INVERT LEVEL
+ KO:	KERB OUTLET
+ LB:	LETTER BOX
LC:	LIGHTING COLUMN
LP:	LAMP POST
LP/BS:	LAMP POST/BUS STOP
+ MH:	MANHOLE
MH:	MANHOLE (ROUND)
+ MKR:	MARKER
P:	POST
+ RE:	RODDING EYE
+ R/S:	ROAD SIGN
+ S/P:	SIGN POST
+ SNP:	STREET NAME PLATE
+ ST:	STOP TAP
+ SV:	STOP VALVE
+ TCB:	TELEPHONE CALL BOX
+ TL:	TRAFFIC LIGHT
TP:	TELEGRAPH POLE
TP/EP:	TELEGRAPH POLE/ELECTRIC POLE
+ WO:	WATER OUTLET
+ WM:	WATER METER
	GATE
X	DEFINED POINT
▲	CONTROL POINT
	TREE (CONIFEROUS)
	TREE (DECIDUOUS)
	FOLIAGE
	HEDGE
SL 99.99m	SOFFIT LEVEL
EL 99.99m	EAVES LEVEL
RL 99.99m	RIDGE LEVEL
TL 99.99m	THRESHOLD LEVEL
DPC 99.99m	DAMP PROOF COURSE LEVEL

FENCE DESCRIPTIONS:

C/B:	CLOSE BOARDED FENCE
C/BARRIER:	CRASH BARRIER
C/P:	CHESTNUT PALING FENCE
CONC/P:	CONCRETE PANEL FENCE
I/R:	IRON RAILING FENCE
P/R:	POST AND RAIL FENCE
P/W:	POST AND WIRE FENCE
P/C:	POST AND CHAIN FENCE
S/PAL:	STEEL PALISADE FENCE
T/PAL:	TIMBER PALISADE FENCE
B/W:	BARBED WIRE FENCE

Revision Information

Rev	Date	Description
A	12/06/08	BH WS14 Moved to correct location

INFORMATION

1) Ordnance Survey co-ordinates and level are derived from OSTN03 and OSGM02, transformed from WGS84.

2) Only services located during the site survey are shown on this plan. Further investigation may be required to ascertain the full extent of the site services.

3) Copyright of this drawing remains the property of PM Surveys UK Ltd. Do not scale from this drawing. In the event of any discrepancy, refer query to PM Surveys UK Ltd.

NOTES

1) All co-ordinates and levels are related to national grid.

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Project

Boreholes
Plant Hill School
Manchester

Project No PMS08151	Sheet: A1 Scale: 1:500	Surveyed By:	N. Lampell
		Drawn By:	D.Shipton
		Approved By:	JMT
Dwg PMS08151-01		Issued:	11/06/08

APPENDIX 8
Investigation Techniques and General Notes

INVESTIGATION TECHNIQUES

INTRODUCTION

The following brief review of Ground Investigation techniques, generally used as part of most Site Investigations in the UK, summarises their methodology, advantages and limitations. Detailed descriptions of the techniques are available and can be provided on request. This review should be read in conjunction with the accompanying General Notes.

TRIAL PITS

The trial pit is amongst the most simple yet effective means of identifying shallow ground conditions on a site. Its advantages include simplicity, speed, potential accuracy and cost-effectiveness. The trial pit is most commonly formed using a backacting excavator which can typically determine ground conditions to some 4 metres below ground level. Hand excavation is often used to locate, expose and detail existing foundations, features or services. In general, it is difficult to extend pits significantly below the water table in predominantly granular soils, where flows can cause instability. Unless otherwise stated, the trial pits will not have been provided with temporary side support during their construction. Under such circumstances ground conditions to some 1.20 metres can be closely inspected, subject to stability assessment, but below this depth, entrance into the pit is not permitted in the absence of shoring and hence observations will have been made from ground surface and samples taken from the excavator bucket.

Trends in strata type, level and thickness can be determined, shear surfaces identified and the behaviour of plant, excavation sides and excavated materials can be related to the construction process. They are particularly valuable in land slip investigations. Some types of insitu test can be undertaken in such pits and large disturbed or block samples obtained.

CABLE PERCUSSION BORING

The light Cable Percussion technique of soft ground boring, typically at a diameter of 150mm, is a well established simple and flexible method of boring vertical holes and generally allows data to be obtained in respect of strata conditions other than rock. A tubular cutter (for cohesive soils) or shell with a flap valve (for granular soils) is repeatedly lifted and dropped using a winch and rope operating from an "A" frame. Soil which enters these tools is regularly removed and either sampled for subsequent examination or test, or laid to one side for backfilling. Steel casing will have been used to prevent collapse of the borehole sides where necessary. A degree of disturbance of soil and mixing of layers is inevitable and the presence of very thin layers of different soils within a particular stratum may not be identified. Changes in strata type can only be detected on recognition of a change in soil samples at surface, after the interface has been passed. For the foregoing reasons, depth measurements should not be considered to be more accurate than 0.10 metre.

In cohesive soils cylindrical samples are retrieved by driving or pushing in 100mm nominal diameter tubes. In soft soils, piston sampling or vane testing may be undertaken. In granular soils and often in cohesive materials, insitu Standard Penetration Tests (SPT's) are performed. The SPT records the number of standard blows required to drive a 50mm diameter open or cone ended probe for 300mm after an initial 150mm penetration. A modified method of recording is used in more dense strata. Small disturbed samples are obtained throughout.

The technique can determine ground conditions to depths in excess of 30 metres under suitable circumstances and usually causes less surface disturbance than trial pitting.

ROTARY DRILLING

Rotary Drilling to produce cores by rotating an annular diamond-impregnated tube or barrel into the ground is the technique most appropriate to the forming of site investigation boreholes through rock or other hard strata. It has the advantage of being able to be used vertically or at an angle. Core diameters of less than 100mm are most common for site investigation purposes. Core is normally retrieved in plastic lining tubes. A flushing fluid such as air, water or foam is used to cool the bit and carry cuttings to the surface.

Examination of cores allows detailed rock description and generally enables angled discontinuity surfaces to be observed. However, vertical holes do not necessarily reveal the presence of vertical or near-vertical fissures or joint discontinuities. The core type and/or techniques used. Where open hole rotary drilling is employed, descriptions of strata result from examination at surface of small particles ejected from the borehole in the flushing medium. In consequence, no indication of fissuring, bedding, consistency or degree of weathering can be obtained. Small scale plant can be used for auger drilling to limited depths where access is constrained.

Depths in excess of 60 metres can be achieved under suitable circumstances using rotary techniques, with minimal surface disturbance.

WINDOW SAMPLING

This technique involves the driving of an open-ended tube into the ground and retrieval of the soil which enters the tube. The term "window sample" arose from the original device which had a "window" or slot cut into the side of the tube through which samples were taken. This has now been superseded by the use of a thin-walled plastic liner within a sampler which has a solid wall. Diameters range from 36 to 86mm. Such samples can be used for qualitative logging, selection of samples for classification and chemical analysis and for obtaining a rudimentary assessment of strength.

Driving devices can be hand-held or machine mounted and the drive tubes are typically in 1m lengths. The hole formed is not cased, however, and hence the success of this technique is limited when soils and groundwater conditions are such that the sides of the hole collapse on withdrawal of the sampler. Obstructions within the ground, the density of the material or its strength can also limit the depth and rate of penetration of this light-weight investigation technique. Nevertheless, it is a valuable tool where access is constrained such as within buildings or on embankments. Depths of up to 8m can be achieved in suitable circumstances but depths of 4m to 6m are more common.

EXPLORATORY HOLE RECORDS

The data obtained by these techniques are generally presented on Trial Pit, Borehole, Drillhole or Window Sample Records. The descriptions of strata result from information gathered from a number of sources which may include published geological data, preliminary field observations and descriptions, insitu test results, laboratory test results and specimen descriptions. A key to the symbols and abbreviations used accompanies the records. The descriptions on the exploratory hole records accommodate but may not necessarily be identical to those on any preliminary records or the laboratory summaries.

The records show ground conditions at the exploratory hole locations. The degree to which they can be used to represent conditions between or beyond such holes, however, is a matter for geological interpretation rather than factual reporting and the associated uncertainties must be recognised.

DYNAMIC PROBING

This technique typically measures the number of blows of a standard weight falling over a standard height to advance a cone-ended rod over sequential standard distances (typically 100mm). Some devices measure the penetration of the probe per standard blow. It is essentially a profiling tool and is best used in conjunction with other investigation techniques where site-specific correlation can be used to delineate the distribution of soft or loose soils or the upper horizon of a dense or strong layer such as rock.

Both machine-driven and hand-driven equipment is available, the selection depending upon access restrictions and the depth of penetration required. It is particularly useful where access for larger equipment is not available, disturbance is to be minimised or where there are cost constraints. No samples are recovered and some techniques leave a sacrificial cone head in the ground. As with other lightweight techniques, progress is limited in strong or dense soils. The results are presented both numerically and graphically. Depths of up to 10m are commonly achieved in suitable circumstances.

The hand-driven DCP probing device has been calibrated by the TRL to provide a profile of CBR values over a range of depths of up to 1.50m.

INSTRUMENTATION

The most common form of instrument used in site investigation is either the standpipe or else the standpipe piezometer which can be installed in investigation holes. They are used to facilitate monitoring of groundwater levels and water sampling over a period of time following site work. Normally a standpipe would be formed using rigid plastic tubing which has been perforated or slotted over much of its length whilst a standpipe piezometer would have a filter tip which would be placed at a selected level and the hole sealed above and sometimes below to isolate the zone of interest. Groundwater levels are determined using an electronic "dipmeter" to measure the depth to the water surface from ground level. Piezometers can also be used to measure permeability. They are simple and inexpensive instruments for long term monitoring but response times can limit their use in tidal areas and access to the ground surface at each instrument is necessary. Remote reading requires more sophisticated hydraulic, electronic or pneumatic equipment.

Settlement can be monitored using surface or buried target plates whilst lateral movement over a range of depths is monitored using slip indicator or inclinometer equipment.

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5. *The report is based on the ground conditions encountered in the exploratory holes together with the results of field and laboratory testing in the context of the proposed development. The data from any commissioned desk study and site reconnaissance are also drawn upon. There may be special conditions appertaining to the site, however, which are not revealed by the investigation and which may not be taken into account in the report.*

6. *Methods of construction and/or design other than those proposed by the designers or referred to in the report may require consideration during the evolution of the proposals and further assessment of the geotechnical and any geoenvironmental data would be required to provide discussion and evaluations appropriate to these methods.*

7. *The accuracy of results reported depends upon the technique of measurement, investigation and test used and these values should not be regarded necessarily as characteristics of the strata as a whole (see accompanying notes on Investigation Techniques). Where such measurements are critical, the technique of investigation will need to be reviewed and supplementary investigation undertaken in accordance with the advice of the Company where necessary.*

8. *The samples selected for laboratory test are prepared and tested in accordance with the relevant Clauses of BS 1377 Parts 1 to 8, where appropriate, in Geotechnics Limited's UKAS accredited Laboratory, where possible. A list of tests is given.*

9. *Tests requiring the use of another laboratory having UKAS accreditation where possible are identified.*

10. *Any unavoidable variations from specified procedures are identified in the report.*

11. *Specimens are cut vertically, where this is relevant and can be identified, unless otherwise stated.*

12. *All the data required by the test procedures are recorded on individual test sheets but the results in the report are presented in summary form to aid understanding and assimilation for design purposes. Where all details are required, these can be made available.*

13. *Whilst the report may express an opinion on possible configurations of strata between or beyond exploratory holes, or on the possible presence of features based on either visual, verbal, written, cartographical, photographic or published evidence, this is for guidance only and no liability can be accepted for its accuracy.*

14. *Classification of materials as Made Ground is based on the inspection of retrieved samples or exposed excavations. Where it is obvious that foreign matter such as paper, plastic or metal is present, classification is clear. Frequently, however, for fill materials that arise from the adjacent ground or from the backfilling of excavations, their visual characteristics can closely resemble those of undisturbed ground. Other evidence such as site history, exploratory hole location or other tests may need to be drawn upon to provide clarification. For these reasons, classification of soils on the exploratory hole records as either Made Ground or naturally occurring strata, the boundary between them and any interpretation that this gives rise to should be regarded as provisional and subject to re-evaluation in the light of further data.*

15. *The classification of materials as Topsoil is generally based on visual description and should not be interpreted to mean that the material so described complies with the criteria for Topsoil used in BS 3882 (1994). Specific testing would be necessary where such definition is a requirement.*

16. *Ground conditions should be monitored during the construction of the works and the report should be re-evaluated in the light of these data by the supervising geotechnical engineers.*

17. *Any comments on groundwater conditions are based on observations made at the time of the investigation, unless specifically stated otherwise. It should be noted, however, that the observations are subject to the method and speed of boring, drilling or excavation and that groundwater levels will vary due to seasonal or other effects.*

18. *Any bearing capacities for conventional spread foundations which are given in the report and interpreted from the investigation are for bases at a minimum depth of 1m below finished ground level in naturally occurring strata and at broadly similar levels throughout individual structures, unless otherwise stated. The foundations should be designed in accordance with the good practice embodied in BS 8004:1986 - Foundations, supplemented for housing by NHBC Standards. Foundation design is an iterative process and bearing pressures may need adjustment or other measures may need to be taken in the context of final layouts and levels prior to finalisation of proposals.*

19. *Unless specifically stated, the investigation does not take account of the possible effects of mineral extraction or of gases from fill or natural sources within, below or outside the site.*

20. *The costs or economic viability of the proposals referred to in the report, or of the solutions put forward to any problems encountered, will depend on very many factors in addition to geotechnical or geoenvironmental considerations and hence their evaluation is outside the scope of the report.*

Appendix C Detailed Quantitative Risk Assessment

Modelled Exposure Pathways

Zone 1: School grounds

Exposure pathway	Land use	Pollutant linkage	Details
Ingestion of soil	School with landscaped areas and carpark	Y	Possible in landscaped areas
Dermal contact with soil (indoors)	School with landscaped areas and carpark	Y	Considered within exposure to outdoor dust
Dermal contact with soil (outdoors)	School with landscaped areas and carpark	Y	Possible in landscaped areas
Inhalation of dust outdoors	School with landscaped areas and carpark	Y	Possible in landscaped areas
Inhalation of dust indoors	School with landscaped areas and carpark	Y	Possible in landscaped areas
Inhalation of vapours outdoors	School with landscaped areas and carpark	Y	Possible in landscaped areas and areas of hard cover
Inhalation of vapours indoors	School with landscaped areas and carpark	Y	Possible within structures on site
Inhalation of groundwater vapours outdoors	School with landscaped areas and carpark	N	No shallow groundwater contamination present
Inhalation of groundwater vapours indoors	School with landscaped areas and carpark	N	No shallow groundwater contamination present

Zone 2:

Exposure pathway	Land use	Pollutant linkage	Details
Ingestion of soil			
Dermal contact with soil (indoors)			
Dermal contact with soil (outdoors)			
Inhalation of dust outdoors			
Inhalation of vapours outdoors			
Inhalation of vapours indoors			
Ingestion of vegetables			
Inhalation of groundwater vapours outdoors			
Inhalation of groundwater vapours indoors			

Zone 3:

Exposure pathway	Land use	Pollutant linkage	Details
Ingestion of soil			
Dermal contact with soil (indoors)			
Dermal contact with soil (outdoors)			
Inhalation of dust outdoors			
Inhalation of vapours outdoors			
Inhalation of vapours indoors			
Inhalation of groundwater vapours outdoors			
Inhalation of groundwater vapours indoors			

Human receptor exposure parameters

Commercial landuse

Parameter	Unit	Receptor	Value	Details
Age class	yrs	Female aged 16-65	16-65	Figure 2.2 SC050021/SR3
Body weight	kg	Female aged 16-65	70	Table 3.2 SC050021/Technical Review 1
Body height	m	Female aged 16-65	1.6	Table 3.7 SC050021/Technical Review 1
Respiration rate (average)	m3/hr	Female aged 16-65	0.6	Table 4.14 SC050021/Technical Review 1
Respiration rate (active)	m3/hr	Female aged 16-65	1.43	Table 4.13 SC050021/SR3 (moderate intensity)
Respiration rate (passive)	m3/hr	Female aged 16-65	0.28	Table 4.13 SC050021/SR3 (sedentary and passive)
Skin area	m2	Female aged 16-65	1.76	CLEA Briefing Note 1.1 (03/2005) Table 2
Fraction of exposed skin (indoors/outdoors)	-	Female aged 16-65	0.08	Table 4.7 SC050021/SR3
Exposed skin area indoors	cm2	Female aged 16-65	480	Table 4.7 SC050021/SR3
Exposed skin area outdoors	cm2	Female aged 16-65	480	Table 4.7 SC050021/SR3
Averaging time ingestion	days/yr	Female aged 16-65	230	Table 4.7 SC050021/SR3
averaging time dermal (indoor)	days/yr	Female aged 16-65	230	Table 4.7 SC050021/SR3
averaging time inhalation (indoor)	days/yr	Female aged 16-65	230	Table 4.7 SC050021/SR3
averaging time dermal (outdoor)	days/yr	Female aged 16-65	170	Table 4.7 SC050021/SR3
averaging time inhalation (outdoor)	days/yr	Female aged 16-65	170	Table 4.7 SC050021/SR3
Averaging time	yrs	Female aged 16-65	49	Figure 2.2 SC050021/SR3
Soil ingestion rate	mg/d	Female aged 16-65	50	Table 6.2 SC050021/SR3
Dermal adherence factor	mg/cm2	Female aged 16-65	0.14 (outdoor) 0.098 (indoor)	Table 8.1 SC050021/SR3 (assumes TF @0.7)
Exposure duration indoors	hrs/day	Female aged 16-65	8.3	Box 3.6 SC050021/SR3
Exposure duration outdoors	hrs/day	Female aged 16-65	0.7	Box 3.6 SC050021/SR3

Residential landuse

Parameter	Unit	Receptor	Value	Details
Age class	yrs	1-6 yr old female child	1-6	Figure 2.2 SC050021/SR3
Body weight	kg	1-6 yr old female child	13.3	Table 3.2 SC050021/Technical Review 1
Body height	m	1-6 yr old female child	0.9	Table 3.7 SC050021/Technical Review 1
Respiration rate (average)	m3/hr	1-6 yr old female child	0.49	Table 4.14 SC050021/SR3
Respiration rate (active)	m3/hr	1-6 yr old female child	1.16	Table 4.13 SC050021/SR3 (moderate intensity)
Respiration rate (passive)	m3/hr	1-6 yr old female child	0.24	Table 4.13 SC050021/SR3 (sedentary and passive)
Skin area	m2	1-6 yr old female child	1.76	CLEA Briefing Note 1.1 (03/2005) Table 2
Fraction of exposed skin (indoors)	-	1-6 yr old female child	0.33	Table 4.8 SC050021/SR3
Fraction of exposed skin (outdoors)	-	1-6 yr old female child	0.27	Table 4.8 SC050021/SR3
Exposed skin area indoors	cm2	1-6 yr old female child	700	Table 4.7 SC050021/SR3
Exposed skin area outdoors	cm2	1-6 yr old female child	500	Table 4.7 SC050021/SR3
Averaging time	yrs	1-6 yr old female child	6	Figure 2.2 SC050021/SR3
Averaging time ingestion	days/yr	1-6 yr old female child	334	Table 3.1 SC050021/SR3
averaging time dermal	days/yr	1-6 yr old female child	334	Table 3.1 SC050021/SR4
averaging time inhalation (indoor and outdoor)	days/yr	1-6 yr old female child	365	Table 3.1 SC050021/SR5
Soil ingestion rate	mg/d	1-6 yr old female child	100	Table 6.2 SC050021/SR3
Dermal adherence factor	mg/cm2	1-6 yr old female child	0.042(indoor) 1(outdoor)	Table 8.1 SC050021/SR3 (assumes TF @0.7)
Exposure duration indoors	hrs/day	1-6 yr old female child	21.7	Table 3.1 SC050021/SR3
Exposure duration outdoors	hrs/day	1-6 yr old female child	1	Table 3.1 SC050021/SR3
Dermal absorbtion fraction (ABSd)	-	1-6 yr old female child	0.1	p106 SC050021/SR3

School age child (age 10-16)

Parameter	Unit	Receptor	Value	Details
Age class	yrs	10-16 yr old	10-16	Assume age range from 10-16 in comprehensive school
Body weight	kg	10-16 yr old	46.1	Table 4.6 SC050021/SR3
Body height	m	10-16 yr old	1.49	Table 4.6 SC050021/SR3
Respiration rate (average)	m3/hr	10-16 yr old	0.55	Table 4.14 SC050021/SR3
Respiration rate (active)	m3/hr	10-16 yr old	1.41	Table 4.13 SC050021/SR3 (moderate intensity)
Respiration rate (passive)	m3/hr	10-16 yr old	0.31	Table 4.13 SC050021/SR3 (sedentary and passive)
Skin area	m2	10-16 yr old	0.58	CLEA Briefing Note 1.1 (03/2005) Appendix 1
Exposed skin fraction indoors	-	10-16 yr old	0.22	Table 4.8 SC050021/SR3
Exposed skin fraction outdoors	-	10-16 yr old	0.14	Table 4.8 SC050021/SR3
Exposed skin area indoors	cm2	10-16 yr old	1000	Table 4.7 SC050021/SR3
Exposed skin area outdoors	cm2	10-16 yr old	700	Table 4.7 SC050021/SR3
Averaging time	yrs	10-16 yr old	5	Assume 5 year duration in secondary school
Averaging time ingestion	days/yr	10-16 yr old	281(outdoors) 197 (indoors)	Assume 12 weeks holiday taken (half of holidays and weekends spent at school)
averaging time dermal	days/yr	10-16 yr old	281(outdoors) 197 (indoors)	Assume 12 weeks holiday taken (half of holidays and weekends spent at school)
averaging time inhalation (indoor and outdoor)	days/yr	10-16 yr old	100	Assume 12 weeks holiday taken (half of holidays and weekends spent at school)
Soil ingestion rate	mg/d	10-16 yr old	50	Table 6.2 SC050021/SR3
Dermal adherence factor	mg/cm2	10-16 yr old	0.042(indoor) 0.3(outdoor)	Table 8.1 SC050021/SR3
Exposure duration indoors	hrs/day	10-16 yr old	7	Assume majority of time spent indoors
Exposure duration outdoors	hrs/day	10-16 yr old	2	Assume time limited time spent outdoors, meeting parents etc
Dermal absorbtion fraction (ABSd)	-	1-6 yr old female child	0.1	p106 SC050021/SR3

School age child (age 10-18)

Parameter	Unit	Receptor	Value	Details
Age class	yrs	10-18 yr old	10-18	Assume age range from 10-18 in comprehensive school with 6th form
Body weight	kg	10-18 yr old	51.4	Table 4.6 SC050021/SR3
Body height	m	10-18 yr old	1.51	Table 4.6 SC050021/SR3
Respiration rate (average)	m3/hr	10-18 yr old	0.55	Table 4.14 SC050021/SR3
Respiration rate (active)	m3/hr	10-18 yr old	1.38	Table 4.13 SC050021/SR3 (moderate intensity)
Respiration rate (passive)	m3/hr	10-18 yr old	0.3	Table 4.13 SC050021/SR3 (sedentary and passive)
Skin area	m2	10-18 yr old	0.58	CLEA Briefing Note 1.1 (03/2005) Appendix 1
Exposed skin fraction indoors	-	10-18 yr old	0.24	Table 4.8 SC050021/SR3
Exposed skin fraction outdoors	-	10-18 yr old	0.17	Table 4.8 SC050021/SR3
Exposed skin area indoors	cm2	10-18 yr old	1236	Table 4.7 SC050021/SR3
Exposed skin area outdoors	cm2	10-18 yr old	901	Table 4.7 SC050021/SR3
Averaging time	yrs	10-18 yr old	7	Assume 5 year duration in secondary school plus 2 years in 6th form
Averaging time ingestion	days/yr	10-18 yr old	281	Assume 12 weeks holiday taken (half of holidays and weekends spent at scholo)
averaging time dermal	days/yr	10-18 yr old	281(outdoors) 197 (indoors)	Assume 12 weeks holiday taken (half of holidays and weekends spent at scholo)
averaging time inhalation (indoor and outdoor)	days/yr	10-18 yr old	281(outdoors) 197 (indoors)	Assume 12 weeks holiday taken (half of holidays and weekends spent at scholo)
Soil ingestion rate	mg/d	10-18 yr old	50	Table 6.2 SC050021/SR3
Dermal adherence factor	mg/cm2	10-18 yr old	0.042(indoor) 0.3(outdoor)	Table 8.1 SC050021/SR3
Exposure duration indoors	hrs/day	10-18 yr old	7	Assume majority of time spent indoors
Exposure duration outdoors	hrs/day	10-18 yr old	2	Assume time limited time spent outdoors, meeting parents etc
Dermal absorbtion fraction (ABSd)	-	10-18 yr old	0.1	p106 SC050021/SR3

Age class	weight	height
1	5.6	0.7
2	9.8	0.8
3	12.7	0.9
4	15.1	0.9
5	16.9	1
6	19.7	1.1
7	22.1	1.2
8	25.3	1.2
9	27.5	1.3
10	31.4	1.3
11	35.7	1.4
12	41.3	1.4
13	47.2	1.5
14	51.2	1.6
15	56.7	1.6
16	59	1.6
17	70	1.6

Age class	inhalation rate passive	inhalation rate active (moderate activity)
1	0.18	0.84
2	0.28	1.26
3	0.28	1.28
4	0.26	1.2
5	0.26	1.2
6	0.26	1.2
7	0.28	1.26
8	0.28	1.26
9	0.28	1.26
10	0.28	1.26
11	0.28	1.26
12	0.31	1.41
13	0.31	1.41
14	0.31	1.41
15	0.31	1.41
16	0.31	1.41
17	0.28	1.42

Indoor/outdoor air parameters

Commercial landuse

Parameter	Unit	Value	Details
Building area	m2	4.24E+02	Table 3.10 SC050021/SR3 (office pre 1970)
Building perimeter	m	8.24E+01	Table 3.10 SC050021/SR3 (office pre 1970)
Building volume/area ratio	ratio	6.4	Table 3.10 SC050021/SR3 (office pre 1970)
Air exchange rate	units per day	24	Table 3.10 SC050021/SR3 (office pre 1970)
Height of living space	m	6.4	Table 3.10 SC050021/SR3 (office pre 1970)
Foundation thickness	m	0.15	Table 3.10 SC050021/SR3 (office pre 1970)
Pressure differential (indoor:outdoor)	pa	4.4	Table 3.10 SC050021/SR3 (office pre 1970)
Crack width	m	0.002	CLEA default (2mm)
Fraction cracks	fraction	3.90E-04	Based on area of total cracks given in Table 3.10 SC050021/SR3
Air content cracks	fraction	0.31	Assume same as soil
Water content cracks	fraction	0.15	Assume same as soil

Residential landuse

Parameter	Unit	Value	Details
Building area	m2	2.80E+01	Table 3.3 SC050021/SR3 (small terraced house)
Building perimeter	m	2.12E+01	Table 3.3 SC050021/SR3 (small terraced house)
Building volume/area ratio	ratio	4.8	Table 3.3 SC050021/SR3 (small terraced house)
Air exchange rate	units per day	12	Table 3.3 SC050021/SR3 (small terraced house)
Height of living space	m	4.8	Table 3.3 SC050021/SR3 (small terraced house)
Foundation thickness	m	0.15	Table 3.3 SC050021/SR3 (small terraced house)
Pressure differential (indoor:outdoor)	pa	3.1	Table 3.3 SC050021/SR3 (small terraced house)
Crack width	m	0.002	CLEA default (2mm)
Fraction cracks	fraction	1.40E-03	Based on area of total cracks given in Table 3.3 SC050021/SR9
Air content cracks	fraction	0.31	Assume same as soil
Water content cracks	fraction	0.15	Assume same as soil

User defined

Parameter	Unit	Value	Details
Building area	m2	4.50E+02	Measured from structural plans
Building perimeter	m	9.00E+01	Measured from structural plans
Building volume/area ratio	ratio	4.8	Table 3.3 SC050021/SR3 (small terraced house)
Air exchange rate	units per day	12	Table 3.3 SC050021/SR3 (small terraced house)
Height of living space	m	4.8	Table 3.3 SC050021/SR3 (small terraced house)
Foundation thickness	m	0.15	Table 3.3 SC050021/SR3 (small terraced house)
Pressure differential (indoor:outdoor)	pa	3	Table 3.3 SC050021/SR3 (small terraced house)
Crack width	m	0.002	CLEA default (2mm)
Fraction cracks	fraction	1.20E-03	Based on area of total cracks given in Table 3.3 SC050021/SR9
Air content cracks	fraction	0.31	Assume same as soil
Water content cracks	fraction	0.15	Assume same as soil

Q/Cwind (input for RBCA to caculate PEF)

	Mean annual air dispersion factor (g m2 s per kg m3)							
	Receptor height = 0.8m				Receptor height = 1.6m			
	Source area (ha)				Source area (ha)			
	0.01	0.05	0.5	2	0.01	0.05	0.5	2
Default value	2.40E+03	5.00E+02	1.20E+02	6.80E+01	1.90E+04	2.00E+03	2.80E+02	1.20E+02

Indoor dust correction factor (resuspended particles)

	IDcr	PEF	TFDL
Residential	0.00E+00		4.20E-06
Commercial	1.23E-03	8.60E-09	7.00E-06
school child 10-18	9.86E-01	6.90E-06	7.00E-06

Parameter	Unit	Soil type	Value	Details
TF (soil to dust transport factor)	g-g	Sand	0.7	P58 SC050021/SR3
DL (dust loading factor residential)	g m3	Sand	6.00E-06	P115 SC050021/SR3
DL (dust loading factor commercial)	g m3	Sand	1.00E-05	P115 SC050021/SR3

Soil and groundwater properties (all zones)

Commercial landuse

Parameter	Unit	Soil type	Value	Details
Porosity (total)	fraction	Sand	0.54	Table 4.4 SC050021/SR3
Porosity (air filled)	fraction	Sand	0.3	Table 4.4 SC050021/SR3
Porosity (water filled)	fraction	Sand	0.24	Table 4.4 SC050021/SR3
Dry Bulk Density	g/cm3	Sand	1.18	Table 4.4 SC050021/SR3
Van Genuchten shape parameter	dimensionless	Sand	0.35	Table 4.4 SC050021/SR3
Residual soil water content	fraction	Sand	0.07	Table 4.4 SC050021/SR3
Soil permeability	m/d	Sand	6.36	Table 4.4 SC050021/SR3
Vapour permeability	m2	Sand	7.20E-12	Table 4.4 SC050021/SR3
Fraction of organic carbon	fraction	Sand	0.0058	Assume 1% SOM
Soil temperature	K	Sand	283	Table 4.4 SC050021/SR3
Thickness of soil profile	m	Sand	0.5	Default value
Affected soil area	m2	Sand	170,343	From site plan
Length of affected soil parallel to wind	m	Sand	300	From site plan
Depth to groundwater	m	Sand	NA	None present

Residential Landuse

Parameter	Unit	Soil type	Value	Details
Porosity (total)	fraction	Sand	0.54	Table 4.4 SC050021/SR3
Porosity (air filled)	fraction	Sand	0.3	Table 4.4 SC050021/SR3
Porosity (water filled)	fraction	Sand	0.24	Table 4.4 SC050021/SR3
Dry Bulk Density	g/cm3	Sand	1.18	Table 4.4 SC050021/SR3
Van Genuchten shape parameter	dimensionless	Sand	0.35	Table 4.4 SC050021/SR3
Residual soil water content	fraction	Sand	0.07	Table 4.4 SC050021/SR3
Soil permeability	m/d	Sand	6.36	Table 4.4 SC050021/SR3
Vapour permeability	m2	Sand	7.20E-12	Table 4.4 SC050021/SR3
Fraction of organic carbon	fraction	Sand	0.0058	Assume 1% SOM
Soil temperature	K	Sand	283	Table 4.4 SC050021/SR3
Thickness of soil profile	m	Sand	0.5	Default value
Affected soil area	m2	Made ground (CLEA sandy soil default)	2,922	From site plan
Length of affected soil parallel to wind	m	Made ground (CLEA sandy soil default)	50	From site plan
Depth to groundwater	m	Made ground (CLEA sandy soil default)	NA	None present

User defined

Parameter	Unit	Soil type	Value	Details
Porosity (total)	fraction	Sand	0.54	Table 4.4 SC050021/SR3
Porosity (air filled)	fraction	Sand	0.3	Table 4.4 SC050021/SR3
Porosity (water filled)	fraction	Sand	0.24	Table 4.4 SC050021/SR3
Dry Bulk Density	g/cm3	Sand	1.18	Table 4.4 SC050021/SR3
Van Genuchten shape parameter	dimensionless	Sand	0.35	Table 4.4 SC050021/SR3
Residual soil water content	fraction	Sand	0.07	Table 4.4 SC050021/SR3
Soil permeability	m/d	Sand	6.36	Table 4.4 SC050021/SR3
Vapour permeability	m2	Sand	7.20E-12	Table 4.4 SC050021/SR3
Fraction of organic carbon	fraction	Sand	0.0058	Assume 1% SOM
Soil temperature	K	Sand	283	Table 4.4 SC050021/SR3
Thickness of soil profile	m	Sand	0.5	Default value
Affected soil area	m2	Made ground (CLEA sandy soil default)	1,125	From site plan
Length of affected soil parallel to wind	m	Made ground (CLEA sandy soil default)	30	From site plan
Depth to groundwater	m	Made ground (CLEA sandy soil default)	NA	None present

Exposure frequency adjustment for inhalation pathways

PARAMETERS	VALUE	UNIT	JUSTIFICATIONS
Ref chem tox value (residential indoor air CLR 10)			
Respiration Rate (active)	0.435	m^3/hour	Default value from Table 5.9 (CLR10)
Respiration Rate (passive)	0.1592	m^3/hour	Default value from Table 5.9 (CLR10)
Inhalation Time (active)	2.67	hours/day	Table 4.9 from CLR 10
Inhalation Time (passive)	18	hours/day	Table 4.9 from CLR 10
Repiration volume	3.98	m^3/day	Calculated using equations 5.7
Body Weight	14.5	kg	A time averaged body weight for 0 to 6 years old
Residential indoors			
Respiration Rate (active)	1.16	m^3/hour	Table 4.14 SC050021/SR3
Respiration Rate (passive)	0.24	m^3/hour	Table 4.14 SC050021/SR3
Respiration Rate (average)	11.85	m^3/day	Table 4.14 SC050021/SR3
Inhalation Time (total)	22	hours/day	Table 3.1 SC050021/SR3
Repiration volume	10.71	m^3/day	Calculated using equations 5.7
Body Weight	13.3	kg	Table 3.2 SC050021/SR3
Residential outdoors			
Respiration Rate (active)	1.16	m^3/hour	Table 4.14 SC050021/SR3
Respiration Rate (passive)	0.24	m^3/hour	Table 4.14 SC050021/SR3
Respiration Rate (average)	11.85	m^3/day	Table 4.14 SC050021/SR3
Inhalation Time (total)	1	hours/day	Table 3.1 SC050021/SR3
Repiration volume	0.49	m^3/day	Calculated using equations 5.7
Body Weight	13.3	kg	Table 3.2 SC050021/SR3
Commercial indoors			
Respiration Rate (active)	1.43	m^3/hour	Table 4.14 SC050021/SR3
Respiration Rate (passive)	0.28	m^3/hour	Table 4.14 SC050021/SR3
Respiration Rate (average)	14.8	m^3/hour	Table 4.14 SC050021/SR3
Inhalation Time (total)	8.3	hours/day	Table 3.1 SC050021/SR3
Repiration volume	5.12	m^3/day	Calculated using equations 5.7
Body Weight	70	kg	Table 3.2 SC050021/SR3
Commercial outdoors			
Respiration Rate (active)	1.43	m^3/hour	Table 4.14 SC050021/SR3
Respiration Rate (passive)	0.28	m^3/hour	Table 4.14 SC050021/SR3
Respiration Rate (average)	14.8	m^3/hour	Table 4.14 SC050021/SR3
Inhalation Time (total)	0.7	hours/day	Table 3.1 SC050021/SR3
Repiration volume	0.43	m^3/day	Calculated using equations 5.7
Body Weight	70	kg	Table 3.2 SC050021/SR3

User defined indoors			
Respiration Rate (active)	1.38	m^3/hour	Table 4.14 SC050021/SR3
Respiration Rate (passive)	0.4	m^3/hour	Table 4.14 SC050021/SR3
Inhalation time (active)	2	hours/day	Table 4.14 SC050021/SR3
Inhalation Time (passive)	5	hours/day	Table 4.14 SC050021/SR3
Repiration volume	4.76	m^3/day	Calculated using equations 5.7
Body Weight	51.4	kg	Table 3.2 SC050021/SR3
User Defined outdoors			
Respiration Rate (active)	1.38	m^3/hour	Table 4.14 SC050021/SR3
Respiration Rate (passive)	0.4	m^3/hour	Table 4.14 SC050021/SR3
Inhalation time (active)	2	hours/day	Table 4.14 SC050021/SR3
Inhalation Time (passive)	0	hours/day	Table 4.14 SC050021/SR3
Repiration volume	2.76	m^3/day	Calculated using equations 5.7
Body Weight	51.4	kg	Table 3.2 SC050021/SR3

CLEA default exposure parameters			
Receptor	**Indoor inhalation (dust and vapours)**	**outdoor inhalation (dust and vapours)**	**Unit**
Residential	365	365	days
Commercial	230	170	days
school age child (10-18)	197	281	days

Adjusted exposure parameters			
Receptor	**Indoor inhalation (dust and vapours)**	**outdoor inhalation (dust and vapours)**	**Unit**
Residential	1071.255331	49.4	days
Commercial	61.3	3.8	days
school age child (10-18)	66.46530317	54.97145259	days

Default value for female receptor

Age class	inhalation rate (m3 d)
1	8.5
2	13.3
3	12.7
4	12.2
5	12.2
6	12.2
7	12.4
8	12.4
9	12.4
10	12.4
11	12.4
12	13.4
13	13.4
14	13.4
15	13.4
16	13.4
17	14.8
18	12

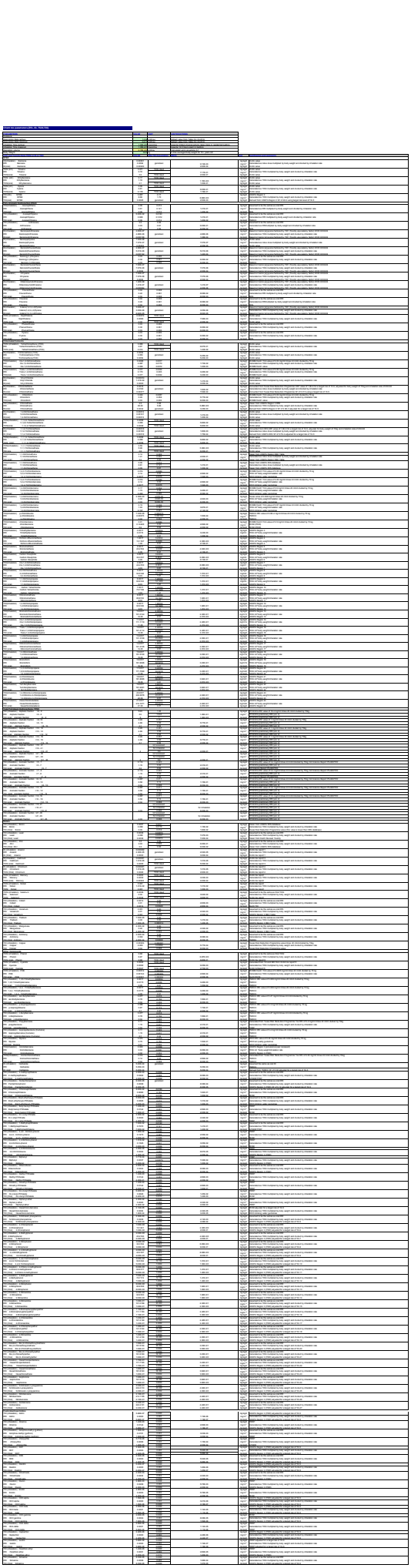
Soil/Leachate partitioning Coefficient (conversion from kd)

PARAMETERS	ABBREVIATION	UNIT	DATA SOURCE
Henry's law Constant	H	-	Litterature search
Organic carbon partition coefficient	Koc	l/kg	Litterature search
Octanol-water partition coefficient	Kow	-	Litterature search
Soil/Leachate partitoning coefficient (CLR10 derivation)	Kswα	kg/l	Calculated
Soil/Leachate partitoning coefficient (RBCA derivation)	Kswβ	kg/l	Calculated
Volumetric Water content	θws	fraction	Medium specific
Volumetric air content	θas	fraction	Medium specific
Bulk density	ρ	g/cm3	Medium specific
Fraction of Organic Carbon	Foc	SOM/100	Medium specific
Correction Factor	CF	-	Calculated

PARAMETERS	ABBREVIATION	UNIT	VALUE								DATA SOURCE
			sand	sandy loam	silt loam	sandy clay loam	clay loam	sily clay loam	silty clay	clay	
Volumetric Water content	θws	fraction	0.24	0.33	0.44	0.37	0.42	0.46	0.51	0.47	Table 4.4 SC050021/SR3
Volumetric air content	θas	fraction	0.3	0.2	0.14	0.16	0.14	0.12	0.12	0.12	Table 4.4 SC050021/SR3
Bulk density	ρ	g/cm3	1.18	1.21	1.09	1.2	1.14	1.07	0.94	1.07	Table 4.4 SC050021/SR3
Fraction of Organic Carbon	Foc	SOM/100	0.0058	0.0058	0.0058	0.0058	0.0058	0.0058	0.0058	0.0058	Lowest Foc used in CLEA SGV derivation

Determinand	Kaw	log KOC	KOC	Kd	log KOW	Ksw
Acenaphthene	0.00644335	3.6	3981.071706	23.09021589	4.1512	23.36400818
Acenaphthylene	0.00473898	3.84	6918.309709	40.12619631	3.9362	40.39970689
Aldrin	0.0070669	4.68	47863.00923	277.6054535	6.7488	277.8793489
Anthracene	0.00461427	4.37	23442.28815	135.9652713	4.345	136.2387613
Antimony	0	1.653213	45	0.261	0	0.533727273
Arsenic	0	1.39794	25	0.145	0.679	0.417727273
Atrazine	1.09329E-07	2.20412	160	0.928	2.8175	1.200727291
Azinphos-methyl (guthion)	8.8E-11	2.4	251.1886432	1.45689413	2.5	1.729621403
Azobenzene	**0.001888748**	**4.725985**	**53208.9829**	**308.6121008**	**4.767721047**	**308.8851403**
Benz-a-anthracene	0.00013926	5.55	354813.3892	2057.917658	5.521	2058.190408
Benzo-a-pyrene	4.69741E-05	5.98	954992.586	5538.956999	6.109	5539.229734
Benzo-b-fluoranthene	0.00049884	6.08	1202264.435	6973.133721	6.109	6973.406531
Benzo-g,h,i-perylene	5.8198E-06	6.2	1584893.192	9192.380516	6.697	9192.653245
Benzo-k-fluoranthene	4.44799E-07	6.09	1230268.771	7135.558871	6.109	7135.831598
Biphenyl, 1,1-	0.012471	3.71	5128.61384	29.74596027	3.757	30.02074887
Bis (2-chloro-ethyl) ether	0.000889598	1.19	15.48816619	0.089831364	1.5572	0.362705678
Bis (2-ethyl-hexyl) phthalate	0.00045727	5.833333	681292.0691	3951.494001	8.3918	3951.766803
Bis (chloroethoxy) methane	0.001247675	2.486675	306.6728049	1.778702268	2.52939498	2.051635768
Boron	0	-	#VALUE!	#VALUE!	-	#VALUE!
Bromobenzene	0.083816344	2.38412	242.1699258	1.40458557	2.91163052	1.69116784
Bromodichloromethane	0.1317769	1.74	54.95408739	0.318733707	1.6105	0.613242285
Bromoform	0.02556555	1.94	87.096359	0.505158882	1.7895	0.782111866
Bromomethane	0.590294	1.02	10.47128548	0.060733456	1.176	0.431029985
Bromophenyl phenylether, 4-	0.009662198	5.161775	145136.0959	841.7893559	5.250758328	842.0636803
Butyl benzyl phthalate	7.93987E-05	4.138176	13746	79.7268	4.8445	79.9995404
Butylbenzene, n-	0.557	3.48	3019.95172	17.51571998	4.29	17.88051337
Butylbenzene, sec-	0.507	3.32	2089.296131	12.11791756	4.09	12.47444648
Butylbenzene, tert-	0.856	3.39	2454.708916	14.23731171	4.18	14.65152659
Cadmium	0	1.176091	15	0.087	-0.071	0.359727273
Carbazole	0.003375484	3.39	2454.708916	14.23731171	3.2308	14.51059691
Carbon disulfide	0.6131575	1.72	52.48074602	0.304388327	1.94	0.678463947
Carbon tetrachloride	1.197216	2.27	186.2087137	1.080010539	2.4421	1.550624754
Chloro-3-methylphenol, 4-	1.40079E-05	2.943726	878.4686716	5.095118295	2.994350232	5.367847883
Chloroaniline, p-	4.86369E-05	1.82	66.0693448	0.3832022	1.7205	0.655937512
Chlorobenzene	0.1816609	2.33	213.796209	1.240018012	2.6375	1.54277188
Chlorobromomethane (bromochloromethane)	0.036897799	1.439221	27.46290518	0.15945885	1.318361992	0.438284932
Chloroethane	0.212007	1.25	17.7827941	0.103140206	1.5776	0.410909958
Chloroform	0.1525619	1.67	46.77351413	0.271286382	1.521	0.569230498
Chloromethane	1.438322	0.778	5.997910763	0.034787882	1.0865	0.545254329
Chloronaphthalene, 1-	0.006332584	3.975677	9455.328502	54.84090531	4.044147123	55.11467929
Chloronaphthalene, 2-	0.02544084	3.93	8511.380382	49.36600622	3.8135	49.64293859
Chlorophenol, 2-	0.000739946	2.456366	286	1.6588	2.1573	1.931649578
Chlorophenyl phenylether, 4-	0.012991679	4.117308	13101.12162	75.98650539	5.037928442	76.26138004
Chlorotoluene, p- (4-chlorotoluene)	0.133476406	2.695761	496.319558	2.878653436	3.305166548	3.173442925
Chlorpyrifos	0.000172931	3.7	5011.872336	29.06885955	4.6582	29.34161541
Chromium (III) (total chromium)	0	3.079181	1200	6.96	0	7.232727273
Chromium (VI)	0	1.146128	14	0.0812	0	0.353927273
Chrysene	5.02997E-05	5.49	309029.5433	1792.371351	5.521	1792.644086
Cobalt	0	1.653213	45	0.261	0	0.533727273
Copper	0	1.60206	40	0.232	-0.571	0.504727273
Cumene	0.606922	3.54	3467.368505	20.11073733	3.449	20.48378228
Cyanide	0	0.995635	9.9	0.05742	-0.8928	0.330147273
Cymene (isopropyltoluene)	0.466	3.36	2290.867653	13.28703239	4.14	13.63678445
DDE	0.00087297	5.04	109647.8196	635.9573538	5.9956	636.2302253
DDT	0.002232309	5.137803	137341.9271	796.5831771	6.7945	796.8562733
Dibenz-a,h-anthracene	4.65584E-07	6.28	1905460.718	11051.67216	6.697	11051.94489
Dibenzofuran	0.005282986	3.928762	8487.143383	49.22543162	3.996420691	49.49903211
Dibromo-3-chloropropane, 1,2-	0.008314	2.23	169.8243652	0.984981318	2.6822	1.259082806
Dibromochloromethane	0.03254931	1.8	63.09573445	0.36595526	1.7	0.644062584
Dichlorobenzene, 1,2-	0.087297	2.84	691.8309709	4.012619631	3.282	4.29977616
Dichlorobenzene, 1,3-	0.195	2.23	169.8243652	0.984981318	3.28	1.289939996
Dichlorobenzene, 1,4-	0.1168117	2.81	645.654229	3.744794528	3.282	4.03682952
Dichlorodifluoromethane	16.66957	2.11	128.8249552	0.74718474	1.8155	3.775212839
Dichloroethane, 1,1-	0.2394432	1.5	31.6227766	0.183412104	1.7581	0.495716765
Dichloroethane, 1,2-	0.0532096	1.24	17.37800829	0.100792448	1.8316	0.382314696
Dichloroethylene, cis-1,2-	0.1874807	1.462398	29	0.1682	1.86	0.471915818
Dichloroethylene, trans-1,2	0.3899266	1.7	50.11872336	0.290688596	2.07	0.627866546
Dichlorophenol, 2,4-	0.000131361	1.857332	72	0.4176	2.8018	0.690348985
Dichloropropane, 1,2-	0.1168117	1.77	58.88436554	0.341529302	2.2492	0.633564312
Dichloropropane, 1,3-	0.055194688	2.097105	125.0560768	0.725325245	2.23209	1.007175607
Dichloropropane, 2,2-	0.339352168	2.192176	155.6597583	0.902826598	2.364133822	1.231645139
Dichloropropene, 1,1-	1.818840538	2.314262	206.1872775	1.195886209	2.823414401	1.769248282
Dichloropropene, 1,3-cis	0.0915	1.65	44.66835922	0.259076483	1.53	0.546927723
Dichloropropene, 1,3-trans	0.0915	1.65	44.66835922	0.259076483	1.53	0.546927723
Dieldrin	0.000110992	4.33	21379.6209	124.0018012	5.4478	124.2745468
Diethyl phthalate	1.87065E-05	2.18	151.3561248	0.877865524	2.6456	1.150595889
Dimethoate	2.57734E-09	0.63	4.265795188	0.024741612	0.2781	0.297468885
Dimethyl phenol, 2,4-	0.00008314	2.07	117.4897555	0.681440582	2.6074	0.954181597
Dimethylphthalate	0.000024	1.5	31.6227766	0.183412104	1.66	0.456143344
Di-n-butyl phthalate	5.94451E-05	4.53	33884.41561	196.5296106	4.61	196.8023477
Dinitrotoluene, 2,6-	3.10528E-05	1.62	41.68693835	0.241784242	2.1757	0.514516648
Di-n-octyl phthalate	0.002776876	7.92	83176377.11	482422.9872	8.5388	482423.2604
Diphenyl oxide	0.01754108	4.178192	15072.72803	87.42182255	4.250164662	87.69744917
Diuron	3.04283E-08	2.63	426.5795188	2.474161209	2.6726	2.746888487
Endrin	4.94683E-05	3.97	9332.543008	54.12874945	5.4478	54.4014849
Ethylene dibromide	0.02934842	1.73	53.70317964	0.311478442	2.0106	0.589056693
Fluoranthene	0.000387848	4.69	48977.88194	284.0717152	4.933	284.3445066
Fluorene	0.002643852	3.88	7585.77575	43.99749935	4.0155	44.27066362
Heptachlor	0.02440159	4.07	11748.97555	68.14405819	6.2065	68.42081878
Hexachlorobenzene	0.02223995	4.45	28183.82931	163.46621	5.86	163.7426133
Hexachlorobutadiene	0.993523	3.84	6918.309709	40.12619631	4.7172	40.56314226
Hexachlorocyclohexane, alpha	0.00028226	3.12	1318.256739	7.645889084	4.2586	7.918663011
Hexachlorocyclohexane, beta	1.43832E-05	3.14	1380.384265	8.006228735	4.2586	8.278958385
Hexachlorocyclohexane, delta	0.000177	3.93	8511.380382	49.36600622	4	49.63876274
Hexachlorocyclohexane, gamma	0.000140922	3.04	1096.478196	6.359573538	4.2586	6.632324103
Hexachlorocyclopentadiene	0.715004	3.98	9549.92586	55.38956999	4.6253	55.78047974
Hexachloroethane	0.1617073	3.26	1819.700859	10.55426498	4.0348	10.85372073
Indeno-1,2,3-cd-pyrene	2.8517E-06	6.54	3467368.505	20110.73733	6.697	20111.01005
Isodrin	0.091303492	6.837488	6878404.918	39894.74852	6.819715975	39895.03634
Isophorone	0.000257318	1.48	30.1995172	0.1751572	2.6179	0.447927004
Lead (inorganic)	0	1	10	0.058	0.729	0.330727273
Manganese	0	1.7	50.11872336	0.290688596	0	0.563415868
Mercury	0.473898	-1.39794	0.04	0.000232	-0.471	0.351289521
Methyl naphthalene, 1-	0.0164	3.36	2290.867653	13.28703239	3.72	13.5624704
Methylene chloride	0.0910383	1.07	11.74897555	0.068144058	1.3405	0.355918984
Methylnaphthalene, 2-	0.018466436	3.635	4315.190768	25.02810646	3.7163	25.30388603
Naphthalene	0.02003674	3.19	1548.816619	8.98313639	3.169	9.25917552
Nickel	0	1.20412	16	0.0928	-0.571	0.365527273
Nitroaniline, 2-	0.000020785	1.43	26.91534804	0.156109019	2.0185	0.428839727
Nitroaniline, 3-	2.31021E-07	1.595669	39.41570873	0.228611111	1.62298	0.501338422
Nitroaniline, 4-	3.32726E-08	1.050937	11.24441275	0.065217594	1.068826835	0.337944872
Nitrophenol, 2-	2.21028E-05	1.32	20.89296131	0.121179176	2.349	0.393910102
Nitrophenol, 4-	3.23984E-08	0.5	3.16227766	0.01834121	1.72642	0.291068489
Nitrosodi-n-propylamine, n-	9.35325E-05	1.295	19.72422736	0.114400519	1.3528	0.387143251
Nitrosodiphenylamine	0.00020785	2.52	331.1311215	1.920560505	3.1614	2.193322133
Parathion	2.36949E-05	3.748188	5600	32.48	3.7309	32.75273119
Pentachlorophenol	1.16398E-05	2.612784	410	2.378	4.7353	2.650729197
Phenanthrene	0.0054041	4.15	14125.37545	81.92717759	4.345	82.2007981
Phenol	2.47342E-05	1.24	17.37800829	0.100792448	1.5128	0.373523809
Polybrominated biphenyls (solid)	0.000162123	3.33	2137.96209	12.40018012	6.39	12.67293419
Propylbenzene, n-	0.424	3.03	1071.519305	6.21481197	3.73	6.557621888
Pyrene	0.00045727	4.58	38018.93963	220.5098499	4.933	220.7826527
Selenium	0	0.342423	2.2	0.01276	0.239	0.285487273
Simazine	2.47757E-07	2.47308	297.2213483	1.72388382	2.64	1.996611134
Styrene	0.1143175	2.88	758.577575	4.399749935	2.895	4.691372662
Tetrachloroethane, 1,1,1,2-	0.099768	2.98	954.992586	5.538956999	2.9332	5.82817485
Tetrachloroethane, 1,1,2,2-	0.01546404	1.89	77.62471166	0.450223328	2.1926	0.72550664
Tetrachloroethylene	0.764888	2.190332	155	0.899	2.9654	1.298155041
Thallium	0	1.64	43.65158322	0.253179183	-	0.525906455
TPH - Aliph >C06-C08	48.11424433	3.6	3981.071706	23.09021589	3.63	31.31571082
TPH - Aliph >C08-C10	78.54930121	4.5	31622.7766	183.4121043	1.0865	196.6681871
TPH - Aliph >C10-C12	122.2667856	5.4	251188.6432	1456.89413	4.044147123	1477.376244
TPH - Aliph >C12-C16	520.9361792	6.7	5011872.336	29068.85955	3.8135	29155.23743
TPH - Aliph >C16-C21	4899.404766	8.8	630957344.5	3659552.598	2.47	3660362.69
TPH - Aliph >C21-C34	7258.377431	8.8	630957344.5	3659552.598	2.1573	3660752.603
TPH - Arom >C05-C07	0.232323065	1.9	79.43282347	0.460710376	2.07	0.771838156
TPH - Arom >C07-C08	0.277264942	2.4	251.1886432	1.45689413	2.1	1.775450319
TPH - Arom >C08-C10	0.479662005	3.2	1584.893192	9.192380516	5.037928442	9.544390765
TPH - Arom >C10-C12	0.135104798	3.4	2511.886432	14.5689413	2.20959631	14.86399995
TPH - Arom >C12-C16	0.051195452	3.7	5011.872336	29.06885955	3.46	29.35004888
TPH - Arom >C16-C21	0.013260497	4.2	15848.93192	91.92380516	3.2	92.19872425
TPH - Arom >C21-C35	0.000659852	5.1	125892.5412	730.1767388	3.305166548	730.4495752
Trichlorobenzene, 1,2,3-	0.038	3.95	8912.509381	51.69255441	4.02	51.97156268
Trichlorobenzene, 1,2,4-	0.0590294	3.22	1659.586907	9.625604063	3.9265	9.908088261
Trichloroethane, 1,1,1-	0.715004	2.04	109.6478196	0.635957354	2.6792	1.026867106
Trichloroethane, 1,1,2-	0.03795341	1.7	50.11872336	0.290688596	2.0121	0.569689159
Trichloroethylene	0.428171	1.97	93.32543008	0.541287494	2.4731	0.884786833
Trichlorofluoromethane	4.03229	2.13	134.8962883	0.782398472	2.1288	1.72161996
Trichlorophenol, 2,4,5-	0.00017792	2.474216	298	1.7294	3.4483	2.001156681

$$K_{sw} = \frac{\theta_w + (K_d \rho_s) + (K_{aw} \theta_a)}{\rho_s}$$



[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

RBCA output (user defined receptor)

Tier 1 Soil RBSL - secondary school child HQ

Contaminant	Units	Ingestion	Dermal Indoor	Dermal Outdoor	Soil Vapours Outdoor	Soil Vapours Indoor	Dust outdoors	Dust indoors	Soil HQ
Acenaphthene		6.4E-5	5.1E-6	3.8E-5	2.63E-06	3.79E-07	2.38E-08	4.54E-08	1.5E-8
Acenaphthylene		6.4E-5	5.1E-6	3.8E-5	1.16E-06	1.68E-07	2.38E-08	4.54E-08	1.4E-8
Aldrin		6.5E+0	9.2E-1	6.9E+0	7.72E-03	1.12E-03	2.43E-03	4.63E-03	6.1E-4
Anthracene		1.3E-5	1.0E-6	7.6E-6	4.94E-08	7.17E-09	4.74E-09	9.05E-09	2.1E-9
Antimony		9.6E-3	4.5E-3	3.4E-2			3.57E-06	6.81E-06	#VALUE!
Arsenic		2.0E-3	1.9E-4	1.4E-3			1.42E-04	2.72E-04	#VALUE!
Atrazine		6.5E+0	9.2E-1	6.9E+0	4.07E-06	3.54E-06	9.99E-07	1.91E-06	4.9E-7
Azinphos-methyl (guthion)		2.6E-3	3.6E-4	2.7E-3	1.84E-06	1.85E-06	9.53E-07	1.82E-06	3.7E-7
Azobenzene		8.5E-3	1.2E-3	8.9E-3	8.90E-06	1.30E-06	3.09E-06	5.90E-06	7.3E-7
Benz-a-anthracene		5.6E-3	4.4E-4	3.3E-3	2.11E-05	4.38E-06	5.90E-04	1.13E-03	3.6E-6
Benzo-a-pyrene		3.8E-2	3.1E-3	2.3E-2	1.88E-05	6.20E-06	4.07E-03	7.78E-03	4.6E-6
Benzo-b-fluoranthene		5.4E-3	4.3E-4	3.2E-3	9.08E-06	1.54E-06	5.74E-04	1.10E-03	1.3E-6
Benzo-g,h,i-perylene		1.3E-4	1.0E-5	7.6E-5	2.23E-10	1.86E-10	4.74E-08	9.05E-08	1.0E-10
Benzo-k-fluoranthene		3.8E-3	3.1E-4	2.3E-3	2.33E-07	2.02E-07	4.07E-04	7.78E-04	1.1E-7
Biphenyl, 1,1-		7.7E-5	1.1E-5	8.1E-5	8.70E-04	1.24E-04	3.85E-06	7.34E-06	1.9E-6
Bis (2-chloro-ethyl) ether		8.5E-2	7.5E-3	5.6E-2	1.20E-01	1.80E-02	3.30E-05	6.30E-05	2.2E-5
Bis (2-ethyl-hexyl) phthalate		1.5E-4	5.7E-5	4.3E-4	3.89E-08	6.03E-09	9.99E-07	1.91E-06	5.2E-9
Bis (chloroethoxy) methane		8.5E-2	1.2E-2	8.9E-2	1.23E-02	1.82E-03	3.30E-05	6.30E-05	2.1E-5
Boron		4.3E-3	3.4E-4	2.5E-5			2.50E-07	4.78E-07	#VALUE!
Bromobenzene		1.9E-4	1.7E-5	1.3E-4	1.78E-02	2.53E-03	4.74E-07	9.05E-07	3.0E-7
Bromodichloromethane		1.9E-2	1.4E-3	1.0E-2	1.60E-01	2.28E-02	1.77E-06	3.37E-06	1.2E-6
Bromoform		6.1E-4	7.2E-5	5.3E-4	6.82E-04	9.81E-05	1.10E-07	2.10E-07	7.2E-8
Bromomethane		2.7E-3	2.4E-4	1.8E-3	1.83E+00	2.60E-01	9.99E-07	1.91E-06	6.5E-7
Bromophenyl phenylether, 4-		1.2E+0	1.6E-1	1.2E+0	1.56E-03	2.23E-04	6.30E-08	1.19E-07	1.1E-4
Butyl benzyl phthalate		7.7E-6	8.9E-7	6.6E-6	2.15E-07	6.41E-08	1.04E-06	1.98E-06	4.3E-8
Butylbenzene, n-		9.6E-5	1.4E-5	1.0E-4	3.13E-04	4.46E-05	1.85E-08	3.53E-08	1.2E-8
Butylbenzene, sec-		9.6E-5	8.5E-6	6.3E-5	4.15E-04	5.90E-05	1.85E-08	3.53E-08	1.2E-8
Butylbenzene, tert-		9.6E-5	8.5E-6	6.3E-5	1.17E-03	1.66E-04	3.57E-08	6.81E-08	2.3E-8
Cadmium		1.5E-3	4.4E-3	3.2E-2			3.00E-04	5.73E-04	#VALUE!
Carbazole		1.5E-3	1.6E-4	1.2E-3	4.97E-05	7.23E-06	5.71E-07	1.09E-06	3.5E-7
Carbon disulfide		3.8E-5	4.3E-6	3.2E-5	6.41E-02	9.12E-03	4.99E-08	9.53E-08	3.2E-8
Carbon tetrachloride		5.5E-4	6.0E-5	4.4E-4	9.41E-02	1.34E-02	1.42E-07	2.72E-07	9.3E-8
Chloro-3-methylphenol, 4-		3.8E-5	5.5E-6	4.0E-5	3.94E-08	1.74E-08	1.42E-08	2.72E-08	5.3E-9
Chloroaniline, p-		9.6E-4	1.4E-4	1.0E-3	6.12E-05	1.99E-05	9.44E-07	1.80E-06	5.9E-7
Chlorobenzene		1.9E-5	4.4E-6	3.3E-5	9.34E-07	1.33E-07	9.99E-12	1.91E-11	6.6E-12
Chlorobromomethane (bromochloromethane)		9.6E-5	8.5E-6	6.3E-5					#VALUE!
Chloroethane		2.2E-4	2.0E-5	1.5E-4	7.16E-04	1.02E-04	4.92E-10	9.40E-10	3.2E-10
Chloroform		1.3E-4	8.5E-5	3.1E-4	2.05E-02	2.91E-03	4.99E-08	9.53E-08	3.2E-8
Chloromethane		1.0E-3	8.9E-5	6.6E-4	9.44E-01	1.34E-01	1.80E-07	3.43E-07	1.2E-7
Chloronaphthalene, 1-		4.8E-5	3.8E-6	2.8E-5	2.25E-07	3.22E-08	3.58E-09	6.84E-09	2.2E-9
Chloronaphthalene, 2-		4.8E-5	3.8E-6	2.8E-5	1.07E-06	1.53E-07	3.58E-09	6.84E-09	2.3E-9
Chlorophenol, 2-		1.3E-3	1.1E-4	8.4E-4	1.96E-05	3.07E-06	9.53E-08	1.82E-07	6.1E-8
Chlorophenyl phenylether, 4-		1.2E+0	1.6E-1	1.2E+0	2.60E-02	3.72E-03	3.30E-04	6.30E-04	2.0E-4
Chlorotoluene, p- (4-chlorotoluene)		1.9E-4	1.7E-5	1.3E-4	5.50E-01	7.83E-02	1.92E-06	3.67E-06	6.6E-6
Chlorpyrifos		3.8E-3	5.5E-4	4.0E-3	7.09E-05	1.24E-05	2.50E-05	4.77E-05	5.3E-6
Chromium (III) (total chromium)		3.0E-4	1.6E-3	1.2E-2			3.00E-04	5.73E-04	#VALUE!
Chromium (VI)		3.0E-4	8.4E-4	6.2E-3			3.00E-04	5.73E-04	#VALUE!
Chrysene		3.8E-3	3.1E-4	2.3E-3	3.69E-06	1.28E-06	4.07E-04	7.78E-04	9.4E-7
Cobalt		2.7E-3	2.4E-4	1.8E-3			1.02E-06	1.94E-06	#VALUE!
Copper		9.6E-5	1.2E-5	8.9E-5			4.99E-06	9.53E-06	#VALUE!
Cumene		3.8E-5	3.4E-10	2.5E-9	2.29E-04	3.26E-05	1.25E-08	2.38E-08	2.9E-10
Cyanide		2.9E-4	4.0E-5	3.0E-4			3.19E-07	6.08E-07	#VALUE!
Cymene (isopropyltoluene)		3.8E-5	3.4E-6	2.5E-5	3.11E-04	4.43E-05	1.66E-08	3.17E-08	1.1E-8
DDE		1.3E-1	1.3E-2	9.8E-2	9.37E-06	1.57E-06	4.85E-05	9.27E-05	1.3E-6
DDT		1.3E-1	1.3E-2	9.8E-2	1.78E-05	2.69E-06	4.85E-05	9.27E-05	2.2E-6
Dibenz-a,h-anthracene		1.9E-1	1.5E-2	1.1E-1	7.02E-06	6.00E-06	2.04E-02	3.89E-02	3.3E-6
Dibenzofuran		1.9E-3	2.7E-4	2.0E-3	3.97E-05	5.70E-06	7.11E-07	1.36E-06	4.3E-7
Dibromo-3-chloropropane, 1,2-		1.2E-1	1.6E-2	1.2E-1	2.97E-02	4.24E-03	4.99E-06	9.53E-06	3.3E-6
Dibromochloromethane		1.8E-4	2.1E-5	1.6E-4	3.27E-02	4.68E-03	2.39E-06	4.57E-06	1.4E-6
Dichlorobenzene, 1,2-		9.0E-6	7.9E-7	5.9E-6	1.15E-04	1.64E-05	8.31E-09	1.59E-08	5.4E-9
Dichlorobenzene, 1,3-		1.3E-4	1.1E-5	8.4E-5	7.17E-02	1.02E-02	6.22E-07	1.19E-06	3.9E-7
Dichlorobenzene, 1,4-		3.6E-5	2.8E-6	2.1E-5	1.48E-04	2.11E-05	7.47E-09	1.43E-08	4.9E-9
Dichlorodifluoromethane		1.9E-5	5.9E-6	4.4E-5	6.06E-02	8.63E-03	2.50E-08	4.77E-08	1.6E-8
Dichloroethane, 1,1-		1.9E-5	1.4E-6	1.0E-5	5.93E-03	8.44E-04	1.03E-08	1.96E-08	6.7E-9
Dichloroethane, 1,2-		6.4E-3	4.5E-4	3.4E-3	6.91E-01	9.84E-02	2.38E-06	4.54E-06	1.6E-6
Dichloroethylene, cis-1,2-		5.5E-4	3.9E-5	2.9E-4	1.01E-01	1.44E-02	2.08E-07	3.97E-07	1.4E-7
Dichloroethylene, trans-1,2		2.3E-4	1.6E-5	1.2E-4	5.13E-02	7.31E-03	8.31E-08	1.59E-07	5.4E-8
Dichlorophenol, 2,4-		1.3E-3	1.1E-4	8.2E-4	4.78E-05	1.14E-05	4.74E-07	9.05E-07	3.0E-7
Dichloropropane, 1,2-		2.7E-4	2.6E-5	2.0E-4	2.50E-01	3.56E-02	1.25E-06	2.38E-06	7.9E-7
Dichloropropane, 1,3-		7.7E-5	6.8E-6	5.1E-5	2.05E-02	2.91E-03	4.00E-07	7.63E-07	2.6E-7
Dichloropropane, 2,2-		5.2E-3	4.6E-4	3.4E-3	3.10E-01	4.41E-02	1.25E-06	2.38E-06	8.2E-7
Dichloropropene, 1,1-		7.7E-3	6.8E-4	5.1E-3	3.64E-01	5.18E-02	4.00E-07	7.63E-07	2.6E-7
Dichloropropene, 1,3-cis		4.2E-2	3.7E-3	2.7E-2	1.49E-01	2.12E-02	7.47E-07	1.43E-06	4.9E-7
Dichloropropene, 1,3-trans		7.7E-3	6.8E-4	5.1E-3	7.97E-02	1.13E-02	4.00E-07	7.63E-07	2.6E-7
Dieldrin		6.2E+0	8.7E-1	6.5E+0	3.03E-04	8.98E-05	2.28E-03	4.36E-03	6.6E-5
Diethyl phthalate		1.9E-5	1.5E-6	1.1E-5	9.95E-06	5.12E-06	1.04E-06	1.98E-06	3.9E-7
Dimethoate		1.9E-5	2.7E-4	2.0E-3	1.07E-07	1.53E-08	1.36E-06	4.8E-7	1.8E-7
Dimethyl phenol, 2,4-		1.9E-4	2.7E-5	2.0E-4	2.03E-05	4.70E-06	2.93E-07	5.60E-07	1.8E-7
Dimethylphthalate		4.8E-6	3.8E-7	2.8E-6	7.11E-05	2.39E-05	1.04E-06	1.98E-06	2.1E-7
Di-n-butyl phthalate		7.4E-5	5.2E-6	3.9E-5	1.53E-07	4.32E-08	9.99E-07	1.91E-06	3.2E-8
Dinitrotoluene, 2,6-		1.9E-3	1.6E-4	1.2E-3	1.59E-03	6.41E-04	3.35E-05	6.40E-05	1.8E-5
Di-n-octyl phthalate		1.9E-4	1.5E-5	1.1E-4	5.72E-11	8.43E-12	6.92E-08	1.32E-07	7.3E-12
Diphenyl oxide		6.2E-4	8.8E-5	6.5E-4	7.13E-05	1.02E-05	7.11E-07	1.36E-06	4.4E-7
Diuron		1.9E-4	2.7E-4	2.0E-3	1.56E-07	4.24E-08	4.99E-07	9.53E-07	1.7E-7
Endrin		1.9E-2	2.7E-3	2.0E-2	8.51E-06	3.54E-06	4.99E-05	9.53E-05	2.3E-6
Ethylene dibromide		2.9E-1	2.6E-2	1.9E-1	9.35E-01	1.35E-01	6.00E-05	1.15E-04	3.9E-5
Fluoranthene		9.6E-5	7.7E-6	5.7E-5	1.45E-08	2.48E-09	3.57E-08	6.81E-08	1.9E-9
Fluorene		9.6E-5	7.7E-6	5.7E-5	7.38E-07	1.08E-07	3.57E-08	6.81E-08	1.9E-8
Heptachlor		1.7E+0	1.7E-1	1.3E+0	2.43E-02	3.48E-03	6.41E-04	1.22E-03	3.7E-4
Hexachlorobenzene		2.4E-2	3.4E-3	2.5E-2	9.26E-04	1.32E-04	1.33E-05	2.54E-05	8.1E-6
Hexachlorobutadiene		1.9E-2	2.7E-3	2.0E-2	3.48E-02	4.07E-03	2.49E-06	4.75E-06	1.4E-6
Hexachlorocyclohexane, alpha		2.4E+0	1.8E-1	1.3E+0	5.00E-03	1.17E-03	8.95E-04	1.71E-03	3.6E-4
Hexachlorocyclohexane, beta		6.9E-1	5.4E-2	4.0E-1	2.29E-04	1.56E-04	2.56E-04	4.90E-04	6.0E-5
Hexachlorocyclohexane, delta		6.9E-1	9.8E-2	7.3E-1	4.13E-04	7.59E-05	2.56E-04	4.90E-04	4.6E-5
Hexachlorocyclohexane, gamma		4.8E-1	3.5E-2	2.6E-1	1.34E-04	4.08E-05	3.57E-05	6.81E-05	1.3E-5
Hexachlorocyclopentadiene		6.4E-3	9.1E-5	6.7E-4	4.88E-02	6.94E-03	2.50E-05	4.77E-05	1.3E-5
Hexachloroethane		1.1E-3	1.6E-4	1.1E-3	1.43E-04	2.04E-05	3.57E-07	7.63E-07	2.6E-7
Indeno-1,2,3-cd-pyrene		8.9E-3	7.1E-4	5.3E-3	2.15E-07	1.72E-07	9.44E-04	1.80E-03	9.5E-8
Isodrin		6.5E+1	9.2E+0	6.9E+1	1.78E-02	2.54E-03	2.43E-02	4.63E-02	1.9E-3
Isophorone		7.3E-5	1.0E-5	7.7E-5	1.38E-04	2.28E-05	2.17E-07	4.14E-07	1.4E-7
Lead (inorganic)		1.1E-3	5.0E-4	3.7E-3			3.96E-07	7.57E-07	#VALUE!
Manganese		1.9E-4	2.3E-4	1.7E-3			7.11E-08	1.36E-07	#VALUE!
Mercury		3.5E-3	1.2E-3	8.8E-3	2.51E-03	3.57E-04	9.32E-07	1.78E-06	6.2E-7
Methyl naphthalene, 1-		5.5E-5	4.4E-6	3.2E-5	1.49E-05	2.12E-06	2.04E-08	3.89E-08	1.3E-8
Methylene chloride		6.4E-4	4.8E-5	3.6E-4	9.44E-04	1.34E-04	1.66E-09	3.17E-09	1.1E-9
Methylnaphthalene, 2-		9.6E-4	7.7E-5	5.7E-4	1.51E-04	2.16E-05	3.46E-07	6.61E-07	2.2E-7
Naphthalene		3.8E-5	3.1E-6	2.3E-5	4.44E-04	6.34E-05	3.61E-07	6.89E-07	2.2E-7
Nickel		7.7E-4	1.4E-3	1.0E-2			3.00E-04	1.96E-07	#VALUE!
Nitroaniline, 2-		1.3E-2	1.8E-3	1.3E-2	1.52E-04	5.60E-05	2.04E-06	3.89E-06	1.3E-6
Nitroaniline, 3-		1.9E-3	2.3E-4	1.7E-3	1.00E-04	8.65E-05	4.74E-06	9.05E-06	2.9E-6
Nitroaniline, 4-		1.6E-3	2.3E-4	1.7E-3	1.36E-04	1.20E-04	2.99E-06	5.71E-06	1.9E-6
Nitrophenol, 2-		1.9E-3	2.7E-4	2.0E-3	1.33E-04	4.83E-05	1.25E-06	2.38E-06	8.0E-7
Nitrophenol, 4-		1.9E-3	1.4E-4	1.0E-3	2.60E-04	2.28E-04	3.71E-06	7.08E-06	2.3E-6
Nitrosodi-n-propylamine, n-		5.4E-1	1.5E-1	1.1E+0	2.91E-01	6.50E-02	9.99E-04	1.91E-03	6.4E-4
Nitrosodiphenylamine		3.8E-4	1.1E-4	7.9E-4	4.61E-06	8.94E-07	1.40E-07	2.67E-07	8.2E-8
Parathion		6.4E-4	9.1E-5	6.7E-4	2.44E-05	1.30E-05	9.99E-05	1.91E-04	6.8E-5
Pentachlorophenol		1.3E-2	1.2E-3	8.9E-3	1.47E-04	8.63E-05	3.42E-07	6.52E-07	1.5E-7
Phenanthrene		1.3E-4	1.0E-5	7.6E-5	9.85E-07	1.42E-07	4.74E-08	9.05E-08	2.5E-8
Phenol		1.1E-6	8.9E-8	6.6E-7	6.27E-08	2.08E-08	4.19E-10	8.00E-10	2.7E-10
Polybrominated biphenyls (solid)		3.8E-1	2.9E-2	2.2E-1		2.77E+23	9.99E-06	1.91E-05	#VALUE!
Propylbenzene, n-		9.6E-5	8.5E-6	6.3E-5	4.89E-04	6.95E-05	1.25E-08	2.38E-08	8.2E-9
Pyrene		1.3E-4	1.0E-5	7.6E-5	2.63E-08	4.58E-09	4.74E-08	9.05E-08	3.5E-9
Selenium		2.1E-4	3.0E-5	2.2E-4			7.93E-08	1.51E-07	#VALUE!
Simazine		4.6E-2	6.6E-3	4.8E-2	4.48E-05	3.86E-05	1.27E-05	7.3E-6	2.4E-6
Styrene		3.8E-4	3.4E-5	2.5E-4	3.28E-04	4.66E-05	1.92E-08	3.67E-08	1.3E-8
Tetrachloroethane, 1,1,1,2-		1.3E-4	1.2E-5	8.7E-5	5.85E-04	8.32E-05	4.92E-08	9.40E-08	3.2E-8
Tetrachloroethane, 1,1,2,2-		1.3E-4	1.3E-5	1.0E-4	9.75E-04	1.39E-04	4.92E-08	9.40E-08	3.2E-8
Tetrachloroethylene		5.5E-5	3.9E-6	2.9E-5	2.07E-03	2.94E-04	4.33E-09	8.26E-09	2.8E-9
Thallium		5.5E-2	3.9E-3	2.9E-2			2.04E-05	3.89E-05	#VALUE!
TPH - Aliph >C06-C08		7.7E-7	6.8E-8	5.1E-7	4.03E-04	5.74E-05	1.78E-10	5.78E-10	1.8E-10
TPH - Aliph >C08-C10		3.8E-5	3.4E-6	2.5E-5	1.89E-03	2.69E-04	4.99E-09	9.53E-09	3.3E-9
TPH - Aliph >C10-C12		3.8E-5	5.5E-6	4.0E-5	3.90E-04	5.55E-05	4.99E-09	9.53E-09	3.3E-9
TPH - Aliph >C12-C16		3.8E-5	5.5E-6	4.0E-5	8.42E-05	1.20E-05	4.99E-09	9.53E-09	3.3E-9
TPH - Aliph >C16-C21		1.9E-6	2.7E-7	2.0E-6	6.31E-06	8.97E-07	4.99E-09	9.53E-09	3.2E-9
TPH - Aliph >C21-C34		1.9E-6	2.7E-7	2.0E-6	9.34E-06	1.33E-06	4.99E-09	9.53E-09	3.2E-9
TPH - Arom >C05-C07		1.9E-5	2.7E-6	2.0E-5	4.82E-03	6.86E-04	1.25E-08	2.38E-08	8.2E-9
TPH - Arom >C07-C08		1.9E-5	1.4E-6	1.0E-5	2.08E-03	2.96E-04	1.25E-08	2.38E-08	8.1E-9
TPH - Arom >C08-C10		9.6E-5	8.5E-6	6.3E-5	1.21E-03	1.72E-04	2.50E-08	4.77E-08	1.6E-8
TPH - Arom >C10-C12		9.6E-5	1.4E-5	1.0E-4	2.17E-04	3.09E-05	2.50E-08	4.77E-08	1.6E-8
TPH - Arom >C12-C16		9.6E-5	1.4E-5	1.0E-4	4.14E-05	5.89E-06	2.50E-08	4.77E-08	1.6E-8
TPH - Arom >C16-C21		1.3E-4	1.0E-5	7.6E-5	3.40E-06	4.85E-07	2.50E-08	4.77E-08	1.6E-8
TPH - Arom >C21-C35		1.3E-4	1.0E-5	7.6E-5	2.15E-08	3.25E-09	2.50E-08	4.77E-08	2.4E-9
Trichlorobenzene, 1,2,3-		5.0E-4	2.1E-5	5.3E-4	4.29E-05	6.11E-06	9.99E-08	1.91E-07	6.5E-8
Trichlorobenzene, 1,2,4-		5.0E-4	3.6E-5	2.7E-4	1.72E-04	2.45E-05	9.99E-08	1.91E-07	6.5E-8
Trichloroethane, 1,1,1-		1.3E-6	1.0E-7	7.5E-7	3.12E-04	4.43E-05	4.83E-10	9.22E-10	3.2E-10
Trichloroethane, 1,1,2-		4.4E-3	3.8E-4	2.9E-3	1.23E-01	1.76E-02	1.60E-06	3.05E-06	1.0E-6
Trichloroethylene		1.5E-4	1.0E-5	7.8E-5	2.59E-02	3.68E-03	5.50E-08	1.05E-07	3.6E-8
Trichlorofluoromethane		1.3E-5	4.0E-6	2.9E-5	1.60E-02	2.28E-03	7.11E-09	1.36E-08	4.7E-9
Trichlorophenol, 2,4,5-		1.3E-2	1.8E-3	1.3E-2	3.46E-06	7.33E-07	1.15E-07	2.20E-07	6.7E-8
Trichlorophenol, 2,4,6-		1.2E-4	1.6E-5	1.2E-4	2.58E-05	4.53E-06	2.14E-07	4.08E-07	1.3E-7
Trichloropropane, 1,2,3-		1.5E-1	1.4E-2	1.0E-1	2.59E-01	3.70E-02	5.71E-05	1.09E-04	3.7E-5
Trimethylbenzene, 1,2,3-		7.7E-5	5.6E-6	4.2E-5	2.01E-02	2.86E-03	8.31E-07	1.59E-06	4.9E-7
Trimethylbenzene, 1,2,4-		7.7E-5	6.8E-6	5.1E-5	1.63E-02	2.32E-03	8.31E-07	1.59E-06	5.0E-7

Tier 1 Soil RBSL - Secondary school child RBSL

Contaminant	Units	Ingestion	Dermal Indoor	Dermal Outdoor	Soil Vapours Outdoor	Soil Vapours Indoor	Dust outdoors	Dust indoors	Soil RBSL
Acenaphthene		15593.26	195926.5	26380	379963.1	2641186	42071799	22037609	#REF!
Acenaphthylene		15593.26	195926.5	26380	859464.2	5961149	42071799	22037609	#REF!
Aldrin		0.153334	1.082366	0.145732	129.5026	891.8938	412.0533	215.8375	#REF!
Anthracene		77966.28	979632.7	131900	20256326	1.4E+08	2.11E+08	1.1E+08	#REF!
Antimony		103.955	220.1422	29.64045	#VALUE!	#VALUE!	280157.7	146749.3	#REF!
Arsenic		499.7838	5228.377	703.9608	#VALUE!	#VALUE!	7018.385	3676.297	#REF!
Atrazine		0.153334	1.082366	0.145732	245889.6	282689.8	1001251	524464.8	#REF!
Azinphos-methyl (guthion)		389.8314	2751.777	370.5057	542936	539981.3	1049388	549679.5	#REF!
Azobenzene		118.1189	833.7885	112.2632	112306.8	768795	323481.1	169442.5	#REF!
Benz-a-anthracene		179.3224	2253.155	303.3701	47463.44	228452	1694.425	887.5559	#REF!
Benzo-a-pyrene		25.98876	326.5442	43.96667	53278.43	161191.8	245.4991	128.5947	#REF!
Benzo-b-fluoranthene		184.5202	2318.464	312.1634	110114.1	650749.6	1742.562	912.7705	#REF!
Benzo-g,h,i-perylene		7796.628	97963.27	13190	4.48E+09	5.36E+09	21084037	11044019	#REF!
Benzo-k-fluoranthene		259.8876	3265.442	439.6667	4282948	4961544	2454.991	1285.947	#REF!
Biphenyl, 1,1-		12994.38	91725.9	12350.19	1148.951	8046.519	259940.2	136159.1	#REF!
Bis (2-chloro-ethyl) ether		11.81189	133.4062	17.96212	8.306685	55.70071	30326.35	15885.23	#REF!
Bis (2-ethyl-hexyl) phthalate		6497.19	77427.92	2346.536	25683950	1.66E+08	1001251	524464.8	#REF!
Bis (chloroethoxy) methane		11.81189	83.37885	11.22632	61.32608	550.3301	30326.35	15885.23	#REF!
Boron		23389.88	297191.9	40014.61	#VALUE!	#VALUE!	3995377	2092816	1.39E+04
Bromobenzene		5197.752	58704.58	7904.121	56.28673	395.4431	2108404	1104402	#REF!
Bromodichloromethane		51.97752	719.1311	96.82549	6.255747	43.928	566091.9	296524.4	#REF!
Bromoform		1650.286	13979.03	1882.169	1466.038	10195.93	9107534	4770613	#REF!
Bromomethane		363.8426	4109.32	553.2885	0.54729	3.846774	1001251	524464.8	#REF!
Bromophenyl phenylether, 4-		0.866725	6.118118	0.823758	589.296	4120.036	3035.635	1588.523	#REF!
Butyl benzyl phthalate		129943.8	1119056	150672.3	4654811	15590344	962741.4	504293.1	#REF!
Butylbenzene, n-		10395.5	73380.72	9880.152	3192.211	22437.96	54106067	28341273	#REF!
Butylbenzene, sec-		10395.5	117409.2	15808.24	2411.01	16946.79	54106067	28341273	#REF!
Butylbenzene, tert-		10395.5	117409.2	15808.24	857.8807	6030.205	28015775	14674930	#REF!
Cadmium		649.719	229.3148	30.87547	#VALUE!	#VALUE!	3331.085	1744.854	#REF!
Carbazole		649.719	6420.813	864.5133	20105.63	138398.9	1752189	917813.5	#REF!
Carbon disulfide		25988.76	231104.3	31122.48	15.60334	109.6776	20025021	10489297	#REF!
Carbon tetrachloride		1819.213	16694.11	2247.734	10.62517	74.68743	7018385	3676297	#REF!
Chloro-3-methylphenol, 4-		25988.76	183451.8	24700.38	25366278	57495884	70183848	36762968	#REF!
Chloroaniline, p-		1039.55	7338.072	988.0152	16335.2	50174.94	1059016	554722.4	#REF!
Chlorobenzene		51977.52	227480.2	30628.47	1071098	7527381	1E+11	5.24E+10	#REF!
Chlorobromomethane (bromochloromethane)		10395.5	117409.2	15808.24	#VALUE!	#VALUE!	#VALUE!	#VALUE!	
Chloroethane		4483.061	50632.7	6817.305	1395.854	9810.745	2.03E+09	1.06E+09	#REF!
Chloroform		7796.628	22014.22	2964.045	48.85659	343.3535	20025021	10489297	#REF!
Chloromethane		999.2678	11285.96	1519.567	1.058956	7.443868	5564645	2914814	#REF!
Chloronaphthalene, 1-		20791.01	261235.4	35173.34	4447640	31017624	2.79E+08	1.46E+08	#REF!
Chloronaphthalene, 2-		20791.01	261235.4	35173.34	930321.5	6528203	2.79E+08	1.46E+08	#RE

RBCA output (commercial receptor)

Tier 1 Soil RBSL - Commercial

Contaminant	Units	Ingestion	Dermal Indoor	Dermal Outdoor	Soil Vapours Outdoor	Soil Vapours Indoor	Dust outdoors	Dust indoors	Veg uptake (leafy)	Soil HQ
Acenaphthene		3.8E-5	2.0E-5	1.5E-5	7.11E-07	4.14E-07	1.64E-09	2.67E-08		1.5E-9
Acenaphthylene		3.8E-5	2.0E-5	1.5E-5	4.73E-07	1.84E-07	1.64E-09	2.67E-08		1.5E-9
Aldrin		3.8E+0	3.7E+0	2.7E+0	1.23E-02	1.23E-03	1.68E-04	2.72E-03		1.4E-4
Anthracene		7.5E-6	4.0E-6	3.0E-6	4.35E-08	7.85E-09	3.28E-10	5.33E-09		2.9E-10
Antimony		5.6E-3	1.8E-2	1.3E-2			2.47E-07	4.01E-06		2.3E-7
Arsenic		1.2E-3	7.6E-4	5.6E-4			9.84E-06	1.60E-04		8.9E-6
Atrazine		3.8E+0	3.7E+0	2.7E+0	5.73E-06	3.87E-06	6.90E-08	1.12E-06		6.3E-8
Azinphos-methyl (guthion)		1.5E-3	1.4E-3	1.1E-3	4.30E-06	1.83E-06	6.58E-08	1.07E-06		5.9E-8
Azobenzene		5.0E-3	4.8E-3	3.5E-3	1.49E-05	1.42E-06	2.14E-07	3.47E-06		1.7E-7
Benz-a-anthracene		3.2E-3	1.3E-3	1.2E-3	3.71E-06	4.71E-06	4.05E-05	6.83E-04		4.2E-6
Benzo-a-pyrene		2.3E-2	1.2E-2	9.0E-3	7.86E-04	6.79E-06	2.81E-04	4.57E-03		6.6E-6
Benzo-b-fluoranthene		3.2E-3	1.7E-3	1.3E-3	2.05E-04	1.68E-06	3.96E-05	6.44E-04		1.6E-6
Benzo-g,h,i-perylene		7.5E-5	4.0E-5	3.0E-5	9.23E-09	2.04E-10	3.28E-09	5.33E-08		1.9E-10
Benzo-k-fluoranthene		2.3E-3	1.2E-3	9.0E-4	2.77E-05	2.21E-07	2.81E-05	4.57E-04		2.2E-7
Biphenyl, 1,1-		4.5E-5	4.3E-5	3.2E-5	1.65E-04	1.36E-04	2.66E-07	4.32E-06		2.4E-7
Bis (2-chloro-ethyl) ether		5.0E-2	3.0E-2	2.2E-2	5.66E-03	1.97E-02	2.28E-06	3.70E-05		2.1E-6
Bis (2-ethyl-hexyl) phthalate		9.0E-5	2.3E-4	1.7E-4	1.61E-07	8.60E-09	6.90E-08	1.12E-06		5.9E-9
Bis (chloroethoxy) methane		5.0E-2	4.8E-2	3.5E-2	1.81E-03	1.99E-03	2.28E-06	3.70E-05		2.1E-6
Boron		2.5E-5	1.3E-5	9.9E-6			1.73E-08	2.81E-07		1.6E-8
Bromobenzene		1.1E-4	6.8E-5	5.0E-5	2.61E-04	2.77E-03	3.28E-08	5.33E-07		3.1E-8
Bromodichloromethane		1.1E-2	5.5E-3	4.1E-3	1.51E-03	2.49E-02	1.22E-07	1.98E-06		1.1E-7
Bromoform		3.5E-4	2.8E-4	2.1E-4	2.46E-05	1.07E-04	7.59E-09	1.23E-07		7.1E-9
Bromomethane		1.6E-3	9.6E-4	7.1E-4	3.84E-03	2.85E-01	6.90E-08	1.12E-06		6.5E-8
Bromophenyl phenylether, 4-		6.7E-1	1.6E-1	4.8E-1	2.15E-03	2.66E-04	2.07E-05	3.37E-04		2.0E-5
Butyl benzyl phthalate		4.5E-6	3.5E-6	2.6E-6	1.34E-06	7.02E-08	7.18E-08	1.17E-06		3.3E-8
Butylbenzene, n-		5.6E-5	5.4E-5	4.0E-5	6.84E-06	4.88E-05	1.28E-09	2.08E-08		1.2E-9
Butylbenzene, sec-		5.6E-5	3.4E-5	2.5E-5	7.87E-06	6.46E-05	1.28E-09	2.08E-08		1.2E-9
Butylbenzene, tert-		5.6E-5	3.4E-5	2.5E-5	1.83E-05	1.82E-04	2.47E-09	4.01E-08		2.3E-9
Cadmium		9.0E-4	1.7E-2	1.3E-2			2.07E-05	3.37E-04		1.9E-5
Carbazole		9.0E-4	6.2E-4	4.6E-4	1.51E-05	7.91E-06	3.94E-08	6.41E-07		3.7E-8
Carbon disulfide		2.3E-3	1.2E-3	1.3E-3	1.61E-04	9.98E-03	3.45E-09	5.61E-08		3.2E-9
Carbon tetrachloride		3.2E-4	2.4E-4	1.8E-4	3.29E-04	1.47E-02	9.84E-09	1.60E-07		9.3E-9
Chloro-3-methylphenol, 4-		2.3E-5	2.2E-5	1.6E-5	8.74E-08	1.90E-08	9.84E-10	1.60E-08		8.7E-10
Chloroaniline, p-		5.6E-4	5.4E-4	4.0E-4	2.18E-05	2.18E-05	6.90E-08	1.12E-06		6.5E-8
Chlorobenzene		1.1E-5	1.7E-5	1.3E-5	8.68E-09	1.45E-07	6.90E-10	1.12E-11		6.5E-13
Chlorobromomethane (bromochloromethane)		5.6E-5	3.4E-5	2.5E-5						#VALUE!
Chloroethane		1.3E-4	7.8E-5	5.8E-5	1.69E-06	1.12E-04	3.40E-11	5.53E-10		3.2E-11
Chloroform		7.5E-5	1.8E-4	1.3E-4	9.09E-05	3.19E-03	3.45E-09	5.61E-08		3.2E-9
Chloromethane		5.9E-4	3.5E-4	2.6E-4	1.17E-03	1.47E-01	1.24E-08	2.02E-07		1.2E-8
Chloronaphthalene, 1-		2.8E-5	1.5E-5	1.1E-5	8.07E-08	3.53E-08	2.47E-10	4.02E-09		2.3E-10
Chloronaphthalene, 2-		2.8E-5	1.5E-5	1.1E-5	1.76E-07	1.68E-07	2.47E-10	4.02E-09		2.3E-10
Chlorophenol, 2-		7.5E-4	4.5E-4	3.3E-4	3.89E-06	3.36E-06	6.58E-09	1.07E-07		6.2E-9
Chlorophenyl phenylether, 4-		6.7E-1	6.5E-1	4.8E-1	8.33E-03	4.07E-03	2.28E-05	3.70E-04		2.1E-5
Chlorotoluene, p- (4-chlorotoluene)		1.1E-4	6.8E-5	5.0E-5	9.74E-03	8.57E-02	1.33E-06	2.16E-05		1.2E-6
Chlorpyrifos		2.3E-3	2.2E-3	1.6E-3	1.20E-04	1.36E-05	1.73E-06	2.80E-05		1.4E-6
Chromium (III) (total chromium)		1.7E-4	6.4E-3	4.7E-3			2.07E-05	3.37E-04		1.7E-5
Chromium (VI)		1.7E-4	3.3E-3	2.5E-3			2.07E-05	3.37E-04		1.7E-5
Chrysene		2.3E-3	1.2E-3	9.0E-4	1.10E-04	1.40E-06	2.81E-05	4.57E-04		2.2E-6
Cobalt		1.6E-3	9.6E-4	7.1E-4			7.04E-08	1.14E-06		6.6E-8
Copper		5.6E-5	4.7E-5	3.5E-5			3.45E-07	5.61E-06		3.2E-7
Cumene		2.3E-4	1.4E-4	1.0E-4	4.80E-06	3.56E-05	8.62E-10	1.40E-08		3.4E-10
Cyanide		1.7E-4	1.6E-4	1.2E-4			2.20E-08	3.58E-07		2.1E-8
Cymene (isopropyltoluene)		2.3E-5	1.4E-5	1.0E-5	6.47E-06	4.85E-05	1.15E-09	1.87E-08		1.1E-9
DDE		7.7E-2	5.2E-2	3.9E-2	5.08E-05	1.72E-06	3.35E-08	5.45E-05		1.1E-6
DDT		7.7E-2	5.2E-2	3.9E-2	8.36E-05	2.95E-06	3.35E-06	5.45E-05		1.5E-6
Dibenz-a,h-anthracene		1.1E-1	6.1E-2	4.5E-2	1.08E-03	6.64E-06	1.41E-03	2.29E-02		6.6E-6
Dibenzofuran		1.1E-3	1.1E-3	8.0E-4	1.51E-05	6.24E-06	4.92E-08	7.99E-07		4.6E-8
Dibromo-3-chloropropane, 1,2-		6.7E-2	6.5E-2	4.8E-2	1.09E-03	4.64E-03	3.45E-07	5.61E-06		3.2E-7
Dibromochloromethane		1.1E-4	8.4E-5	6.2E-5	7.95E-04	5.12E-03	1.65E-07	2.69E-06		1.5E-7
Dichlorobenzene, 1,2-		5.2E-6	3.1E-6	2.3E-6	2.78E-06	1.80E-05	5.74E-10	9.33E-09		5.4E-10
Dichlorobenzene, 1,3-		7.5E-5	4.5E-5	3.3E-5	5.03E-04	1.12E-02	4.30E-08	6.98E-07		4.0E-8
Dichlorobenzene, 1,4-		2.1E-5	1.1E-5	8.3E-6	2.99E-06	2.31E-05	5.16E-10	8.39E-09		4.9E-10
Dichlorodifluoromethane		1.1E-5	2.3E-5	1.7E-5	1.11E-04	9.44E-03	1.73E-09	2.80E-08		1.6E-9
Dichloroethane, 1,1-		1.1E-5	5.4E-6	4.0E-6	2.22E-05	9.24E-04	7.11E-10	1.15E-08		6.7E-10
Dichloroethane, 1,2-		3.8E-5	1.9E-5	1.3E-5	3.54E-03	1.10E-01	1.64E-07	2.67E-06		1.5E-7
Dichloroethylene, cis-1,2-		3.2E-4	1.5E-4	1.1E-4	4.12E-04	1.57E-02	1.44E-08	2.33E-07		1.4E-8
Dichloroethylene, trans-1,2		1.3E-4	6.4E-5	4.7E-5	1.86E-04	8.00E-03	5.74E-09	9.33E-08		5.4E-9
Dichlorophenol, 2,4-		7.5E-4	4.4E-4	3.2E-4	1.35E-05	1.24E-05	3.28E-08	5.33E-07		3.1E-8
Dichloropropane, 1,2-		1.6E-4	1.0E-4	7.7E-5	1.59E-03	3.89E-02	8.62E-08	1.40E-06		8.1E-8
Dichloropropane, 1,3-		4.5E-3	2.7E-3	2.0E-3	2.57E-04	3.19E-03	2.76E-08	4.49E-07		2.6E-8
Dichloropropane, 2,2-		3.1E-3	1.8E-3	1.4E-3	1.77E-03	4.83E-02	8.62E-08	1.40E-06		8.1E-8
Dichloropropene, 1,1-		4.5E-3	2.7E-3	2.0E-3	1.08E-03	5.67E-02	2.76E-08	4.49E-07		2.6E-8
Dichloropropene, 1,3-cis		2.4E-2	1.5E-2	1.1E-2	9.49E-04	2.32E-02	5.16E-08	8.39E-07		4.9E-8
Dichloropropene, 1,3-trans		4.5E-3	2.7E-3	2.0E-3	5.07E-04	1.24E-02	2.76E-08	4.49E-07		2.6E-8
Dieldrin		3.6E+0	3.5E+0	2.6E+0	2.37E-03	9.83E-05	1.58E-04	2.56E-03		5.8E-5
Diethyl phthalate		1.1E-5	6.0E-6	4.4E-6	9.14E-06	5.60E-06	7.18E-08	1.17E-06		6.4E-8
Dimethoate		1.1E-3	1.1E-3	8.0E-4	1.57E-05	4.08E-05	4.92E-08	7.99E-07		4.6E-8
Dimethyl phenol, 2,4-		1.1E-4	6.8E-5	5.0E-5	5.06E-05	5.15E-05	2.03E-08	3.29E-07		1.9E-8
Dimethylphthalate		2.8E-6	1.5E-6	1.1E-6	2.44E-05	2.61E-05	7.18E-08	1.17E-06		6.0E-8
Di-n-butyl phthalate		4.3E-5	2.1E-5	1.5E-5	1.11E-06	4.73E-08	6.90E-08	1.12E-06		2.7E-8
Dinitrotoluene, 2,6-		1.1E-3	6.4E-4	4.7E-4	6.56E-04	7.02E-04	2.31E-06	3.76E-05		2.1E-6
Di-n-octyl phthalate		1.1E-4	6.0E-5	4.4E-5	5.56E-09	9.23E-12	4.78E-09	7.77E-08		9.2E-12
Diphenyl oxide		3.6E-4	3.5E-4	2.6E-4	2.03E-05	1.11E-05	4.92E-08	7.99E-07		4.6E-8
Diuron		1.1E-3	1.1E-3	8.0E-4	1.74E-06	7.20E-07	3.45E-08	5.61E-07		3.1E-8
Endrin		1.1E-2	1.1E-2	8.0E-3	3.86E-05	3.64E-05	2.47E-07	4.01E-06		1.7E-6
Ethylene dibromide		1.7E-1	1.0E-1	7.5E-2	2.13E-02	1.47E-01	4.15E-06	6.74E-05		3.9E-6
Fluoranthene		5.6E-5	3.0E-5	2.2E-5	6.46E-08	2.72E-09	2.47E-09	4.01E-08		1.2E-9
Fluorene		5.6E-5	3.0E-5	2.2E-5	4.41E-07	1.19E-07	2.47E-09	4.01E-08		2.3E-9
Heptachlor		1.0E-0	6.8E-1	5.0E-1	1.12E-02	3.81E-03	4.43E-05	7.20E-04		4.1E-5
Hexachlorobenzene		1.4E-2	1.4E-2	1.0E-2	3.16E-04	1.45E-04	9.20E-07	1.50E-05		8.6E-7
Hexachlorobutadiene		1.1E-2	1.1E-2	8.0E-3	7.13E-04	4.46E-03	1.52E-07	2.47E-06		1.4E-7
Hexachlorocyclohexane, alpha		1.4E-4	1.0E-4	5.2E-5	1.03E-03	1.58E-03	2.03E-08	3.29E-07		5.5E-9
Hexachlorocyclohexane, beta		4.1E-1	2.1E-1	1.6E-1	6.89E-04	1.71E-04	1.77E-05	2.88E-04		1.5E-5
Hexachlorocyclohexane, delta		4.1E-1	3.9E-1	2.9E-1	9.25E-04	8.31E-05	1.77E-05	2.88E-04		1.4E-5
Hexachlorocyclohexane, gamma		2.8E-1	1.4E-1	1.1E-1	2.75E-04	4.47E-03	2.27E-06	3.01E-05		2.2E-6
Hexachlorocyclopentadiene		3.8E-4	3.6E-4	2.7E-4	3.14E-03	7.60E-03	1.73E-06	2.80E-05		1.6E-6
Hexachloroethane		6.3E-4	6.1E-4	4.5E-4	2.15E-05	2.25E-05	2.76E-08	4.49E-07		2.6E-8
Indeno-1,2,3-cd-pyrene		5.2E-3	2.8E-3	2.1E-3	4.05E-05	1.88E-07	6.52E-05	1.06E-03		1.9E-7
Isodrin		3.8E-1	1.7E-1	1.2E-1	2.92E-03	1.68E-03	1.50E-05	2.43E-04		9.9E-6
Isophorone		4.3E-5	4.1E-5	3.0E-5	1.55E-05	2.49E-05	1.50E-08	2.43E-07		1.4E-8
Lead (inorganic)		6.3E-4	2.0E-3	1.5E-3			2.74E-08	4.45E-07		2.6E-8
Manganese		1.1E-4	3.4E-4	2.5E-4			4.24E-09	6.89E-08		4.0E-9
Mercury		2.0E-3	1.4E-2	1.0E-2	1.39E-04	3.91E-04	6.58E-08	1.07E-06		6.2E-8
Methyl naphthalene, 1-		3.2E-5	1.7E-5	1.3E-5	1.57E-06	2.33E-06	1.41E-09	2.29E-08		1.3E-9
Methylene chloride		3.6E-4	1.9E-4	1.4E-4	3.56E-06	1.47E-05	1.15E-10	1.87E-09		1.1E-10
Methylnaphthalene, 2-		5.6E-5	3.0E-5	2.2E-5	2.35E-05	3.36E-05	2.39E-08	3.89E-07		2.2E-8
Naphthalene		2.3E-5	1.2E-5	9.0E-6	3.60E-05	6.94E-05	2.49E-08	4.05E-07		2.3E-8
Nickel		4.5E-4	5.4E-3	4.0E-3			2.07E-05	3.37E-04		1.9E-5
Nitroaniline, 2-		7.5E-3	7.2E-3	5.3E-3	5.00E-05	6.13E-05	1.41E-07	2.29E-06		1.3E-7
Nitroaniline, 3-		9.5E-4	9.1E-4	6.7E-4	6.20E-05	9.46E-05	3.28E-07	5.33E-06		3.1E-7
Nitroaniline, 4-		9.5E-4	9.1E-4	6.7E-4	5.75E-05	1.31E-04	2.07E-07	3.36E-06		1.9E-7
Nitrophenol, 2-		1.1E-3	1.1E-3	8.0E-4	1.03E-04	5.26E-05	8.62E-08	1.40E-06		8.1E-8
Nitrophenol, 4-		1.1E-3	5.4E-4	4.0E-4	8.84E-05	2.50E-04	2.56E-07	4.16E-06		2.4E-7
Nitrosodi-n-propylamine, n-		3.1E-1	6.0E-1	4.5E-1	4.85E-02	7.12E-02	6.90E-05	1.12E-03		6.5E-5
Nitrosodiphenylamine		2.2E-4	4.2E-4	3.1E-4	2.28E-06	9.78E-07	9.65E-09	1.57E-07		9.0E-9
Parathion		3.8E-4	4.3E-4	2.7E-4	1.46E-08	2.23E-08	6.90E-08	1.12E-06		4.2E-8
Pentachlorophenol		7.5E-3	4.7E-3	3.5E-3	2.01E-06	7.26E-07	2.36E-08	3.84E-07		2.1E-8
Phenanthrene		7.5E-5	4.0E-5	3.0E-5	6.15E-07	1.56E-07	3.28E-09	5.33E-08		3.0E-9
Phenol		6.6E-3	4.5E-3	2.7E-4	1.46E-08	2.23E-08	2.76E-11	4.72E-10		2.7E-11
Polybrominated biphenyls (solid)		2.3E-1	1.2E-1	8.6E-2		1.61E+23	6.90E-07	1.12E-05		6.5E-7
Propylbenzene, n-		5.6E-5	3.4E-5	2.5E-5	7.02E-06	7.61E-05	8.62E-10	1.40E-08		8.1E-10
Pyrene		7.5E-5	4.0E-5	3.0E-5	1.01E-07	5.01E-09	3.28E-09	5.33E-08		1.9E-9
Selenium		1.3E-4	1.3E-4	9.4E-5			2.89E-08	4.69E-07		2.7E-8
Simazine		2.7E-2	2.6E-2	1.9E-2	7.87E-05	4.23E-05	1.18E-06	1.92E-05		1.1E-6
Styrene		2.3E-4	1.4E-4	1.0E-4	7.13E-06	5.10E-05	1.33E-09	2.16E-08		1.2E-9
Tetrachloroethane, 1,1,1,2-		7.8E-4	1.5E-4	1.1E-4	1.88E-05	1.57E-05	3.40E-09	5.53E-08		3.2E-9
Tetrachloroethane, 1,1,2,2-		7.8E-5	5.3E-5	3.9E-5	1.97E-05	1.52E-04	3.40E-09	5.53E-08		3.2E-9
Tetrachloroethylene		3.2E-5	1.5E-5	1.1E-5	8.51E-06	3.22E-04	2.99E-10	4.86E-09		2.8E-10
Thallium		3.2E-2	1.1E-2	8.4E-3			1.24E-06	2.02E-05		1.2E-6
TPH - Aliph >C06-C08		4.5E-7	2.7E-7	2.0E-7	9.40E-07	6.28E-05	1.87E-11	3.04E-10		1.8E-11
TPH - Aliph >C08-C10		2.3E-5	1.4E-5	1.0E-5	8.74E-06	2.95E-04	3.45E-10	5.61E-09		3.2E-10
TPH - Aliph >C10-C12		2.3E-5	2.2E-5	1.6E-5	3.97E-06	6.08E-05	3.45E-10	5.61E-09		3.2E-10
TPH - Aliph >C12-C16		2.3E-5	2.2E-5	1.6E-5	1.76E-05	1.31E-05	3.45E-10	5.61E-09		3.2E-10
TPH - Aliph >C16-C21		1.1E-6	1.1E-6	8.0E-7	5.05E-07	9.82E-07	3.45E-10	5.61E-09		3.2E-10
TPH - Aliph >C21-C34		1.1E-6	1.1E-6	8.0E-7	6.14E-07	1.45E-06	3.45E-10	5.61E-09		3.2E-10
TPH - Arom >C05-C07		1.1E-5	1.5E-5	1.1E-5	5.06E-05	7.51E-04	1.38E-09	2.24E-08		8.1E-10
TPH - Arom >C07-C08		1.1E-5	5.6E-6	4.1E-6	1.45E-05	3.24E-04	8.62E-10	1.40E-08		8.1E-10
TPH - Arom >C08-C10		5.6E-5	3.4E-5	2.5E-5	1.56E-05	1.88E-04	1.73E-09	2.80E-08		1.6E-9
TPH - Arom >C10-C12		5.6E-5	5.4E-5	4.0E-5	6.62E-06	3.38E-05	1.73E-09	2.80E-08		1.6E-9
TPH - Arom >C12-C16		5.6E-5	5.4E-5	4.0E-5	1.76E-05	3.45E-05	1.73E-09	2.80E-08		1.6E-9
TPH - Arom >C16-C21		7.5E-5	4.0E-5	3.0E-5	8.28E-07	5.31E-07	1.73E-09	2.80E-08		1.6E-9
TPH - Arom >C21-C35		7.5E-5	4.0E-5	3.0E-5	6.59E-08	3.55E-09	1.73E-09	2.80E-08		1.1E-9
Trichlorobenzene, 1,2,3-		3.8E-4	2.8E-4	1.9E-4	1.88E-05	1.69E-05	1.30E-08	2.11E-07		6.5E-9
Trichlorobenzene, 1,2,4-		2.9E-4	1.4E-4	1.1E-4	1.18E-05	2.68E-05	6.90E-09	1.12E-07		6.5E-9
Trichloroethane, 1,1,1-		7.5E-7	4.0E-7	3.0E-7	1.10E-06	4.85E-05	3.34E-11	5.42E-10		3.1E-11
Trichloroethane, 1,1,2-		2.6E-3	1.5E-3	1.1E-3	1.26E-03	1.92E-02	1.10E-07	1.79E-06		1.0E-7
Trichloroethylene		8.1E-5	4.2E-5	3.1E-5	1.07E-04	4.03E-03	3.80E-09	6.17E-08		3.6E-9
Trichlorofluoromethane		7.5E-6	1.6E-5	1.2E-5	3.04E-05	2.49E-03	4.92E-10	7.99E-09		4.6E-10
Trichlorophenol, 2,4,5-		7.5E-3	7.2E-3	5.3E-3	1.80E-06	8.02E-07	7.97E-09	1.30E-07		7.4E-9
Trichlorophenol, 2,4,6-		6.7E-5	6.5E-5	4.8E-5	6.67E-06	4.96E-06	1.48E-08	2.40E-07		1.4E-8
Trichloropropane, 1,2,3-		9.0E-2	5.4E-2	4.0E-2	1.09E-02	4.05E-02	3.94E-06	6.41E-05		3.7E-6
Trimethylbenzene, 1,2,3-		4.5E-5	2.2E-5	1.6E-5	3.67E-04	3.13E-03	5.74E-08	9.33E-07		5.4E-8
Trimethylbenzene, 1,2,4-		4.5E-5	2.7E-5	2.0E-5	3.31E-04	2.54E-03	5.74E-08	9.33E-07		5.4E-8

Tier 1 Soil RBSL - Commercial

Contaminant	Units	Ingestion	Dermal Indoor	Dermal Outdoor	Soil Vapours Outdoor	Soil Vapours Indoor	Dust outdoors	Dust indoors	Veg uptake (leafy)	Soil RBSL
Acenaphthene		2.7E+4	4.9E+4	6.7E+4	1.4E+6	2.4E+6	6.1E+8	3.7E+7		1.35E+04
Acenaphthylene		2.7E+4	4.9E+4	6.7E+4	2.1E+6	5.4E+6	6.1E+8	3.7E+7		1.36E+04
Aldrin		2.6E-1	2.7E-1	3.7E-1	8.1E+1	8.1E+2	6.0E+3	3.7E+2		9.80E-02
Anthracene		1.3E+5	2.5E+5	3.3E+5	2.3E+7	1.3E+8	3.1E+9	1.9E+8		6.85E+04
Antimony		1.8E+2	5.6E+1	7.5E+1	#VALUE!	#VALUE!	4.1E+6	2.5E+5		2.71E+01
Arsenic		8.5E+2	1.3E+3	1.8E+3	#VALUE!	#VALUE!	1.0E+5	6.3E+3		3.76E+02
Atrazine		2.6E-1	2.7E-1	3.7E-1	1.7E+5	2.6E+5	1.4E+7	8.9E+5		9.82E-02
Azinphos-methyl (guthion)		6.7E+2	6.9E+2	9.4E+2	2.3E+5	5.5E+5	1.5E+7	9.3E+5		2.49E+02
Azobenzene		2.0E+2	2.1E+2	2.8E+2	6.7E+4	7.0E+5	4.7E+6	2.9E+5		7.55E+01
Benz-a-anthracene		3.1E+2	5.7E+2	7.7E+2	3.2E+3	2.1E+5	2.5E+4	1.5E+3		1.39E+02
Benzo-a-pyrene		4.4E+1	8.2E+1	1.1E+2	1.3E+3	1.5E+5	3.6E+3	2.2E+2		2.03E+01
Benzo-b-fluoranthene		3.2E+2	5.8E+2	7.9E+2	4.9E+3	5.9E+5	2.5E+4	1.6E+3		1.42E+02
Benzo-g,h,i-perylene		1.3E+4	2.5E+4	3.3E+4	1.1E+8	4.9E+9	3.1E+8	1.9E+7		6.88E+03
Benzo-k-fluoranthene		4.4E+2	8.2E+2	1.1E+3	3.6E+4	4.5E+6	3.6E+4	2.2E+3		2.05E+02
Biphenyl, 1,1-		2.2E+4	2.3E+4	3.1E+4	6.1E+3	7.4E+3	3.8E+6	2.3E+5		2.35E+03
Bis (2-chloro-ethyl) ether		2.0E+1	3.4E+1	4.6E+1	1.8E+2	5.1E+1	4.4E+5	2.7E+4		7.90E+00
Bis (2-ethyl-hexyl) phthalate		1.1E+4	4.4E+3	5.9E+3	1.8E+6	1.5E+8	1.4E+7	8.9E+5		2.05E+03
Bis (chloroethoxy) methane		2.0E+1	2.1E+1	2.8E+1	5.5E+2	5.0E+2	4.4E+5	2.7E+4		7.35E+00
Boron		4.0E+4	7.5E+4	1.0E+5	#VALUE!	#VALUE!	5.8E+7	3.6E+6		2.06E+04
Bromobenzene		8.9E+3	1.5E+4	2.0E+4	3.8E+3	3.6E+2	3.1E+7	1.9E+6		3.07E+02
Bromodichloromethane		8.9E+1	1.8E+2	2.5E+2	6.6E+2	4.0E+1	8.2E+6	5.0E+5		2.12E+01
Bromoform		2.8E+3	3.5E+3	4.8E+3	4.1E+4	9.3E+3	1.3E+8	8.1E+6		1.02E+03
Bromomethane		6.2E+2	1.0E+3	1.4E+3	2.6E+2	3.5E+0	1.4E+7	8.9E+5		3.43E+00
Bromophenyl phenylether, 4-		1.5E+0	1.5E+0	2.1E+0	4.7E+2	3.8E+3	4.4E+4	2.7E+3		5.54E-01
Butyl benzyl phthalate		2.2E+5	2.8E+5	3.8E+5	7.4E+5	1.4E+7	1.4E+7	8.6E+5		7.51E+04
Butylbenzene, n-		1.8E+4	1.9E+4	2.5E+4	1.5E+5	2.0E+4	7.8E+8	4.8E+7		4.86E+03
Butylbenzene, sec-		1.8E+4	3.0E+4	4.0E+4	1.3E+5	1.5E+4	7.8E+8	4.8E+7		5.33E+03
Butylbenzene, tert-		1.8E+4	3.0E+4	4.0E+4	5.5E+4	5.5E+3	4.1E+8	2.5E+7		3.18E+03
Cadmium		1.1E+3	5.8E+1	7.8E+1	#VALUE!	#VALUE!	4.8E+4	3.0E+3		3.19E+01
Carbazole		1.1E+3	1.6E+3	2.2

GAC Commercial landuse

contaminant	TF (indoor dust inhalation	GAC (ldcr)	GAC ingestion	GAC dermal indoors	GAC dermal outdoors	GAC dust inhalation indoors	GAC dust inhalation outdoors	GAC vapour inhalation indoors	GAC vapour inhalation outdoors	Combined GAC without veg uptake
	0.7	1.22E-03								
Acenaphthene	0.7	3.05E+10	26660.86957	49433.69565	66880.88235	26231000.28	608933935	2412829.362	1406266.005	1.35E+04
Acenaphthylene	0.7	3.05E+10	26660.86957	49433.69565	66880.88235	26231000.28	608933935	5445749.091	2115001.178	1.36E+04
Aldrin	0.7	2.99E+05	0.262165217	0.273088768	0.369473039	256.9077372	5963.929615	814.7807073	81.24892217	9.80E-02
Anthracene	0.7	1.53E+11	133304.3478	247168.4783	334404.4118	131455127.2	3051636882	127461066.6	22985743.94	6.85E+04
Antimony	0.7	2.04E+08	177.7391304	55.54347826	75.14705882	174673.2513	4054914.761	#VALUE!	#VALUE!	2.71E+01
Arsenic	0.7	5.09E+06	854.5150502	1319.157609	1784.742647	4375.835057	101581.8853	#VALUE!	#VALUE!	3.67E+02
Atrazine	0.7	7.26E+08	0.262165217	0.273088768	0.369473039	624261.7914	14491791.59	258274.8249	174496.9074	9.82E-02
Azinphos-methyl (guthion)	0.7	7.61E+08	666.5217391	694.2934783	939.3382353	654274.3776	15188512.34	545867.0313	232773.6367	2.49E+02
Azobenzene	0.7	2.35E+08	201.956087	210.3709239	284.6194853	201684.5788	4681963.436	702325.154	67036.17826	7.55E+01
Benz-a-anthracene	0.7	1.23E+06	306.6	568.4875	769.1301471	1056.443032	24524.57038	208700.1382	3154.218479	1.31E+02
Benzo-a-pyrene	0.7	1.78E+05	44.43478261	82.38949275	111.4681373	153.0641892	3553.275822	147255.2214	1272.042471	1.95E+01
Benzo-b-fluoranthene	0.7	1.26E+06	315.4869565	584.9653986	791.4237745	1086.455618	25221.29113	594485.8187	4872.108538	1.37E+02
Benzo-g,h,i-perylene	0.7	1.53E+10	13330.43478	24716.84783	33440.44118	13145512.72	305163688.2	4899912936	108059612.4	6.87E+03
Benzo-k-fluoranthene	0.7	1.78E+06	444.3478261	823.8949275	1114.681373	1530.641892	35532.75822	4532682.78	36064.86911	1.97E+02
Biphenyl, 1,1-	0.7	1.88E+08	22217.3913	23143.11594	31311.27451	162067.9651	3762292.047	7350.818751	6078.388172	2.34E+03
Bis (2-chloro-ethyl) ether	0.7	2.20E+07	20.1956087	33.65934783	45.53911765	18907.92926	438934.0721	50.88483982	176.532545	7.90E+00
Bis (2-ethyl-hexyl) phthalate	0.7	7.26E+08	11108.69565	4397.192029	5949.142157	624261.7914	14491791.59	151406345.6	1783625.616	2.05E+03
Bis (chloroethoxy) methane	0.7	2.20E+07	20.1956087	21.03709239	28.46194853	18907.92926	438934.0721	502.7487111	552.364818	7.35E+00
Boron	0.7	2.04E+09	39991.30435	74983.69565	101448.5294	2491044.649	57827822.2	#VALUE!	#VALUE!	2.06E+04
Bromobenzene	0.7	1.53E+09	8886.956522	14811.5942	20039.21569	1314551.272	30516368.82	361.2531655	3831.604791	3.07E+02
Bromodichloromethane	0.7	4.10E+08	88.86956522	181.442029	245.4803922	352948.0129	8193436.013	40.12998552	661.8879445	2.12E+01
Bromoform	0.7	6.60E+09	2821.608696	3527.01087	4771.838235	5678381.295	131819565.8	9314.386366	40641.94978	1.02E+03
Bromomethane	0.7	7.26E+08	622.0869565	1036.811594	1402.745098	624261.7914	14491791.59	3.514183212	260.3639825	3.43E+00
Bromophenyl phenylether, 4-	0.7	2.20E+06	1.4819	1.543645833	2.088462201	1890.792926	43893.40721	3763.818237	470.1949811	5.54E-01
Butyl benzyl phthalate	0.7	6.98E+08	222173.913	282346.0145	381997.549	600251.7225	13934414.99	14242405.18	744573.1362	7.24E+04
Butylbenzene, n-	0.7	3.92E+10	17773.91304	18514.49275	25049.01961	33734146.81	783114122.3	20497.97928	146173.8723	4.86E+03
Butylbenzene, sec-	0.7	3.92E+10	17773.91304	29623.18841	40078.43137	33734146.81	783114122.3	15481.57646	127035.0218	5.33E+03
Butylbenzene, tert-	0.7	2.03E+10	17773.91304	29623.18841	40078.43137	17467325.13	405491476.1	5508.834579	54527.52131	3.18E+03
Cadmium	0.7	2.41E+06	1110.869565	57.85778986	78.27818627	2076.87096	48213.07586	#VALUE!	#VALUE!	3.18E+01
Carbazole	0.7	1.27E+09	1110.869565	1620.018116	2191.789216	1092458.135	25360635.28	126432.9077	66016.21403	5.01E+02
Carbon disulfide	0.7	1.45E+10	44434.78261	58320.65217	78904.41176	12485235.83	289835831.7	100.1949062	6217.211799	9.81E+01
Carbon tetrachloride	0.7	5.09E+09	3110.434783	4212.047101	5698.651961	4375835.057	101581885.3	68.22997852	3037.296484	6.36E+01
Chloro-3-methylphenol, 4-	0.7	1.45E+10	44434.78261	46286.23188	62622.54902	4375835.57	101581885.3	52524862.42	14840455.71	1.66E+04
Chloroaniline, p-	0.7	7.68E+08	1777.391304	1851.449275	2504.901961	660276.8948	15327856.49	45836.84485	46260.92323	6.46E+02
Chlorobenzene	0.7	7.26E+13	88869.56522	57394.92754	77651.96078	62426179144	1.44918E+12	6876565.802	115182612.8	2.40E+04
Chlorobromomethane (bromochloromethane)	0.7	#VALUE!	17773.91304	29623.18841	40078.43137	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Chloroethane	0.7	1.47E+12	7665	12775	17283.82353	12665331135	294016156	8962.513475	592264.5927	2.63E+03
Chloroform	0.7	1.45E+10	13330.43478	5554.347826	7514.705882	12485235.83	289835831.7	313.6672496	11001.41168	2.73E+02
Chloromethane	0.7	4.03E+09	1708.517391	2847.528986	3852.539216	3469454.956	80540918.63	6.800274987	853.80327	6.69E+00
Chloronaphthalene, 1-	0.7	2.02E+11	35547.82609	65911.5942	89174.5098	174072999.5	4040980346	28335846.65	1239432.02	1.83E+04
Chloronaphthalene, 2-	0.7	2.02E+11	35547.82609	65911.5942	89174.5098	174072999.5	4040980346	5963775.713	5668540.932	1.82E+04
Chlorophenol, 2-	0.7	7.61E+09	1333.043478	2221.73913	3005.882353	6542740.776	151885123.4	297241.1554	2570070.8579	6.49E+02
Chlorophenyl phenylether, 4-	0.7	2.20E+06	1.4819	1.543645833	2.088462201	1890.792926	43893.40721	245.8162479	120.0683874	5.51E-01
Chlorotoluene, p- (4-chlorotoluene)	0.7	3.78E+07	8886.956522	14811.5942	20039.21569	32473.61819	753851.8508	11.66410713	108.2002805	1.05E+01
Chlorpyrifos	0.7	2.90E+07	444.3478261	462.8623188	626.2254902	24970.47166	579671.6635	73509.80967	8359.505287	1.62E+02
Chromium (III) (total chromium)	0.7	2.41E+06	5776.521739	156.4474638	211.6642157	2076.87096	48213.07586	#VALUE!	#VALUE!	8.48E+01
Chromium (VI)	0.7	2.41E+06	5776.521739	300.8605072	407.0465686	2076.87096	48213.07586	#VALUE!	#VALUE!	1.55E+02
Chrysene	0.7	1.78E+06	444.3478261	823.8949275	1114.681373	1530.641892	35532.75822	714799.314	9074.095263	1.94E+02
Cobalt	0.7	7.12E+08	622.0869565	1036.811594	1402.745098	612256.757	14213103.29	#VALUE!	#VALUE!	3.04E+02
Copper	0.7	1.45E+08	17773.91304	21106.52174	28555.88235	124852.3583	2898358.317	#VALUE!	#VALUE!	6.80E+03
Cumene	0.7	5.81E+10	44434.78261	740579710.1	100196.0784	50000968.49	1160736768	28053.01543	208187.9225	1.59E+04
Cyanide	0.7	2.28E+09	5998.695652	6248.641304	8454.044118	1956820.615	45428516.86	#VALUE!	#VALUE!	2.24E+03
Cymene (isopropyltoluene)	0.7	4.36E+10	44434.78261	74057.97101	100196.0784	37515732.66	870900936.7	20615.29549	154591.0407	9.90E+03
DDE	0.7	1.49E+07	13.06382609	19.05141304	25.77544118	12845.38686	298196.4807	580805.937	16490.98167	5.95E+00
DDT	0.7	1.49E+07	13.06382609	19.05141304	25.77544118	12845.38686	298196.4807	339251.6172	11967.8356	5.95E+00
Dibenz-a,h-anthracene	0.7	3.56E+04	8.886956522	16.47789855	22.29362745	30.61263785	710.6551644	150707.9691	930.0686384	3.95E+00
Dibenzofuran	0.7	1.02E+09	888.6956522	925.7246377	1252.45098	876367.5149	20344245.88	160295.0097	66198.24111	3.30E+02
Dibromo-3-chloropropane, 1,2-	0.7	1.45E+08	14.819	15.43645833	20.8846201	124852.3583	2898358.317	215.3646734	913.6600267	5.38E+00
Dibromochloromethane	0.7	3.03E+08	9509.043478	11886.30435	16081.47059	2605092476	6047536.105	195.3157699	1257.940287	1.62E+02
Dichlorobenzene, 1,2-	0.7	8.72E+10	190625.2174	317708.6957	429841.1765	75031465.32	1741801873	55678.26377	359367.7002	3.18E+04
Dichlorobenzene, 1,3-	0.7	1.17E+09	13330.43478	22217.3913	30058.82353	1002420.377	23270363.03	89.55897133	1665.687021	8.39E+01
Dichlorobenzene, 1,4-	0.7	9.70E+10	47545.21739	89147.28261	120611.0294	83434989.43	1936883683	43303.14681	334179.3757	1.50E+04
Dichlorodifluoromethane	0.7	2.90E+10	88869.56522	42583.33333	57612.7451	24970471.66	579671663.5	105.9038994	9039.228968	1.04E+02
Dichloroethane, 1,1-	0.7	7.05E+10	88869.56522	185144.9275	250490.1961	60625423.98	1407375914	1082.41917	45033.66009	1.03E+03
Dichloroethane, 1,2-	0.7	3.05E+08	266.6086957	555.4347826	751.4705882	262310.0028	6089339.35	9.282807149	257070.8579	8.46E+00
Dichloroethylene, cis-1,2-	0.7	3.49E+09	3110.434783	6480.072464	8767.156863	3001258.613	69672074.94	63.5761144	2428.458249	5.98E+01
Dichloroethylene, trans-1,2	0.7	8.72E+09	7553.913043	15737.31884	21291.66667	7503146.532	174180187.3	125.0506626	5384.718943	1.19E+02
Dichlorophenol, 2,4-	0.7	1.53E+09	1333.043478	2277.282609	3081.029412	1314551.272	30516368.82	80480.78591	73885.94294	6.49E+02
Dichloropropane, 1,2-	0.7	5.81E+08	6220.869565	9590.507246	12975.39216	5000096.849	116073676	25.68510258	630.0478493	2.45E+01
Dichloropropane, 1,3-	0.7	1.81E+09	222.173913	370.2898551	500.9803922	1560654.479	36229478.97	313.4546687	3889.390479	7.31E+01
Dichloropropane, 2,2-	0.7	5.81E+08	326.5956522	544.326087	736.4411765	5000096.849	116073676	20.71360316	565.7256717	1.78E+01
Dichloropropene, 1,1-	0.7	1.81E+09	222.173913	370.2898551	500.9803922	1560654.479	36229478.97	17.62217324	921.8266022	1.49E+01
Dichloropropene, 1,3-cis	0.7	9.70E+08	41.10217391	68.50362319	92.68137255	834349.8943	19368836.83	43.0674321	1053.913228	1.35E+01
Dichloropropene, 1,3-trans	0.7	1.81E+09	222.173913	370.2898551	500.9803922	1560654.479	36229478.97	80.55147081	1971.336083	4.52E+01
Dieldrin	0.7	3.18E+05	0.277717391	0.288288949	0.391309031	273.1145338	6340.158815	10177.03848	422.5571457	1.04E-01
Diethyl phthalate	0.7	6.98E+08	88869.56522	166630.4348	225441.1765	600251.7225	13934414.99	178452.887	109433.8523	2.62E+04
Dimethoate	0.7	1.02E+09	888.6956522	925.7246377	1252.45098	876367.5149	20344245.88	24511.82717	63651.40771	3.27E+02
Dimethyl phenol, 2,4-	0.7	2.47E+09	8886.956522	9257.246377	12524.5098	2124891.098	49327829.06	194311.967	144086.9831	3.20E+03
Dimethylphthalate	0.7	6.98E+08	355478.2609	66652.71739	90176.47059	600251.7225	13934414.99	38272.854	40927.09061	1.73E+04
Di-n-butyl phthalate	0.7	7.26E+08	23106.08696	48137.68116	65127.45098	624261.7914	14491791.59	21163764.57	898360.7473	1.22E+06
Dinitrotoluene, 2,6-	0.7	2.16E+07	888.6956522	1573.731884	2129.166667	18607.8034	431966.8646	1424.786106	1525.212808	2.74E+02
Di-n-octyl phthalate	0.7	1.05E+10	8886.956522	16663.04348	22544.11765	9003775.838	209016224.8	1.08315E+11	176754632	4.61E+03
Diphenyl oxide	0.7	1.02E+09	2754.956522	2869.746377	3882.598039	876367.5149	20344245.88	89793.82522	49378.82348	9.98E+02
Diuron	0.7	1.45E+08	888.6956522	925.7246377	1252.45098	124852.3583	2898358.317	1387.73	574546.0204	3.33E+02
Endrin	0.7	1.45E+07	88.86956522	92.57246377	125.245098	12485.23583	289835.8317	258035.7488	17058.48625	3.31E+01
Ethylene dibromide	0.7	1.21E+07	5.932043478	9.88673913	13.37617647	10384.3548	241065.3793	6.785437702	46.93556485	1.95E+00
Fluoranthene	0.7	2.03E+10	17773.91304	32955.7971	44587.2549	17467325.13	405491476.1	367925510.6	15484767.88	9.16E+03
Fluorene	0.7	2.03E+10	17773.91304	32955.7971	44587.2549	17467325.13	405491476.1	84282831.94	2167187.992	9.12E+03
Heptachlor	0.7	1.13E+06	0.986452174	1.479678261	2.001917647	972.4077905	22573.75228	262.4109864	89.15974847	4.53E-01
Hexachlorobenzene	0.7	5.44E+07	71.09565217	74.05797101	100.1960784	46819.63436	1086884.369	6919.124267	3166.828483	2.63E+01
Hexachlorobutadiene	0.7	3.30E+08	88.86956522	92.57246377	125.24509	283919.0648	6590978.289	224.3895992	1403.037216	2.84E+01
Hexachlorocyclohexane, alpha	0.7	8.10E+05	0.706513043	1.427745109	1.931655147	696.2919981	16163.92139	783.1036895	166.2294865	3.78E-01
Hexachlorocyclohexane, beta	0.7	2.83E+06	2.466130435	4.675372283	6.325503676	2431.019476	56434.3807	5840.092676	1452.359406	1.28E+00
Hexachlorocyclohexane, delta	0.7	2.83E+06	2.466130435	2.56888587	3.47555147	2431.019476	56434.3807	1202.86924	980.7951006	9.23E-01
Hexachlorocyclohexane, gamma	0.7	2.03E+07	3.532565217	7.138725543	9.658275735	17467.32513	405491.4761	22371.99731	5084.300983	1.90E+00
Hexachlorocyclopentadiene	0.7	2.90E+07	2666.086957	2777.173913	3757.352941	24970.47166	579671.6635	131.5653347	318.6393423	8.49E+01
Hexachloroethane	0.7	1.81E+09	1586.321739	1652.418478	2235.625	1560654.479	36229478.97	44530.30907	46493.48786	5.79E+02
Indeno-1,2,3-cd-pyrene	0.7	1.47E+06	191.513913	355.0987138	480.4276716	660.2768946	15327.85648	153227.1168	24686.1286	8.52E+01
Isodrin	0.7	2.99E+04	0.026216522	0.027308877	0.036947304	25.69077372	596.3929615	359.8277329	16.90526873	9.81E-03
Isophorone	0.7	3.34E+09	23328.26087	24300.27174	32876.83824	2875205.751	66745847.79	40099.81466	64362.5856	6.44E+03
Lead (inorganic)	0.7	1.83E+09	1599.652174	499.8913043	676.3235294	1572659.513	36508167.27	#VALUE!	#VALUE!	2.44E+02
Manganese	0.7	1.02E+10	8886.956522	1110.869565	1502.941176	8763675.148	203442458.8	#VALUE!	#VALUE!	5.96E+02
Mercury	0.7	1.41E+08	488.7826087	71.2807971	96.43872549	654274.3776	15188512.34	2555.666491	7188.37244	3.71E+01
Methyl naphthalene, 1-	0.7	3.56E+10	31104.34783	57672.64493	78027.69608	30612837.85	710655164.4	430094.6432	638690.2216	1.51E+04
Methylene chloride	0.7	4.36E+11	2666.086957	5276.630435	7138.970588	375157326.6	8709009367	6796.116893	280742.5081	1.17E+03
Methylnaphthalene, 2-	0.7	2.09E+09	1777.391304	3295.57971	4458.72549	1800755.186	41803244.99	42362.93897	48609.056	8.81E+02
Naphthalene	0.7	2.01E+09	44434.78261	82389.49275	111468.1373	1728724.961	40131115.16	14416.38162	27784.36464	6.69E+03
Nickel	0.7	2.41E+06	2221.73913	185.1449275	250.4901961	2076.87096	48213.07586	#VALUE!	#VALUE!	9.67E+01
Nitroaniline, 2-	0.7	3.56E+08	133.3043478	138.8586957	187.8676471	306128.3785	7106551.644	16304.76944	19998.51608	4.97E+01
Nitroaniline, 3-	0.7	1.53E+08	1057.547826	1101.612319	1490.416667	1314551.272	30516368.82	10565.67217	16135.30278	3.72E+02
Nitroaniline, 4-	0.7	2.42E+08	1057.547826	1101.612319	1490.416667	208287.3477	4835242.001	7632.104203	17398.29248	3.68E+02
Nitrophenol, 2-	0.7	5.81E+08	888.6956522	925.7246377	1252.45098	500009.849	11607367.68	18913.81958	27341.52742	3.23E+02
Nitrophenol, 4-	0.7	1.95E+08	888.6956522	1851.449275	2504.901961	168070.4823	3901636.197	4000.386912	11315.09698	4.15E+02
Nitrosodi-n-propylamine, n-	0.7	7.26E+05	3.177086957	1.65473278	2.238756127	624.2617914	14491.79159	14.04989104	20.62030074	6.72E-01
Nitrosodiphenylamine	0.7	5.19E+09	4532.347826	2360.597826	3193.75	4465872.816	103672047.5	1022045.952	438449.7501	1.04E+03
Parathion	0.7	7.26E+06	2666.086957	2777.173913	3757.352941	6242.617914	144917.9159	70510.25018	7117.792474	7.56E+02
Pentachlorophenol	0.7	2.12E+08	133.3043478	211.0652174	285.5588235	1824765.237	42360621.56	1378157.507	496329.9677	6.35E+01
Phenanthrene	0.7	1.53E+10	13330.43478	24716.84783	33440.44118	13145512.72	305163688.2	6413267.876	1627208.768	6.84E+03
Phenol	0.7	1.73E+12	1510782.609	2832717.391	3832500	1488624227	34557349165	43922924.19	6861312.9	7.61E+05
Polybrominated biphenyls (solid)	0.7	7.26E+07	4.443478261	8.60923913	11.64779412	62426.17914	1449179.159	6.1925E-24	#VALUE!	6.19E-24
Propylbenzene, n-	0.7	5.81E+10	17773.91304	29623.18841	40078.43137	50000968.49	1160736768	13143.11394	142502.6649	5.05E+03
Pyrene	0.7	1.53E+10	13330.43478	24716.84783	33440.44118	13145512.72	305163688.2	199418701.8	9949492.74	6.87E+03
Selenium	0.7	9.14E+09	7998.26087	8331.521739	11272.05882	7863297.566	182540836.3	#VALUE!	#VALUE!	2.99E+03
Simazine	0.7	4.24E+07	37.10304348	38.64900362	52.28982843	36435.27956	845818.9897	23664.19997	12706.97159	1.39E+01
Styrene	0.7	3.78E+10	4443.478261	7405.797101	10019.60784	32473618.19	753851850.8	19594.48548	140242.1466	1.93E+03
Tetrachloroethane, 1,1,1,2-	0.7	1.47E+10	12886.08696	21476.81159	29058.86275	12665311.35	294016156.2	10912.62017	65547.81238	3.71E+03
Tetrachloroethane, 1,1,2,2-	0.7	1.47E+10	12886.08696	18792.21014	25424.7549	12665311.35	294016156.2	6566.639627	50764.7556	2.92E+03
Tetrachloroethylene	0.7	1.68E+11	31104.34783	64800.72464	87671.56863	144060413.4	3344259597	3103.01333	117527.0925	2.57E+03
Thallium	0.7	3.56E+07	31.10434783	64.80072464	87.67156863	30612.83785	710655.1644	#VALUE!	#VALUE!	1.69E+01
TPH - Aliph >C06-C08	0.7	2.67E+12	2221739.13	3702898.551	5009803.922	2299964097	53368809402	15921.23815	1063446.36	1.55E+04
TPH - Aliph >C08-C10	0.7	1.45E+11	44434.78261	74057.97101	100196.0784	12485235.83	289835831.7	3392.612761	114400.1321	2.86E+03
TPH - Aliph >C10-C12	0.7	1.45E+11	44434.78261	46286.23188	62622.54902	12485235.83	289835831.7	16451.9609	251923.2065	8.01E+03
TPH - Aliph >C12-C16	0.7	1.45E+11	44434.78261	46286.23188	62622.54902	12485235.83	289835831.7	76273.19335	542431.9368	1.33E+04
TPH - Aliph >C16-C21	0.7	1.45E+11	888695.6522	925724.6377	1252450.98	12485235.83	289835831.7	1018385.815	1982053.819	2.22E+05
TPH - Aliph >C21-C34	0.7	1.45E+11	888695.6522	925724.6377	1252450.98	12485235.83	289835831.7	687478.1834	1628503.633	1.97E+05
TPH - Arom >C06-C07	0.7	5.81E+11	88869.56522	92572.46377	125245.098	50000968.49	1160736768	1331.687146	45361.10063	1.25E+03
TPH - Arom >C07-C08	0.7	5.81E+10	88869.56522	179590.5797	242975.4902	50000968.49	1160736768	3090.435076	69102.08373	2.79E+03
TPH - Arom >C08-C10	0.7	2.90E+10	17773.91304	29623.18841	40078.43137	24970471.66	579671663.5	5305.99167	63984.62099	3.13E+03
TPH - Arom >C10-C12	0.7	2.90E+10	17773.91304	18514.49275	25049.01961	24970471.66	579671663.5	29572.29312	151070.9113	5.24E+03
TPH - Arom >C12-C16	0.7	2.90E+10	17773.91304	18514.49275	25049.01961	24970471.66	579671663.5	155071.7345	346026.7235	6.27E+03
TPH - Arom >C16-C21	0.7	2.90E+10	13330.43478	24716.84783	33440.44118	24970471.66	579671663.5	1884634.554	1207645.585	6.81E+03
TPH - Arom >C21-C35	0.7	2.90E+10	13330.43478	24716.84783	33440.44118	24970471.66	579671663.5	281454758.8	15169727.72	6.87E+03
Trichlorobenzene, 1,2,3-	0.7	7.26E+09	3421.478261	3564.039855	4821.936275	6242617.914	144917915.9	149529.9628	169938.4208	1.26E+03
Trichlorobenzene, 1,2,4-	0.7	7.26E+09	3421.478261	6914.237319	9354.556373	6242617.914	144917915.9	372701.6278	84865.20731	1.72E+03
Trichloroethane, 1,1,1-	0.7	7.26E+10	133304.3478	24929.46.542	33816171.641	1290541203	29958992223	20611.7394	906604.4793	1.98E+04
Trichloroethane, 1,1,2-	0.7	4.54E+08	388.8043478	656.107337	887.6746324	390763.8714	9071304.157	52.0282665	793.0327397	3.89E+01
Trichloroethylene	0.7	1.32E+10	11553.04348	24068.84058	32563.72549	11344757.56	263360443.3	248.0032119	9324.176656	2.33E+02
Trichlorofluoromethane	0.7	1.02E+11	133304.3478	63875	86419.11765	87636751.49	2034424588	400.8456803	32945.42048	3.91E+02
Trichlorophenol, 2,4,5-	0.7	6.28E+09	133.3043478	138.8586957	187.8676471	5402265.503	125409734.9	1246299.37	556793.655	4.99E+01
Trichlorophenol, 2,4,6-	0.7	3.39E+05	14819	15436.45833	20884.6201	2917223.372	67721256.84	201803.5906	149861.2568	5.20E+03
Trichloropropane, 1,2,3-	0.7	1.27E+07	11.10869565	18.51449275	25.04901961	10924.58135	253606.3528	24.69054214	91.41920114	4.25E+00
Trimethylbenzene, 1,2,3-	0.7	8.72E+08	22217.3913	44897.64493	60743.87255	750314.6532	17418018.73	319.9515044	2723.931865	2.80E+02
Trimethylbenzene, 1,2,4-	0.7	8.72E+08	22217.3913	37028.9855	50098.03922	750314.6532	17418018.73	394.3882048	3024.124832	3.38E+02

GAC User defined receptor

Contaminant	TF (indoor dust inhalation)	GAC (ldi-r)	GAC ingestion	GAC dermal indoors	GAC dermal outdoors	GAC dust inhalation indoors	GAC dust inhalation outdoors	GAC vapour inhalation indoors	GAC vapour inhalation outdoors	Combined GAC without veg uptake	GAC (fruit/cover)
Acenaphthene	0.7	9.69E-01									
Acenaphthylene	0.7	2.24E+07	1559.2.2E+03	19'09.2E.5.309	28'380..00482		1'542.03E.2E.3.5	42.071.759.14	2'64.1'89.349	37'990.3.131	9.07E+03	3.32E+05
Acenaphthylene	0.7	2.24E+07	1559.2.2E+03	19'09.2E.5.309	28'380..00482		1'542.03E.2E.3.5	42.071.759.14	5'95.114.2.217	8'094.64.1.779	9.21E+03	7.51E+05
Aldrin	0.7	2.16E+03	0.1.53.33.5.6.84	1.09.2.E+0.697	0.1.457.322.30		151.0.962.165	41.2.0.33.1.86	891.8.63.80.2	1.29.5.0E.3.4.2	6.38E-02	1.13E+02
Anthracene	0.7	1.12E+08	7'966.2E.0.3	97'90.32.6.5.4	13.'90.0.02.41		7'7.03E1.34.3.5	21.0.84.0.0.98.4	1.39'5.24.3.2.0.4	2.02.5.0.2.30.07	4.65E+04	1.77E+07
Antimony	0.7	1.40E+05	103.9.55.0.40.2	2.0.5.14.2.1.68	29.0.40.4.64.85		1.02.724.5.07.3	38.0.1.7.7.4.72	#VALUE!	#VALUE!	2.09E+03	
Arsenic	0.7	3.73E+03	49.9.78.9.47	52.28.3.76.5.28	70.3.90.0.80.27		25.73.4.07.7.6	70.18.3.94.8	#VALUE!	#VALUE!	2.27E+02	
Atrazine	0.7	5.32E+05	0.1.53.33.5.6.84	1.09.2.E+0.697	0.1.457.322.30		367.125.3.80.9	10.0.12.0.1.0.85	30.28.6.5.79.9	2.45.8.9.0.4.0.8	6.93E-02	1.32E+00
Azinphos-methyl (guthion)	0.7	5.58E+05	3.89.8.3.1.4.0.7	27.5.1.7.7.7.1.9	37.0.3.0.9.9.8.57		3.84.7.7.5.4.6.3	10.4.0.3.8.1.25	5.3.9.8.1.2.9.3.2	5.42.9.3.0.2.7.4	1.77E+02	2.71E+00
Azobenzene	0.7	1.12E+05	1.89.1.9.9.14.1.1	112.26.3.22.28	151.2.8.0.3.2.2.8		1.9.6.09..7.40.4	32.3.4.8.1.1.1.0.1	7.6.9.7.9.5..0.4.6.2	1.2.3.0.0..9.4.6.2	5.38E+01	9.60E+04
Benz-a-anthracene	0.7	9.00E+02	1.79.3.2.2.4.4.3	22.53.1.9.5.1.0.5	30.1.3.7.0.0.5.4		8.21.2.8.9.1.9.2	16.9.4.4.2.8.0.2	2.2.8.4.2..0.8.5	4.74.0.3.4.8.8.7	7.90E+01	3.93E+04
Benzo-a-pyrene	0.7	1.30E+03	23.9.8.9.7.9.0.4	326.54.2.1.8.1	4.1.3.9.6.9.7.4.7		90.0.1.6.2.2.8.2.2	245.4.6.9.0.9.8.8	1.6.1.9.1..7.9.4.9	0.52.7.6.4.2.9.7.2	1.15E+01	4.03E+03
Benzo-b-fluoranthene	0.7	9.26E+02	1.94.5.2.0.1.9.3	23.1.8.4.0.3.4.9	31.2.1.6.3.9.0.4		6.38.9.3.9.3.7.5.2	17.4.2.6.0.9.1.9.2	6.0.0.7.4.0..7.9.1	1.1.0.1.4.2.0.1.8	8.14E+01	9.42E+04
Benzo-g,h,i-perylene	0.7	1.12E+07	7.79.6.2.8.0.1.3	97.9.6.3.2.6.4.4	13.'90..0.02.41		7.7.0.0.8.1.3.4.5	21.0.8.4.0.2.6.6.4	5.3.6.3.5.4.9.8.1	44.7.7.0.4.7.6.0.0	4.66E+03	2.44E+05
Benzo-k-fluoranthene	0.7	1.30E+03	23.9.8.9.7.9.0.4	326.54.2.1.8.1	4.1.3.9.6.9.7.4.7		90.0.1.6.2.2.8.2.2	245.4.9.0.9.8.8	4.9.6.1.9.4.4.4	4.2.8.2.6.4.5.3	1.15E+02	2.33E+05
Biphenyl (1,1-)	0.7	1.39E+05	1.29.4.3.9.0.0.2	91.72.5.0.9.9.7.7	12.9.9.0..189.62		9.5.3.1.1.3.9.8.2	25.9.9.4.4..17.6	8.0.4.6.5.1.9.2.7.6	1.1.4.8.9.0.8.8.6	8.44E+02	1.01E+03
Bis (2-chloro-ethyl) ether	0.7	1.61E+04	11.5.1.8.9.1.4.4	13.3.4.0.1.6.9.7	17.9.6.2.1.5.5.4.4		1.11.9.6.0.3.1.7.2	3.0.3.2.6..3.9.0.7	1.6.9.4.6..7.8.2.9.6	3.3.9.6.0.4.7.7.7	3.48E+03	7.23E+00
Bis (2-ethyl-hexyl) phthalate	0.7	5.32E+05	6.4.9.7..1.9.0.5.1	17.4.2.7.5.2.1.5	23.4.5.3.9.0.0.9		3.0.7.1.2.5..3.9.6.3	10.0.1.2.5.1.0.8.3	1.6.7.2.5.9.4.7.4	2.9.6.8.9.9.1.5.4	1.59E+03	2.22E+07
Bis (chloromethoxy) methane	0.7	1.61E+04	11.5.1.8.9.1.4.4	83..3.7.8.9.4.7.1	11.2.2.6.3.2.2.8		1.11.9.6.0.3.1.7.2	3.0.3.2.6..3.9.0.7	1.6.0.2.3.0.1.4.3.5	8.1.3.2.9.0.9.8.1.9	5.00E+03	7.03E+01
Boron	0.7	2.12E+06	2.3.3.9.3.8.4.0.4	29.7.1.9.1.9.3.8.9	40.0.5.4.1.4.4.0.5		1.4.6.4.9.7.1.4.6.5	39.9.3.5.7.8.0.9.6	#VALUE!	#VALUE!	1.38E+04	
Bromobenzene	0.7	1.39E+06	9.9.6.7..7.5.2.0.0.9	58.'90.4.37.8.5.6	79.0.4.1.2.7.2.9.4		7.7.3.9.8.1..3.4.3.5	21.0.9.4.0.3.6.6.4	5.6.3.8.9.7..3.4.7	5.6..2.8.0.7.3.4.7	4.85E+03	4.93E+01
Bromochloromethane	0.7	3.01E+05	5.1.9.7.5.2.0.0.9	71.9.1.3.1.9.8.7	96.8.2.6.4.8.5.8.5		2.0.7.9.9..7.4.6.7	50.8.9.9.1.9.4.2.7	43.9.2.7.9.9.6.4.5	6.2.9.5.7.4.7.4.0.6	4.66E+03	5.44E+03
Bromoform	0.7	4.94E+05	1.6.9.2..2.8.6.2.3	13.9.7.9.1.2.7.7.7	18.6.2.1.6.8.9.8.0		3.3.3.9.4.2.9.1	9.1.0.7.5.3.3.6.9	1.0.1.9.5.9.2.8.9.5	1.4.6.6.0.7.5.7.6	5.03E+02	1.28E+03
Bromomethane	0.7	3.73E+05	3.0.3.5.4.8.9.4.0.8	41.0.9.3.2.1.4.8.5	55.3.3.8.4.6.0.9.1		3.6.7.3.2..3.8.6.3	10.0.1.2.5.1.0.8.3	3.3.4.8.7.7.4.9.4	0.5.4.7.3.9.7.0.1	4.78E+01	4.76E+02
Bromophenyl phenylether, 4-	0.7	1.61E+03	0.8.9.9.2.5.1.4.7	6.1.9.1.1.7.7.9.3	0.8.2.7.3.7.6.4.1		1.1.1.1.9.6.3.1.8	30.3.2.6.3.9.4.0.7	4.1.2.0.1.0.5.9.1.4	5.8.9.2.9.0.2.7.5	3.94E-01	5.16E+02
Butyl benzyl phthalate	0.7	5.12E+05	2.9.3.9.4.0.1.0.2	11.'90.9.6.0.3.0.8	15.0.7.2.1.3.2.2		3.5.3.0.9..1.7.9.7	9.6.2.7.4..3.9.1.4	1.5.9.0.3.4.4.0.4	4.6.5.4.8.1..4.6.3	4.09E+04	3.53E+05
Butylbenzene, n-	0.7	2.88E+07	1.0.3.9.5.0.9.4.0.2	73.3.8.0.7.2.3.1.8	9.8.8.0..1.5.9.1.7		1.9.0.3.8.9.1.1	54.1.0.9.0.0.6.6.0.3	2.2.4.3.7.9.6.1.1.8	2.9.1.2.2.1.0.9.6.9	1.76E+03	2.79E+03
Butylbenzene, sec-	0.7	2.88E+07	1.0.3.9.5.0.9.4.0.2	11.7.4.0.9.1.3.7.1	15.8.0.8..2.4.2.9.9		1.9.0.3.8.9.1.1	54.1.0.9.0.0.6.6.0.3	1.9.9.4.6.7.9.2.9.4	2.4.1.1.0.9.8.7.6	1.56E+03	2.13E+03
Butylbenzene, tert-	0.7	1.49E+07	1.0.3.9.5.0.9.4.0.2	11.7.4.0.9.1.9.7.1	15.8.0.8..2.4.2.9.9		1.0.2.7.4.9.0.7.3	28.0.1.5.7.7.4.7.2	6.0.3.0..2.0.4.9.3	8.5.7.8.6.0.7.4.3	6.67E+02	7.51E+03
Cadmium	0.7	1.77E+03	6.4.6.7.1.9.0.0.1.1	2.2.9.3.1.4.7.9.9.9	3.0.7.9.4.7.8.3		1.2.2.1.3.9.7.9.2.2	3.3.3.1.0.8.5.4.2.4	#VALUE!	#VALUE!	2.06E+01	
Carbazole	0.7	9.31E+05	8.4.9.7.9.9.0.1.1	64.2.0.8.1.3.2.7.8	86.4.3.1.3.2.6.9.5		8.4.2.4.9.9.4.2.7	17.5.2.1.9.3.4.6.1	1.3.3.9.8.1..8.9.9.8	2.0.1.0.5.8.3.0.3.4	3.40E+02	1.78E+04
Carbon disulfide	0.7	1.39E+06	2.9.8.8.5.7.6.0.4	231.9.4.9.2.7.1.5	3.1.2.2..4.7.7.5		7.3.4.2.9.7..7.1.7	2.0.0.2.9.2.1.1	1.0.9.2.7.7.5.9	1.5.9.0.3.4.0.8.7	1.36E+03	1.37E+03
Carbon tetrachloride	0.7	3.73E+06	1.8.9.6..2.1.5.2.0	16.6.9.4.1.1.4.5.2	22.4.7.1.3.4.4.9		2.5.7.3.4.7.7.6	70.1.8.3.8.4.8	7.4.6.8.7.4.3.9.3	1.0.6.2.5.1.6.7.7.7	9.21E+00	9.33E+03
Chloro-3-methylphenol, 4-	0.7	3.73E+07	2.0.9.8.6.7.6.0.4	18.3.4.5.1.8.0.7.2	24.7.0.0..3.7.5.0.4		2.5.7.3.4.7.7.6	70.1.8.3.8.4.8	57.4.9.5.8.3.3.7	2.5.3.0.9.2.7.3.8.8	1.18E+04	1.79E+07
Chloroaniline, p-	0.7	5.63E+05	4.8.9..5.9.4.2.2	73.3.8.0.7.2.3.1.8	98.0.1.5.5.0.1.7		3.8.8.0.1.5.5.0.1.7	10.9.0.7.5..5.3.9	5.0.1.7.4.9.4.5.9.3	1.4.1.0.4.4.4.9.2.2	1.15E+03	1.23E+03
Chlorobenzene	0.7	6.32E+10	5.1.9.7.7.5.2.0.0.9	22.7.4.9.0.2.4.1.6	30.6.2.8.4.7.0.0.1		367.12.5.0.9.8.7	1.0.0.1.2.9.2.+.1.1	7.5.2.7.0.1.3.0.6	1.0.7.1.0.9.8.2.7	1.74E+04	9.38E+05
Chlorodibromomethane (bromochlorodimethane)	0.7	#VALUE!	1.0.9.9.5.9.0.4.2.2	11.7.4.0.9.1.3.7.1	15.9.0.8..2.4.2.9.9	#VALUE!	1.9.0.3.8.9.1.1	#VALUE!	#VALUE!	#VALUE!	1.56E+03	
Chloroethane	0.7	1.08E+09	4.4.8.1.0.9.1.1.0.8	50.6.3.2.6.8.9.8.9	68.1.7.3.0.4.6.1.9		7.4.4.9.4.0.9.2.8.1	9.8.1.0.7.4.5.1.7.7			8.28E+02	1.23E+01
Chloroform	0.7	1.06E+07	7.7.9.6.6.2.8.0.1.3	2.0.1.4.2.1.9.8.9.3	2.8.9.4.0.4.5.4.8.5		7.3.4.2.9.7..7.1.7	2.0.0.2.9.2.1.1	3.4.3.1.5.1.4.0.2.1	4.1.9.6.+.2.4.8.6	4.16E+02	2.43E+01
Chloromethane	0.7	2.96E+06	9.9.9.2.0.7.6.2.3.7	11.2.8.5.9.5.6.2.2	15.1.9.5.0.7.3.7.9		2.0.4.0.9.6.9.3.9	5.5.6.4.6.5..8.8.7	7.4.4.0.8.9.8.4.2	1.0.5.9.9.0.6.4.3.7	9.26E-01	9.27E-01
Chloronaphthalene, 1-	0.7	1.46E+06	1.2.1.9.5.1.3.7.5.5	26.'90.3.5.3.7.4.5	35.'97.3.3.3.9.7.6		1.0.2.7.1.9.2.1.1	27.9.1.9.0.5.2.1	1.3.0.7.7.0.4.4.5	1.2.4.5.1.0.3.9.2.2	1.44E+03	3.93E+04
Chloronaphthalene, 2-	0.7	1.46E+06	2.0.7.9.1.0.0.8.0.4	26.'90.3.5.3.7.4.5	35.'97.3.3.3.9.7.6		1.0.2.7.1.9.2.1.1	27.9.1.9.0.5.2.1	6.5.2.8.0.2.2.7.7.1	9.3.0.3.2.1.9.2.3.6	1.23E+04	8.14E+05
Chlorophenol, 2-	0.7	5.58E+06	7.7.9.6.6.2.8.0.1.3	88.0.5.6.0.7.8.1	11.8.5.8.1.8.1.9.4		3.9.4.7.9.5.4.6.9	10.4.0.3.8.1.2.5	3.2.3.7.2.1.8.0.3.1	5.0.9.0.5.8.1.3.0.3	4.42E+03	4.40E+04
Chlorophenol phenylether, 4-	0.7	1.61E+03	0.8.9.7.2.5.1.4.7	6.1.9.1.1.7.7.9.3	0.8.2.7.3.7.6.4.1		1.1.1.1.9.6.3.1.8	30.3.2.6.3.9.4.0.7	2.8.0.0.8.9.4.5.1.5	3.8.4.2.8.9.8.2.0.6	3.48E-01	3.53E+02
Chromatographic fluorene, 5-	0.7	1.08E+07	7.7.9.6.6.2.8.0.1.3	2.0.1.4.2.1.9.8.9.3	2.8.9.4.0.4.5.4.8.5		7.3.4.2.9.7..7.1.7	2.0.0.2.9.2.1.1	3.3.0.7.7.0.4.4.5	4.1.9.6.+.2.4.8.6	4.16E+02	2.43E+01
Chromanphthalene, 2-	0.7	1.46E+06	2.0.7.9.1.0.0.8.0.4	26.'90.3.5.3.7.4.5	35.'97.3.3.3.9.7.6		1.0.2.7.1.9.2.1.1	27.9.1.9.0.5.2.1	6.5.2.8.0.2.2.7.7.1	9.3.0.3.2.1.9.2.3.6	1.23E+04	8.14E+05
Chrysene	0.7	5.58E+06	7.7.9.6.6.2.8.0.1.3	88.0.5.6.0.7.8.1	11.8.5.8.1.8.1.9.4		3.9.4.7.9.5.4.6.9	10.4.0.3.8.1.2.5	1.2.3.7.2.1.8.0.3.1	1.6.9.0.5.8.1.3.0.3	4.42E+03	4.40E+04
Chromium (III) (total chromium)	0.7	1.77E+03	6.4.6.7.1.9.0.0.1.1	2.2.9.3.1.4.7.9.9.9	3.0.7.9.4.7.8.3		1.2.2.1.3.9.7.9.2.2	3.3.3.1.0.8.5.4.2.4	#VALUE!	#VALUE!	2.06E+01	
Chromium (VI)	0.7	1.77E+03	3.3.7.8.5.3.8.8.0.6	1.6.2.4.9.7.5.2	1.9.0.3.9.2.4.5.9.1		1.2.2.1.3.9.7.9.2.2	3.3.3.1.0.8.5.4.2.4	#VALUE!	#VALUE!	2.06E+01	
Chrysene	0.7	1.30E+03	2.9.9.8.7.9.0.0.4	3.2.6.5.4.2.9.1.8	4.3.9.6.9.8.7.4.7		9.0.0.1.6.3.0.8.2	24.5.4.9.9.0.9.8	78.2.4.9.6.8.7	2.7.1.1.5.4.9.6.6	1.16E+02	2.01E+01
Cobalt	0.7	5.12E+05	3.8.0.4.2.4.9.4.6	4.1.9.9..3.3.1.4.9.5	5.5.3.3.8.1.4.0.0		3.6.0.9.6..1.9.1.3	9.8.1.9.8..2.2.7.1	#VALUE!	#VALUE!	2.08E+02	
Copper	0.7	1.08E+05	1.0.3.9.5.0.4.9.2.2	8.3.9.5.1.4.2.4.4.2	11.2.6.3.1.3.7.2.9.4		1.7.3.4.2.0.7.7.7.7	2.0.9.2.6.0.2.1.1	#VALUE!	#VALUE!	4.46E+03	
Cumene	0.7	4.29E+07	2.9.9.8.7.9.0.0.4	26.'90.2.2.8.9.2.7	33.0.7.9.4.7.6.2.3		2.9.4.9.5.0.1.4.7	7.0.7.0.8.0.3.4.4.9	3.0.7.0.9.0.3.4.4.9	4.3.9.8.7.2.4.8.6.9	3.33E+03	3.83E+03
Cyanide	0.7	1.67E+06	3.5.0.6.4.8.2.0.0.6	2.4.7.6.5.9.9.4.0.7	3.3.3.4.5.5.1.7.1		1.1.5.0.7.9.6.9.8.8	31.3.5.9.6..9.6.1	#VALUE!	#VALUE!	1.56E+03	
Cyanide (oxygen/chlorine)	0.7	3.20E+07	2.9.9.8.6.7.9.0.0.4	2.0.5.2.2.8.9.2.7	3.9.5.2.0.8.9.4.7		2.2.0.2.6.0.2.7.3	6.0.7.1.5.3.7.4.6	2.2.5.9.6.3.9.0.4.6	3.2.1.0.3.5.3.8.9.0	2.36E+03	2.81E+03
DDE	0.7	1.06E+07	7.8.4.9.9.9.5.4.3.1	75.5.0.5.7.9.4.1.5	10.1.9.6.9.7.6.0.1		7.5.4.3.1.9.8.4.5	20.0.6.2.9.8.9.8.4	6.3.7.7.5.0.2.2.9	1.0.7.0.1.4.8.9.6	4.12E+03	9.14E+04
DDT	0.7	1.06E+04	7.8.4.9.9.9.5.4.3.1	75.5.0.5.7.9.4.1.5	10.1.9.6.9.7.6.0.1		7.5.4.3.1.9.8.4.5	20.0.6.2.9.8.9.8.4	3.7.1.3.5.3.3.6.3	5.6.1.9.5.8.9.5.2.6	4.12E+00	4.84E+04
Dibenz-a,h-anthracene	0.7	1.30E+03	1.2.7.9.2.0.0.9.4	8.5.3.0.8.9.4.3.0.3	4.7.9.0.2.3.4.4.6		1.8.1.0.3.2.6.0.1.5	49.0.8.9.1.1.5.0.1	19.9.6.7.7.1.9.7	1.4.2.4.0.1.0.2.9.4	2.30E+01	1.74E+04
Dibenzofuran	0.7	7.47E+05	5.1.9.7.5.2.0.0.9	3.6.9.9..0.3.6.1.9	49.4.0.7.5.6.0.9		6.5.3.3.8.7.9.6.2.2	14.0.5.9.2..4.4.3	17.5.4.6..7.4.6.3	33.4.9.2.8.0.9.8.6	2.34E+02	2.20E+04
Dibromo-3-chloropropane, 1,2-	0.7	1.08E+05	1.8.4.7.2.5.1.4.7	6.2.3.7.5.7.6.4.1.1	8.2.1.7.6.3.1.1.8		1.7.3.4.2.0.7.7.7.7	2.0.9.2.6.0.2.1.1	2.0.5.7.4.7.2.2.1	3.3.6.9.7.2.8.5.8.9	3.48E+01	3.93E+01
Dibromochloromethane	0.7	2.23E+05	5.5.6.1.5.9.4.7.6	47.1.1.0.4.2.6.8.5	63.4.0.1.3.7.3.3.8		15.3.2.0.4.2.4.8	41.7.8.2.9.7.9.7.2	10.3.6.1.2.7.3.0.1	1.8.1.6.9.7.1.7.0.5	1.59E+01	1.58E+02
Dichlorobenzene, 1,2-	0.7	6.40E+05	1.1.4.6.1..7.9.0.6	16.9.5.6.4.4.0.1.8	21.7.4.2.3.4.7.4.9		4.4.1.2.5.0.4.7.7	11.9.0.6.2.3.9.6.4	6.9.0.4.7.7.9.5.9.6	8.0.7.4.7.4.9.9.2.2	1.44E+02	1.22E+03
Dichlorobenzene, 1,3-	0.7	8.5.4E+05	7.7.9.6.2.8.0.1.3	8.8.0.5.5.8.6.7.6	11.8.5.6.1.8.1.9.4		5.8.9.5.1.8.6.9.1	16.0.7.7.9..1.3.7	9.8.0.3.9.0.0.8.8	1.3.9.4.6.1.1.5.1	1.22E+03	1.22E+03
Dichlorobenzene, 1,4-	0.7	2.76E+07	2.7.8.0.7.9.7.2.5	3.5.3.2.8.1.6.2.1	4.7.7.2.3.0.0.9.4		4.9.0.0.7.7.9.9.6	13.3.6.2.1.0.4.5	4.7.4.0.1.4.9.6.4.7	6.7.4.5.7.9.9.6.8	4.36E+03	5.91E+03
Dichlorodifluoromethane	0.7	2.13E+07	1.5.9.7.7.5.2.0.0.9	1.6.8.7.7.5.6.8.3.3	22.7.2.4.3.4.8.7.2		4.1.4.8.0.7.5.1.4.7	4.0.9.5.0.9.6.2.4	1.1.5.3.9.2.5.2.7.5	1.8.4.9.1.0.1.5.2.8	1.44E+03	1.44E+03
Dichloroethane, 1,1-	0.7	6.17E+07	5.1.9.7.7.5.2.0.0.9	7.3.9.0.7.2.3.1.8	9.8.0.1.5.1.6.1.7		3.9.6.3.5.9.2.1.5	9.7.2.3.9.8.1.3.1	1.1.9.4.8.6.2.0.4	1.6.8.5.0.3.9.8	1.47E+02	1.48E+02
Dichloroethane, 1,2-	0.7	1.12E+07	9.9.3.2.9.0.9.0.3	2.0.1.4.0.1.4.6.5	2.6.9.4.0.4.6.4.5		1.5.4.2.6.1.2.6.3.5	4.0.7.7.1.9.9.4.2	1.0.1.8.3.2.3.9.6.4	1.4.6.5.3.4.2.8.8.6	1.20E+03	1.27E+03
Dichloroethene, cis-1,2-	0.7	2.58E+06	1.8.1.9.2.1.3.2.0.3	2.5.9.8.1.2.3.0.1.1	3.4.9.8.2.3.1.0.0.6		1.7.6.0.2.5.8.9.8.1	4.6.1.0.5.1.3.6.2.2	1.0.4.9.3.8.5.5.2.6	1.4.1.7.4.5.2.2.1.6	1.68E+02	1.76E+02
Dichloroethene, trans-1,2	0.7	6.40E+06	4.8.1.9.2.8.9.2.0.8	62.0.7.3.1.4.7.4.1	83.9.8.1.9.1.6.1.7		20.4.9.6.1.2.7.8.5	57.2.2.7.3.7.4.3	4.0.9.0.7.7.9.5.9.6	5.7.3.6.2.9.0.8.8.6	4.36E+02	5.91E+02
Dichlorophenol, 2,4-	0.7	1.12E+06	7.7.9.6.2.8.0.1.3	9.0.2.5.2.5.8.6.6	12.1.5.2.8.8.6.9.1		7.7.3.0.8.1.3.4.8	9.6.0.7.7.9.8.6.4	2.9.4.0.7.0.9.0.5.5	4.0.2.4.9.2.0.0.5.8	4.39E+02	1.69E+04
Dichloropropane, 1,2-	0.7	2.56E+06	1.8.1.9.2.1.3.2.0.3	2.5.9.8.1.2.3.0.1.1	3.4.9.8.2.3.1.0.0.6		1.7.6.0.2.5.8.9.8.1	4.6.1.0.5.1.3.6.2.2	1.0.4.9.3.8.5.5.2.6	1.4.1.7.4.5.2.2.1.6	1.68E+02	1.76E+02
Dichloropropane, 1,3-	0.7	1.12E+06	6.4.0.9.2.8.9.2.0.8	8.2.3.7.5.4.6.9.1.1	11.2.6.3.1.3.7.2.9.4		2.6.4.0.9.6.9.3.9	6.9.2.3.1.2.7.3	3.4.3.1.2.1.2.7.3	4.8.8.5.1.9.2.7.3	4.39E+02	1.69E+04
Dichloropropane, 2,2-	0.7	4.29E+07	2.9.9.8.7.9.0.0.4	26.'90.2.2.8.9.2.7	33.0.7.9.4.7.6.2.3		2.9.4.9.5.0.1.4.7	7.0.7.0.8.0.3.4.4.9	3.0.7.0.9.0.3.4.4.9	4.3.9.8.7.2.4.8.6.9	3.33E+03	3.83E+03
Dichloropropene, 1,1-	0.7	1.3.3E+06	1.2.9.3.4.0.0.2	1.4.0.7..6.1.4.4.6	1.9.7.6.0.3.2.3		4.7.8.1.1.4.6.7.2	25.0.3.1.2.7..6.8	19.2.8.9.7.9.3.5	2.7.4.4.1.9.0.9	2.33E+00	2.40E+03
Dichloropropene, 1,3-cis	0.7	7.1.1E+05	2.4.0.3.9.6.0.0.4	2.7.1.5.0.9.6.7.5	3.6.5.9.6.9.0.8.8		4.9.0.6.7.1.9.9.6	13.3.8.2.1.0.5.4.5	4.7.1.4.3.4.4.1.0.5	6.6.1.7.9.2.6.4.8	4.12E+00	5.8.7E+00
Dichloropropene, 1,3-trans	0.7	1.3.3E+06	1.2.9.3.4.0.0.2	1.4.0.7..6.1.4.4.6	1.9.7.6.0.3.2.3		4.7.8.1.1.4.6.7.2	25.0.3.1.2.7..6.8	19.2.8.9.7.9.3.5	2.7.4.4.1.9.0.9	2.33E+00	2.40E+03
Dieldrin	0.7	2.3.3E+02	0.1.9.3.4.2.9.7.5	1.1.4.6.7.3.9.9	0.1.4.5.7.7.3.9.9		1.0.0.6.7.3.9.6.9	4.3.8.0.4.7.3.9.6	1.1.1.4.0.9.4.0.3.9	3.2.6.4.0.3.9.6.1.7	7.40E-02	2.5.4.+.0.0
Diethyl phthalate	0.7	5.12E+06	1.9.7.7.5.2.0.0.9	8.9.9.2.1.3.6.4.9	2.9.0.4.0.3.3.9.6		3.5.3.0.5.1.7.9.7	9.6.2.7.4..3.9.1	1.0.5.3.4.2.3.2.3.9	1.0.7.9.2.1.5.9.7	1.83E+04	6.4.6.+.0.0
Dimethoate	0.7	7.47E+05	5.1.9.7.5.2.0.0.9	3.6.9.9..0.3.6.1.9	49.4.0.7.5.6.0.9		6.5.3.3.8.7.9.6.2.2	14.0.5.9.2..4.4.3	2.3.6.9.0.7.9.3.6.4	2.3.6.9.0.7.9.3.6.4	2.32E+02	1.29E+04
Dimethyl phenol, 2,4-	0.7	1.8.1E+06	1.2.9.7.5.2.0.0.9	3.6.9.9..0.3.6.1.9	49.4.0.7.5.6.0.9		1.3.4.9.3.8..3.9.6	3.4.0.7.0.5..9.9.2	3.4.9.0.7.0.5..9.9.2	4.9.2.4.1.9.0.0.5.8	2.23E+03	4.00E+04
Dimethylphthalate	0.7	5.12E+06	2.0.7.9.1.0.0.8.0.4	2.6.4.1.7.0.6.0.4	3.5.9.8.5.4.9.9.2		3.5.3.0.5.1.7.9.7	9.6.2.7.4..3.9.1	4.1.9.8.5.2.7.4.0.7	4.6.0.5.6.2.0.9.4.2	4.19E+03	1.09E+04
Dinitrobenzene, 2,6-	0.7	1.56E+04	5.1.9.7.5.2.0.0.9	62.7.3.9.1.4.7.7	83.9.1.2.8.0.7.5		10.0.4.3.1.9.0.7	29.8.4.4.9.8.3.7	1.9.9.6.8.1.6.0.9.6	6.3.0.0.8.7.9.1.0	1.78E+02	4.49E+03
Di-n-octyl phthalate	0.7	5.12E+04	1.9.7.7.5.2.0.0.9	2.6.4.1.7.0.6.0.4	3.5.9.8.5.4.9.9.2		3.5.3.0.5.1.7.9.7	9.6.2.7.4..3.9.1	1.0.5.3.4.2.3.2.3.9	1.0.7.9.2.1.5.9.7	6.01E+03	6.09E+04
Dinitrotoluene, 2,6-	0.7	1.56E+04	5.1.9.7.5.2.0.0.9	62.7.3.9.1.4.7.7	83.9.1.2.8.0.7.5		10.0.4.3.1.9.0.7	29.8.4.4.9.8.3.7	1.9.9.6.8.1.6.0.9.6	6.3.0.0.8.7.9.1.0	1.78E+02	4.49E+03
Di-n-octyl phthalate	0.7	7.47E+04	5.1.9.7.5.2.0.0.9	6.9.9.4.2.0.8.9.8	8.9.2.1.3.4.9.0		1.4.9.0.1.2.8.0.7	4.4.0.1.2.1.8.0	1.9.9.6.8.1.6.0.9.6	2.5.0.1.9.2.4.9.4	1.13E+03	1.23E+03
Dioxane, 1,4-	0.7	1.67E+06	1.6.1.1.3.3.1.2.3	1.1.0.7.1.0.7.8.9	1.3.3.1.4.2.3.9.0.1		4.9.3.1.9.7.8.6.2.5	14.0.5.9.2..4.4.3	4.6.5.7.6.4.9.1.8	7.3.6.1.4.2.7.8.3.5	1.78E+02	2.09E+03
Diuron	0.7	1.06E+05	5.1.9.7.5.2.0.0.9	3.6.9.9..0.3.6.1.9	49.4.0.7.5.6.0.9		7.3.4.2.0.7.7.7	2.0.0.2.9.2.1.1	1.5.1.9.6.8.1.7.9.6	1.3.3.6.7.2.3.1.8	2.37E+02	7.10E+05
Endrin	0.7	1.67E+03	0.9.6.9.0.8.7.6.9	1.9.0.4.0.7.5.8.9	2.5.4.0.0.7.5.8.9		7.3.4.2.0.7.7.7	2.0.0.2.9.2.1.1	1.3.0.4.5.0.1.2.9.1	1.7.7.4.4.0.4.4.5	2.33E+00	2.13E+03
Ethylene dibromide	0.7	8.9.5E+03	3.4.9.9.4.9.4.6.6	3.9.1.9.3.0.6.1.5	5.2.7.6.0.0.0.9.4		1.6.1.6.8.9.6.0.9	16.6.5