ENTRIX, Inc.
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Seattle, WA 98119
(206) 269-0104 | Fax (206) 269-0098
www.entrix.com

Date: May 3, 2010

To: Ralph Markarian, John Dimitry

cc:

From: Rob Barrick

Re: **Hydrocarbon Results for MC252 Riser Oil**

Attached are final results received through today for the following analyses of the MC252 Riser Fluid:

1. Whole oil (C_3 to C_{44}) fingerprinting analysis (***MC252 Riser Fluid 11_of_13_ZymaX 41824.pdf***), completed by ZymaX Laboratory in Escondido, CA
2. Triplicate, quantitative PAH analysis (***MC252 Riser Fluid PAH 10_of_13_B&B_1May10.xls***), completed by B&B Laboratories in College Station, TX

The lowest molecular weight hydrocarbon detected in the whole oil analysis was isobutane, a C_4 compound also known as 2-methylpropane. It is labeled "2" on page 1 of 3 of the attached chromatogram. A wide variety of paraffinic, isoparaffinic, aromatic, and naphthenic hydrocarbons were identified in the Riser Fluid over the C_4.to C_{36} range. Olefins were undetected.

Unlike the weathered oil, benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds were all detected in the Riser Fluid, as was naphthalene. Naphthalene was the most volatile PAH compound quantified in the PAH analysis conducted by B&B, and was present at 634 ng/mg oil.

Concentrations of BTEX compounds in the ZymaX whole oil sample were estimated as follows based on a comparison of naphthalene measured in both the semi-quantitative ZymaX and the quantitative B&B analyses:[1]

Benzene	~ 1,000 ng/mg oil
Toluene	**<** 3,000 ng/mg oil (toluene and 2,3,3-trimethylpentane, and so the estimated concentration is the sum for the two compounds)
Ethylbenzene	~ 900 ng/mg oil
***m,p*-xylenes**	~ 4,000 ng/mg oil
***o*-xylene**	~ 1,000 ng/mg oil

[1] For each BTEX compound, the estimated concentration = (ratio of B&B naphthalene concentration divided by ZymaX naphthalene area count) times the compound area count. Estimates are rounded to one significant figure.

ENTRIX

WILL CONTACT FOR ANALYSES

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CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

Page _____ of _____

Site: MC 252 Entrix Contact: M. Louise Lammons

Client: BP Project No. _____

Sampler(s) Signature: _____ Airbill No _____

41824

Sample ID	Date	Time	Comp	Grab	No. of Cont.	Sample Media	ANALYTICAL REQUEST	Comments
MC-252 RiserFluid	4/27/10	0449			11 of 13	oil		collected by L.J. Girard (ROV pilot) 402
Total Number of Containers					11			

Relinquished By	Date	Time	Received By	Date	Time
M. Louise Lammons Louise Lammons	4/30/10	0908	[signature]	5/3/10	0940

FORM # ENT-131

ZymaX FORENSICS

5/3/2010

ZymaX ID	41824-1
Sample ID	MC-252 Riser Fluid

Evaporation

n-Pentane / n-Heptane	0.60
2-Methylpentane / 2-Methylheptane	1.07

Waterwashing

Benzene / Cyclohexane	0.34
Toluene / Methylcyclohexane	0.43
Aromatics / Total Paraffins (n+iso+cyc)	0.31
Aromatics / Naphthenes	1.22

Biodegradation

(C4 - C8 Para + Isopara) / C4 - C8 Olefins	0.00
3-Methylhexane / n-Heptane	0.39
Methylcyclohexane / n-Heptane	1.17
Isoparaffins + Naphthenes / Paraffins	1.54

Octane rating

2,2,4,-Trimethylpentane / Methylcyclohexane	0.00

Relative percentages - Bulk hydrocarbon composition as PIANO

% Paraffinic	30.20
% Isoparaffinic	27.26
% Aromatic	23.40
% Naphthenic	19.14
% Olefinic	0.00

Submitted by,
Zymax Forensics, a DPRA Company

Shan-Tan Lu, Ph.D.
Director of Forensic Geochemistry

ZymaX FORENSICS

5/3/2010

ZymaX ID		41824-1
Sample ID		MC-252 Riser Fluid
1	Propane	0.00
2	Isobutane	0.35
3	Isobutene	0.00
4	Butane/Methanol	1.44
5	trans-2-Butene	0.00
6	cis-2-Butene	0.00
7	3-Methyl-1-butene	0.00
8	Isopentane	2.19
9	1-Pentene	0.00
10	2-Methyl-1-butene	0.00
11	Pentane	3.57
12	trans-2-Pentene	0.00
13	cis-2-Pentene/t-Butanol	0.00
14	2-Methyl-2-butene	0.00
15	2,2-Dimethylbutane	0.10
16	Cyclopentane	0.00
17	2,3-Dimethylbutane/MTBE	0.93
18	2-Methylpentane	2.77
19	3-Methylpentane	1.76
20	Hexane	5.19
21	trans-2-Hexene	0.00
22	3-Methylcyclopentene	0.00
23	3-Methyl-2-pentene	0.00
24	cis-2-Hexene	0.00
25	3-Methyl-trans-2-pentene	0.00
26	Methylcyclopentane	2.91
27	2,4-Dimethylpentane	0.35
28	Benzene	1.05
29	5-Methyl-1-hexene	0.00
30	Cyclohexane	3.10
31	2-Methylhexane/TAME	2.13
32	2,3-Dimethylpentane	0.71
33	3-Methylhexane	2.30
34A	1-trans-3-Dimethylcyclopentane	0.73
34B	1-cis-3-Dimethylcyclopentane	1.24
35	2,2,4-Trimethylpentane	0.00
I.S. #1	à,à,à-Trifluorotoluene	0.00

ZymaX FORENSICS

5/3/2010

ZymaX ID	41824-1
Sample ID	MC-252 Riser Fluid

36	n-Heptane	5.91
37	Methylcyclohexane	6.94
38	2,5-Dimethylhexane	0.32
39	2,4-Dimethylhexane	0.46
40	2,3,4-Trimethylpentane	0.07
41	Toluene/2,3,3-Trimethylpentane	2.96
42	2,3-Dimethylhexane	0.56
43	2-Methylheptane	2.58
44	4-Methylheptane	0.74
45	3,4-Dimethylhexane	0.17
46A	3-Ethyl-3-methylpentane	2.21
46B	1,4-Dimethylcyclohexane	1.63
47	3-Methylheptane	0.00
48	2,2,5-Trimethylhexane	0.32
49	n-Octane	5.08
50	2,2-Dimethylheptane	0.00
51	2,4-Dimethylheptane	0.36
52	Ethylcyclohexane	2.60
53	2,6-Dimethylheptane	0.72
54	Ethylbenzene	0.79
55	m+p Xylenes	3.70
56	4-Methyloctane	0.85
57	2-Methyloctane	1.04
58	3-Ethylheptane	0.23
59	3-Methyloctane	1.22
60	o-Xylene	1.07
61	1-Nonene	0.00
62	n-Nonane	4.55
I.S.#2	p-Bromofluorobenzene	0.00
63	Isopropylbenzene	0.17
64	3,3,5-Trimethylheptane	0.37
65	2,4,5-Trimethylheptane	0.76
66	n-Propylbenzene	0.69
67	1-Methyl-3-ethylbenzene	0.68
68	1-Methyl-4-ethylbenzene	0.39
69	1,3,5-Trimethylbenzene	1.41
70	3,3,4-Trimethylheptane	0.61

ZymaX FORENSICS

5/3/2010

ZymaX ID		41824-1
Sample ID		MC-252 Riser Fluid

71	1-Methyl-2-ethylbenzene	0.00
72	3-Methylnonane	0.08
73	1,2,4-Trimethylbenzene	1.41
74	Isobutylbenzene	0.14
75	sec-Butylbenzene	0.31
76	n-Decane	4.47
77	1,2,3-Trimethylbenzene	0.60
78	Indan	0.00
79	1,3-Diethylbenzene	0.69
80	1,4-Diethylbenzene	0.29
81	n-Butylbenzene	0.33
82	1,3-Dimethyl-5-ethylbenzene	0.52
83	1,4-Dimethyl-2-ethylbenzene	0.98
84	1,3-Dimethyl-4-ethylbenzene	0.40
85	1,2-Dimethyl-4-ethylbenzene	0.33
86	Undecene	0.00
87	1,2,4,5-Tetramethylbenzene	0.32
88	1,2,3,5-Tetramethylbenzene	0.39
89	1,2,3,4-Tetramethylbenzene	0.51
90	Naphthalene	0.58
91	2-Methyl-naphthalene	1.47
92	1-Methyl-naphthalene	1.21

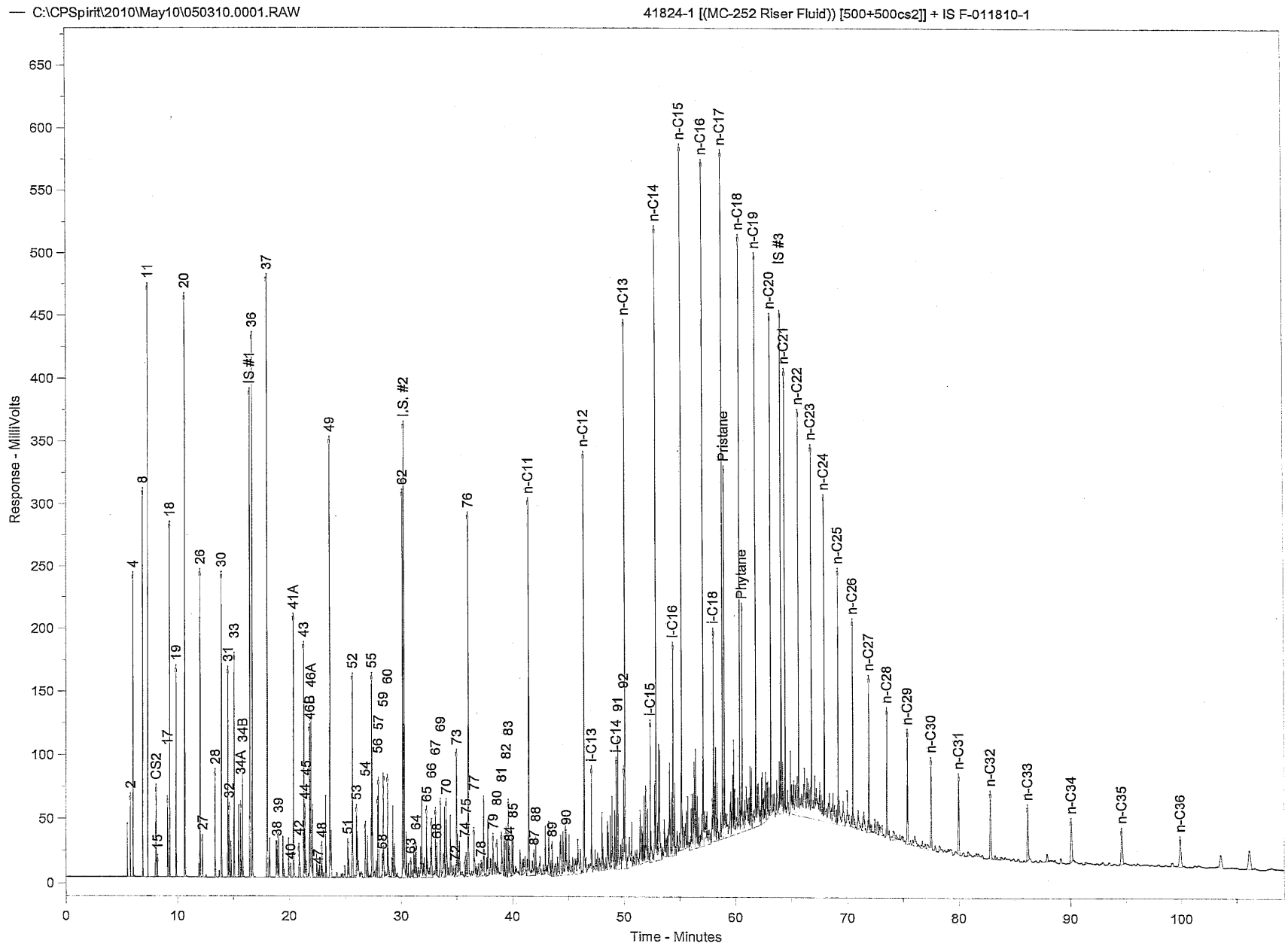
C_3-C_{44} Whole Oil Analysis

1) Whole Chromatogram

2) Expanded Chromatogram (in 3 pages)

3) Quantitation Report with peak areas

Reviewed by: STL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Response - MilliVolts
Time - Minutes
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n-C16
n-C17
n-C14
n-C18
n-C19
IS #3
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C13
n-C12
n-C11
Pristane
Phytane
i-C18
i-C16
i-C15
i-C14
i-C13
I.S. #2
IS #1
CS2

ZymaX FORENSICS

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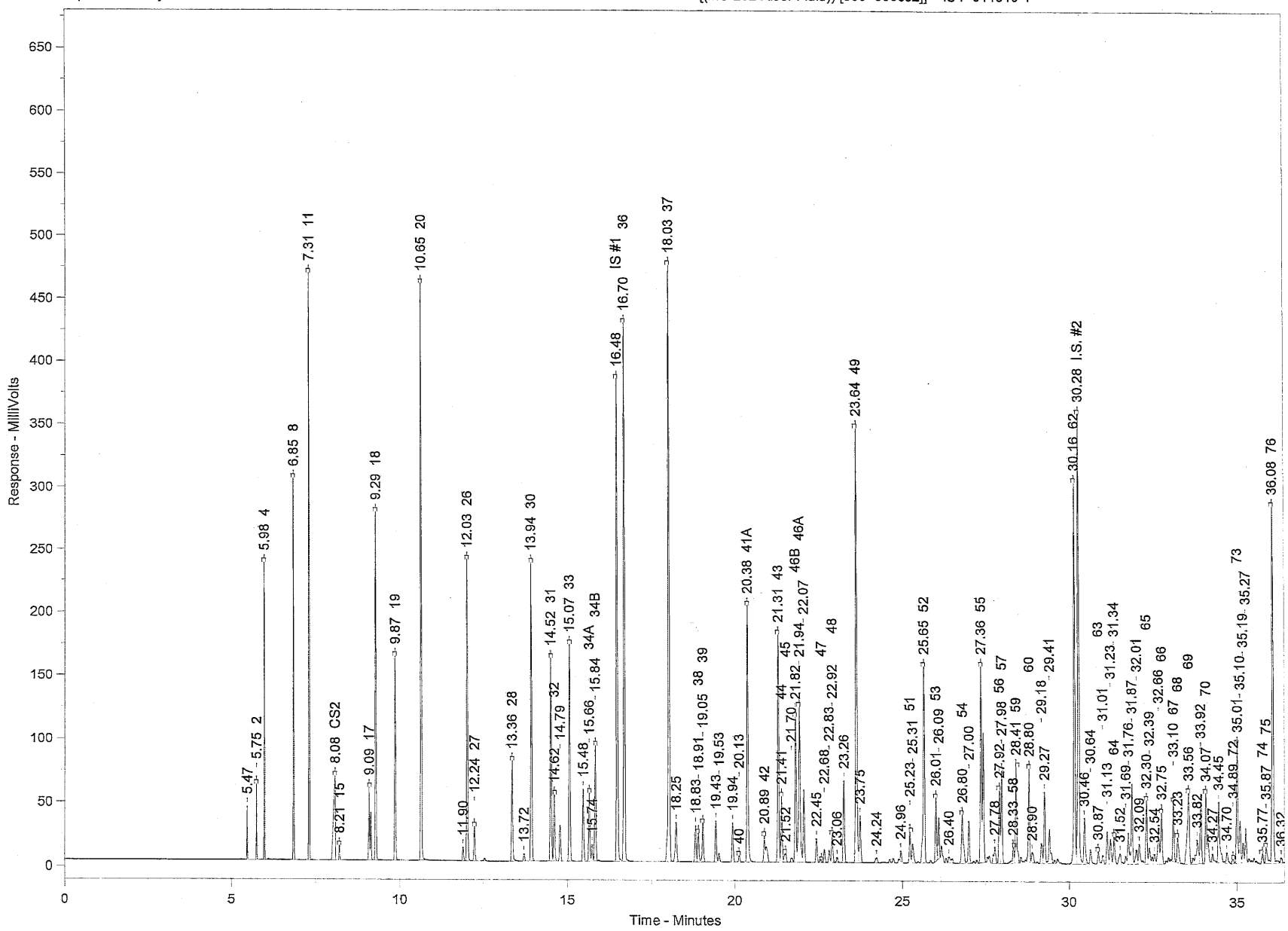
41824-1 [(MC-252 Riser Fluid)) [500+500cs2]] + IS F-011810-1



ZymaX FORENSICS

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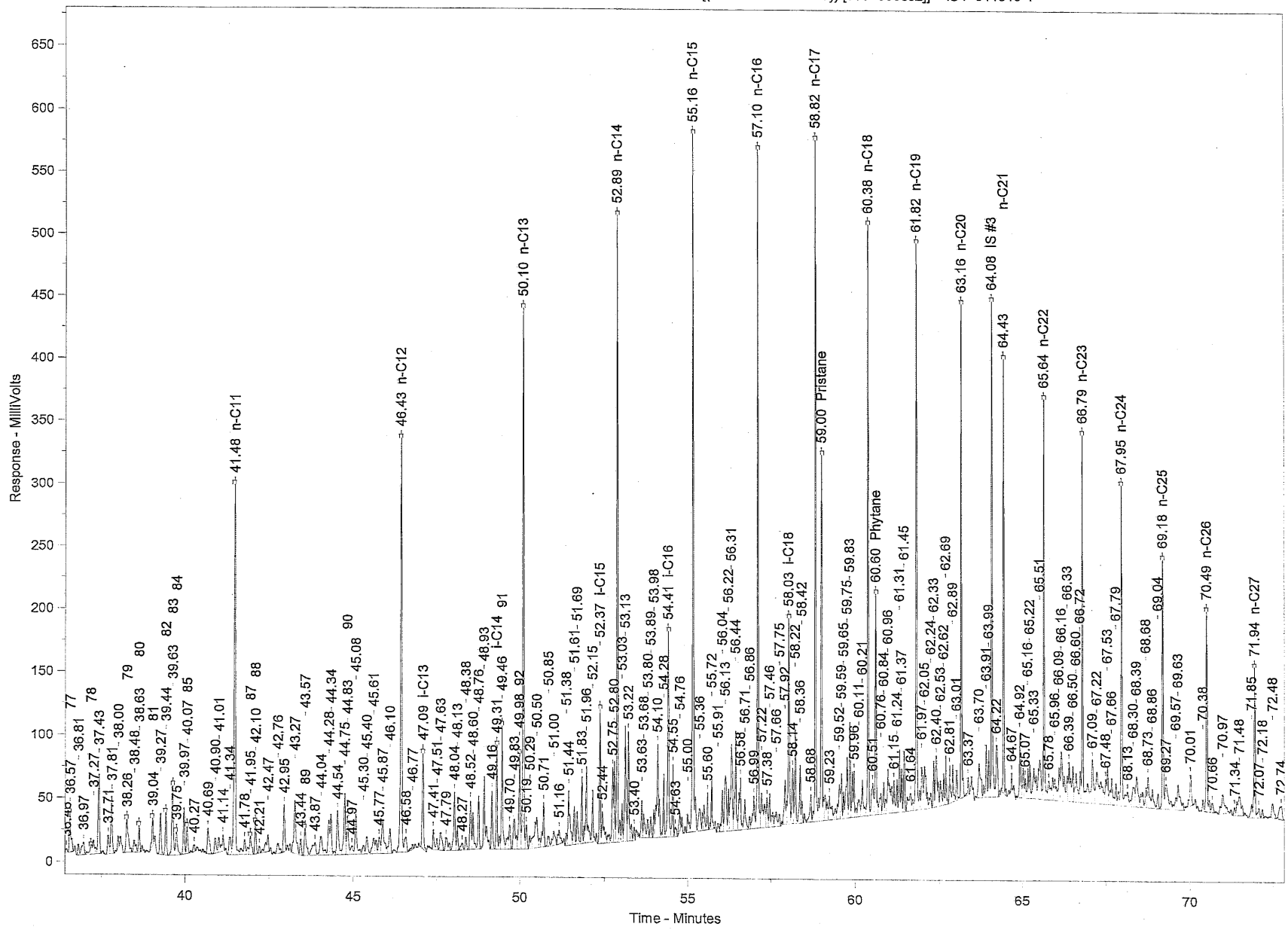
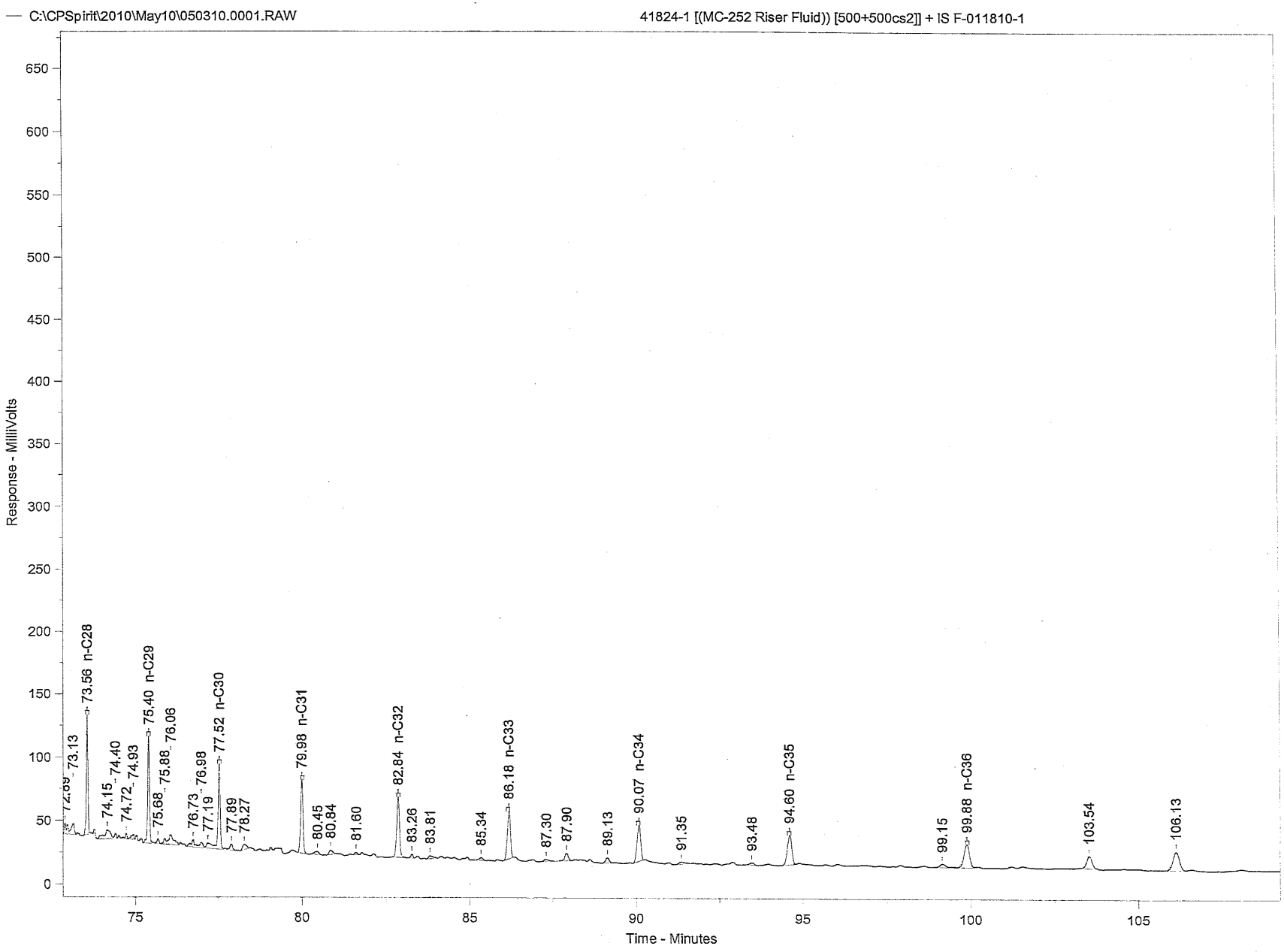
41824-1 [(MC-252 Riser Fluid)) [500+500cs2]] + IS F-011810-1

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41824-1 [(MC-252 Riser Fluid)) [500+500cs2]] + IS F-011810-1
Response - MilliVolts
Time - Minutes
73.13
73.56 n-C28
74.15
74.40
74.72
74.93
75.40 n-C29
75.68
75.88
76.06
76.73
76.98
77.19
77.52 n-C30
77.89
78.27
79.98 n-C31
80.45
80.84
81.60
82.84 n-C32
83.26
83.81
85.34
86.18 n-C33
87.30
87.90
89.13
90.07 n-C34
91.35
93.48
94.60 n-C35
99.15
99.88 n-C36
103.54
106.13

Sample Name = **41824-1 [(MC-252 Riser Fluid)) [500+500cs2]] + IS F-011810-1**

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Heading 2 =

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Peak Name	Ret. Time	Area %	Area
	5.47	0.0721	42974.10
2	5.75	0.1050	62587.52
4	5.98	0.4341	258748.10
8	6.85	0.6622	394672.70
11	7.31	1.0759	641231.90
CS2	8.08	0.4211	250985.60
15	8.21	0.0294	17530.33
17	9.09	0.2805	167199.50
18	9.29	0.8357	498087.40
19	9.87	0.5299	315839.00
20	10.65	1.5650	932752.90
	11.90	0.0404	24083.65
26	12.03	0.8771	522763.40
27	12.24	0.1053	62750.78
28	13.36	0.3177	189327.00
	13.72	0.0235	13990.41
30	13.94	0.9343	556882.60
31	14.52	0.6425	382947.00
32	14.62	0.2137	127362.90
	14.79	0.1171	69772.29
33	15.07	0.6934	413255.70
	15.48	0.2299	137052.50
34A	15.66	0.2199	131082.20
	15.74	0.0518	30853.27
34B	15.84	0.3746	223273.30
IS #1	16.48	1.5840	944053.80
36	16.70	1.7820	1062087.00
37	18.03	2.0934	1247703.00
	18.25	0.1587	94574.24
	18.83	0.1221	72747.44
38	18.91	0.0974	58075.26
39	19.05	0.1398	83347.86
	19.43	0.1396	83174.57
	19.53	0.0288	17180.12
	19.94	0.1339	79780.78
40	20.13	0.0221	13184.64
41A	20.38	0.8942	532973.10
42	20.89	0.1702	101428.10
43	21.31	0.7784	463918.10
44	21.41	0.2219	132256.70
45	21.52	0.0502	29940.91
	21.70	0.0218	12996.35
46B	21.82	0.4911	292731.20
46A	21.94	0.6671	397618.60
	22.07	0.2437	145234.90
	22.45	0.0832	49574.00
	22.68	0.0439	26192.48
	22.83	0.0411	24491.65
48	22.92	0.0973	57993.90
	23.06	0.0175	10426.39
	23.26	0.2843	169473.50
49	23.64	1.5338	914177.00
	23.75	0.1782	106228.90
	24.24	0.0256	15238.56
	24.96	0.0323	19241.90

Peak Name	Ret. Time	Area %	Area
51	25.23	0.1088	64821.07
	25.31	0.0832	49578.13
52	25.65	0.7837	467110.10
53	26.01	0.2177	129735.20
	26.09	0.1363	81234.09
	26.40	0.0446	26572.54
54	26.80	0.2389	142362.60
	27.00	0.1507	89826.98
55	27.36	1.1167	665578.80
	27.78	0.0870	51878.50
56	27.92	0.2578	153652.30
57	27.98	0.3136	186933.10
58	28.33	0.0682	40672.50
59	28.41	0.3696	220293.70
60	28.80	0.3234	192760.10
	28.90	0.0526	31369.05
	29.18	0.0859	51224.17
	29.27	0.2576	153516.20
	29.41	0.1506	89761.22
62	30.16	1.3739	818848.90
I.S. #2	30.28	1.6339	973807.30
	30.46	0.1901	113296.80
	30.64	0.0593	35348.11
63	30.87	0.0508	30297.56
	31.01	0.0339	20223.20
	31.13	0.1283	76496.52
	31.23	0.0989	58969.49
64	31.34	0.1118	66658.46
	31.52	0.0583	34734.37
	31.69	0.0285	16979.93
	31.76	0.1252	74632.52
	31.87	0.2948	175713.80
	32.01	0.0725	43193.43
	32.09	0.0828	49362.79
65	32.30	0.2289	136415.00
	32.39	0.0713	42491.60
	32.54	0.0389	23159.11
	32.66	0.1536	91531.32
66	32.75	0.2079	123932.40
67	33.10	0.2053	122342.30
68	33.23	0.1179	70257.13
69	33.56	0.4263	254072.00
	33.82	0.1749	104220.90
	33.92	0.2507	149410.70
70	34.07	0.1854	110473.30
	34.27	0.0353	21061.38
	34.45	0.2847	169673.10
	34.70	0.0507	30231.18
72	34.89	0.0230	13697.19
73	35.01	0.4256	253688.20
	35.10	0.1520	90568.94
	35.19	0.0731	43548.28
	35.27	0.1243	74063.51
74	35.77	0.0417	24841.08
75	35.87	0.0925	55140.86
76	36.08	1.3481	803485.90
	36.32	0.0219	13045.00
	36.46	0.0206	12266.80
77	36.57	0.1812	107981.90
	36.81	0.0390	23229.11
	36.97	0.0859	51195.95
	37.27	0.1091	65037.45
	37.43	0.3067	182779.30
	37.71	0.0809	48239.26
	37.81	0.2207	131564.40
	38.00	0.0379	22607.22
79	38.26	0.2085	124294.80

Peak Name	Ret. Time	Area %	Area
	38.48	0.0750	44691.29
80	38.63	0.0882	52542.55
81	39.04	0.1009	60165.98
	39.27	0.1546	92121.59
82	39.44	0.1583	94359.02
83	39.63	0.2946	175568.00
84	39.75	0.1205	71826.77
	39.97	0.1661	98976.03
85	40.07	0.0991	59090.69
	40.27	0.0282	16789.72
	40.69	0.1344	80086.56
	40.90	0.0700	41703.13
	41.01	0.0664	39569.54
	41.14	0.0744	44341.32
	41.34	0.0990	59011.68
n-C11	41.48	1.4416	859200.40
	41.78	0.0626	37285.39
87	41.95	0.0966	57553.73
88	42.10	0.1176	70105.71
	42.21	0.0248	14809.26
	42.47	0.1089	64889.91
	42.76	0.0715	42624.54
	42.95	0.1820	108455.10
	43.27	0.3060	182388.10
	43.44	0.0600	35742.43
89	43.57	0.1540	91773.38
	43.87	0.1295	77178.62
	44.04	0.1216	72477.48
	44.28	0.1502	89550.37
	44.34	0.1566	93340.68
	44.54	0.2151	128215.60
	44.75	0.2702	161029.90
90	44.83	0.1749	104235.70
	44.97	0.0508	30256.76
	45.08	0.1795	107001.10
	45.30	0.0479	28549.60
	45.40	0.0870	51844.64
	45.61	0.1001	59684.01
	45.77	0.0850	50683.67
	45.87	0.2361	140735.00
	46.10	0.1217	72545.96
n-C12	46.43	1.5127	901613.10
	46.58	0.0961	57305.53
	46.77	0.0245	14629.40
i-C13	47.09	0.3472	206962.00
	47.41	0.0716	42693.07
	47.51	0.0421	25069.09
	47.63	0.1099	65472.50
	47.79	0.0712	42406.43
	48.04	0.2377	141699.40
	48.13	0.0782	46625.50
	48.27	0.0432	25763.30
	48.38	0.0493	29361.92
	48.52	0.1862	110983.70
	48.60	0.1428	85100.91
	48.76	0.1755	104602.00
	48.93	0.1954	116434.60
	49.16	0.2035	121301.50
i-C14	49.31	0.3188	189987.80
91	49.46	0.4430	264036.60
	49.70	0.0944	56254.38
	49.83	0.2021	120458.90
92	49.98	0.3647	217363.20
n-C13	50.10	1.6019	954778.00
	50.19	0.0939	55958.26
	50.29	0.0419	24953.55
	50.50	0.2562	152711.10

Peak Name	Ret. Time	Area %	Area
	50.71	0.1843	109861.10
	50.85	0.0501	29883.19
	51.00	0.0938	55920.09
	51.16	0.0910	54229.93
	51.38	0.0417	24863.02
	51.44	0.2727	162509.70
	51.61	0.1443	86016.48
	51.69	0.1252	74610.32
	51.83	0.1928	114885.60
	51.96	0.3170	188915.20
	52.15	0.1662	99045.52
i-C15	52.37	0.3750	223498.70
	52.44	0.1813	108032.60
	52.75	0.2162	128861.30
	52.80	0.2389	142390.80
n-C14	52.89	1.6862	1004966.00
	53.03	0.1082	64489.43
	53.13	0.4235	252388.90
	53.22	0.3458	206091.60
	53.40	0.0430	25612.71
	53.63	0.1240	73933.54
	53.68	0.1010	60203.95
	53.80	0.0671	39988.37
	53.89	0.0742	44195.18
	53.98	0.0779	46425.64
	54.10	0.5251	312948.00
	54.28	0.1728	102999.60
i-C16	54.41	0.7244	431746.20
	54.55	0.2151	128205.90
	54.63	0.0455	27107.03
	54.76	0.0709	42274.14
	55.00	0.0918	54741.50
n-C15	55.16	2.0389	1215227.00
	55.36	0.1853	110414.70
	55.60	0.0976	58167.71
	55.72	0.1351	80519.13
	55.91	0.0380	22619.60
	56.04	0.1473	87767.24
	56.13	0.2921	174097.30
	56.22	0.1119	66705.08
	56.31	0.4514	269046.20
	56.44	0.3662	218288.10
	56.58	0.2697	160749.10
	56.71	0.1331	79327.63
	56.86	0.0401	23923.84
	56.99	0.1693	100933.00
n-C16	57.10	1.8218	1085821.00
	57.22	0.2624	156363.70
	57.38	0.1078	64243.72
	57.46	0.1255	74771.53
	57.66	0.0853	50835.60
	57.75	0.0439	26151.75
	57.92	0.2265	135022.20
i-C18	58.03	0.6562	391076.00
	58.14	0.2003	119393.30
	58.22	0.2943	175376.90
	58.36	0.1812	108003.00
	58.42	0.0675	40233.45
	58.68	0.1158	69004.23
n-C17	58.82	1.7917	1067890.00
Pristane	59.00	1.1887	708491.90
	59.23	0.1565	93282.68
	59.52	0.1839	109615.60
	59.59	0.1319	78584.42
	59.65	0.0645	38470.45
	59.75	0.2619	156106.50
	59.83	0.2527	150641.50

Peak Name	Ret. Time	Area %	Area
	59.96	0.2422	144349.30
	60.11	0.1038	61881.63
	60.21	0.1729	103057.10
n-C18	60.38	1.4437	860479.10
	60.51	0.1898	113093.50
Phytane	60.60	0.6707	399752.90
	60.76	0.1071	63836.06
	60.84	0.1031	61471.89
	60.96	0.3569	212718.50
	61.15	0.1075	64072.16
	61.24	0.0906	54017.00
	61.31	0.1790	106662.60
	61.37	0.1126	67108.88
	61.45	0.1992	118739.90
	61.64	0.1568	93439.48
n-C19	61.82	1.5267	909903.50
	61.97	0.1921	114474.80
	62.05	0.2573	153382.20
	62.24	0.0721	42947.65
	62.33	0.1277	76106.55
	62.40	0.2839	169228.40
	62.53	0.1005	59898.06
	62.62	0.0881	52533.61
	62.69	0.1391	82900.49
	62.81	0.1277	76098.48
	62.89	0.1174	69963.87
	63.01	0.1054	62838.76
n-C20	63.16	1.2108	721672.70
	63.37	0.0493	29372.09
	63.70	0.2282	136009.80
	63.91	0.1690	100736.70
	63.99	0.1508	89890.35
IS #3	64.08	1.3053	778002.90
	64.22	0.2377	141698.40
n-C21	64.43	1.0391	619334.30
	64.67	0.0433	25822.37
	64.92	0.2331	138916.10
	65.07	0.0586	34918.37
	65.16	0.0925	55136.74
	65.22	0.0964	57467.06
	65.33	0.2267	135111.50
	65.51	0.3002	178928.00
n-C22	65.64	1.0240	610324.30
	65.78	0.1314	78308.21
	65.96	0.1345	80184.42
	66.09	0.1167	69583.20
	66.16	0.3335	198750.30
	66.33	0.0911	54268.38
	66.39	0.1948	116073.40
	66.50	0.1243	74090.40
	66.60	0.1822	108611.10
	66.72	0.1051	62622.41
n-C23	66.79	0.9728	579794.10
	67.09	0.2620	156169.30
	67.22	0.2461	146671.20
	67.48	0.0845	50362.88
	67.53	0.1160	69121.72
	67.66	0.1213	72285.24
	67.79	0.0761	45376.06
n-C24	67.95	0.9135	544454.20
	68.13	0.1364	81301.39
	68.30	0.1412	84143.93
	68.39	0.1840	109672.10
	68.68	0.0679	40483.64
	68.73	0.1557	92791.74
	68.86	0.0944	56260.07
	69.04	0.0537	32024.61

Peak Name	Ret. Time	Area %	Area
n-C25	69.18	0.7523	448388.20
	69.27	0.1839	109605.90
	69.57	0.0518	30858.45
	69.63	0.1915	114115.10
	70.01	0.1413	84207.34
	70.38	0.0408	24343.50
n-C26	70.49	0.6257	372933.40
	70.66	0.0456	27168.13
	70.97	0.1876	111818.50
	71.34	0.0294	17550.94
	71.48	0.1564	93245.61
	71.85	0.0617	36745.09
n-C27	71.94	0.5247	312727.20
	72.07	0.0500	29813.53
	72.18	0.0276	16437.11
	72.48	0.0840	50059.40
	72.74	0.1120	66769.80
	72.89	0.0415	24717.04
	73.13	0.0969	57766.23
n-C28	73.56	0.5049	300921.90
	74.15	0.1526	90977.94
	74.40	0.0250	14897.32
	74.72	0.0194	11572.45
	74.93	0.0378	22540.54
n-C29	75.40	0.5479	326526.70
	75.68	0.0288	17137.30
	75.88	0.0390	23257.29
	76.06	0.1385	82544.57
	76.73	0.0659	39277.10
	76.98	0.0503	30006.38
	77.19	0.0772	46023.98
n-C30	77.52	0.4790	285463.70
	77.89	0.0447	26622.96
	78.27	0.0559	33326.43
n-C31	79.98	0.4719	281275.40
	80.45	0.0373	22242.55
	80.84	0.0444	26447.81
	81.60	0.0195	11599.81
n-C32	82.84	0.4678	278816.20
	83.26	0.0246	14662.00
	83.81	0.0378	22547.66
	85.34	0.0302	17995.93
n-C33	86.18	0.4091	243838.20
	87.30	0.0312	18607.03
	87.90	0.0713	42522.69
	89.13	0.0512	30490.69
n-C34	90.07	0.3642	217038.20
	91.35	0.0388	23149.95
	93.48	0.0293	17481.65
n-C35	94.60	0.3620	215757.10
	99.15	0.0535	31864.61
n-C36	99.88	0.3687	219768.00
	103.54	0.1947	116058.60
	106.13	0.3294	196337.00

Total Area = 5.960118E+07 Total Height = 2.252017E+07 Total Amount = 0

Entrix, Inc.
MC252 Oil Spill Project
Polycyclic Aromatic Hydrocarbon Data
Client Submitted Samples

Sample Name	ETX8070.D	ETX8070A.D	ETX8070B.D	ETX8070.D	ETX8070.D
Client Name	Riser Fluid (10 of 13)	Riser Fluid (10 of 13)	Riser Fluid (10 of 13)	Riser Fluid (10 of 13)	Riser Fluid (10 of 13)
Matrix	Product	Product	Product	Product	Product
Collection Date	04/27/10	04/27/10	04/27/10	04/27/10	04/27/10
Received Date	04/30/10	04/30/10	04/30/10	04/30/10	04/30/10
Extraction Date	04/30/10	04/30/10	04/30/10	04/30/10	04/30/10
Extraction Batch	EOM 557	EOM 557	EOM 557	EOM 557	EOM 557
Date Acquired	05/01/10	05/01/10	05/01/10		
Method	PAH-2002	PAH-2002	PAH-2002		
Sample Weight (mg)	15.2	15.2	15.2		
Dilution	NA	NA	NA		

Target Compounds	Su Corrected Conc. (ng/mg)	Q	Su Corrected Conc. (ng/mg)	Q	Su Corrected Conc. (ng/mg)	Q	Standard Deviation	%RSD
Naphthalene	637		632		634		2.5	0.4
C1-Naphthalenes	1470		1480		1460		10.0	0.7
C2-Naphthalenes	2140		2100		2090		26.5	1.3
C3-Naphthalenes	1490		1530		1510		20.0	1.3
C4-Naphthalenes	889		917		917		16.2	1.8
Benzothiophene	8.5	J	9.5	J	9.1	J		
C1-Benzothiophene	41.1		39.7		36.4		2.4	6.2
C2-Benzothiophene	32.4		34.5		33.9		1.1	3.2
C3-Benzothiophene	49.0		50.5		46.2		2.2	4.5
Biphenyl	181		182		179		1.5	0.8
Acenaphthylene	<10	U	<10	U	<10	U		
Acenaphthene	11.3		12.5		10.7		0.9	8.0
Dibenzofuran	31.8		31.7		30.5		0.7	2.3
Fluorene	136		130		132		3.1	2.3
C1-Fluorenes	330		330		373		24.8	7.2
C2-Fluorenes	533		534		504		17.0	3.3
C3-Fluorenes	445		420		422		13.9	3.2
Carbazole	1.8	J	1.6	J	1.9	J	0.2	8.6
Anthracene	<10	U	<10	U	<10	U		
Phenanthrene	274		262		286		12.0	4.4
C1-Phenanthrene/Anthracenes	676		667		676		5.2	0.8
C2-Phenanthrene/Anthracenes	735		796		818		43.0	5.5
C3-Phenanthrene/Anthracenes	563		514		558		27.0	4.9
C4-Phenanthrene/Anthracenes	309		301		308		4.4	1.4
Dibenzothiophene	47.3		48.8		48.9		0.9	1.9
C1-Dibenzothiophene	164		142		157		11.2	7.3
C2-Dibenzothiophene	199		192		204		6.0	3.0
C3-Dibenzothiophene	157		150		149		4.4	2.9
Fluoranthene	5.1	J	5.1	J	5.7	J	0.3	6.5
Pyrene	10.4		9.7	J	10.4		0.4	4.0
C1-Fluoranthenes/Pyrenes	65.8		62.8		64.4		1.5	2.3
C2-Fluoranthenes/Pyrenes	118		118		115		1.7	1.5
C3-Fluoranthenes/Pyrenes	95.5		92.9		98.7		2.9	3.0
Naphthobenzothiophene	40.4		42.1		36.3		3.0	7.5
C1-Naphthobenzothiophene	69.8		65.2		67.0		2.3	3.4
C2-Naphthobenzothiophene	103		97.5		91.4		5.8	6.0
C3-Naphthobenzothiophene	58.6		51.2		53.5		3.8	7.0
Benz(a)anthracene	9.0	J	9.6	J	9.4	J	0.3	3.3
Chrysene	39.7		39.2		38.7		0.5	1.3
C1-Chrysenes	95.5		89.7		90.0		3.3	3.6
C2-Chrysenes	99		103		96.8		3.2	3.2
C3-Chrysenes	56.6		57.8		50.9		3.7	6.7
C4-Chrysenes	3.8	J	3.7	J	3.6	J	0.1	2.7
Benzo(b)fluoranthene	6.4	J	6.6	J	6.8	J	0.2	3.0
Benzo(k)fluoranthene	0.5	J	0.5	J	0.6	J	0.1	10.8
Benzo(e)pyrene	11.0		10.8		11.2		0.2	1.8
Benzo(a)pyrene	1.2	J	1.4	J	1.4	J	0.1	8.7
Perylene	1.7	J	1.7	J	1.9	J	0.1	6.5
Indeno(1,2,3-c,d)pyrene	0.6	J	0.6	J	0.7	J	0.1	9.1
Dibenzo(a,h)anthracene	1.1	J	1.1	J	1.0	J	0.1	5.4
Benzo(g,h,i)perylene	1.1	J	1.0	J	1.0	J	0.1	5.6
Total PAHs	12445		12379		12451		39.9	0.3
Individual Alkyl Isomers and Hopanes								
2-Methylnaphthalene	1380		1420		1380		23	1.7
1-Methylnaphthalene	1010		983		984		15.3	1.5
2,6-Dimethylnaphthalene	1100		1090		1080		10.0	0.9
1,6,7-Trimethylnaphthalene	242		255		242		7.5	3.0
1-Methylphenanthrene	170		166		175		4.5	2.6
C29-Hopane	21.7		22.2		22.3		0.3	1.5
18a-Oleanane	<10	U	<10	U	<10	U		
C30-Hopane	45.4		44.6		45.9		0.7	1.4

Surrogate (Su)	Su Recovery (%)	Su Recovery (%)	Su Recovery (%)
Naphthalene-d8	72	76	73
Acenaphthene-d10	108	91	95
Phenanthrene-d10	89	91	89
Chrysene-d12	95	93	96
Perylene-d12	80	82	82

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not Applicable, *=Outside QA limits, refer to narrative

Riser Fluid (10 of 13) (Product)
ETX8070