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**CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE  
AGREEMENT/FEDERAL FACILITY AGREEMENT AND REMEDIAL  
INVESTIGATION/FEASIBILITY STUDY MONTHLY PROGRESS REPORT  
FOR NOVEMBER 1994**

12/16/94

DOE-0327-95  
DOE-FN        EPAS  
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REPORT



**Department of Energy**  
**Fernald Environmental Management Project**  
P. O. Box 398705  
Cincinnati, Ohio 45239-8705  
(513) 648-3155

**DEC 16 1994**

DOE-0327-94

Mr. James A. Saric, Remedial Project Director  
U.S. Environmental Protection Agency  
Region V - 5HRE-8J  
77 W. 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 NOVEMBER 1994**

Enclosure 1 is the consolidated CA/FFCA/FFA and RI/FS Monthly Progress Report which describes the activities accomplished November 1-30, 1994, and planned actions for the period of December, 1994. Also, enclosed are diskettes containing Lotus 1-2-3 (version 2.2) data files of the K-65 hourly data (see Enclosure 2).

If you or your staff should have any questions, please contact me at (513) 648-3107.

Sincerely,

A handwritten signature in cursive script that reads "Johnny Reising".

*fn*

Jack R. Craig  
Fernald Remedial Action  
Project Manager

Enclosures: As Stated

cc w/enc:

K. A. Chaney, EM-423, QO  
D. R. Kozlowski, EM-423, QO  
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S. Disbro, FERMCO/52-5  
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cc w/o enc:

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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 November 30, 1994**

**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 November 1 through November 30, 1994, and planned actions for the period December 1 through December 31, 1994.

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

Period Ending November 30, 1994

**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 November 1994. Information is presented for each of the Removal Actions identified in the Consent Agreement As Amended.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR **6412**  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending November 30, 1994

**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.	Plants 2/3 & 6 Operational  Plant 8 Temp. Inoperable
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 RI/FS wells in the South Plume area and installing homeowner treatment systems.	Ongoing
		Part 5 - Conduct groundwater modeling and geochemical investigating 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
4		Silos 1 & 2	Install bentonite cap to reduce and monitor radon emissions. Provide follow-on monitoring.

Shading denotes completed actions

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

Period Ending November 30, 1994

**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
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.	Ongoing
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.	Final Report Submitted 11/18/94
15	Scrap Metal Piles	Phase I - Disposition LLW ferrous/non-ferrous scrap metal	Ongoing
		Phase II - IIA - Containerization of scrap copper	Completed: 9/29/92
		IIB - Disposition of scrap copper	Ongoing
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

Shading denotes completed actions

6412

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

Period Ending November 30, 1994

**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
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: 8/30/93
Phase III			
19	Plant 7 Dismantling	Dismantle and dispose of the Plant 7 structure.	Ongoing
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: 10/15/93
25	Nitric Acid Tank Car and Surrounding Area	Remove residual contents from tank car and decontaminate and dispose of tank car.	Completed: 10/11/93
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.	Ongoing
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

\*Shading denotes completed actions

6412

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

Period Ending November 30, 1994

*Removal Actions*

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

**Current Month:**

Corrective maintenance of Plants 2/3, 8, and 9 extraction wells was not completed in November as planned due to other priority maintenance commitments.

**Planned Activities:**

- Complete corrective maintenance and reestablish operations of Plants 2/3, 8, and 9 perched groundwater extraction wells.

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

**Part 1 - Alternate Water Supply**

**Current Month:**

Activities to complete the transfer of ownership of the Alternate Water Supply System from DOE to Albright and Wilson Americas (A&W) continue. Expenses due to A&W for spent regenerate filter disposal costs, including transportation and electrical usage, was established. Expenses conformed to the settlement agreement signed in February 1990.

Public Water Supply Project A was awarded by Hamilton County Department of Public Works (HCDPW) on November 22, 1994—ground breaking ceremony has been scheduled for December 5, 1994.

Delta Steel requested that they be provided bottled water service from the FEMP until the Public Water Supply (PWS) is complete. A letter is in process that contains the information obtained regarding Delta Steel's current consumption.

Cultural resource (data recovery) effort along State Route 128 began in November, and it is expected that field work will be complete by mid-December.

**Planned Activities:**

- Complete proceedings to transfer ownership of the AWS to Albright and Wilson in accordance with the agreement of 1990.
- Continue to support HCDPW on installation of the entire PWS including service connections.
- Provide cultural resource monitoring during construction of Project A.
- Complete cultural resources (data recovery) efforts for area in Project B along State Route 128.

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

Period Ending November 30, 1994

*Removal Actions*

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

- Submit cultural resource report for Phase I effort along Crosby Road to State Historical Preservation Office (SHPO).
- Submit letter to Delta Steel regarding the requested bottled water service.

**Part 2 - Pumping and Discharge System**

**Current Month:**

Pumping of Recovery Wells 2 and 3 continue. Recovery Wells 1, 4, and 5 remain shut down as previously reported.

Progress continues on the effort to replace the existing five recovery well pumps with lower operating range pumps. The new pumps were received in late November. Plans are underway for the installation of these new pumps and pressure transducers.

Arsenic concentrations in three south plume observation wells (2128, 2548 and 2625) have decreased to below detection limits as of November 14, 1994.

**Planned Activities:**

- Weekly sampling will be performed to monitor arsenic entering the recovery wells.

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

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

**Current Month:**

Nothing to report.

**Planned Activities:**

- Continue to operate IAWWT(SWRB).

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

Period Ending November 30, 1994

*Removal Actions*

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

IAWWT Bionitrification Effluent Treatment System (BDN-ETS) Unit

**Current Month:**

Nothing to report.

**Planned Activities:**

- Continue to operate IAWWT(BDN-ETS) unit.

Part 4 - Groundwater Monitoring and Institutional Controls

**Current Month:**

Nothing to report.

**Planned Activities:**

- Continue to monitor performance of the ion exchange systems.

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

Step 1

**Current Month:**

Nothing to report.

**Planned Activities:**

- Continue full operation of the system.

Step 2

**Current Month:**

Nothing to report.

**Planned Activities:**

- The off-peak capacity will be available when Phase I of the AWWT system becomes operational in January 1995.

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

Period Ending November 30, 1994

*Removal Actions*

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

Step 3

**Current Month:**

Completed initial testing of instrument and controls in the pipeline going to the AWWT Phase II equalization tanks.

**Planned Activities:**

- Initiate comprehensive testing of instrumentation and controls in the portion of the new pipeline going to the Phase II equalization tanks to prepare for turnover of the system to Operations in January 1995.

Step 4

**Current Month:**

Nothing to report.

**Planned Activities:**

- Conversion of the IAWWT(SWRB) to South Plume groundwater treatment is scheduled to be accomplished between January and March 1995.

RA No. 5, K-65 Decant Sump Tank

**Current Month:**

Nothing to report.

**Planned Activities:**

- None

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

Period Ending November 30, 1994

*Removal Actions*

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

**Current Month:**

During November the four wells in areas A-C were again purged. One well still had elevated levels of the volatile organics from the surface coating breach. Another purge is planned prior to beginning well abandonment work to properly plug and remove these wells thus preventing further contamination from the pad to soils or groundwater. The contractor has completed approximately 90% of the outstanding punchlist items as part of the construction phase closeout of the Removal Action.

**Planned Activities:**

- Subcontractor to demobilize upon completion of the remaining outstanding punchlist items. Estimated completion date of punchlist items is December 15, 1994.
- Development of the Final Report is ongoing.

KEY MILESTONES	STATUS	DUE DATE
Complete Resurfacing of Phase III pad	Completed	September 30, 1994
Issue Final Report to EPA	On Schedule	February 21, 1995

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

**Current Month:**

The volume of waste shipped off-site in November was 2,033 drum equivalents (DEs) for a total of 7,489 DEs shipped to the NTS in FY-95. This volume includes 3,387 drums of residues removed from inventory and shipped to-date.

The FY 1995 volume shipped to the NTS is 10,150 DEs behind schedule. This schedule slippage is primarily due to ISO and large metal box shipments being held pending revised tie-down procedures. This has resulted in 4,981 DEs of waste staged awaiting shipment. An additional 5,100 DEs of construction waste is being held pending development of a compaction plan. The compaction plan will reduce the volume of material shipped for disposal by 3,570 DEs.

The volume of legacy waste shipped in FY-95 is 385 DEs. Currently generated construction waste shipped year to date is 2,178 DEs.

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

Period Ending November 30, 1994

*Removal Actions*

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

**Planned Activities:**

- During December, the NTS is shut down for the last two weeks of the calendar year. The FEMP stops shipments as of December 16 and resumes shipments on December 27, 1994.
- An ALARA review of the thorium shipping plan will be completed and two shipments of thorium will be completed in December 1994.

**RA No. 12, Safe Shutdown**

**Current Month:**

Preparation of implementation plans for Safe Shutdown activities, including Hazardous Waste Management Unit (HWMU) closures, continues with emphasis on the work in Plants 4 and 1.

The Plant 4 drummed uranium material relocation was completed on November 30, 1994, as scheduled.

The following is the status of capital equipment: of an estimated 1,875 items, 1,286 have been or will be excessed, and 589 have been identified as "In Use/Future Use" items. The reason for the change in estimated items is that the current property data base was reconciled with the Safe Shutdown data base.

To date, 1,385 maintenance work orders to isolate and disconnect all utilities/energy sources from equipment not in use have been prepared. Of these, 749 have been completed. Completion of utility disconnects is a necessary action prior to removal of hold-up material from process equipment in preparation for eventual equipment removal and decontamination and decommissioning.

To date, 298 task orders to remove the hold-up material from equipment have been prepared; of those, 62 have been completed.

**Planned Activities:**

- Continue to issue work orders to disconnect utilities from process equipment and issue task orders to identify and/or remove hold-up materials from process equipment.
- Continue verification of the equipment in Plants 2 and 3 Refinery.
- Continue to prepare implementation packages and obtain appropriate approvals.
- Continue shipping depleted derbies to MSC in Oak Ridge, Tennessee.

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

Period Ending November 30, 1994

*Removal Actions*

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

- Continue the removal of Plants 5 and 6 equipment to be used in the OU 4 Pilot Plant vitrification project.
- Continue to pursue other government interest in FEMP process equipment and nuclear materials.

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

**Current Month:**

The removal of the structural steel that supported the tile silos was completed on November 3, 1994. Containerizing the steel, clearing the general area of staged construction materials, and stabilizing the pad area with a fixative paint was completed November 18, 1994.

**Planned Activities:**

- Close out the construction portion of the Removal Action is ongoing.

KEY MILESTONES	STATUS	DUE DATE
Complete Removal Action	Open, ahead of schedule	December 19, 1994

**RA No. 14, Contaminated Soils Adjacent to Sewage Treatment Plant Incinerator (STPI)**

**Current Month:**

Excavated surface soil (top 6-inches) encompassing sample point 1 (SP-1), located south of Zone 4, east of the Sewage Treatment Plant (off-property), to remove the uranium contamination. The area of excavation is approximately 23 feet by 70 feet. The estimated volume of soil excavated is 28 cubic yards. The excavation was filled with clean top soil purchased from a commercial vendor. The work was completed November 8, 1994.

Final Report submitted to U.S. EPA and Ohio EPA on November 18, 1994.

**Planned Activities:**

- None - Removal Action complete.

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

Period Ending November 30, 1994

*Removal Actions*

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

**Current Month:**

Phase I: A letter was sent on November 29, 1994 to both EPAs updating the actions for the remaining 84 oxide boxes that were determined to be RCRA hazardous for lead, and the proposed stabilization for disposal at NTS as low-level radioactive waste. The new date for this determination is February 28, 1995.

Phase II: Nothing to report

**Planned Activities:**

- Phase I: Final disposition of the 84 remaining oxide boxes is delayed until February 28, 1995 due to sampling and analysis of the stabilized waste. Confirmatory sampling of the treated slag and two oxide boxes will begin upon completion of stabilization by SEG.
- Phase II: Determine path forward for project since it is not currently baselined.

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	On hold until funding is available	Sept. 30, 1993
Phase IIB: Submittal of Final Report	On hold until funding is available	March 30, 1995

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

**Current Month:**

November activities included completing removal of existing fence fabric and posts (for later reuse). Commencement of removing visible scrap metal and wood from the soil and rubble pile north of Third Street and placing into large white metal containers for off-site shipment. Two large containers have been filled to-date with a forecast that one more will contain all of the exposed debris for off-shipment. Approximately 85% of the concrete rubble was pulled out of the pile and is being segregated and placed on the east end of the pile.

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

Period Ending November 30, 1994

*Removal Actions*

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

Since construction of the Scrap Metal Pad (SMP) tension support structure has been deleted from the RA 17 scope, the removal of the residues/debris from that pad is the only remaining scope for the RA 17 project. Radiation Worker Permits (RWPs), requests for heavy equipment operators, and loading equipment were secured in November.

**Planned Activities:**

- Complete removal and containerization of accessible existing scrap metal/wood from the Soil & Rubble pile.
- Continue segregating concrete to the East side of pile.
- Begin containerization and removal of the remaining debris/residue at the Scrap Metal Pad.

**RA No. 19, Plant 7 Dismantling**

**Current Month:**

November activities included dismantlement and removal of exterior structures, including tanks, projecting concrete structures, and excess soil pile. Segregating, packaging, and loading materials removed from Plant 7 into waste containers was completed. Shearing and loading the structural steel into containers for the recycling contract was completed. Cleaning, repairing, and applying sealant to the first floor slab was completed.

**Planned Activities:**

- Subcontractor to demobilize the week of December 12, 1994.
- Decontaminate construction equipment by December 9, 1994.

**RA No. 20, Stabilization of UNH Inventories**

**Current Month:**

Construction of the new UNH transfer piping will be completed on December 1, 1994. The double-diaphragm pumps, already located on site, which are being utilized for the project in place of the defective progressive cavity pumps, have been installed. The UNH operating procedures were issued the last week of November, 1994. Training on the operating procedures, SAR, Plan of Action (POA), Project Health and Safety Plan, and several other documents occurred the week of November 28 for the first shift only.

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

Period Ending November 30, 1994

*Removal Actions*

**RA No. 20, Stabilization of UNH Inventories (continued)**

Weekly telephone conferences between Ohio EPA, DOE-HQ, DOE-OH, DOE-FN, FERMCO, and DNFSB occurred on a regular basis throughout the month of November and will continue at least through start-up on January 16, 1995. The phone conferences are used to appraise everyone of the progress. A fax sheet with the information to be discussed is issued the morning of the phone conferences.

**Planned Activities**

- Begin and complete System Operability Testing.
- Revise operating procedures, SAR, Standing Orders, and Project Specific Health and Safety Plan to incorporate comments being received during training.
- Complete training of UNH operations.
- Complete FERMCO Operational Readiness Review (ORR)
- Complete all construction, training, procedure and document revisions by December 19 to support completion of FERMCO ORR by end of December and DOE ORR review during week of January 3-7, 1995.

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

**Current Month:**

The friable transite ceiling in the Hot Raffinate Building, east tank room was encapsulated. A different material was used than in the Metal Dissolver Building. Both areas are being monitored for stability and future recommendation of products.

The Water Treatment Building abatement of steam lines was completed November 30, 1994.

The NAR Tower abatement is 100% complete from the second to the sixth floor.

**Planned Activities:**

- Continue the compilation of work packages.
- Continue the abatement of the NAR Tower, scheduled to be completed in December.
- Construction activity on the thermal system insulation removal is ongoing.
- Asbestos floor tile removal for the Security Building is scheduled to start in December.

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

Period Ending November 30, 1994

*Removal Actions*

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

**Current Month:**

All excavation activity was completed in November. Backfill of all excavated areas, with the exception of the small trench area, was also completed in November.

Stained soils from the open top tank trench have been excavated, drummed, and moved to proper storage.

Verification samples have been collected from the trench area.

**Planned Activities:**

- Size reduction and containerization of the open top tank.
- Analyze the verification samples for further actions.
- Excavation of the asphalt pad.
- Move all remaining boxes of soils to proper mixed waste storage.
- Install 4 perched water borings near pond.
- Seed all excavated areas.

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

**Current Month:**

An alternative evaluation is in progress and a work plan is due to DOE on December 24, 1994.

**Planned Activities for December:**

- Continue Evaluation of Alternatives.
- Develop of work plan.
- Prepare RFP for Design Services.

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

Period Ending November 30, 1994

*Removal Actions*

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

<b>KEY MILESTONES</b>	<b>STATUS</b>	<b>DUE DATE</b>
Submit RSE	Completed	October 11, 1994
Submit work plan	Under Development	December 24, 1994
Complete Removal Action	Work plan in progress	October 17, 1995

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**1.0 Operable Unit 1**

Operable Unit 1 (OU 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.

**OPERABLE UNIT 1 REMEDIAL INVESTIGATION REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Details the nature and extent of contaminants within the OU 1 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	10/4/93 A	12/20/93 A	02/04/94 A

C = Consent Agreement Date

A = Actual

\* = Request for extension

**1.3 Feasibility Study/Proposed Plan**

**Status:**

Complete.

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**OPERABLE UNIT 1 FEASIBILITY STUDY/PROPOSED PLAN**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Describes and analyzes potential remedial alternatives. A comparative analysis is 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.	03/04/94 A	06/01/94 A	07/01/94 A

C = Consent Agreement Date

A = Actual

**1.4 Treatability Studies**

**Status:**

Wet excavation, Phase II of the Dewatering and Excavation Evaluation Program (DEEP), is scheduled to begin in late December upon completion of the Safety Analysis.

**Issues/Corrective Actions:**

None to report.

**1.5 Record of Decision**

**Status:**

The Draft OU 1 Record of Decision inclusive of the Responsiveness Summary was forwarded to U.S. EPA and Ohio EPA on November 3, 1994.

**Issues/Corrective Actions:**

None to report.

**1.6 Planned Activities for December 1994**

- Begin Phase II of the DEEP project, wet excavation, in late December.

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**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:**

Operable Unit 2 has responded to the remaining comments and changed pages were submitted to U.S. EPA and Ohio EPA on November 10, 1994. Awaiting approval from the U.S. EPA to issue the final OU 2 Remedial Investigation Report.

**Issues/Corrective Actions:**

None to report.

**OPERABLE UNIT 2 REMEDIAL INVESTIGATION REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL DRAFT
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.	02/18/94 C	04/22/94 C	06/15/94 C (due to extension)

C = Consent Agreement Date

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**2.3 Feasibility Study/Proposed Plan**

**Status:**

Responses, actions, and changed pages were finalized and sent to the U.S. EPA and Ohio EPA on November 17, 1994.

**Issues/Corrective Actions:**

None to report.

**OPERABLE UNIT 2 FEASIBILITY STUDY/PP REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT DRAFT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA DRAFT 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.	04/29/94 C	07/05/94 C	08/24/94 C

C = Consent Agreement Date

**2.4 Treatability Studies**

**Status:**

None to report.

**Issues/Corrective Actions:**

None to report.

**2.5 RD/RA Work Plan**

**Status:**

Work is being rescheduled to begin in FY95 consistent with plans for the sitewide disposal facility.

000023

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**2.6 Record of Decision**

**Status:**

Draft Record of Decision was submitted to DOE on October 6, 1994. Response to DOE-HQ comments are being developed. The Public Comment Period started October 26, 1994 and was scheduled to end November 25, 1994. However, the public has requested additional time to comment and the comment period will be extended to December 30, 1994. The revised ROD is scheduled to be resubmitted to DOE on December 13, 1994.

SCOPE	SUBMIT DRAFT TO EPA	SUBMIT TO EPA DRAFT FINAL
Presents the selected remedial action for OU 2 in accordance with CERCLA.	1/5/95	5/29/95

**2.7 Planned Activities for December**

- Meet with EPAs to discuss the Pre-design Investigation Work plan.
- Continue efforts on the Pre-Design Investigation Work Plan
- Submit revised ROD December 13, 1994.
- Submit Removal Action No. 30 Work Plan to DOE by December 24, 1994.

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**3.0 Operable Unit 3**

Operable Unit 3 (OU 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 RI/FS Work Plan**

**Status:**

Nothing to report.

**Issues/Corrective Actions:**

None to report.

**3.2 Remedial Investigation**

**Status:**

As of November 20, 1994, 80% of the radiological field characterization analytical data has been received from the off-site laboratories and is undergoing quality control checks and data validation.

**Issues/Corrective Actions:**

None to report.

**OPERABLE UNIT 3 REMEDIAL INVESTIGATION REPORT      PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Details the nature of contaminants within the OU 3 study area. Estimates the volume of contaminated media and materials. Characterizes contamination in the former production area and establishes remedial action objectives.	03/13/96 C 09/11/95 F	05/12/96 C 12/05/95 F	06/11/96 C 01/24/96 F

C = Consent Agreement Date

F = Forecast Date

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**3.3 Feasibility Study/Proposed Plan**

**Status:**

Nothing to report.

**OPERABLE UNIT 3 FEASIBILITY STUDY/PP REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA 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.	04/12/96 C 09/11/95 F	08/07/96 C 12/05/95 F	11/05/96 C 01/24/96 F

C = Consent Agreement Date

F = Forecast (FS, PP, and ROD anticipated to be delivered early)

**Issues/Corrective Actions:**

None to Report.

**3.4 Treatability Studies**

**Status:**

The FEMP has been conducting remedy screening treatability studies in parallel with the field investigation and alternatives development. Initial studies were identified in the OU 3 Treatability Study Work Plan, approved April 13, 1994. Additional studies are currently being planned and will be submitted for review and approval upon completion of planning. These studies include: Kelly Decontamination on Concrete, Surface Decontamination/Removal of Metal, Transite Characterization, N-Scan PGNA, EET of Transite, Plant 7 Gross Decontamination, Ultrasonic Decontamination of Strategic Metals, Recycling of Plant 7 Metals, Recycling of High Nickel Alloys, Recycling of Copper, Treatment of Thorium Nitrate, Treatment of High Fluoride Waste Waters, and treatability studies on legacy mixed waste in support of the Site Treatment Plan. These tests will support FS decision-making and will be summarized in treatability study reports.

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**3.4 Treatability Studies (continued)**

**Issues/Corrective Actions:**

None to report.

**3.5 Interim Action - Record of Decision**

**Status:**

Complete.

**3.6 Interim Action RD/RA Work Plan**

**Status:**

By letter dated November 8, 1994, U.S. EPA disapproved the Draft RD/RA Work Plan and the Building 4A Implementation Plan. U.S. EPA provided comments to be addressed before either of the documents will be approved. Comments were received from Ohio EPA on November 17, 1994, on both of the documents. Efforts were subsequently initiated to develop responses to the comments, and propose modifications to the various documents.

In response to these comments, a conference call was held with U.S. EPA and Ohio EPA on November 28, 1994. It was agreed through the conference call that the date for submittal of the document to the EPAs would be December 19, 1994, and that the format for response to the comments would entail a revised Volume 1 and change pages to Volume 2 (based on the minimal comments received). The format of the resubmittal of the Building 4A Implementation Plan was not finalized. Also discussed, and agreed to, was the proposal to not submit a Material Disposition Plan as proposed in the Draft Work Plan, but to include this information in an Appendix to the RD Prioritization and Sequencing Report. Specific issues discussed included comments on waste acceptance criteria, additional submittals, organizational charts, referencing to other documents, contents of Implementation Plans, and air monitoring. A meeting has been scheduled for December 6, 1994 with Ohio EPA and U.S. EPA to further discuss some of these issues.

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**3.6 Interim Action RD/RA Work Plan (continued)**

The draft schedule for the safe shutdown and dismantlement of the 232 structures, storage pads, and utilities contained within OU 3 has been developed. Impacts of the base schedule to waste storage and disposition, utility supply and distribution, and the construction of the proposed on-property disposal cell are currently being evaluated.

A meeting was held within DOE-FN to determine a realistic funding profile over the duration of OU 3 remediation. Once this funding profile is applied to the base schedule, the resulting schedule will be submitted to U.S. EPA in March 1995 as part of the OU 3 Remedial Design Prioritization and Sequencing Report. It is anticipated that this schedule will form the basis for new Amended Consent Agreement milestones for OU 3 remediation.

**Issues/Corrective Actions:**

None to report.

**3.7 Planned Activities for December 1994**

- Continue efforts to develop the OU 3 Remedial Design Prioritization and Sequencing Report (PSR), including the development of the Material Balance Model, to support the RD/RA Work Plan. The primary focus for the month will be on applying realistic funding constraints to the base schedule developed, and evaluating impacts of this schedule on other site activities. The draft PSR will be transmitted for site-wide review, with comments expected back in January 1995.
- Continue efforts to develop material for presentation to the public, relative to the design efforts which were undertaken for the interim remedial action. Provide information on specifics relative to upcoming remedial action activities such as construction schedules, anticipated environmental monitoring, and other issues of public interest. This material will be presented both in a fact sheet and in some type of public briefing anticipated for January 1995.

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**3.7 Planned Activities for December 1994 (continued)**

- Continue efforts to provide responses to comments received from U.S. EPA and Ohio EPA on the RD/RA Work Plan and the Building 4A Implementation Plan. These efforts will include meeting with U.S. EPA and Ohio EPA on December 6, 1994 to further discuss comments. The revised documents are scheduled for submittal to U.S. EPA/Ohio EPA by December 19, 1994.
- Revise the Implementation Plans for Phase I of the Plant 1 Complex and the "Outlying Components" of the Pilot Plant design package based on comments received from U. S. EPA/Ohio EPA on the Building 4A Implementation Plan and agreements reached through the various discussions with U.S. EPA/Ohio EPA.
- Develop preliminary Contaminants of Concern List for OU 3. Source terms are currently being developed by linking sitewide environmental database information to the material quantity database.
- Complete technology screening and evaluation and detailed write-up to support FS development.
- Continue development of alternatives for on-property and off-site disposal with a detail approach for each of the nine material categories within OU 3. Recycling and free-release will be utilized under both alternatives to the maximum extent practical.
- Begin developing information to support the assessment of the alternatives with respect to the nine EPA evaluation criteria.
- Initiate development of a short-term risk assessment conceptual model that details pathways and receptors for analysis within the FS.
- Complete laboratory portion of the leachability studies of porous and non-porous materials to generate material leaching characteristics.
- Refinement of the volume estimates for the total quantity of materials in OU 3. Includes the input and QC of data within the Oracle database.
- Development of cost evaluations for the comparison of material scabbling costs. Other comparisons include evaluation of the potential use of clean concrete within the cell construction as rip rap.

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

**Period Ending November 30, 1994**

***Remedial Investigations/Feasibility Studies***

**3.7 Planned Activities for December 1994 (continued)**

- Initiate Thorium Nitrate Treatability Study in support of OU 3 Hazardous Waste Management Unit (HWMU) Closure for Tank T-2.
- Award contract to recycle 710 tons of structural steel from Plant 7.
- Continue planning on the following Treatability Studies: Surface Decontamination/Removal of Metal, Transite Characterization, N-Scan PGNA, EET of Transite, and Ultrasonic Decontamination of Strategic Metals.

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**4.0 Operable Unit 4**

Operable Unit 4 (OU 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 RI/FS Work Plan**

**Status:**

Complete.

**4.2 Remedial Investigation**

**Status:**

Complete.

**4.3 Feasibility Study/Proposed Plan**

**Status:**

Complete.

**OPERABLE UNIT 4 FEASIBILITY STUDY/PP REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Describes and analyzes potential remedial alternatives. A comparative analysis is 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.	09/10/93 C 09/09/93 A	11/10/93 C 11/12/93 A	12/28/93 C 12/21/93 A

C = Consent Agreement Date  
A = Actual Date

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

**Period Ending November 30, 1994**

***Remedial Investigations/Feasibility Studies***

**4.4 Treatability Studies**

**4.4.1 Bench Scale Treatability Studies**

**Status:**

Complete.

**4.4.2 Pilot Plant Treatability Studies**

**Status:**

The Test Plan will be submitted to the EPA as a Phase II Work Plan attachment in January 1995.

**Issues/Corrective Actions:**

None to report.

**4.5 Record of Decision**

**Status:**

The Final Record of Decision for Remedial Actions at Operable Unit 4 was submitted to the U.S. EPA and Ohio EPA on November 4, 1994.

**4.6 Planned Activities for December 1994**

- Continue construction of the Phase I Pilot Plant facility.
- Distribute U.S. EPA approved Final record of Decision.
- Obtain U.S. EPA approval of the Final Record of Decision on December 7, 1994.

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**5.0 Operable Unit 5**

Operable Unit 5 (OU 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:**

The draft final OU 5 Remedial Investigation (RI) report was delivered to U.S. EPA and Ohio EPA on November 1, 1994. The deliverable consisted of a new binder of Plates, new Volumes 1 of 5 and 2 of 5, and page changes for Volumes 3, 4, and 5 of 5. Page changes were also provided for the limited edition set of Reference Appendices, including a new binder of groundwater analytical data; this is now 13 volumes. Updated covers, spines and title pages were provided for all binders along with instructions on inserting the various replacements. Accompanying the RI Report was a separate volume of responses to comments.

Internal DOE/FERMCO distribution of the RI Report was completed early in November, including copies for the Administrative Record and the Public Information Center.

**Issues/Corrective Actions:**

None to report.

**OPERABLE UNIT 5 REMEDIAL INVESTIGATION REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA 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

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

**5.2 Feasibility Study/Proposed Plan**

**Status:**

The draft Feasibility Study (FS) and Proposed Plan (PP) were transmitted to the U.S. EPA and Ohio EPA on November 15, 1994. A briefing on the contents of the FS/PP was presented to representatives of the U.S. and Ohio EPAs on November 15, 1994.

The FEMP continues to receive analytical results from the support laboratory for the K<sub>1</sub> study—anticipate all results will be received during early December. Summary report on the sampling program will be issued in early January 1995.

**Issues/Corrective Actions:**

None to report.

**OPERABLE UNIT 5 FEASIBILITY STUDY/PP REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA 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.	11/16/94 C 11/16/94 A	01/15/95 C	02/14/95 C

C = Consent Agreement Date

**5.3 RCRA Monitoring**

**Status:**

Preparation of the RCRA Annual Report continued during the month of November. Activities include: finalizing data entry and validation of the RCRA groundwater samples; preparing graphical presentation of data; and preparing report on smectite (grout) intrusion.

**Issues/Corrective Actions:**

None to report.

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

**Period Ending November 30, 1994**

***Remedial Investigations/Feasibility Studies***

**5.4 Treatability Studies**

Treatability activities in support of the OU 5 FS Report have been concluded.

**5.5 Planned Activities for December 1994**

- Respond to comments received from the U.S. and Ohio EPAs. Depending on the scope of comments, revise the RI Report and issue change pages/sections.
- Compile final K<sub>1</sub> Sampling Report for issuance in January 1995.
- Perform desorption tests for uranium on archived samples of Great Miami Aquifer sediments originally collected from Type 2 and 3 wells at select locations of the aquifer exhibiting greater than 20 ppb of total uranium.
- Continue preparation of the 1994 RCRA Annual Report.
- Complete closeout activities related to inventorying and archiving selected soil samples obtained during treatability study activities.

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

Period Ending November 30, 1994

*Remedial Investigations/Feasibility Studies*

6.0 Community Relations

**Status:**

DOE submitted the revised *Community Relations Plan* to Ohio EPA for review after incorporating agency and stakeholder comments. U.S. EPA granted conditional approval of the plan, pending appropriate resolution of written comments submitted by Ohio EPA.

On November 2, 1994 the Fernald Envoys held their monthly meeting. About 50 envoys were updated on several issues, including the status of DOE's proposal to dispose of some low-level radioactively contaminated soil and sludge on site. The envoys were encouraged to contact their organizations and urge interested and affected parties to attend DOE's meeting and formal public hearing on its Proposed Plan for Operable Unit 2. The next envoy meeting is scheduled for December 7.

Also on November 2, 1994, DOE placed copies of the transcript from its October 18, 1994 Community Meeting in the Public Environmental Information Center.

On November 3, Ohio EPA met with several local residents at the Venice Presbyterian Church, Ross, Ohio, to discuss the preferred remedial alternative for Operable Unit 2. Ohio EPA holds availability sessions on major DOE activities and documents in order to answer stakeholders' questions.

On November 4, DOE submitted the Draft Record of Decision for Remedial Actions at Operable Unit 1 (Waste Pits) to U.S. EPA and Ohio EPA. The draft ROD summarizes the development and evaluation of remedial alternatives and the basis for identification of the selected remedy for Operable Unit 1. It also contains the draft responsiveness summary. U.S. EPA's review of the draft ROD is scheduled to end December 4, 1994.

DOE submitted the Final Record of Decision for Remedial Actions at Operable Unit 4 (Silos 1-4) to U.S. EPA and Ohio EPA on November 4. The ROD was signed by DOE's Assistant Secretary for Environmental Management.

DOE held a meeting and formal public hearing on November 8, 1994, on the Proposed Plan for Operable Unit 2, which calls for disposing low-level radioactively contaminated soil and sludge in an on-site disposal facility. About 100 people attended the meeting to hear DOE's presentation on the plan and to give formal comments. Four stakeholders provided oral comments; two hand written comments were read into the record. A transcript of the meeting was placed in the Public Environmental Information Center with information explaining DOE's rationale for its proposed plan. At the request of Ross Township, DOE extended the public comment period on the Operable Unit 2 proposed plan until December 30, 1994. The public comment period began on October 26 and was scheduled to end on November 25.

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

**Period Ending November 30, 1994**

***Remedial Investigations/Feasibility Studies***

**6.0 Community Relations (continued)**

The Fernald Citizens Task Force's monthly meeting was held November 12, 1994 at the AmeriSuites in Forest Park, Ohio. About 27 people, including the Task Force members, representatives from DOE, U.S. EPA, and FERMCO were in attendance. The Task Force discussed whether current grazing on DOE's property be continued after remediation is complete. The Task Force also discussed the schedule for issuing its interim report, which is to discuss future use of the Fernald site and cleanup levels. The Task Force submitted its interim report to DOE, U.S. EPA, and Ohio EPA on November 29, 1994.

On November 14, 1994, DOE held a public meeting to discuss the path forward on the UNH (uranyl nitrate hexahydrate) project. About 35 people attended the meeting, which included presentations on the leaks in the UNH system. DOE is proceeding with corrective action and is monitoring the tanks three times a day. Ohio EPA is taking enforcement action on the UNH situation.

DOE held a public meeting on the Operable Unit 5 Remedial Investigation on November 15, 1994. Operable Unit 5 addresses the environmental media, including soil, air, surface water, and groundwater. The presentations focused on the extent and nature of the contamination found in the environmental media.

The Draft Operable Unit 5 Feasibility Study was submitted to U.S. EPA and Ohio EPA on November 15, 1994.

FRESH (Fernald Residents for Environmental Safety and Health) invited DOE and FERMCO to attend its last meeting for 1994 on November 17. FRESH is celebrating its 10th anniversary. DOE presented FRESH with a commemorative plaque and letters of congratulations from Secretary of Energy O'Leary and other DOE officials from Fernald and the Ohio Field Office. FERMCO's Joe Schomaker, the coordinator of the effort to identify cultural resources at and around the Fernald site, also discussed the heritage of the area. He displayed examples of Native American and early historical artifacts from the region.

**Issues/Corrective Action:**

None.

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

**Period Ending November 30, 1994**

***Remedial Investigations/Feasibility Studies***

**6.1 Planned Activities for December 1994**

- On December 6, DOE will hold a public meeting on its draft Work Force Restructuring Plan. The meeting begins at 7:00 p.m. at the Plantation in Harrison, Ohio.
- The regular monthly meeting of the Fernald Citizens Task Force will be held on December 8 from 5:30 until 7 p.m. at the Joint Information Center, 6025 Dixie Hwy., Fairfield, Ohio. The Task Force plans to discuss its work plan for 1995.
- The public comment period on the Operable Unit 2 proposed plan is scheduled to end on December 30, 1994.

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

**PERIOD ENDING NOVEMBER 30, 1994**

**ENCLOSURE A**

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

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

**Period Ending November 30, 1994**

**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 November 1994.

**Summary - November 1994**

The total quantity of uranium discharged from the FEMP to the Great Miami River via Manhole 175 (Outfall 11o00004001) was 8.29 kilograms. The average uranium concentration for the previous 12 months was 0.43 mg/L. This is 48.3% of the Derived Concentration Guide (DOE Order 5400.5) for ingested water.

There was no discharge from the Storm Water Retention Basin Spillway (Outfall 11o00004002) to Paddy's Run via the Storm Sewer Outfall Ditch in November 1994. Based on 3.83 inches of rainfall in November 1994, the total quantity of uranium discharged to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 10.88 kilograms.

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

Period Ending November 30, 1994

**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:** 11O00004001  
001 Total Discharge  
Manhole 175 (Effluent to Great Miami River)

**DATE:** NOVEMBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)	Calculated Total U-238 (pCi/l) (1)
1	0.159	**	**	0.12	0.07	41
2	0.116	**	**	0.12	0.05	41
3	0.111	**	**	0.13	0.05	44
4	0.137	**	**	0.11	0.06	37
5	0.083	**	**	0.05	0.01	16
6	0.115	**	**	0.48	0.21	162
7	0.164	**	**	0.46	0.29	155
8	0.171	**	**	0.48	0.31	162
9	0.198	**	**	0.51	0.38	172
10	0.228	**	**	0.48	0.41	162
11	0.023	**	**	0.36	0.03	122
12	0.130	**	**	0.72	0.35	243
13	0.133	**	**	0.70	0.35	236
14	0.201	**	**	0.55	0.42	186
15	0.186	**	**	0.50	0.35	169
16	0.223	**	**	0.49	0.41	166
17	0.195	**	**	0.53	0.39	179
18	0.174	**	**	0.58	0.38	196
19	0.136	**	**	0.67	0.34	228
20	0.135	**	**	0.69	0.35	233
21	0.204	**	**	0.52	0.40	176
22	0.190	**	**	0.52	0.37	176
23	0.158	**	**	0.54	0.32	182
24	0.114	**	**	0.66	0.28	223
25	0.120	**	**	0.61	0.28	206
26	0.142	**	**	0.61	0.33	206
27	0.157	**	**	0.51	0.30	172
28	0.209	**	**	0.38	0.30	128
29	0.160	**	**	0.58	0.35	196
30	0.091	**	**	0.31	0.11	105
<b>Total</b>	<b>4.563</b>				<b>8.29</b>	

\*\* Analytical results not yet available.

000041

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

Period Ending November 30, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: 001 Total Discharge

DATE: NOVEMBER 1994

	Flow (MGD)	Total Alpha (pCi/l)(2)	Total Beta (pCi/l)(2)	Total U (mg/l)(2)	Total U (kgs)	Calculated Total U-238 (pCi/l)(1)(2)
Avg.	0.152	--	--	0.48	0.28	162
Max.	0.228	--	--	0.72	0.42	243
Min.	0.023	--	--	0.05	0.01	16

The average uranium concentration for the previous twelve months was 0.43 mg/l. This is 48.3 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.

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

**Period Ending November 30, 1994**

**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:** 11O00004002  
002 Discharge (Overflow) to Storm Sewer Outfall Ditch  
Stormwater Retention Basin Spillway (Effluent to Paddy's Run)

**DATE:** NOVEMBER 1994

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

Based on 3.83 inches of rainfall for the month, the uranium discharge to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 10.88 kgs.

000043

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

**PERIOD ENDING NOVEMBER 30, 1994**

**ENCLOSURE B**

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

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

Period Ending November 30, 1994

**INTRODUCTION**

Enclosure B describes actions undertaken at the FEMP during the period November 1, through November 30, 1994, that are not covered by the reporting requirements of the Consent Agreement As Amended under the Comprehensive Environmental Response, Compensation, and Liability Act (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 (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 October 1994 was transmitted to the U.S. EPA on November 19, 1994, 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 Consent Agreement As Amended.

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

**Period Ending November 30, 1994**

**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 October 1994, was transmitted to the U.S. EPA on November 18, 1994 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.

TABLE 1

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

November 30, 1994

<u>ACTION</u>	<u>DESCRIPTION</u>	<u>COMPLETION TIME AFTER FFCA SIGNED</u>	<u>FY1995 STATUS</u>
<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/FIS 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/FIS 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/FIS Work Plan to U.S. EPA if deficiencies are found.		Status information on the RI/FIS 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/FIS Work Plan		Status information on the RI/FIS 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/FIS progress reports.	monthly	The RI/FIS Monthly Progress Report for October 1994 was transmitted to the U.S. EPA on November 19, 1994.

**TABLE 1**

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

**November 30, 1994**

**CLEAN AIR ACT**

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 is being prepared by the Effluent Monitoring and Control Section of the ES&H Division. The report was transmitted to DOE 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 10, 1994 (DOE-1907-94).
D.1	Provide U.S. EPA with yearly stack-testing schedule.	yearly	No stacks related to production were operating in 1993.  Periodic confirmatory measurements to demonstrate compliance with NESHAP Subpart H were conducted on three laboratory exhaust stacks. These tests were conducted in accordance with a program to verify low emissions from stacks without continuous in-stack monitoring.  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 stacks related to production were operated or tested in 1994.
E.1	Maintain records of monthly particulate matter emissions.	—	Ongoing.

## TABLE 1

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

November 30, 1994

**RCRA**

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.

**REPORTING REQUIREMENTS**

B.	Issue monthly progress report of actions taken to ensure compliance with FFCA requirements.	monthly	October's FFCA Monthly Progress Report was transmitted to the U.S. EPA on November 18, 1994.
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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 NOVEMBER 30 1994**

**ENCLOSURE C**

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

**000050**

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

**Period Ending November 30, 1994**

**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 November 1, through November 30, 1994, 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).

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

Period Ending November 30, 1994

<u>FFA Part, Paragraph(s)</u>	<u>Description of Commitment</u>	<u>FFA Due Date</u>	<u>Status of Commitment</u>
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 for November 1994.

000052

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

Period Ending November 30, 1994

<u>FFA Part, Paragraph(s)</u>	<u>Description of Commitment</u>	<u>FFA Due Date</u>	<u>Status of Commitment</u>
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 6/25/92. A letter was received from the U.S. EPA on 10/16/92 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.
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.

000053

57

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

Period Ending November 30, 1994

<u>FFA Part, Paragraph(s)</u>	<u>Description of Commitment</u>	<u>FFA Due Date</u>	<u>Status of Commitment</u>
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.

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

**Period Ending November 30, 1994**

**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.
- 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
- K-65 Monitoring Data (K-65 NW, K-65 SW, K-65 NE, K-65 SE).

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.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITIES COMPLIANCE AGREEMENT/  
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT**

**MONTH:** NOVEMBER  
**YEAR:** 94

**FACILITY:** Fernald Environmental Management Report  
U.S. Department of Energy  
7400 Wiley Road, P.O. Box 398704  
Cincinnati, Ohio 45239 Hamilton

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

Daily Averages:	K-65, NW (pCi/L)	K-65, SW (pCi/L)	K-65, NE (pCi/L)	K-65, SE (pCi/L)
11/01/94	0.8	1.2	2.8	1.2
11/02/94	2.4	3.0	4.1	2.8
11/03/94	1.1	1.2	1.1	0.9
11/04/94	0.9	1.0	1.5	0.8
11/05/94	2.8	1.5	1.3	1.3
11/06/94	0.6	0.9	1.4	0.8
11/07/94	2.9	2.9	5.3	4.0
11/08/94	2.4	2.9	8.0 (a)	5.2
11/09/94	1.2	1.1	0.9	0.8
11/10/94	0.7	2.6	0.6	0.5
11/11/94	1.0	3.5	0.8	0.8
11/12/94	2.4	3.1	7.3	5.2
11/13/94	2.2	2.7	8.0	5.5
11/14/94	1.4	1.8	3.6	2.7
11/15/94	0.9	2.1	1.3	1.0
11/16/94	0.9	2.8	1.2	1.2
11/17/94	2.9	3.3	2.0	1.9
11/18/94	2.4	2.7	6.3	3.3
11/19/94	3.5	5.7	6.7	4.7
11/20/94	4.6	4.5	0.6	0.7
11/21/94	0.8	0.9	1.5	0.6
11/22/94	0.6	1.5	2.1	1.6
11/23/94	1.1	3.2 (a)	4.2	1.8
11/24/94	1.5	2.0 (a)	10.9	5.1
11/25/94	1.0	1.6	2.2	1.8
11/26/94	1.5	3.2	1.4	1.2
11/27/94	2.3	2.3	0.6	0.5
11/28/94	0.6	1.0	1.3	0.5
11/29/94	1.1	2.5	5.4	2.9
11/30/94	2.1	3.6 (a)	7.9	5.0

Monthly Averages:	K-65, NW (pCi/L)	K-65, SW (pCi/L)	K-65, NE (pCi/L)	K-65, SE (pCi/L)
<b>AVERAGE:</b>	1.7	2.4	3.4	2.2
<b>MAXIMUM:</b>	4.6	5.7	10.9	5.5
<b>MINIMUM:</b>	0.6	0.9	0.6	0.5
<b>MEDIAN:</b>	1.3	2.5	2.0	1.4
<b>STD. DEV.:</b>	1.0	1.1	2.8	1.7

**STANDARD LEGEND:**

1. "(a)" indicates censored data due to erroneous readings.
2. "(b)" indicates data loss due to monitor malfunction.
3. "(c)" indicates error in monitor programming.
4. "(d)" indicates data loss due to relocation of monitor.

000057

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITIES COMPLIANCE AGREEMENT/  
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT**

MONTH: NOVEMBER  
YEAR: 94

FACILITY: Fernald Environmental Management Report  
U.S. Department of Energy  
7400 Willey Road, P.O. Box 398704  
Cincinnati, Ohio 45238 Hamilton

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

Daily Averages:	AMS-4 (pCi/L)	AMS-6 (pCi/L)	PILOT PLANT (pCi/L)	BKGD-1 (pCi/L)	BKGD-2 (pCi/L)
11/01/94	0.8	0.9	0.7	0.8	0.5
11/02/94	1.7	2.3 (b)	1.3	0.7	0.9
11/03/94	0.9	0.7	0.7	0.8	0.8
11/04/94	0.5	0.5	0.7	0.5	0.5
11/05/94	0.8	0.8	0.7	0.8	0.5
11/06/94	0.4	0.9	0.8	0.6	0.4
11/07/94	1.8	2.7	1.3	0.8	0.9
11/08/94	1.8	1.7	1.7	0.7	1.1
11/09/94	0.4	0.6	0.8	0.5	0.5
11/10/94	0.5	0.8	0.4	0.4	0.5
11/11/94	0.6	0.9	0.5	0.8	0.7
11/12/94	1.8	1.4	1.1	0.9	1.1
11/13/94	1.8	1.6	1.4	0.9	1.3
11/14/94	0.8	0.9	0.7	0.5	0.8
11/15/94	0.8	0.7	0.8	0.8	0.8
11/16/94	0.8	0.7	0.5	0.8	0.8
11/17/94	0.8	0.8	0.6	0.6	0.8
11/18/94	1.3	1.4	1.2	0.8	0.9
11/19/94	1.8	1.9	1.9	0.8	1.0
11/20/94	0.8	0.8	0.4	0.7	0.7
11/21/94	0.4	0.4	0.2	0.5	0.4
11/22/94	0.4	0.5	0.3	0.5	0.4
11/23/94	0.7	0.2 (b)	0.6	0.5	0.8
11/24/94	1.3	(b)	1.3	0.8	0.7
11/25/94	0.7	(b)	0.8	0.5	0.8
11/26/94	0.7	(b)	0.9	0.6	0.9
11/27/94	0.5	(b)	0.6 (b)	0.5	0.4
11/28/94	0.4	(b)	(b)	0.5	0.4
11/29/94	0.7	(b)	(b)	0.5	0.8
11/30/94	1.2	(b)	(b)	0.8	0.8

Monthly Averages:	AMS-4 (pCi/L)	AMS-6 (pCi/L)	PILOT PLANT (pCi/L)	BKGD-1 (pCi/L)	BKGD-2 (pCi/L)
AVERAGE:	0.9	1.0	0.8	0.6	0.7
MAXIMUM:	1.8	2.7	1.7	0.9	1.3
MINIMUM:	0.4	0.2	0.2	0.4	0.4
MEDIAN:	0.7	0.7	0.6	0.5	0.6
STD. DEV.:	0.5	0.8	0.4	0.1	0.2

**STANDARD LEGEND:**

1. "(s)" indicates censored data due to erroneous readings.
2. "(b)" indicates data loss due to monitor malfunction.
3. "(c)" indicates error in monitor programming.
4. "(d)" indicates data loss due to relocation of monitor.

000058

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/  
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O. Box 398704  
Cincinnati, Ohio 45239 Hamilton

## K-65 SILO REPORT

LOCATION: Silo # 1

DATE: November 1994

Day	Ambient		Temperature Head Space °F	Inter. Hum. %	Diff. Press In. HG	Head Space Radon (pCi/l)
	Temp °F	Press In. Hg.				
** 1	40	29.11	55	*	0.08	124,000
** 2	43	29.48	54	*	0.04	715,000
3	61	29.46	54	*	0.00	644,000
4	64	29.45	55	*	0.00	659,000
5	62	29.31	55	*	0.00	947,000
6	53	29.40	58	*	-0.02	124,000
7	43	29.72	55	*	0.00	844,000
8	52	29.42	54	*	0.00	718,000
** 9	58	29.33	55	*	-0.01	715,000
** 10	45	29.65	54	*	0.03	79,200
11	42	29.73	54	*	0.00	251,000
12	43	29.66	53	*	0.00	640,000
13	52	29.58	53	*	0.00	656,000
14	59	29.58	54	*	0.00	599,000
15	48	29.69	54	*	0.00	294,000
** 16	43	29.61	53	*	-0.04	290,000
17	46	29.51	53	*	0.00	625,000
18	45	29.53	53	*	0.00	333,000
19	40	29.73	52	*	0.00	644,000
20	52	29.53	52	*	0.00	937,000
21	53	29.29	53	*	0.00	370,000
22	33	29.77	52	*	-0.01	222,000
23	30	29.78	51	*	-0.01	324,000
24	34	29.65	50	*	0.00	401,000
25	42	29.58	50	*	0.00	268,000
26	39	29.62	50	*	0.00	391,000
** 27	48	29.20	50	*	-0.03	1,120,000
** 28	44	29.16	50	*	0.06	167,000
29	36	29.53	50	*	0.00	315,000
30	26	29.71	49	*	-0.01	333,000
ARITHMETIC MEAN	45.9	29.52	52.7	*	0.005	491,640
MAXIMUM	63.6	29.78	55.7	*	0.078	1,120,000
MINIMUM	26.1	29.11	48.6	*	-0.036	79,200
MEDIAN	44.6	29.55	53.0	*	-0.003	396,000

Note: \* - Silo #1 Relative Humidity was inoperable, default value = 0.

\*\* - Some Delta Pressure values were outside of range restrictions.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/  
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT**

**FACILITY:** Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O. Box 398704  
Cincinnati, Ohio 45239 Hamilton

**K-65 SILO REPORT**

**LOCATION:** Silo # 2

**DATE:** November 1994

Day	Ambient Temp °F	Ambient Press In. Hg.	Temperature Head Space °F	Inter. Hum. %	Diff. Press In. HG	Head Space Radon (pCi/l)
1	40	29.11	54	*	0.04	3,080,000
2	43	29.46	54	*	-0.01	3,680,000
3	61	29.46	54	*	-0.01	3,590,000
4	64	29.45	54	*	-0.01	3,570,000
5	62	29.31	55	*	-0.01	3,680,000
6	53	29.40	55	*	-0.02	2,820,000
7	43	29.72	54	*	-0.01	3,610,000
8	52	29.42	54	*	-0.01	3,620,000
** 9	56	29.33	54	*	0.00	3,550,000
** 10	45	29.65	54	*	0.01	3,000,000
11	42	29.73	53	*	-0.01	3,460,000
12	43	29.66	53	*	-0.01	3,670,000
13	52	29.58	53	*	-0.01	3,710,000
14	59	29.58	53	*	-0.01	3,670,000
15	48	29.69	54	*	-0.01	3,600,000
16	43	29.61	53	*	-0.05	3,650,000
17	46	29.51	53	*	-0.01	3,770,000
18	45	29.53	53	*	-0.01	3,630,000
19	40	29.73	52	*	-0.01	3,680,000
20	52	29.53	52	*	-0.01	3,730,000
21	53	29.29	53	*	-0.02	2,840,000
22	33	29.77	52	*	-0.01	3,450,000
23	30	29.78	51	*	-0.01	3,450,000
24	34	29.65	50	*	-0.01	3,620,000
25	42	29.56	50	*	-0.01	3,740,000
26	39	29.62	50	*	-0.01	3,880,000
27	48	29.20	50	*	-0.07	3,940,000
** 28	44	29.16	50	*	0.01	2,980,000
29	36	29.53	50	*	-0.01	3,720,000
30	26	29.71	49	*	-0.01	3,860,000
<b>ARITHMETIC MEAN</b>						
	45.9	29.52	52.6	*	-0.011	3,541,667
<b>MAXIMUM</b>						
	63.6	29.78	55.2	*	0.038	3,940,000
<b>MINIMUM</b>						
	26.1	29.11	49.1	*	-0.069	2,820,000
<b>MEDIAN</b>						
	44.6	29.55	52.9	*	-0.011	3,625,000

Note: \* - Silo #2 Relative Humidity was inoperable, default value = 0.

Note: \*\* - Some Delta Pressure values were outside of range restrictions

000060

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/  
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT**

**FACILITY:** Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O. Box 398704  
Cincinnati, Ohio 45239 Hamilton

**K-65 SILO REPORT  
RADON CONCENTRATIONS**

**MONTH:** NOVEMBER 1994

**REPORT GENERATED:** 12/05/94

**Daily Summary of Recorded Headspace Concentrations  
(recorded at 5 minute intervals)**

Date	SILO 1				SILO 2			
	Average	Maximum	Minimum	Std. Dev.	Average	Maximum	Minimum	Std. Dev.
11/01/94	124,000	841,000	17,500	117,000	3,080,000	3,790,000	2,160,000	333,000
11/02/94	715,000	1,390,000	135,000	381,000	3,680,000	3,940,000	3,280,000	122,000
11/03/94	644,000	1,350,000	80,400	351,000	3,590,000	3,850,000	2,940,000	198,000
11/04/94	659,000	1,260,000	46,800	316,000	3,570,000	3,830,000	2,940,000	182,000
11/05/94	947,000	1,480,000	216,000	316,000	3,680,000	3,870,000	2,990,000	157,000
11/06/94	124,000	1,350,000	11,100	220,000	2,820,000	3,780,000	1,450,000	558,000
11/07/94	844,000	1,510,000	176,000	484,000	3,610,000	3,810,000	3,320,000	106,000
11/08/94	718,000	1,460,000	47,500	357,000	3,620,000	3,900,000	2,920,000	182,000
11/09/94	715,000	1,610,000	11,800	494,000	3,550,000	3,850,000	2,500,000	326,000
11/10/94	79,200	503,000	10,400	83,200	3,000,000	3,560,000	2,210,000	370,000
11/11/94	251,000	987,000	48,100	166,000	3,460,000	3,740,000	3,050,000	146,000
11/12/94	640,000	1,440,000	44,600	355,000	3,670,000	3,870,000	3,160,000	155,000
11/13/94	656,000	1,350,000	92,500	351,000	3,710,000	3,900,000	3,190,000	142,000
11/14/94	599,000	1,320,000	46,100	360,000	3,670,000	3,900,000	2,810,000	145,000
11/15/94	294,000	1,170,000	21,800	254,000	3,600,000	3,810,000	3,120,000	133,000
11/16/94	290,000	1,140,000	44,600	261,000	3,850,000	3,870,000	3,430,000	87,600
11/17/94	625,000	1,400,000	46,800	395,000	3,770,000	3,920,000	3,500,000	88,200
11/18/94	333,000	1,160,000	46,100	226,000	3,630,000	3,920,000	3,280,000	134,000
11/19/94	644,000	1,230,000	123,000	301,000	3,680,000	3,850,000	2,810,000	119,000
11/20/94	937,000	1,640,000	48,900	458,000	3,730,000	3,940,000	2,760,000	158,000
11/21/94	370,000	1,630,000	10,400	522,000	2,840,000	3,880,000	1,300,000	697,000
11/22/94	222,000	848,000	48,100	109,000	3,450,000	3,720,000	3,050,000	146,000
11/23/94	324,000	970,000	36,100	196,000	3,450,000	3,870,000	2,480,000	357,000
11/24/94	401,000	1,100,000	44,600	201,000	3,620,000	3,990,000	2,810,000	276,000
11/25/94	268,000	1,080,000	44,600	188,000	3,740,000	4,030,000	3,370,000	131,000
11/26/94	391,000	1,290,000	47,500	288,000	3,880,000	4,050,000	3,360,000	119,000
11/27/94	1,120,000	1,720,000	330,000	388,000	3,940,000	4,210,000	2,940,000	206,000
11/28/94	167,000	1,310,000	18,200	217,000	2,980,000	3,980,000	1,460,000	687,000
11/29/94	315,000	1,170,000	67,500	173,000	3,720,000	3,990,000	3,160,000	196,000
11/30/94	333,000	1,190,000	48,200	215,000	3,860,000	4,100,000	3,450,000	115,000

**Grab Samples of Headspace**

Date	SILO 1 Concentration	SILO 2 Concentration
11/04/94	153,000	3,280,000
11/07/94	1,837,000	3,850,000
11/09/94	2,119,000	3,590,000
11/14/94	1,985,000	3,560,000
11/17/94	1,896,000	3,760,000
11/21/94	49,000	2,790,000
11/28/94	77,000	2,870,000

- Notes:**
1. All values reported in pCi/L.
  2. Continuous data reported to three significant digits to remain consistent with the calibration data.

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

**PERIOD ENDING NOVEMBER 30, 1994**

**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 November 30, 1994**

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

Period Ending November 30, 1994

**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:** NOVEMBER 1994

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	0.057	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
2	0.000	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
3	0.000	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
4	0.000	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
5	0.000	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
6	0.149	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
7	0.212	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
8	0.212	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
9	0.212	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
10	0.213	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
11	0.103	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
12	0.217	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
13	0.204	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
14	0.163	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
15	0.204	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
16	0.195	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
17	0.198	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
18	0.192	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
19	0.213	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
20	0.203	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
21	0.229	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
22	0.060	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
23	0.130	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
24	0.205	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
25	0.193	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
26	0.201	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
27	0.224	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
28	0.212	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
29	0.206	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
30	0.212	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
<b>Total</b>	<b>4.819</b>				<b>0.0000</b>			

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

000064

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

Period Ending November 30, 1994

**EFFLUENT RADIATION REPORT (cont.)**

**FACILITY:** Fernald Environmental Management Project

**LOCATION:** [SP1] IAWWT - T108

**DATE:** NOVEMBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.161	0.0	0.0	0.0	0.0000
Max.	0.229	0.0	0.0	0.0	0.0000
Min.	0.000	0.0	0.0	0.0	0.0000

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

Period Ending November 30, 1994

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: NOVEMBER 1994

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	0.057	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
2	0.000	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
3	0.000	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
4	0.000	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
5	0.000	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
6	0.150	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
7	0.208	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
8	0.205	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
9	0.203	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
10	0.220	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
11	0.106	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
12	0.207	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
13	0.196	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
14	0.159	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
15	0.200	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
16	0.195	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
17	0.197	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
18	0.187	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
19	0.195	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
20	0.205	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
21	0.242	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
22	0.063	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
23	0.126	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
24	0.208	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
25	0.190	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
26	0.196	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
27	0.214	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
28	0.197	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
29	0.200	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
30	0.189	0.0	0.0	0.0	0.0000	0.0	0.0	0.0
Total	4.715				0.0000			

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

000066

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

Period Ending November 30, 1994

**EFFLUENT RADIATION REPORT (cont.)**

**FACILITY:** Fernald Environmental Management Project

**LOCATION:** [SP1] IAWWT - T109

**DATE:** NOVEMBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.157	0.0	0.0	0.0	0.0000
Max.	0.242	0.0	0.0	0.0	0.0000
Min.	0.000	0.0	0.0	0.0	0.0000

**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.

000067

3/10/94

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

**Period Ending November 30, 1994**

**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:** NOVEMBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)
1	0.114	0	0	0.00	0.00
2	0.000	0	0	0.00	0.00
3	0.000	0	0	0.00	0.00
4	0.000	0	0	0.00	0.00
5	0.000	0	0	0.00	0.00
6	0.299	0	0	0.00	0.00
7	0.420	0	0	0.00	0.00
8	0.417	0	0	0.00	0.00
9	0.415	0	0	0.00	0.00
10	0.433	0	0	0.00	0.00
11	0.209	0	0	0.00	0.00
12	0.424	0	0	0.00	0.00
13	0.400	0	0	0.00	0.00
14	0.322	0	0	0.00	0.00
15	0.404	0	0	0.00	0.00
16	0.390	0	0	0.00	0.00
17	0.395	0	0	0.00	0.00
18	0.379	0	0	0.00	0.00
19	0.408	0	0	0.00	0.00
20	0.408	0	0	0.00	0.00
21	0.471	0	0	0.00	0.00
22	0.123	0	0	0.00	0.00
23	0.256	0	0	0.00	0.00
24	0.413	0	0	0.00	0.00
25	0.383	0	0	0.00	0.00
26	0.397	0	0	0.00	0.00
27	0.438	0	0	0.00	0.00
28	0.409	0	0	0.00	0.00
29	0.406	0	0	0.00	0.00
30	0.401	0	0	0.00	0.00
	<b>9.534</b>				<b>0.00</b>

000068

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

**Period Ending November 30, 1994**

**EFFLUENT RADIATION REPORT (cont.)**

**FACILITY:** Fernald Environmental Management Project

**LOCATION:** (606) SWRB

**DATE:** NOVEMBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (mg/l)(2)	Total U (kgs)
Avg.	0.318	0	0	0.00	0.00
Max.	0.471	0	0	0.00	0.00
Min.	0.000	0	0	0.00	0.00

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

Period Ending November 30, 1994

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: NOVEMBER 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)
1	0.054	0	0	0.00	0.00
2	0.051	0	0	0.08	0.02
3	0.029	0	0	0.00	0.00
4	0.048	0	0	0.00	0.00
5	0.048	0	0	0.00	0.00
6	0.096	0	0	0.00	0.00
7	0.103	0	0	0.00	0.00
8	0.098	0	0	0.58	0.22
9	0.108	0	0	0.00	0.00
10	0.120	0	0	0.00	0.00
11	0.032	0	0	0.00	0.00
12	0.029	0	0	0.00	0.00
13	0.128	0	0	0.00	0.00
14	0.127	0	0	0.00	0.00
15	0.129	0	0	0.00	0.00
16	0.125	0	0	0.93	0.44
17	0.128	0	0	0.00	0.00
18	0.126	0	0	0.00	0.00
19	0.129	0	0	0.00	0.00
20	0.131	0	0	0.00	0.00
21	0.128	0	0	0.00	0.00
22	0.117	0	0	0.00	0.00
23	0.125	0	0	0.00	0.00
24	0.120	0	0	0.00	0.00
25	0.124	0	0	0.00	0.00
26	0.133	0	0	0.00	0.00
27	0.119	0	0	0.00	0.00
28	0.126	0	0	0.00	0.00
29	0.121	0	0	0.00	0.00
30	0.043	0	0	0.00	0.00
Total	2.993				0.67

\* Analytical results not yet available.

000070

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

Period Ending November 30, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (605) BDN/VETS

DATE: NOVEMBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (mg/l)(2)	Total U (kgs)
Avg.	0.100	0	0	0.06	0.02
Max.	0.133	0	0	0.93	0.44
Min.	0.029	0	0	0.00	0.00

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

**Period Ending November 30, 1994**

**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:** NOVEMBER 1994

<u>Day</u>	<u>Flow (MGD)</u>	<u>Total U (ug/l)</u>	<u>Total U (kgs)</u>
1	1.360	8.9	0.05
2	1.500	6.2	0.04
3	1.483	10.3	0.06
4	1.394	9.8	0.05
5	1.497	9.6	0.05
6	1.343	10.1	0.05
7	1.452	10.3	0.06
8	1.352	9.8	0.05
9	1.487	9.5	0.05
10	1.481	9.5	0.05
11	1.252	9.5	0.05
12	0.957	9.4	0.03
13	1.448	9.3	0.05
14	1.534	10.5	0.06
15	1.462	10.7	0.06
16	1.419	10.3	0.06
17	1.471	10.4	0.06
18	1.334	10.1	0.05
19	1.506	9.4	0.05
20	1.420	9.1	0.05
21	1.429	9.8	0.05
22	0.000		
23	1.236	9.8	0.05
24	1.232	9.4	0.04
25	1.435	9.2	0.05
26	1.474	9.2	0.05
27	1.507	9.0	0.05
28	1.204	10.3	0.05
29	1.426	10.5	0.06
30	1.484	5.6	0.03
<b>Total</b>	<b>40.579</b>		<b>1.46</b>

000072

**6412**

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

Period Ending November 30, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project  
 LOCATION: South Plume  
 DATE: NOVEMBER 1994

	Flow (MGD)	Total U (ug/l)(2)	Total U (kgs)
Avg.	1.353	9.5	0.05
Max.	1.534	10.7	0.06
Min.	0.000	5.6	0.03

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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.

**000073**

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

Period Ending November 30, 1994

**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 \*

**DATE:** NOVEMBER 1994

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	1.474	0.0	0.0	10	0.06	0.0	0
2	1.500	0.0	0.0	9	0.05	0.0	0
3	1.483	0.0	0.0	9	0.05	0.0	0
4	1.394	0.0	0.0	9	0.04	0.0	0
5	1.497	0.0	0.0	9	0.05	0.0	0
6	1.642	0.0	0.0	13	0.08	0.0	0
7	1.872	0.0	0.0	17	0.12	0.0	0
8	1.769	0.0	0.0	16	0.11	0.0	0
9	1.902	0.0	0.0	18	0.13	0.0	0
10	1.914	0.0	0.0	23	0.17	0.0	0
11	1.461	0.0	0.0	20	0.11	0.0	0
12	1.381	0.0	0.0	37	0.19	0.0	0
13	1.848	0.0	0.0	29	0.20	0.0	0
14	1.856	0.0	0.0	27	0.19	0.0	0
15	1.866	0.0	0.0	33	0.23	0.0	0
16	1.809	0.0	0.0	30	0.21	0.0	0
17	1.866	0.0	0.0	37	0.26	0.0	0
18	1.713	0.0	0.0	42	0.27	0.0	0
19	1.914	0.0	0.0	37	0.27	0.0	0
20	1.828	0.0	0.0	31	0.21	0.0	0
21	1.900	0.0	0.0	36	0.26	0.0	0
22	0.123	0.0	0.0	26	0.01	0.0	0
23	1.492	0.0	0.0	20	0.11	0.0	0
24	1.645	0.0	0.0	27	0.17	0.0	0
25	1.818	0.0	0.0	31	0.21	0.0	0
26	1.871	0.0	0.0	30	0.21	0.0	0
27	1.945	0.0	0.0	33	0.24	0.0	0
28	1.613	0.0	0.0	26	0.16	0.0	0
29	1.832	0.0	0.0	24	0.17	0.0	0
30	1.885	0.0	0.0	25	0.18	0.0	0
<b>Total</b>	<b>50.113</b>				<b>4.73</b>		

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

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6412

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

Period Ending November 30, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP3] Valve House

DATE: NOVEMBER 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	1.670	0.0	0.0	25	0.16
Max.	1.945	0.0	0.0	42	0.27
Min.	0.123	0.0	0.0	9	0.01

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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.

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74