

APPENDIX F
CHEMICAL ANALYSIS RESULTS



Chemical Testing Summary



Method	ICPMSSD	ICPMSSD	ICPMSSD	ICPMSSD	ICPMSSD	TMMS1	ICPMSSD	ICPMSSD	ICPMSSD	ICPMSSD	ICPSED	ICPSED	ICPSED	ICPSED	ICPSED	ICPSED	TOMLOI	WSLM59
Detection Limit	1	0.1	0.5	2	2	0.01	0.5	0.5	2	3	10	1	1.5	1	1	1		0.02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	% M/M
Description	As	Cd	Cr	Cu	Pb	Hg	Ni	Sn	V	Zn	Al	Ba	Cr	Ni	V	Zn	Total Organic Matter % (LOI)	Total Organic Carbon
S01	9.8	0.1	11.1	15.1	12.4	<0.01	6.1	3.8	28.2	24.4	23200	302	11.5	4.4	15.3	19.2	1.5	0.19
S03	7.8	0.1	7.9	7.3	11.0	<0.01	5.2	2.1	24.2	15.8	24300	326	7.9	5.6	12.0	35.5	0.8	0.14
S07	11.4	0.1	24.2	7.2	11.8	<0.01	13.7	1.3	43.4	34.4	31400	390	24.5	13.0	32.3	27.0	1.9	0.21
S09	15.6	0.1	10.5	13.0	8.9	<0.01	8.3	0.7	38.4	17.1	16800	225	10.0	8.9	25.1	15.5	2.1	0.17
S11	8.2	0.1	15.3	15.1	10.8	<0.01	10.0	1.2	36.4	24.0	23500	297	15.5	9.8	25.7	21.5	1.3	0.23
S13	5.4	0.1	14.5	12.2	9.9	<0.01	6.6	0.9	29.2	21.5	20600	316	15.7	8.1	16.6	18.1	0.8	0.17
S14																	1.0	0.23
S15																	0.8	0.15
S16	6.8	0.1	17.3	9.9	11.1	<0.01	7.0	1.1	30.1	25.6	21800	310	17.8	7.1	18.6	20.7	1.0	0.32
S18																	1.0	0.22
S20																	1.2	0.17
S21																	0.6	0.17
S22																	1.0	0.12
S23																	1.0	0.12
S24																	1.2	0.14
S26																	1.7	0.25
S27																	1.2	0.12
S28																	0.7	0.11
S29																	1.0	0.22
S31																	0.9	0.11
S32																	0.6	0.15
S34																	0.8	0.11

MMT Project Number	101462	Site Test Date	25/09/2013	Core Location Grab Samples - Statoil Hywind	Comments
Vessel	Franklin	Co-ordinates	E N		
Client	Statoil	Water Depth (m LAT)			

ESG Environmental Sciences Group		Chemical Testing Summary								MMT	
Polyaromatic Hydrocarbon Concentrations (ng/g dry weight basis)											
			Sample ID :	CL1322793	CL1322794	CL1322795	CL1322796	CL1322797	CL1322798	CL1322799	
			Station :	S01	S03	S16	S13	S11	S07	S09	
PAH Fraction	# PAH	Mass									
Naphthalene	1	128	<1	<1	<1	<1	<1	<1	<1	<1	
C1 Naphthalenes		142	<1	<1	<1	<1	<1	<1	<1	<1	
C2 Naphthalenes		156	<1	<1	<1	1.0	<1	<1	<1	<1	
C3 Naphthalenes		170	<1	<1	<1	<1	<1	<1	<1	<1	
C4 Naphthalenes		184	<1	<1	<1	<1	<1	<1	<1	<1	
Sum Naphthalenes			0	0	0	1	0	0	0	0	
Phenanthrene / Anthracene	2	178	<1	5.3	<1	1.0	1.2	1.3	<1	<1	
C1 178		192	<1	4	<1	1	1	1	<1	<1	
C2 178		206	<1	2	<1	1	<1	<1	<1	<1	
C3 178		220	<1	1	<1	<1	<1	<1	<1	<1	
Sum 178			0	13	0	3	2	2	0	0	
Dibenzthiophene		184	<1	<1	<1	<1	<1	<1	<1	<1	
C1 Dibenzthiophenes		198	<1	<1	<1	<1	<1	<1	<1	<1	
C2 Dibenzthiophenes		212	<1	<1	<1	<1	<1	<1	<1	<1	
C3 Dibenzthiophenes		226	<1	<1	<1	<1	<1	<1	<1	<1	
Sum Dibenzthiophenes			0	0	0	0	0	0	0	0	
Fluoranthene / pyrene	2	202	4	19	<1	5	1	4	<1	<1	
C1 202		216	1	6	<1	2	<1	1	<1	<1	
C2 202		230	1	3	<1	2	<1	<1	<1	<1	
C3 202		244	<1	1	<1	1	<1	<1	<1	<1	
Sum 202			6	30	0	10	1	5	0	0	
Benzantracene / chrysene	2	228	3	13	<1	3	1	1	<1	<1	
C1 228		242	2	4	<1	3	1	<1	<1	<1	
C2 228		256	2	2	<1	2	<1	<1	<1	<1	
Sum 228			6	19	0	7	2	1	0	0	
Benzfluoranthenes / benzopyrenes	3	252	11	23	5	20	5	5	<1	<1	
C1 252		266	4	8	3	7	3	2	<1	<1	
C2 252		280	3	3	2	4	1	1	<1	<1	
Sum 252			17	34	10	31	9	9	0	0	
Aranthranthrenes / indenopyrene / benzperylene	3	276	6	9	6	17	4	3	<1	<1	
C1 276		290	2	3	2	3	1	1	<1	<1	
C2 276		304	<1	<1	1	3	1	<1	<1	<1	
Sum 276			8	12	9	23	6	5	0	0	
Sum of all fractions			37	108	19	76	21	22	0	0	
Sum of NPD fraction			0	13	0	5	2	2	0	0	
NPD / 4-6 ring PAH ratio			0.00	0.13	0.00	0.06	0.12	0.13	0.00	0.00	

MMT Project Number	101462	Site Test Date	25/09/2013		Core Location	Grab Samples - Statoil Hywind	Comments
Vessel	Franklin	Co-ordinates	E	N			
Client	Statoil	Water Depth (m LAT)					



Chemical Testing Summary



Method	ICPMSSD	ICPMSSD	ICPMSSD	ICPMSSD	ICPMSSD	TMMS1	ICPMSSD	ICPMSSD	ICPMSSD	ICPMSSD	ICPSED	ICPSED	ICPSED	ICPSED	ICPSED	ICPSED	TOMLOI	WSLM59
Detection Limit	1	0.1	0.5	2	2	0.01	0.5	0.5	2	3	10	1	1.5	1	1	1		0.02
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	% M/M
Description	As	Cd	Cr	Cu	Pb	Hg	Ni	Sn	V	Zn	Al	Ba	Cr	Ni	V	Zn	Total Organic Matter % (LOI)	Total Organic Carbon
S01	9.8	0.1	11.1	15.1	12.4	<0.01	6.1	3.8	28.2	24.4	23200	302	11.5	4.4	15.3	19.2	1.5	0.19
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S07	11.4	0.1	24.2	7.2	11.8	<0.01	13.7	1.3	43.4	34.4	31400	390	24.5	13.0	32.3	27.0	1.9	0.21
S09	15.6	0.1	10.5	13.0	8.9	<0.01	8.3	0.7	38.4	17.1	16800	225	10.0	8.9	25.1	15.5	2.1	0.17
S11	8.2	0.1	15.3	15.1	10.8	<0.01	10.0	1.2	36.4	24.0	23500	297	15.5	9.8	25.7	21.5	1.3	0.23
S13	5.4	0.1	14.5	12.2	9.9	<0.01	6.6	0.9	29.2	21.5	20600	316	15.7	8.1	16.6	18.1	0.8	0.17
S14																	1.0	0.23
S15																	0.8	0.15
S16	6.8	0.1	17.3	9.9	11.1	<0.01	7.0	1.1	30.1	25.6	21800	310	17.8	7.1	18.6	20.7	1.0	0.32
S18																	1.0	0.22
S20																	1.2	0.17
S21																	0.6	0.17
S22																	1.0	0.12
S23																	1.0	0.12
S24																	1.2	0.14
S26																	1.7	0.25
S27																	1.2	0.12
S28																	0.7	0.11
S29																	1.0	0.22
S31																	0.9	0.11
S32																	0.6	0.15
S34																	0.8	0.11

MMT Project Number	101462	Site Test Date	25/09/2013	Core Location Grab Samples - Statoil Hywind	Comments
Vessel	Franklin	Co-ordinates	E N		
Client	Statoil	Water Depth (m LAT)			

ESG Environmental Sciences Group		Chemical Testing Summary								MMT	
Polyaromatic Hydrocarbon Concentrations (ng/g dry weight basis)											
			Sample ID :	CL1322793	CL1322794	CL1322795	CL1322796	CL1322797	CL1322798	CL1322799	
			Station :	S01	S03	S16	S13	S11	S07	S09	
PAH Fraction	# PAH	Mass									
Naphthalene	1	128	<1	<1	<1	<1	<1	<1	<1	<1	
C1 Naphthalenes		142	<1	<1	<1	<1	<1	<1	<1	<1	
C2 Naphthalenes		156	<1	<1	<1	1.0	<1	<1	<1	<1	
C3 Naphthalenes		170	<1	<1	<1	<1	<1	<1	<1	<1	
C4 Naphthalenes		184	<1	<1	<1	<1	<1	<1	<1	<1	
Sum Naphthalenes			0	0	0	1	0	0	0	0	
Phenanthrene / Anthracene	2	178	<1	5.3	<1	1.0	1.2	1.3	<1	<1	
C1 178		192	<1	4	<1	1	1	1	<1	<1	
C2 178		206	<1	2	<1	1	<1	<1	<1	<1	
C3 178		220	<1	1	<1	<1	<1	<1	<1	<1	
Sum 178			0	13	0	3	2	2	0	0	
Dibenzthiophene		184	<1	<1	<1	<1	<1	<1	<1	<1	
C1 Dibenzthiophenes		198	<1	<1	<1	<1	<1	<1	<1	<1	
C2 Dibenzthiophenes		212	<1	<1	<1	<1	<1	<1	<1	<1	
C3 Dibenzthiophenes		226	<1	<1	<1	<1	<1	<1	<1	<1	
Sum Dibenzthiophenes			0	0	0	0	0	0	0	0	
Fluoranthene / pyrene	2	202	4	19	<1	5	1	4	<1	<1	
C1 202		216	1	6	<1	2	<1	1	<1	<1	
C2 202		230	1	3	<1	2	<1	<1	<1	<1	
C3 202		244	<1	1	<1	1	<1	<1	<1	<1	
Sum 202			6	30	0	10	1	5	0	0	
Benzantracene / chrysene	2	228	3	13	<1	3	1	1	<1	<1	
C1 228		242	2	4	<1	3	1	<1	<1	<1	
C2 228		256	2	2	<1	2	<1	<1	<1	<1	
Sum 228			6	19	0	7	2	1	0	0	
Benzfluoranthenes / benzopyrenes	3	252	11	23	5	20	5	5	<1	<1	
C1 252		266	4	8	3	7	3	2	<1	<1	
C2 252		280	3	3	2	4	1	1	<1	<1	
Sum 252			17	34	10	31	9	9	0	0	
Aranthranthrenes / indenopyrene / benzperylene	3	276	6	9	6	17	4	3	<1	<1	
C1 276		290	2	3	2	3	1	1	<1	<1	
C2 276		304	<1	<1	1	3	1	<1	<1	<1	
Sum 276			8	12	9	23	6	5	0	0	
Sum of all fractions			37	108	19	76	21	22	0	0	
Sum of NPD fraction			0	13	0	5	2	2	0	0	
NPD / 4-6 ring PAH ratio			0.00	0.13	0.00	0.06	0.12	0.13	0.00	0.00	

MMT Project Number	101462	Site Test Date	25/09/2013	Core Location	Grab Samples - Statoil Hywind	Comments
Vessel	Franklin	Co-ordinates	E N			
Client	Statoil	Water Depth (m LAT)				



Chemical Testing Summary



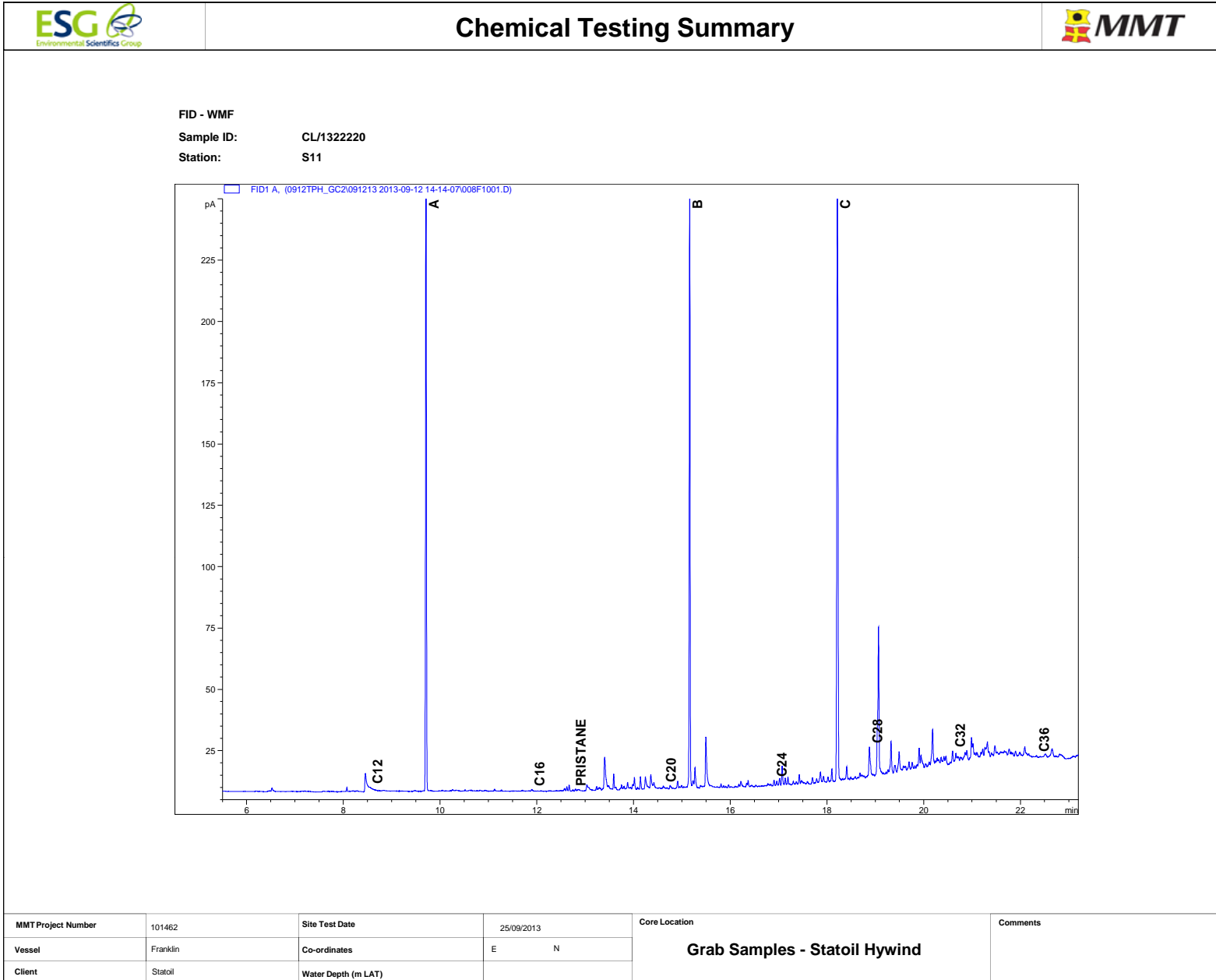
Polyaromatic Hydrocarbon Concentrations (ng/g dry weight basis)

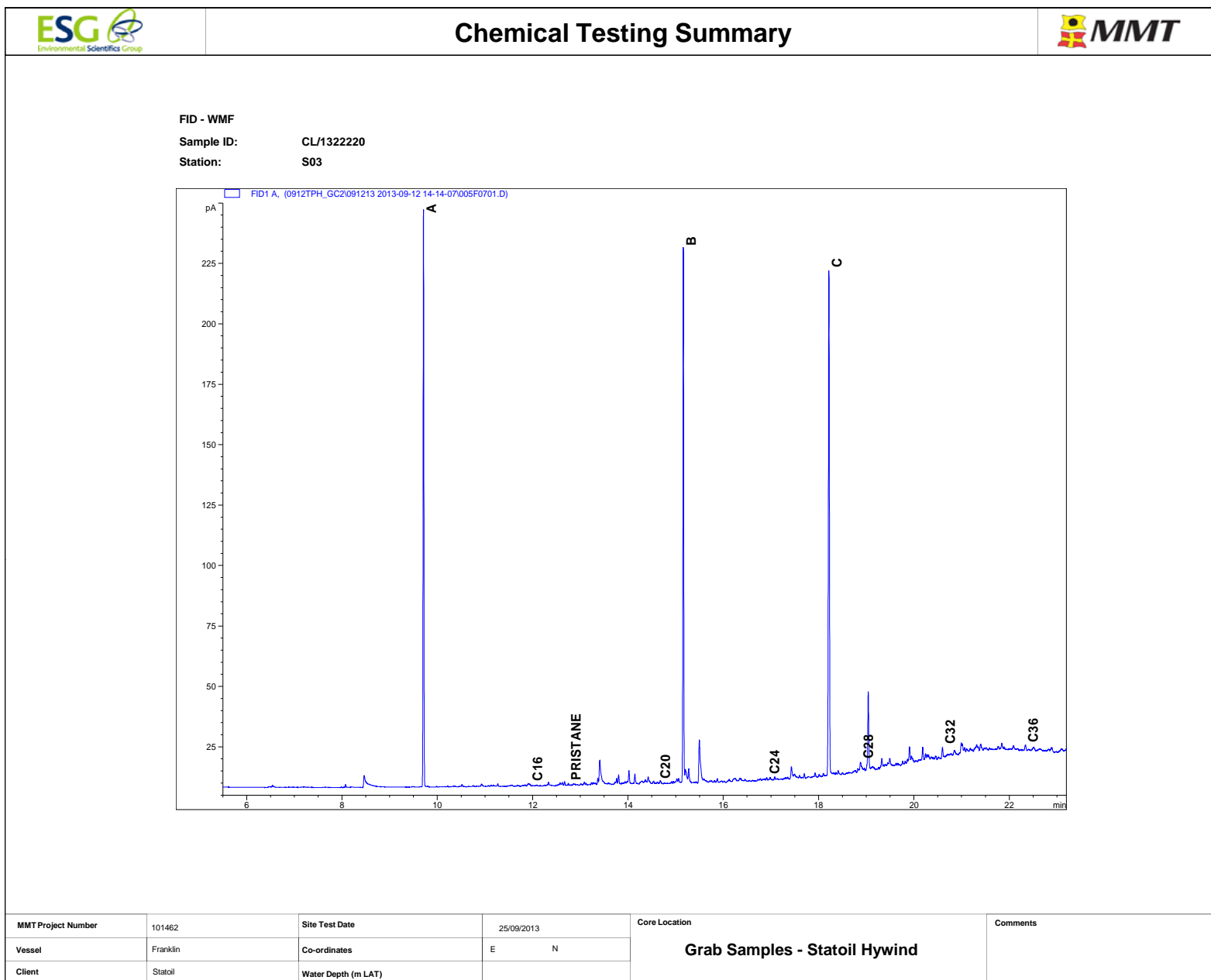
EPA 16 PAHs

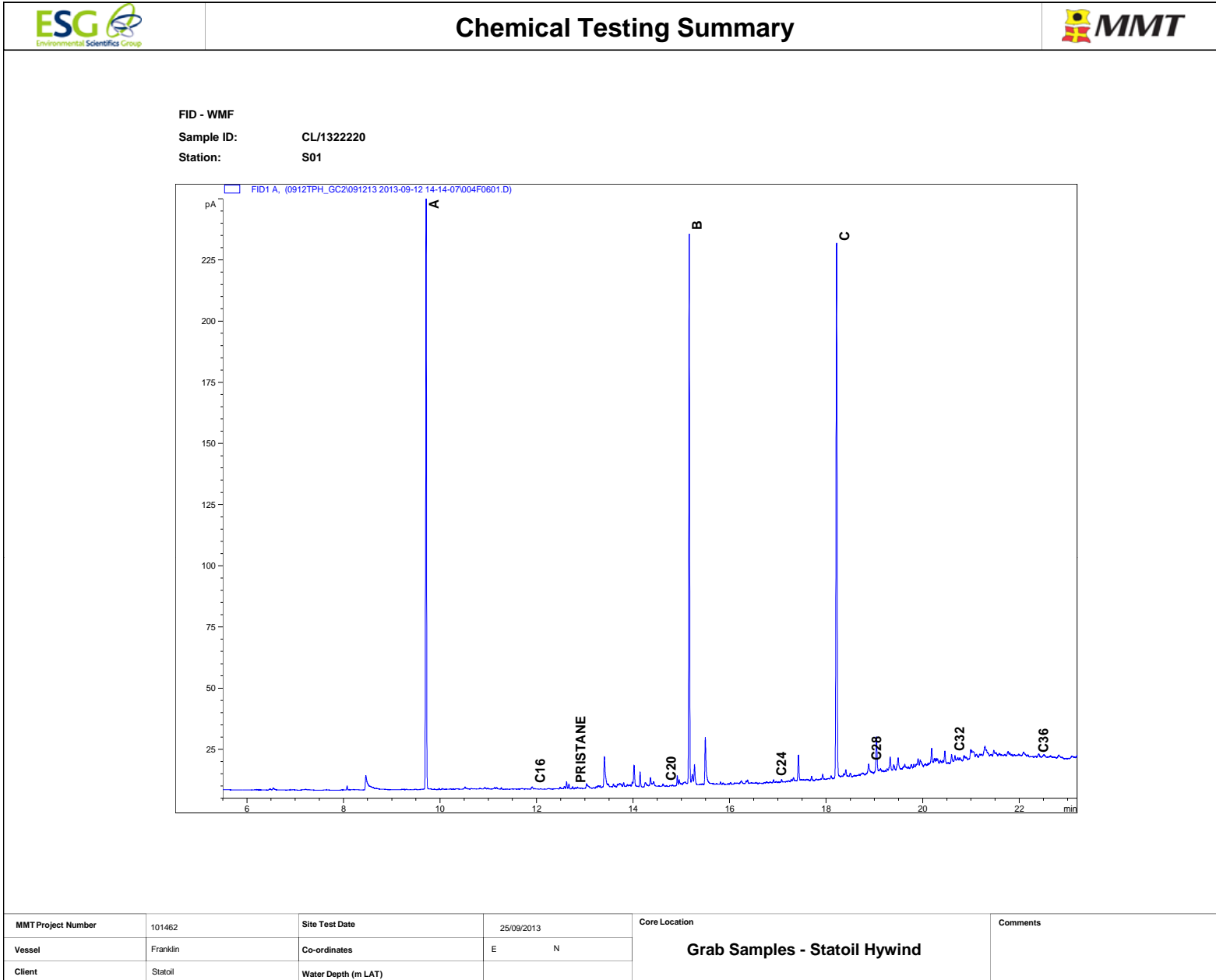
Sample ID :		CL1322793	CL1322794	CL1322795	CL1322796	CL1322797	CL1322798	CL1322799
Station :		S01	S03	S16	S13	S11	S07	S09
PAH	Mass							
Naphthalene	128	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	152	<1	<1	<1	<1	<1	<1	<1
Acenaphthene	154	<1	<1	<1	<1	<1	<1	<1
Fluorene	166	<1	<1	<1	<1	<1	<1	<1
Phenanthrene	178	<1	3.3	<1	1.0	1.2	1.3	<1
Dibenzothiophene	184	<1	<1	<1	<1	<1	<1	<1
Anthracene	178	<1	2.0	<1	<1	<1	<1	<1
Fluoranthene	202	1.9	10.5	<1	2.9	1.0	2.2	<1
Pyrene	202	1.8	8.8	<1	2.5	<1	1.9	<1
Benzo[a]anthracene	228	1.4	6.5	<1	1.6	<1	<1	<1
Chrysene	228	1.6	6.1	<1	1.2	1.2	1.2	<1
Benzo[b]fluoranthene	252	3.6	8.6	2.7	8.9	2.4	2.1	<1
Benzo[k]fluoranthene	252	1.6	3.4	1.1	3.2	1.0	<1	<1
Benzo[a]pyrene	252	3.3	7.3	<1	3.4	<1	1.4	<1
Indeno[1,2,3-cd]pyrene	276	2.7	3.9	2.6	7.6	2.1	1.6	<1
Dibenzo[a,h]anthracene	278	<1	1.1	<1	1.2	<1	<1	<1
Benzo[ghi]perylene	276	3.0	4.4	2.9	8.0	1.9	1.6	<1

MMT Project Number	101462	Site Test Date	25/09/2013	Core Location	Grab Samples - Statoil Hywind	Comments
Vessel	Franklin	Co-ordinates	E N			
Client	Statoil	Water Depth (m LAT)				

ESG Environmental Scientifics Group		Chemical Testing Summary						MMT	
n-alkanes (ng/g)									
Sample ID :	CL1322220	CL1322221	CL1322222	CL1322223	CL1322224	CL1322225	CL1322226		
Station :	S11	S03	S01	S16	S13	S07	S09		
Alkane									
nC10	<1	<1	<1	<1	3.6	<1	<1		
nC11	<1	<1	<1	<1	<1	<1	<1		
nC12	<1	<1	<1	<1	<1	<1	<1		
nC13	<1	<1	<1	<1	<1	<1	<1		
nC14	<1	<1	<1	<1	1.1	<1	<1		
nC15	1.1	<1	<1	1.0	<1	<1	<1		
nC16	1.2	2.3	<1	1.2	1.3	1.2	1.9		
nC17	4.3	2.0	4.7	2.9	3.0	4.0	1.3		
pristane	4.0	2.6	3.3	5.1	4.2	4.4	1.5		
nC18	<1	1.5	1.1	1.1	2.4	1.2	<1		
phytane	<1	4.3	<1	<1	<1	<1	<1		
nC19	2.9	<1	2.6	4.5	3.1	1.1	6.4		
nC20	<1	1.3	2.3	1.8	2.2	1.8	2.0		
nC21	5.0	8.3	7.5	8.6	8.6	6.8	4.8		
nC22	1.6	<1	1.2	1.9	2.5	2.0	1.5		
nC23	3.5	1.5	2.0	4.5	5.8	3.3	1.6		
nC24	3.6	1.2	1.6	7.1	8.1	1.8	1.1		
nC25	5.4	9.2	17.6	22.5	13.7	6.3	2.0		
nC26	3.5	3.3	3.0	4.1	5.0	2.3	1.5		
nC27	8.0	2.6	2.9	12.4	13.6	6.6	2.2		
nC28	10.9	5.1	4.1	9.0	15.4	15.9	5.4		
nC29	23.6	4.2	7.6	26.6	32.2	41.9	6.1		
nC30	3.9	2.2	2.7	3.5	8.2	4.7	2.0		
nC31	23.8	8.9	9.0	30.4	51.0	19.4	6.0		
nC32	9.0	9.0	6.6	7.6	13.4	7.3	2.8		
nC33	8.8	5.5	4.6	14.5	28.0	12.6	4.0		
nC34	<1	6.9	1.4	<1	2.5	2.1	<1		
nC35	3.5	3.6	<1	2.0	2.9	1.0	<1		
nC36	1.8	3.9	1.0	1.4	1.2	<1	<1		
nC37	<1	3.6	1.4	<1	1.5	1.4	<1		
Total Oil (ug/kg)	1,148.5	1,130.3	1,102.0	1,543.0	1,575.8	1,395.6	538.3		
Total n alkanes (ng/g)	126	86	85	169	230	145	52		
Carbon Preference Index	2.53	1.34	2.39	3.35	2.44	2.59	1.87		
Pristane	4	3	3	5	4	4	2		
Phytane	<1	4	<1	<1	<1	<1	<1		
Pristane / phytane ratio		0.6							
MMT Project Number	101462	Site Test Date	25/09/2013		Core Location			Comments	
Vessel	Franklin	Co-ordinates	E	N	Grab Samples - Statoil Hywind				
Client	Statoil	Water Depth (m LAT)							





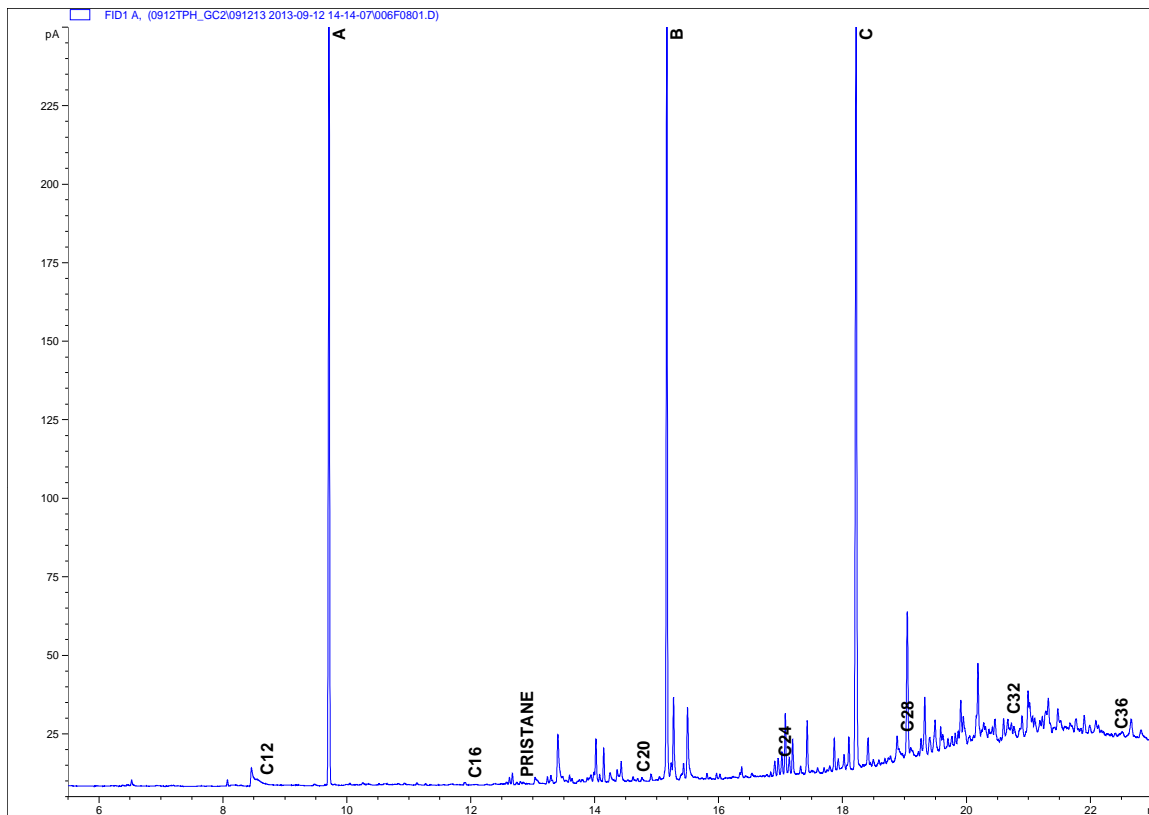




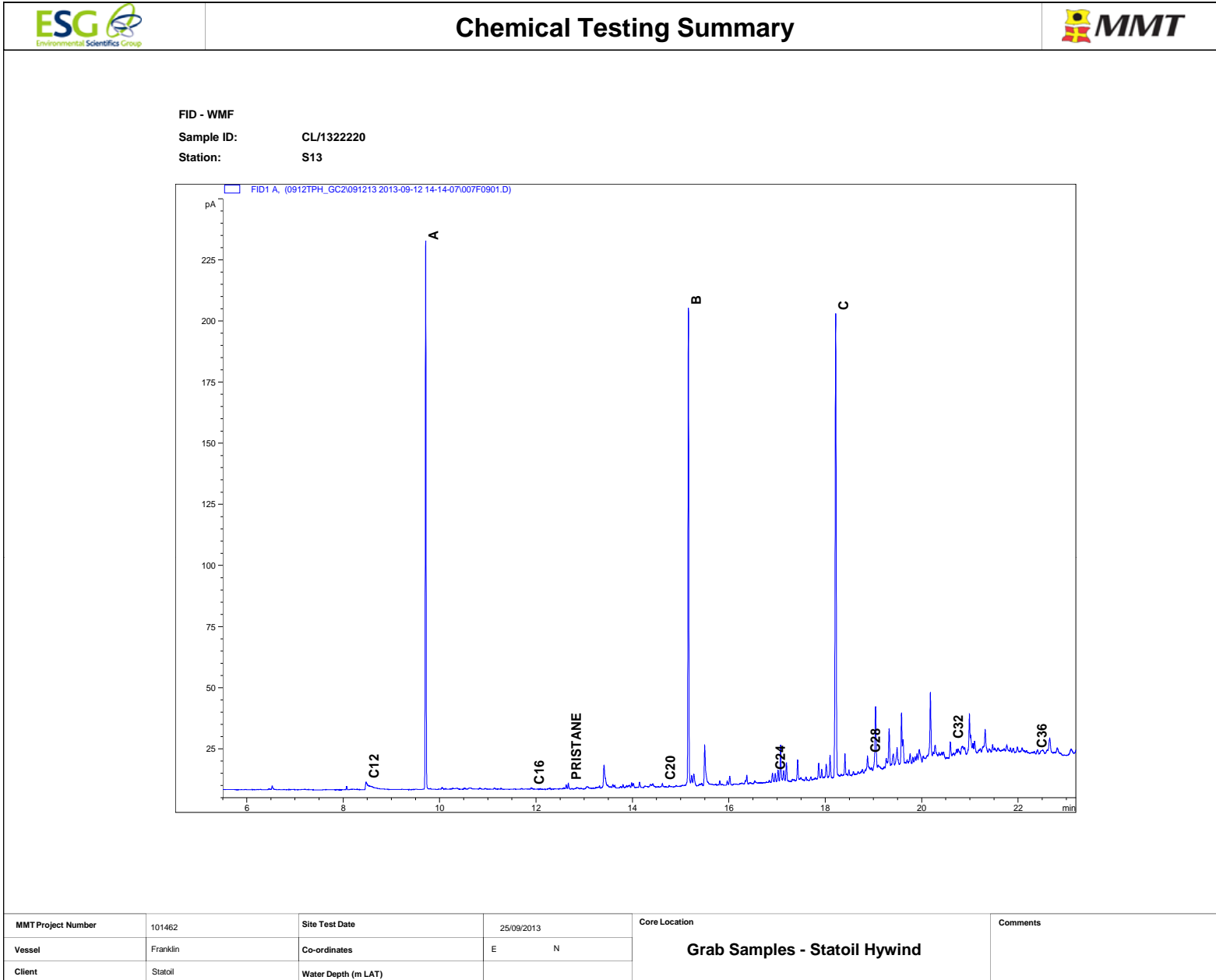
Chemical Testing Summary



FID - WMF
 Sample ID: CL/1322220
 Station: S16



MMT Project Number	101462	Site Test Date	25/09/2013	Core Location	Grab Samples - Statoil Hywind	Comments
Vessel	Franklin	Co-ordinates	E N			
Client	Statoil	Water Depth (m LAT)				

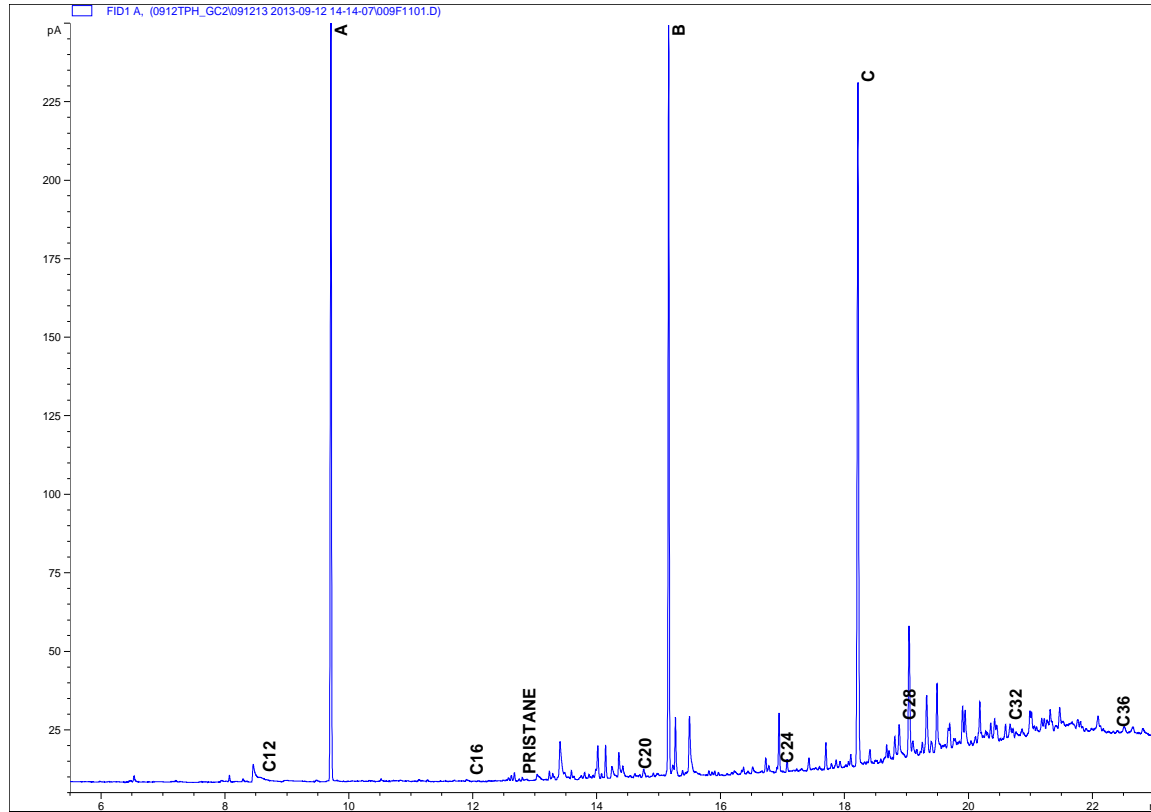




Chemical Testing Summary



FID - WMF
 Sample ID: CL/1322220
 Station: S07



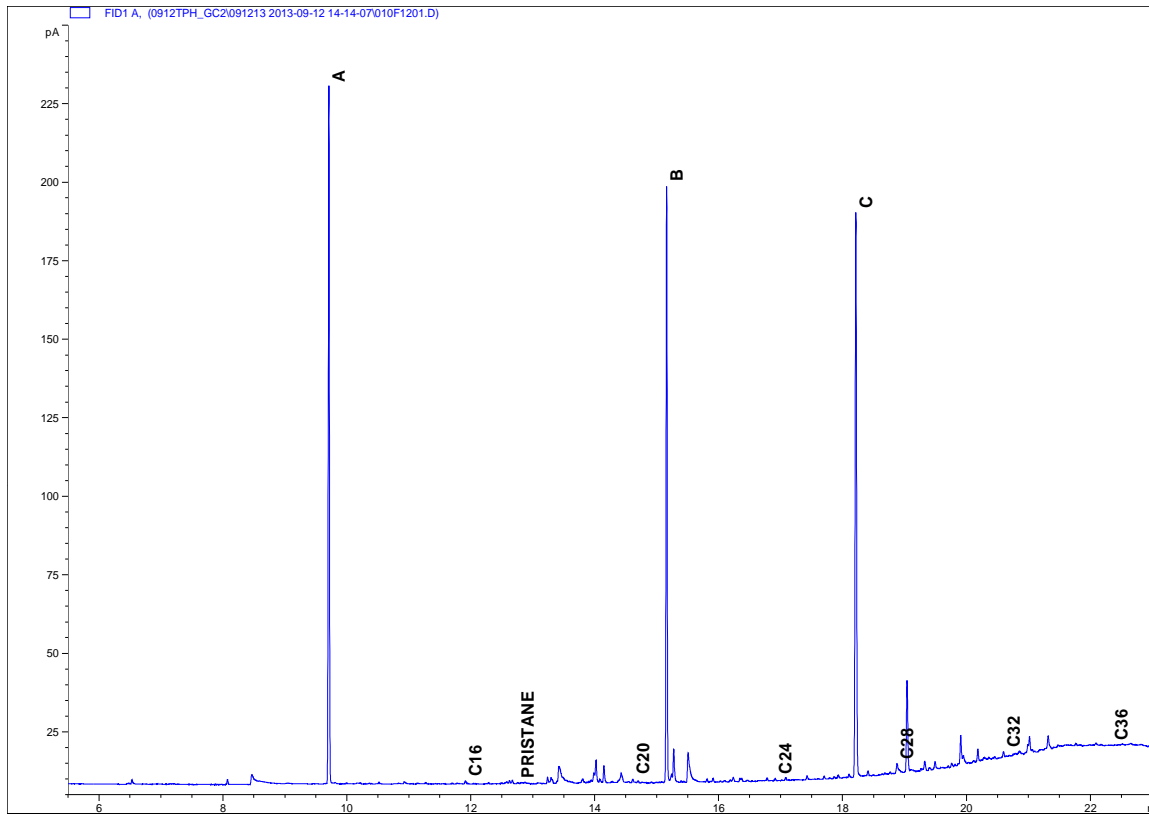
MMT Project Number	101462	Site Test Date	25/09/2013	Core Location	Grab Samples - Statoil Hywind	Comments
Vessel	Franklin	Co-ordinates	E N			
Client	Statoil	Water Depth (m LAT)				



Chemical Testing Summary



FID - WMF
 Sample ID: CL/1322220
 Station: S09



MMT Project Number	101462	Site Test Date	25/09/2013	Core Location	Grab Samples - Statoil Hywind	Comments
Vessel	Franklin	Co-ordinates	E N			
Client	Statoil	Water Depth (m LAT)				