

APPENDIX I
Summaries of Handheld Surface
Moisture Measurement Data

Exploratory Study of Basement Moisture During Operation of
ASD Radon Control Systems

Contractor Report to EPA

December 6, 2007

Surface Measurement Testing Schedules

PA01 Testing Schedule

Baseline (5/9/2005): No ASD operation
4/4/2006: ASD on 14 days prior to measurements
7/21/2006: ASD on 72 days prior to measurements
10/2/2006: ASD off 6 days prior to measurements

PA02 Testing Schedule

Baseline (7/14/2005): No ASD operation
3/28/2006: ASD on 14 days prior to measurements
7/19/2006: ASD on 16 days prior to measurements
11/28/2006: ASD off 14 days prior to measurements
12/19/2006: ASD on 21 days prior to measurements

PA03 Testing Schedule

Baseline (7/18/2005): No ASD operation
4/11/2006: ASD on 14 days prior to measurements
7/20/2006: ASD on 2 days prior to measurements
12/12/2006: ASD off 14 days prior to measurements
01/02/2007: ASD on (modified) 14 days prior to measurements

Basement Floor Measurement Results

Table 1a, Average Basement Floor Moisture (%) Measurements for PA01

Location	Baseline 5/9/2005	4/4/2006	7/21/2006	10/2/2006	Avg
SW Perimeter	4.88	3.97	4.77	4.72	4.58
NW Perimeter	4.65	3.84	4.48	4.41	4.34
NE Perimeter	4.48	3.48	4.72	4.38	4.26
SE Perimeter	4.41	3.8	4.38	4.52	4.27
Perimeter Avg	4.61	3.77	4.58	4.51	---
Slab Center	4.36	3.52	4.33	4.45	---
Center & Perimeter Avg.	4.56	3.72	4.34	4.50	---

Table 1b. Average Basement Floor Moisture (%) Measurements for PA02

Location	Baseline 7/14/2005	3/28/2006	7/19/2006	11/28/2006	12/19/2006	Average
SW Perimeter	3.32	1.48	3.18	2.80	1.99	2.55
NW Perimeter	3.40	1.32	3.08	No Data	1.94	2.44
NE Perimeter	3.58	1.32	3.00	2.17	1.86	2.39
SE Perimeter	2.77	1.34	2.86	2.89	1.81	2.33
Perimeter Avg	3.27	1.37	3.03	2.62	1.90	---
Slab Center	4.68	3.48	4.68	4.10	3.80	---
Center & Perimeter Avg.	3.98	2.43	3.86	3.36	2.85	---

Table 1c, Average Basement Floor Moisture Measurements for PA03

Location	Baseline 7/18/2005	4/11/2006	7/20/2006	12/12/2006	1/02/2007	Avg
SW Perimeter	4.70	3.68	4.46	3.68	3.67	4.03
NW Perimeter	5.06	3.66	4.66	3.84	3.80	4.20
NE Perimeter	4.80	3.56	4.49	3.67	3.70	4.04
SE Perimeter	5.06	4.10	4.96	4.08	4.16	4.47
Perimeter Avg.	4.91	3.75	4.64	3.82	3.83	---
Slab Center	4.03	3.33	3.97	3.50	3.63	---
Center & Perimeter Avg.	4.47	3.54	4.31	3.66	3.73	---

Basement Wall Measurement Results by Height

Table 2a, Average Wall Moisture (%) Measurements vs. Height for PA01

Height from Top of Wall	Baseline 5/9/2005	4/4/2006	7/21/2006	10/3/2006	Avg.
3"	2.4	2.1	2.4	2.5	2.35
33"	2.7	2.2	2.6	2.6	2.53
63"	2.7	2.2	2.7	2.7	2.58
93"	2.8	2.2	2.8	2.7	2.63
Avg.	2.65	2.18	2.63	2.63	---

Table 2b, Average Wall Moisture (%) Measurements vs. Height for PA02

Height from Top of Wall	Baseline 7/14/2005	3/28/2006	7/19/2006	11/28/2006	12/19/2006	Avg.
5"	1.66	1.07	1.74	1.33	1.08	1.38
36"	2.95	1.42	2.74	2.55	1.78	2.29
60"	3.21	1.38	2.89	2.57	1.88	2.39
91"	5.75	1.69	4.95	4.06	3.20	3.93
Avg.	3.39	1.39	3.08	2.63	1.99	---

Table 2c, Average Wall Moisture Measurements vs. Height for PA03

Height from Top of Wall	Baseline, 7/18/2005	4/11/2006	7/20/2006	12/12/2006	1/02/2007	Avg.
6"	3.3	2.26	3.3	2.9	3.1	2.35
39"	3.8	2.9	3.7	3.3	3.6	2.53
63"	3.7	3.0	3.9	3.4	3.5	2.58
85"	3.42	3.1	4.1	3.4	3.6	2.63
Avg.	3.75	2.82	3.75	3.25	3.45	---

Basement Wall Measurement Results by Wall Location

Table 3a, Average Wall Moisture (%) Measurements for PA01

Wall ID	Baseline 5/9/2005	4/4/2006	7/21/2006	10/3/2006	Avg.
NW Wall	2.63	2.18	2.67	2.59	2.52
NE Wall	2.68	2.14	2.64	2.62	2.52
SE Wall	2.66	2.16	2.60	2.60	2.51
SW Wall	2.71	2.20	2.64	2.63	2.50
Avg.	2.67	2.17	2.64	2.61	---

Table 3b, Average Wall Moisture (%) Measurements for PA02

Wall ID	Baseline 7/14/2005	3/28/2006	7/19/2006	11/28/2006	12/19/2006	Avg.
NW Wall	3.40	1.32	3.08	No data	1.88	2.42
NE Wall	3.58	1.30	3.00	2.03	1.86	2.35
SE Wall	3.04	1.39	2.86	3.12	1.95	2.47
SW Wall	3.32	1.47	3.20	2.79	1.99	2.55
Avg.	3.34	1.37	3.04	2.64	1.92	---

Table 3c, Average Wall Moisture Measurements for PA03

Wall ID	Baseline 7/18/2005	4/11/2006	7/20/2006	12/12/2006	1/02/2007	Avg.
NW Wall	3.59	2.49	3.53	3.02	3.10	3.15
NE Wall	4.04	3.31	4.11	3.46	3.66	3.72
SE Wall	3.75	2.76	3.78	3.44	3.63	3.47
SW Wall	3.59	2.64	3.67	3.24	3.53	3.47
Avg.	3.74	2.80	3.77	3.29	3.48	---

Basement Ceiling Wood Joist Measurements

Table 4a, Average Basement Ceiling Joist Moisture (%) Measurements for PA01

Date	Avg. Moisture %
5/9/2005	9.4
4/4/2006	8.0
7/21/2006	9.7
10/2/2006	10.3

Table 4b, Average Basement Ceiling Joist Moisture (%) Measurements for PA02

Date	Avg. Moisture %
7/14/2005	10.6
3/28/2006	8.1
7/19/2006	11.4
11/28/2006	9.78
12/19/2006	7.72

Table 4c, Average Basement Ceiling Joist Moisture Measurements for PA03

Date	Avg. Moisture %
7/18/2005	11.1
4/11/2006	8.1
7/20/2006	11.8
12/12/2006	8.1
1/02/2007	9.1