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

08/19/94

**DOE-2223-94  
DOE-FN        EPA  
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REPORT**



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

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AUG 10 1994  
DOE-2223-94

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 Fifth 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 JUNE 1994**

Enclosure 1 is the consolidated CA/FFCA/FFA and RI/FS Monthly Progress Report which describes the activities accomplished June 1-31, 1994, and planned actions for the period of July, 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,

*for*   
Jack R. Craig  
Fernald Remedial Action  
Project Manager

Enclosures: As Stated

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cc w/enc:

K. A. Chaney, EM-423, Q0  
D. R. Kozlowski, EM-423, Q0  
J. Kwasniewski, OEPA-Columbus  
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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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**Period Ending July 31, 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 July 1 through July 31, 1994, and planned actions for the period August 1 through August 31, 1994.

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**WORK ASSIGNMENTS AND PROGRESS**

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

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

**CA Section IX. Removal Actions**

This section provides an update of activities associated with the implementation of Removal Actions (RAs) at the FEMP during July 1994. Information is presented for each of the Removal Actions identified in the Consent Agreement As Amended.

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
Phase I			
1	Contaminated Water Under FEMP Buildings	Pump water from extraction wells underneath Plants 2/3, 6, 8, and 9. Treat extracted water for volatile organic chemicals and uranium removal before discharge.	Treatment: Operational  Pumping has not resumed
2	Waste Pit Area Run-off Control	Collect and treat contaminated storm water run-off from the waste pit area.	Construction Completed: 6/15/92 Operational: 7/30/92
3	South Groundwater Contamination Plume	<p>Part 1 - Install new alternate water supply and transfer to industrial user.</p> <p>Part 2 - Pump and discharge groundwater from South Plume.</p> <p>Part 3 - Install and operate Interim Advanced Waste Water Treatment system to reduce uranium contaminant loading to the Great Miami River.</p> <p>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.</p> <p>Part 5 - Conduct groundwater modeling and geochemical investigating to define the extent of the groundwater plume contaminated with uranium</p> <p>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.</p>	<p>Operational: 12/7/92</p> <p>Transfer: Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Completed: 2/25/94</p> <p>Operational: 3/31/94</p>
4	Silos 1 & 2	Install bentonite cap to reduce and monitor radon emissions. Provide follow-on monitoring.	Cap Completed: 11/28/91  Monitoring: Ongoing
5	Decant Sump Tank	Periodically remove liquid from K-65 decant sump tank.	Ongoing
6	Waste Pit 6 Residues	Eliminate potential airborne contamination by re-submerging exposed pit material.	Completed: 12/19/90

Shading denotes completed actions

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
7	Plant 1 Pad Continuing Release	Stage I - Implement run-on/off control measures. Stage II - Install new pad. Stage III - Upgrade existing Plant 1 Storage Pad.	Completed: 1/17/92 Completed: 12/4/92 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. Phase II - Complete active flyash pile controls.	Completed: 6/29/92 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.	Ongoing
15	Scrap Metal Piles	Phase I - Disposition LLW ferrous/non-ferrous scrap metal Phase II - IIA - Containerization of scrap copper IIB - Disposition of scrap copper	Ongoing Completed: 9/29/92 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

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**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: 6/30/93
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 release and migration of asbestos fibers.	Ongoing

\* Shading denotes completed actions

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
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

\* Shading denotes completed actions

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*Removal Actions*

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

**Current Month:**

In July, operation of the Plant 8 VOC Treatment System was not restricted by the Plant 8 SWRB sludge processing. Accordingly, the perched groundwater extraction wells have begun to be restarted. Extraction wells at Plants 6 and 9 have been restarted.

**Planned Activities:**

- Reestablish operation of the Plants 2/3 and 8 perched groundwater extraction wells in August 1994.

**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. Progress on the Public Water Supply (PWS), which will supply Delta Steel, continues including Phase IV work to address archeological and historical items. An audit of cultural resources contractor is in progress to perform data recovery (Phase IV) work. A public hearing was held on July 20, 1994 for Project A (Bolton Plant to Hamilton/Butler County line) of the PWS.

**Planned Activities:**

- Continue the proceedings to transfer ownership of the Alternate Water Supply to A&W.
- Continue to support Hamilton County on installation of the PWS including service connections.
- Finalize language to be used in PWS contract bid documents that will address cultural resource issues.
- Establish basis for cost sharing with Hamilton County Department of Public Works for Project A of the PWS.

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

**Part 2 - Pumping and Discharge System**

**Current Month:**

Additional modifications to the three-well pumping scheme were evaluated to minimize the effect of migration of arsenic contamination south of the recovery well field. Only Well 2625 is still exhibiting a slightly elevated concentration of arsenic (11 ppb). On June 30, 1994, Recovery Wells Nos. 1, 3 and 5 were changed to 400, 550, and 550 gallons per minute (gpm), respectively.

On July 28, an off-normal occurrence was reported (Occurrence Report No. ORO-FERM-FEMP-1994-0050) involving groundwater leakage at South Plume, Recovery Well No. 1. The recovery well was isolated from the system by manually closing isolation valves. Water samples were collected from the area and analyzed; no contamination above background levels was detected in the area. Property owners and EPA were notified about the incident. There was no significant impact to on-site or off-site personnel as a result of this occurrence. Recovery Well No. 2 was started in order to compensate for the Recovery Well No. 1 outage. Currently an evaluation is being performed to determine the reason for the well failure.

A requisition has been submitted to replace the pumps in the five recovery wells and to permanently install pressure transducers in each recovery well to monitor groundwater elevations.

**Planned Activities:**

- Report writing has begun for the next submittal of the recovery well field operation report [Design, Monitoring, and Evaluation Program Plan (DMEPP)] to the EPAs. Comments were received from Ohio EPA on the previous DMEPP quarterly report. Accordingly, an extension was requested by Ohio EPA and approved for the next quarterly submittal (September 1994) of the document.
- Continue to evaluate additional modifications implemented to address the arsenic contamination found in the monitoring wells. Continuous monitoring will be performed to prevent any arsenic entering the recovery wells.

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

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

**Current Month:**

The IAWWT (SWRB) continued with minimal operational downtime due to improved filtration.

**Planned Activities:**

- Continue to operate IAWWT (SWRB).

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

**Current Month:**

Satisfactory operation of the IAWWT (BDN-ETS) unit continues.

**Planned Activities:**

- Continue to operate with minimal downtime due to permanent ion exchange vessel repairs.

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

**Current Month:**

Sampling of private homeowner and existing RI/FS wells in the South Plume area continues. The FEMP is continuing to monitor the effectiveness of the ion exchange systems at the two residences where these units are installed.

A procedure for ion exchange vessel changeout was completed and approved. Due to plugging of the primary ion exchange vessel at one of the residences prior to uranium breakthrough, the primary vessels at both residences were changed out.

**Planned Activities:**

- Continue to monitor performance of ion exchange units through bimonthly groundwater sampling and analysis.

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

**Step 1**

**Current Month:**

The new IAWWT unit [the South Plume Interim Treatment (SPIT) project] continues to operate satisfactorily.

**Planned Activities:**

- Continue full operation of the system (treating 200 gpm of South Plume flow).

**Step 2**

**Current Month:**

Use off-peak capacity in Phase I of the Advanced Waste Water Treatment (AWWT) system for South Plume flow when no storm water treatment is required. The AWWT package, now under construction, contains piping and valving to transfer South Plume flow to the existing SWRB pumping station for subsequent transfer to Phase I.

**Planned Activities:**

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

**Step 3**

**Current Month:**

Installation of the AWWT Phase III line began in April which will eventually serve the Phase III AWWT system. This will allow South Plume groundwater to be transferred to the AWWT Phase II system to meet the Step 3 commitment.

**Planned Activities:**

- Continue installation of AWWT Phase III line. Step 3 will be available when Phase II of the AWWT becomes operational in January 1995.

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

**Step 4**

**Current Month:**

Extension of the planned operational life of the existing IAWWT SWRB unit by converting it from treating storm water to treating South Plume flow, and increasing capacity from 300 gpm to approximately 400 gpm is scheduled for completion by March 1995. No action was taken during the month of July.

**Planned Activities:**

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

RA No. 4, Silos 1 and 2

**Current Month:**

The results of the video camera investigation of the Silo 2 bentonite cap (due to a slight upward trend in headspace radon concentration) were compared against baseline videos of the bentonite surface taken immediately following its installation. Overall, the bentonite cap integrity is in very good condition. The Removal Action No. 4 Final Report was transmitted to DOE on May 13, 1994 and subsequently transmitted to the U.S. EPA and Ohio EPA on May 17, 1994. On Wednesday July 6, 1994, the U.S. EPA and Ohio EPA verbally notified DOE-FN that the Removal Action No. 4 Final report was accepted with no comments.

RA No. 5, K-65 Decant Sump Tank

**Current Month:**

In an effort to reduce worker exposure to the Decant Sump Tank and to improve confidence in the liquid level measurements, DOE is proceeding to install a submersible pressure indicator/transmitter in the tank. The new water level indicator equipment will allow for accurate, continuous, and remote level readings from the tank.

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**RA No. 5, K-65 Decant Sump Tank (continued)**

**Planned Activities:**

- The action to install the new water level indicator is expected to be completed by the end of August 1994.

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

**Current Month:**

The first concrete placement of Phase "E" (the curb on the south side of Phase "E") has been completed. Additional forms have been erected and reinforcement placed for three major slabs. A letter was submitted requesting a change in the type of coating membrane for Phase "E" only. This change is proposed due to a different use of this portion of the pad. The original use was for interim storage of containerized radioactive waste. The proposed use is for surface-decontaminated bulk material generated by the dismantling of structures within CRU3.

**Planned Activities:**

- Pour the three major slabs.
- Obtain approval on the change in coating membrane for Phase "E."

<b>KEY MILESTONES</b>	<b>STATUS</b>	<b>DUE DATE</b>
Complete Installation of Stage III and Tension Support Structure	Open, behind schedule	February 21, 1995

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

**Current Month:**

The volume of waste shipped off-site in July was 9,387 drum equivalents (DEs) for a total of 51,348 DEs shipped to the NTS in FY-94. This volume includes 12,547 drums of residues removed from inventory and shipped to-date.

Shipments of AMCCOM metal to the NTS was initiated in July. The volume shipped in July is 1,385 DEs.

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

**Planned Activities:**

- During August, shipping activities will include the initiation of thorium waste shipments to the NTS.
- An accelerated shipping schedule has been developed for the months of August and September in an effort to achieve the FEMP FY94 LLW shipping goals.

<b>KEY MILESTONES</b>	<b>STATUS</b>	<b>DUE DATE</b>
Submit Annual Work Procedures for 1994	Completed June 30, 1994	June 30, 1994

**RA No. 12, Safe Shutdown**

**Current Month:**

Preparation of implementation plans for Safe Shutdown activities continues with emphasis on the work in Plants 1, 4, and the Pilot Plant. Project managers have been assigned to these plants.

The verification of the production equipment in all process plants has been completed, except for Plants 2/3. The anticipated completed date for the verification of Plants 2/3 equipment is March 1997. The as-built floor plan drawings are being redlined to validate them to current configurations so intelligent bid packages can be put together for D&D contractors.

The following is the status of capital equipment: of an estimated 1,683 total number of items, 1,196 have been or will be excessed, and 487 have been identified as "In Use/Future Use" items. This information varies from month-to-month due to changes in status of equipment.

To date, 1,117 maintenance work orders to isolate and disconnect all utilities/energy sources from equipment not in use have been prepared. Of these, 500 have been completed. Field verification of the completed orders is ongoing. 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. These numbers may vary from month-to-month due to changes in status of the equipment.

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

Five-hundred and three (503) task orders to determine if hold-up material is present in equipment have been prepared; of these, 162 have been completed. Also, 146 task orders to remove the hold-up material from equipment have been prepared; of these, only two (2) have been completed to-date.

The weekly conference calls, concerning preparation of the NEPA document to support the joint sale of uranium materials from the Hanford and Fernald Sites, have been discontinued due to the fact that the customer, COGEMA, has not renewed the offer. The customer cited the time lag since the original bid, the change in availability of processing facilities, and the change in world markets as some of the reasons for not extending the offer.

British Nuclear Fuels, Lancashire, United Kingdom, continues to maintain their interest in obtaining approximately 120 metric tons uranium (MTU) of depleted uranium tetrafluoride (UF<sub>4</sub>). However, we are still awaiting finalization of the contract with them. The NEPA document for this proposed transfer of material, a categorical exclusion (CX), is currently being reviewed.

The fifth shipment of depleted derbies was shipped on July 1, 1994, to the customer, Manufacturing Sciences Corporation (MSC) in Oak Ridge, Tennessee. That shipment brought the total shipped to 85 MTU of 440 MTU total. One hundred fifty-seven (157) metal derby pallets have been sold to MSC to facilitate their materials handling. They are currently being prepared for shipment.

Samples of seven (7) lots of normal UF<sub>4</sub> were shipped to an independent laboratory (Environmental Physics, Inc., Charleston, South Carolina) to be analyzed for AlliedSignal, the company that is interested in obtaining this portion of the inventory. The results of those analyses were incompatible with the customer's specifications; however, we are having duplicate samples of the same lots tested in our laboratory. Depending upon the results from the on-site laboratory, a third lab test may be necessary to confirm results. Additional testing is justified, because the results could lead to the removal of 230 MTU of material from the site.

Approval was received June 24, 1994, to ship the remaining Army metal to the Nevada Test Site (NTS) for burial. This material is Phase II of the removal of all Army-owned material from the site (Phase I was the successful removal of 1843.5 MTU, which was completed in November 1992). Phase II will cover the removal of 1028 MTU in 70 shipments. For the month of July, 24 truckloads were shipped, for a total of 347.4 MTU. This exceeded our schedule of five (5) loads per week by four loads. Projected completion date is October 7, 1994.

Shipments of dust collector equipment to Martin Marietta Energy Systems in Oak Ridge were completed in July.

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

**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 to expedite utility isolations, identify hold-up in process equipment, and remove/drum hold-up materials from the process equipment.
- Continue verification of the equipment in Plants 2/3 in support of the UNH neutralization program.
- Continue to prepare implementation packages and obtain appropriate approvals. Continue field inspections of implementation activities.
- Continue shipments of 4A metal to the Nevada Test Site.
- Continue shipping depleted derbies to MSC in Oak Ridge, Tennessee.
- Begin removal of Plant 5 and Plant 6 equipment to be used in the CRU4 Pilot Plant project.
- Continue to pursue private sector interest and other disposal options for the uranium inventory.

KEY MILESTONES	STATUS	DUE DATE
Submit Annual Work Procedures for 1994	Completed June 30, 1994	June 30, 1994

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

**Current Month:**

In July, the containment and ventilation system were installed at the tile silos, as well as the conveyors which will be used to remove loaded white boxes from the containment area. The caps on the eight tile silos have been removed and are currently stored on the ground next to the Size Reduction Building.

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**RA No. 13, Plant 1 Ore Silos (continued)**

**Planned Activities:**

- Install debris chutes.
- Begin tile removal.

<b>KEY MILESTONES</b>	<b>STATUS</b>	<b>DUE DATE</b>
Complete Removal Action	Estimated completion date October 1994	December 19, 1994

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

**Current Month:**

A contract was issued to an off-site laboratory EPI to conduct analyses of verification soil samples collected from Zones 2 and 4. Samples were shipped July 26 and are due back in 45 days, September 9, 1994.

Non-contaminated tree stumps and vegetation were removed from the area and disposed of at the FEMP wildlife preserve for animal habitation.

A draft letter of acceptance from the property owner for Zones 3 and 4 off-property soil excavation was transmitted to DOE-OR for review and comment.

DOE requested U.S. EPA approval to extend the due date of the Final Report to December 5, 1994. This request was verbally approved by U.S. EPA.

**Planned Activities:**

- Receive U.S. EPA approval of extended due date for Final Report. The Draft Final Report is due from ENSERCH on August 3 for review.
- Receive DOE-OR approval of draft letter of acceptance from property owner.

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

KEY MILESTONES	STATUS	DUE DATE
Phase V - Submittal of Final Report	Open, behind schedule. Extension on due date requested.	September 26, 1994

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

**Current Month:**

Phase I: The first shipment of Slag and Aluminum arrived at NTS on July 18, 1994. SEG completed sampling and analysis of the remaining slag and oxide.

Phase II: The path forward for the scrap copper beneficial reuse is being evaluated.

**Planned Activities:**

- Stabilization of waste from the Phase I lead melt and disposal at Envirocare.
- Receive DOE-NV approval to ship remaining Phase I slag and aluminum to NTS and to ship sulfur cement solidified waste to NTS.
- Sampling and analysis of the remaining Phase I slag and oxide.
- The vendors BAFO for Phase II will be provided August 8, 1994

KEY MILESTONES	STATUS	DUE DATE
Phase I - On-Site Processing Off-Site Processing	Completed Completed	September 30, 1993 March 25, 1994
Phase I - Submit Final Report	Open	September 30, 1994 to U.S. EPA
Phase IIB: Submittal of Subcontractor's Removal Action Project Plan	Open, behind Schedule	September 30, 1993
Phase IIB: Submittal of Final Report	Open, behind schedule	March 30, 1995

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***Removal Actions***

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

**Current Month:**

July activities included Certified for Construction (CFC) design for the regrading and placement of a vegetative cover over the existing soil and rubble pile north of Third Street. Continued working on the RCRA Determination for the debris/residue at the Scrap Metal Pad (SMP) and, the implementation plan for removing the debris/residues. The subcontractor bid package for the Decontamination Facility Pad (DFP) has been completed and the package is currently being issued for bid. Ohio EPA is recommending that a discussion occur prior to making any additional design modifications relating to the CSF.

**Planned Activities:**

- Approve implementation plan for removal of the remaining debris/residue at the SMP and begin the field work.
- Issue bid package for the DFP structure to potential subcontractors.
- Determine feasibility for need and possible relocation of the Central Storage Facility.
- Issue the Request for Construction Action (RCA) for the Soil and Rubble Pile North of Third Street.

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

**Current Month:**

Exterior transite removals include the north wall, north roof, south wall of the south shed, penthouse and north penthouse roof. Structural steel is being downsized and loaded into containers for recycling; transite sheets are also being loaded into waste containers pending disposition. DOE-FN has approved the plan to fell Plant 7 structural steel with shaped charges; NEPA compliance has been verified. Fernald Residents for Environmental Safety and Health (FRESH) is agreeable with the plan also.

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**RA No. 19, Plant 7 Dismantling (continued)**

**Planned Activities:**

- Continue to dismantle and remove exterior structures including tanks and balance of pipe rack and bridge crane support structure on east side.
- Continue exterior transite removals including south shed walls and roof, south main and penthouse roof, east and south walls.
- Seek to obtain approval from the U.S. and Ohio EPAs on the removal of Building 4C and the plan to fell the structural steel with shaped charges.

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

**Current Month:**

Construction of the new UNH transfer pipe continued. The UNH transfer (Block 1) from tank F1-26 to tank F1-2 was completed. The draft operating procedures for the UNH operations water simulation (Block 2) was completed. Maintenance activities to isolate the UNH storage tanks continued. An internal review of the SAR was completed. Most of the backlog drums from the previous plant test were shipped offsite to NTS.

**Planned Activities:**

- Continue construction of transfer pipe.
- Continue development of UNH operating procedures.
- Continue isolation of UNH storage tanks.
- Restart East/West Eimco filters in Plant 8.
- Issue Process Requirement for tank D1-7.
- Issue project SAR for internal review and Independent Safety Review Committee review.

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*Removal Actions*

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

**Current Month:**

The annual submittal of updated Work Procedures for Asbestos Removals was provided to the EPAs before July 1994.

**Planned Activities:**

- Complete the CFC package and begin construction activities for encapsulation/encasement of transite siding and roofing on the Metal Dissolver Building.
- Complete the compilation of work packages and begin construction activity on the thermal system insulation removal at the Harshaw Towers.
- Begin engineering evaluation of alternatives to remove and replace Plant 2/3 transite roof temporarily until Plant 2/3 dismantling occurs.

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

**Current Month:**

Samples of the concrete block in the two-story block building were collected and shipped off site for analysis. The cleanout of loose debris from the building was completed and floor scabbling and demolition can now begin. The water from the open top tank has been removed and staging the equipment to remove sludges from the tank has begun.

**Planned Activities:**

- Scabble the floors of the block building. After a final rad survey, disposition will be made on the demolition debris that will be generated when the building is demolished.
- Remove the pressure vessel.
- Remove, size reduce, and containerize the skid tank.

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*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.

**Issues/Corrective Actions:**

None to report.

**1.2 Remedial Investigation**

**Status:**

Received conditional approval of the OU 1 Remedial Investigation/Baseline Risk Assessment from U.S. EPA on April 4, 1994. Submitted final comment responses and draft proposed change pages for U.S. EPA and Ohio EPA review and approval on July 25, 1994. Comment resolution for final document preparation and approval is in progress.

**Issues/Corrective Actions:**

None to report.

**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

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**1.3 Feasibility Study/Proposed Plan**

**Status:**

Received Ohio EPA comments on the Draft OU 1 Feasibility Study/Proposed Plan-Environmental Assessment (FS/PP-EA) on May 24, 1994. Received U.S. EPA comments on June 2, 1994. A comment response document and Draft Final FS/PP-EA were completed and submitted to U.S. EPA and Ohio EPA on July 1, 1994. Approval with comment was received from the U.S. EPA on July 29, 1994.

**Issues/Corrective Actions:**

None to report.

**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:**

Remedy Screening/Remedy Selection Treatability Studies in support of the OU 1 Remedial Investigation/Feasibility Study (RI/FS) are complete. OU 1 treatability studies to support remedy design will be developed as needed.

**Issues/Corrective Actions:**

None to report.

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***Remedial Investigations/Feasibility Studies***

**1.5 Record of Decision**

**Status:**

DOE-FN and DOE-HQ comments to the Draft OU 1 Record of Decision (ROD) were received on July 19, 1994. Revisions to the Draft ROD in response to these comments have been initiated.

**1.6 Planned Activities for August 1994**

- Based on verbal input from the U.S. and Ohio EPA, final approval of the OU 1 Remedial Investigation/Baseline Risk Assessment and conditional approval of the OU 1 Feasibility Study/Proposed Plan-Environmental Assessment (FS/PP-EA) is expected in the first week of August 1994. Any required revisions to the OU 1 FS/PP-EA from the conditional approval will be initiated.
- The formal public comment period for the ROD draft is expected to be initiated on or around August 10, 1994.
- Revisions to the Draft OU 1 ROD in response to DOE FN-HQ comments will continue.

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***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**

DOE-FN submitted the Remedial Investigation Report for OU 2 to the U.S. EPA and Ohio EPA in October 1992. Based on December 17, 1992, review comments from the U.S. EPA and Ohio EPA on the RI Report and subsequent disapproval of the document, OU 2 required a second phase of Remedial Investigation sampling and analysis in order to meet the objectives of the March 1988 RI/FS Work Plan.

**Status:**

Complete.

**Issues/Corrective Actions:**

None to report.

**2.1.1 RI Field Investigation**

**Status:**

Samples of monitoring wells completed.

**Issues/Corrective Actions:**

None to report.

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**2.2 Remedial Investigation**

**Status:**

The comments received by Ohio EPA on the Remedial Investigation Report will result in minor text changes to the document. Verbal approval has been received from Jim Saric, U.S. Environmental Protection Agency with the official approval letter to follow.

**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
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

**2.3 Feasibility Study/Proposed Plan**

**Status:**

Based on Feasibility Study comments from U.S. EPA and Ohio EPA the OU 2 FS is being reformatted to add clarity and a new preferred alternative is being written into the Proposed Plan.

**Issues/Corrective Actions:**

- Reformat sections 4, 5, and 6 to identify OU 2-wide alternatives and clarify the Appendix.
- Rewrite Proposed Plan to include new preferred alternative.
- Revise remaining sections to address other U.S. EPA and Ohio EPA comments.

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**2.3 Feasibility Study/Proposed Plan (continued)**

**OPERABLE UNIT 2 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.	04/29/94 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 Planned Activities for August 1994**

- Incorporate EPA comments into the Draft OU 2 FS Report.
- Reformat sections 4, 5, and 6 of the Feasibility Study.
- Rewrite Proposed Plan to include the new preferred alternative.

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**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:**

Sixteen Field Work Packages (FWPs) were completed, approved, and distributed in July 1994 with the sampling identified therein, reflecting the last of the samples identified in the Sampling and Analysis Plan of the RI/FS Work Plan Addendum. This sampling does not, however, reflect any resampling which may be deemed necessary once the data from this initial round of sampling has been received and evaluated.

**Issues/Corrective Actions:**

None to report.

**3.1.1 Field Investigations**

**Scope:**

The Operable Unit 3 Field Investigations Program gathers information necessary to perform a baseline risk assessment. The program also identifies the nature of contaminants in the operable unit, refines estimates of volume of contaminated materials, and supports initial screening of applicable alternatives.

**Status:**

Field screening for chemical and metals contamination continued throughout July 1994 using two field portable X-Ray fluorescence analyzers, a field portable gas chromatograph, and photo-ionization detectors. Chemical screening was performed to support selection of intrusive media locations in the Soil Piles, South Access Road, North Access Road, Laboratory Building (Room W-22), Building 63 West Pad, "B" Street (between 1st and 2nd Streets), 1st Street, "B" Street (from 2nd to end), "101" Street, Oil/Graphite Burn Pad, 2nd Street, Plant One Thorium Warehouse, "102" Street, and K-65 Access Road.

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**3.1.1 Field Investigations (continued)**

Intrusive media sampling was initiated in the Main Electrical Strainer House, Plant 9 Cylinder Shed, Security Building, Drum Storage Building, Laboratory Pad, Thorium Warehouse, Clearwell Line, Clearwell Pump House, Storm Sewer System, Bulk Lime Handling Building, Pilot Plant Thorium Tank Farm, Laboratory Building, Utility Shed East of Rust Trailer, BDN Effluent Treatment Facility, Decontamination Pad, NFS Storage Pump House, Rotary Kiln/Drum Reconditioning Building, Plant 7 Pad, Decontamination Building, Ore Refinery Plant, Metal Dissolver Building, and Quonset Hut #3. Intrusive media sampling continued in the Engine House/Garage, Heavy Equipment Building, Soil Piles, Electrical Substation, Pilot Plant Annex, Main Electrical Transformers, and Six to Four Reduction #1. A total of 80 intrusive samples were collected in July 1994.

The remaining samples for Task Order 4 against the Radioanalytical Laboratory Services Task Order Subcontract, for the radioanalytical analysis of the OU 3 RI/FS samples, were shipped to TMA/Eberline in June 1994. Shipment of samples for Task Order 5, 7, and 8 against the Radioanalytical Laboratory Services Task Order Subcontract, to Core Laboratories, continued through July 1994. Task Order 10 was awarded to Environmental Physics, Inc. (EPI), in July 1994. Shipment of samples on Task Order 10 and Task Order 9 (previously awarded to Lockheed Laboratories) began in July 1994. In response to changes in the RI program, modifications were made in July to above five Task Orders, and proposed Task Orders 11 and 12 were cancelled. Shipments of the remaining samples for each of the above task orders is expected to be completed by the end of August 1994.

**Issues/Corrective Actions:**

None to report.

**3.2 Remedial Investigation**

**Status:**

A revised schedule for the RI has been proposed based on the elimination of the Baseline Risk Assessment, trending of early data, and a combined RI/FS Report. Cost savings will result from this revised schedule. As of July 22, 1994, approximately 79% of the chemical field characterization analytical data and 4% of the radiological field characterization analytical data have been received from the laboratories. Approximately 70% of planned chemical data to be collected has been validated.

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**3.2 Remedial Investigation (continued)**

**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 and extent of contaminants within the OU 3 study area. Estimates the volume of contaminated media and materials. Characterizes contamination in the former production area 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

**3.3 Feasibility Study/Proposed Plan**

**Status:**

OU 3 has begun formal activities on the Feasibility Study. Cost estimating and technology screening have begun. Recent meetings between DOE, U.S. EPA, and Ohio EPA have established a revised schedule for the OU 3 FS and subsequent documents such as the Proposed Plan and the Record of Decision. The dates are expected to be written into future changes of the Amended Consent Agreement. The revised submittal date for the OU 3 FS report to U.S. EPA is September 11, 1995. Additionally, the document will be submitted in conjunction with the OU 3 RI Report (a combined RI/FS Report).

The OU 3 FS will be prepared as a focused feasibility study with three alternatives and on the assumption of a performance-based Record of Decision (ROD), instead of a ROD specifying a very specific set of technologies to utilize. Four disposition options have been identified for materials generated by OU 3: on-site disposal, off-site disposal, controlled recycling, and unrestricted release for disposal or recycling. These options will each have criteria associated with them, such that not all options are to be available for every material stream. Treatment will be considered a viable option when required to meet at least one of the options and also when the cost effectively supports meeting a criteria which leads to a cheaper disposition option.

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**3.3 Feasibility Study/Proposed Plan (continued)**

**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.

Additionally, small in-situ testing activities at the site have been monitored to collect treatability information. These tests may support FS decision-making or screening, and as such will be summarized in treatability study reports to be submitted. For example, Plant 7 gross decontamination activities were closely monitored for removal of radioactivity. The results will be summarized in a report. Recycling contracts are also being closely monitored to develop definitive cost and secondary waste estimates for use in FS decision-making.

**Issues/Corrective Actions:**

None to report.

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**3.5 Interim Action - Record of Decision**

**Status:**

The IROD was signed by DOE on June 8, 1994 and forwarded for U.S. EPA signature on June 10. The U.S. EPA signed the IROD on July 22, 1994.

**Issues/Corrective Actions:**

None to report.

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

The Interim RD/RA Work Plan will detail how design activities will be performed to meet the scope of the interim remedial action for facility decontamination and dismantlement, and how this design will then be implemented through the remedial action program.

**Status:**

FERMCO and DOE-FN have had several interchanges during July 1994 to finalize what additional modifications/enhancements are necessary to meet DOE's and EPA's expectations for the OU 3 RD/RA Work Plan for the Interim Remedial Action. FERMCO continues to draw upon additional resources within its organization and teaming partner organizations to support this effort. Drafts of the revised Work Plan sections, and the initial Implementation Plan have gone through internal DOE review. A final draft of the Work Plan, including all appendices, is being developed for one last DOE review in late August, prior to finalization for submittal to U.S. EPA/Ohio EPA within sixty days after finalization of the IROD.

**Issues/Corrective Actions:**

None to report.

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**3.8 Planned Activities for August 1994**

- Initiate OU 3 FS execution based on DOE and EPA agreements on project path forward.
- Continue efforts in revising the RD/RA Work Plan for planned submittal to the EPAs within 60 days of signature of the IROD, including having an internal DOE-FN review of the document in early August 1994.
- Continue efforts to develop a waste management model in support of the RD/RA Work Plan, the OU 3 Waste Disposition Plan, and the Remedial Design Prioritization and Sequencing Report.
- Continue efforts to complete the shipment of samples under the fifth, seventh, eighth, ninth, and tenth Task Orders against the Radioanalytical Laboratory Services Task Order Subcontract.
- Complete field sampling on August 5, 1994.
- Continue development of additional small-scale treatability studies and plan FY-95 scope of work. Additional appendices for the Treatability Study Work Plan will be submitted.
- Complete treatability study reports on Plant 7 surface decontamination work and initial site recycling efforts.

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**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.

**Issues/Corrective Actions:**

None to report.

**4.2 Remedial Investigation**

**Status:**

The OU 4 Remedial Investigation Final Report was transmitted to the U.S. EPA on October 29, 1993. Ohio EPA approved the document on November 23, 1993. U.S. EPA conditionally approved the RI on January 6, 1994.

**Issues/Corrective Actions:**

None to report.

**4.3 Feasibility Study/Proposed Plan**

**Status:**

Complete.

**Issues/Corrective Actions:**

None to report.

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**4.3 Feasibility Study/Proposed Plan (continued)**

**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

**4.4 Treatability Studies**

**4.4.1 Bench Scale Treatability Studies**

A Treatability Study Work Plan addresses the additional information that is required to support the FS and subsequent remedy selection for OU 4. There are two separate treatability studies to support the OU 4 FS. One study considers cement stabilization of Silos 1, 2, and 3 material and chemical extraction, leachate precipitation, and leachate stabilization of Silos 1 and 2 material. The second treatability study considers the vitrification of Silos 1, 2, and 3 material.

**Status:**

Complete.

**4.4.2 Pilot Plant Treatability Studies**

A two phase Pilot Plant Treatability Study is being conducted to develop the design of facilities and equipment for the final remediation of OU 4. Phase I will utilize bentonite and surrogate materials, the pilot plant scale vitrification facility, and the empty Silo 4 as a test bed for demonstrating both vitrification and waste retrieval technologies. Phase II will utilize bentonite, actual K-65 and Silo 3 materials retrieved from the silos in addition to treating radon gas. A work plan has been developed for each phase.

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***Remedial Investigations/Feasibility Studies***

**4.4.2 Pilot Plant Treatability Studies (continued)**

**Status:**

The Pilot Plant Phase II Work Plan was submitted to U.S. EPA on May 11, 1994. Ohio EPA comments on the Phase II Work Plan were received on June 27, 1994. U.S. EPA comments on the Phase II Work Plan were received on July 11, 1994.

The Preliminary Safety Analysis Report for OU 4 was submitted to DOE-HQ for review. Approval by DOE-FN is anticipated in August 1994.

Approval to begin construction was received June 1, 1994 from DOE-FN. Construction of the Pilot Plant facility began on June 23, 1994.

Pilot Plant Phase I Operations are projected to begin in March 1995.

**Issues/Corrective Actions:**

None to report.

**4.5 Record of Decision**

**Status:**

Because of the sixty day schedule extension to the OU 4 Feasibility Study/Proposed Plan - Draft Environmental Impact Statement (FS/PP-DEIS) public comment period, the Amended Consent Agreement submittal date for the draft ROD has been extended by the U.S. EPA until August 9, 1994.

The public comment period on the OU 4 FS/PP-DEIS ended on June 19, 1994. The proposed draft Record of Decision for OU 4 has been revised in accordance with all comments received from the public. The proposed draft Record of Decision for OU 4 contains the Responsiveness Summary to all public comments.

Pursuant to the Amended Consent Agreement, the Record of Decision for Operable Unit 4 is required to be submitted to the United States Environmental Protection Agency on or before August 9, 1994.

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***Remedial Investigations/Feasibility Studies***

**4.6 Planned Activities for August 1994**

- Obtain DOE-HQ approval and submit the Proposed Draft Record of Decision for Remedial Action at OU 4 to the U.S. EPA and Ohio EPA.
- Obtain DOE-HQ approval of the PSAR for Operable Unit 4.
- Complete and transmit U.S. EPA comments responses along with Ohio EPA comment responses on the Pilot Plant Phase II Work Plan by August 5, 1994.
- Continue construction of the Phase I Pilot Plant facility.

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**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 Remedial Investigation (RI) Report, submitted to the EPAs on June 24, 1994, is undergoing concurrent internal review. This process revealed that 10 tables and 5 figures were not bound into the first sets of the Baseline Risk Assessment, Appendix A. A letter of explanation and the missing tables and figures are being provided to all recipients of those sets of the RI Report.

The internal review is concentrating on ensuring consistency between the RI Report and the Feasibility Study, which will be submitted to the EPAs on November 16, 1994, soon after the next version of the RI Report.

**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	08/23/94 C	09/22/94 C

C = Consent Agreement Date

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***Remedial Investigations/Feasibility Studies***

**5.2 Feasibility Study/Proposed Plan**

**Status:**

A draft of the OU 5 Feasibility Study and Proposed Plan was completed on July 21, 1994. The draft was submitted to DOE-FN on July 24, and is currently undergoing internal review.

Fifteen locations were sampled as part of the K<sub>1</sub> study to determine the solubility of uranium in soil in order to refine waste acceptance criteria for the OU 5 FS remedial alternatives. These field activities were completed on July 12 and the preparation of samples for off-site analysis was completed by July 29, 1994. Additional sample preparation and analyses are ongoing. The Project Specific Plan for this study is in internal review and will be transmitted to the EPAs in August 1994.

**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	01/15/95 C	02/14/95 C

C = Consent Agreement Date

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**5.3 Treatability Studies**

The current treatability activities are focusing on the OU 5 FS Report, specifically the development of the treatability appendix. In addition, bench-testing activities are providing data in support of remedial design issues at the FEMP.

**Status:**

Analytical data from contracted laboratory analyses for the contaminants of concern (COC) testing has been incorporated into the Sitewide Environmental Database (SED) and into the treatability study for the OU 5 FS. Data validation has been essentially completed for all contracted laboratory analyses for all other treatability data. The incorporation of OU 5 FS treatability data in the SED is one of the first uses of the SED for data other than RI data. The structuring of a treatability database in the Oracle-based SED has provided DOE with a template for a database structure on a national basis.

Treatability testing in support of OU 5's FS is focusing on optimizing physical separation processes within the proposed soil washing system. Laboratory bench testing is characterizing uranium distribution among the soil particle-size fractions for the 12 soils from the Fernald site. The soils are being evaluated for uranium loadings on the sand, silt, and clay fractions. These basic characterization tests could indicate that simple physical separation processes within the soil washing system may provide a specific fraction of the soil that meets both residual uranium mass concentrations as well as a form of residual uranium that is resistant to further leaching (as determined by equilibrium testing).

**Issues/Corrective Actions:**

None to report.

**5.4 Planned Activities for August 1994**

- Await comments from internal DOE-FN and DOE-HQ on OU 5 Draft FS. Revise document to address comments and prepare for submittal to the EPAs on November 16, 1994.
- Continue treatability testing in support of the OU 5 FS.
- Continue internal review of the OU 5 RI Report for consistency.
- Anticipate U.S. EPA and Ohio EPA comments on the Draft OU 5 RI.
- Meet, along with FERMCO, the Citizens' Task Force to discuss OU 5 FS/PP.

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**6.0 Community Relations**

**Status:**

The Fernald Envoys held their monthly meeting on July 6, 1994. Information shared with the envoys included: explanation of the demolition of Plant 7 to take place on September 10; status of the Strategic Plan; and, personnel changes at DOE-FN. Handouts included information from the June 14 Community Meeting; Questions and Answers from the June 28 Operable Unit 2 Workshop; monthly report on Waste Shipments; and, an announcement of the August 9 Operable Unit 1 Transportation Workshop. The envoys gave updates about various activities taking place within their stakeholder groups. The Envoy Program accepted applications to fill approximately 20 new envoy positions. Orientation for the new envoys was held July 20, 1994.

On July 12, DOE-FN briefed the four members of the Fernald Citizens Task Force's waste disposition subcommittee on the Federal Facilities Compliance Act (FFCA). The National Governors Association have assembled representatives from the 22 states that have mixed waste, to work with DOE headquarters to combat equity issues involved in complex-wide mixed waste treatment and disposal. Ohio is represented by Ohio EPA officials Tom Winston and Mike Savage with respect to negotiating the trade-offs that would be necessary to the implementation of any complex-wide plan. DOE headquarters issued a Development Framework for DOE sites that have mixed waste to use in compiling the individual Site Treatment Plans. The Site Treatment Plans will be evaluated by DOE headquarters and the National Governors Association at each stage of their development to form a complex-wide plan that will meet with the states' approval.

On July 19-20, DOE-HQ sponsored a workshop in Cincinnati focusing on DOE's mission to develop an approach to future use planning within the complex. Breakout sessions addressed topics such as public involvement, developing a process for making recommendations, ecosystem management, and identifying and gathering baseline information. The evening of July 20, The Fernald Citizens Task Force played its hands-on exercise, *FutureSite*, with DOE and contractor officials. Approximately 55 people played the game. On July 21, about 20 people were given a tour of the Fernald site.

On July 22, 1994, the U.S. EPA signed the *Interim Record of Decision* (IROD) document for Operable Unit 3.

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**6.0 Community Relations (continued)**

Progress continues on the revision of the Community Relations Plan (CRP), Volume III of the Remedial Investigation/Feasibility Study Workplan. Current activities include analyzing/interpreting the data collected from the 415 interviewees, developing draft copy of the current data, and updating sections of the CRP. Once the data from the 365 telephone interviews have been analyzed, it will be added to the data from the 50 in-person interviews with community leaders, and conclusions will be developed, as appropriate.

On July 27, 1994, Dr. Clyde Frank, DOE-HQ Deputy Assistant Secretary for Technology Development, attended a groundbreaking ceremony at the Fernald site for the new vitrification pilot plant.

The \$500 million lawsuit filed in 1990 by former workers at Fernald against National Lead of Ohio (NLO) went to trial the first week of July. A settlement was reached July 26, 1994. The proposed settlement includes lifetime medical monitoring for all NLO employees who worked at least six weeks at the plant and a \$15 million cash compensation. Since this is a class action, Judge Arthur Spiegel will hold a hearing on the settlement, probably in September or October of this year.

DOE-FN representatives attended the monthly FRESH meeting on July 28, 1994. Approximately 30 residents attended. The following topics were included in the briefing given by DOE-FN:

- Operable Unit 3: The proposed revision to RI/FS approach and schedule; The interim Record of Decision approved by U.S. EPA on July 22, 1994.
- Information on the upcoming dismantlement of Plant 7 scheduled for September 10 which will be open to the public for observation.

The Manager of the Fernald Envoy Program gave a brief presentation on the newly-initiated envoy program and it was very well received by FRESH. He also handed out the envoy roster listing all DOE/FERMCO envoys and the groups and organizations they represent.

**Issues/Corrective Action:**

None.

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***Remedial Investigations/Feasibility Studies***

**6.0 Community Relations (continued)**

**Planned Activities for August 1994**

- On Tuesday, August 9, 1994, DOE will hold a meeting to discuss with the public issues associated with the handling and transportation of wastes from Operable Unit 1 (waste pits) at Fernald. The workshop will be held at the Alpha Building, 10991 Hamilton-Cleves Road beginning at 7:00 p.m. The meeting will focus on packaging, handling, waste hauling operational procedures, emergency response, and prior notifications.
- A 30-day Public Comment Period on the *Operable Unit 1 Proposed Plan* will begin on August 10 and end on September 8, 1994.
- The week of August 15, 1994 has been tentatively set for the next meeting of the Fernald site natural resource trustees. The location has yet to be determined, but will be near the Fernald site. At this meeting, the minutes from the June 6, 1994 meeting will be approved and placed in the Public Environmental Information Center.
- On Wednesday, August 17, 1994, Ohio EPA will independently conduct an Availability Session to discuss the *Operable Unit 1 Proposed Plan* with the Task Force and FRESH.
- A public meeting and formal hearing to take comments on DOE's proposal to clean up Operable Unit 1 is tentatively scheduled for August 23, 1994. (The date depends on when EPA approves the Operable Unit 1 Proposed Plan for public comment.) The time and location of the meeting will be announced as soon as determined.
- The regular monthly FRESH meeting will be held August 25, 1994 at the Venice Presbyterian Church in Ross, Ohio beginning at 7:30 p.m.
- The Fernald Citizens Task Force has cancelled its regular monthly meeting for August. The next regular meeting will be September 17, 1994 (tentative) at Shriver Center, Miami University, Oxford, Ohio. At that meeting, Task Force members will evaluate the future use scenarios that resulted from the *FutureSite* exercise as a basis for developing their recommendation to DOE. That draft report is due in October, and it will be finalized in November 1994.

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**ENCLOSURE A**

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

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**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 July 1994.

**Summary - July 1994**

The total quantity of uranium discharged from the FEMP to the Great Miami River via Manhole 175 (Outfall 11o00004001) was 6.43 kilograms. The average uranium concentration for the previous 12 months was 0.38 mg/L. This is 42.7 % 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 July 1994. Based on 6.50 inches of rainfall in July 1994, the total quantity of uranium discharged to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 18.47 kilograms.

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**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:** JULY 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	0.206	81	86	0.20	0.16	68
2	0.125	72	86	0.19	0.09	64
3	0.170	18	86	0.05	0.03	17
4	0.144	14	86	0.04	0.02	14
5	0.209	14	86	0.02	0.02	7
6	0.239	14	90	0.01	0.01	5
7	0.286	14	90	0.01	0.01	4
8	0.256	14	90	0.02	0.02	6
9	0.176	27	90	0.05	0.04	18
10	0.135	45	90	0.12	0.06	41
11	0.200	45	90	0.12	0.09	41
12	0.212	36	90	0.11	0.09	37
13	0.367	41	90	0.09	0.13	31
14	0.366	135	95	0.24	0.33	81
15	0.312	144	104	0.26	0.31	88
16	0.205	234	108	0.47	0.36	159
17	0.238	189	113	0.41	0.37	139
18	0.248	**	**	0.35	0.33	118
19	0.244	**	**	0.42	0.39	142
20	0.291	**	**	0.31	0.34	105
21	0.240	**	**	0.42	0.38	142
22	0.360	**	**	0.33	0.45	111
23	0.141	**	**	0.39	0.21	132
24	0.221	**	**	0.41	0.34	139
25	0.272	**	**	0.30	0.31	101
26	0.232	**	**	0.30	0.26	101
27	0.329	**	**	0.22	0.27	74
28	0.307	**	**	0.23	0.27	78
29	0.223	**	**	0.25	0.21	84
30	0.250	**	**	0.30	0.28	101
31	0.190	**	**	0.35	0.25	118
<b>Total</b>	<b>7.394</b>				<b>6.43</b>	

\*\* Analytical results not yet available.

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EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: 001 Total Discharge

DATE: JULY 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.	0.239	37	48	0.23	0.21	78
Max.	0.367	234	113	0.47	0.45	159
Min.	0.125	0	0	0.01	0.01	4

The average uranium concentration for the previous twelve months was 0.38 mg/l. This is 42.7 percent of the Derived Concentration Guide(DOE Order 5400.5) for ingested water.

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

(2) Average values presented are flow-weighted.

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**EFFLUENT RADIATION REPORT**

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

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

**DATE:** JULY 1994

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

Based on 6.50 inches of rainfall for the month, the uranium discharge to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 18.47 kgs.

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**ENCLOSURE B**

**FFCA: INITIAL REMEDIAL MEASURES**

**AND OTHER OPEN ACTIONS**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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**INTRODUCTION**

Enclosure B describes actions undertaken at the FEMP during the period July 1, through July 31, 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 June 1994 was transmitted to the U.S. EPA on July 20, 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.

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**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 June 1994, was transmitted to the U.S. EPA on July 20, 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

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

July 31, 1994

<u>ACTION</u>	<u>DESCRIPTION</u>	<u>COMPLETION TIME AFTER FFCA SIGNED</u>	<u>FY1994 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/FS work is to be conducted in accordance with the U.S. EPA guidelines.	N/A	
2.B	--No Action Required--	-----	Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).
2.E	Amend and submit revised RI/FS Work Plan to U.S. EPA if deficiencies are found.		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).
2.F	Implement tasks described in the approved RI/FS Work Plan		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA sections 120 and 106(a).
3.	REPORTS AND RECORD KEEPING		
3.B	Submit monthly RI/FS progress reports.	monthly	The RI/FS Monthly Progress Report for June 1994 was transmitted to the U.S. EPA on July 20, 1994.

TABLE 1

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

July 31, 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 CY1992 was transmitted to the U.S. EPA on June 28, 1993 (DOE-2281-93).
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 1993.
E.1	Maintain records of monthly particulate matter emissions.	-----	Ongoing.

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

**July 31, 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	June's FFCA Monthly Progress Report was transmitted to the U.S. EPA on July 20, 1994.
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**ENCLOSURE C**

**FEDERAL FACILITY AGREEMENT:  
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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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**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 July 1, through July 31, 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).

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 CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
 MONTHLY PROGRESS REPORT

Period Ending July 31, 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. Installation of the bentonite completed 11/28/91.
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. Concentrations off-site remain well below performance goal of removal action.
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.	The Bentonite Effectiveness Environmental Monitoring Plan was resubmitted to the U.S. EPA for comment and approval on 3/13/92. EPA approval was received on 4/24/92. DOE used the approved ISCLT method to demonstrate compliance in the Final Report. The final report was submitted to U.S. EPA on May 17, 1994. There were no comments received from the U.S. EPA or the Ohio EPA. Commitment is 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.	Methodology for estimating radon-222 concentration reduction submitted to U.S. EPA per paragraph 20 of Part V. The final report was issued to the U.S. EPA on May 17, 1994. The performance of the removal action was a success; no further action is required. Action completed.

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

Period Ending July 31, 1994

<u>FFA Part, Paragraph(s)</u>	<u>Description of Commitment</u>	<u>FFA Due Date</u>	<u>Status of Commitment</u>
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 July 1994.
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. An estimate of radon flux from the K-65 Silo 3 was submitted to the U.S. EPA on 12/17/91. Radon flux for the silo was estimated to be above 20 pCi/m <sup>2</sup> -s.

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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 July 31, 1994

<u>FFA Part, Paragraph(s)</u>	<u>Description of Commitment</u>	<u>FFA Due Date</u>	<u>Status of Commitment</u>
Part V, 28	Submit documentation or estimates of current radon-222 emissions from existing but newly discovered sources that contain radium-226 in sufficient concentrations to emit radon-222 in excess of NESHAP Subpart Q prior to final remediation.	Within 30 days of discovery.	No new sources identified.
Part V, 30	Submit methodology for direct measurement or other appropriate means of characterization of the relevant emissions pursuant to paragraph 29 of the FFA.	Within 45 days of the U.S. EPA response pursuant to paragraph 29.	None required.
Part V, 31	Submit results of measurements pursuant to paragraph 30.	Within 30 days of U.S. EPA approval of characterization method.	None required.
Part VI, 31	Submit monthly report on steps undertaken to implement Part V of the FFA-CARE and the data obtained in the preceding month.	20th day of succeeding month.	The progress report being submitted herewith as an integral part of the CERCLA Consent Agreement Monthly Progress Report.

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

**Period Ending July 31, 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).

0082

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.

C-7

000062

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

5866

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: July 1994

Day	Ambient		Temperature Head Space ° F	Inter. Hum. %	Diff. Press In. HG	Head Space Radon (pCi/l)
	Temp ° F	Press In. Hg.				
1	71.8	29.44	63.6	*	0.004	528,000
2	73.2	29.42	64.1	*	0.004	435,000
** 3	73.3	29.51	64.4	*	0.002	475,000
4	78.7	29.53	64.8	*	0.006	625,000
5	81.3	29.52	65.6	*	0.007	601,000
6	77.5	29.47	66.2	*	0.005	602,000
7	78.7	29.43	66.2	*	0.006	581,000
8	76.3	29.44	66.5	*	0.016	467,000
9	72.4	29.51	66.4	*	0.033	306,000
10	67.0	29.57	66.1	*	0.003	199,000
*** 11	65.2	29.58	65.8	*	0.003	382,000
12	71.4	29.51	65.8	*	0.004	572,000
** 13	69.9	29.47	66.0	*	0.011	551,000
** 14	74.6	29.44	65.9	*	0.016	550,000
** 15	71.8	29.50	66.1	*	-0.006	414,000
16	70.3	29.57	65.8	*	0.004	523,000
** 17	71.3	29.50	66.1	*	0.023	577,000
** 18	74.1	29.50	66.4	*	0.050	467,000
19	74.7	29.51	66.6	*	0.005	525,000
20	79.4	29.52	67.0	*	0.008	598,000
*** 21	68.2	29.44	67.5	*	0.003	703,000
*** 22	n/a	n/a	n/a	n/a	n/a	n/a
*** 23	n/a	n/a	n/a	n/a	n/a	n/a
*** 24	n/a	n/a	n/a	n/a	n/a	n/a
*** 25	78.7	29.30	67.5	*	0.008	369,000
26	68.1	29.31	67.3	*	0.003	435,000
27	66.5	29.29	66.9	*	0.014	582,000
28	65.8	29.35	66.6	*	0.019	317,000
29	62.9	29.47	66.2	*	0.002	286,000
*** 30	57.0	29.54	65.8	*	0.000	202,000
*** 31	n/a	n/a	n/a	n/a	n/a	n/a
ARITHMETIC MEAN	71.9	29.47	66.0	0.0	0.009	476,741
MAXIMUM	81.3	29.58	67.5	0.0	0.050	703,000
MINIMUM	57.0	29.29	63.6	0.0	-0.006	199,000
MEDIAN	71.8	29.50	66.1	0.0	0.005	523,000

Note: \* - Silo #1 Relative Humidity was inoperable, default value = 0.  
 \*\* - Some Delta Pressure values were outside of range restrictions.  
 \*\*\* - Some or all data lost due to maintenance activities on 7-11-94.  
 Some or all data lost due to relocation of the DLS from 7-21-94 to 7-25-94.  
 Some or all data lost due to power outage from 7-30-94 to 7-31-94.

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: July 1994

Day	Ambient Temp °F	Press In. Hg.	Temperature Head Space °F	Inter. Hum. %	Diff. Press In. HG	Head Space Radon (pCi/l)
1	71.8	29.44	62.3	82.5	-0.013	3,466,000
2	73.2	29.42	62.7	82.4	-0.014	3,341,000
** 3	73.3	29.51	63.0	82.1	-0.020	3,409,000
4	78.7	29.53	63.4	82.0	-0.014	3,468,000
5	81.3	29.52	64.1	82.0	-0.014	3,492,000
6	77.5	29.47	64.6	82.0	-0.014	3,550,000
7	78.7	29.43	64.6	82.0	-0.014	3,531,000
8	76.3	29.44	64.9	82.0	0.000	3,425,000
9	72.4	29.51	64.8	82.0	0.027	3,434,000
10	67.0	29.57	64.6	81.7	-0.013	3,590,000
*** 11	65.2	29.58	64.2	82.0	-0.013	3,618,000
12	71.4	29.51	64.2	81.9	-0.013	3,627,000
** 13	69.9	29.47	64.5	81.8	0.002	3,647,000
14	74.6	29.44	64.3	81.3	0.004	3,620,000
15	71.8	29.50	64.5	81.1	-0.003	3,563,000
16	70.3	29.57	64.4	81.3	-0.013	3,576,000
** 17	71.3	29.50	64.6	81.4	0.013	3,583,000
** 18	74.1	29.50	64.8	81.5	0.044	3,584,000
19	74.7	29.51	65.0	81.5	-0.013	3,589,000
20	79.4	29.52	65.5	81.3	-0.014	3,545,000
*** 21	68.2	29.44	65.8	81.5	-0.013	3,649,000
*** 22	n/a	n/a	n/a	n/a	n/a	n/a
*** 23	n/a	n/a	n/a	n/a	n/a	n/a
*** 24	n/a	n/a	n/a	n/a	n/a	n/a
*** 25	78.7	29.30	65.8	41.9	-0.014	3,436,000
26	68.1	29.31	65.8	60.0	-0.013	3,735,000
27	66.5	29.29	65.3	60.0	0.000	3,690,000
28	65.8	29.35	65.0	60.0	0.029	3,675,000
29	62.9	29.47	64.7	60.0	-0.013	3,541,000
*** 30	57.0	29.54	64.3	60.0	-0.013	3,551,000
*** 31	n/a	n/a	n/a	n/a	n/a	n/a
ARITHMETIC MEAN	71.9	29.47	64.5	76.3	-0.005	3,552,407
MAXIMUM	81.3	29.58	65.8	82.5	0.044	3,735,000
MINIMUM	57.0	29.29	62.3	41.9	-0.020	3,341,000
MEDIAN	71.8	29.50	64.6	81.8	-0.013	3,563,000

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

\*\*\* - Some or all data lost due to maintenance activities on 7-11-94.

Some or all data lost due to relocation of the DLS from 7-21-94 to 7-25-94.

Some or all data lost due to power outage from 7-30-94 to 7-31-94.

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

MONTH: JULY  
YEAR: 94

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

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

Daily Averages:	K-05, NW (pCi/L)	K-05, SW (pCi/L)	K-05, NE (pCi/L)	K-05, SE (pCi/L)
07/01/94	1.7	1.5	1.7	1.8
07/02/94	1.7	1.7	1.8	2.2
07/03/94	1.2	1.4	0.9	0.6
07/04/94	1.6	1.2 (a)	1.3	1.4
07/05/94	1.6	1.5	2.5	2.0
07/06/94	2.3	1.6	1.6	2.3
07/07/94	1.7	1.5	1.3	1.9
07/08/94	0.8	0.5	0.2	0.4
07/09/94	0.6	0.6	0.6	0.7
07/10/94	1.1	1.2	1.7	1.7
07/11/94	1.1	1.1	1.3	1.7
07/12/94	1.5	1.5	3.9	2.9
07/13/94	1.6	1.6	2.4	2.4
07/14/94	1.0	1.0 (a)	0.6	1.1
07/15/94	0.9	1.0	0.8	0.8
07/16/94	1.3	1.2 (a)	2.4	2.1
07/17/94	1.5	1.5	2.4	2.5
07/18/94	0.9	1.1	2.3	2.3
07/19/94	1.4	1.3	2.9	2.3
07/20/94	1.5	1.2	1.4	1.8
07/21/94	1.5	1.1	2.6	1.3
07/22/94	0.7	0.7	1.9	0.7
07/23/94	1.2	1.2	5.2	2.2
07/24/94	1.4	1.5	4.7	1.7
07/25/94	2.9	1.2	5.5	2.8
07/26/94	1.4	1.3	4.3	2.1
07/27/94	1.3	1.3	3.3	2.4
07/28/94	0.9	0.6	2.5	1.4
07/29/94	1.2	1.4	2.6	1.5
07/30/94	1.0	0.9	2.1	1.5
07/31/94	1.4	1.3	5.9	2.3

Monthly Averages:	K-05, NW (pCi/L)	K-05, SW (pCi/L)	K-05, NE (pCi/L)	K-05, SE (pCi/L)
AVERAGE:	1.3	1.2	2.4	1.8
MAXIMUM:	2.9	1.7	5.5	2.9
MINIMUM:	0.6	0.5	0.2	0.4
MEDIAN:	1.4	1.3	2.4	1.9
STD. DEV.:	0.5	0.3	1.4	0.6

## STANDARD LEGEND:

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

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

MONTH: **JULY**  
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-5 (pCi/L)	AMS-6 (pCi/L)	PILOT PLANT (pCi/L)	BKGD-1 (pCi/L)	BKGD-2 (pCi/L)
07/01/94	1.2	0.9	1.1	0.8	0.6
07/02/94	1.1	1.0	1.0	0.7	0.6
07/03/94	0.9	0.8	0.8	0.6	0.4
07/04/94	1.1	0.8	0.8	0.7	0.6
07/05/94	1.3	1.1	1.0	0.8 (a)	0.7
07/06/94	1.0	1.2	1.0	0.9	0.7
07/07/94	0.9	1.0	0.9	0.7 (b)	0.7
07/08/94	0.5	0.4	0.5	(b)	0.4
07/09/94	0.5	0.4	0.6	(b)	0.4
07/10/94	1.0	0.9	0.9	(b)	0.6
07/11/94	1.2	0.8	0.8	(b)	0.6
07/12/94	1.3	1.3	1.2	(b)	0.7
07/13/94	0.9 (c)	1.0	1.0	(b)	0.7
07/14/94	(c)	0.5	0.5	(b)	0.4
07/15/94	(c)	0.5	0.6	0.3 (b)	0.5
07/16/94	(e)	0.8	0.8	0.8	0.6
07/17/94	(e)	1.0	1.0	0.9	0.7
07/18/94	(c)	0.7	0.9	0.7 (b)	0.6
07/19/94	(c)	1.1	1.1	(b)	0.7
07/20/94	(c)	1.1	1.0	(b)	0.7
07/21/94	(c)	0.7	0.8	(b)	0.5
07/22/94	(c)	0.8	0.8	(b)	0.4
07/23/94	(e)	1.0	1.1	(b)	0.6
07/24/94	(e)	1.1	1.1	(b)	0.7
07/25/94	0.2 (c)	1.0	1.0	(b)	0.7
07/26/94	1.0	1.0	1.1	(b)	0.7
07/27/94	0.9	0.9	1.0	(b)	0.7
07/28/94	0.8	0.7	0.7	0.1 (b)	0.5
07/29/94	0.9	1.0	1.0	0.9	0.7
07/30/94	0.7	0.9	0.8	0.8	0.6
07/31/94	1.1	1.2	1.1	0.9	0.7

Monthly Averages:	AMS-5 (pCi/L)	AMS-6 (pCi/L)	PILOT PLANT (pCi/L)	BKGD-1 (pCi/L)	BKGD-2 (pCi/L)
AVERAGE:	0.9	0.9	0.9	0.7	0.6
MAXIMUM:	1.3	1.3	1.2	0.9	0.7
MINIMUM:	0.2	0.4	0.5	0.1	0.4
MEDIAN:	0.7	1.0	1.0	0.1	0.6
STD. DEV.:	0.3	0.2	0.2	0.2	0.1

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

000066

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

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

**K-65 SILO REPORT  
RADON CONCENTRATIONS**

MONTH: JULY, 1994

REPORT GENERATED: 08/01/94

**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.
07/01/94	526,000	1,171,000	107,000	257,000	3,468,000	3,622,000	3,226,000	91,000
07/02/94	435,000	1,170,000	69,000	260,000	3,341,000	3,388,000	2,153,000	298,000
07/03/94	475,000	871,000	101,000	236,000	3,409,000	3,589,000	2,170,000	142,000
07/04/94	625,000	1,172,000	99,000	237,000	3,468,000	5,256,000	3,292,000	125,000
07/05/94	601,000	1,171,000	145,000	231,000	3,492,000	6,130,000	3,226,000	175,000
07/06/94	602,000	1,171,000	96,000	234,000	3,550,000	3,688,000	3,243,000	81,000
07/07/94	581,000	974,000	127,000	254,000	3,531,000	3,721,000	3,226,000	117,000
07/08/94	467,000	917,000	92,000	218,000	3,425,000	3,688,000	1,675,000	230,000
07/09/94	308,000	783,000	94,000	150,000	3,434,000	3,688,000	2,863,000	157,000
07/10/94	199,000	663,000	58,000	115,000	3,590,000	3,738,000	3,292,000	78,000
* 07/11/94	382,000	1,111,000	55,000	258,000	3,818,000	3,804,000	3,408,000	71,000
07/12/94	572,000	1,171,000	120,000	256,000	3,627,000	5,536,000	3,259,000	167,000
07/13/94	551,000	1,173,000	161,000	249,000	3,647,000	5,454,000	2,036,000	204,000
07/14/94	550,000	1,005,000	155,000	226,000	3,620,000	3,804,000	3,193,000	110,000
07/15/94	414,000	1,173,000	76,000	222,000	3,563,000	4,035,000	3,012,000	113,000
07/16/94	523,000	897,000	120,000	244,000	3,576,000	3,754,000	3,292,000	83,000
07/17/94	577,000	1,170,000	110,000	242,000	3,583,000	4,018,000	3,111,000	101,000
07/18/94	467,000	1,173,000	106,000	228,000	3,584,000	3,721,000	3,457,000	64,000
07/19/94	525,000	933,000	59,000	281,000	3,569,000	3,820,000	3,259,000	111,000
07/20/94	598,000	936,000	137,000	238,000	3,545,000	3,721,000	3,193,000	97,000
** 07/21/94	703,000	962,000	296,000	182,000	3,649,000	3,754,000	2,880,000	122,000
** 07/22/94	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
** 07/23/94	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
** 07/24/94	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
** 07/25/94	436,000	903,000	85,000	224,000	3,803,000	3,820,000	1,658,000	329,000
07/26/94	435,000	949,000	123,000	206,000	3,735,000	3,936,000	3,325,000	89,000
07/27/94	582,000	995,000	136,000	265,000	3,690,000	3,886,000	2,036,000	187,000
07/28/94	317,000	854,000	33,000	248,000	3,875,000	3,870,000	3,474,000	79,000
07/29/94	286,000	762,000	30,000	216,000	3,541,000	3,804,000	3,111,000	113,000
*** 07/30/94	202,000	685,000	42,000	155,000	3,551,000	3,705,000	3,309,000	74,000
*** 07/31/94	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

**Grab Samples of Headspace**

Date	SILO 1 Concentration	SILO 2 Concentration
07/05/94	1,510,000	4,402,000
07/07/94	602,000	2,918,000
07/11/94	1,559,000	4,668,000
07/15/94	123,000	4,564,000
07/18/94	799,000	2,836,000
07/25/94	1,513,000	3,472,000
07/28/94	147,000	4,615,000

Notes: 1. All values reported to the nearest thousand pCi/L to remain consistent with the precision of the calibration source.

\* Partial data loss due to DLS malfunction as a result of maintenance activities.

\*\* Data loss due to a change in location of the DLS.

\*\*\* Data loss due to planned power outage.

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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 JULY 31, 1994**

**ENCLOSURE D**

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

000068

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

**Period Ending July 31, 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."

0082

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

**Period Ending July 31, 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:** JUNE 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	0.134	243.2	99	< 1.0	0.0005	< 1.0	8.8	8.9
2	0.016	288.3	86	< 1.0	0.0001	1.0	8.7	8.8
3	0.000							
4	0.000							
5	0.000							
6	0.000							
7	0.145	288.3	86	< 1.0	0.0005	2.0	8.9	9.4
8	0.198	220.7	99	1.0	0.0007	< 1.0	8.8	9.0
9	0.180	265.8	72	3.7	0.0025	< 1.0	8.8	9.1
10	0.195	337.8	72	< 1.0	0.0007	< 1.0	9.1	9.4
11	0.000							
12	0.000							
13	0.119	193.7	108	< 1.0	0.0005	1.8	7.9	8.2
14	0.211	166.7	68	< 1.0	0.0008	< 1.0	7.8	8.8
15	0.161	202.7	77	< 1.0	0.0006	1.4	7.9	8.3
16	0.176	198.2	77	< 1.0	0.0007	1.6	8.0	8.4
17	0.181	198.2	77	< 1.0	0.0007	1.2	8.2	8.4
18	0.000							
19	0.000							
20	0.000							
21	0.000							
22	0.000							
23	0.000							
24	0.164	229.7	81	2.3	0.0014	4.4	7.9	8.6
25	0.167	229.7	81	1.3	0.0008	1.4	8.4	8.5
26	0.148	256.8	81	1.0	0.0006	< 1.0	8.2	8.4
27	0.139	153.2	81	< 1.0	0.0005	< 1.0	7.8	8.2
28	0.126	162.2	153	< 1.0	0.0005	1.0	7.9	8.1
29	0.125	315.3	90	< 1.0	0.0005	< 1.0	7.9	8.0
30	0.136	279.3	95	< 1.0	0.0005	< 1.0	7.9	8.1
<b>Total</b>	<b>2.721</b>				<b>0.0131</b>			

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

**5866**

**Period Ending July 31, 1994**

**EFFLUENT RADIATION REPORT (cont.)**

**FACILITY:** Fernald Environmental Management Project  
**LOCATION:** [SP1] IAWWT - T108  
**DATE:** JUNE 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
<b>Avg.</b>	0.091	232	86	1.27	0.0007
<b>Max.</b>	0.211	338	153	3.70	0.0025
<b>Min.</b>	0.000	153	68	< 1.0	0.0001

---

**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.

000071

0082

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

**Period Ending July 31, 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:** JUNE 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	0.000							
2	0.000							
3	0.000							
4	0.000							
5	0.000							
6	0.000							
7	0.161	220.7	99	2.5	0.0015	2.8	8.9	9.4
8	0.197	265.8	72	4.8	0.0036	< 1.0	8.8	9.0
9	0.200	337.8	72	8.2	0.0062	< 1.0	8.8	9.1
10	0.159	261.3	95	2.6	0.0016	< 1.0	9.1	9.4
11	0.000							
12	0.000							
13	0.131	193.7	108	1.5	0.0007	1.4	7.9	8.2
14	0.211	166.7	68	2.5	0.0020	< 1.0	7.8	8.8
15	0.201	202.7	77	< 1.0	0.0008	1.4	7.9	8.3
16	0.197	198.2	77	1.8	0.0013	1.4	8.0	8.4
17	0.164	198.2	77	1.8	0.0011	1.0	8.2	8.4
18	0.000							
19	0.000							
20	0.000							
21	0.000							
22	0.000							
23	0.000							
24	0.208	229.7	81	1.4	0.0011	1.6	7.9	8.6
25	0.074	229.7	81	2.4	0.0007	1.0	8.4	8.5
26	0.000							
27	0.000							
28	0.084	162.2	153	2.9	0.0009	1.4	7.9	8.1
29	0.194	315.3	90	3.5	0.0026	1.4	7.9	8.0
30	0.193	279.3	95	3.6	0.0026	< 1.0	7.9	8.1
Total	2.374				0.0267			

000072

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

**5866**

**Period Ending July 31, 1994**

**EFFLUENT RADIATION REPORT (cont.)**

**FACILITY:** Fernald Environmental Management Project

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

**DATE:** JUNE 1994

	<u>Flow (MGD)</u>	<u>Total Alpha(2) (pCi/l)</u>	<u>Total Beta(2) (pCi/l)</u>	<u>Total U (ug/l)(2)</u>	<u>Total U (kgs)</u>
Avg.	0.079	237	85	2.97	0.0019
Max.	0.211	338	153	8.20	0.0062
Min.	0.000	162	68	< 1.0	0.0007

---

**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.

0080

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

Period Ending July 31, 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: JUNE 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)
1	0.134	243	99	0.44	0.22
2	0.084	288	86	0.47	0.15
3	0.000				
4	0.000				
5	0.000				
6	0.089	441	189	0.87	0.29
7	0.306	221	99	0.36	0.42
8	0.395	266	72	0.36	0.54
9	0.380	338	72	0.36	0.52
10	0.378	261	95	0.38	0.54
11	0.037	185	90	0.26	0.04
12	0.290	207	86	0.24	0.26
13	1.802	194	108	0.31	2.11
14	0.422	167	68	0.29	0.46
15	0.362	203	77	0.31	0.42
16	0.373	198	77	0.32	0.45
17	0.345	198	77	0.32	0.42
18	0.000				
19	0.000				
20	0.000				
21	0.000				
22	0.000				
23	0.000				
24	0.372	230	< 81	0.35	0.49
25	0.241	230	< 81	0.28	0.26
26	1.329	257	< 81	0.34	1.71
27	1.686	153	< 81	0.21	1.34
28	1.079	162	153	0.28	1.14
29	0.319	315	90	0.45	0.54
30	0.329	279	95	0.41	0.51
	10.752				12.85

000074

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

**5866**

**Period Ending July 31, 1994**

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (606) SWRB

DATE: JUNE 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.358	214	67	0.32	0.61
Max.	1.802	441	189	0.87	2.11
Min.	0.000	153	67	0.21	0.04

---

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.

8888

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

**Period Ending July 31, 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:** JUNE 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)
1	0.102	446	437	1.10	0.42
2	0.095	176	122	0.38	0.14
3	0.099	207	158	0.48	0.18
4	0.097	266	221	0.59	0.22
5	0.099	360	356	0.83	0.31
6	0.083	311	297	0.55	0.17
7	0.097	158	86	0.39	0.14
8	0.097	171	194	0.37	0.14
9	0.099	239	203	0.54	0.20
10	0.100	239	176	0.48	0.18
11	0.092	171	158	0.46	0.16
12	0.098	261	243	0.48	0.18
13	0.100	225	243	0.55	0.21
14	0.103	252	315	0.59	0.23
15	0.100	288	212	0.53	0.20
16	0.096	225	266	0.59	0.21
17	0.094	252	212	0.58	0.21
18	0.101	248	315	0.59	0.23
19	0.097	243	320	0.61	0.22
20	0.095	266	541	0.67	0.24
21	0.097	338	329	0.72	0.26
22	0.072	378	495	0.71	0.19
23	0.070	329	495	0.67	0.18
24	0.069	342	495	0.71	0.19
25	0.070	446	495	0.84	0.22
26	0.070	351	374	0.77	0.20
27	0.071	396	392	0.79	0.21
28	0.069	356	631	0.86	0.22
29	0.071	495	369	0.82	0.22
30	0.069	365	333	0.76	0.20
<b>Total</b>	<b>2.672</b>				<b>6.30</b>

000076

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

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**Period Ending July 31, 1994**

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (605) BDN/VETS

DATE: JUNE 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.089	285	304	0.62	0.21
Max.	0.103	495	631	1.10	0.42
Min.	0.069	158	86	0.37	0.14

---

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.

000077

0282

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

Period Ending July 31, 1994

## EFFLUENT REPORT

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

LOCATION: [605]  
Biodenitrification Tower  
BDN Tower Effluent

DATE: JUNE 1994

Day	C-BOD5 (mg/l)	TSS (mg/l)	NH3-N (mg/l)	NO3-N (mg/l)	Chromium (ug/l)	Copper (ug/l)	Nickel (ug/l)	Hex-Chrom (ug/l)
1		5	< 0.10	0.4	< 6.0	< 14.0	< 17.0	< 6.0
2								
3								
4								
5								
6								
7	2.66							
8								
9								
10								
11								
12								
13								
14	5.20	6	0.13	1.4	< 6.0	15.8	< 17.0	< 6.0
15								
16								
17								
18								
19								
20		7	0.10	1.8	8.7	< 14.0	< 17.0	< 6.0
21	7.16							
22								
23								
24								
25								
26		11	< 0.10	1.4	< 6.0	< 14.0	< 17.0	< 6.0
27								
28								
29	2.00							
30								

000078

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

5866

**Period Ending July 31, 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:** JUNE 1994

Day	Flow (MGD)	Total U (ug/l)	Total U (kgs)
1	2.103	15	0.12
2	2.154	12	0.10
3	2.103	15	0.12
4	2.220	17	0.14
5	1.776	20	0.13
6	2.087	18	0.14
7	1.518	25	0.14
8	1.373	28	0.15
9	1.474	25	0.14
10	1.423	23	0.12
11	1.435	24	0.13
12	1.470	24	0.13
13	1.375	15	0.08
14	0.000		
15	2.107	22	0.18
16	1.710	16	0.10
17	1.744	16	0.11
18	1.971	17	0.13
19	2.189	15	0.12
20	1.952	18	0.13
21	1.739	17	0.11
22	2.419	16	0.15
23	1.830	15	0.10
24	2.485	17	0.16
25	2.003	15	0.11
26	2.015	15	0.11
27	1.511	14	0.08
28	1.848	17	0.12
29	1.959	15	0.11
30	2.035	13	0.10
<b>Total</b>	<b>54.028</b>		<b>3.58</b>

000075

0080

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

**Period Ending July 31, 1994**

**EFFLUENT RADIATION REPORT (cont.)**

**FACILITY:** Fernald Environmental Management Project

**LOCATION:** South Plume

**DATE:** JUNE 1994

	<u>Flow (MGD)</u>	<u>Total U (ug/l)(2)</u>	<u>Total U (kgs)</u>
Avg.	1.801	18	0.12
Max.	2.485	28	0.18
Min.	0.000	12	0.08

---

**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.

000080

5866

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

**Period Ending July 31, 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:** JUNE 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	2.237	23	< 63	42	0.36		7.1
2	2.238	14	< 63	22	0.19	7.6	7.3
3	2.103	9	< 63	12	0.10		7.1
4	2.220	9	< 63	11	0.09		7.4
5	1.776	< 9	< 68	14	0.09		7.1
6	2.176	27	< 68	35	0.29		7.4
7	1.824	23	< 68	30	0.21		7.1
8	1.768	14	< 68	30	0.20		6.9
9	1.854	23	< 68	32	0.22	1.4	7.0
10	1.801	18	< 68	30	0.20		7.5
11	1.472	14	< 68	23	0.13		7.5
12	1.760	23	< 68	29	0.19		7.4
13	3.177	72	< 68	150	1.80		7.2
14	0.422	41	< 68	52	0.08		7.3
15	2.469	23	< 77	28	0.28		7.4
16	2.083	14	< 77	28	0.22	5.6	7.0
17	2.089	18	< 77	25	0.20		7.1
18	1.971	< 14	< 77	16	0.12		7.4
19	2.189	< 14	< 81	16	0.13		7.3
20	1.952	< 14	< 81	13	0.10		7.7
21	1.739	< 14	< 81	10	0.07		7.3
22	2.419	< 14	< 81	15	0.14		7.6
23	1.830	< 14	< 81	16	0.11	7.8	7.0
24	2.857	< 14	< 81	20	0.22		7.2
25	2.244	18	< 81	36	0.31		7.4
26	3.344	41	< 81	73	0.92		7.2
27	3.197	63	< 81	110	1.33		7.4
28	2.927	68	< 86	100	1.11		7.3
29	2.278	18	< 86	35	0.30		7.2
30	2.364	14	< 86	26	0.23		7.3
<b>Total</b>	<b>64.780</b>				<b>9.92</b>		

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

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

**Period Ending July 31, 1994**

**EFFLUENT RADIATION REPORT (cont.)**

**FACILITY:** Fernald Environmental Management Project

**LOCATION:** [SP3] Valve House

**DATE:** JUNE 1994

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	2.159	22	0	40	0.33
Max.	3.344	72	0	150	1.80
Min.	0.422	0	0	10	0.07

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

**Period Ending July 31, 1994**

**EFFLUENT REPORT**

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

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

**DATE:** JUNE 1994

<u>Day</u>	<u>DO (mg/l)</u>	<u>IRON (mg/l)</u>	<u>MANGANESE (mg/l)</u>
1			
2	9.7	0.72	0.2
3			
4			
5			
6			
7			
8			
9	9.0	2.62	0.1
10			
11			
12			
13			
14			
15			
16	9.3	0.37	0.1
17			
18			
19			
20			
21			
22			
23			
24	9.1	1.37	0.3
25			
26			
27			
28			
29			
30			

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