Department of Energy

Ohio Field Office
Fernald Environmental Management Project
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OCT 15 2003

Mr. James A. Saric, Remedial Project Manager
United States Environmental Protection Agency
Region V, SR-6J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0010-04

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF THE PROPOSED CHANGES RESULTING FROM THE 2003 ANNUAL REVIEW OF THE INTEGRATED ENVIRONMENTAL MONITORING PLAN TO THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND OHIO ENVIRONMENTAL PROTECTION AGENCY

This letter transmits and documents the completion of the annual review of the Integrated Environmental Monitoring Plan (IEMP), Revision 3, and identifies the necessary program modifications. The requirement for the IEMP annual review is identified in Section 8.0 of the plan. It states that the annual review cycle provides the mechanism for identifying and initiating any program modifications necessary to align the IEMP with near-term remediation activities.

Modifications to the monitoring programs, which have been identified through the review process, are primarily designed to:

- Address any remediation activities expected to begin during 2004 that have not already been identified
- Incorporate and consolidate any updates identified through the weekly conference calls to the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) along with commitments made through the IEMP reporting process or associated comment response documents
- Incorporate or identify any new or revised regulatory requirements or agreements

To facilitate and document the review process, an enclosure has been provided that includes the following: 1) a table summarizing the proposed changes to the IEMP, Revision 3 along with the reasons for the changes; and 2) attachments, which provide detailed information on some of the changes discussed in the summary table. The changes identified in the enclosure are to be implemented January 1, 2004 unless otherwise noted. The proposed changes identified in this enclosure will be formally incorporated in the next revision of the IEMP.

Additionally, with respect to IEMP data reporting, it should be noted that there are some process improvements that will be made to the IEMP Data Information Site during 2003 or in early 2004, which will allow for automated graphing capabilities. The graphs will be similar to some of those included in the annual site environmental reports. After the graphing capabilities are added to the IEMP Data Information Site, discussions should be held with the USEPA and OEPA regarding the possibility of reducing the number of graphs to be included in the annual site environmental reports. These discussions could occur during the weekly site conference calls or through an independent meeting.

As stated above the target date for overall implementation is January 1, 2004. This date supports the calendar year reporting structure outlined in the IEMP and contract requirements.

If you have any questions concerning the IEMP annual review or the changes proposed within, please contact Ed Skintik of my staff at (513) 648-3151.

Sincerely,

Johnny Reising

for Glenn Griffiths
Acting Director

FCP:Skintik

Enclosures: As Stated

cc w/enclosures:
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N. Hallein, EM-41/CLOV
G. Jablonowski, USEPA-V, SR-6J
M. Murphy, USEPA-V, AE-17J
T. Schneider, OEPA-Dayton (total of 3 copies of encs.)
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ECDC, Fluor Fernald, Inc./MS52-7

SUMMARY OF PROPOSED TECHNICAL CHANGES TO THE INTEGRATED ENVIRONMENTAL MONITORING PLAN, REVISION 3

Section/Page Number	Description of Proposed Change	Driver/Technical Information
Global	The IEMP organization is now under Soil and Disposal Facility Project; therefore, references to the "Closure Project Regulatory Management organization" in association with the IEMP are no longer accurate regarding project organization. It is important to note that compliance oversight and review with respect to the IEMP and its related documents will continue. Additionally, Waste Pit Remedial Action Project (WPRAP) is now Waste Pits Project (WPP).	Reorganizations have resulted in new divisional names, and some divisional roles and responsibilities have changed.
Global	The Fernald Environmental Management Project (FEMP) has been renamed to the Fernald Closure Project (FCP); therefore, references to FEMP will be updated in some places.	The name of the site has been changed to "Closure Project" to better reflect the cleanup mission.
Global	A note will be added to identify that in January 2003 the DOE Order 450.1 went into effect, superceding DOE Order 5400.1. It has been determined that the intent of the order is met through existing DOE contractual requirements, established FCP programs, and the closure mission of the site. Until such time that the FCP contract is modified, DOE Order 5400.1 will continue to be referenced in the IEMP.	DOE Order 5400.1 has been superceded by DOE Order 450.1.
Pages 2-2, and 2-11 through 2-13 (Table 2-2, and Figures 2-1 and 2-2)	Update Table 2-2, and Figures 2-1 and 2-2 with the most current information from the revised site closure schedule. Refer to Attachment A for updated figures and table.	The change is required based on updated schedule of site activities.
Section 3.5/Pages 3-28 through 3-31 (Table 3-4) Section 3.6.2.1/Page 3-34 (Table 3-6) Section 3.6.2.1/Page 3-35 (Figure 3-5) Section 3.6.2.2/Page 3-37 (Figure 3-6) Appendix A (Figure A-17)	Remove five monitoring wells (Monitoring Wells 2015, 2068, 2037, 2070, and 3009) from Table 3-4, and Figures 3-5, 3-6, and A-17 to update the list of IEMP Groundwater Monitoring Wells. Remove two monitoring wells (Monitoring Wells 2015 and 2068) from Table 3-6. Abandonment of these wells was communicated to EPA and OEPA in the weekly conference calls on 4/22/03 (Wells 2015, 2068, 2070, and 3009) and 5/13/03 (Well 2037). Refer to Attachment B for updated figures and tables.	These wells were plugged and abandoned in 2003. Downhole camera surveys revealed that Monitoring Wells 2015, 2068, 2070, and 3009 were leaking, and therefore no longer protective of the aquifer. Monitoring Well 2037 was plugged and abandoned to facilitate excavation of the Solid Waste Landfill.
Section 3.6.2.6/Page 3-43	Measure water levels in Channels 1 and 6 of Type 8 wells. If Channel 1 is dry sampling personnel will measure the water level from the next deeper channel that is not dry.	This change was needed to correct an error in the IEMP, Revision 3. Water level measurements made from the shallowest and deepest available sampling channels can be used to assess the presence of vertical gradients.

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SUMMARY OF PROPOSED TECHNICAL CHANGES TO THE INTEGRATED ENVIRONMENTAL MONITORING PLAN, REVISION 3 (Continued)

Section/Page Number	Description of Proposed Change	Driver/Technical Information
Section 3.6.2.6/Pages 3-45 and 3-44 (list of wells and Figure 3-8)	Remove nine monitoring wells (Monitoring Wells 2011, 2015, 2020, 2037, 2068, 2070, 2417, 2949, and 3009) and added two monitoring wells (Monitoring Wells 3011 and 3070) to update the list of Groundwater Elevation Monitoring Wells. Abandonment of these wells was communicated to EPA and OEPA in the weekly conference calls on 4/22/03 (Wells 2015, 2020, 2068, 2070, 2417, and 3009), 5/13/03 (Wells 2011 and 2037), and 5/20/03 (Well 2949). Refer to Attachment B for updated information.	These wells were plugged and abandoned in 2003. Downhole camera surveys revealed that Monitoring Wells 2011, 2015, 2020, 2068, 2070, and 3009 were leaking, and therefore no longer protective of the aquifer. Monitoring Wells 2037 and 2949 were plugged and abandoned to facilitate excavation of the Solid Waste Landfill. Monitoring Well 2417 was plugged and abandoned to make way for Cell 7 construction.
Section 3.6.2.11/Page 3-51	Add a requirement that wells to be plugged and abandoned may be sampled one last time for a subset of water quality parameters listed in Table 3-5. The exact parameter list selected for the sampling will be based on the exact location of the monitoring well. Changes were communicated to EPA and OEPA in the weekly conference call on 4/22/03.	This change provides for a pre-abandonment sampling of monitoring wells.
Section 3.6.2.11/Page 3-51	Sample Type 8 wells in all channels for total uranium prior to being plugged and abandoned. Additional water quality parameters may also be selected from Table 3-5 for sampling in each channel, based on the location of the well.	Type 8 wells have more than one sampling point. Direction is needed in the IEMP to allow samplers to collect pre plugging and abandonment samples from all available sampling channels, not just the channel completed in the portion of the uranium plume with the highest measured uranium concentration.
Section 4.4.2.1/Page 4-11 (Table 4-2)	Change the total uranium background value from 0.001 µg/L to 0.001 mg/L.	There was error in the unit reported in the table.
Sections 4.4.2.3 and 4.5.2/Pages 4-15, 4-32 and 4-33 (Tables 4-3 and 4-5)	Revise tables and text to reflect new NPDES Permit requirements. Additionally, changes were communicated to EPA and OEPA in the weekly conference call on 6/17/03. Refer to Attachment C for updated tables.	The new NPDES Permit 1IO00004*GD effective 7/1/03 is now the driver for NPDES Permit requirements.
Section 4.5.2/Page 4-30 (Table 4-4)	Add Nitrate/Nitrite Method 353.2[c]. Refer to Attachment C.	This update is included so the approved method can be used.
Section 4.5.2/Pages 4-30, 4-32 (Tables 4-4 and 4-5)	Change Cyanide Method 9010[c] to 9010B[c]. Refer to Attachment C for updated tables.	This change reflects the update to the method.
Global - Section 4 and Appendix B	Remove references to Benchmark Toxicity Value (BTV) evaluations.	Refer to Attachment D.
Section 5.2.2/Pages 5-4 and 5-6	Update the text associated with the specific Stream Corridor areas planned for excavation in 2004 to include the Pilot Plant Drainage Ditch in addition to the Storm Sewer Outfall Ditch and Paddys Run, as it is anticipated that excavation in these areas will occur as required.	The planned excavation schedule and sequence for required excavation within the Stream Corridors area has been revised since the IEMP, Revision 3 was issued.

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SUMMARY OF PROPOSED TECHNICAL CHANGES TO THE INTEGRATED ENVIRONMENTAL MONITORING PLAN, REVISION 3 (Continued)

Section/Page Number	Description of Proposed Change	Driver/Technical Information
Section 5.4.3/Page 5-8	Update text to identify that instead of certification sampling for the Stream Corridors that sampling associated with the Stream Corridors will be fulfilled through a combination of soil remediation efforts (i.e., excavation control sampling) during 2004.	The planned excavation schedule and sequence for required excavation within the Stream Corridors area has been revised since the IEMP, Revision 3 was issued. Note: Duplication of sampling efforts will not occur with respect to IEMP and Stream Corridor sediment sampling and IEMP related data will continue to be reported through the IEMP reporting and data processes.
Global - Section 5	If Stream Corridor sampling indicates the necessity to add five inorganic constituents (barium, cadmium, iron, lead, and zinc) to IEMP sediment sampling, then these constituents will be sampled and evaluated with respect to BTVs in 2004.	Refer to Attachment D.
Section 6.4.2.2/Page 6-18 (Figure 6-3)	Remove TS-4 radon monitoring location from IEMP radon network. This change was communicated to EPA and OEPA in the weekly conference call on 7/15/03. Refer to Attachment E for updated figure.	Continued progress with the excavation of building foundations and the Decontamination and Demolition (D&D) of buildings requires utilities, specifically electrical power, to be isolated in a number of locations within the former production area. As a result of utility isolation at the Plant 1 pad, power is no longer available to the TS-4 radon monitor. Since temporary power or re-location of the monitor is not practical, the monitoring location was removed from the IEMP network.
Section 6.4.2.2/Page 6-18 (Figure 6-3)	Remove Pilot Plant radon monitoring location from IEMP radon network. This change was communicated to EPA and OEPA in the weekly conference call on 7/15/03. Refer to Attachment E for updated figure.	Under current plans, the utility isolation at the Pilot Plant is expected to occur prior to January 2004. This will cut power to the Pilot Plant radon monitor. Since temporary power or re-location of the monitor is not practical, the monitoring location will be removed from the IEMP network.
Section A.3.2/Page A-9	Remove Monitoring Well 2037 from the list of eight wells to be sampled for dioxins. Abandonment of this well was communicated to EPA and OEPA in the weekly conference call on 5/13/03.	Monitoring Well 2037 was plugged and abandoned in 2003 to facilitate excavation of the Solid Waste Landfill.
Section D.4.1/Pages D-5 and D-8 (Table D-2)	Revise text to state that monitoring of the Indiana brown bat and Sloan's crayfish will only occur if their habitat is impacted by cleanup activities. Additionally, years identified in Table D-2 with respect to the "Implementation" column will be updated to be "As required."	Monitoring since 1993 has demonstrated that no impacts to Sloan's crayfish or Indiana brown bat have occurred. Now that the majority of suitable habitat for both species has been certified, no future impacts are anticipated. Therefore, it will not be necessary to conduct surveys. However, surveys will be conducted if deemed necessary.
Section D.4.1.2/Page D-8	Remove text that states that additional bat surveys will occur prior to ecological restoration and as a follow-up to enhancement of bat habitat.	No further ecological restoration within suitable habitat is planned. Additionally, bat surveys are not included in the scope of monitoring for restored areas or in the draft Natural Resource Restoration Plan.

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ATTACHMENT A

FCP INTEGRATED REMEDIATION FIELD ACTIVITIES FOR 2003 AND 2004

TABLE 2-2

FEMP INTEGRATED REMEDIATION FIELD ACTIVITIES FOR 2003 AND 2004[a]

Remediation Project	2003	2004
Waste Pits Project	Continue waste excavation, treatment, shipment, and off-site disposal by rail	Complete waste excavation, treatment, shipment, and off-site disposal by rail
Soil and Disposal Facility Project	Continue excavation and screening of clay from Borrow Area	Continue excavation and screening of clay from Borrow Area
	Begin and complete Cell 2 cap construction	Begin and complete Cell 7 liner construction and begin impacted material placement with protective and select soil
	Continue Cell 3 impacted material placement	Continue Cell 3 impacted material placement
	Continue Cell 4 impacted material placement	Cap Cell 3
	Begin Cell 5 impacted material placement	Continue Cell 4 impacted material placement
	Begin and complete Cell 6 liner construction and begin impacted material placement	Continue Cell 5 impacted material placement
	Continue Area 6 excavation (Solid Waste Landfill and Fire Training Facility)	Continue Cell 6 impacted material placement
	Begin and complete Area 4A excavation	Begin Area 5 excavation
	Complete Area 2/Phase 2 excavation	Begin Area 6 excavation (Waste pit liners and subsurface soils)
	Begin Area 4B excavation	Begin and complete Stream Corridors excavation
		Begin and complete Outfall Line excavation (from Dissolved Oxygen Building to the Great Miami River)

TABLE 2-2
(Continued)

Remediation Project	2003	2004
Aquifer Restoration Project	Sitewide groundwater monitoring	Sitewide groundwater monitoring
	Continue operation of water treatment facilities	Continue operation of water treatment facilities
	Continue South Plume Module extraction well operations and Phase 2 Optimization Construction (if necessary)	Continue South Plume Module extraction well operations
	Continue Re-Injection Module well operations	Continue Re-Injection Module well operations
	Continue South Field Phase I Module extraction well operations and continue construction and Startup Phase II	Continue South Field Module extraction well operations
	Installation and maintenance of supplemental extraction/re-injection wells (as necessary)	Installation and maintenance of supplemental extraction/re-injection wells (as necessary)
	Continue collection and treatment of storm water and wastewater	Continue collection and treatment of storm water and wastewater
	Continue on-site disposal facility leak detection and leachate monitoring	Continue on-site disposal facility leak detection and leachate monitoring
	Continue Waste Storage Area Phase I Module extraction well operations	Continue Waste Storage Area Phase I Module extraction well operations

TABLE 2-2
(Continued)

Remediation Project	2003	2004
Decontamination and Demolition Project	Complete Plant 1 Phase 2 Complex Complete Plant 2 Complex Complete Plant 3 Complex Complete Plant 8 Complex Begin & complete Pilot Plant Warehouse Begin Administration Complex (6 buildings/structures) Complete Laboratory Complex Continue miscellaneous structures Continue Pilot Plant Complex Complete Liquid Storage Complex Complete General Sump complex	Complete Administration Complex (6 buildings/structures) Begin East Warehouse Complex Continue miscellaneous structures Complete Pilot Plant Complex
Silos Project	Continue Silo 3 Construction Radon Control System Phase 1 operations Continue Silo 1 and 2 Accelerated Waste Retrieval Construction Continue Silo 1 and 2 Remediation facility construction	Complete Silo 3 Construction and Startup Silo 3 operations and shipping Begin Radon Control System Phase 2 Operations (a component of Silo 1 and 2 Accelerated Waste Retrieval) Complete Silo 1 and 2 Accelerated Waste Retrieval Construction, Begin Operations (Silo 1 and 2 material transfer) Complete Silo 1 and 2 Remediation facility construction and startup; initiate operations

[a]All schedule information is based on the site master schedule, July 2002 status.

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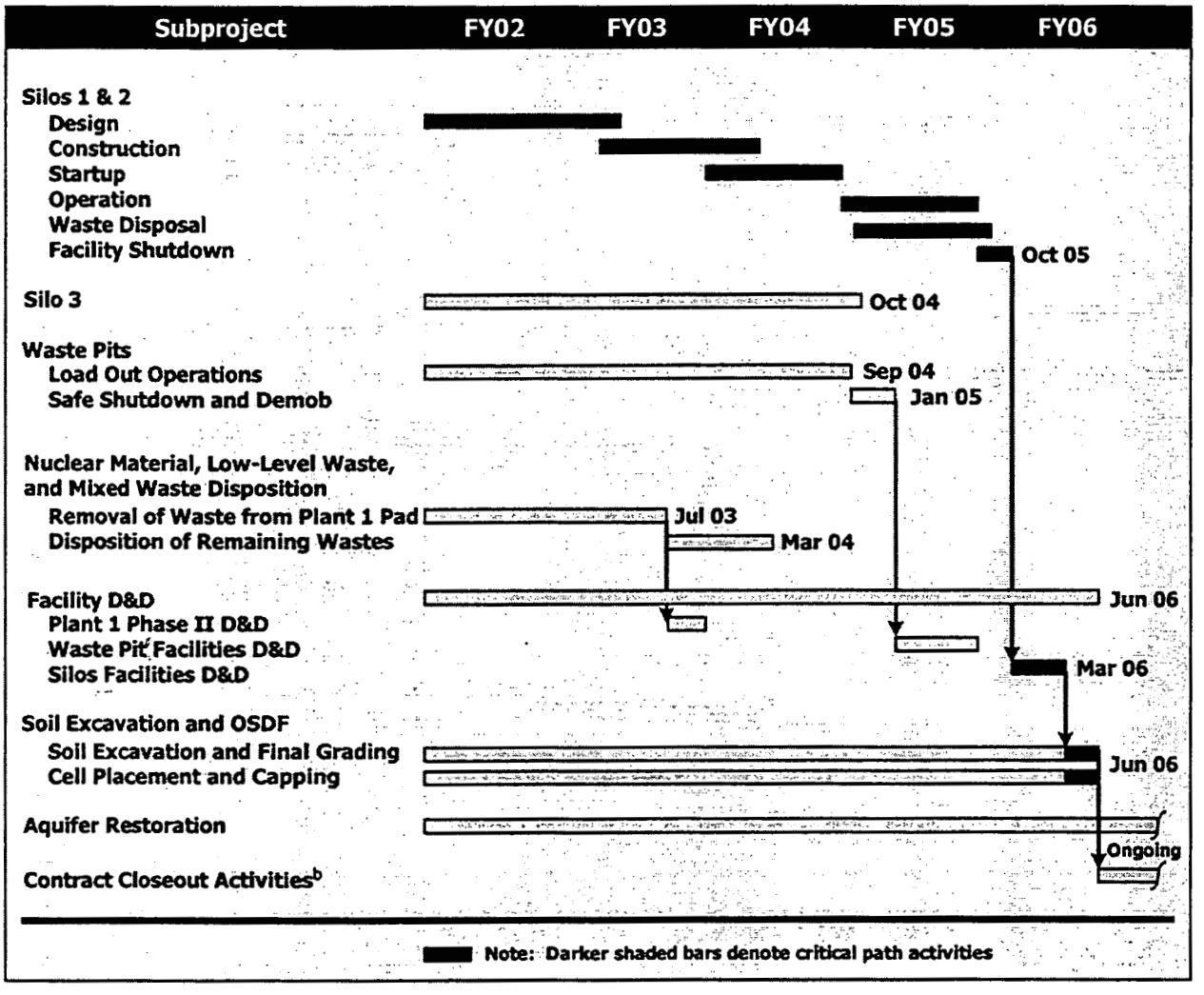
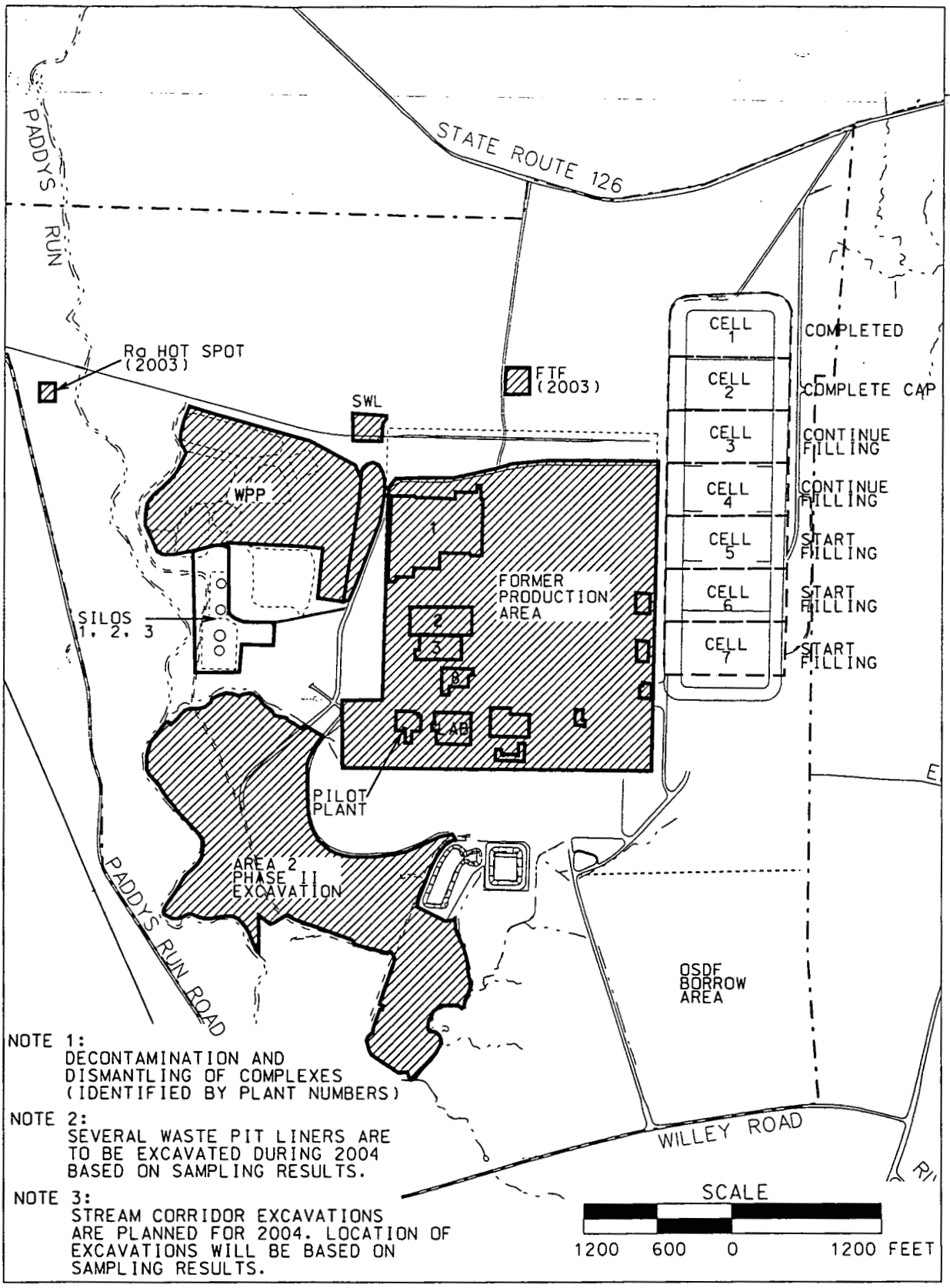
FIGURE 2-1
FERNALD SCHEDULE FOR SITE CLOSURE IN 2006[a]



[a]Based on site baseline schedule as of October 2003.
[b]Following the target site closure date of June 2006, contract closeout activities, groundwater pumping and treatment, and long-term stewardship activities will be performed.



NOTE 1:
DECONTAMINATION AND DISMANTLING OF COMPLEXES (IDENTIFIED BY PLANT NUMBERS)

NOTE 2:
SEVERAL WASTE PIT LINERS ARE TO BE EXCAVATED DURING 2004 BASED ON SAMPLING RESULTS.

NOTE 3:
STREAM CORRIDOR EXCAVATIONS ARE PLANNED FOR 2004. LOCATION OF EXCAVATIONS WILL BE BASED ON SAMPLING RESULTS.

LEGEND:

— · — · — FCP BOUNDARY

WPP EXCAVATION, TREATMENT AND OFF-SITE DISPOSAL OF WASTE PIT MATERIALS

SILOS 1,2,3 CONSTRUCTION AND OPERATIONS

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FIGURE 2-2. PLANNED FCP REMEDIATION ACTIVITIES FOR 2003 AND 2004

V:/5FGP1/DGN/03REVISION/03RV001.DGN

STATE PLANAR COORDINATE SYSTEM 1983

07-OCT-2003

ATTACHMENT B

UPDATED FIGURES AND TABLES FOR GROUNDWATER SAMPLING

LIST OF GROUNDWATER ELEVATION MONITORING WELLS

80	2098	2424	2881	23275	3387	62433
2002	2106	2426	2897	23276	3390	63116
2009	2107	2429	2898	23277	3396	63119
2010	2108	2430	2899	23278	3398	63121
2014	2109	2431	2900	23279	3402	63122
2016	2118	2432	21033	23280	3550	63283
2017	2119	2434	21063	23281	3552	63284
2032	2125	2436	21064	23282	3821	63285
2043	2126	2446	21065	3011	3880	63286
2044	2128	2544	21192	3014	3881	63287
2045	2166	2545	21194	3015	3900	63288
2046	2383	2546	22198	3017	31217	63289
2048	2384	2550	22206	3032	32304	63290
2049	2385	2552	22299	3045	32305	63291
2051	2386	2553	22300	3046	32306	63292
2052	2387	2625	22301	3049	32307	82433
2054	2389	2636	23064	3054	32766	83117
2065	2390	2648	22302	3065	32768	83120
2091	2394	2649	22303	3069	4067	83123
2092	2396	2679	23118	3070	4424	83124
2093	2397	2702	23271	3095	4426	83293
2095	2398	2733	23272	3106	4432	83294
2096	2399	2821	23273	3125	41217	83295
2097	2402	2880	23274	3385	62408	83296

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TABLE 3-4

LISTING OF IEMP GROUNDWATER MONITORING WELLS[a]

Number	Total Uranium Monitoring	Property/Plume Boundary Monitoring			Waste Storage Area Monitoring - FRL Exceedances	South Field Monitoring - FRL Exceedances
		Monitor FRL Exceedances	Monitor OSDF Constituents[b]	Monitor PRRS Constituents[c]		
1	13					
2	14					
3	2002					
4	2008					
5	2009					
6	2010				2010	
7	2014					
8	2016					
9	2017					
10	2032					
11	2045					2045
12	2046					
13	2048					
14	2049					2049
15	2054					
16	2060 (12)					
17	2093	2093				
18	2095					
19	2106					
20	2109					
21	2118					
22	2125					
23	2128	2128		2128		
24	2166					
25	2385					
26	2386					
27	2387					
28	2389					
29	2390					
30	2396					
31	2397					
32	2398	2398				
33	2402					
34	2426	2426				
35	2429	2429				
36	2430	2430				
37	2431	2431				
38	2432	2432				
39	2550					
40	2552					
41	2553					

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TABLE 3-4
(Continued)

Number	Total Uranium Monitoring	Property/Plume Boundary Monitoring: Monitor FRL Exceedances	Monitor OSDF Constituents[b]	Monitor PRRS Constituents[c]	Waste Storage Area Monitoring - FRL Exceedances	South Field Monitoring - FRL Exceedances
42	2625	2625		2625		
43	2636	2636		2636		
44	2648				2648	
45	2649				2649	
46	2733	2733				
47	2821				2821	
48	2880					
49	2897					
50	2898	2898		2898		
51	2899	2899		2899		
52	2900	2900		2900		
53	3014					
54	3015					
55	3032					
56	3045					
57	3046					
58	3049					
59	3054					
60	3067	3067				
61	3069					
62	3070	3070				
63	3093	3093				
64	3095					
65	3106					
66	3125					
67	3128	3128		3128		
68	3385					
69	3387					
70	3390					
71	3396					
72	3397					
73	3398	3398				
74	3402					
75	3424	3424				
76	3426	3426				
77	3429	3429				
78	3431	3431				
79	3432	3432				
80	3550					
81	3552					
82	3636	3636		3636		
83	3733	3733				

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TABLE 3-4
(Continued)

Number	Total Uranium Monitoring	Property/Plume Boundary Monitoring: Monitor FRL Exceedances	Monitor OSDF Constituents[b]	Monitor PRRS Constituents[c]	Waste Storage Area Monitoring - FRL Exceedances	South Field Monitoring - FRL Exceedances
84	3821				3821	
85	3880					
86	3897					
87	3898	3898		3898		
88	3899	3899		3899		
89	3900	3900		3900		
90	4125					
91	4398	4398				
92	6880					
93	6881					
94	21033					
95	21063	21063				
96	21192					
97	22204	22204	22204			
98	22205	22205	22205			
99	22208	22208	22208			
100	22198	22198	22198			
101	22199	22199	22199			
102	23064					
103	23118					
104	23271					
105	23272					
106	23273					
107	23274					
108	23275					
109	23276					
110	23277					
111	23278					
112	23279					
113	23280					
114	23281					
115	23282					
116	31217	31217				
117	32766					
118	32768					
119	62408					
120	62433					
121	63116					
122	63119					
123	63121					
124	63122					
125	63283					

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TABLE 3-4
(Continued)

Number	Total Uranium Monitoring	Property/Plume Boundary Monitoring			Waste Storage Area Monitoring - FRL Exceedances	South Field Monitoring - FRL Exceedances
		Monitor FRL Exceedances	Monitor OSDF Constituents[b]	Monitor PRRS Constituents[c]		
126	63284					
127	63285					
128	63286					
129	63287					
130	63288					
131	63289					
132	63290					
133	63291					
134	63292					
135	82433					
146	83117					
137	83120					
138	83123					
139	83124					
140	83293					
141	83294					
142	83295					
143	83296					

[a]The Column 1 number is used to identify the number of wells in the overall program. The individual monitoring well identification numbers are provided in Columns 2-7 as appropriate.
[b]Listing of total uranium monitoring wells and Property/Plume Boundary monitoring wells that overlap with OSDF monitoring wells.
[c]Listing of total uranium monitoring wells and Property/Plume Boundary monitoring wells that overlap with PRRS monitoring wells.

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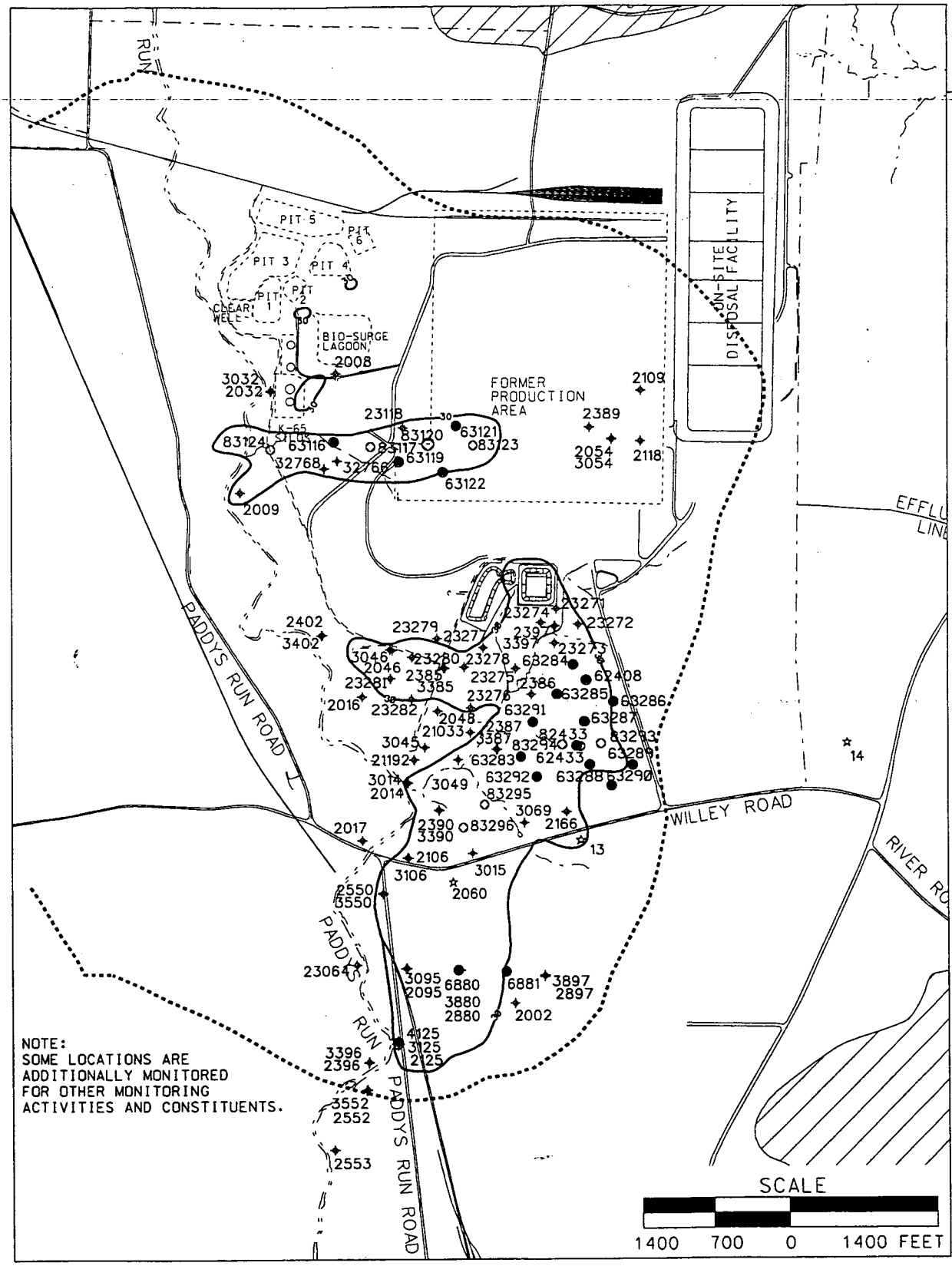
TABLE 3-6

LISTING OF GROUNDWATER WELLS TO BE SAMPLED FOR TOTAL URANIUM ONLY

13	14	2002	2008	2009
2014	2016	2017	2032	2046
2048	2054	2060 (12)	2095	2106
2109	2118	2125	2166	2385
2386	2387	2389	2390	2396
2397	2402	2550	2552	2553
2880	2897	3014	3015	3032
3045	3046	3049	3054	3069
3095	3106	3125	3385	3387
3390	3396	3397	3402	3550
3552	3880	3897	4125	6880
6881	21033	21192	23064	23118
23271	23272	23273	23274	23275
23276	23277	23278	23279	23280
23281	23282	32766	32768	62408
62433	63116	63119	63121	63122
63283	63284	63285	63286	63287
63288	63289	63290	63291	63292
82433	83117	83120	83123	83124
83293	83294	83295	83296	

Note: Six of the seven available channels in a CMT well are available for water quality sampling. The seventh channel is used only for water level measurements. The channel completed in the plume interval with the highest measured uranium concentration will be sampled every 6-months. The other five channels will only be sampled once a year, to document any changes in the plume concentration profile.



LEGEND:

- FCP BOUNDARY
- MONITORING WELL
- CMT WELL
- BEDROCK HIGHS
- 30 — TOTAL URANIUM CONTOUR (30 μg/L)
- 10-YEAR, URANIUM-BASED RESTORATION FOOTPRINT (BRSR 1997)

FIGURE 3-5. LOCATIONS FOR SEMI-ANNUAL TOTAL URANIUM MONITORING ONLY

V:/BFGP1/DGN/03REVISION/03RV003.DGN

STATE PLANAR COORDINATE SYSTEM 1983

07-OCT-2003

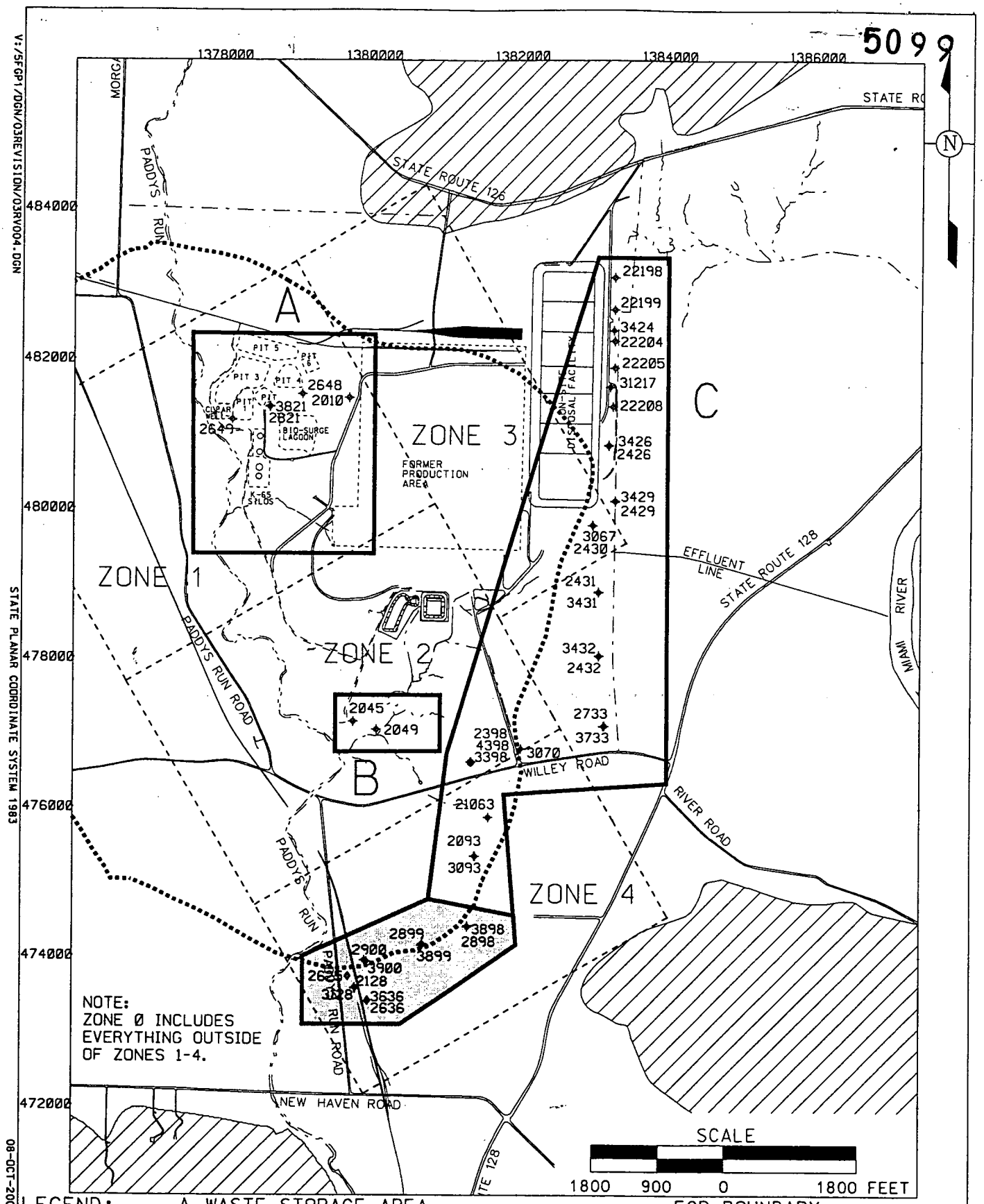
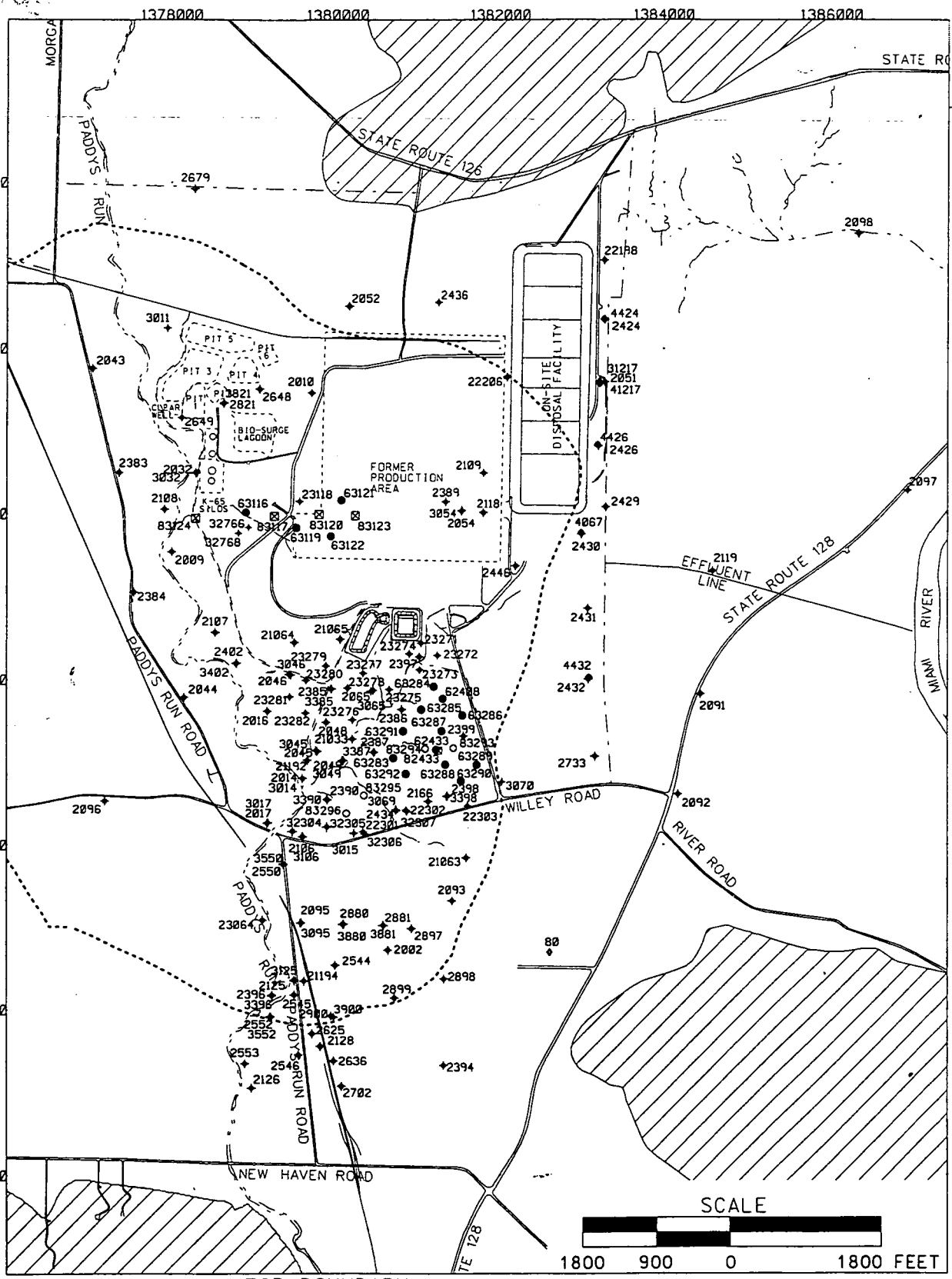


FIGURE 3-6. LOCATIONS FOR SEMI-ANNUAL URANIUM AND NON-URANIUM MONITORING PROPERTY/PLUME BOUNDARY, SOUTH FIELD, AND WASTE STORAGE AREA



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STATE PLANAR COORDINATE SYSTEM 1983

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FIGURE 3-8. GROUNDWATER ELEVATION MONITORING WELLS

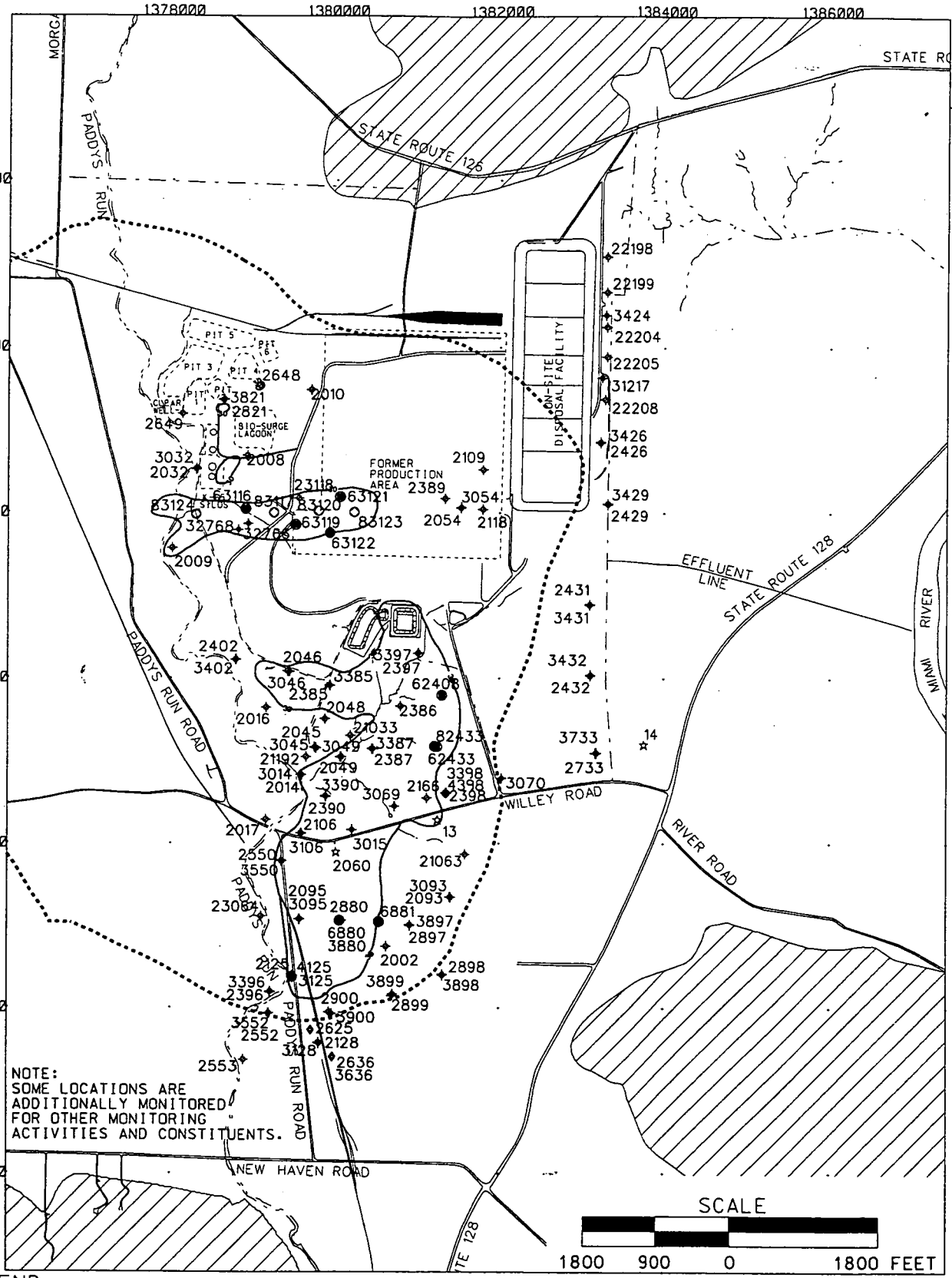

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FIGURE A-17. LOCATIONS FOR SEMI-ANNUAL TOTAL URANIUM MONITORING

ATTACHMENT C

UPDATED FIGURES AND TABLES FOR SURFACE WATER SAMPLING

TABLE 4-3

SUMMARY OF SURFACE WATER AND TREATED EFFLUENT SAMPLING REQUIREMENTS BY LOCATION

Location	Constituent[a]	IEMP Characterization Requirements (reason for selection)[b,c]	NPDES Requirements[c]	OU5 ROD/FFCA[c] Requirements
SWP-01 and SWR-01 (SWR-01) (Paddys Run and Great Miami River Background)	**General Chemistry:**			
	Ammonia	-	Quarterly[d]	-
	Fluoride	Quarterly (B)	-	-
	Nitrate/Nitrite	Quarterly (B)	-	-
	Total hardness	-	Quarterly[d]	-
	Inorganics:			
	Antimony	Quarterly (B)	-	-
	Arsenic	Quarterly (B)	-	-
	Barium	Quarterly (B)	-	-
	Beryllium	Quarterly (B)	-	-
	Cadmium	Quarterly (B)	Quarterly[d]	-
	Chromium, Total	Quarterly (B)	Quarterly[d]	-
	Cobalt	-	Quarterly[d]	-
	Copper	Quarterly (B)	Quarterly[d]	-
	Cyanide	Quarterly (B)	-	-
	Lead	Quarterly (B)	Quarterly[d]	-
	Manganese	Quarterly (B)	Quarterly[d]	-
	Mercury	Quarterly (B)	Quarterly[d]	-
	Molybdenum	Quarterly (B)	-	-
	Nickel	Quarterly (B)	Quarterly[d]	-
	Selenium	Quarterly (B)	-	-
	Silver	Quarterly (B)	Quarterly[d]	-
	Vanadium	Quarterly (B)	-	-
	Zinc	Quarterly (B)	Quarterly[d]	-
	Radionuclides:			
	Cesium-137	Quarterly (B)	-	-
	Lead-210	Quarterly (B)	-	-
	Neptunium-237	Quarterly (B)	-	-
	Plutonium-238	Quarterly (B)	-	-
	Plutonium-239/240	Quarterly (B)	-	-
	Radium-226	Quarterly (B)	-	-
	Radium-228	Quarterly (B)	-	-
	Strontium-90	Quarterly (B)	-	-
	Technetium-99	Quarterly (B)	-	-
	Thorium-228	Quarterly (B)	-	-
	Thorium-230	Quarterly (B)	-	-
	Thorium-232	Quarterly (B)	-	-
	Uranium, Total	Quarterly (B)	-	-
	Pesticides/PCBs:			
	alpha-Chlordane	Quarterly (B)	-	-
	Aroclor-1254	Quarterly (B)	-	-
	Aroclor-1260	Quarterly (B)	-	-
	Dieldrin	Quarterly (B)	-	-
	Semi-Volatiles:			
	Benzo(a)anthracene	Quarterly (B)	-	-
	Benzo(a)pyrene	Quarterly (B)	-	-
	bis(2-Chloroisopropyl)ether	Quarterly (B)	-	-
	bis(2-Ethylhexyl)phthalate	Quarterly (B)	-	-
	Dibenzo(a,h)anthracene	Quarterly (B)	-	-
	3,3'-Dichlorbenzidine	Quarterly (B)	-	-
	Di-n-butylphthalate	Quarterly (B)	-	-
	Di-n-octylphthalate	Quarterly (B)	-	-
	p-Methylphenol	Quarterly (B)	-	-
	4-Nitrophenol	Quarterly (B)	-	-

TABLE 4-3
(Continued)

Location	Constituent[a]	IEMP Characterization Requirements (reason for selection)[b,c]	NPDES Requirements[c]	OU5 ROD/FFCA[c] Requirements
SWP-01 and SWR-01 (SWR-4801) (Paddys Run and Great Miami River Background) Contd.	**Volatiles:**			
	Benzene	Quarterly (B)	-	-
	Bromodichloromethane	Quarterly (B)	-	-
	Bromomethane	Quarterly (B)	-	-
	Chloroform	Quarterly (B)	-	-
	1,1-Dichloroethene	Quarterly (B)	-	-
	Methylene chloride	Quarterly (B)	-	-
	Tetrachloroethene	Quarterly (B)	-	-
	1,1,1-Trichloroethane	Quarterly (B)	-	-
	1,1,2-Trichloroethane	Quarterly (B)	-	-
SWP-02 (Paddys Run)	**Radionuclides:**			
	Technetium-99	Quarterly (M)	-	-
	Thorium-228[e]	Quarterly (WP)	-	-
	Thorium-230[e]	Quarterly (WP)	-	-
	Thorium 232[e]	Quarterly (WP)	-	-
	Uranium, Total	Quarterly (PC)	-	-
SWP-03 (Paddys Run at Downstream Property Boundary)	**Inorganics:**			
	Chromium, Total	Quarterly (S)	-	-
	Copper	Quarterly (S)	-	-
	Cyanide	Quarterly (M)	-	-
	Mercury	Quarterly (M)	-	-
	Silver	Quarterly (M)	-	-
	Zinc	Quarterly (M)	-	-
	Radionuclides:			
	Radium-226	Quarterly (M)	-	-
	Strontium-90	Quarterly (M)	-	-
	Technetium-99	Quarterly (M)[f]	-	-
	Thorium-228[e]	Quarterly (WP)	-	-
	Thorium-230[e]	Quarterly (WP)	-	-
	Thorium-232[e]	Quarterly (WP)	-	-
	Uranium, Total	Quarterly (PC, M)	-	-
SWD-01 (Northeast Drainage)	**Inorganics:**			
	Mercury	Quarterly (M)	-	-
	Cyanide	Quarterly (M)	-	-
	Radionuclides:			
	Uranium, Total	Quarterly (PC, M)	-	-
SWD-02 (Storm Sewer Outfall Ditch)	**Radionuclides:**			
	Strontium-90	Quarterly (M)	-	-
	Technetium-99	Quarterly (M)	-	-
	Uranium, Total	Quarterly (PC, M)	-	-
SWD-03 (Waste Storage Area)	**Inorganics:**			
	Copper	Quarterly (S)	-	-
	Cyanide	Quarterly (M)		
	Mercury	Quarterly (M)	-	-
	Silver	Quarterly (M)	-	-
	Zinc	Quarterly (M)	-	-
	Radionuclides:			
	Technetium-99	Quarterly (M)	-	-
	Thorium-228[e]	Quarterly (WP)	-	-
	Thorium-230[e]	Quarterly (WP)	-	-
	Thorium-232[e]	Quarterly (WP)	-	-
	Uranium, Total	Quarterly (PC)	-	-

TABLE 4-3
(Continued)

Location	Constituent[a]	IEMP Characterization Requirements (reason for selection)[b,c]	NPDES Requirements[c]	OU5 ROD/FFCA[c] Requirements
PF 4001 (Parshall Flume - Treated Effluent)	**General Chemistry:**			
	Ammonia	-	3/Week[g]	-
	Carbonaceous biochemical oxygen demand	-	2/Week	-
	Fluoride	-	Monthly	-
	Nitrate/Nitrite	-	Monthly	-
	Oil and grease	-	2/Week	-
	Total dissolved solids	-	Monthly	-
	Total residual chlorine	-	3/Week[h]	-
	Total suspended solids	-	Daily	-
	Inorganics:			
	Antimony	-	Monthly	-
	Arsenic	-	Monthly	-
	Barium	-	3/Week	-
	Beryilium	-	Monthly	-
	Boron	-	Monthly	-
	Cadmium	Quarterly (S)	3/Week	-
	Chromium, Total	-	3/Week	-
	Cobalt	-	2/Week	-
	Copper	-	3/Week	-
	Cyanide	Quarterly (M)	Monthly	-
	Lead	-	3/Week	-
	Manganese	-	2/Week	-
	Mercury	Quarterly (M)	Monthly	-
	Molybdenum	-	3/Week	-
	Nickel	-	3/Week	-
	Selenium	-	3/Week	-
	Silver	Quarterly (M)	3/Week	-
	Zinc	-	3/Week	-
	Radionuclides:			
	Radium-226	Quarterly (M)	-	-
	Radium-228	-	-	Monthly
	Strontium-90	Quarterly (M)	-	-
	Technetium-99	Quarterly (M)	-	Monthly
	Uranium, Total	Quarterly (PC, M)	-	Daily
	Semi-Volatiles:			
	Bis (2-ethylhexyl) phthalate	-	Quarterly	-
	Volatiles:			
	Chloroform	-	Quarterly	-
	1,1-Dichloroethane	-	Quarterly	-
	Trichloroethene	-	Quarterly	-
	Other:			
	Flow Rate	-	Daily	-
SWRB 4002O[i] (Storm Water Retention Basin)	**General Chemistry:**			
	Total residual chlorine	-	Daily	-
	Total suspended solids	-	Daily	-
	Inorganics:			
	Beryllium	Quarterly (S)	-	-
	Cadmium	Quarterly (S)	-	-
	Copper	-	Monthly	-
	Cyanide	Quarterly (M, S)	-	-
	Manganese	Quarterly (S)	-	-
	Mercury	Quarterly (M, S)	Monthly	-
	Radionuclides:			
	Radium-226	Quarterly (M)	-	-
	Radium-228	Quarterly (S)	-	-
	Strontium-90	Quarterly (M)	-	-
	Technetium-99	Quarterly (M, S)	-	-
	Uranium, Total	Quarterly (PC, M)	-	Daily
	Other:			
	Flow rate	-	Daily	-

TABLE 4-3
(Continued)

Location	Constituent[a]	IEMP Characterization Requirements (reason for selection)[b,c]	NPDES Requirements[c]	OU5 ROD/FFCA[c] Requirements
SWRB 4002O[i] (Storm Water Retention Basin) (Contd)	**Radionuclides:**			
	Radium-226	Quarterly (M)	-	-
	Radium-228	Quarterly (S)	-	-
	Strontium-90	Quarterly (M)	-	-
	Technetium-99	Quarterly (M, S)	-	-
	Uranium, Total	Quarterly (PC, M)	-	Daily
	Other:			
	Flow rate	-	Daily	-
SWRB 4002B (Treatment Bypass)	**Radionuclide:**			
	Uranium, Total	-	-	Daily during bypass
STRM 4003, STRM 4004[j] STRM 4005, STRM 4006 (Drainages to Paddys Run)	**General Chemistry:**			
	Total suspended solids	-	Semiannually	-
	Inorganics:			
	Copper (4003, 4004, 4006)	-	Semiannually	-
	Lead (4004, 4005, 4006)	-	Semiannually	-
	Mercury	-	Semiannually	-
	Silver (4004, 4006)	-	Semiannually	-
	Radionuclides:			
	Uranium, Total	Quarterly (PC, M, S)	-	-
	Other:			
	Fecal coliform	-	Semiannually	-
	Flow Rate	-	Semiannually	-
STP 4601 (Sewage Treatment Plant Effluent)	**General Chemistry:**			
	Carbonaceous biochemical oxygen demand	-	2/Week	-
	Ammonia	-	Every two weeks	-
	Total suspended solids	-	2/Week	-
	Other:			
	Fecal coliform	-	Weekly (May-Oct)	-
	Flow Rate	-	Daily	-
SWR-4902 (Downstream of FCP Effluent)	**General Chemistry:**			
	Ammonia	-	Quarterly	-
	Total Hardness	-	Quarterly	-
	Inorganics			
	Cadmium	-	Quarterly	-
	Chromium	-	Quarterly	-
	Cobalt	-	Quarterly	-
	Copper	-	Quarterly	-
	Lead	-	Quarterly	-
	Manganese	-	Quarterly	-
	Mercury	-	Quarterly	-
	Nickel	-	Quarterly	-
	Silver	-	Quarterly	-
	Zinc	-	Quarterly	-

[a]Field parameter readings, taken at each location, include temperature, specific conductance, pH, and dissolved oxygen.
[b]B = Background Evaluation; M = Based on Modeling; PC – Primary COC; S – Sporadic Exceedances of FRLs or BTVs; WP – Waste Pits Excavation Monitoring
[c]"-"indicates the constituent is not included in the sample program.
[d]Refers only to location SWR-01 (NPDES location SWR-4801); constituents sampled quarterly.
[e]Constituent being monitored during excavation of the waste pits to assess thorium releases as a whole.
[f]The basis for the "M" designation is because of the contribution from an upgradient location (i.e., SWP-02).
[g]Sampled twice a week in winter (November 1 through April 30).
[h]Constituent not sampled from November through April.
[i]Constituents will be analyzed at each overflow event.
[j]New location STRM 4004A has been identified as an alternative sample location for STRM 4004. STRM 4004A will be sampled for the constituents if no flow is observed at STRM 4004 or is otherwise not accessible.

TABLE 4-4

SURFACE WATER ANALYTICAL REQUIREMENTS FOR CONSTITUENTS AT SAMPLE LOCATIONS SWD-01, SWD-02, SWD-03, SWP-01[a], SWP-02, SWP-03, AND SWR-01[a]

Constituent	Analytical Method	ASL[b]	Holding Time	Preservative	Container
General Chemistry:					
Fluoride	300.0[c], 340.2[c], or 4500C[d]	B	28 days	None	Plastic
Nitrate/Nitrite	353.1[c], 353.2[c], 353.3[c], 4500D[d], or 4500E[d]	B	28 days	Cool 4°C, H_2SO_4 to pH < 2	Plastic or glass
Inorganics:					
Antimony Arsenic Barium Beryllium Cadmium Chromium, Total Copper Lead Manganese Molybdenum Nickel Selenium Silver Vanadium Zinc	7000A[e], 3500[d], or 6010B[e]	B	6 months	HNO_3 to pH < 2	Plastic or glass
Mercury	7470A[e]	B	28 days	HNO_3 to pH < 2	Plastic or glass
Cyanide	9010B[e], 9012[e], 335.2[c], or 335.3[c]	B	14 days	Cool 4°C, NaOH to pH > 12	Plastic or glass
Radionuclides:					
Cesium-137 Lead-210 Neptunium-237 Plutonium-238 Plutonium-239/240 Radium-226 Radium-228 Strontium-90 Technetium-99 Thorium-228 Thorium-230 Thorium-232 Uranium, Total	SCQ[f]	B	6 months	HNO_3 to pH < 2	Plastic or glass

TABLE 4-4
(Continued)

Constituent	Analytical Method	ASL[b]	Holding Time	Preservative	Container
Pesticides/PCBs:					
alpha-Chlordane Dieldrin Aroclor-1254 Aroclor-1260	8081A[e] or 8082[e]	B	7 days to extraction 40 days from extraction to analysis	Cool 4°C	Glass (amber wth Teflon lined cap)
Semi-Volatiles:					
bis(2-Chloroisopropyl)ether bis(2-Ethylhexyl)phthalate 3,3'-Dichlorobenzidine Di-n-butylphthalate Di-n-octylphthalate p-Methylphenol 4-Nitrophenol	8270C[e]	B	7 days to extraction 40 days from extraction to analysis	Cool 4°C	Glass (amber wth Teflon lined cap)
Benzo(a)anthracene Benzo(a)pyrene Dibenzo(a,h)anthracene	8310[e]	B	7 days to extraction 40 days from extraction to analysis	Cool 4°C	Glass (amber wth Teflon lined cap)
Volatiles:					
Benzene Bromodichloromethane Bromomethane Chloroform 1,1-Dichloroethene Methylene chloride Tetrachloroethene 1,1,1-Trichloroethane 1,1,2-Trichloroethane	8260B[e]	B	7 days or 14 days	Cool 4°C or Cool 4°C, H_2SO_4, HCl, or solid $NaHSO_4$ to pH < 2	Glass (with teflon line septum cap)
Field Parameters:[g]	SCQ[h]	A	NA[i]	NA[i]	NA[i]

[a]Only sample locations SWP-01 and SWR-01 are analyzed for all constituents listed in this table. The remaining sample locations are analyzed for a subset of these constituents which is summarized in Table 4-3.
[b]The ASL may become more conservative if it is necessary to meet detection limits or data quality objectives.
[c]Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020
[d]Standard Methods for the Analysis of Water and Wastewater, 17th edition
[e]Test methods for evaluating solid waste, physical/chemical methods, SW-846
[f]Radionuclide analyses do not have standard methods; Appendix G of the SCQ provides performance specifications.
[g]Field parameters include temperature, specific conductance, pH, and dissolved oxygen.
[h]Appendix K of the SCQ provides field methods.
[i]NA = not applicable

TABLE 4-5

SURFACE WATER AND EFFLUENT ANALYTICAL REQUIREMENTS FOR CONSTITUENTS AT SAMPLE LOCATIONS PF 4001, STP 4601, STRM 4003, STRM 4004, STRM 4005, STRM 4006, SWRB 4002O, SWRB 4002B, SWR-4801, AND SWR-4902

Constituent[a]	Analytical Method[b]	Sample Type[c]	ASL[b,d]	Holding Time[b]	Preservative[b]	Container[b]
General Chemistry:						
Ammonia	350.1[e], 350.3[e], 4500C[f], or 4500F[f]	Composite or Grab[g]	B	28 days	Cool 4°C, H_2SO_4 to pH < 2	Plastic or glass
Carbonaceous biochemical oxygen demand	5210B[f]	Composite	B	48 hours	Cool 4°C	Plastic or glass
Chlorine, residual	4500[f]	Grab	B	Analyze immediately	None	Plastic or glass
Fluoride	300.0[e], 340.2[e], 4500C[f]	Composite	B	28 days	None	Plastic or glass
Nitrate/Nitrite	353.1[e], 353.2[e], 353.3[e], 4500D[f], or 4500E[f]	Composite	B	28 days	Cool 4°C, H_2SO_4 to pH < 2	Plastic or glass
Oil and grease	9070[h], 1664A[i] 5520B[f], or 413.1[e]	Grab	B	28 days	Cool 4°C, H_2SO_4 to pH < 2	Glass
Total dissolved solids	160.1[e] or 2540C[f]	Grab	B	7 days	Cool 4°C	Plastic or glass
Total hardness	2340C[f]	Grab	B	28 days	Cool 4°C, H_2SO_4 to pH < 2	Plastic
Total suspended solids	160.2[e] or 2540D[f]	Composite	B	7 days	Cool 4°C	Plastic or glass
Inorganics:						
Antimony	6020[h], 7000A[h], 3500[f], 6010B[h], 200.8[j], 220.2[e], or 272.2[e]	Composite or Grab[g]	B	6 months	HNO_3 to pH < 2	Plastic or glass
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Chromium, Total						
Cobalt						
Copper						
Lead						
Manganese						
Molybdenum						
Nickel						
Selenium						
Silver						
Zinc						
Mercury	7470A[h] or 1631[e,k]	Grab	B	28 days	HNO_3 to pH < 2	Plastic or glass
Cyanide, Free	9010B[h], 9012[h], 335.2[e], 335.3[e], or 4500-CNI[f]	Grab	B	14 days	Cool 4°C, NaOH to pH > 12	Plastic or glass

TABLE 4-5
(Continued)

Constituent[a]	Analytical Method[b]	Sample Type[c]	ASL[b,d]	Holding Time[b]	Preservative[b]	Container[b]
Radionuclides:						
Radium-226	SCQ[l]	Grab	B	6 months	HNO_3 to pH < 2	Plastic or glass
Radium-228						
Technetium-99						
Strontium-90						
Uranium, Total	SCQ[l]	Grab/Composite[m]	B	6 months	HNO_3 to pH < 2	Plastic or glass
Semi-Volatiles:						
Bis(2-ethylexyl)phthalate	8270C[h]	Grab	B	7 days to extraction 40 days from extraction to analysis	Cool 4°C	Glass (amber wth Teflon lined cap)
Volatiles:						
Trichloroethene	8260B[h]	Grab	B	14 days	H_2SO_4 pH < 2 Cool 4°C	Glass (with Teflon lined septum cap)
Chloroform						
1,1-Dichloroethane						
Other:						
Fecal coliform	9222D[f]	Grab	B	6 hours	Cool 4°C	Plastic or glass (sterile)
Flow rate	NA	24 hour total	NA	NA	NA	NA
Field Parameters[n]	SCQ[o]	Grab	A	NA	NA	NA

[a]This represents a comprehensive list of constituents taken from the indicated list of surface water and treated effluent monitoring locations. Each individual location will be analyzed for a subset of these constituents which is summarized in Table 4-3.
[b]NA = not applicable
[c]For composite samples for PF 4001 and STP 4601, collect a flow-weighted composite sample over a 24 hour period; for SWRB 4002O, SWRB 4002B, STRM 4003, STRM 4004, STRM 4005, and STRM 4006, composite samples shall be comprised of four samples collected at intervals of at least 30 minutes but not more than two hours.
[d]The ASL may become more conservative if necessary to meet detection limits or data quality objectives.
[e]Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020
[f]Standard Methods for the Analysis of Water and Wastewater, 17th Edition
[g]Grab samples are collected at locations SWR-4801 and SWR-4902 for this constituent.
[h]Test Methods for Evaluation Solid Wastes, Physical/Chemical Methods, SW-846
[i]Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-Polar material) by Extraction and Gravimetry, EPA/821/R-98-002.
[j]Methods for the Determination of Metals in Environmental Samples, EPA/600/R-94/111
[k]Method 1631 for mercury analysis will only be used at NPDES Permit locations where mercury sampling is required.
[l]Radionuclide analyses do not have standard methods; performance specifications are provided in Appendix G of the SCQ.
[m]Total uranium is a grab sample at STRM 4003, STRM 4004, STRM 4005, and STRM 4006 and a composite sample at all other locations.
[n]Field parameters include dissolved oxygen, pH, specific conductance, and temperature.
[o]Appendix K of the SCQ provides field analytical method

ATTACHMENT D

BTV DISCUSSION

OVERVIEW OF SURFACE WATER AND SEDIMENT ECOLOGICAL RISK EVALUATIONS

Surface water and sediment were originally investigated as part of the Sitewide Ecological Risk Assessment (SERA) during the Operable Unit 5 Remedial Investigation. The SERA findings were re-evaluated and updated in Appendix C of the Sitewide Excavation Plan (SEP), in light of the establishment of FRLs, the availability of additional sample results, and anticipated excavation footprints. Based on this review, three surface water (barium, cadmium, silver) and five sediment (barium, cadmium, iron, lead, zinc) parameters remained as constituent of ecological concern (COEC).

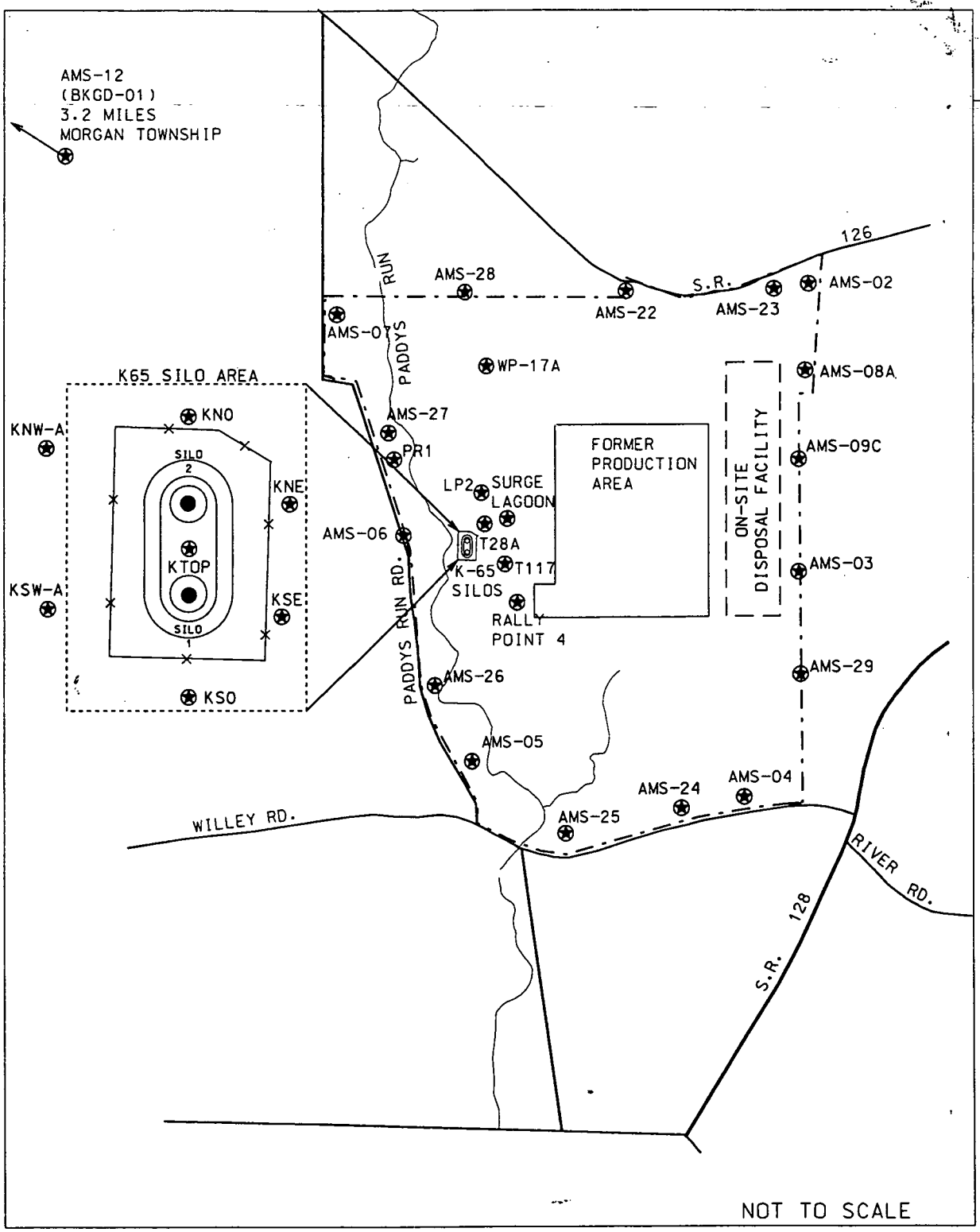
The SEP evaluation also investigated the potential for post-remediation soil concentrations to contaminate surface water and sediment. Soil COECs were evaluated using the site Surface Water Flow and Infiltration Model. Maximum anticipated post-excavation soil concentrations were established for each drainage sub-basin recognized by the model. When a soil concentration was not available, background concentrations were used. The results of this effort revealed that no cross media impacts would be a concern. Manganese was the only anticipated exceedance for surface water and sediment, and this was attributed to its high background concentration (1,400 mg/kg). Silver slightly exceeded a sediment BTV established for the Oak Ridge National Laboratory. However, as stated in the SEP, "the conservative nature of the modeling suggests that silver will not be an ecological concern in restored aquatic habitats."

The three surface water BTVs of interest - barium, cadmium, and silver are monitored as part of the IEMP Surface Water Monitoring Program. Sampling results from the IEMP have revealed that of approximately 1800 samples, only ten BTV exceedances have occurred since 1997. Five of the ten exceedances were for cadmium, which has a BTV lower than the Great Miami River background concentration. The five remaining exceedances have been sporadic in nature and minimally above their respective BTVs. For these reasons, DOE is proposing to discontinue surface water sampling driven solely by BTVs and to discontinue evaluations with respect to BTVs. Data collected in support of other requirements (e.g., NPDES sampling) will be reviewed to make certain that protectiveness is maintained; however; evaluations with respect to BTVs will be discontinued in future IEMP mid-year and annual reports. It is important to note that through review of Table 4-3 of the IEMP, Revision 3, it has been determined that no constituents are monitored solely for BTVs; therefore, the sampling programs will not need modification regarding this issue.

To ensure that sediment COECs are addressed, the five constituents (barium, cadmium, iron, lead, and zinc) will be added to the list for remediation areas that include Paddys Run and associated drainage channels. This sampling will be addressed as part of the Stream Corridor sampling effort to be conducted later in 2003. The required evaluations associated with the sediment COECs will end with the completion of the area specific soil certification that includes Paddys Run and associated drainage channels.

ATTACHMENT E

UPDATED FIGURE FOR AIR MONITORING



LEGEND:

— · — · — FCP BOUNDARY

⊛ ENVIRONMENTAL RADON MONITORING - CONTINUOUS ALPHA SCINTILLATION LOCATION

DISTANCE FROM CENTER OF FORMER PRODUCTION AREA TO LOCATION OFF MAP

● SILO HEAD SPACE RADON MONITORING - CONTINUOUS ALPHA SCINTILLATION LOCATION

FIGURE 6-3. RADON MONITORING - CONTINUOUS ALPHA SCINTILLATION LOCATIONS

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