

US EPA ARCHIVE DOCUMENT

Final Site Investigation Report

Appendices

Centredale Manor Restoration Project North Providence, Rhode Island

*Submitted to:
United States Environmental Protection Agency
Region I*

Contract No. 68-R1-98-01
IT Project No. 782893

Prepared by:



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Appendices

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February Soil Sampling Results
by EPA Method 8290

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EPA Centredale Manor Apartments
Centredale, RI

SITE	DATE	DEPTH (ft)	RESULT TYPE	2,3,7,8-TCDD (ng/kg)
CMS-001	02/17/99	0.25	Prim	26.1
CMS-001	02/17/99	0.25	Dup 1	19.0
CMS-002	02/17/99	0.25	Prim	125
CMS-003	02/17/99	0.25	Prim	7.81
CMS-004	02/17/99	0.25	Prim	18.6
CMS-004	02/17/99	0.25	Dup 1	27.1
CMS-005	02/17/99	0.25	Prim	166
CMS-005	02/17/99	0.25	Dup 1	322
CMS-006	02/17/99	0.25	Prim	14.6
CMS-007	02/17/99	0.25	Prim	485
CMS-008	02/17/99	0.25	Prim	14.9
CMS-009	02/17/99	0.25	Prim	32.2
CMS-010	02/17/99	0.25	Prim	18.9
CMS-011	02/17/99	0.25	Prim	200
CMS-012	02/17/99	0.25	Prim	151
CMS-013	02/17/99	0.25	Prim	236
CMS-014	02/17/99	0.25	Prim	25.6
CMS-015	02/17/99	0.25	Prim	45.5
CMS-016	02/17/99	0.25	Prim	815
CMS-017	02/17/99	0.25	Prim	302
CMS-018	02/17/99	0.25	Prim	38.1
CMS-019	02/17/99	0.25	Prim	1510
CMS-020	02/17/99	0.25	Prim	233
CMS-021	02/17/99	0.25	Prim	1170
CMS-021	02/17/99	0.25	Dup 1	2130
CMS-022	02/17/99	0.25	Prim	1480
CMS-023	02/17/99	0.25	Prim	2480
CMS-024	02/17/99	0.25	Prim	1600
CMS-025	02/17/99	0.25	Prim	1030
CMS-026	02/16/99	0.25	Prim	15.5
CMS-027	02/16/99	0.25	Prim	63.9
CMS-028	02/16/99	0.25	Prim	58.0
CMS-029	02/16/99	0.25	Prim	40.5
CMS-030	02/16/99	0.25	Prim	101

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For RCL TCDD_HIST

February Soil Sampling Results
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EPA Centredale Manor Apartments
Centredale, RI

SITE	DATE	DEPTH (ft)	RESULT TYPE	2,3,7,8-TCDD (ng/kg)
CMS-031	02/16/99	0.25	Prim	107
CMS-033	02/16/99	0.25	Prim	185
CMS-034	02/16/99	0.25	Prim	2.62
CMS-035	02/17/99	0.25	Prim	10.3
CMS-037	02/16/99	0.25	Prim	7.59
CMS-038	02/16/99	0.25	Prim	5.27
CMS-041	02/16/99	0.25	Prim	2.14
CMS-044	02/16/99	0.25	Prim	2.30
CMS-047	02/16/99	0.25	Prim	5.45
CMS-048	02/16/99	0.25	Prim	2.66
CMS-050	02/16/99	0.25	Prim	54.5
CMS-051	02/16/99	0.25	Prim	1483
CMS-052	02/16/99	0.25	Prim	44.5
CMS-052	02/16/99	0.25	Dup 1	2.27
CMS-053	02/16/99	0.25	Prim	3.12
CMS-054	02/16/99	0.25	Prim	1.41
CMS-055	02/17/99	0.25	Prim	232
CMS-056	02/16/99	0.25	Prim	249
CMS-057	02/16/99	0.25	Prim	16300
CMS-058	02/16/99	0.25	Prim	185
CMS-059	02/16/99	0.25	Prim	42.1
CMS-060	02/16/99	0.25	Prim	116000
CMS-061	02/16/99	0.25	Prim	195
CMS-061	02/16/99	0.25	Dup 1	222
CMS-062	02/16/99	0.25	Prim	12.0
CMS-063	02/16/99	0.25	Prim	4460
CMS-064	02/16/99	0.25	Prim	699
CMS-065	02/16/99	0.25	Prim	1.53
CMS-066	02/16/99	0.25	Prim	76.3
CMS-067	02/16/99	0.25	Prim	118
CMS-068	02/16/99	0.25	Prim	8.51
CMS-068	02/16/99	0.25	Dup 1	8.41
CMS-069	02/16/99	0.25	Prim	2430
CMS-070	02/16/99	0.25	Prim	0.710

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SITE	DATE	DEPTH (ft)	RESULT TYPE	2,3,7,8-TCDD (ng/kg)
CMS-071	02/16/99	0.25	Prim	1.77
CMS-071	02/16/99	0.25	Dup 1	1.00
CMS-072	02/16/99	0.25	Prim	4.00
CMS-073	02/16/99	0.25	Prim	28.0
CMS-074	02/16/99	0.25	Prim	1750
CMS-075	02/16/99	0.25	Prim	8750
CMS-076	02/16/99	0.25	Prim	2030
CMS-078	02/16/99	0.25	Prim	6.09
CMS-078	02/16/99	0.25	Dup 1	9.25
CMS-079	02/16/99	0.25	Prim	35.8
CMS-080	02/16/99	0.25	Prim	394
CMS-081	02/16/99	0.25	Prim	1020
CMS-082	02/16/99	0.25	Prim	1250
CMS-084	02/16/99	0.25	Prim	746
CMS-084	02/16/99	0.25	Dup 1	156
CMS-085	02/17/99	0.25	Prim	329
CMS-086	02/16/99	0.25	Prim	240
CMS-087	02/16/99	0.25	Prim	684
CMS-088	02/16/99	0.25	Prim	134
CMS-089	02/16/99	0.25	Prim	4470
CMS-090	02/17/99	0.25	Prim	13.3
CMS-091	02/17/99	0.25	Prim	225
CMS-092	02/16/99	0.25	Prim	153
CMS-093	02/16/99	0.25	Prim	111
CMS-093	02/16/99	0.25	Dup 1	1830
CMS-094	02/16/99	0.25	Prim	2620
CMS-095	02/16/99	0.25	Prim	115
CMS-096	02/16/99	0.25	Prim	38.5
CMS-096	02/16/99	0.25	Dup 1	24.0
CMS-098	02/17/99	0.25	Prim	28100
CMS-099	02/17/99	0.25	Prim	767
CMS-100	02/17/99	0.25	Prim	12.4
CMS-101	02/16/99	0.25	Prim	118
CMS-102	02/16/99	0.25	Prim	2760

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SITE	DATE	DEPTH (ft)	RESULT TYPE	2,3,7,8-TCDD (ng/kg)
CMS-103	02/16/99	0.25	Prim	129
CMS-103	02/16/99	0.25	Dup 1	164
CMS-104	02/16/99	0.25	Prim	53.1
CMS-107	02/17/99	0.25	Prim	1810
CMS-108	02/17/99	0.25	Prim	95.0
CMS-109	02/16/99	0.25	Prim	1090
CMS-110	02/16/99	0.25	Prim	605
CMS-111	02/16/99	0.25	Prim	112
CMS-112	02/16/99	0.25	Prim	220
CMS-114	02/17/99	0.25	Prim	23.5
CMS-114	02/17/99	0.25	Dup 1	23.2
CMS-115	02/17/99	0.25	Prim	463
CMS-116	02/17/99	0.25	Prim	132
CMS-117	02/16/99	0.25	Prim	6550
CMS-118	02/16/99	0.25	Prim	2530
CMS-119	02/17/99	0.25	Prim	22.9
CMS-121	02/17/99	0.25	Prim	280
CMS-123	02/17/99	0.25	Prim	2100
CMS-124	02/16/99	0.25	Prim	213
CMS-125	02/16/99	0.25	Prim	31.9
CMS-126	02/16/99	0.25	Prim	44.3
CMS-126	02/16/99	0.25	Dup 1	44.4
CMS-127	02/16/99	0.25	Prim	39.0
CMS-128	02/16/99	0.25	Prim	17.8
CMS-130	02/17/99	0.25	Prim	71.9
CMS-131	02/16/99	0.25	Prim	3320
CMS-132	02/16/99	0.25	Prim	19.4
CMS-133	02/16/99	0.25	Prim	729
CMS-134	02/16/99	0.25	Prim	15600
CMS-135	02/17/99	0.25	Prim	20600
CMS-136	02/17/99	0.25	Prim	14.2
CMS-137	02/17/99	0.25	Prim	4.13
CMS-138	02/16/99	0.25	Prim	98.8
CMS-139	02/16/99	0.25	Prim	158

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SITE	DATE	DEPTH (ft)	RESULT TYPE	2,3,7,8-TCDD (ng/kg)
CMS-140	02/16/99	0.25	Prim	117000
CMS-141	02/16/99	0.25	Prim	35500
CMS-142	02/17/99	0.25	Prim	8070
CMS-143	02/17/99	0.25	Prim	186
CMS-144	02/17/99	0.25	Prim	75.2
CMS-145	02/16/99	0.25	Prim	2750
CMS-147	02/16/99	0.25	Prim	6470
CMS-148	02/17/99	0.25	Prim	15300
CMS-149	02/17/99	0.25	Prim	22700
CMS-150	02/17/99	0.25	Prim	22100
CMS-151	02/17/99	0.25	Prim	22.4
CMS-152	02/16/99	0.25	Prim	1400
CMS-153	02/16/99	0.25	Prim	40.8
CMS-154	02/16/99	0.25	Prim	1300
CMS-155	02/16/99	0.25	Prim	6810
CMS-156	02/17/99	0.25	Prim	52900
CMS-157	02/17/99	0.25	Prim	12600
CMS-158	02/17/99	0.25	Prim	10200
CMS-158	02/17/99	0.25	Dup 1	8430
CMS-159	02/17/99	0.25	Prim	3380
CMS-160	02/16/99	0.25	Prim	12600
CMS-160	02/16/99	0.25	Dup 1	11300
CMS-161	02/17/99	0.25	Prim	2550
CMS-162	02/17/99	0.25	Prim	311
CMS-163	02/17/99	0.25	Prim	253
CMS-164	02/17/99	0.25	Prim	16700
CMS-164	02/17/99	0.25	Dup 1	17500
CMS-165	02/17/99	0.25	Prim	8580
CMS-166	02/17/99	0.25	Prim	9620
CMS-167	02/17/99	0.25	Prim	2140
CMS-168	02/17/99	0.25	Prim	11600
CMS-169	02/17/99	0.25	Prim	35100
CMS-170	02/17/99	0.25	Prim	8590
CMS-171	02/17/99	0.25	Prim	5290

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EPA Centredale Manor Apartments
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SITE	DATE	DEPTH (ft)	RESULT TYPE	2,3,7,8-TCDD (ng/kg)
CMS-172	02/17/99	0.25	Prim	9990
CMS-173	02/17/99	0.25	Prim	17500
CMS-174	02/17/99	0.25	Prim	30.8
CMS-175	02/17/99	0.25	Prim	12900
CMS-176	02/17/99	0.25	Prim	141
CMS-177	02/17/99	0.25	Prim	2530
CMS-178	02/17/99	0.25	Prim	769
CMS-178	02/17/99	0.25	Dup 1	734
CMS-179	02/17/99	0.25	Prim	21.7
CMS-180	02/17/99	0.25	Prim	11.2
CMS-181	02/17/99	0.25	Prim	826
CMS-182	02/17/99	0.25	Prim	1440
CMS-182	02/17/99	0.25	Dup 1	869
CMS-183	02/17/99	0.25	Prim	729
CMS-184	02/17/99	0.25	Prim	88.3
CMS-185	02/17/99	0.25	Prim	61.6
CMS-186	02/17/99	0.25	Prim	2500
CMS-187	02/17/99	0.25	Prim	8200
CMS-188	02/17/99	0.25	Prim	3460
CMS-189	02/17/99	0.25	Prim	153
CMS-190	02/17/99	0.25	Prim	1410
CMS-191	02/17/99	0.25	Prim	404
CMS-191	02/17/99	0.25	Dup 1	1380
CMS-192	02/17/99	0.25	Prim	21800
CMS-193	02/17/99	0.25	Prim	1450
CMS-194	02/17/99	0.25	Prim	660
CMS-195	02/17/99	0.25	Prim	8330
CMS-196	02/17/99	0.25	Prim	7840
CMS-197	02/17/99	0.25	Prim	616
CMS-199	02/17/99	0.25	Prim	679
CMS-200	02/17/99	0.25	Prim	2350
CMS-201	02/17/99	0.25	Prim	877
CMS-202	02/17/99	0.25	Prim	2530
CMS-203	02/17/99	0.25	Prim	2530

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EPA Centredale Manor Apartments
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SITE	DATE	DEPTH (ft)	RESULT TYPE	2,3,7,8-TCDD (ng/kg)
CMS-204	02/17/99	0.25	Prim	1830
CMS-204	02/17/99	0.25	Dup 1	3390
CMS-205	02/17/99	0.25	Prim	13300
CMS-206	02/17/99	0.25	Prim	4500
CMS-208	02/17/99	0.25	Prim	1950
CMS-209	02/17/99	0.25	Prim	11900
CMS-210	02/17/99	0.25	Prim	6190
CMS-211	02/17/99	0.25	Prim	864
CMS-212	02/17/99	0.25	Prim	2740
CMS-213	02/17/99	0.25	Prim	7820
CMS-214	02/17/99	0.25	Prim	5040
CMS-215	02/17/99	0.25	Prim	10200
CMS-216e	02/16/99	0.25	Prim	10500
CMS-217	02/16/99	0.25	Prim	2420
CMS-217	02/16/99	0.25	Dup 1	5030
CMS-218	02/16/99	0.25	Prim	2290
CMS-219	02/16/99	0.25	Prim	2220
CMS-220	02/16/99	0.25	Prim	2.86
CMS-221	02/16/99	0.25	Prim	1990
CMS-222	02/16/99	0.25	Prim	98.7
CMS-223	02/16/99	0.25	Prim	120
CMS-224	02/16/99	0.25	Prim	1.17
CMS-225	02/16/99	0.25	Prim	133
CMS-226	02/17/99	0.25	Prim	9680
CMS-227	02/17/99	0.25	Prim	1910
CMS-228	02/17/99	0.25	Prim	2360
CMS-229	02/17/99	0.25	Prim	0.988
CMS-230	02/17/99	0.25	Prim	5.31
CMS-231	02/17/99	0.25	Prim	193
CMS-232	02/17/99	0.25	Prim	2200
CMS-233	02/17/99	0.25	Prim	841
CMS-234	02/17/99	0.25	Prim	278
CMS-235	02/17/99	0.25	Prim	781
CMS-236	02/17/99	0.25	Prim	830

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SITE	DATE	DEPTH (ft)	RESULT TYPE	2,3,7,8-TCDD (ng/kg)
CMS-237	02/17/99	0.25	Prim	2620
CMS-238	02/17/99	0.25	Prim	13500
CMS-239	02/17/99	0.25	Prim	3490
CMS-240	02/17/99	0.25	Prim	5110
CMS-241	02/17/99	0.25	Prim	6640
CMS-242	02/17/99	0.25	Prim	20300

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For RCL TCDD_HIST

Table 1a

Dioxin Analytical Results in Soil
Validated Results (Sampled from 6/21/99 - 11/5/99)

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EPA Centredale Manor Apartments
Centredale, RI

CONSTITUENT (Units in ng/kg)	SITE	AD-01	AD-01	AD-01	AD-02	AD-02	AD-02
	SAMPLE ID	AD-01-A	AD-01-B	AD-01-C	AD-02-A	AD-02-B	AD-02-C
	DATE	07/22/99	07/22/99	07/22/99	07/21/99	07/21/99	07/21/99
	DEPTH (ft)	0.50	9.50	11.20	0.50	8.00	11.50
	RESULT TYPE	Primary	Primary	Primary	Primary	Primary	Primary
2,3,7,8-TCDD		68	2.5	1.4	0.68 J	<0.49 U	3.9
1,2,3,7,8-PeDD		<0.58 U	<0.59 U	<0.46 U	<0.46 U	<0.44 U	<0.37 U
1,2,3,4,7,8-HxCDD		<0.30 U	<0.19 U	<0.41 U	<0.49 U	<0.56 U	<0.48 U
1,2,3,6,7,8-HxCDD		<0.77 U	<0.40 U	<0.42 U	<0.50 U	<0.57 U	<0.49 U
1,2,3,7,8,9-HxCDD		<0.70 U	<0.26 U	<0.38 U	<0.46 U	<0.53 U	<0.46 U
1,2,3,4,6,7,8-HpDD		14	<2.2 U	<0.48 U	<2.1 U	<1.6 U	<2.5 U
OCDD		90	15	5.8 J	17	22	56
2,3,7,8-TCDF		<0.34 U	1.1 CON	<0.22 U	<0.40 CON	<0.23 U	<0.23 U
1,2,3,7,8-PeDF		<0.36 U	<1.7 U	<0.41 U	<0.31 U	<0.24 U	<0.35 U
2,3,4,7,8-PeDF		<0.21 U	<1.8 U	<0.40 U	<0.34 U	<0.23 U	<0.34 U
1,2,3,4,7,8-HxCDF		<0.47 U	3.8 J	<0.19 U	<1.0 U	<0.41 U	<0.48 U
1,2,3,6,7,8-HxCDF		---	---	---	---	---	---
2,3,4,6,7,8-HxCDF		<0.55 U	<1.2 U	<0.19 U	<0.38 U	<0.20 U	<0.27 U
1,2,3,7,8,9-HxCDF		<0.13 U	<0.44 U	<0.20 U	<0.16 U	<0.20 U	<0.28 U
1,2,3,4,6,7,8-HpDF		4.3 J	4.8 J	<0.34 U	8.5	4.9 J	5.4 J
1,2,3,4,7,8,9-HpDF		<0.31 U	<0.67 U	<0.049 U	<0.33 U	<0.18 U	<0.29 U
OCDF		7.4 J	<2.5 U	<0.48 U	5.8 J	<2.5 U	<3.1 U
Total TCDDs		71	2.5	1.4	0.68	<0.57 U	3.9
Total PeCDDs		<0.58 U	<0.59 U	<0.46 U	<0.46 U	<0.44 U	<0.37 U
Total HxCDDs		<1.9 U	<0.86 U	<0.42 U	<0.86 U	<0.57 U	<0.83 U
Total HpCDDs		25	<2.4 U	<0.48 U	<2.2 U	<1.6 U	<2.7 U
Total TCDFs		1.2	22	<0.22 U	2.6	1.0	0.95
Total PeCDFs		<2.0 U	7.6	<0.41 U	6.1	<0.98 U	<1.5 U
Total HxCDFs		<2.2 U	8.3	<0.20 U	4.6	<1.9 U	<2.4 U
Total HpCDFs		8.6	4.8	<0.34 U	12	4.9	5.4

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