

APPENDIX I

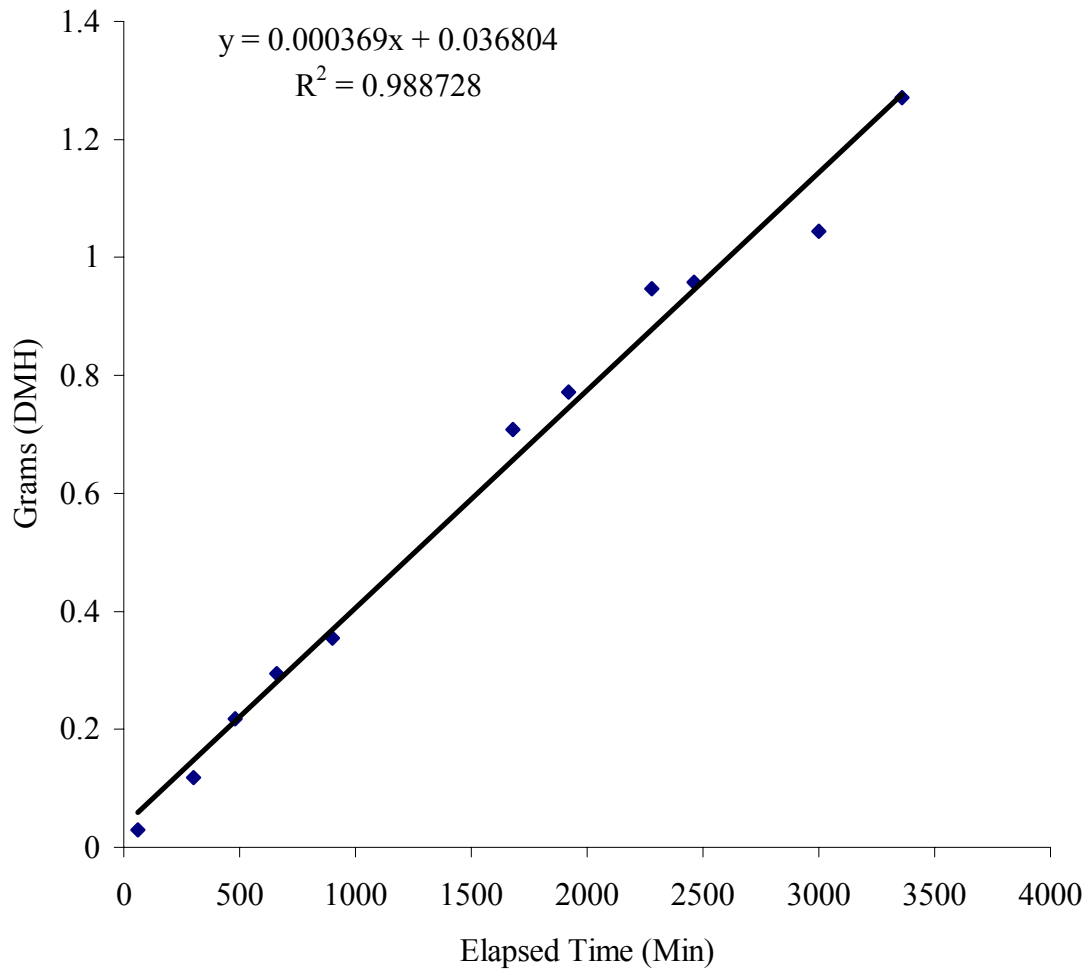
Continuous System 9: Synthetic Bangladesh Groundwater without Contaminants

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Continuous System 9: HPLC Data

Time	Elapsed Time	Peak Area	Conc. (M)	Avg. Conc. (M)	S	Summary			
						Elapsed Time	Conc. (M)	Conc. (mM)	Grams appear
4/11/03 5:00 PM	60	143.4217 127.7598	9.52E-05 8.73E-05	9.13E-05	5.6E-06	60	9.13E-05	0.091	0.0294647
4/11/03 9:00 PM	300	99.60153 99.62308	7.31E-05 7.31E-05	7.31E-05	7.7E-09	300 480	7.31E-05 8.41E-05	0.073 0.084	0.1179728 0.2173005
4/12/03 12:00 AM	480	125.8819 117.0797	8.64E-05 8.19E-05	8.41E-05	3.1E-06	660 900	8.28E-05 7.32E-05	0.083 0.073	0.294133 0.3542811
4/12/03 3:00 AM	660	123.2419 114.5321	8.50E-05 8.06E-05	8.28E-05	3.1E-06	1680 1920	7.83E-05 7.47E-05	0.078 0.075	0.7081223 0.7715594
4/12/03 7:00 AM	900	103.4208 96.10024	7.50E-05 7.13E-05	7.32E-05	2.6E-06	2280 2460	7.71E-05 7.24E-05	0.077 0.072	0.9463253 0.9579835
4/12/03 8:00 PM	1680	115.402 104.6065	8.11E-05 7.56E-05	7.83E-05	3.9E-06	3000 3360	6.47E-05 7.03E-05	0.065 0.070	1.0444842 1.2707358
4/13/03 12:00 AM	1920	105.1232 100.4349	7.59E-05 7.35E-05	7.47E-05	1.7E-06				
4/13/03 6:00 AM	2280	111.4791 103.7882	7.91E-05 7.52E-05	7.71E-05	2.7E-06				
4/13/03 9:00 AM	2460	101.3997 95.01655	7.40E-05 7.08E-05	7.24E-05	2.3E-06				
4/13/03 6:00 PM	3000	86.55761 79.51037	6.65E-05 6.29E-05	6.47E-05	2.5E-06				
4/14/03 12:00 AM	3360	98.31049 89.84693	7.24E-05 6.81E-05	7.03E-05	3.0E-06				

Appearance of DMH: Continuous System 9



**Continuous System 9:
Chemiluminescence Data**

Elapsed Time (Min)	Conc. (mM)	grams BCDMH
60	0.1009	4.429
300	0.0916	4.211
480	0.0785	4.108
660	0.0899	3.889
900	0.0795	3.765
1680	0.0804	3.120
1920	0.0780	2.971
2280	0.0736	2.789
2460	0.0822	2.438
3000	0.0805	2.040
3240	0.0751	2.021
3360	0.0759	1.905

Turner Designs: TD-20/20
Luminometer

Ver. 2020-1E 1098

Delay Time: (sec)	2
Integrate Time: (sec)	4
Number of Replicates:	1
Sensitivity Level %:	1
Standard Reading:	0.274
Injection Volume #1: (ul)	50
Injection Volume #2: (ul)	50
Average Blank:	0.057
Mode:	STD

The following tables contain the continuous stream data. Each column represents a series of luminescence readings, taken every 0.2 seconds. Five series of measurements (5 columns) were taken from each sample. The first number in the columns represents the blank sample that was obtained prior to the addition of the BCDMH briquette. The instrument was programmed to collect measurements for four seconds with a two second delay. The peak maximums, usually seen around 0.6 seconds were averaged. Average peak maximums and BCDMH concentrations are seen below each sample

Continuous System 9 (pg 1 of 6)									
0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
0.76	0.269	0.555	0.283	0.269	0	0	1.225	0	0
0.76	0.324	0.61	0.324	0.31	0.011	0.024	1.28	0.011	0.011
4733	6767	5741	6184	5103	4307	5371	6052	5568	6217
7943	8299	8744	7652	8224	6705	7925	7271	7350	7869
648.2	658.5	700.8	633.5	640.6	246.4	407.2	624.1	312.6	498.6
582.8	601	635.9	573	581.5	196.8	332	568.7	249.6	412.6
523.1	542.9	573.7	515.8	523	162.6	280.3	516.3	206.1	349.8
468.2	489.4	516.1	463.1	468.3	138.7	242.3	467.2	175.7	303.6
419.8	441.3	464.7	416	419.9	127.1	213.4	423.4	153.4	268.2
376.5	398	418.7	374.1	376.3	113.7	191.1	383.6	136.2	240.4
337.6	359.1	377.4	336.6	337.7	102.7	172.5	347.6	122.6	217.5
303.1	324	340.6	302.8	303.1	93.46	157	315.1	117.3	198.4
272.1	292.7	307.2	272.6	272.4	85.56	143.7	285.7	107.8	181.8
244.6	264.4	277.5	245.7	244.9	78.58	131.9	259.3	99.24	167.1
219.8	239.1	250.9	221.5	220.1	72.33	127.3	235.3	91.5	154
197.5	216.3	226.6	199.7	197.8	66.68	117.8	213.5	84.53	142
177.9	195.9	204.9	180.1	177.9	61.55	109.4	193.8	78.18	131.1
160.2	177.1	185.3	162.7	160.2	56.83	101.4	176.1	72.32	127.4
144.2	160.5	167.6	146.6	144.2	52.49	94.05	159.7	66.91	118.2
129.8	145.3	151.8	132.5	129.8	48.5	87.25	145.3	61.93	110
122.9	131.7	137.4	125.7	122.9	44.82	81	131.9	57.35	102.1
111.6	125.3	124.3	114.4	111.5	41.4	75.15	125.9	53.09	94.79
101.1	114.4	118.8	103.9	101	38.28	69.76	115.3	49.13	88.04
91.7	104.2	108.5	94.41	91.58	35.35	64.78	105.4	45.49	81.77
83.22	95.07	98.78	85.84	83.04	32.66	60.18	96.29	42.09	75.96
75.57	86.71	90.05	78.12	75.35	30.17	55.87	88.07	39	70.58
68.63	79.13	82.11	71.08	68.44	27.87	51.85	80.58	36.1	65.54
62.41	72.27	74.95	64.77	62.16	25.78	48.17	73.77	33.43	60.94
56.77	66.03	68.42	59	56.51	23.8	44.69	67.53	30.94	56.6
51.65	60.35	62.51	53.81	51.38	21.98	41.51	61.88	28.64	52.63
Samp1 r0	Samp2 r0	Samp3 r0	Samp4 r0	Samp5 r0	Samp8 r0	Samp9 r0	Samp10 r0	Samp11 r0	Samp12 r0
11 Apr 03 5 PM 60 minutes later					4/11/2003 21:00				
Average Peak Max			8172.4		Average Peak Max			7424	
BCDMH Conc. (mM)			0.10088		BCDMH Conc. (mM)			0.14854	

Continuous System 9 (pg 2 of 6)

0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
0.555	0.501	0.365	0.365	0.256	0.862	0.093	0.258	0.409	0.107
0.582	0.555	0.419	0.419	0.296	0.903	0.135	0.313	0.464	0.587
6579	6506	6600	4855	4552	6033	5611	5142	5722	4651
6648	6453	6360	6406	5990	7366	7492	7706	7657	6209
460.9	461.6	437.8	406.8	395.1	446.8	447.3	441.6	444.4	447
420.6	421.5	400.6	368.8	361.2	405.8	404.2	400.3	403	396.3
381.3	381.9	364.2	333.5	327	366.8	366.2	364.5	366.5	361.3
345.5	345.8	330.9	301.2	295.5	331	331.5	332	332.8	328.5
312.9	313.2	300.7	271.9	266.7	298.9	300.3	302.5	302.2	298.4
283.6	283.8	273	245.5	241.2	270.2	271.8	275.3	274.2	271.2
257.2	257.2	248	221.9	217.8	244.4	246.3	251	249.3	246.6
233	233.3	225.4	200.6	196.9	221.1	223.6	228.8	226.6	224.1
211.5	211.2	205	181.3	178.1	200	202.8	208.5	206	203.8
191.9	191.7	186.5	163.9	160.9	181.1	184.1	190.4	187.1	185.5
174.3	174	169.7	148.5	145.5	164.1	167.1	173.7	170.4	168.8
158.2	157.9	154.2	134.3	131.6	148.5	151.5	158.6	155.1	153.4
143.8	143.6	140.3	127.6	125.2	134.5	137.8	144.9	141.1	139.7
130.8	130.2	127.5	116.7	114.1	128.1	125.2	132.3	128.5	127.4
124.7	124.3	122.2	105.8	103.8	117.1	119.8	127.1	123.1	122
114.2	113.7	112	96.35	94.43	106.6	109.7	116.9	112.9	112
104.4	103.8	102.5	87.76	85.99	97.25	100.2	107.4	103.3	102.5
95.4	94.87	93.8	79.92	78.33	88.72	91.71	98.73	94.65	93.89
87.29	86.68	85.85	72.84	71.39	80.97	83.83	90.75	86.71	86.07
79.84	79.26	78.64	66.43	65.08	73.96	76.73	83.5	79.46	78.92
73.09	72.51	72.04	60.58	59.37	67.55	70.21	76.83	72.87	72.4
66.93	66.34	66.05	55.27	54.15	61.76	64.31	70.73	66.85	66.45
61.34	60.74	60.54	50.44	49.42	56.46	58.92	65.16	61.31	60.99
56.2	55.61	55.53	46.04	45.09	51.63	53.99	60.03	56.29	56
51.52	50.94	50.96	42.05	41.2	47.24	49.5	55.33	51.69	51.46
47.22	46.66	46.74	38.43	37.63	43.22	45.37	51.02	47.47	47.29
Samp13	rCSamp14	rCSamp15	rCSamp16	rCSamp17	rCSamp18	rCSamp19	rCSamp20	rCSamp21	rCSamp22
4/12/2003 0:00					4/12/2003 3:00				
Average Peak Max			6371.4		Average Peak Max			7286	
BCDMH Conc. (mM)			0.07848		BCDMH Conc. (mM)			0.08985	

Continuous System 9 (pg 3 of 6)

4/12/2003 7:00					4/12/2003 20:00				
0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
0.907	0.631	0.659	0.452	0.948	0.12	0.133	0.392	0.065	0.052
0.99	0.714	0.742	0.521	1.003	0.188	0.201	0.433	0.12	0.147
3202	2844	4976	3973	3419	7352	6786	6756	6581	2266
5815	6852	6949	6120	6514	6565	7021	6747	6909	5394
332.7	339.7	358.2	342	310.1	392	400.9	394	394.2	367.3
294.2	302.1	324.5	308	281	357.7	369.6	361.2	360.1	330.7
262.4	268.4	291.3	276.7	252.5	325.9	339	331.6	330.6	302.3
233.9	238.6	261.1	248.2	226.7	296.9	310.5	304.5	303.4	276.2
208.9	212.4	234.2	223.1	203.3	270.5	284.7	279.5	278.4	252.3
186.6	189	210	200.6	182.4	246.3	261	256.6	255.6	230.5
167	168.4	188.2	180.5	163.7	224.6	239.5	235.7	234.9	210.6
149.4	150	169	162.6	146.9	204.7	219.7	216.4	215.8	192.7
133.7	133.7	151.6	146.7	131.8	186.7	201.7	198.9	198.4	176.1
126	125.5	136.2	132.1	124.6	170.4	185.1	182.9	182.6	161.1
113.9	112.8	128.5	125.3	112.8	155.4	170.1	167.9	167.7	147.2
102.7	101.3	116.4	113.9	102	141.8	156.2	154.6	154.3	134.7
92.73	90.98	105.2	103.4	92.25	129.3	143.4	142.1	141.8	123.3
83.75	81.78	95.15	93.83	83.43	124.2	131.7	130.6	130.6	118.8
75.69	73.59	86.14	85.27	75.55	114.2	127	126.2	126.1	109.5
68.41	66.24	77.99	77.46	68.45	104.7	117.2	116.6	117.1	100.7
61.91	59.64	70.66	70.42	62.02	96.1	108.4	108	107.9	92.61
56.04	53.74	64.04	64.1	56.22	88.23	100.1	99.87	99.76	85.24
50.74	48.44	58.11	58.31	51	81.02	92.37	92.32	92.25	78.44
45.97	43.68	52.68	53.11	46.29	74.41	85.31	85.36	85.3	72.19
41.66	39.47	47.82	48.35	42.02	68.36	78.8	78.97	78.91	66.51
37.76	35.61	43.44	44.06	38.14	62.81	72.79	73.04	73	61.25
34.26	32.14	39.47	40.11	34.66	57.7	67.27	67.6	67.56	56.43
31.08	29.04	35.86	36.59	31.5	53.1	62.17	62.59	62.55	52.01
28.24	26.24	32.61	33.36	28.65	48.81	57.51	57.98	57.9	47.91
25.61	23.73	29.64	30.44	26.05	44.88	53.17	53.65	53.61	44.16
Samp23	rCSamp24	rCSamp25	rCSamp26	rCSamp27	rCSamp54	rCSamp55	rCSamp56	rCSamp57	rCSamp58
Average Peak Max					Average Peak Max				
BCDMH Conc. (mM)					BCDMH Conc. (mM)				
6450					6527.2				
0.07946					0.08042				

Continuous System 9 (pg 4 of 6)

0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
0.12	0.188	0.065	0.202	0.12	0.217	0.285	0.258	0.175	0.422
0.188	0.243	0.12	0.229	0.175	0.271	0.354	0.326	0.244	0.477
6215	6869	7202	7127	5722	7170	6366	7862	7390	9489
6383	6273	6248	6366	6398	5755	6411	6414	5838	5460
347.2	346.8	354.7	347.8	340.4	360.3	362	371.5	362.2	359.9
314.6	312.7	316.5	314.1	309.8	324.9	323.8	336.4	325.2	324.1
284.4	283.1	286.6	285.2	280.6	292.7	290.2	303.6	292.2	291.6
256.9	256.1	259.7	258.6	254.2	263.5	260.8	274.4	263	263
232.4	232.1	235.4	234.6	230.8	237.5	234.2	248.2	237	237.3
210.3	210.6	213.3	213.1	209.2	214	211	224.7	213.7	214.3
190.1	191	193.4	193.4	189.9	192.9	189.9	203.3	192.7	193.5
172.4	173.2	175.4	175.7	172.4	174	171	184.2	173.8	174.9
156.3	157.1	159.3	159.6	156.6	157.1	154.1	166.9	156.8	158.2
141.6	142.7	144.6	145.1	142.1	141.8	139	151.3	141.5	143.1
128.2	129.6	131.2	131.8	129.3	128.1	125.3	137.4	127.8	129.4
122.3	123.8	125.2	126	123.5	121.8	119.3	124.5	121.5	123.5
111.8	113.3	114.6	115.4	113.1	110.9	108.5	119.1	110.7	112.7
101.9	103.5	104.6	105.5	103.3	100.7	98.46	109	100.6	102.7
92.94	94.55	95.6	96.5	94.51	91.57	89.4	99.45	91.44	93.55
84.86	86.44	87.38	88.3	86.45	83.27	81.22	90.79	83.16	85.27
77.47	79.06	79.88	80.85	79.15	75.74	73.84	82.94	75.67	77.82
70.74	72.33	73.07	74.02	72.45	68.92	67.15	75.8	68.86	71.03
64.65	66.22	66.89	67.8	66.36	62.76	61.07	69.28	62.69	64.79
59.08	60.63	61.23	62.13	60.82	57.18	55.59	63.36	57.16	59.2
54.01	55.53	56.08	56.95	55.72	52.08	50.59	57.96	52.08	54.06
49.38	50.86	51.38	52.2	51.09	47.43	46.08	53.03	47.49	49.42
45.16	46.63	47.05	47.9	46.83	43.19	41.92	48.55	43.28	45.17
41.34	42.75	43.13	43.91	43.01	39.4	38.21	44.41	39.46	41.29
37.84	39.18	39.54	40.29	39.43	35.93	34.82	40.69	35.96	37.76
34.62	35.96	36.23	36.96	36.2	32.78	31.69	37.25	32.8	34.54
Samp59	rCSamp60	rCSamp61	rCSamp62	rCSamp63	rCSamp74	rCSamp75	rCSamp76	rCSamp77	rCSamp78
4/13/2003 0:00					4/13/2003 6:00				
Average Peak Max			6333.6		Average Peak Max			5975.6	
BCDMH Conc. (mM)			0.07801		BCDMH Conc. (mM)			0.07356	

Continuous System 9 (pg 5 of 6)

Continuous System 9 (pg 5 of 6)									
0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
0.273	0.094	0.328	0.273	0.135	0.107	0.203	0.23	0.079	0.079
0.355	0.149	0.396	0.328	0.19	0.162	0.271	0.244	0.121	0.148
5426	6947	6232	9580	8714	3318	3746	4765	3310	4039
6383	6771	6683	6782	6746	6662	7068	6786	6088	6073
365.6	398.8	394	383	383.6	297.7	320.9	318.3	315.3	291.5
329.9	361.4	356.8	347.1	347.2	271.9	291.6	283.8	284.2	264.7
296.5	326.1	321.2	313.5	313.5	248	266.3	257.2	258.6	240.8
266.6	294.4	289.7	282.8	283.1	225.9	241.7	234.1	235.2	219
239.7	265.5	261.2	255.7	255.7	205.7	220.2	213.3	214.1	199.1
215.8	239.7	235.6	231.2	231	187.6	200.5	194.5	195	181.3
194.2	216.7	212.8	209.3	209	170.9	182.4	177.2	177.7	165.2
174.9	196.1	192.3	189.5	189	155.6	166.6	161.6	162.2	150.4
157.6	177.4	173.8	171.6	171.1	142	151.5	147.4	147.9	137
142	160.4	157.1	155.4	154.9	129.4	138.1	134.6	134.8	124.7
128	145.3	142	140.9	140.3	124	126.1	129	123.1	119.7
121.5	131.5	128.5	128	127.2	113.9	121.1	118.3	118.4	109.8
110.4	125.3	122.6	122.1	121.4	104.4	111.3	108.8	108.8	100.6
100.1	114.4	111.8	111.6	110.9	95.69	102	99.9	99.85	92.15
90.83	104.2	101.7	101.8	101.1	87.77	93.56	91.75	91.66	84.43
82.42	95	92.68	92.9	92.22	80.58	85.89	84.29	84.13	77.42
74.86	86.67	84.41	84.83	84.15	73.96	78.82	77.47	77.26	70.99
67.97	79.05	76.98	77.49	76.8	67.9	72.35	71.2	70.99	65.14
61.78	72.19	70.2	70.79	70.16	62.42	66.5	65.47	65.22	59.76
56.12	65.94	64.04	64.69	64.11	57.35	61.08	60.26	59.95	54.87
51.02	60.22	58.45	59.16	58.56	52.71	56.14	55.42	55.15	50.34
46.41	55.01	53.35	54.09	53.55	48.48	51.6	50.99	50.68	46.22
42.22	50.3	48.7	49.46	48.95	44.61	47.46	46.95	46.64	42.44
38.4	46.01	44.49	45.25	44.79	41.02	43.64	43.21	42.91	38.98
34.93	42.08	40.66	41.43	40.94	37.75	40.13	39.8	39.47	35.8
31.78	38.52	37.14	37.88	37.47	34.75	36.9	36.65	36.33	32.87
Samp79	rCSamp80	rCSamp81	rCSamp82	rCSamp83	rCSamp84	rCSamp85	rCSamp86	rCSamp87	rCSamp88
4/13/2003 9:00					4/13/2003 18:00				
Average Peak Max			6673		Average Peak Max			6535.4	
BCDMH Conc. (mM)			0.08223		BCDMH Conc. (mM)			0.08052	

Continuous System 9 (pg 6 of 6)

0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
0.309	0.105	0.105	0.228	0.187	0.148	0.244	0.107	0.175	0.408
0.35	0.16	0.133	0.282	0.241	0.23	0.326	0.162	0.244	0.463
6642	6621	5949	3611	5897	5755	2731	8910	8764	7133
6150	6421	5958	5744	6240	6257	5700	6601	6051	6195
319.9	318.9	318.5	295.4	318	339.3	357	365.7	357.4	351.9
290.4	292.1	290.4	269.2	288.7	307	322.3	332.4	324	318.5
265.6	267.2	265.3	245.2	264.5	277.6	290.7	300.3	292.4	287.2
242.9	244.5	242.3	223.6	241.8	251.2	262.4	271.7	264	259.1
222.3	223.6	221.5	204.1	221.5	227.1	237	245.4	238.6	234
203.3	204.7	202.5	186.2	202.5	205.5	214.3	222	215.7	211.3
186.3	187.6	185.2	169.7	185.7	186.1	193.8	200.9	195.2	191.1
170.5	171.6	169.4	154.8	170	168.6	175.5	181.8	176.6	172.8
156.2	157.2	155.1	141.5	155.9	152.8	159.1	164.8	159.9	156.4
143.1	144.2	142	129	142.9	138.6	144	149.2	144.9	141.6
131.2	132.3	130.1	123.8	130.9	125.5	130.6	135.3	131.2	128.2
126.2	127.2	125.2	113.9	125.9	120	124.4	128.6	125	122.2
116.7	117.1	115.4	104.5	116.6	109.7	113.5	117.1	114.1	111.6
107.2	108.2	106.2	95.89	107.1	100.1	103.5	107	104	101.6
98.76	99.69	97.81	88.01	98.71	91.39	94.39	97.56	94.76	92.67
91.01	91.92	90.1	80.85	90.98	83.48	86.14	88.96	86.43	84.49
83.88	84.79	82.99	74.27	83.92	76.24	78.6	81.19	78.86	77.07
77.38	78.21	76.48	68.23	77.41	69.69	71.79	74.11	71.99	70.31
71.37	72.2	70.5	62.72	71.42	63.72	65.54	67.65	65.77	64.22
65.87	66.62	65.04	57.68	65.93	58.29	59.89	61.8	60.03	58.64
60.78	61.52	59.98	53.03	60.86	53.32	54.73	56.47	54.86	53.57
56.11	56.81	55.31	48.8	56.22	48.79	50.05	51.6	50.14	48.97
51.81	52.5	51.03	44.89	51.91	44.7	45.74	47.18	45.83	44.75
47.85	48.51	47.12	41.29	47.94	40.9	41.86	43.15	41.89	40.9
44.21	44.8	43.47	38	44.29	37.48	38.28	39.44	38.31	37.4
40.83	41.43	40.14	34.94	40.93	34.37	35.03	36.11	35.04	34.2
Samp89	rCSamp90	rCSamp91	rCSamp92	rCSamp93	rCSamp94	rCSamp95	rCSamp96	rCSamp97	rCSamp98
4/13/2003 22:00					4/14/2003 0:00				
Average Peak Max			6102.6		Average Peak Max			6160.8	
BCDMH Conc. (mM)			0.07514		BCDMH Conc. (mM)			0.07586	

Continuous System 9: Decomposition of 4.49 gram BCDMH Briquette

