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**CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE  
AGREEMENT/FEDERAL FACILITY AGREEMENT AND REMEDIAL  
INVESTIGATION/FEASIBILITY STUDY MONTHLY PROGRESS REPORT  
FOR FEBRUARY 1996**

**03/15/96**

**DOE-0655-96  
DOE-FN        EPAS  
60  
REPORT**



**Department of Energy**

**Ohio Field Office  
Fernald Area Office**

P. O. Box 538705  
Cincinnati, Ohio 45253-8705  
(513) 648-3155



MAR 15 1996  
DOE-0655-96

Mr. James A. Saric, Remedial Project Director  
U.S. Environmental Protection Agency  
Region V - SRF-5J  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

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

Dear Mr. Saric and Mr. Schneider:

**CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL  
FACILITY AGREEMENT AND REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY  
PROGRESS REPORT FOR FEBRUARY 1996**

Enclosure 1 is the consolidated CA/FFCA and RI/FS Monthly Progress Report which describes the activities accomplished February 1 through 29, 1996, and planned actions for the period of March 1996. Also, enclosed are diskettes containing Lotus 1-2-3 (Version 2.2) data files of the K-65 hourly data (see Enclosure 2).

The next version of this submittal will be modified to reflect the agreed upon changes listed in our letter of January 16, 1996.

If you or your staff should have any questions, please contact me at (513) 648-3139.

Sincerely,

Johnny W. Reising  
Fernald Remedial Action  
Project Manager

Enclosures: As Stated

## cc w/encs:

R. L. Nace, EM-423/GTN  
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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
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**Period Ending February 29, 1996**

**Introduction**

The Consent Agreement (CA) As Amended under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sections 120 and 106(a), the Federal Facility Compliance Agreement (FFCA), and the Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (FFA-CARE) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (U.S. EPA) signed September 20, 1991, July 18, 1986, and November 19, 1991, respectively, require that monthly reports be submitted to the U.S. EPA regarding progress made to meet the provisions of those agreements. This report fulfills those requirements by describing actions undertaken at the Fernald Environmental Management Project (FEMP) during the period February 1 through February 29, 1996, and planned actions for the period March 1 through March 31, 1996.

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**WORK ASSIGNMENTS AND PROGRESS**

Descriptions of work progress are presented in the following sections and/or enclosures to this report:

- CA Section IX - Removal Actions
- CA Section X - Remedial Investigation/Feasibility Study
- Enclosure A - Waste Water Flows and Radionuclide Concentrations under CA Section XXIII.B
- Enclosure B - FFCA: Initial Remedial Measures and Other Open Actions
- Enclosure C - FFA: Control and Abatement of Radon-222 Emissions
- Enclosure D - Effluent Radiation Discharges to the Great Miami River

**CA Section IX. Removal Actions**

This section provides an update of activities associated with the implementation of Removal Actions (RAs) at the FEMP during February 1996. Information is presented for each of the Removal Actions identified in the Consent Agreement As Amended.

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
Phase I			
1	Contaminated Water Under FEMP Buildings	Pump water from extraction wells underneath Plants 2/3, 6, 8, and 9. Treat extracted water for volatile organic chemicals and uranium removal before discharge.	Removal Action pumping discontinued December 1995 per USEPA and OEPA approval
2	Waste Pit Area Run-off Control	Collect and treat contaminated storm water run-off from the waste pit area.	Operational: 7/30/92  Operation Ongoing
3	South Groundwater Contamination Plume	Part 1 - Install new alternate water supply and transfer to industrial user.	Operational: 12/7/92  Operation Ongoing
		Part 2 - Pump and discharge groundwater from South Plume.	Operational: 8/27/93  Operation RW 5 offline indefinitely
		Part 3 - Install and operate Interim Advanced Waste Water Treatment system to reduce uranium contaminant loading to the Great Miami River.	Operational: 7/30/92  Operation Ongoing
		Part 4 - Conduct groundwater monitoring and institutional controls by sampling private and existing R/FS wells in the South Plume area and installing homeowner treatment systems.	Ongoing
		Part 5 - Conduct groundwater modeling and geochemical investigation to define the extent of the groundwater plume contaminated with uranium.	Completed: 2/25/94
		OU 2 Dispute Resolution Supplemental Project - Provide for partial treatment of the South Plume discharge to further reduce uranium flow to the Great Miami River.	Operational: 3/31/94  Operation Ongoing

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
4	Silos 1 & 2	Install bentonite cap to reduce and monitor radon emissions. Provide follow-on monitoring.	Cap Completed: 11/28/91  Monitoring: Ongoing
5	Decant Sump Tank	Periodically remove liquid from K-65 decant sump tank.	Ongoing
6	Waste Pit 6 Residues	Eliminate potential airborne contamination by resubmerging exposed pit material.	Completed: 12/19/90
7	Plant 1 Pad Continuing Release	Stage I - Implement run-on/off control measures.	Completed: 1/17/92
		Stage II - Install new pad.	Completed: 12/4/92
		Stage III - Upgrade existing Plant 1 Storage Pad	Ongoing
Phase II			
8	Inactive Flyash Pile Control	Install plastic chain-link barrier and post warning signs.	Completed: 12/23/91
9	Removal of Waste Inventories	Disposition of low-level waste off-site.	Ongoing
10	Active Flyash Pile Controls	Phase I - Complete interim surface stabilization.	Completed: 6/29/92
		Phase II - Complete active flyash pile controls.	Maintenance: Ongoing
11	Pit 5 - Experimental Treatment Facility	Remove contents, structure, and filter material. Backfill and cap with clay cover.	Completed: 3/20/92
12	Safe Shutdown	Remove uranium and other material from former processing equipment and ship material and equipment off-site.	Ongoing
13	Plant 1 Ore Silos	Dismantle fourteen ore silos and their support structures.	Completed: 11/18/94
14	Contaminated Soil Adjacent to Sewage Treatment Plant Incinerator	Isolate or remove and dispose of contaminated soils from the vicinity of the sewage treatment plant.	Completed: 1/3/95
15	Scrap Metal Piles	Phase I - Disposition LLW ferrous/non-ferrous scrap metal	Completed: 11/14/94
		Phase II -	
		IIA - Containerization of scrap copper	Completed: 9/29/92
	IIB - Disposition of scrap copper	Final Report Submitted 12/8/95	

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
16	Collect Uncontrolled Production Area Run-off - Northeast	Collect storm water run-off from the northeast perimeter of the former production area in the Storm Water Retention Basin.	Completed: 8/20/93
17	Improved Storage of Soil and Debris	Improve storage of existing and future generated soils and debris.	Ongoing
18	Control Exposed Material in Pit 5	Eliminate potential airborne contamination by re-submerging exposed pit material.	Completed: 5/13/93
Phase III			
19	Plant 7 Dismantling	Dismantle and dispose of the Plant 7 structure.	Completed: 8/18/95
20	Stabilization of UNH Inventories	Neutralize, filter and package UNH inventory.	Ongoing
21	Expedited Silo 3	Mitigate the potential release of hazardous waste material by covering and sealing dust collector hopper, removing dust collector, and capping and covering obvious release pathways.	Completed: 2/24/93
22	Waste Pit Area Containment Improvement	Stabilize south berm of Pit 4; regrade drainage ditches along Pits 3, 4, 5, and 6; and resurface road between Pits 3, 4, 5, and 6.	Completed: 7/30/93
23	Inactive Flyash Pile	Conduct field investigation to identify locations requiring material removal.	Completed: 4/30/92
24	Pilot Plant Sump	Remove liquid and sludge from the sump.	Completed: 1/14/94
25	Nitric Acid Tank Car and Surrounding Area	Remove residual contents from tank car and decontaminate and dispose of tank car.	Complete pending OEPA approval
26	Asbestos Removals (Asbestos Program)	Mitigate the potential for contaminant and migration of asbestos fibers.	Ongoing
27	Management of Contaminated Structures at the FEMP	Submit an Engineering Evaluation/Cost Analysis for managing contaminated structures. Identify alternatives for managing contaminated structures.	Final EE/CA Approved 6/16/93
28	Contamination at the Fire Training Facility	Remove, decontaminate, dispose, treat or store contaminated structures, equipment, and soil from the former Fire Training Facility.	Completed: 12/25/95
29	Erosion Control at Inactive Flyash Pile	Mitigate the threat of erosion induced slope failure and discharge of flyash to Paddy's Run.	Final Report Submitted to DOE 2/94  Maintenance: Ongoing
30	Seepage Control at the South Field and Inactive Flyash Pile	Minimize future groundwater contamination by intercepting contaminated seeps that drain from the South Field and Inactive Flyash Pile and infiltrate to the GMA.	Ongoing

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***Removal Actions***

**RA No. 1, Contaminated Water Under FEMP Buildings**

**Current Month:**

All RA No. 1 pumping and sampling was discontinued except for dewatering of the clarifier pit and floor sumps located in Plant 6.

**Planned Activities:**

- Continue dewatering of the clarifier pit and floor sumps located in Plant 6.

**RA No. 3, South Groundwater Contamination Plume**

**Part 1 - Alternate Water Supply**

**Current Month:**

The U.S. Army Corps of Engineers, through an Interagency Agreement, is proceeding with obtaining the necessary documents to transfer easement rights to Albright and Wilson Americas.

The final report for cultural resources data recovery field work for Project B of the Public Water Supply (PWS) was issued to DOE-FN for subsequent transmittal to the State Historical Preservation Office.

All transmission main construction, excluding service connections to right of way, has been completed. Cincinnati Water Works (CWW) continues acceptance testing and chlorination.

The FEMP public water supply line was chlorinated and officially placed in service on February 16, 1996.

Hamilton County Department of Public Works (HCDPW) awarded four contracts for service connections for the PWS. A pre-construction meeting was held with the contractors—anticipate construction will begin the first week of March 1996.

**Planned Activities:**

- Continue proceedings to transfer ownership of the pumping and piping equipment as well as the easement rights to Albright and Wilson in accordance with the agreement of 1990.
- Continue to support HCDPW on installation of the entire PWS including service connections.
- Continue providing assistance with technical evaluation of HCDPW's submittal of costs applied to DOE grant as of October 31, 1995, for submittal to the Ohio Field Office with a request for payment.

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*Removal Actions*

**RA No. 3, South Groundwater Contamination Plume (continued)**

**Part 2 - Pumping and Discharge System**

**Current Month:**

The draft July 1, 1995 - December 31, 1995, status report which is due to the EPAs on April 1, 1996 was submitted to DOE-FN on February 29, 1996. Comments were requested by March 15, 1996 so the April 1 deliverable date to the U.S. and Ohio EPAs could be met.

**Planned Activities:**

- DOE comments on the draft status report will be incorporated in March 1996 so the April 1 deliverable can be met.
- Field crews will survey Design, Monitoring, and Evaluation Program Plan (DMEPP) wells with the colloidal borescope to determine groundwater flow direction and velocity so as to assist the definition of the induced capture by the recovery wellfield.

**Part 3 - Interim Advanced Waste Water Treatment (IAWWT)**

**IAWWT Storm Water Retention Basin (SWRB) Unit**

**Current Month:**

The unit continues to operate smoothly.

**Planned Activities:**

- Continue to operate.

**IAWWT Bionitrification Effluent Treatment System (BDN-ETS) Unit**

**Current Month:**

System will be operational until current inventory of high NO<sub>3</sub> water has been processed. Treatment of the current inventory is expected to be complete in late March 1996.

**Planned Activities:**

- None to report.

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**RA No. 3, South Groundwater Contamination Plume (continued)**

**Part 4 - Groundwater Monitoring and Institutional Controls**

**Current Month:**

Partial plugging of one of the residence's ion exchange (IX) units was reported by the homeowner as evidenced by low flow rate of water. To alleviate this problem, a new IX unit was delivered to the residence for replacement. The partially plugged IX vessel will be packed and returned to the FEMP after installation of the new vessel is complete.

**Planned Activities:**

- Continue to monitor performance of the ion exchange units installed at private residences.

**Operable Unit 2 Dispute Resolution Supplemental Project (Uranium Reduction in FEMP Discharge)**

**Step 1**

Install 200 gallons per minute (gpm) system dedicated to the treatment of a portion of the extracted South Plume groundwater—commonly known as South Plume Interim Treatment (SPIT) System.

**Current Month:**

Operations continued.

**Planned Activities:**

- Continue to operate.

**Step 2**

Utilization of off-peak Advanced Waste Water Treatment (AWWT) capacity.

**Current Month:**

An optimum flow of 660 gpm has been achieved at the AWWT using the current configuration. Operational goals have been established whereby the 400 gpm system uses available capacity to routinely process South Plume water daily and the 700 gpm system along with the IAWWT will change over to exclusively process South Plume water during those times when the SWRB is at a low level.

**Planned Activities:**

- Continue operational goals as described.

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**RA No. 3, South Groundwater Contamination Plume**

**Operable Unit 2 Dispute Resolution Supplemental Project (Uranium Reduction in FEMP Discharge)  
(continued)**

**Step 3**

Elimination of low uranium concentration streams.

**Current Month:**

Continue to operate at optimum flows using current configuration.

**Planned Activities:**

- Continue to operate.

**Step 4**

Extend operating life/increase capacity of the IAWWT (SWRB).

**Current Month:**

Operations continue.

**Planned Activities:**

- Treat storm water and South Plume water as required.

**RA No. 7, Plant 1 Pad Continuing Release**

**Current Month:**

The concrete refill continues to be approximately 30% complete. Due to cold weather, this work will not be resumed/completed until Spring 1996.

**Planned Activities:**

- None to report.

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***Removal Actions***

**RA No. 9, Removal of Waste Inventories**

**Current Month:**

The volume, in cubic feet (cf), of low-level waste staged for shipment to Nevada Test Site (NTS) through February 1996 is 108,808 (external) and 93,910 (internal). As of March 1, 1996, the FEMP has shipped 71,916 cf (external) and 61,973 cf (internal) to NTS for Fiscal Year (FY) 1996.

Low level waste volume reduction includes approximately 1,276 and 1,500 containers of legacy low level residue and mixed waste materials, respectively; identified in "FY 1996 Inventory Reduction Plan for Legacy Wastes at the FEMP."

Shipment of uranium derbies to Manufacturing Sciences Corporation (MSC) in Oak Ridge, Tennessee continued in February 1996.

The volume of low level waste materials shipped to NTS in FY 1996 per waste stream is as follows:

<b>WASTE STREAM</b>	<b>INTERNAL Vol. (cf)</b>	<b>EXTERNAL Vol. (cf)</b>
Process Area Scrap	43,296	49,722
Thorium	0	0
Residues to NTS	12,180	14,397
Contaminated Trash	800	1,051
Construction (Legacy)	0	0
Construction (Newly Generated)	5,870	6,745

Note : 1 drum equivalent = 7.4 cubic feet

**Liquid Mixed Waste Project:**

The Waste Water Treatment Project (WWTP) completed processing of 82 containers of Liquid Mixed Waste through the on-site Waste Water Treatment Plant during the month of February 1996. The total number of containers processed to date is 107.

For the TSCA Incinerator Project, blending of Batches 1 and 5 took place on February 9, 1996. This blending is required to reduce the radiation levels of Batch 1 material which will allow the waste to be shipped in tankers that are currently available at the TSCA Incinerator.

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***Removal Actions***

**RA No. 9, Removal of Waste Inventories**

**Current Month: (continued)**

Sampling of the blended waste took place on February 15, 1996. At that time a layer of ice was identified in the tank, the ice layer is keeping the waste phases separated therefore preventing the waste from blending. Additional sampling will be required after the ice melts.

A letter to the Ohio EPA and U.S. EPA informing them of the additional waste streams that need to be Incinerated was reviewed within FERMCO and is expected to be transmitted to DOE-FN on March 1, 1996. The letter references the waste streams identified in the Site Treatment Plan (STP) that require Incineration.

**Mixed Waste Stabilization Project:**

505 containers of Solidified Furnace Salts and Sump Cake were treated during the month of February 1996. This brings the total number of containers treated by this project to 1550.

A contract modification was issued to increase the "Option Clause" from 300 to a maximum of 800 additional waste containers to be treated. The current project inventory is now 2164 containers.

Submitted a request for additional ALARA review and Safety Assessment to include the containers added in the Option Clause.

Provided support for subcontractor equipment general maintenance and upgrades to increase HEPA ventilation capacity.

**Chemical Treatment Project:**

Based on Site Treatment Plan milestones, a technology specific work plan was required to be submitted by March 29, 1996. This milestone was met ahead of schedule with submittal of the Decontamination Technology Specific Work Plan on February 26, 1996.

The Waste Segregation Technology Specific Work Plan was submitted to OEPA and USEPA ahead of schedule on February 27, 1996. The milestone date for this submittal is March 22, 1996.

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***Removal Actions***

**RA No. 9, Removal of Waste Inventories (continued)**

**Planned Activities:**

- In March 1996, continue shipment of uranium derbies to Oak Ridge, Tennessee upon approval from MSC.
- In March 1996, continue packaging operations to develop a surplus of LLW materials to be shipped to NTS.
- In March 1996, continue radiological characterization efforts for wastes to be shipped to NTS, and develop/implement a radiological characterization program.
- Additional blending of Batches 1 and 5 followed by analytical review for acceptance by the TSCA Incinerator.
- Compatibility testing of the Batch 6 material prior to bulking activities scheduled to begin in April 1996.
- Startup of Decontamination Treatment and Waste Segregation field operations.
- The FEMP also plans to put out a Request for Proposals for the next technologies, including Precipitation/Neutralization and Deactivation. The contract is planned to be in place in early April 1996.

**RA No. 12, Safe Shutdown**

**Current Month:**

**Pilot Plant**

Hold-up removal is complete on Dust Collector 7051. Removal and packaging of biological waste (bird carcasses) in Building 13A continues. Work on the Autoclave System and Thoria Gel System continue. Holdup removal from the Portable Dust Collectors and the Ammonia Dissociators is near completion.

**Plant 5**

75% of the Plant 5 Implementation Plans have received final FERMCO internal review and approval and have been turned over to Field Activities for scheduling and execution. Holdup removal is underway in the Graphite Shop. The removal of oil from the Hilco Oil Reclaimer is complete. The design for redistribution of electrical power running through the Plant 5 complex is also complete.

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***Removal Actions***

**RA No. 12, Safe Shutdown (continued)**

**Planned Activities:**

- Continue utility disconnections and holdup material removal in the Pilot Plant.
- Continue utility disconnections and holdup material removal in Plant 5.
- Continue advanced planning to support Safe Shutdown of Plant 2/3.

**RA No. 13, Plant 1 Ore Silos**

**Current Month:**

No further activities are planned for RA No. 13.

**Planned Activities:**

- None to report.

**RA No. 15, Scrap Metal Piles**

**Current Month:**

Review of the RA No. 15 Final Report by DOE-FN continues.

Phase I: None to report.

Phase II: The Engineering Study contract was awarded to Manufacturing Sciences Corporation, Oak Ridge, Tennessee, on September 20, 1995. The Phase II study is scheduled for completion July 1996.

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**RA No. 15, Scrap Metal Piles (continued)**

**Planned Activities:**

- Phase I: Final disposition of the waste streams continues to be determined.
- Phase II: The Engineering Study of the Phase II waste streams will be managed by Waste Programs Management.

KEY MILESTONES	STATUS	DUE DATE
Phase I - On-Site Processing Off-Site Processing	Completed Completed	Sept. 30, 1993 March 25, 1994
Phase I - Submit draft Final Report to U.S. EPA	Completed	October 4, 1994
Phase IIB: Submittal of Subcontractor's Removal Action Project Plan	Cannot proceed until treatability/engineering study is completed.	Sept. 30, 1993
Phase IIB: Submittal of Final Report	Cannot proceed until treatability/engineering study is completed.	March 30, 1995

**RA No. 17, Improved Storage of Soil and Debris**

**Current Month:**

On February 15, 1996 a letter was received from the US EPA formally disapproving the Final Revision No. 3 of RA 17 Work Plan submitted with the comment resolutions from the draft on January 5, 1996.

February activities included negotiations and response to the disapproval of the RA 17 Work Plan.

The revised version of the site procedure EW-0006 which was being updated to incorporate the new management strategies introduced within the Revision No. 3 of RA 17 (Improved Storage of Soil and Debris) Work Plan will be on hold until resolutions to the Work Plan can be developed.

**Planned Activities:**

- Submit written resolutions to the EPAs in response to the disapproval letter for the Final Revision No. 3 of RA 17 Work Plan. Re-convene on the revisions of the site procedure EW-0006 and implement into field activities at the FEMP.

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*Removal Actions*

RA No. 19, Plant 7 Dismantling

**Current Month:**

ALARON incorporated final FERMCO review comments into the ALARON Final Report and returned it to FERMCO the week of February 26, 1996. Data validation continues on the waste streams sampled from the structural steel waste returned to the FEMP.

**Planned Activities:**

- Complete consolidation of containers of primary waste at the Plant 7 Pad in March.
- Prepare draft report of FERMCO-related activities for Plant 7 structural steel and lead recycle for completion of project reports in March.

RA No. 20, Stabilization of UNH Inventories

**Current Month:**

Tank D1-11 is empty and will be rinsed. The 1,200 gallons of material in Tank F1-26 will be processed.

Present status of tanks:

- Tank D1-7 is empty, rinsed, and has clean results.
- Tank D1-11 is empty and will be rinsed.
- Tank F1-26 contains 1,200 gallons of material transferred from D1-11. This material will be processed.

Samples for total uranium were taken from Tanks D1-7, D1-11, and F1-26 on January 29, 1996.

**Planned Activities:**

- Rinse dilution/neutralization Tank F1-26.
- Rinse and sample D1-11.
- Process liquid in Tank F1-26 (1,200 gallons from D1-11).
- When empty, rinse F1-26 and ancillary equipment.

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***Removal Actions***

**RA No. 26, Asbestos Removals (Asbestos Program)**

**Current Month:**

Removal of friable asbestos from the furnaces located in Plant 4 continues. The non-friable asbestos (interior transite) removal in Plant 4 was completed the week of February 5, 1996. The friable asbestos removal (interior piping) removal in Plant 1 began the week of February 12, 1996.

**Planned Activities:**

- Complete friable asbestos (interior piping) removal in Plant 1 by March 1996.
- Continue removal of friable asbestos from the furnaces located in Plant 4.

**RA No. 28, Contamination at the Fire Training Facility**

**Current Month:**

No further activities are planned for RA No. 28.

**Planned Activities:**

- None to report.

**RA No. 30, Seepage Control and Removal of Sediment at the South Field and Inactive Flyash Pile**

**Current Month:**

No further activities are planned for RA No. 30.

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RA No. 30, Seepage Control and Removal of Sediment at the South Field and Inactive Flyash Pile  
(continued)

**Planned Activities:**

- RSO will continue to monitor and sample in accordance with the Operation and Maintenance Manual until remediation of the South Field.

<b>KEY MILESTONES</b>	<b>STATUS</b>	<b>DUE DATE</b>
Submit RSE	Completed	October 11, 1994
Submit work plan to DOE	Completed	December 22, 1994
Submit work plan to EPAs	Completed	January 20, 1995
Complete Removal Action	Began Construction April 25, 1995	August 16, 1995
Submit Final Report to EPA	Completed Sent to EPA on November 30, 1995	December 8, 1995

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**1.0 Operable Unit 1**

Operable Unit 1, as defined in the Amended Consent Agreement, includes Waste Pits 1 - 6, Clearwell, Burn Pit, berms, liners, and soil within the operable unit boundary.

**1.1 RI/FS Work Plan**

**Status:**

Complete.

**1.2 Remedial Investigation**

**Status:**

Complete.

**1.3 Feasibility Study/Proposed Plan**

**Status:**

Complete.

**1.4 Treatability Studies**

**Status:**

The DEEP draft final report was issued for review February 21, 1996, with the finalized version anticipated by March 21, 1996, for the Pre-Final Design Package.

**Issues/Corrective Actions:**

None to report.

**1.5 Record of Decision**

**Status:**

Complete.

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**1.6 RD Work Plan**

The Remedial Design (RD) Work Plan identifies the design deliverables, and presents the schedule for their submittal to U.S. EPA (in coordination with OEPA) for the implementation of the selected remedy described in the Operable Unit 1 (OU 1) Record of Decision.

**Status:**

A Final RD Work Plan was submitted to the U.S. and Ohio EPAs on July 7, 1995.

An Amended Remedial Design Work Plan (ARDWP) for OU 1 is in the process of being developed for submittal to the U.S. EPA and Ohio EPA. This ARDWP is needed to present design plan changes associated with the pursuance of an Alternative Remedial Action Subcontracting Approach (ARASA) for OU 1. This ARDWP will provide an explanation of ARASA and describe its impact on the current OU 1 design. Specifically, this ARDWP includes: 1) a definition of ARASA; 2) integrating the current design into ARASA; 3) deliverables under ARASA; and 4) Agency review and subsequent finalization of ARASA deliverables. Submittal of the ARDWP is planned concurrent with the submittal of the Pre-final Design deliverables on March 21, 1996.

**Issues/Corrective Actions:**

None to report.

**1.7 Remedial Design**

Remedial design is the process wherein the broad concepts presented in the Record of Decision (ROD), relative to the selected remedy (e.g., drying, excavation, etc.), are developed into the technical requirements and direction needed to ensure that the remedial action is implemented in a manner that meets the requirements of the ROD. Remedial design consists of technical analyses and procedures which result in the development of various design documents. The RD Work Plan identifies the following deliverables: Plant Facilities Design Criteria Package, Plant Facilities Engineering, Equipment Specifications, Site Improvement Plan, Construction Schedule, Excavation Plan, Site Restoration Plan, and Transportation and Disposal Plan. The RD Work Plan also provides for submittal dates of October 24, 1995, for the preliminary design deliverables, and March 21, 1996, for the pre-final design deliverables.

As an alternative, OU 1 is also in the process of evaluating a concept, referred to as the Alternative Remedial Action Subcontracting Approach (ARASA), as a means of reducing initial capital costs for the remediation of the waste pits. Under the ARASA concept, the subcontractor would install and operate remedial facilities, excavate, treat, and load waste for shipment. The subcontractor would provide construction capital and recover these costs through processing charges, allowing the government to avoid significant up-front expenses.

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**1.7 Remedial Design (continued)**

**Status:**

The preliminary design package was submitted to U.S. EPA and Ohio EPA for review on October 23, 1995. In a letter dated December 14, 1995, U.S. EPA provided comments on the preliminary design package. In the letter, U.S. EPA stated that this package adequately addresses the record of decision requirements and conforms to generally accepted engineering practices, but disapproved the package pending resolution of comments. In a letter dated December 22, 1995, Ohio EPA provided comments on the preliminary design package. A Response to Comments document was submitted to U.S. EPA and Ohio EPA on January 19, 1996, formally responding to these Agency comments on the preliminary design package.

Efforts continued through February 1996 to provide further detail to the design, including various design meetings. Included in these efforts was the development and initial reviews of the Pre-final Design deliverables, for planned submittal to the U.S. EPA and Ohio EPA on March 21, 1996.

A draft Decision Document for ARASA was transmitted to DOE for review on February 21, 1996. This document is the culmination of efforts by the ARASA Task Force in reviewing the potential for implementing a subcontracting approach wherein a private subcontractor would perform the excavation, processing, and loadout of OU 1 wastes in lieu of the current design, build, and operate concept. The Decision Document concludes that there is a clear advantage for ARASA, especially in the short term, and that there are no challenges which are "fatal flaws" to adopting ARASA. The recommendation of the Decision Document, therefore, is to proceed ahead with its implementation. This Decision Document is currently under review by DOE.

In support of this recommendation to proceed with the implementation of ARASA, efforts were expended in initiating development of a request for proposal, including a statement of work. Included in these efforts was a market survey of industry capabilities in the area of waste remediation. In all, these industry representatives provided presentations on: 1) experience on projects similar to the Fernald site remediation activities; 2) experience on projects similar to the planned OU 1 remediation activities; and 3) thoughts relative to approaches and methodologies concerning the OU 1 project.

A request for proposal for procurement of services at a permitted off-site commercial disposal facility for OU 1 wastes was sent to prospective vendors the week of February 26, 1996, for review and comment. Based on comments received, this request for proposal will be revised, with a planned reissuance of the final version in April 1996.

**Issues/Corrective Actions:**

None to report.

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**1.8 RA Work Plan**

The Remedial Action (RA) Work Plan provides the basis for implementation of the Remedial Design Work Plan and includes, but is not limited to, the following: Sampling and Analysis Plan, Quality Assurance Project Plan, Health & Safety/Contingency Plan, Operations and Maintenance Plan, and a plan for meeting permitting requirements.

**Status:**

The Remedial Action Work Plan is scheduled for submittal to the U.S. and Ohio EPAs by October 22, 1996, as stated in the Remedial Design Deliverable Schedule submitted as part of the RD Work Plan.

**Issues/Corrective Actions:**

None to report.

**1.9 Planned Activities for March 1996:**

- Continue to finalize the DEEP final report.
- Receive comments from prospective vendors on request for proposal for the permitted off-site commercial disposal facility, and revise request for proposal accordingly.
- Formalize decision on the implementation of ARASA, including issuance of the final Decision Document.
- Submittal of Pre-final Design Packages to U.S. EPA and Ohio EPA by March 21, 1996.
- Submittal of Amended Remedial Design Work Plan to U.S. EPA and Ohio EPA by March 21, 1996.
- Continue development of the request for proposal for procurement of an ARASA subcontractor.

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**2.0 Operable Unit 2**

Operable Unit 2 (OU 2), as defined in the Amended Consent Agreement, includes the Flyash Piles, other South Field disposal areas, Lime Sludge Ponds, Solid Waste Landfill, berms, liners, and soil within the operable unit boundary.

**2.1 RI/FS Work Plan Addendum**

**Status:**

Complete.

**2.1.1 RI Field Investigation**

**Status:**

Complete.

**2.2 Remedial Investigation**

**Status:**

Complete.

**OPERABLE UNIT 2 REMEDIAL INVESTIGATION REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA <sub>s</sub>	RECEIVE FROM EPA <sub>s</sub>	FINAL DUE DATE TO EPA <sub>s</sub>	ACTUAL DATE SUBMITTED
Details the nature and extent of contaminants within the OU 2 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	2/18/94 C	4/22/94	1/21/95	1/20/95

C = Consent Agreement Date

**2.3 Feasibility Study/Proposed Plan**

**Status:**

Complete.

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OPERABLE UNIT 2 FEASIBILITY STUDY/PP REPORT

PRIMARY MILESTONES

SCOPE	SUBMIT DRAFT TO EPAs	RECEIVE FROM EPAs	SUBMIT FINAL DRAFT TO EPAs	ACTUAL FINAL SUBMITTAL TO EPAs
Describes and analyzes potential remedial alternatives. A comparative analysis will be performed for all alternatives. The Proposed Plan identifies potential remedial alternatives as listed in the FS and presents the preferred alternative to the U.S. EPA and the public.	4/29/94 C	7/5/94 C	8/24/94 C	3/1/95

C = Consent Agreement Date

**2.4 Treatability Studies**

**Status:**

None to report.

**2.5 RD/RA Work Plan**

**Status:**

The Operable Unit 2 Draft Remedial Design Work Plan report was submitted to the U.S. EPA for review and approval and the OEPA for review on August 4, 1995. The document was transmitted three days ahead of schedule. The U.S. Environmental Protection Agency conditionally approved the document on September 18, 1995 and gave final approval on November 16, 1995 in accordance with the Award Fee Milestone. The OEPA submitted their conditional approval September 29, 1995 and gave final approval on November 3, 1995.

**Issues/Corrective Actions:**

None to report.

**2.6 Record of Decision**

**Status:**

The Record of Decision (ROD) was signed by DOE and submitted to the EPAs on May 12, 1995. Formal approval was received June 8, 1995 and the Final Operable Unit 2 ROD was submitted to the EPAs and general distribution was completed.

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**2.7 Pre-Design Field Investigation**

**Status:**

Submittal of the Draft Addendum to the Project Specific Plan for Phase I and Phase II of the Operable Unit 2 Predesign was sent to DOE on December 14, 1995 and transmitted to the U.S. EPA and Ohio EPA on December 15, 1995. The Addendum is currently being reviewed by DOE and the U.S. Environmental Protection Agency. Ohio EPA completed its review and transmitted comments to FERMCO on January 24, 1996. FERMCO is currently addressing the OEPA review comments. Field work began on January 26, 1996.

**2.8 Geotechnical Field Investigation**

**Status:**

Geotechnical sampling in support of the OSDF Test Pad was performed in February 1996. These tests are needed to establish acceptable permeability zones for the upper and lower horizontal till materials and to select the range of target compaction conditions that will be evaluated during the test pad program.

**2.9 Disposal Facility**

**Status:**

On-Site Disposal Facility (OSDF) Design - Transmittal of the Intermediate Design Package (60%) for the On-Site Disposal Facility was submitted to DOE for review and comments on February 28, 1996. The submittal included: Design Criteria Package (1 volume), Design Calculations (Volumes 1, 2, 3, and 4), Technical Specifications, and Design Drawings. The transmittal of this document was in accordance with POC 2 (d), and was due to DOE on February 29, 1996.

The Draft Remedial Action Work Plan for the On-Site Disposal Facility was transmitted to DOE for review and comment on February 29, 1996. DOE comments are expected around March 29, 1996.

**Planned Activities for March 1996:**

- Continue preparation of the Intermediate (60%) Design Package and incorporate any comments received from DOE.
- Incorporation of comments received from DOE on the Draft Remedial Action Work Plan for the On-Site Disposal Facility.

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**3.0 Operable Unit 3**

Operable Unit 3, as defined in the Amended Consent Agreement, includes the Production Area and production-associated facilities and equipment (including all above-and below-grade improvements) including all structures, equipment, utilities, drums, tanks, solid waste, waste, product, thorium, effluent lines, K-65 transfer lines, waste water treatment facilities, fire training facilities, scrap metal piles, feed stocks, and coal pile.

**3.1 Remedial Investigation/Feasibility Study Report**

**Status:**

The OU 3 RI/FS Comment Response Document was conditionally approved by U.S. EPA with comments on January 23, 1996. All issues with the Comment Response Document were resolved during a conference call held on February 7, 1996, with U.S. EPA and Ohio EPA. The OU 3 Final RI/FS Report and Proposed Plan were submitted to U.S. EPA, Ohio EPA, and DOE on February 15, 1996. Included with this submittal were final responses to the comments received from U.S. EPA on January 23, 1996, and Ohio EPA on January 19, 1996. Approval of the OU 3 RI/FS Report is expected in mid to late March 1996. The public comment period for the Proposed Plan is scheduled to begin in early April 1996.

**Issues/Corrective Actions:**

It is a U.S. EPA requirement that all remedies with a net present value over \$60 million be presented to the remedy review board. The review board is scheduled to consider the OU 3 proposed remedy in mid to late March 1996. Based on approval of the OU 3 RI/FS/PP being granted on March 22, 1996, the public comment period will begin in April 3, 1996, with a public hearing tentatively scheduled for April 23, 1996.

**OPERABLE UNIT 3 REMEDIAL INVESTIGATION/FEASIBILITY STUDY**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA <sub>s</sub>	RECEIVE FROM EPA <sub>s</sub>	SUBMIT TO EPA <sub>s</sub> FINAL
Details the nature and extent of contaminants within the OU 3 study area. Estimates the volume of contaminated media and materials. Characterizes contamination in the former production area. Develops remedial action objectives and describes and analyzes potential remedial alternatives. A comparative analysis will be performed for all alternatives. The Proposed Plan identifies potential remedial alternatives as listed in the FS and presents the preferred alternative to the U.S. EPA and the public.	09/11/95 C	12/05/95 C	01/24/96 C

C = Consent Agreement Date  
F = Forecast Date

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***Remedial Investigations/Feasibility Studies***

**3.2 Record of Decision**

**Status:**

Comments were received by February 16, 1996 from DOE (FN, HQ, OFO, and ANL). Submittal of the draft ROD to the EPAs will occur 60 days after the close of the public comment period.

**Issues/Corrective Actions:**

Comments from DOE will be incorporated into the draft ROD as appropriate. March 19, 1996 has been identified as a tentative date for resubmittal of the revised draft ROD for DOE review.

**OPERABLE UNIT 3 RECORD OF DECISION**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPAs	RECEIVE FROM EPAs	SUBMIT TO EPAs FINAL
Finalizes the decision between the DOE and the U.S. EPA on the remediation approach for Operable Unit 3. The document contains multiple sections including the Declaration, the Decision Summary, and the Responsiveness Summary.	07/25/96 C	08/23/96 F	09/25/96 F

C = Consent Agreement Date  
F = Forecast Date

**3.3 Engineering Studies**

**Status:**

A decision was made to complete Phase I and discontinue phases planned for the future on the Ultrasonic Decontamination of Strategic Metals project. A summary report on work finished to date is out for internal FERMCO review.

Contaminated pipe insulation (asbestos) collected by Safe Shutdown from two areas in Plant 9 was received by Westinghouse Science and Technology Center (WSTC) in Pittsburgh, PA. WSTC and KAI Tech. Inc. are continuing efforts to develop a process that uses ion exchange to remove radiological and metal contamination from asbestos. The project is being funded by DOE Morgantown Energy Technology Center (DOE-METC) on a Program Research and Development Announcement (PRDA).

**Issues/Corrective Actions:**

None to report.

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**3.4 Interim Remedial Action**

**Status:**

**Dismantlement of MAWS Equipment** - Field activities are underway in preparation for the removal of the MAWS soil washing system. Since utilities have been disconnected and Safe Shutdown has been completed in Plant 9, temporary lighting and heating, powered by a portable generator, are currently being set up. Dismantlement is anticipated to begin on March 4, 1996 with the removal of PVC lines and other non-salvageable items.

**Dismantlement of the High and Low Nitrate Tanks** - The draft implementation plan for the above-grade dismantlement of the High and Low Nitrate Tanks was submitted to the EPAs on February 20, 1996. Pending sampling analyses of the Low Nitrate Tank sediment for uranium and thorium concentrations, the cover of the Low Nitrate Tank is expected to be removed during the week of March 4, 1996 in preparation for removing the 120,000 gallons of sediment for Plant 8 dewatering. This tank must be removed by mid-April to avoid delaying the construction of the OU 1 Waste Treatment Facility. Similarly, the High Nitrate Tank, which lays in the planned path of the Haul Road, needs to be dismantled by September 1996.

**Issues/Corrective Actions:**

None to report.

**3.5 Planned Activities for March 1996:**

- Develop the Notice of Availability (NOA) to announce the public comment period for the OU 3 proposed plan.
- Schedule and continue planning for the OU 3 public comment period. This includes determining the appropriate date and location for the public hearing. Planning also includes preparation of presentation slides and dry runs for the meeting.
- Incorporate DOE comments on the draft ROD and revise the ROD accordingly.
- Remove the cover of the Low Nitrate Tank in preparation for removing the 120,000 gallons of sediment for Plant 8 dewatering.
- Review and incorporate technical comments into the summary report for the Ultrasonic Cleaning of Strategic Metals Engineering Study. Issue the draft report.

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**4.0 Operable Unit 4**

Operable Unit 4, as defined in the Amended Consent Agreement, consists of Silos 1, 2, 3, and 4, the silo berms, the Decant Sump Tank System, and soil within the operable unit boundary.

**4.1 R/FS Work Plan**

**Status:**

Complete.

**4.2 Remedial Investigation**

**Status:**

Complete.

**4.3 Feasibility Study/Proposed Plan**

**Status:**

Complete.

**4.4 Treatability Studies**

**4.4.1 Bench Scale Treatability Studies**

**Status:**

Complete.

**4.4.2 Pilot Plant Treatability Studies**

**Status:**

Response to DOE-FN comments on the Phase I Work Plan were submitted on January 18, 1996. The Final Phase I Work Plan was submitted to DOE-FN on February 22, 1996 for submittal to the U.S. EPA. Comments on the Phase II Work Plan are being addressed for submittal to DOE-FN in April, 1996.

**Issues/Corrective Actions:**

None to report.

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**4.5 Record of Decision**

**Status:**

Complete.

**4.6 RD Work Plan**

**Status:**

Complete.

**4.7 Planned Activities for March 1996:**

- Complete construction of the Phase I Pilot Plant facility.
- Address comments on the Phase II Work Plan.
- Continue System Operability Testing and Pre-Start activities.

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**5.0 Operable Unit 5**

Operable Unit 5, as defined in the Amended Consent Agreement, includes: groundwater, surface water, and soil not included in the definitions of Operable Units 1 through 4, sediment, flora and fauna.

**5.1 Remedial Investigation**

**Status:**

Complete.

**OPERABLE UNIT 5 REMEDIAL INVESTIGATION REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA <sub>s</sub>	RECEIVE FROM EPA <sub>s</sub>	SUBMIT TO EPA <sub>s</sub> FINAL
Details the nature and extent of contaminants within the OU 5 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	06/24/94 C	09/12/94 C	11/01/94 C 11/01/94 A

C = Consent Agreement Date  
A = Actual Date

**5.2 Feasibility Study/Proposed Plan (FS/PP)**

**Status:**

Complete.

**OPERABLE UNIT 5 FEASIBILITY STUDY/PROPOSED PLAN**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA <sub>s</sub>	RECEIVE FROM EPA <sub>s</sub>	SUBMIT TO EPA <sub>s</sub> FINAL
Describes and analyzes potential remedial alternatives. A comparative analysis will be performed for all alternatives. The Proposed Plan identifies potential remedial alternatives as listed in the FS and presents the preferred alternative to the U.S. EPA and the public.	11/15/94 C 11/15/94 A	01/16/95 C	02/14/95 C

C = Consent Agreement Date  
A = Actual Date

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**5.3 RCRA Monitoring**

**Status:**

The 1995 RCRA Annual Report was forwarded to the Ohio EPA on February 28, 1996.

**Issues/Corrective Actions:**

None to report.

**5.4 Treatability Studies**

Complete.

**5.5 Record of Decision (ROD)**

**Status:**

The Operable Unit 5 Record of Decision was signed by the Regional Administrator of the EPA on January 31, 1996. Full distribution of the ROD, including the signed Declaration, was completed on February 16, 1996.

**Issues/Corrective Actions:**

None to report.

**5.6 Other Studies/Reports**

**Status:**

South Field Injection Test Report - Comments were received from OEPA in January 1996 and from EPA in February 1996. Responses to comments were prepared in February; these will be forwarded to the agencies in early March, followed by a revised Injection Test Report. An additional injection test is planned for mid- to late March.

The South Plume Groundwater Recovery System's Design Monitoring Evaluation Program Plan (DMEPP) System Evaluation Report for July 1, 1995 - December 31, 1995 has been in preparation and review for submission to EPA and OEPA by April 1, 1996.

**Issues/Corrective Actions:**

None to report.

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**5.7 RD/RA Activities**

**Status:**

The draft Operable Unit 5 Remedial Design Work Plan, due to EPA 60 days after the signing of the ROD, is being prepared. An associated document, the Integrated Environmental Monitoring Plan, is also in preparation.

**Issues/Corrective Actions:**

None to report.

**5.8 Planned Activities for March 1996:**

- Continue preparation of the draft Remedial Design Work Plan and the Integrated Environmental Monitoring Plan.
- Complete the DMEPP System Evaluation Report and forward to the agencies by the end of the month.
- Respond to comments received on the South Field Injection Test Report and issue a revised document. Prepare an Addendum to the existing Project-Specific Plan for the South Field Injection Test to outline conducting an additional injection test and performing geochemical modeling.

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**6.0 Community Relations**

**Status:**

On February 15, 1996 FERMCO employees reached a key milestone -- 4 million consecutive safe work hours without a lost workday accident. This is the longest period of safe work since FERMCO assumed responsibility for managing the Fernald site cleanup December 1, 1992, and the second-longest period of safe work in the 43-year history of the Fernald site. The 4-million-hour countdown began March 27, 1995. FERMCO's incidence rate for lost workdays away from work in 1995 was 43 times better than the industry average using National Safety Council measurement standards.

Public Affairs drafted and distributed a news release on 4 million safe work hour accomplishment. The article "Fernald Site Improves Work Practices," submitted to *EM Progress* last fall, was published in the winter 1996 edition of the publication. A brief highlight of FERMCO's 4-million-work-hour safety milestone was included.

A DOE/FERMCO news conference held February 12, 1996 at the Westin Hotel in Cincinnati. The news conference was conducted in response to allegations of wrongdoing made by *The Cincinnati Enquirer*.

In its February 13, 1996, article, *The Cincinnati Enquirer* reported, "criticality incidents . . . could have led to explosions of nuclear material . . ." at Fernald. Public Affairs has written an article in the Fernald Report to inform neighbors that it is **physically impossible** for a nuclear explosion to occur at Fernald because materials at the plant have much too low a concentration of uranium-235. The article emphasized that safety and discipline in operations are stressed in all Fernald activities.

Stakeholders were notified of unplanned events that occurred at Fernald this month including topics such as:

- 10 mutual aid runs (loggable events);
- Positive Substance Abuse (off-normal occurrence);
- OSHA Violation/Fall Protection (off-normal occurrence);
- Clothing Contamination -- (off-normal occurrence);
- Inadvertent Criticality Alarm Horn Activation (off-normal occurrence).

Local neighbors were notified that beginning the week of March 4, through March 16, 1996 the new Boiler House will undergo start-up testing. This testing will include a series of steam blows to clean the steam line running from the new Boiler House, just north of Advanced Waste Water Treatment Facility. During this testing, it is possible that a significant amount of noise will be generated, as the "clean" steam is vented to the atmosphere.

A brochure was developed outlining Fernald successes within the past three years, as well as accomplishments that have made Fernald referred to as a model within the DOE complex.

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**6.0 Community Relations**

**Status: (continued)**

FERMCO Technology Programs hosted a Site Technology Coordination Group (STCG) meeting on February 9, 1996. Three local stakeholders, STCG members, attended the meeting.

Stu Hinnefeld, vice president of the FERMCO Safety and Health Division, accepted a reward on behalf of FERMCO for its participation in the mock crash program within the local schools given by the Hamilton County Safety Council.

During the month, the Fernald Citizens Task Force's four subcommittees held the following meetings and discussed their paths forward:

- The Waste Management Subcommittee met February 6;
- The Monitoring Subcommittee met February 7;
- The Transportation Subcommittee met February 8;
- The Natural Resources met February 10, 1996.

During the regular monthly meeting held February 10, 1996 the task force discussed preliminary design of the on-site disposal facility and determined the design is consistent with task force recommendations.

The February 1996 issue of the *Fernald Report* has been prepared and will be mailed to over 1,200 stakeholders in early March 1996.

A new fact sheet titled, *Natural Resources Trusteeship*, has been developed by FERMCO's Natural Resource Management Department. The fact sheet will be distributed with the *Fernald Report* in early March 1996. The fact sheet identifies the natural resources trustees for the Fernald site: secretary of DOE; secretary of the U.S. Department of the Interior, and officials of the Ohio Environmental Protection Agency (Ohio EPA), appointed by the governor of Ohio.

The trustees' role is to act as guardians for public natural resources at or near the Fernald site, and act on behalf of the public. The trustees have indicated a preliminary preference for on-property natural resource restoration. If the site's trustees recommend on-property restoration, portions of the Fernald site will be permanently committed to natural resource management activities. Since decisions regarding this issue may influence final land use at the Fernald site, it is critical for stakeholders to be informed and have a chance to participate in the decision-making process.

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**Period Ending February 29, 1996**

***Remedial Investigations/Feasibility Studies***

**6.0 Community Relations**

**Status: (continued)**

The University of Cincinnati (UC) submitted a work-in-progress report to DOE on its worldwide investigation of alternate radium-226 sources for medical research. The report, titled *University of Cincinnati Work in Progress, Part 1 — Preliminary Assessment of Known Sources of Radium-226 Support for the FEMP Radium Initiative*, dated January 31, 1996, is available in the Public Environmental Information Center. UC will continue to obtain additional information and will issue its final report in June 1996. FERMCO subcontracted with UC in October 1995 to conduct the worldwide investigation in support of DOE's initiative to investigate alternate sources of the radioisotopes for medical research. This spring, under DOE direction, UC will begin a second phase to the project. Researchers will study the feasibility of potential processes for recovering radium from Fernald vitrified K-65 Silo material.

Maria Kreppel, an associate professor of English at the UC, has been hired by FERMCO to serve as convener for Fernald's Community Reuse Organization (CRO). One of Kreppel's main priorities will be to ensure the CRO's formation process is fair, open and all-inclusive. She will screen the CRO membership, prepare a charter and operating procedures, and make other initial recommendations to DOE.

The CRO will act as the single voice to DOE for all local economic development planning and management efforts that address impacts related to Fernald. The group will also will make land use recommendations, keeping with those advanced by the Fernald Citizens Task Force, and it will decide on disposition of excess government property resulting from the closing of Fernald.

Milford High School will represent the Greater Cincinnati Region in DOE's National Science Bowl in May 1996 after winning the regional competition sponsored by the Fernald Environmental Management Project February 3, 1996 at Cincinnati State Technical and Community College.

Public Affairs conducted 12 tours with a total of 52 visitors to the site during February 1996. Tour guests included: DNFSB members who were at the site performing a waste management audit, UC students who chose Fernald for their projects/reports, and Fernald lab employees.

On February 28, 1996 a reporter from *Business Week* magazine toured the site, accompanied by the FERMCO Public Affairs director. Initially he was interested in writing an article about *The Cincinnati Enquirer's* allegations against FERMCO, but after touring the site and speaking with the FERMCO and DOE personnel, he decided against pursuing the story.

On February 17, 1996 a Public Affairs staffer gave a Fernald overview speakers bureau presentation to 35 members of the Ross First Baptist Church. In addition, a Public Affairs staffer spoke at a "Leap Forward" event sponsored by the Council for the Advancement of Science, held at the Cincinnati Museum Center. This meeting was conducted in an effort to bring universities, industry, and local agencies up to date on the new Ohio Science Model and state proficiency tests.

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***Remedial Investigations/Feasibility Studies***

**6.0 Community Relations**

**Status: (continued)**

Five FERMCO engineers participated in this year's National Engineers Week, an annual event to help raise public awareness and appreciation of engineers and their work. The theme of this year's event was "Engineers Make It Work." During the week of February 19 through February 23, 1996 the FERMCO engineers visited four area junior and senior high schools during the week. They visited St. Andrews Middle School, Bridgetown Junior High School, Ross High School, and LaValle Middle School. Forty-six schools were invited to participate.

Fernald Envoys attended 16 meetings of community organizations and stakeholder groups. These meetings were attended by approximately 1,500 stakeholders. They included two meetings each with Crosby, Morgan and Ross Trustees, Hamilton Chamber of Commerce (300), Hamilton County Board of Health, Ross First Baptist Church Brotherhood, American Society of Safety Engineers, FRESH Core Group, Alpha Phi Alpha Fraternity (1,000).

Contributions of \$1,000 were presented to Colerain Fire Department to help build a new fire training facility and to Hamilton Rotary Club to sponsor its annual science fair to be attended by 800 students.

Used computers, which had been declared excess by FERMCO and DOE, were donated to Millville Fire Department; St. Rita School for the Deaf; Welcome House, a homeless agency in Covington, Ky.; and Butler County Emergency Management Agency.

**6.1 Planned Activities for March 1996:**

- The Fernald Citizens Task Force will conduct a regular meeting March 9, 1996. The meeting will begin at 8:30 a.m., at the Joint Information Center, 6025 Dixie Highway, Fairfield. Issues to be discussed include: natural resource damage issues, legacy waste removal and Fernald's 10-year accelerated cleanup schedule.
- The Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry (ATSDR) will approve the members of the Fernald Health Effects Subcommittee within one month. The group's first meeting is expected to be held during late March or early April 1996. CDC will publicize the meeting arrangements once they are confirmed. The Fernald Health Effects Subcommittee will represent citizens and advise CDC and ATSDR on Fernald-related public health activities and research. The group will work with DOE and the Fernald Citizens Task Force.
- Economic development will be the topic at an April 1996 forum designed to allow prospective CRO members an opportunity to discuss future issues.

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**Period Ending February 29, 1996**

***Remedial Investigations/Feasibility Studies***

**6.1 Planned Activities for March 1996: (continued)**

- An Arthur D. Little employee contacted Public Affairs about Fernald participating as a host site for visiting Belarussian scientists. The scientists are interested in learning about the environmental challenges at Fernald, and on going remediation activities. DOE and FERMCO Technology Programs have agreed to host the visits on April 2, June 25, and October 29, 1996. A conference call has been scheduled on March 5 to discuss plans for the first visit.

**Issues/Corrective Action:**

None to report.

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**ENCLOSURE A**

**WASTE WATER FLOWS AND RADIONUCLIDE  
CONCENTRATIONS UNDER CA SECTION XXIII.B**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
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**ENCLOSURE A**

**Introduction**

The accompanying Effluent Radiation Reports provide, in accordance with the requirements of Section XXIII.B of the Consent Agreement As Amended under CERCLA Sections 120 and 106 (a), data on the daily waste water flows, radionuclide concentrations, and loadings released to the Great Miami River and an estimate of runoff and radionuclide concentrations to Paddy's Run during February 1996. Effective November 1, 1995, the new NPDES permit, 11o00004\*ED, identified the Parshall Flume as the monitoring location for all discharges to the Great Miami River.

**Summary - February 1996**

The total quantity of uranium discharged from the FEMP to the Great Miami River from the Parshall Flume (Outfall 11o00004001) was 10.78 kilograms. The average uranium concentration for the month was 42 ug/L. This is 4.7 % of the Derived Concentration Guide (DOE Order 5400.5) for ingested water.

There were no discharges from the Storm Water Retention Basin Spillway (Outfall 11o00004002) to Paddy's Run via the Storm Sewer Outfall Ditch in February 1996.

Based on 1.42 inches of rainfall in February 1996, the total quantity of uranium discharged to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 4.03 kilograms.

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**ENCLOSURE A**

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398704  
Cincinnati, Ohio 45239-8704  
9002 M 9501 900212

LOCATION: 11000004001  
4001 Total Discharge  
Parshall Flume (Effluent to Great Miami River)

DATE: FEBRUARY 1996

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	Calculated Total U-238 (pCi/l) (1)
1	3.139	29	350	38	0.45	13
2	3.098	24	350	35	0.42	12
3	2.646	35	400	38	0.38	13
4	2.691	24	400	30	0.30	10
5	2.643	21	390	29	0.29	10
6	2.343	18	390	28	0.25	9
7	1.983	24	470	29	0.22	10
8	1.590	20	610	32	0.19	11
9	1.566	21	680	21	0.13	7
10	2.034	14	450	23	0.18	8
11	2.048	26	280	36	0.28	12
12	2.194	31	200	42	0.35	14
13	2.335	44	280	63	0.56	21
14	2.189	33	530	37	0.31	13
15	2.409	30	690	45	0.41	15
16	2.329	35	790	50	0.44	17
17	2.270	38	710	63	0.54	21
18	2.282	28	670	54	0.46	18
19	2.284	26	750	48	0.42	16
20	2.322	42	720	61	0.54	21
21	2.290	69	550	118	1.02	40
22	1.938	**	**	48	0.35	16
23	2.265	**	**	67	0.57	23
24	2.434	**	**	35	0.32	12
25	2.386	**	**	26	0.23	9
26	2.439	**	**	34	0.32	12
27	2.305	**	**	32	0.28	11
28	2.479	**	**	33	0.31	11
29	2.507	**	**	29	0.27	10
Total	67.438				10.78	

\*\* Analytical results not yet available.

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**ENCLOSURE A**

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: 4001 Total Discharge

DATE: FEBRUARY 1996

	Flow (MGD)	Total Alpha (pCi/l)(2)	Total Beta (pCi/l)(2)	Total U (ug/l)(2)	Total U (kgs)	Calculated Total U-238 (pCi/l)(1)(2)
Avg.	2.325	22	360	42	0.37	14
Max.	3.139	69	790	118	1.02	40
Min.	1.566	**	**	21	0.13	7

The average uranium concentration for the month was 42 ug/l.  
This is 4.7 percent of the Derived Concentration Guide  
(DOE Order 5400.5) for ingested water.

- Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.
- (2) Average values presented are flow-weighted.

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**ENCLOSURE A**

**EFFLUENT RADIATION REPORT**

**FACILITY:** Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

**LOCATION:** 11000004002  
4002 Discharge (Overflow) to Storm Sewer Outfall Ditch  
Stormwater Retention Basin Spillway (Effluent to Paddy's Run)

**DATE:** FEBRUARY 1996

There was no discharge to Paddy's Run from the Stormwater Retention Basin.

Based on 1.42 inches of rainfall for the month, the uranium discharge to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 4.03 kgs.

000044

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE  
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**ENCLOSURE B**

**FFCA: INITIAL REMEDIAL MEASURES  
AND OTHER OPEN ACTIONS**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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**ENCLOSURE B**

**INTRODUCTION**

Enclosure B describes actions undertaken at the FEMP during the period February 1 through February 29, 1996 that are not covered by the reporting requirements of the Amended Consent Agreement under the Comprehensive Environmental Response, Compensation, and Liability Act as amended (CERCLA) Sections 120 and 106(a).

**WORK ASSIGNMENTS AND PROGRESS**

Descriptions of ongoing work progress are presented in the following sections of this report. The status of ongoing work in support of the Federal Facility Compliance Agreement (FFCA) is summarized in Table 1 of Enclosure B. Completed work previously reported upon has been eliminated for the sake of brevity. In this portion of the report and in Table 1, descriptions of actions are presented in a format consistent with that of the FFCA.

**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND  
LIABILITY ACT AS AMENDED (CERCLA)**

1. Initial Remedial Measures

*Section C*

K-65 Silo Project - Status information on the K-65 Silo project normally reported in this section is being provided under Operable Unit 4: Silos 1-4.

2. Remedial Investigation/Feasibility Study (RI/FS)

Status information on the Remedial Investigation/Feasibility Study (RI/FS) normally reported in this section is being provided separately in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).

3. Reports and Record Keeping

*Section B*

The RI/FS Monthly Technical Progress Report for January 1996 was transmitted to the U.S. EPA and OEPA on February 20, 1996, as an integral part of the Consolidated Consent Agreement/Federal Facility Compliance Agreement/Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (CA/FFCA/FFA-CARE) Monthly Progress Report in accordance with the requirements of Section X of the Amended Consent Agreement.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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**ENCLOSURE B**

**CLEAN AIR ACT (CAA)**

*Section E*

The Quarterly Particulate Emissions Report will now be incorporated into the Annual NESHAP Compliance Report.

**RADIATION DISCHARGE INFORMATION**

*Section A*

This information will now be submitted on an annual basis as part of the FEMP Site Environmental Report.

**REPORTING REQUIREMENTS**

*Section B*

The Federal Facility Compliance Agreement Monthly Progress Report for January 1996, was transmitted to the U.S. EPA and OEPA on February 20, 1996 as Enclosure B of the Consolidated Consent Agreement/Federal Facility Compliance Agreement/Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (CA/FFCA/FFA-CARE) Monthly Progress Report.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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**ENCLOSURE B**

**TABLE 1**

**STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON  
FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS**

<b>ACTION</b>	<b>DESCRIPTION</b>	<b>COMPLETION TIME AFTER FFCA SIGNED</b>	<b>FY1995 STATUS</b>
<b>CERCLA</b>			
1.	INITIAL REMEDIAL MEASURES		
1.C	Implement radon control plan approved by the U.S. EPA.	----	No longer applicable. Progress on actions to address radon emissions from the K-65 Silos are being reported separately under Section IX- Removal Actions of the Consent Agreement/FFCA Monthly Progress Report.
2.	REMEDIAL INVESTIGATION/FEASIBILITY STUDY		No action required.
2.A	RI/FS work is to be conducted in accordance with the U.S. EPA guidelines.	N/A	
2.B	--No Action Required--	----	Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).
2.E	Amend and submit revised RI/FS Work Plan to U.S. EPA if deficiencies are found.		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).
2.F	Implement tasks described in the approved RI/FS Work Plan		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA sections 120 and 106(a).
3.	REPORTS AND RECORD KEEPING		
3.B	Submit monthly RI/FS progress reports.	monthly	The RI/FS Monthly Progress Report for January 1996 was transmitted to the U.S. EPA and OEPA on February 20, 1996.

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**ENCLOSURE B**

**TABLE 1**

**STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON  
FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS**

<b>ACTION</b>	<b>DESCRIPTION</b>	<b>COMPLETION TIME AFTER FFCA SIGNED</b>	<b>FY1995 STATUS</b>
<b>CLEAN AIR ACT</b>			
B.4	Prepare annual progress report installation and replacement of emission control devices.	yearly	The Sixth Annual Progress Report on the installation and replacement of emission control devices was prepared by the Effluent Monitoring and Control Section of the ES&H Division. The report was transmitted to DOE on July 15, 1994.
C.	Provide annual reports to the U.S. EPA per 40 CFR 61.94(c).	yearly	The Annual NESHAP Compliance Report for CY1993 was transmitted to the U.S. EPA on June 29, 1995.
D.1	Provide U.S. EPA with yearly stack-testing schedule.	yearly	No stacks related to production were operating in 1995 or to this date in 1996.  Due to the permanent shutdown of metals production, resumption of the FFCA Stack Testing Program is unlikely. A proposal is being developed to substitute the NESHAP Subpart H testing/monitoring program for the FFCA Stack Testing. When this proposal is completed it will be formally submitted to U.S. EPA.
D.2	Provide U.S. EPA with stack-test results for stacks tested that year.	45 days	No stack tests performed this year.
E.1	Maintain records of monthly particulate matter emissions.	----	Ongoing.

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**ENCLOSURE B**

**TABLE 1**

**STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON  
FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS**

<b>ACTION</b>	<b>DESCRIPTION</b>	<b>COMPLETION TIME AFTER FFCA SIGNED</b>	<b>FY1995 STATUS</b>
<b>RCRA</b>			
A.1	Conduct a hazardous waste determination on all waste streams.	30 days	Complete. Pursuant to the Proposed Amended Consent Decree, a RCRA waste evaluation was conducted on all identified waste streams pertaining to the PACD.
A.2	Commence a hazardous waste analysis program for materials in the landfill and going to the incinerator.	30 days	Complete. Operation of these units was discontinued and data on the waste which had gone to them was provided in a 30-day FFCA deliverable on August 17, 1986.
A.5	Update the facility closure plan to reflect the year the facility expects to begin closure.	30 days	The Facility closure date is dependent upon closure schedules for individual TSD units as presented most recently in Section I of the RCRA Part B Permit Application transmitted to the Ohio EPA and the U.S. EPA on March 26, 1993 (DOE-1471-93). Facility closure will be completed on a date the last TSD unit is closed.
<b>REPORTING REQUIREMENTS</b>			
B.	Issue monthly progress report of actions taken to ensure compliance with FFCA requirements.	monthly	January's CA/FFCA Monthly Progress Report was transmitted to the U.S. EPA and OEPA on February 20, 1996.

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**ENCLOSURE C**

**FEDERAL FACILITY AGREEMENT:  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
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**ENCLOSURE C**

**Introduction**

The Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (FFA-CARE) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (U.S. EPA), signed November 19, 1991, requires that a monthly report be submitted to the U.S. EPA regarding all steps undertaken in the preceding month to implement Part V of the agreement and that all data generated as a result of those actions be submitted.

Enclosure C fulfills those requirements by describing steps taken at the FEMP during the period February 1 through February 29, 1996, to implement Part V, Radon-222 Control and Abatement Plan, paragraphs 19-33 of the FFA-CARE.

**Work Assignments and Progress**

In this section of Enclosure C, action descriptions and work progress are presented in a format consistent with that of the FFA-CARE. Immediately following this section are the K-65 Silos Report and the Selected Radon Data Report. Reporting this data is also a requirement included in the U.S. EPA approved Silos 1 and 2 Removal Action Work Plan (Removal Action No. 4).

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**ENCLOSURE C**

FFA Part, Paragraph(s)	Description of Commitment	FFA Due Date	Status of Commitment
Part V, 19 & 21	Implement the K-65 Silos 1 and 2 Removal Action in accordance with the approved Silos 1 and 2 Removal Action Work Plan.	12/1/91	Completed.
Part V, 20	Reduce radon-222 to a level As-Low-As Reasonably-Achievable (ALARA) with the goal as specified in the Silos 1 and 2 Removal Action Work Plan.	5/22/92	Completed.
Part V, 22	Submit proposed methodology for estimating radon-222 concentration reductions resulting from completion of the Silos 1 and 2 Removal Action.	Within 60 days of completing removal action; 1/27/92.	Completed.
Part V, 23	Evaluate performance of the removal action and determine whether or not additional actions are needed prior to final remediation.	None specified.	Completed.
Part V, 24, 25, and 33	Demonstrate compliance with NESHAP Subpart Q at the completion of final remediation using a methodology approved by the U.S. EPA. Applicable to: Silos 1, 2, and 3; Waste Pits 1, 2, 3, 4, and 5 and the Clearwell; and any newly discovered radon-222 emission sources.	None specified.	No information to report.
Part V, 26	Directly measure radon-222 flux from Waste Pits 1, 2, 3, 4, and 5 and the Clearwell in the RI/FS under the CERCLA Consent Agreement.	None specified.	Radon sampling is complete for Pits 1, 2, and 3. All measurements were below the criteria set by the U.S. EPA. A final report was issued to the U.S. EPA on June 25, 1992. A letter was received from the U.S. EPA on October 16, 1992 giving approval of the proposed method for measuring the radon flux from Pit 4. The letter also stated that since the Clearwell is water covered, and Pit 5 is nearly 100% water covered, the flux from Pit 5 and the Clearwell may be assumed to be zero.

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**ENCLOSURE C**

FFA Part, Paragraph(s)	Description of Commitment	FFA Due Date	Status of Commitment
Part V, 26	Include direct measurement data from Waste Pits 1, 2, 3, 4, and 5 and the Clearwell in the RI/FS under the CERCLA Consent Agreement.	None specified.	See above.
Part V, 27	Estimate radon-222 emissions from Silo 3 based upon characterization data; include the estimated radon-222 emission data from Silo 3 in the RI/FS that includes Silo 3 under the CERCLA Consent Agreement.	None specified.	Completed.
Part V, 28	Submit documentation or estimates of current radon-222 emissions from existing but newly discovered sources that contain radium-226 in sufficient concentrations to emit radon-222 in excess of NESHAP Subpart Q prior to final remediation.	Within 30 days of discovery.	No new sources identified.
Part V, 30	Submit methodology for direct measurement or other appropriate means of characterization of the relevant emissions pursuant to paragraph 29 of the FFA.	Within 45 days of the U.S. EPA response pursuant to paragraph 29.	None required.
Part V, 31	Submit results of measurements pursuant to paragraph 30.	Within 30 days of U.S. EPA approval of characterization method.	None required.
Part VI, 31	Submit monthly report on steps undertaken to implement Part V of the FFA-CARE and the data obtained in the preceding month.	20th day of succeeding month.	The progress report being submitted herewith as an integral part of the CERCLA Consent Agreement Monthly Progress Report.

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**ENCLOSURE C**

**Data Reporting Requirements: RA No. 4: Silos 1 and 2**

As defined in the Silos 1 and 2 Removal Action Work Plan and the Federal Facility Agreement, data associated with monitoring the effectiveness of the bentonite installation are included in the following tables: the K-65 Silos Report and the Selected Radon Data Report.

The K-65 Silos Report includes data on the following parameters:

- ambient temperature and pressure near the silos,
- Silos 1 and 2 headspace temperature,
- Silos 1 and 2 differential pressure,
- Silos 1 and 2 radon headspace concentration, and
- Silos 1 and 2 headspace humidity.

The Selected Radon Data Report includes radon data from the following locations:

- Air monitoring station number 5 (AMS-5),
- Air monitoring station number 6 (AMS-6),
- Pilot Plant,
- Background data, and
- K-65 Monitoring Data (K-65 NW, K-65 SW, K-65 NE, K-65 SE).

Per letter dated July 18, 1995, U.S. EPA granted DOE-FN relief from reporting non-radon parameter data. Non-radon data would only need to be reported if the effectiveness of the bentonite was in question.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**Period Ending February 29, 1996**

**ENCLOSURE C**

The radon data submitted in Enclosure C: Due to its high source strength, unique measurement methods had to be devised to measure radon emissions from this nonstandard source. The data that has been gathered since 1992 is collected by qualified technicians using detailed procedures. This data although not yet verified, serves as a very good qualitative indicator of the integrity of the bentonite sealant layer covering the residues in the silos. Activities have been initiated to enhance the quality and independently verify the data that is being collected.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE C**

MONTH: FEBRUARY  
YEAR: 1996

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O. Box 538704  
Cincinnati, Ohio 45253 Hamilton

**SELECTED RADON DATA REPORT**  
(Monthly Summary of Selected Sampling Locations)

Daily Averages	AMS #5	AMS #6	PILOT PLANT WAREHOUSE	BKGD-1 (Fairfield)	BKGD-2 (Miamitown)
	(pCi/L)	(pCi/L)	(pCi/L)	(pCi/L)	(pCi/L)
02/01/96	0.6	0.5	0.4 (b)	0.5	n/a (b)
02/02/96	0.6	0.6	0.9 (b)	0.5	n/a (b)
02/03/96	0.6	0.6	0.2 (b)	0.6	n/a (b)
02/04/96	0.8	0.8	1.2 (b)	0.7	n/a (b)
02/05/96	0.8	0.8	0.2 (b)	0.6	n/a (b)
02/06/96	1.2	1.0	1.7 (b)	0.7	n/a (b)
02/07/96	0.6	0.5	0.3 (b)	0.4	n/a (b)
02/08/96	0.6	0.4	1.5 (b)	0.4	n/a (b)
02/09/96	0.7	0.5	0.2 (b)	0.5	n/a (b)
02/10/96	0.9	0.7	1.4 (b)	0.6	n/a (b)
02/11/96	0.6	0.5	0.2 (b)	0.4	n/a (b)
02/12/96	0.5	0.5	0.9	0.5	n/a (b)
02/13/96	0.7	0.6	0.9	0.5	n/a (b)
02/14/96	0.7	0.6	1.0	0.5	n/a (b)
02/15/96	0.7	0.5	1.4	0.5	n/a (b)
02/16/96	0.6	0.5	0.9	0.4	0.3 (b)
02/17/96	0.6	0.5	1.0	0.5	0.5
02/18/96	0.7	0.5	0.9	0.4	0.5
02/19/96	0.7	0.7	0.9	0.5	0.5
02/20/96	0.9	0.7	0.9	0.5	0.6
02/21/96	0.6	0.6	0.8	0.5	0.5
02/22/96	0.7	0.7	0.9	0.5	0.5
02/23/96	0.7	0.7	0.9	0.5	0.5
02/24/96	0.6	0.5	0.9	0.4	0.4
02/25/96	1.3	1.0	0.8	0.5	0.6
02/26/96	1.2	1.1	0.7	0.6	0.7
02/27/96	0.9	0.7	0.7	0.4	0.5
02/28/96	0.5	0.5	0.6	0.8	0.4
02/29/96	0.6	0.5	0.6	0.5	0.4

Monthly Statistics of Daily Averages:	AMS #5	AMS #6	PILOT PLANT WAREHOUSE	BKGD-1 (Fairfield)	BKGD-2 (Miamitown)
	(pCi/L)	(pCi/L)	(pCi/L)	(pCi/L)	(pCi/L)
AVERAGE:	0.7	0.6	0.8	0.5	0.5
MAXIMUM:	1.3	1.1	1.7	0.8	0.7
MINIMUM:	0.5	0.4	0.2	0.4	0.3
MEDIAN:	0.7	0.6	0.9	0.5	0.5
STD. DEV:	0.2	0.2	0.4	0.1	0.1

STANDARD LEGEND: 1. "(a)" indicates censored data due to erroneous readings from the monitoring equipment.  
2. "(b)" indicates partial or complete data loss due to monitor malfunction.  
3. "(c)" indicates partial or complete data loss due to programming error in monitor.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE C**

MONTH: FEBRUARY  
YEAR: 1996

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O. Box 538704  
Cincinnati, Ohio 45253 Hamilton

**SELECTED RADON DATA REPORT**  
(Monthly Summary of Selected Sampling Locations)

Daily Averages	K65-NW	K65-SW	K65-NE	K65-SE
	(pCi/L)	(pCi/L)	(pCi/L)	(pCi/L)
02/01/96	1.1	0.3 (b)	4.6	4.0
02/02/96	1.6	1.0	2.4	2.1
02/03/96	2.1	1.4	2.2 (a)	2.3
02/04/96	0.9	1.8	2.6 (a)	6.1
02/05/96	0.6 (a)	2.1	3.7 (a)	5.4
02/06/96	2.1	1.8	14.8	7.1
02/07/96	1.0	0.6	1.0	0.7
02/08/96	0.9	0.7	2.3	1.3
02/09/96	1.5	1.6	7.1	3.7
02/10/96	2.5	2.7	20.9	11.4
02/11/96	0.1 (a)	0.7	4.7	2.5
02/12/96	0.1 (a)	0.6	1.6	2.7
02/13/96	0.3 (a)	1.9	7.4	4.3
02/14/96	0.1 (a)	0.9	5.1	3.1
02/15/96	0.2	0.9	2.6	3.0
02/16/96	0.1 (a)	0.7	1.7	1.9
02/17/96	0.2 (a)	0.7	4.6	2.2
02/18/96	1.0	1.1	1.3	1.9
02/19/96	1.4	3.5	0.7	0.8
02/20/96	0.4	1.1	1.2	1.1
02/21/96	0.2	1.4	2.1	1.7
02/22/96	0.2 (a)	6.2	0.6	0.7
02/23/96	0.9	4.6	1.9	1.2
02/24/96	0.1 (a)	0.7	3.5	1.4
02/25/96	0.6	3.2	7.6	6.9
02/26/96	0.4 (b)	3.3	3.2	3.8
02/27/96	0.5 (b)	1.9	3.2	2.3
02/28/96	0.8	0.7	2.4	2.6
02/29/96	2.4	1.8	7.2	5.6

Monthly Statistics of Daily Averages:	K65-NW	K65-SW	K65-NE	K65-SE
	(pCi/L)	(pCi/L)	(pCi/L)	(pCi/L)
AVERAGE:	0.8	1.7	4.3	3.2
MAXIMUM:	2.5	6.2	20.9	11.4
MINIMUM:	0.1	0.3	0.6	0.7
MEDIAN:	0.6	1.4	2.6	2.5
STD. DEV:	0.7	1.3	4.3	2.4

STANDARD LEGEND: 1. "(a)" indicates censored data due to erroneous readings from the monitoring equipment.  
2. "(b)" indicates partial or complete data loss due to monitor malfunction.  
3. "(c)" indicates partial or complete data loss due to programming error in monitor.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE C**

MONTH: FEBRUARY  
YEAR: 1996

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O. Box 538704  
Cincinnati, Ohio 45253 Hamilton

**K-65 SILO REPORT  
RADON CONCENTRATIONS**  
(Daily Summary of Recorded Headspace Concentrations)

REPORT GENERATED: 03/11/96

Daily Statistics	SILO 1				SILO 2			
	Average	Maximum	Minimum	Std. Dev.	Average	Maximum	Minimum	Std. Dev.
02/01/96	1.47E+06	2.13E+06	7.54E+05	3.51E+05	6.04E+06	6.67E+06	3.51E+05	1.95E+05
02/02/96	1.01E+06	1.75E+06	6.31E+05	2.81E+05	6.16E+06	6.61E+06	2.81E+05	1.21E+05
02/03/96	9.35E+05	1.38E+06	4.40E+05	2.32E+05	6.18E+06	6.62E+06	2.32E+05	1.29E+05
02/04/96	9.93E+05	1.66E+06	2.85E+05	4.51E+05	5.49E+06	6.57E+06	4.51E+05	3.78E+05
02/05/96	1.19E+06	2.27E+06	9.91E+04	7.23E+05	4.81E+06	6.93E+06	7.23E+05	6.81E+05
02/06/96	1.98E+06	3.08E+06	7.88E+05	6.66E+05	6.56E+06	7.34E+06	6.66E+05	2.24E+05
02/07/96	1.84E+06	2.87E+06	7.94E+05	5.87E+05	6.57E+06	7.29E+06	5.87E+05	2.20E+05
02/08/96	1.75E+06	2.97E+06	2.55E+05	9.13E+05	7.15E+06	7.33E+06	9.13E+05	5.04E+04
02/09/96	1.51E+06	2.96E+06	3.02E+05	9.24E+05	6.91E+06	7.39E+06	9.24E+05	1.55E+05
02/10/96	2.03E+06	3.41E+06	1.09E+05	1.23E+06	5.30E+06	7.28E+06	1.23E+06	6.30E+05
02/11/96	2.04E+05	5.94E+05	4.46E+05	1.93E+05	5.72E+06	6.70E+06	1.93E+05	2.69E+05
02/12/96	2.21E+05	5.71E+05	3.35E+04	1.47E+05	6.12E+06	6.83E+06	1.47E+05	1.73E+05
02/13/96	2.51E+06	3.39E+06	7.78E+05	7.23E+05	6.70E+06	6.95E+06	7.23E+05	5.42E+04
02/14/96	8.19E+05	2.15E+06	1.22E+05	5.77E+05	6.01E+06	6.74E+06	5.77E+05	1.69E+05
02/15/96	5.68E+05	1.79E+06	2.33E+05	3.30E+05	6.60E+06	6.85E+06	3.30E+05	5.91E+04
02/16/96	4.12E+05	1.95E+06	3.71E+03	4.60E+05	1.95E+06	6.21E+06	4.60E+05	1.94E+05
02/17/96	1.13E+06	2.41E+06	1.18E+04	8.79E+05	2.41E+06	6.10E+06	8.79E+05	2.41E+05
02/18/96	1.44E+06	3.24E+06	1.10E+05	9.31E+05	3.24E+06	6.55E+06	9.31E+05	1.02E+05
02/19/96	2.35E+06	3.27E+06	1.49E+06	4.50E+05	3.27E+06	6.74E+06	4.50E+05	3.77E+04
02/20/96	2.54E+06	3.22E+06	1.69E+06	4.24E+05	3.22E+06	6.72E+06	4.24E+05	5.51E+04
02/21/96	1.88E+06	2.94E+06	4.96E+05	7.21E+05	2.94E+06	6.14E+06	7.21E+05	1.30E+05
02/22/96	1.21E+06	2.77E+06	1.60E+05	6.88E+05	2.77E+06	6.25E+06	6.88E+05	1.12E+05
02/23/96	2.27E+06	3.47E+06	3.13E+04	1.06E+06	3.47E+06	4.37E+06	1.06E+06	7.15E+05
02/24/96	9.50E+05	2.81E+06	2.01E+04	7.92E+05	2.81E+06	4.46E+06	7.92E+05	3.33E+05
02/25/96	2.44E+06	3.40E+06	1.69E+06	5.15E+05	3.40E+06	5.52E+06	5.15E+05	1.51E+05
02/26/96	2.69E+06	3.31E+06	2.21E+06	3.37E+05	3.31E+06	5.66E+06	3.37E+05	5.98E+04
02/27/96	2.32E+06	3.40E+06	9.60E+05	7.17E+05	3.40E+06	4.99E+06	7.17E+05	1.68E+05
02/28/96	3.28E+05	1.04E+06	6.58E+03	3.07E+05	1.04E+06	4.85E+06	3.07E+05	2.80E+05
02/29/96	1.72E+06	2.29E+06	6.21E+04	6.91E+05	2.29E+06	5.33E+06	6.91E+05	2.78E+05

**Grab Samples of Headspace**

Date:	SILO 1 Concentration	SILO 2 Concentration
(b) 02/06/96	6.01E+06	6.23E+06
(b) 02/12/96	3.06E+05	5.69E+06
(b) 02/16/96	1.32E+05	5.66E+06
(b) 02/21/96	5.54E+06	5.74E+06
(b) 02/23/96	5.62E+06	5.65E+06
(b) 02/27/96	***	5.13E+06

- Notes:
- All values reported in pCi/L.
  - Continuous data reported to three significant digits to remain consistent with the calibration data.
- \*(a)\* Indicates continuous counting method used for radon concentration calculation.  
\*(b)\* Indicates continuous counting method and 10% efficient lucas cell used for radon concentration calculation.  
\*\*\* Indicates partial or complete data loss due to computer failure.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**PERIOD ENDING FEBRUARY 29, 1996**

**ENCLOSURE D**

**EFFLUENT RADIATION DISCHARGES TO THE GREAT MIAMI RIVER**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**Period Ending February 29, 1996**

**ENCLOSURE D**

**Introduction**

Enclosure D lists monthly discharges to the Great Miami River. This information is required by the DOE/U.S. EPA Agreement Resolving Dispute Concerning Denial of Request for Extension of Time to Submit Operable Unit 2 Document and discussed in the "Addendum No. 1 to the South Groundwater Contamination Plume Removal Action Parts 2 and 3 Work Plan."

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE D**

**EFFLUENT RADIATION REPORT**

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [SP1]  
IAWWT - T108 (SWRB) Discharge  
Interim Advanced Wastewater Treatment Effluent

DATE: JANUARY 1996

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (MIN) (S.U.)	pH (MAX) (S.U.)
1	0.207	1.7	2.1	7.4	0.0058 <	2.0	7.6	7.6
2	0.183	1.5	2.8	7.2	0.0050 <	2.0	7.6	7.6
3	0.186	2.1	2.6	7.1	0.0050 <	2.0	7.6	7.6
4	0.154	4.5	5.0	7.5	0.0044 <	2.0	7.6	7.6
5	0.182	6.2	7.4	13.1	0.0090 <	2.0	7.5	8.0
6	0.183	2.7	7.4	5.1	0.0035 <	2.0	7.6	7.8
7	0.186	1.6	6.2	3.9	0.0027 <	2.0	7.6	7.7
8	0.030	2.6	6.6	4.1	0.0005 <	2.0	7.7	8.1
9	0.143	3.0	7.9	4.3	0.0023	4.4	7.7	7.8
10	0.186	2.2	7.7	4.9	0.0034 <	2.0	7.7	7.8
11	0.184	3.8	7.1	6.0	0.0042 <	2.0	7.7	7.7
12	0.166	3.4	7.5	5.9	0.0037 <	2.0	7.4	7.4
13	0.185	3.5	7.6	6.0	0.0042 <	2.0	7.5	7.5
14	0.200	2.2	5.2	3.8	0.0029 <	2.0	7.4	7.5
15	0.188	2.1	4.4	1.4	0.0010 <	2.0	7.6	7.6
16	0.212	4.3	6.1	6.4	0.0051 <	2.0	7.6	7.6
17	0.159	9.2	8.5	16.8	0.0101 <	2.0	7.2	7.6
18	0.185	5.2	8.3	10.0	0.0070	2.2	7.6	7.7
19	0.166	3.3	7.0	3.8	0.0024	7.0	7.7	7.7
20	0.175	3.8	5.1	3.0	0.0020	6.2	7.7	7.7
21	0.182	3.3	6.0	3.2	0.0022	4.8	7.7	7.7
22	0.187	2.7	6.0	3.9	0.0028	3.4	7.6	7.7
23	0.181	2.1	5.2	2.9	0.0020	5.4	7.6	7.7
24	0.194	1.9	4.7	3.9	0.0029	7.4	7.6	7.7
25	0.176	2.9	6.1	3.1	0.0021	7.8	7.6	7.7
26	0.158	2.1	5.8	3.1	0.0019	5.2	7.6	7.7
27	0.184	3.1	5.9	3.0	0.0021	4.8	7.5	7.6
28	0.191	2.8	5.8	3.2	0.0023	4.2	7.5	7.7
29	0.179	1.8	6.6	3.3	0.0022	3.0	7.7	7.7
30	0.194	***	***	5.6	0.0041	2.0	7.7	7.8
31	0.177	***	***	4.1	0.0027 <	2.0	7.3	7.8
Total	5.463	***	***		0.1115			

\*\*\* Analytical results not yet available.

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending February 29, 1996

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T108

DATE: JANUARY 1996

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.176	2.9	5.5	5.4	0.0036
Max.	0.212	9.2	8.5	16.8	0.0101
Min.	0.030	***	***	1.4	0.0005

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE D**

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [SP1]  
IAWWT - T109 (SWRB) Discharge  
Interim Advanced Wastewater Treatment Effluent

DATE: JANUARY 1996

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (MIN) (S.U.)	pH (MAX) (S.U.)
1	0.211	2.2	2.7	11.0	0.0088 <	2.0	7.6	7.6
2	0.195	2.4	2.4	11.3	0.0083 <	2.0	7.6	7.6
3	0.189	1.8	2.5	13.8	0.0099 <	2.0	7.6	7.6
4	0.175	7.6	5.8	11.2	0.0074 <	2.0	7.6	7.6
5	0.189	9.4	8.2	19.7	0.0141 <	2.0	7.5	8.0
6	0.188	4.5	7.2	5.6	0.0040 <	2.0	7.6	7.8
7	0.189	3.3	5.7	8.9	0.0064 <	2.0	7.6	7.7
8	0.037	3.5	6.1	5.4	0.0008 <	2.0	7.7	8.1
9	0.169	3.8	6.0	6.0	0.0038	3.4	7.7	7.8
10	0.191	4.3	6.6	7.1	0.0051 <	2.0	7.7	7.8
11	0.190	4.3	8.2	8.1	0.0058 <	2.0	7.7	7.7
12	0.169	5.3	7.9	7.5	0.0048 <	2.0	7.4	7.4
13	0.188	6.0	8.5	7.6	0.0054 <	2.0	7.5	7.5
14	0.201	3.3	6.3	5.3	0.0040 <	2.0	7.4	7.5
15	0.208	2.4	4.4	1.5	0.0012 <	2.0	7.6	7.6
16	0.216	4.4	5.7	9.4	0.0077 <	2.0	7.6	7.6
17	0.161	7.9	7.2	15.3	0.0093	2.2	7.2	7.6
18	0.190	9.8	8.3	17.5	0.0126 <	2.0	7.6	7.7
19	0.177	3.7	5.9	3.9	0.0026	5.0	7.7	7.7
20	0.179	3.0	5.5	3.4	0.0023	4.4	7.7	7.7
21	0.184	4.2	6.8	3.9	0.0027	3.8	7.7	7.7
22	0.190	3.4	5.8	5.2	0.0037	3.2	7.6	7.7
23	0.183	1.7	5.6	4.5	0.0031	4.0	7.6	7.7
24	0.198	3.2	5.6	4.0	0.0030	6.2	7.6	7.7
25	0.179	2.3	5.5	3.1	0.0021	5.8	7.6	7.7
26	0.161	3.6	7.0	3.5	0.0021	4.8	7.6	7.7
27	0.189	3.5	6.3	3.4	0.0024	3.8	7.5	7.6
28	0.196	3.5	6.2	4.0	0.0030	3.6	7.5	7.7
29	0.183	3.6	7.5	4.3	0.0030	3.6	7.7	7.7
30	0.198	***	***	7.5	0.0056	2.0	7.7	7.8
31	0.188	***	***	6.3	0.0045 <	2.0	7.3	7.8
Total	5.661				0.1596			

\*\*\* Analytical results not yet available.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE D**

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T109

DATE: JANUARY 1996

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.183	3.9	5.7	7.4	0.0051
Max.	0.216	9.8	8.5	19.7	0.0141
Min.	0.037	***	***	1.5	0.0008

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

000065

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE D**

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [606]  
SWRB Pump Station Discharge  
Stormwater Retention Basin Effluent

DATE: JANUARY 1996

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)
1	0.000				
2	0.000				
3	0.000				
4	0.000				
5	0.760	220	140	377	1.08
6	0.761	280	160	513	1.48
7	0.753	310	160	556	1.58
8	0.512	300	210	432	0.84
9	0.474	270	170	201	0.36
10	0.675	210	100	328	0.84
11	0.574	290	190	425	0.92
12	0.649	250	190	462	1.13
13	0.623	300	200	574	1.35
14	0.291	300	170	628	0.69
15	0.145	280	150	568	0.31
16	0.140	340	190	663	0.35
17	0.719	350	170	609	1.66
18	0.875	340	160	497	1.65
19	1.380	310	140	439	2.29
20	0.966	330	130	481	1.76
21	0.968	350	140	513	1.88
22	0.967	340	150	492	1.80
23	1.114	250	140	435	1.83
24	2.143	210	98	363	2.94
25	2.347	250	130	373	3.31
26	1.552	290	130	410	2.41
27	0.988	270	150	430	1.61
28	0.987	290	140	460	1.72
29	0.973	280	160	459	1.69
30	0.992	290	200	492	1.85
31	0.806	310	200	481	1.10
	23.934				40.45

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE D**

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (606) SWRB

DATE: JANUARY 1996

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.772	282	149	447	1.50
Max.	2.347	350	210	663	3.31
Min.	0.000	210	98	201	0.31

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**Period Ending February 29, 1996**

**ENCLOSURE D**

**EFFLUENT RADIATION REPORT**

**FACILITY:** Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

**LOCATION:** [605]  
Biodenitrification Tower  
BDN Tower Effluent

**DATE:** JANUARY 1996

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)
1	0.115	780	12000	1400	0.61
2	0.116	840	11000	2000	0.88
3	0.113	680	9100	1500	0.64
4	0.118	680	6800	1200	0.54
5	0.117	660	6200	1300	0.58
6	0.120	530	5100	1100	0.50
7	0.126	630	5100	1100	0.52
8	0.075	580	6000	1300	0.37
9	0.049	710	6400	1400	0.26
10	0.126	590	7200	1500	0.72
11	0.101	570	5600	1300	0.50
12	0.129	550	5300	1300	0.63
13	0.133	600	5500	1300	0.65
14	0.122	490	5400	1200	0.55
15	0.060	570	5300	1200	0.27
16	0.063	610	6900	1200	0.29
17	0.192	630	7600	1200	0.87
18	0.194	780	9100	1500	1.10
19	0.165	740	9000	1500	0.94
20	0.200	710	9200	1500	1.14
21	0.210	640	9300	1400	1.11
22	0.195	550	9500	1200	0.89
23	0.191	590	9800	1100	0.80
24	0.087	600	9200	1200	0.40
25	0.219	770	8900	1400	1.16
26	0.232	830	9200	1600	1.40
27	0.234	940	9200	1700	1.51
28	0.237	830	8900	1700	1.52
29	0.238	800	8100	1700	1.53
30	0.235	700	6500	1550	1.38
31	0.237	710	4500	1450	1.30
<b>Total</b>	<b>4.749</b>				<b>25.55</b>

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**Period Ending February 29, 1996**

**ENCLOSURE D**

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (605) BDN/ETS

DATE: JANUARY 1996

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.153	714	7881	1421	0.82
Max.	0.238	980	12000	2000	1.53
Min.	0.049	490	4500	1100	0.26

---

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**Period Ending February 29, 1996**

**ENCLOSURE D**

**EFFLUENT REPORT**

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [605]  
Biodenitrification Tower  
BDN Tower Effluent

DATE: JANUARY 1996

Day	C-BOD5 (mg/l)	TSS (mg/l)	NH3-N (mg/l)	NO3-N (mg/l)	Chromium (ug/l)	Copper (ug/l)	Nickel (ug/l)	Hex-Chrom (ug/l)
1		**	**	**		**	**	**
2	1.76	**	**	**		**	**	**
3		**	**	**	7.4	**	**	**
4		**	**	**		**	**	**
5		**	**	**		**	**	**
6		**	**	**		**	**	**
7		**	**	**		**	**	**
8		**	**	**		**	**	**
9	3.77	**	**	**		**	**	**
10		**	**	**	< 6.0	**	**	**
11		**	**	**		**	**	**
12		**	**	**		**	**	**
13		**	**	**		**	**	**
14		**	**	**		**	**	**
15	11.50	**	**	**		**	**	**
16		**	**	**	7.9	**	**	**
17		**	**	**		**	**	**
18		**	**	**		**	**	**
19		**	**	**		**	**	**
20		**	**	**		**	**	**
21		**	**	**		**	**	**
22	9.18	**	**	**	9.7	**	**	**
23		**	**	**		**	**	**
24		**	**	**		**	**	**
25		**	**	**		**	**	**
26		**	**	**		**	**	**
27		**	**	**		**	**	**
28		**	**	**		**	**	**
29	3.47	**	**	**		**	**	**
30		**	**	**		**	**	**
31		**	**	**		**	**	**

\*\* Parameters are no longer required to be monitored under the new NPDES permit 1100000\*ED, issued November 1, 1995.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE D**

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [SP2]  
Stormwater Retention Basin Emergency Bypass  
SWRB Bypass Effluent

DATE: JANUARY 1996

Day	Flow (MGD)
---	-----
1	0.000
2	0.000
3	0.000
4	0.000
5	0.000
6	0.000
7	0.000
8	0.000
9	0.000
10	0.000
11	0.000
12	0.000
13	0.000
14	0.000
15	0.000
16	0.000
17	0.000
18	0.030
19	0.046
20	0.000
21	0.000
22	0.000
23	0.140
24	1.559
25	1.354
26	0.629
27	0.000
28	0.000
29	0.000
30	0.000
31	0.000
Total	3.758

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE D**

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: Valve House  
South Groundwater Contamination Plume

DATE: JANUARY 1996

Day	Flow (MGD)	Total U (ug/l)	Total U (kgs)
1	2.012	17.0	0.13
2	2.047	21.3	0.17
3	2.670	20.6	0.21
4	1.838	19.4	0.13
5	1.838	20.4	0.14
6	1.838	19.9	0.14
7	1.995	19.8	0.15
8	1.995	20.1	0.15
9	1.995	20.2	0.15
10	1.995	13.2	0.10
11	1.020	19.4	0.07
12	1.995	20.5	0.15
13	2.106	20.8	0.17
14	2.029	19.9	0.15
15	2.018	20.2	0.15
16	2.025	22.4	0.17
17	2.023	19.6	0.15
18	2.106	21.1	0.17
19	2.374	18.2	0.16
20	1.802	21.3	0.15
21	2.106	20.6	0.16
22	1.923	17.6	0.13
23	2.021	19.1	0.15
24	2.163	20.7	0.17
25	1.936	17.6	0.13
26	2.043	22.1	0.17
27	1.955	26.3	0.19
28	1.861	26.1	0.18
29	1.650	23.8	0.15
30	1.799	7.9	0.05
31	1.858	23.2	0.16
Total	61.036		4.62

000072

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**Period Ending February 29, 1996**

**ENCLOSURE D**

**EFFLUENT RADIATION REPORT (cont.)**

**FACILITY:** Fernald Environmental Management Project

**LOCATION:** South Plume

**DATE:** JANUARY 1996

	<u>Flow (MGD)</u>	<u>Total U (ug/l)(2)</u>	<u>Total U (kgs)</u>
Avg.	1.969	20.0	0.15
Max.	2.670	26.3	0.21
Min.	1.020	7.9	0.05

---

**Comments:** (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**Period Ending February 29, 1996**

**ENCLOSURE D**

**EFFLUENT RADIATION REPORT**

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [SP3]  
Valve House  
South Plume/Stormwater Retention Basin \*/BDN-ETS \*\*

DATE: JANUARY 1996

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (Grab) (S.U.)
1	2.127	30	130	47	0.38		7.4
2	2.163	24	120	37	0.30		7.3
3	2.783	23	130	27	0.28		7.5
4	1.956	15	150	23	0.17	4.4	7.2
5	2.715	14	100	22	0.23		7.2
6	2.719	18	80	24	0.25		6.7
7	2.874	25	69	29	0.32		6.9
8	2.532	19	66	30	0.29		7.2
9	2.513	13	39	21	0.20		7.3
10	2.736	9	78	19	0.20		7.2
11	1.695	11	76	16	0.10	3.4	7.2
12	2.773	12	98	18	0.19		7.3
13	2.862	12	110	21	0.23		6.5
14	2.442	12	130	21	0.19		6.6
15	2.223	15	120	25	0.21		6.7
16	2.228	13	24	16	0.13		6.8
17	2.934	11	130	24	0.27		7.8
18	3.175	12	180	20	0.24	2.8	6.8
19	3.919	32	220	67	0.99		7.1
20	2.968	18	220	33	0.37		7.0
21	3.284	13	260	28	0.35		7.2
22	3.085	19	300	29	0.34		7.2
23	3.326	17	300	24	0.30		7.3
24	4.393	74	120	120	2.00		7.3
25	4.502	82	170	130	2.22	8.6	7.3
26	3.827	71	360	110	1.59		7.2
27	3.177	16	490	38	0.46		7.2
28	3.035	11	510	30	0.35		7.2
29	2.861	21	540	34	0.37		7.0
30	3.026	14	550	32	0.37		7.2
31	2.701	19	420	35	0.36		7.1
Total	89.719				14.24		

\* Effective 3/11/94, the SWRB discharges were combined with the South Plume.

\*\* Effective 1/27/95, the BDN-ETS discharges were routed from MH #175 to the AWWT.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**Period Ending February 29, 1996**

**ENCLOSURE D**

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP3] Valve House

DATE: JANUARY 1996

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	2.894	25	213	42	0.46
Max.	4.502	82	550	130	2.22
Min.	1.695 <	9	24	16	0.10

---

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

000075

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE D**

EFFLUENT REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [SP4]  
Parshall Flume  
Effluent Downstream of Manhole 176B

DATE: JANUARY 1996

Day	Flow (MGD)	DO (mg/l)	IRON (mg/l)	MANGANESE (mg/l)
1	1.612			
2	1.819			
3	1.782			
4	1.706	8.0	0.25	< 0.1
5	2.423			
6	2.461			
7	2.488			
8	1.621			
9	2.057			
10	1.965			
11	1.848	9.4	0.10	0.1
12	2.333			
13	2.245			
14	1.929			
15	1.794			
16	1.789			
17	2.363			
18	2.426	9.2	0.18	< 0.1
19	3.483			
20	2.669			
21	2.613			
22	2.671			
23	2.860			
24	2.804			
25	4.270	9.4	0.48	< 0.1
26	3.457			
27	3.019			
28	2.978			
29	3.125			
30	3.186			
31	2.911			
Total	76.707			

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**Period Ending February 29, 1996**

**ENCLOSURE D**

**EFFLUENT RADIATION REPORT (cont.)**

**FACILITY:** Fernald Environmental Management Project

**LOCATION:** [SP4] Parshall Flume

**DATE:** JANUARY 1996

	<u>Flow (MGD)</u>	<u>DO (mg/l)</u>	<u>Fe (mg/l)</u>	<u>Mn (mg/l)</u>
Avg.	2.422	9.0	0.33	0.1
Max.	4.270	9.4	0.48	0.1
Min.	1.612	8.0	0.10	0.1

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**Comments:** (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**Period Ending February 29, 1996**

**ENCLOSURE D**

**EFFLUENT REPORT 1995  
QUARTERLY GRAB SAMPLES**

Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 538705  
Cincinnati, Ohio 45253-8705  
9002 M 9501 900212

Paddy's Run Road Site

Monitoring Parameter	Mar	Jun	Sep	Dec	Units
Benzene	<10	<1	<5	<10	ug/l
Ethylbenzene	<10	<1	<10	<10	ug/l
Toluene	<10	<1	<5	<10	ug/l
Xylenes	<10	<1	<5	<10	ug/l
1,1,1-Trichloroethane	<10	0.06 A	<5	<10	ug/l
1,1-Dichloroethane	<10	<1	<5	<10	ug/l
1,2-Dichloroethane	<10	<1	<5	<10	ug/l
Arsenic	<10	<10	<10	<10	ug/l
Potassium	2705	2930	2610	2957	ug/l
Sodium	12430	13300	11630	12700	ug/l
Phosphates	<0.1	<0.1	<0.1	<0.1	mg/l
Sulfates	80.2	72.8	72.0	71.0	mg/l

June sample taken July 14, 1995.  
September sample taken October 9, 1995

A = Reported value is less than the CRDL but greater than the IDL.

Note: Different < values due to the fact that more than one lab receives FEMP analytical samples.  
Each lab is required to meet contract required detection level (CRDL) of <10 ug/L.  
Some labs choose to lower their method detection limit (MDL) by increasing the size of the aliquot to be analyzed.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending February 29, 1996

**ENCLOSURE D**

**EFFLUENT REPORT 1994  
QUARTERLY GRAB SAMPLES**

Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 538705  
Cincinnati, Ohio 45253-8705  
9002 M 9501 900212

Paddy's Run Road Site

Monitoring Parameter	Jan	Mar	Jun	Sep	Dec	Units
Benzene	<0.005	<0.005	<0.010	<0.010	<0.010	mg/l
Ethylbenzene	<0.005	<0.005	<0.010	<0.010	<0.010	mg/l
Toluene	<0.005	<0.005	<0.010	<0.010	<0.010	mg/l
Xylenes	<0.005	<0.005	<0.010	<0.010	<0.010	mg/l
1,1,1-Trichloroethane	<0.005	<0.005	<0.010	<0.010	<0.010	mg/l
1,1-Dichloroethane	<0.005	<0.005	<0.010	<0.010	<0.010	mg/l
1,2-Dichloroethane	<0.005	<0.005	<0.010	<0.010	<0.010	mg/l
Arsenic	2.2 A	<10	<10	<10	<10	ug/l
Potassium	3030 B	2885	2642	2699	2288	ug/l
Sodium	13400	NA	14090	13490	12680	ug/l
Phosphates	<0.1	<0.1	<0.1	0.2	0.02	mg/l
Sulfates	61.5	64.0	78.0	80.8	71.2	mg/l

Data for January and March reported using SW-846 requirements. All others reported using CLP requirements.

NA = Not available.

A = Reported value is less than the CRDL but greater than the IDL. Post digestion spike for furnace AA analysis is out of control limits (85-125%) while sample absorbance is less than 50% of spike absorbance. Spiked sample recovery not within control limits.

B = Reported value is less than the CRDL but greater than the IDL.

NA = Data not available. Analysis not run; sample has been discarded