



# Continental Remediation Inc.

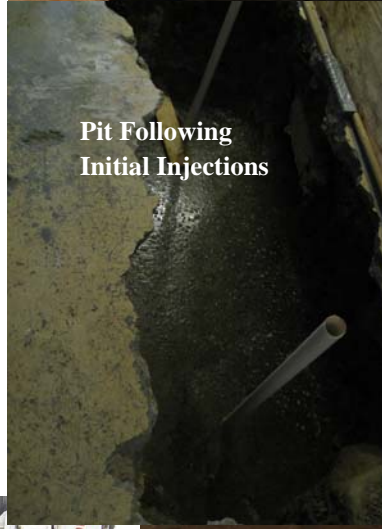
Move the Solution, Not the Problem

## Completed Project-Home Heating Oil Remediation - Roslindale, MA

Following a reported loss of Heating Oil following a delivery, MADEP required the removal of contaminated soil below the floor of the residence. The subsequent 54 sq ft excavation extended 10+ feet below the floor, oil was removed by vac truck and pumps. Results of the site investigation revealed that significant heating oil impacts to soil and groundwater extended to 300+ sq ft. Approximately 640 tons of soil had been impacted.

Following the initial round of injections, it was found that free product was accumulating on the groundwater. This was removed from numerous wells with adsorption wicks, and additional injections performed. Visual evidence of the penetration through the tight soil was shown by Nano Peroxide coating the excavation walls and in monitoring wells around the site.

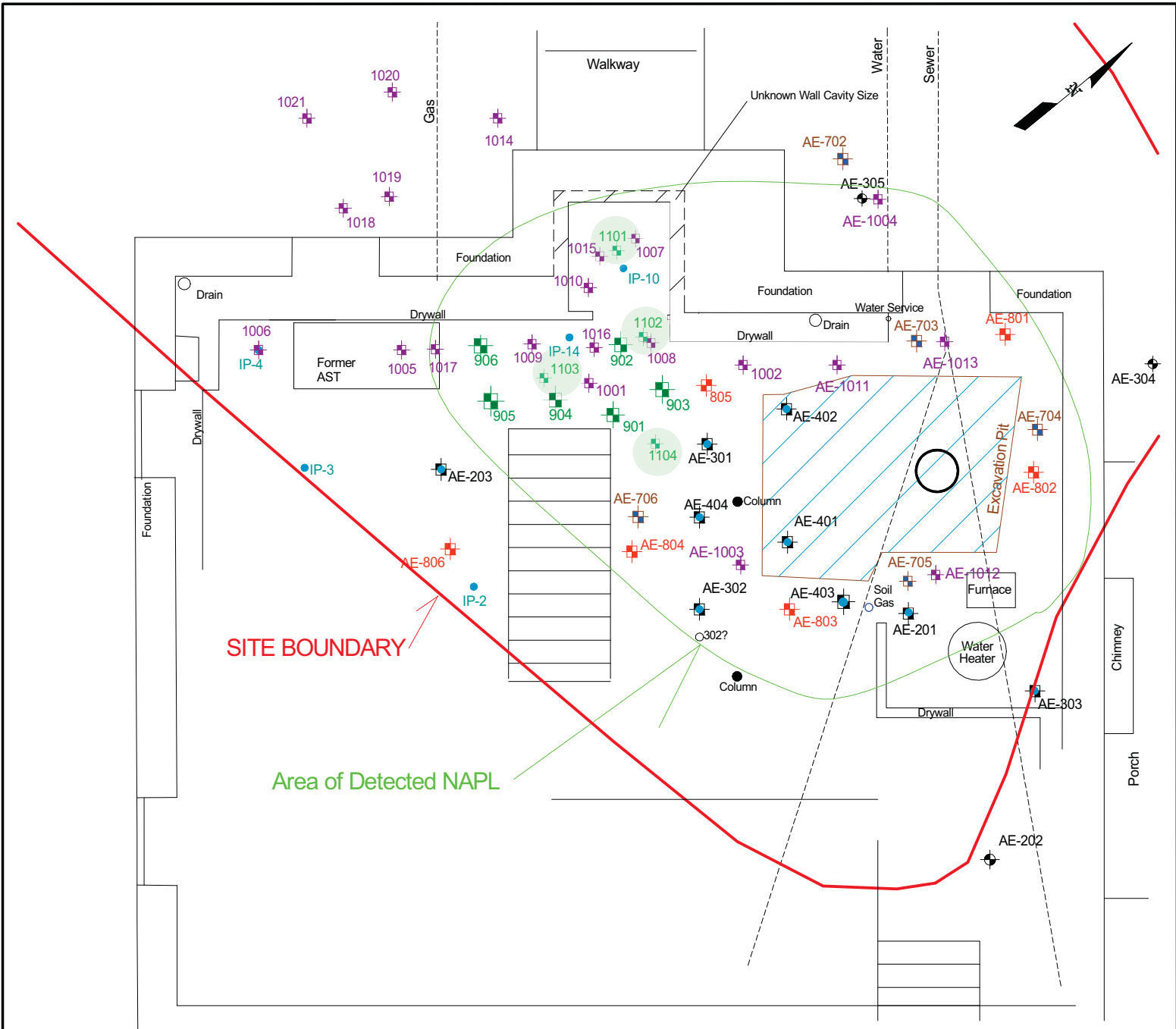
Soil averages were below standard within 12 months and groundwater confirmed below standards after 18 months. Contamination was confirmed to be confined to the site before and following In-Situ treatment.



RAO submitted approximately 20 months following startup.

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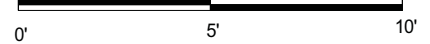


**KEY**

- Soil Gas
- Recovery Well
- AE-101 Monitoring Well
- AE-301 Soil boring
- 1101 Post Treatment Soil 7/13/10
- 1004 Post Treatment Soil 12/21/09
- 902 Post Treatment Soil 9/8/09
- AE-804 Post Treatment Soil 8/5/09
- IP-1 Injection Point
- AE-702 Post Treatment Soil 6/8/09

Dashed Site Boundary is Estimated

Scale: 1" = 5'




<h2 style="margin: 0;">Inspection Points</h2>		
<h3 style="margin: 0;">Roslindale, MA</h3>		
<p><b>Figure 4</b> DWN BY: HS File: 3008 soil 1-5</p>		<p>CKD BY: GC September 2, 2010</p>
<p>184 Riverview Avenue, Waltham, MA</p>		

Table 2  
Summary of Extractable Petroleum Hydrocarbons in Soil  
Rosindale, Massachusetts

MCP Method 1 Standards		Naphthalene	2-Methylnaphthalene	Phenanthrene	Acenaphthylene	Acenaphthene	Fluorene	Anthracene	Fluoranthene	Pyrene	Benz[a]Anthracene	Chrysene	Benzofluoranthene	Benzofluoranthene	Benzofluoranthene	Benzo[a]Pyrene	Indeno[1,2,3-c,d]	Dibenz[a,h]Anthracene	Benzo[e,h,i]Perylene	9-C18 Aliphatic Hydrocarbons	C19-C36 Aliphatic Hydrocarbons	C11-C22 Aromatic Hydrocarbons	
Sample ID	Sample Depth (ft)	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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Sample ID	Sample Date	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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
S-1/GW-2 Standard	8-10'	40	80	500	600	1,000	1,000	1,000	1,000	1,000	1,000	70	70	70	70	2	7	0.7	1,000	1,000	3,000	1,000	
S-1/GW-3 Standard	8-9'	500	300	500	10	1,000	1,000	1,000	1,000	1,000	1,000	70	70	70	70	2	7	0.7	1,000	1,000	3,000	1,000	
UCL		10,000	5,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	300	3,000	300	10,000	20,000	20,000	20,000	10,000
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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
AE-101	12/3/08	0.36	1.59	0.32	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
AE-102	12/3/08	< 0.27	< 0.27	1.22	< 0.27	< 0.27	0.82	0.74	1.28	1.48	0.57	0.46	0.48	0.48	0.48	0.39	< 0.27	< 0.27	< 0.27	93.9	113	80.4	
AE-202	1/16/09	< 0.28	0.62	0.33	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	400	45.0	28.0	
AE-202	1/16/09	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	16.0	< 5.5	< 5.5	
AE-203	1/16/09	1.28	6.54	2.35	< 0.27	< 0.27	0.94	0.62	< 0.27	0.81	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	520	233	240	
AE-203	1/16/09	< 0.27	1.90	0.68	< 0.27	< 0.27	0.29	< 0.27	< 0.27	0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	105	49.6	85.4	
AE-301	1/26/09	3.66	12.2	3.10	< 0.29	< 0.29	2.1	1.18	< 0.29	1.44	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	1,180	331	717	
AE-302	1/26/09	0.75	2.79	0.67	< 0.28	< 0.28	0.52	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	190	53.0	92.3	
AE-305	1/26/09	2.6	7.93	1.72	< 0.27	< 0.27	1.17	0.49	< 0.27	0.51	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	500	136	231	
AE-401 (501)	5/28/09	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27
AE-402 (502)	5/28/09	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27
AE-701	6/8/09	0.65	2.02	0.87	0.67	1.11	1.44	2.54	0.55	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	383	102	123	
AE-703	6/8/09	6.15	8.46	2.76	1.11	1.44	2.54	0.55	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	2,130	563	715	
AE-704	6/8/09	8.71	15.70	5.65	5.09	2.47	5.02	1.03	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	3,810	1,030	815	
AE-706	6/8/09	1.18	6.25	2.69	1.91	0.63	0.84	0.51	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	962	296	300	
AE-801	8/5/2009	1.4	5.2	< 0.27	0.4	4.8	0.6	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	770	160	390	
AE-801	8/5/2009	3.5	11.3	< 0.27	0.54	5.4	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	530	220	470	
AE-802	8/5/2009	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	762	18	32.1	
AE-803	8/5/2009	12.5	36.6	< 1.25	1.7	17.2	1.6	< 1.25	< 1.25	< 1.25	< 1.25	< 1.25	< 1.25	< 1.25	< 1.25	< 1.25	< 1.25	< 1.25	< 1.25	4,300	930	1,200	
AE-804	8/5/2009	0.8	2.7	1.2	< 0.29	0.5	12.5	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	410	130	180	
AE-805	8/5/2009	1.3	7.1	< 0.27	< 0.27	4.7	0.4	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	600	170	380	
AE-805	8/5/2009	6.2	12.0	< 1.4	< 1.4	10.0	3.0	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	4,800	1,200	650	
AE-902	6-8'	1.81	3.12	0.81	< 0.27	0.41	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	264	86	144	
AE-903	6-8'	5.82	6.22	3.55	< 0.26	1.27	< 0.26	2.71	0.32	0.28	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	1,480	495	422	
AE-904	4-6'	1.31	2.93	1.22	0.75	0.51	< 0.26	< 0.26	< 0.26	0.37	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	420	142	188	
AE-906	4-6'	98/09	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	38	< 5.5	29	
AE-906	8-10'	5.32	5.38	2.54	0.50	1.65	1.96	0.38	0.3	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	1,020	335	527	
AE-1001	2-4'	8.3	19.0	21.1	8.2	15.0	18.8	11.2	7.0	1.1	< 0.78	< 0.78	< 0.78	< 0.78	< 0.78	< 0.78	< 0.78	< 0.78	< 0.78	1,500	410	1,499	
AE-1001	4-6'	12/21/09	1.4	4.5	0.9	1.4	1.4	1.5	0.5	0.3	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	200	61.4	187	
AE-1001	6-8'	12/21/09	21.7	28.2	5.6	12.0	9.7	6.8	1.4	0.9	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	1,800	630	1,406	
AE-1002	4-6'	12/21/09	1.9	5.8	1.1	1.4	0.4	1.7	0.3	0.4	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	300	55.0	186	
AE-1002	6-8'	12/21/09	5.0	13.0	5.1	3.8	6.7	10.3	7.9	2.0	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	2,800	820	574	
AE-1003	6-8'	12/21/09	2.4	7.6	3.3	2.5	4.5	6.4	4.3	0.8	1.0	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	1,000	290	367	
AE-1003	8-10'	12/21/09	2.0	5.3	3.3	1.7	4.3	5.5	3.2	0.5	0.4	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	760	160	274	
AE-1004	12-14'	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	20.8	< 5.5	13.9	
AE-1006	2-4'	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	280	360	572	
AE-1006	4-6'	1/13/10	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	20.3	< 5.5	< 5.5	
AE-1006	6-8'	1/13/10	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	14.7	< 5.5	< 5.5	
AE-1011	2-4'	1/22/10	1.3	4.4	1.6	1.3	2.5	1.7	1.6	0.8	< 0.28	< 0.28	< 0.2										

Table 1  
Summary of Volatile Petroleum Hydrocarbons in Soil  
Roslindale, Massachusetts

MCP Standards			Benzene	Ethylbenzene	MTBE	Naphthalene	Toluene	Xylenes	C5-C8 Aliphatic Hydrocarbons	C9-C12 Aliphatic Hydrocarbons	C9-C10 Aromatic Hydrocarbons
S-1/GW-2 Standard			30	500	100	40	500	300	100	1,000	100
S-1/GW-3 Standard			30	500	100	500	500	500	100	1,000	100
UCL			9,000	10,000	5,000	10,000	10,000	10,000	5,000	20,000	5,000
Units			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Sample ID	Sample Location	Sample Date									
AE-101	8-10'	12/3/08	< 0.30	< 0.30	< 0.10	< 0.60	< 0.30	0.99	11.5	126	82.5
AE-102	8-9'	12/3/08	< 0.30	1.77	< 0.10	1.65	< 0.30	1.17	27.8	137	181
AE-202	4-6'	1/16/09	< 0.30	0.30	< 0.10	0.87	< 0.30	0.72	4.9	57.9	45.5
AE-203	5-6'	1/16/09	< 0.30	1.1	< 0.10	1.9	< 0.30	3.7	17.9	138.0	186.7
AE-203	6-8'	1/16/09	< 0.30	1.1	< 0.05	1.5	< 0.30	3.7	21.7	112.1	142.5
AE-301	8-9'	1/26/09	0.65	8.6	< 0.10	8.7	8.1	32.1	80.7	353	560
AE-302	8-10'	1/26/09	< 0.30	0.30	< 0.10	0.80	< 0.30	0.50	4.6	47.8	36.9
AE-305	14-16'	1/26/09	< 0.30	3.6	< 0.10	5.4	1.9	17.4	43.5	284	281
AE-701	8-9'	6/8/09	< 0.30	5.4	< 0.10	9.10	< 0.30	13.6	34.7	281	200
AE-702	8-9'	6/8/09	< 0.30	0.30	< 0.10	0.60	< 0.30	0.60	2.80	3.3	3.0
AE-703	2-4'	6/8/09	< 0.30	10.8	< 0.10	3.7	8.4	38.2	152	651	1100
AE-703	7-8'	6/8/09	0.9	10.2	< 0.10	21.7	6.9	51.9	102	728	810
AE-704	4-6'	6/8/09	< 0.30	1.2	< 0.10	3.0	< 0.30	4.0	12.8	84.8	150
AE-706	8-10'	6/8/09	0.3	8.5	< 0.10	10.5	1.4	31.4	106	360	340
AE-801	7-8'	8/5/09	< 0.60	8.70	< 0.10	12.6	1.62	37.4	131	424	829
AE-802	9-10'	8/5/09	< 0.30	0.93	< 0.10	32.4	< 0.30	49.0	6.88	90.6	110
AE-803	6-7.5'	8/5/09	< 2.90	8.64	< 0.60	24.2	5.01	39.7	118	762	1050
AE-804	9-10'	8/5/09	< 0.60	9.54	< 0.10	11.9	3.64	35.0	104	421	690
AE-805	7-8'	8/5/09	< 2.9	40.8	< 0.6	66.8	14.9	152.7	295	1,010	3,270
AE-902	6-8'	9/8/09	< 0.30	0.30	< 0.10	1.17	< 0.30	1.22	2.70	96.8	45.2
AE-903	6-8'	9/8/09	0.57	8.64	< 0.10	9.26	1.91	26.7	74.8	712	497
AE-904	4-6'	9/8/09	< 0.30	0.30	< 0.10	0.50	< 0.30	0.50	2.7	3.82	2.7
AE-906	4-6'	9/8/09	< 0.30	0.30	< 0.10	0.50	< 0.30	0.50	2.7	2.7	2.7
AE-906	8-10'	9/8/09	< 0.30	2.25	< 0.10	3.92	1.15	8.24	29.7	289	199
AE-1001	2-4'	12/21/09	< 0.30	2.1	< 0.10	1.8	< 0.30	5.4	58.4	338	325
AE-1001	4-6'	12/21/09	< 0.30	0.30	< 0.10	0.50	< 0.30	0.50	5.60	69.6	70.5
AE-1001	6-8'	12/21/09	0.55	6.30	< 0.10	10.9	6.8	25.20	126	762	488
AE-1002	4-6'	12/21/09	< 0.30	1.8	< 0.10	3.2	< 0.30	5.8	26.8	193	223
AE-1002	6-8'	12/21/09	0.89	15.0	< 0.10	17.4	2.0	44.0	254	1320	975
AE-1003	6-8'	12/21/09	0.30	3.6	< 0.10	5.5	2.4	12.5	72	417	368
AE-1003	8-10'	12/21/09	< 0.30	4.30	< 0.10	6.10	0.58	12.10	68.7	423	365
AE-1004	12-14'	12/21/09	< 0.30	0.30	< 0.10	0.60	< 0.30	0.60	2.9	3.0	3.5
AE-1006	0-2'	1/13/10	< 0.30	0.30	< 0.10	0.60	< 0.30	0.60	3.2	5.8	3.2
AE-1006	2-4'	1/13/10	< 0.30	0.30	< 0.10	0.60	< 0.30	0.60	2.9	35.3	22.1
AE-1006	4-6'	1/13/10	< 0.30	0.30	< 0.10	0.60	< 0.30	0.60	2.9	10.5	4.4
AE-1006	6-8'	1/13/10	< 0.30	0.30	< 0.10	0.60	< 0.30	0.60	2.8	2.8	2.8
AE-1011	2-4'	1/22/10	< 0.30	4.74	< 0.10	4.49	< 0.30	7.13	75.3	472	411
AE-1011	4-6'	1/22/10	< 0.30	0.30	< 0.10	0.98	< 0.30	0.50	3.7	81.2	71.5
AE-1011	6-8'	1/22/10	< 0.30	1.34	< 0.10	2.01	< 0.30	2.77	19.8	189	202
AE-1012	2-4'	1/22/10	< 0.30	0.30	< 0.10	0.60	< 0.30	0.60	2.8	127	135
AE-1012	4-6'	1/22/10	< 0.30	0.30	< 0.10	0.79	< 0.30	0.50	4.0	65.0	75.1
AE-1012	6-8'	1/22/10	< 0.60	15.6	< 0.10	14.9	4.94	43.9	114	1260	1020
AE-1012	8-10'	1/22/10	< 0.60	12.3	< 0.10	11.6	4.46	37.3	184	1110	899
AE-1013	2-4'	1/22/10	< 0.30	0.30	< 0.10	1.47	< 0.30	0.50	8.5	111.0	178.0
AE-1014	10-12'	2/26/10	< 0.30	0.30	< 0.10	0.60	< 0.30	0.60	2.8	8.1	2.8
Average across site			0.40	1.29	0.12	1.50	0.62	3.72	11.01	# 76.97	64.84
AE-705	6-8'	6/8/09	6.1	100	< 1.00	144	72.3	397	912	3,500	6,000
AE-806	9-10'	8/5/09	< 0.30	0.30	< 0.10	0.60	< 0.30	0.60	2.80	2.80	2.80