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**CONSOLIDATED CONSENT AGREEMENT/
FEDERAL FACILITY COMPLIANCE AGREEMENT
MONTHLY PROGRESS REPORT PERIOD ENDING
APRIL 30, 1991**

05/17/91

**DOE-FSO/EPA
48
REPORT**

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

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Introduction

The Consent Agreement (CA) under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Section 120 and 106(a) and the Federal Facility Compliance Agreement (FFCA) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (U.S. EPA), signed April 9, 1990 and July 18, 1986, 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 Feed Materials Production Center (FMPC) during the period April 1 through April 30, 1991 and planned actions for the period May 1 through May 31, 1991.

Work completed in April by the DOE includes the following:

- The final Initial Screening of Alternatives Report for Operable Unit 2 was submitted to the U.S. EPA on April 18, 1991.
- Resolution of the U.S. EPA comments, concerning the conditional approval with modifications on the Waste Pit Area Runoff Control Removal Action Work Plan, was achieved in April. Additionally, the final modifications to the Sampling and Analysis Plan were made with the documentation completed and submitted for internal review in April.
- Completion of the K-65 Decant Sump Tank Liquid removed on April 16, 1991 (10 days ahead of schedule).
- Initiated the Slant Borings underneath the K-65 Silos and the sampling of the K-65 silos berms.

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WORK ASSIGNMENTS AND PROGRESS

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

- o CA Section IX - Removal Actions.
- o CA Section X - Remedial Investigation/Feasibility Study.
- o Enclosure A - Wastewater flows and radionuclide concentrations under CA Section XXIII.B.
- o Enclosure B - FFCA: Initial Remedial Measures and Other Open Actions.
- o Enclosure C - Drilling/Boring Logs.

CA Section IX. Removal Actions

This section provides an update of activities associated with the implementation of Removal Actions (RAs) at the FMPC during April 1991. Information is presented for each of the removal actions identified in the Consent Agreement, and the two recently agreed upon Removal Actions:

- o RA No. 1, Contaminated Water Beneath FMPC Buildings.
- o RA No. 2, Waste Pit Area Runoff Control.
- o RA No. 3, South Groundwater Contamination Plume.
- o RA No. 4, Silos 1 and 2.
- o RA No. 5, K-65 Decant Sump Tank.
- o RA No. 6, Waste Pit 6 Residues.
- o RA No. 7, Outfall Pipeline Replacement (Previously Outfall Pipeline Investigation and Repair).
- o RA No. 8, Plant 1 Pad Continuing Release.

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RA No. 1, Contaminated Water Beneath FMPC Buildings

Plant 6 - Groundwater pumping activities from the three (3) wells and the clarifier pit remained curtailed during April. Analytical results from Volatile Organic Compounds/Hazardous Substance List (VOC/HSL) sampling have been received from the laboratory. Activities required to install, start-up, and operate the Plant 6 perched water extraction system continued on schedule.

Plants 2/3 and Plant 9 - The preliminary engineering necessary to locate and design the extraction and treatment systems specified within the approved work scope continued on schedule. Engineering activities associated with the detailed design and procurement of piping and equipment to support the removal and treatment of contaminated perched water beneath Plant 9, Plants 2/3 and Plant 8 are underway. The design drawings and specifications for Plants 2/3 and 9 extraction systems will arrive from the Architect/Engineer (A/E) in early May. These drawings will represent the 90% complete toward CFC (Certified For Construction) and will undergo immediate review.

Activities in May will focus on the procurement and installation of equipment for the Plant 8 treatment system and the completion of the modified piping and collection systems in Plant 6.

All activities are on schedule to support the deliverables identified in the three U.S. EPA approved Removal Action Work Plans.

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Initiate Pumping in Plant 6.	Open, on schedule.	June 1, 1991
Initiate Pumping in Plant 9.	Open, on schedule.	August 29, 1991
Initiate Pumping in Plants 2/3 and 8.	Open, on schedule.	September 16, 1991

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RA No. 2, Waste Pit Area Runoff Control

The Waste Pit Area Runoff Control Engineering Evaluation/Cost Analysis (EE/CA) was conditionally approved by the U.S. EPA and the Ohio EPA on September 12, 1990.

The U.S. EPA issued a letter on November 13, 1990 disapproving the Work Plan. Deficiencies cited by the U.S. EPA were incorporated into the Work Plan and the Work Plan was resubmitted on schedule to the U.S. EPA on December 13, 1990. Late comments were received from the Ohio EPA the week of November 19, 1990. These comments were also resolved and reflected in the Work Plan. Conditional U.S. EPA approval of the revised work plan with modifications pertaining to sampling requirements was received on January 10, 1991. The conditions for full approval of the work plan involve details associated with Quality Assurance Program Plan (QAPP) certified analysis of samples and specific buildover criteria for HSLs. The Ohio EPA reviewed the modified sampling and analysis plan and issued conditional approval based on the satisfactory resolution of questions concerning Pre-Excavation Soil Sampling. Issues raised include the concern over the volatilization of VOCs from the first six inches of the surface soil, laboratory quantification limits, the source for background concentrations of heavy metals, and the use of the Extraction Procedure (EP) toxicity test. Final modifications to the Sampling and Analysis Plan were resolved and the documentation was completed in April. The revised Work Plan is due to the U.S. EPA and the Ohio EPA in early May. Pre-excavation samples have been collected and are being analyzed.

In order to satisfy one of the conditions stipulated by the U.S. EPA for the approval of the Waste Pit Area Runoff Control EE/CA, Permeability Studies in the Waste Pit Area were initiated. These tests will determine if the clays in the detention area will meet the required maximum permeability of 1×10^{-7} cm/sec. Required permeability test samples were collected during January and analytical work was initiated. Laboratory analysis of the results from the permeability testing in the North and East detention areas indicated permeability in the range of 1×10^{-7} cm/sec. However, field studies showed permeability factors as high as 1×10^{-3} cm/sec. Due to these results, modifications to the design have been initiated in the detention areas.

Work on the development of construction bid packages for the removal action by RUST Engineering has been finalized, and bid requests were distributed on April 5, 1991 to potential contractors.

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RA No. 2, Waste Pit Area Runoff Control (cont'd.)

Delay in the start of construction activities was due to resolution of the U.S. EPA and the Ohio EPA comments on the Sampling and Analysis Plan. Scheduled date for construction was April 30, 1991 and is being rescheduled due to impact from the Sampling and Analysis Plan modifications and re-design of the North and East detention areas.

Planned activities in May include the evaluation of the final analytical results of the pre-excitation samples and development of specific HSL buildover criteria as directed by the U.S. EPA.

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Transmit response to the U.S. EPA proposed modification to the Work Plan.	Completed.	March 5, 1991
Initiate construction activities.	Open, delayed.	April 30, 1991
Resolution of the Ohio EPA comments on the Revised SAP was achieved. The final Work Plan is expected in May.	Open, on schedule.	May 6, 1991

RA No. 3, South Groundwater Contamination Plume

The Work Plan for Part 1 (alternate water supply for two industrial users) of the South Plume Removal Action was approved by the U.S. EPA on January 3, 1991. The Ohio EPA approved the Work Plan for Part 1 provided that two comments were satisfactorily resolved. The response to these two comments will be similar to the language in the recently submitted Part 2 Work Plan. Therefore, a response will be issued after the Part 2 comments are received from the U.S. EPA and the Ohio EPA. The Army Corps of Engineers (COE) reached agreement with the owner of the property where the Part 1 test well is to be installed. The Ohio EPA has inspected the well field and found the site acceptable. The COE has obtained deed information on the properties where the alternate water supply mains are to be located.

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RA No. 3, South Groundwater Contamination Plume (cont'd.)

The Work Plans for Part 2 (pump from leading edge of South Plume and discharge to Great Miami River) and Part 3 (the installation and operation of an Interim Advanced Wastewater Treatment [IAWWT] Unit to reduce contaminant loading discharged to the Great Miami River to a level less than 1,700 pounds per year) was prepared as one Work Plan and submitted to the U.S. EPA on December 17, 1990. The Work Plan for Parts 2 and 3 of the South Plume Removal Action was disapproved by the U.S. EPA on January 17, 1991. The Ohio EPA comments were received on January 18, 1991.

The preliminary drawings for Part 2 were issued to the U.S. EPA for informational purposes on February 6, 1991.

A meeting was held on February 8, 1991 at the Ohio EPA Dayton office to discuss key comment items and FMPC's initial responses. The U.S. EPA did not attend the meeting. Several changes resulted from the meeting and were reflected in the revised Work Plan and responses to comments. The Ohio EPA stated that, based on the latest groundwater information discussed at a meeting held on February 1, 1991 at Advanced Sciences, Inc. (ASI) offices, relocation of the well field to the north should be considered.

A second meeting was held February 20, 1991 at the Ohio EPA Dayton office. The U.S. EPA and the Paddy's Run Road Site (PRRS) representatives were in attendance. A discussion on relocating the well field determined that, if possible, the well field should be moved north to minimize impact on the PRRS plume. The Work Plan was revised to reflect an evaluation of this relocation.

Due to the delay required to evaluate relocating the well field, the project was split into two construction packages. The first package will contain the transfer pump station, groundwater discharge pipeline, outfall pipeline, and associated appurtenances. This package, which is the most time consuming to construct, will remain on the original schedule. Construction will be delayed on the well field package until the issues on the well field relocation are resolved.

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RA No. 3, South Groundwater Contamination Plume (cont'd.)

A letter was issued to the U.S. EPA on February 15, 1991, entitled, "Installation of a New Effluent Line and its Incorporation into the South Plume Removal Action." The letter summarized a recently completed study which indicated that the DOE would not attempt to repair the existing outfall pipeline but would instead replace the existing line with a new pipeline. The DOE also stated that a twenty-day extension was needed to make the necessary changes to the Work Plan to reflect this decision.

A revised work plan for Parts 2 and 3 of the South Plume Removal Action, which addressed the aforementioned items, was submitted to the U.S. EPA on March 11, 1991. The Work Plan was approved by the Ohio EPA on April 12, 1991 and by the U.S. EPA on April 26, 1991. The Design Basis Document for the IAWWT, Part 3, was issued to the U.S. EPA for informational purposes on March 19, 1991.

Activities in April included continuation of design work for Parts 1 and 2, working with the Corps of Engineers to obtain easements for Parts 1 and 2, negotiating a scope of work for determining the location for the relocated well field, and the issuance of the draft specifications for the trailer unit portion of Part 3.

Activities in May will focus on the continuation of the evaluation to determine where to relocate the Part 2 well field, issuance of the IAWWT trailer specification for procurement, completion of the design of the Part 2 transfer pump station and associated appurtenances package, and the utilities tie-in portion of the Part 3 work. A response to the Ohio EPA comments for Parts 1 and 2 is scheduled to be submitted by June 7, 1991.

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Issue Revised Work Plan for Parts 2 & 3 to U.S. EPA for approval.	Completed	March 11, 1991
Issue Design Basis Document for IAWWT to the U.S. EPA for informational purposes.	Completed	March 19, 1991

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RA No. 3, South Groundwater Contamination Plume (cont'd.)

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Parts 2 & 3 Revised Work Plan approved by U.S. EPA.	Completed	April 26, 1991
Respond to remaining comments from the Ohio EPA for Parts 1 and 2.	Open	June 7, 1991

RA No. 4, Silos 1 and 2

The Silos 1 and 2 Removal Action Work Plan was submitted to the U.S. EPA on November 5, 1990. The U.S. EPA approval of the Silos 1 and 2 Removal Action Work Plan was received on November 30, 1990.

The detailed design efforts necessary to implement the Removal Action are approximately 90% complete.

Work in May will center on issuing a certified for construction design package for the Removal Action and initiating the procurement of the equipment necessary to complete the installation of the bentonite. Also, the construction activities associated with modifying the Radon Treatment System (RTS) will be initiated.

RA No. 5, K-65 Decant Sump Tank

The K-65 Decant Sump Tank Removal Action Work Plan was submitted to the U.S. EPA for approval on December 10, 1990. The U.S. EPA conditional approval of the K-65 Decant Sump Tank Removal Action Work Plan was received on January 10, 1991. The responses to the issues included in the conditional approval were submitted to the U.S. EPA on February 8, 1991. A revised implementation schedule was included in these responses.

During March, the field activities required to initiate pumping activities for the implementation of the K-65 Decant Sump Tank Removal Action were completed. Pumping and removal of the decant liquid was initiated on March 26, 1991.

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RA No. 5, K-65 Decant Sump Tank (cont'd.)

Removal of the liquid from the K-65 decant sump tank was completed on April 16, 1991 when the liquid was transferred to the holding tanks in Plant 2/3. The liquid pumped from the K-65 decant sump tank will be stored in the Plant 2/3 holding tanks until the analytical results are available and a RCRA determination has been made. The analytical results and the RCRA determination will define the treatment requirement for the decant sump liquid.

RA No. 6, Waste Pit 6 Residues

This removal action was completed on December 19, 1990.

RA No. 7, Outfall Pipeline Replacement (Previously Outfall Pipeline Investigation and Repair)

A letter was issued to the U.S. EPA on February 15, 1991, entitled "Installation of a New Effluent Line and its Incorporation into the South Plume Removal Action." The letter summarized a recently completed study which indicated that the DOE would not attempt to repair the existing line in situ or an equivalent relining alternative. The construction of the new effluent line is incorporated into RA No. 3, South Groundwater Contamination Plume. Please see that Removal Action for further information.

RA No. 8, Plant 1 Pad Continuing Release

The Plant 1 Pad Continuing Release Removal Action Work Plan was submitted to U.S. EPA and the Ohio EPA on December 4, 1990. Responses to the U.S. EPA comments on the Work Plan were prepared and submitted on March 1, 1991. The removal action consists of three phases. Phase I implements the run-on/run-off control measures. Phase II addresses the installation of 80,000 square feet of a new covered and controlled concrete storage pad. Phase III involves activities to upgrade the remaining 375,000 square feet of the existing Plant 1 storage pad. Upgrading activities include installation of a polymeric vapor barrier over the existing concrete and the installation of concrete above the barrier with epoxy sealant. In addition, 22,000 square feet of the Phase III work area will be enclosed beneath a Sprung structure.

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RA No. 8, Plant 1 Pad Continuing Release (cont'd.)

Activities in May, pending U.S. EPA approval of comment responses, will include additional sampling and analysis to characterize HSL contaminants for the Phase II work area. Subject to the receipt of analytical results, construction of Phases I and II is scheduled to start in July.

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CA Section X. Remedial Investigation and Feasibility Study (RI/FS)

This section provides an update on RI/FS Operable Units (OUs), Community Relations and Field Activities for April 1991. Status information is presented for each of the five Operable Units identified in the Consent Agreement. The five Operable Units are described below:

- o Operable Unit 1 (OU 1): Waste Pits 1-6, clearwell, burn pit.
- o Operable Unit 2 (OU 2): Other Waste Units - (fly ash piles, lime sludge).
- o Operable Unit 3 (OU 3): Production area and suspect areas outside production area (including effluent line to Great Miami River).
- o Operable Unit 4 (OU 4): Silos 1, 2, 3, and 4.
- o Operable Unit 5 (OU 5): All environmental media (i.e., including groundwater, surface water, soils, air, flora, fauna, etc.).

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Operable Unit 1: Waste Pits 1 - 6, Burn Pit, and Clearwell

1.1 Remedial Investigation

a. Status of Work - Key Milestones

A revised schedule for completing the Operable Unit 1 Remedial Investigation (RI) Report was submitted for internal review on April 15, 1991. The draft revised schedule includes additional waste pit sampling.

Submittal of the Operable Unit 1 RI Report has been placed on hold pending the completion of the additional pit sampling.

<u>Activity</u>	<u>Comment</u>
Issue draft Remedial Investigation Report to the U. S. EPA by February 18, 1991.	Open, additional work identified.

b. Issues/Problems

The U.S. EPA and the DOE are in disagreement over whether or not the additional pit sampling constitutes additional work under the provisions of the Consent Agreement.

c. Corrective Actions

The DOE submitted a letter to the U.S. EPA on March 26, 1991 identifying the basis for defining the additional waste pit sampling as additional work. On April 25, 1991, the DOE submitted a letter to the U.S. EPA elevating the dispute to the Dispute Resolution Committee.

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Operable Unit 1: Waste Pits 1 - 6, Burn Pit, and Clearwell

1.1 Remedial Investigation (cont'd.)

d. Planned Activities for May 1991

Continue work on the implementation of the Work Plan Addendum (Additional Waste Pit Sampling).

Prepare a revised schedule for delivery of the RI Report, incorporating the additional site characterization based on internal review comments.

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Operable Unit 1: Waste Pits 1 - 6, Burn Pit, and Clearwell

1.2 Feasibility Study

a. Status of Work - Key Milestones

A revised schedule for completing the Feasibility Study (FS) Report was submitted for internal review on April 15, 1991. The draft revised schedule includes completion of treatability studies for inclusion in the FS Report.

Preparation of a Treatability Plan for Operable Unit 1 was initiated. The draft Treatability Plan is scheduled to be issued for internal review on June 3, 1991.

Submittal of the FS Report is on hold pending the completion of the additional Waste Pit Sampling and Treatability Studies.

<u>Activity</u>	<u>Comment</u>
Issue draft Feasibility Study Report to the U.S. EPA on March 25, 1991.	Open, additional work identified.

b. Issues/Problems

The U.S. EPA and the DOE are in disagreement over whether or not the additional waste pit sampling meets the definition of additional work as defined in the Consent Agreement.

c. Corrective Actions

The DOE submitted a letter to the U.S. EPA on March 26, 1991 defining the basis for the additional work. On April 25, 1991, the DOE submitted a letter to the U.S. EPA elevating the dispute to the Dispute Resolution Committee.

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Operable Unit 1: Waste Pits 1 - 6, Burn Pit, and Clearwell

1.2 Feasibility Study (cont'd.)

d. Planned Activities for May 1991

Prepare a revised schedule for delivery of the FS Report that incorporates the additional site characterization data and treatability results.

Complete the Treatability Work Plan and submit for internal review.

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Operable Unit 2: Other Waste Units

2.1 Remedial Investigation

a. Status of Work - Key Milestones

Submittal of the Operable Unit 2 RI Report has been delayed pending the completion of additional source characterization and incorporation of this information into the RI Report. The additional sampling field work was initiated during April.

<u>Activity</u>	<u>Comment</u>
Issue the draft RI Report to the U.S. EPA.	Open, on hold; additional work identified.

b. Issues/Problems

The revised work plan addendum for additional sampling for Operable Unit 2 was submitted to the U.S. EPA on April 17, 1991. The revised plan included the additional boring located in the Sanitary Landfill (requested by the Ohio EPA), as well as a simulated rainwater leaching procedure. The U.S. EPA and the DOE are in disagreement over whether or not the additional sampling constitutes additional work under the provisions of the Consent Agreement.

c. Corrective Actions

The DOE submitted a letter to the U.S. EPA on March 26, 1991 identifying the basis for defining the additional sampling as additional work. On April 25, 1991, the DOE submitted a letter to the U.S. EPA elevating the dispute to the Dispute Resolution Committee.

d. Planned Activities for May 1991

Continue work on implementation of the additional sampling as defined in the Work Plan Addendum.

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Operable Unit 2: Other Waste Units

2.2 Feasibility Study

a. Status of Work - Key Milestones

The final Initial Screening of Alternatives (ISA) Report for Operable Unit 2 was submitted to the U.S. EPA on April 18, 1991. Work on the Detailed Analysis of Alternatives, draft FS, and Proposed Plan/Record of Decision is on hold. An evaluation of the impact of performing the additional sampling contained within the work plan addendum and the rescheduling of RI/FS activities associated with Operable Unit 2 continued.

<u>Activity</u>	<u>Comment</u>
Issue Final Initial Screening of Alternatives Report to the U.S. EPA on April 18, 1991.	Completed.
Present Detailed Analysis of Alternatives to the U.S. EPA.	Open, on hold.
Issue draft Feasibility Study Report to the U.S. EPA.	Open, on hold.

b. Issues/Problems

The revised work plan addendum for additional sampling for Operable Unit 2 was submitted to the U.S. EPA on April 17, 1991. The revised plan included the additional boring located in the Sanitary Landfill (requested by the Ohio EPA), as well as a simulated rainwater leaching procedure. The U.S. EPA and the DOE are in disagreement over whether or not the additional sampling constitutes additional work under the provisions of the Consent Agreement.

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Operable Unit 2: Other Waste Units

2.2 Feasibility Study (cont'd.)

c. **Corrective Actions**

The DOE submitted a letter to the U.S. EPA on March 26, 1991 identifying the basis for defining the additional sampling as additional work. On April 25, 1991, the DOE submitted a letter to the U.S. EPA elevating the dispute to the Dispute Resolution Committee.

d. **Planned Activities for May 1991**

Continue preparation of a revised schedule for delivery of the FS Report that incorporates the additional site characterization data and treatability results.

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Operable Unit 3: Production Area and Suspect Areas

3.1 Remedial Investigation

a. Status of Work - Key Milestones

The major emphasis for Operable Unit 3 work continued to be on the scoping of the work necessary to implement the proposed resolution of the dispute concerning the scope of this operable unit. Draft schedules were submitted for internal review and development of detailed scoping logic was initiated.

Although extensive additional field characterization work will be required to address the expanded Operable Unit 3 work, continuing RI work included the following: preparation of work plans in order to complete the investigation of Operable Unit 3 soils and perched groundwater, determining the effect of the storm sewer system on perched groundwater contamination, integrating removal actions into the RI Report, continuing the analysis of the perched groundwater zones, and establishing the criteria for consideration of these zones in the determination of the point of compliance for application of ARARs.

Research of Atomic Energy Commission/Department of Energy (AEC/DOE) archives continued in an attempt to uncover evidence of the existence of a potential vault in the north flagpole area. In April, photographs of this area taken during the period were located in the archives. They did not show evidence of construction in this area.

<u>Activity</u>	<u>Comment</u>
Issue Draft RI Report to the U.S. EPA on April 8, 1991.	Open, ISA dispute resolution will result in a new schedule.

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Operable Unit 3: Production Area and Suspect Areas

3.1 Remedial Investigation (cont'd.)

b. Issues/Problems

The expanded scope for Operable Unit 3 will result in additional field characterization work which will significantly impact the Consent Agreement schedules.

c. Corrective Actions

Complete the RI schedules and meet with the U.S. EPA to agree upon any Consent Agreement modifications.

d. Planned Activities for May 1991

Continue the development of detailed scoping logic relative to the expanded scope of work for Operable Unit 3. Continue the preparation of work plans with respect to additional field programs necessary to fully characterize the soils and perched groundwater within the production and suspect areas. In addition, continue work on the following activities: determining the effect of the storm sewer system on perched groundwater contamination, integrating time critical removal actions into the RI Report, continuing the analysis of the perched groundwater zones, and establishing the criteria for consideration of these zones in the determination of the point of compliance for application of ARARs.

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Operable Unit 3: Production Area and Suspect Areas

3.2 Feasibility Study

a. Status of Work - Key Milestones

On April 24, 1991, comments were received from the U.S. EPA on the proposed outline for the expanded scope of ISA Report. Work was initiated to address the U.S. EPA comments and submit a revised outline incorporating comment responses within the 30-day period.

Work completed in April 1991 for Operable Unit 3 included the incorporation of the tentative understanding of ISA issues reached at the January 22, 1991 informal dispute resolution meeting. This work did not address workscope items such as bulk waste, inventory, decontamination of buildings in place, et cetera.

<u>Activity</u>	<u>Comment</u>
Issue draft Final Initial Screening of Alternatives Report to the U.S. EPA.	Open, formal dispute resolution complete. Preparing responses to the U.S. EPA comments on revised ISA outline.

b. Issues/Problems

The expanded scope for Operable Unit 3 will result in additional field characterization work which will significantly impact the Consent Agreement schedules.

c. Corrective Actions

Complete the RI schedules and meet with the U.S. EPA to agree upon any Consent Agreement modifications.

d. Planned Activities for May 1991

Respond to the U.S. EPA comments on the revised ISA outline.

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Operable Unit 4: Silos 1, 2, 3, and 4

4.1 Remedial Investigation

a. **Status of Work - Key Milestones**

Work on the RI Report was placed on hold awaiting the completion of the site characterization program for Operable Unit 4. A Treatability Study Work Plan was distributed for internal review. Review comments are being incorporated as appropriate upon receipt.

b. **Issues/Problems**

The current sampling and analysis schedule will delay the incorporation of analytical data into the Operable Unit 4 RI Report in the near term. With the exception of the baseline risk assessment, all work has been suspended.

c. **Corrective Actions**

Priority has been given to the Operable Unit 4 sampling program. Meanwhile, work is underway to determine if some mechanism exists within the regulatory framework to advance the remedial action. A revised schedule for preparation of the Operable Unit 4 RI Report has been prepared and is being reviewed internally.

d. **Planned Activities for May 1991**

Conduct field activities on the slant and vertical boring programs.

Complete position papers on the need for further characterization in the Operable Unit 4 area.

Revise the treatability work plan to reflect the internal review comments.

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Operable Unit 4: Silos 1, 2, 3, and 4

4.2 Feasibility Study

a. **Status of Work - Key Milestones**

A major revision to the FS Report was completed in April. The revision, based upon previous internal review comments, incorporated the bentonite removal action design, vitrification as the solidification option, and a revised cost estimate consistent with the new designs.

The FS Report will be revised upon completion of the characterization activities and treatability studies necessary to complete the detailed analysis of alternatives.

b. **Issues/Problems**

Awaiting completion of field program and treatability studies to continue work on this portion of the project.

c. **Corrective Actions**

The current hold time is being used to investigate regulatory mechanisms to advance the remedial action.

d. **Planned Activities for May 1991**

Continue field sampling activities for the slant borings; initiate vertical boring program. Address any comments received on the Treatability Study work plans.

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Operable Unit 5: All Environmental Media

5.1 Remedial Investigation

a. Status of Work - Key Milestones

Work on the draft RI Report for Operable Unit 5 was limited to the preparation of revised schedules. On March 13, 1991, the DOE notified the U.S. EPA of its intention to seek a revision to the Operable Unit 5 primary document delivery schedule as presented in the Consent Agreement, based on the need for additional field characterization and pursuant to Section XV.B of the Consent Agreement. The report, scheduled for submittal on April 8, 1991, was delayed due to the additional field work.

Activity

Comment

Issue draft RI Report
to the U.S. EPA.

Open,
on hold.

b. Issues/Problems

The results of additional sampling and analysis are not available for inclusion in the RI Report.

c. Corrective Actions

The Paddy's Run Seepage Investigation is continuing and schedules are being prepared for the revised delivery dates of primary documents.

d. Planned Activities for May 1991

Prepare a revised schedule for the delivery of the RI Report.

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

Period Ending April 30, 1991

Operable Unit 5: All Environmental Media

5.2 Feasibility Study

a. Status of Work - Key Milestones

On March 20, 1991, the DOE informed the U.S. EPA that the milestone for submittal of the FS Report will require negotiation based on the additional field characterization required for the Operable Unit 5 RI Report. This additional field work will impact the progress on both primary and secondary FS documents. A follow-up letter from the DOE on April 5, 1991 stated that other primary documents such as the FS, Proposed Plan, and the draft Report of Decision (ROD) will also be affected by the extension of the RI Report schedules.

Work this month was limited to preparing revised schedules and finalizing the Applicable or Relevant and Appropriate Requirements (ARAR) for Operable Unit 5.

<u>Activity</u>	<u>Comment</u>
Issue Detailed Analysis of Alternatives/Selection of Preferred Alternative to the U.S. EPA.	Open, on hold; additional characterization required.
Issue draft FS Report to the U.S. EPA.	Open, on hold; additional characterization required.

b. Issues/Problems

The scheduled submittal dates for the FS documents will not be achieved.

c. Corrective Actions

Evaluate the impact of the additional field work and prepare revised schedules for negotiation.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending April 30, 1991

Operable Unit 5: All Environmental Media

5.2 Feasibility Study (cont'd.)

d. Planned Activities for May 1991

Continue preparation of the revised schedules incorporating internal review comments.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending April 30, 1991

RI/FS Community Relations

6.0 RI/FS Community Relations

a. Status of Work

A presentation was made at the April meeting of Fernald Residents for Environment, Safety and Health (FRESH). Topics included the following:

- The K-65 decant sump tank removal action which was completed 10 days ahead of schedule.
- The K-65 slant borings. Samples were obtained. Vertical borings will be initiated.
- DOE identification of diethyl ether at the site and steps taken to ensure safety.
- The press release concerning the Environmental Restoration Management Contractor (ERMCO) Request for Proposal (RFP).
- The FMPC siren system used during bad storms in April.
- The next FMPC Open House scheduled for April 1992.
- An explanation regarding the increased levels of uranium discharged to the Great Miami River (as a follow-up to a statement made during the March 19 Community Meeting).
- Announcement of thorium availability was made in the Commerce Business Daily in April. If interest in acquiring the thorium is not expressed, the DOE can proceed with determining the final disposition of the thorium material.

The transcript from the March 19, 1991 Community Meeting was placed in the Administrative Record and the FMPC Reading Rooms in April 1991.

A Community Roundtable on meteorological data was held on April 9, 1991.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending April 30, 1991

RI/FS Community Relations

6.0 RI/FS Community Relations (cont'd.)

b/c. Problems/Corrective Action

None to report./None required.

d. Planned Activities for May 1991

Develop an exhibition booth to show the cleanup activities at the FMPC for Public Employees Recognition Week. The exhibit will be displayed on Fountain Square in Cincinnati, Ohio on May 10, 1991.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending April 30, 1991

7.0 Field Activities

Surveying Activities

Surveying activities continued during April, focusing on establishing the horizontal and vertical coordinates for borings installed during the period. Surveying support continued for the K-65 Subsoil (Slant Borings) Investigation to establish drilling angles and drill alignments. Surveying reestablished basic control that was lost during the winter of 1990-1991. Work was initiated to convert plant coordinates to state planar coordinates.

Monitoring Wells Installation

Access agreements for the Pottenger, Century Farms, and CSX properties were being negotiated between the DOE and the landowners. Four 2000-series wells remain to be installed in the Paddy's Run South Seepage Investigation and the 31-Well Program.

Water Sampling: Monitoring Wells/Surface Water

Groundwater sampling efforts continued in April with 15 well samples and one rinsate sample being submitted for analysis in the Paddy's Run South Seepage Investigation program. In addition, stream flow determination equipment was tested in support of the Paddy's Run South Investigation.

Production and Additional Suspect Areas Drilling Program

A monitoring well was installed in Plant 8 as part of the Facilities Testing program. Boring 1235 was completed at 17.5 feet on April 2, 1991. The well was completed with a 4-inch stainless steel casing and screen so that it can be used in future removal actions involving pumping of the perched water.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending April 30, 1991

7.0 Field Activities (cont'd.)

K-65 Silos: Subsoils Sampling

Low-angle boring began in early April on K-65 Subsoil Boring No. 1 (RI/FS Location 1615). Boring No. 1 was suspended due to perched groundwater being encountered. Plans are to analyze the water for radiological, full HSL, and general groundwater parameters. These analyses will provide valuable information on the characteristics of the groundwater in proximity to the silos. While groundwater from Boring No. 1 is being sampled and analyzed, drilling of Boring No. 3 will be initiated. An addendum to the approved K-65 Subsoils Sampling and Analysis Plan is being prepared to address groundwater sampling from the slant borings.

K-65 Silos: Vertical Berm Sampling

The Vibra-Corer sampling device arrived in late April. The equipment was tested and berm sampling was initiated on April 30, 1991.

Operable Unit 1 Field Sampling: Waste Pits

Procurement of materials needed to sample the waste pits is proceeding. Boring is scheduled to begin in May. Final approval of the task-specific safety plan is needed prior to initiation of work.

Operable Unit 2 Field Sampling: Other Waste Units

Procurement of the materials needed for the boring of the Sanitary Landfill and the fly ash piles is proceeding. Borings are scheduled to begin in May.

Pre-Excavation Soil Sampling

Forty-four locations were sampled to a depth of 24 inches in support of the FMPC Waste Pit Area Storm Water Runoff Control Removal Action. Selected samples from each location were submitted for full HSL and radiological analyses.

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

Period Ending April 30, 1991

8.0 Engineering Disposal Facility (EDF) Site Characterization and Suitability Investigation

a. Status of Work

Development of a site Characterization and Suitability Sampling and Analysis Plan (SAP) was initiated in March and continued on schedule in April. Plans call for the SAP to be submitted in early May.

<u>Activity</u>	<u>Comment</u>
Issue draft SAP for Ohio EPA/ U.S. EPA review by June 3, 1991.	Open, on schedule.
Receive Ohio EPA/U.S. EPA comments for incorporation into SAP.	July 3, 1991.
Issue final SAP to Ohio EPA/U.S. EPA by August 1, 1991.	Open, on schedule.

b. Issues/Problems

None to report.

c. Corrective Actions

None required.

d. Planned Activities for May 1991

Review existing regional and site databases, identify data short falls, and develop the preliminary SAP for internal review.

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

PERIOD ENDING APRIL 30, 1991

ENCLOSURE A

**WASTEWATER FLOWS AND RADIONUCLIDE
CONCENTRATIONS UNDER CA SECTION XXIII.B**

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending April 30, 1991

Introduction

The accompanying Effluent Radiation Reports provide, in accordance with the requirements of Section XXIII.B of the Consent Agreement under CERCLA Section 120 and 106(a), data on the daily wastewater flows and radionuclide concentrations and loadings released to the Great Miami River and an estimate of runoff and radionuclide concentrations to Paddy's Run during April 1991.

Summary - April 1991

The total quantity of uranium discharged from the FMPC to the Great Miami River via Manhole 175 (Outfall 11000004001) was 46.32 kilograms. The average uranium concentration for the previous 12 months was 0.90 mg/l. This is 101.1 percent of the Derived Concentration Guide (DOE Order 5400.5) for ingested water.

There was no discharge from the Stormwater Retention Basin (Outfall 11000004002) to Paddy's Run via the Storm Sewer Outfall Ditch in April 1991. Based on 4.48 inches of rainfall in April 1991, the total quantity of uranium discharged to Paddy's Run from uncontrolled areas of the FMPC is estimated to be 20.16 kilograms.

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

Period Ending April 30, 1991

Wastewater Flows and Radionuclide Concentrations

FACILITY: Feed Materials Production Center, U.S. Department of Energy
7400 Willey Road, P.O. Box 398704
Cincinnati, Ohio 45239 Hamilton
9002 M 9501 900212

LOCATION: 1I000004001; 001 Total Discharge **MONTH:** April 1991
Manhole 175 (Effluent to Great Miami River)

<u>Day</u>	<u>Flow (MGD)</u>	<u>Total Alpha (pCi/l)</u>	<u>Total Beta (pCi/l)</u>	<u>Total U (mg/l)</u>	<u>Total U (kgs)</u>	<u>Calculated Total U-238 (pCi/l) (1)</u>
1	1.254	189	104	0.40	1.90	135
2	0.911	189	171	0.48	1.65	162
3	0.502	302	207	0.62	1.18	209
4	0.369	306	293	0.76	1.06	257
5	0.440	347	203	0.78	1.30	264
6	0.401	347	216	0.80	1.21	270
7	0.355	441	149	0.88	1.18	297
8	0.418	405	324	1.00	1.58	338
9	0.493	347	158	0.84	1.57	284
10	0.855	419	207	0.86	2.78	291
11	0.580	414	77	0.88	1.93	297
12	0.580	212	72	0.44	0.97	149
13	0.990	284	77	0.40	1.50	135
14	1.156	410	153	0.44	1.92	149
15	1.031	329	122	0.40	1.56	135
16	1.106	338	95	0.40	1.67	135
17	0.468	302	90	0.48	0.85	162
18	1.103	212	108	0.40	1.67	135
19	1.271	360	90	0.50	2.40	169
20	1.048	306	77	0.48	1.90	162
21	0.928	297	99	0.44	1.54	149
22	1.083	257	99	0.38	1.56	128
23	0.983	212	90	0.40	1.49	135
24	0.982	248	108	0.42	1.56	142
25	0.904	212	90	0.46	1.57	155
26	0.393	351	135	0.86	1.28	291
27	0.235	270	104	0.68	0.60	230
28	0.256	383	90	0.80	0.77	270
29	0.367	523	293	1.26	1.75	426
30	0.382	577	252	1.66	2.40	561

	21.844				46.32	

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

Period Ending April 30, 1991

Wastewater Flows and Radionuclide Concentrations (cont'd.)

FACILITY: Feed Materials Production Center

LOCATION: 001 Total Discharge

MONTH: April 1991

	<u>Flow (MGD)</u>	<u>Total Alpha (pCi/l)(2)</u>	<u>Total Beta (pCi/l)(2)</u>	<u>Total U (mg/l)(2)</u>	<u>Total U (kgs)</u>	<u>Calculated Total U-238 (pCi/l)(1)(2)</u>
Avg.	0.728	307	129	0.56	1.54	189
Max.	1.271	577	324	1.66	2.78	561
Min.	0.235	189	72	0.38	0.60	128

The average uranium concentration for the previous 12 months was 0.90 mg/l. This is 101.1 percent of the Derived Concentration Guide (DOE Order 5400.5) for ingested water.

Comments: (1) The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending April 30, 1991

Wastewater Flows and Radionuclide Concentrations (cont'd.)

FACILITY: Feed Materials Production Center, U.S. Department of Energy
7400 Willey Road, P.O. Box 398704
Cincinnati, Ohio 45239 Hamilton
9002 M 9501 900212

LOCATION: 1I000004002, 002 Discharge (Overflow) to Storm Sewer Outfall Ditch
Stormwater Retention Basin Spillway (Effluent to Paddy's Run)

MONTH: April 1991

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

Based on 4.48 inches of rainfall in April 1991, the uranium discharge to Paddy's Run from uncontrolled areas of the FMPC is estimated to be 20.16 kgs.

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

PERIOD ENDING APRIL 30, 1991

ENCLOSURE B

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

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending April 30, 1991

INTRODUCTION

Enclosure B describes actions undertaken at the Feed Materials Production Center (FMPC) during the period April 1 through April 30, 1991 that are not covered by the reporting requirements of the Consent Agreement under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 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 brevity's sake. 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 - As a result of constraining factors associated with the Radon Treatment System (RTS), there were no K-65 Silo residue sampling activities during April 1991.

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 under CERCLA Section 120 and 106(a).

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

Period Ending April 30, 1991

**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND
LIABILITY ACT (CERCLA) (cont'd.)**

3. Reports and Record Keeping

Section B

The RI/FS Monthly Technical Progress Report for March 1991 was transmitted to the U.S. EPA on April 19, 1991 as an integral part of the Consolidated Consent Agreement/Federal Facility Compliance Agreement (CA/FFCA) Monthly Progress Report in accordance with requirements of Section X of the Consent Agreement.

CLEAN AIR ACT (CAA)

Section E

The seventeenth Quarterly Particulate Emissions Report for the period October 5, 1990 through January 4, 1991 was submitted to the U.S. EPA on March 8, 1991.

RADIATION DISCHARGE INFORMATION

Section A

The seventeenth Quarterly Liquid Discharge Report for the period October through December 1990 was submitted to the U.S. EPA on March 8, 1991.

REPORTING REQUIREMENTS

Section B

The Federal Facilities Compliance Agreement Monthly Progress Report for March 1991 was transmitted to the U.S. EPA on April 19, 1991 as Enclosure B of the Consolidated Consent Agreement/Federal Facility Compliance Agreement (CA/FFCA) Monthly Progress Report.

TABLE 1
**STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON
 FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS**

**STATUS OF ACTIONS AS OF
 APRIL 30, 1991**

ACTION	DESCRIPTION	COMPLETION TIME AFTER FFCA SIGNED	FY91 STATUS
CERCLA			
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 under CERCLA Section 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 under CERCLA Section 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 under CERCLA Section 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 March 1991 was transmitted to the U.S. EPA on April 19, 1991 (DOE-1197-91).
CLEAN AIR ACT			
B.4	Prepare annual progress report on installation and replacement of emission control devices.	yearly	The Third Annual Progress Report on installation and replacement of emission control devices was transmitted to the U.S. EPA on February 22, 1990 (DOE-617-90).
C.	Provide annual reports to U.S. EPA per 40 CFR 61.94(c).	yearly	The Annual NESHAP Compliance Report for CY 1989 was transmitted to the U.S. EPA on July 9, 1990 (DOE-1392-90).
D.1	Provide U.S. EPA with yearly stack-testing schedule.	yearly	The 1989 stack testing schedule was transmitted to U.S. EPA on June 16, 1989. A letter (DOE-1615-89) was transmitted to the U.S. EPA on September 15, 1989 indicating that due to the uncertainty concerning resumption of production at the FMPC, the 1989 FFCA Stack Testing Program was being deferred. Notification of future stack testing dates will be provided to the U.S. EPA if and when a decision on the restart of facilities at the FMPC is made.
D.2	Provide U.S. EPA with stack-test results for stacks tested that year.	45 days	Stack testing is currently on hold pending resumption of manufacturing operations. Notification of future stack testing dates will be provided to the U.S. EPA if and when a decision on the restart of production activities at the FMPC is made.

TABLE 1
STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON
FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS

STATUS OF ACTIONS AS OF
APRIL 30, 1991

ACTION	DESCRIPTION	COMPLETION TIME AFTER FFCA SIGNED	FY91 STATUS
E.1	Maintain records of monthly particulate matter emissions.	-----	Continuing.
E.2	Provide quarterly reports to U.S. EPA on these emissions.	quarterly	The seventeenth Quarterly Particulate Emissions Report for the period October 5, 1990 through January 4, 1991 was submitted to the U.S. EPA March 8, 1991 (DOE-773-91). The sixteenth Quarterly Particulate Emissions Report for the period July 3, 1990 through October 3, 1990 was transmitted to the U.S. EPA on December 31, 1990. (DOE-112-91).
RCRA			
A.1	Conduct a hazardous waste determination on all waste streams.	30 days	Pursuant to the amended Consent Decree, a RCRA waste evaluation will be conducted on all site materials by 10/92
A.2	Commence a hazardous waste analysis program for materials in the landfill and going to the incinerator.	30 days	Complete. Operations of these units was discontinued and data on the waste which had gone to them was provided in 30-day FFCA deliverable on August 17, 1986. However, further review of both the waste streams and the potential of the units to be hazardous waste management units are being evaluated as actions required by the amended Consent Decree. Final results are due October 30, 1992.
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 1 of the RCRA Part B Permit Application submitted to the U.S. EPA on September 22, 1989. Facility closure will be completed on the date the last TSD unit is closed.

TABLE 1
 STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON
 FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS

STATUS OF ACTIONS AS OF
 APRIL 30, 1991

ACTION	DESCRIPTION	COMPLETION TIME AFTER FFCA SIGNED	FY91 STATUS
RADIATION DISCHARGE INFORMATION			
A.3	Report to U.S. EPA, Ohio EPA and Ohio Department of Health the results of the continuous liquid discharge samples.	quarterly	The seventeenth Quarterly Liquid Discharge Report for the period October through December 1990 was transmitted to the U.S. EPA on March 8, 1991 (DOE-773-91). The sixteenth Quarterly Liquid Discharge Report for the period July through September, 1990 was transmitted to the U.S. EPA on December 31, 1990. (DOE-112-91)
REPORTING REQUIREMENTS			
B.	Issue monthly progress report of actions taken to ensure compliance with FFCA requirements.	monthly	March's FFCA Monthly Progress Report was transmitted to the U.S. EPA on April 19, 1991 (DOE-1197-91).

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT
PERIOD ENDING APRIL 30, 1991**

**ENCLOSURE C
DRILLING AND BORING LOGS**

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602 3.7 PROJECT NAME: FERNALD RIFS

BORING NUMBER: 1235 COORDINATES: DATE: 4/20/91

ELEVATION: GWL: Depth Date/Time DATE STARTED: 4/20/91

ENGINEER/GEOLOGIST: C. Gruber Depth Date/Time DATE COMPLETED: 4/22/91

DRILLING METHODS: Auger (Howden)

PAGE 1 OF 5

DEPTH 1 FT. 1	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER 16 IN. 1	RECOVERY (IN 1)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY ISFL	REMARKS
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1	NA	NA	6	Cement (Concrete Floor)	NA	NA	H ₂ O = 2ppm R ₂ = 0-20cpm
1	NA	NA	6	Cement (Concrete Floor)	NA	NA	R ₂ = 30,000cpm (Top of Cement) R ₂ = 2,000cpm (Bottom of Cement)
1-2	CL	4.5	6	Hard (5p/4) olive gray silt clay, trace of fine gravel, low plasticity, moist	CL	4.5	H ₂ O = 2ppm R ₂ = 280-370cpm
2	ML	NA	6	Medium dense (2.5 Y _{5/4}) light olive brown clayey silt, slightly moist	ML	NA	
3	CL	1.5	1	Stiff (2.5 Y _{5/4}) light olive brown silt clay, trace of sand and fine gravel, low plasticity, moist	CL	1.5	
3-4	CL	1.25	6	Stiff (2.5 Y _{5/4}) light olive brown silt clay, trace of sand and fine gravel, medium plasticity, moist	CL	1.25	H ₂ O = 2ppm R ₂ = 350-450cpm
4	CL	1.25	2	Stiff (2.5 Y _{5/4}) light olive brown silt clay, trace of sand and gravel, low to medium plasticity, moist	CL	1.25	
4	NA	NA	0	NR	NA	NA	
5	CL	1.5	6	Stiff (2.5 Y _{5/4}) light olive brown silt clay, trace of sand and fine gravel, low plasticity, moist	CL	1.5	H ₂ O = 0-2ppm R ₂ = 500cpm
5	CL	1.75	6	Stiff (2.5 Y _{5/4}) olive gray silt clay, trace of gravel, low plasticity, moist	CL	1.75	
6	CL	NA	0	NR	NA	NA	
6	CL	5	6	Soft (5 Y _{5/4}) olive gray silt clay, medium plasticity, moist	CL	5	H ₂ O = 0ppm R ₂ = 400-500cpm
7	ML	NA	6	Med. dense (2.5 Y _{5/4}) light olive brown clayey silt to silt, moist	ML	NA	
7	NA	NA	0	NR	NA	NA	

NOTES: CONTRACTOR: PENN DRILL

SAMPLES COLLECTED PER ASTM STANDARD PENETRATION TEST

RIG: QME-45 DRIVER: Bob Vost ASSISTANT: Mark Kiedel

HEALTHY SAFETY: Muck Turner/Blindriver NA = Not Applicable NR = No Reaction

BACKGROUNDS LEVELS: H₂O = 0-2 PPM Serial # 49845

LOGS IDENTIFIED USING MUNSSELL COLOR CHART

SOILS IDENTIFIED USING MUNSSELL COLOR CHART

DATE: 4/20/91

DATE COMPLETED: 4/22/91

DATE STARTED: 4/20/91

PROJECT NAME: FERNALD RIFS

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602 3.7	PROJECT NAME: FERNALD RI/FS	
BORING NUMBER: 1235	COORDINATES:	
ELEVATION:	GWL: Depth	Date/Time
ENGINEER/GEOLOGIST: C. Grube	Depth	Date/Time
DRILLING METHODS: AUGER (HOLLOW STEM)	DATE: 4/20/91	
	DATE STARTED: 4/20/91	
	DATE COMPLETED: 4/22/91	
	PAGE 2 OF 5	

DEPTH (FT.)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER 16 IN.	RECOVERY (IN.)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (ISCI)	REMARKS
8	17754 2345 4-20	15	6	Medium dense (2.5Y 5/4) light olive brown silt, trace of clay, moist	ML	NA	H _w = 2 ppm α = 0 cpm β ₈ = 400-500 cpm
	17755 2345 4-20	10	6	SAA	ML	NA	
9	17756 2345 4-20	11	6	SAA	ML	NA	H _w = 2 ppm α = 0 cpm β ₈ = 600-800 cpm
	17757 2357 4-20	6	6	medium Dense (2.5Y 5/4) light olive brown, clayey gravel, wet	GC	NA	
10	17755 2357 4-20	6	6	medium Dense (2.5Y 5/4) light olive brown silt, trace of clay, very moist	ML	NA	H _w = 2 ppm α = 0 cpm β ₈ = 600-800 cpm
	17759 2357 4-20	5	0	NR	NA	NA	
11	17760 1058 4-21	15	6	Dense (2.5Y 5/4) light olive brown clayey silt, moist	ML	NA	H _w = 0-2 ppm α = 0 cpm β ₈ = 400-500 cpm
	52575 1058 4-21	16	0	NR	NA	NA	
12	52576 1058 4-21	17	0	NR	NA	NA	H _w = 2 ppm α = 0 cpm β ₈ = 600-700 cpm
	52577 1104 4-21	11	6	medium Dense (10YR 5/4) yellowish brown silty sand, wet	SM	NA	
13	52575 1104 4-21	14	6	Medium Dense (5Y 4/2) olive gray clayey silt, moist	ML	NA	H _w = 2 ppm α = 0 cpm β ₈ = 600-700 cpm
	52579 1104 4-21	9	6	medium Dense (10YR 5/4) yellowish brown silty sand, wet sand, wet	SM	NA	
14	52580 1110 4-21	8	6	medium Dense (5Y 4/2) olive gray clayey silt, very moist	ML	NA	H _w = 2 ppm α = 0 cpm β ₈ = 600-700 cpm
	52581 1110 4-21	8	6	medium Dense (10YR 5/4) poorly graded yellowish brown sand, wet	SP	NA	
	52582 1110 4-21	12	6	SAA	SP	NA	
				medium Dense (5Y 5/2) olive gray clayey silt, very moist	ML	NA	

no of water using the one 9.0 FT

NOTES:

SAA = Same As Above
NR = No Recovery
NA = Not Applicable

VISUAL CLASSIFICATION OF SOILS

1282

PROJECT NUMBER: 602 3.7	PROJECT NAME: FERNALD RI/FS
BORING NUMBER: 1235	COORDINATES:
ELEVATION:	GWL: Depth Date/Time
ENGINEER/GEOLOGIST: C. Grube	Depth Date/Time
DRILLING METHODS: AUGER (HOLLOW STEM)	DATE: 4/21/91
	DATE STARTED: 4/20/91
	DATE COMPLETED: 4/20/91
	PAGE 3 OF 5

3.0 FT
OF
TOP
OF
BORING
5.3 FT

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER (6 inches)	RECOVERY (in.)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (HS)	REMARKS
15.5	52583 (335) 4-21	6	6	Medium stiff (s.y.s/l) light olive brown well graded sand, wet	SW	NA	H ₂ O = 2 ppm α = 0 cpm β = 400-500 cpm
16	52584 1335 4-21	12	3	Stiff (s.y.s/l) olive gray silty clay, trace of sand and fine gravel, low plasticity, low L _p		1.5	
17	52585 1335 4-21	17	0	SAA		1.5	
17.5				NR	NA	NA	
17.5				Bottom of Sampling at 16.5 FT Bottom of Boring at 17.5 FT			H ₂ O = α = β =
18							
19							H ₂ O = α = β =
20							H ₂ O = α = β =

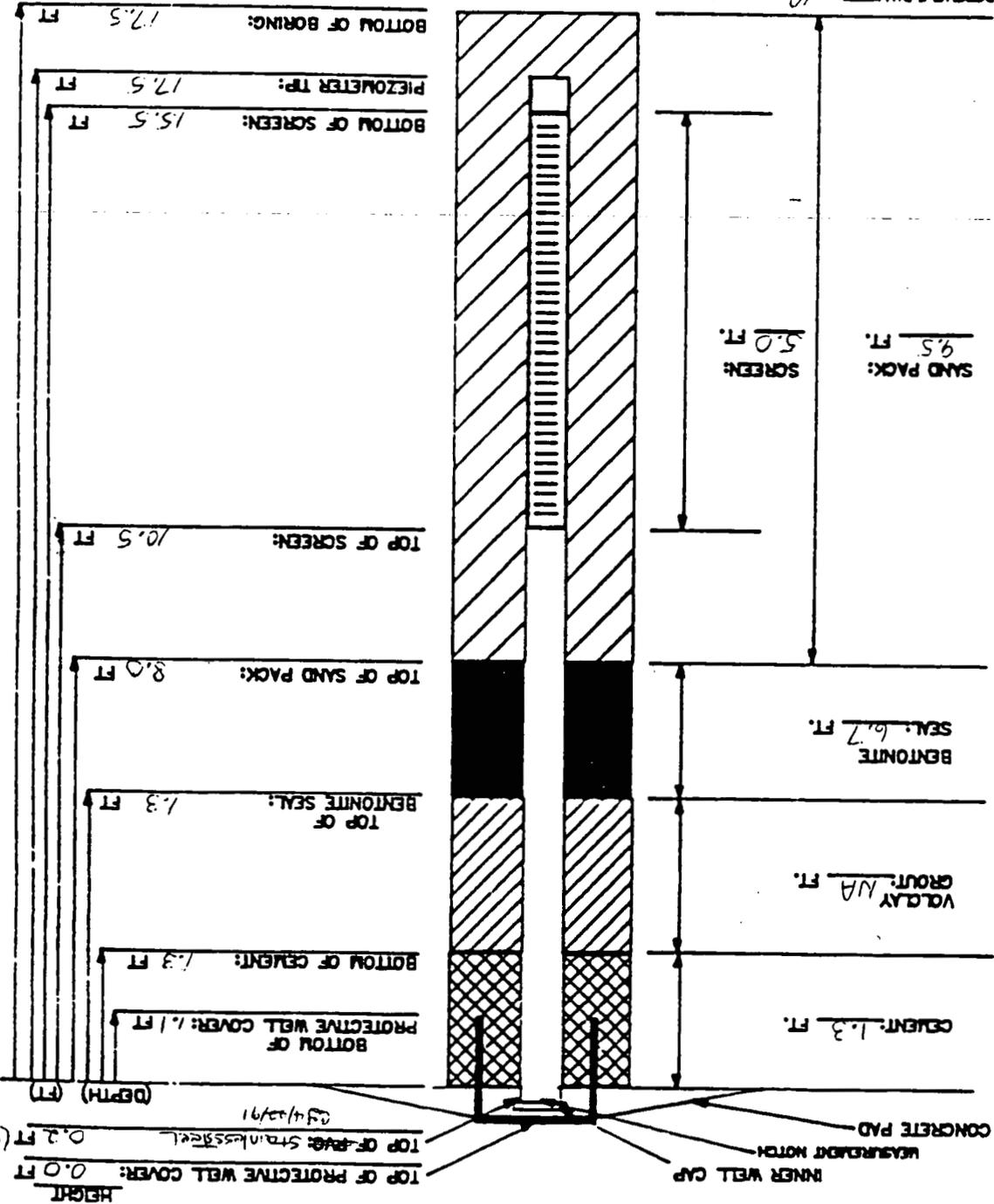
NOTES:

SAA = Same As Above
NR = No Recovery
NA = Not Applicable

FERNALD R/F/S

INSTALLATION DIAGRAM
MONITORING WELL NO.

1235



HEIGHT
TOP OF PROTECTIVE WELL COVER: 0.0 FT
TOP OF PIPE: STAINLESS STEEL
0.2 FT (Below Surface)
0.2 FT (Depth)

PROTECTIVE WELL COVER: 1.1 FT
BOTTOM OF CEMENT: 1.3 FT
TOP OF BENTONITE SEAL: 1.3 FT
TOP OF SAND PACK: 8.0 FT

TOP OF SCREEN: 10.5 FT

PIEZOMETER TIP: 17.5 FT
BOTTOM OF SCREEN: 15.5 FT

BOTTOM OF BORING: 17.5 FT

- NOTES:
- 1) RISER PIPE IS 2-INCH SCH 40 STEEL - 40 FT LONG - 2 INCH FLUSH-THREADED JOINT.
 - 2) TOP OF PVC IS SECURED WITH 40 FT LONG 2 INCH FLUSH-THREADED JOINT.
 - 3) SCREEN IS 2-INCH SCH 40 STEEL - 40 FT LONG - 2 INCH FLUSH-THREADED JOINT.
 - 4) SAND PACK WITH 0.020-INCH SLOTS.
 - 5) PARENTHESIS INDICATE DEPTH BELOW GROUND LEVEL.
 - 6) LOWER END OF SCREEN IS CAPPED WITH AN END CAP OR THREADED CAP.
 - 7) WATER DEPTH/DATE: NA

MATERIALS USED:
SAND TYPE AND QUANTITY: 10/100-3 (50 lbs)
BENTONITE PELLETS (5-GALLON BUCKETS): 5.0
BAGS OF VOLCLAY GROUT: NA
AMOUNT OF CEMENT: 1.3 (50 lbs)
AMOUNT OF WATER USED: 2.0 (50 lbs)
OTHER: 5.0 (50 lbs) FIRST MOUNTING

CEOLOGIST/ENGINEER: [Signature]
TASK: 608 3.2.1

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PIEZOMETER INSTALLATION SHEET

PROJECT NAME FMPK RI/FS FIELD ENG./GEO. C. Grube DATE 4/22/91
 PROJECT NO. 602 3.7.1 CHECKED BY _____ DATE _____
 BORING NO. 1235
 PIEZOMETER NO. 1235 DATE OF INSTALLATION 4/22/91

BOREHOLE DRILLING

DRILLING METHOD <u>Hollowstem Auger</u>	TYPE OF BIT <u>Hollow Augers 8 in 9.10 in</u>
DRILLING FLUID(S) USED:	CASING SIZE(S) USED:
FLUID <u>NA</u> FROM _____ TO _____	SIZE <u>NA</u> FROM _____ TC _____
FLUID <u>NA</u> FROM _____ TO _____	SIZE <u>NA</u> FROM _____ TC _____

PIEZOMETER DESCRIPTION

TYPE <u>Monitoring Piezometer</u>	RISER PIPE MATERIAL <u>Stainless Steel</u>
DIAMETER OF PERFORATED SECTION <u>4.0 in ID</u>	RISER PIPE DIAMETERS:
PERFORATION TYPE:	O.D. <u>4 7/8 in</u> I.D. <u>4.0 in</u>
SLOTS <input checked="" type="checkbox"/> HOLES <input type="checkbox"/> SCREEN <input type="checkbox"/>	LENGTH OF PIPE SECTIONS <u>0.8 FT</u>
AVERAGE SIZE OF PERFORATIONS <u>0.10 in</u>	JOINING METHOD <u>Flush Joint Threaded</u>
TOTAL PERFORATED AREA <u>4.9 FT</u>	

PROTECTION SYSTEM

RISER PROTECTIVE PIPE LENGTH <u>1.1 FT</u>	OTHER PROTECTION <u>Well cap w/ bolted</u>
PROTECTIVE PIPE O.D. <u>8.0 inch</u>	<u>Protective Lid</u>

ITEM	DISTANCE ABOVE/BELOW GROUND SURFACE (FT)		ELEVATION ()	
	TOP	BOTTOM	TOP	BOTTOM
TOP OF RISER PIPE	0.2 FT (below)			
GROUND SURFACE	0.0			
BOTTOM OF PROTECTIVE PIPE	1.1 FT			
BOREHOLE FILL MATERIALS:				
GROUT/SLURRY/cement	TOP 0.0	BOTTOM 1.3	TOP	BOTTOM
BENTONITE	TOP 1.3	BOTTOM 8.0	TOP	BOTTOM
SAND	TOP 8.0	BOTTOM 17.5	TOP	BOTTOM
GRAVEL <u>NA 0.1-0.25</u>	TOP <u>NA</u>	BOTTOM <u>NA</u>	TOP	BOTTOM
PERFORATED SECTION	TOP 17.5	BOTTOM 15.5	TOP	BOTTOM
PIEZOMETER TIP	17.5			
BOTTOM OF BOREHOLE	<u>17.5 FT</u> ^{2d} <u>15.3 FT</u>			
GWL AFTER INSTALLATION	NA			

WAS THE PIEZOMETER FLUSHED AFTER INSTALLATION? YES NO
 WAS A SENSITIVITY TEST PERFORMED ON THE PIEZOMETER? YES NO

REMARKS Top of riser pipe located 0.2 ft below ground surface
Bottom of riser pipe located 15.3 ft