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**CONSOLIDATED CONSENT AGREEMENT/
FEDERAL FACILITY COMPLIANCE AGREEMENT
MONTHLY PROGRESS REPORT PERIOD ENDING
JANUARY 31, 1991**

01/31/91

**DOE-FMPC/USEPA/OEPA
49
REPORT**

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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 January 1991. Information is presented for each of the four removal actions identified in the Consent Agreement, including:

- 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

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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 January. Analytical results (with the exception of semi-volatiles) from Volatile Organic Compounds/Hazardous Substance List (VOC/HSL) sampling were received from the laboratories and the results are being incorporated into the design of system modifications. Activities required to design, procure, install, start-up and operate the Plant 6 perched water extraction system continued on schedule and the final design is scheduled to be submitted for DOE/FMPC approval in March, 1991.

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. Development of the documentation to support the solicitation of engineering services from the DOE CERCLA Program Architect/Engineer was completed in December, 1990. 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.

Activities in February will focus on the detailed design of the Plants 2/3 and Plant 8 extraction systems and the procurement of materials to support required piping modifications in Plant 6. Work on the design of the piping and tankage necessary to install the Volatile Organic Compounds (VOC) treatment system in Plant 8 is planned for February. All activities are on schedule to support the deliverables identified in the three U.S. EPA approved Removal Action Work Plans.

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RA No. 2, Waste Pit Area Runoff Control

The Waste Pit Area Runoff Control 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. U.S. EPA approval of the revised work plan with modifications pertaining to sampling requirements was received on January 10, 1991.

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.

Work on the development of construction bid packages for the removal action was started by RUST Engineering.

Planned activities in February include the following: (1) Incorporate sampling modification into work plan as directed by the U.S. EPA, (2) confirm construction cost estimates for support of bid reviews, and (3) complete preparation of required bid award documents.

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Receive U.S. EPA comments/approval on the Waste Pit Area Runoff Control Work Plan	Completed	November 13, 1990
Issue the revised Waste Pit Area Runoff Control Work Plan to the U.S. EPA	Completed	December 13, 1990
Initiate construction mobilization for removal action field activity	Open, On schedule	April 30, 1991

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RA No. 3, South Groundwater Contamination Plume

The Work Plan for Part 1 of the South Plume Removal Action was disapproved by the U.S. EPA on November 5, 1990. A revised work plan was prepared and resubmitted to the U.S. EPA on December 5, 1990. The Work Plan for Part 1 of the South Plume Removal Action was approved by U. S. EPA on January 3, 1991. 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 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 2/3 of the South Plume Removal Action was disapproved by U.S. EPA. The comments for Parts 2/3 of the South Plume Removal Action Work Plan are being resolved.

Activities in February will focus on the continuation of the design work for Parts 1, 2 and 3 and working with the Corps of Engineers to obtain easements for Parts 1 and 2. The preliminary drawing for Parts 1 and 2 will be issued to the U.S. EPA for informational purposes and comments received on the Parts 2 and 3 Work Plan will be addressed. In addition, the revised Work Plan for Parts 2/3 will be submitted to the U.S. EPA for approval.

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Issue Part 1 Revised Work Plan to U.S. EPA for approval	Completed	December 5, 1990
Issue Parts 2 & 3 Work Plan to the U.S. EPA for review/approval	Completed	December 17, 1990
Issue Revised Work Plan for Parts 2 & 3 to U.S. EPA for approval	Open	February 19, 1991
Part 1 Revised Work Plan approved by U.S. EPA	Completed	January 3, 1991

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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.

Approval to sole source the contract to American Colloid Company to perform the Application Demonstration Program was received from DOE/ORO.

The detailed design efforts necessary to implement the Removal Action are approximately 20% complete.

Work in February will center on the design efforts for the Removal Action and initiating the Application Demonstration Program that is necessary to support implementation of the Removal Action.

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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 January 1991. Status information is presented for each of the five Operable Units (OUs) identified in the Consent Agreement. The five Operable Units are:

- 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**

Review of the second draft of the RI Report was completed by DOE-HQ during January 1991. Resolution and incorporation of comments into the RI report is ongoing.

In the monthly remedial project managers meeting conducted on January 15, 1991, the U.S. EPA informed DOE that completion of the additional OUI field characterization program (Work Plan Addendum of July 25, 1990) was additional work necessary to accomplish the objectives of the Consent Agreement. This program cannot be completed prior to the scheduled delivery date for the RI report as established by the Consent Agreement.

Activity

Comments

Issue draft Remedial Investigation Report to the U. S. EPA by February 18, 1991.

Open, additional work identified.

b. **Issues/Problems**

The results of the additional field characterization program will not be available for inclusion in the RI and FS documents on the scheduled dates for submittal.

c. **Corrective Actions**

Develop a new schedule for delivery of the RI report based upon the availability of the U.S. EPA approved additional characterization data. Present the revised schedule to the U.S. EPA for approval.

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Operable Unit 1: Waste Pits (cont'd.)

1.1 Remedial Investigation

d. **Planned Activities for February 1991**

Continue implementation of the Work Plan Addendum.

Prepare a revised schedule for the delivery of the RI Report that reflects the time required for the U.S. EPA approved additional site characterization.

1.2 Feasibility Study

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

The Initial Screening of Alternatives (ISA) Report was revised and submitted to the U.S. EPA on January 4, 1991. The ISA Report was revised to meet the terms of the dispute resolution which was agreed to on December 13, 1990.

An internal review of the initial draft of the FS report was completed. As discussed in Section 1.1, the RI report will be delayed. This will adversely impact the delivery of the FS report.

<u>Activity</u>	<u>Comment</u>
Issue Initial Screening of Alternatives Report to U. S. EPA for approval.	Completed January 4, 1991
Present Detailed Analysis of Alternatives to U.S. EPA	Delayed to allow incorporation of ISA Dispute Resolution Comments
Issue Draft Feasibility Study Report to U.S. EPA March 25, 1991.	Open, additional work identified.

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Operable Unit 1: Waste Pits (cont'd.)

1.2 Feasibility Study

b. Issues/Problems (cont'd.)

Based upon the current schedule for the submittal of the FS Report, the results of the treatability study may not be available for inclusion in the FS Report.

Comments received from the U.S. EPA and the Ohio EPA on the Operable Unit 1 ISA Report indicate unresolved risk assessment issues for all operable units. These issues include definition of future land-use exposure scenarios, reliance on passive institutional controls, and definition of point of compliance for the groundwater pathway.

Initial evaluation of the vitrification technology appears very promising for use in remediation at the FMPC. However, since it is an unproven technology in large scale applications, there are significant questions on the effectiveness of the technology that cannot readily be addressed in the FS at this time.

c. Corrective Actions

Establishment of the revised submittal date for FS Report will be accomplished in conjunction with the revised schedule for the RI Report (Section 1.1(c)).

The DOE is preparing position papers on the identified issues. Discussions with the U.S. EPA and the Ohio EPA will be held to achieve resolution.

Bench and/or pilot scale applications of vitrification technology for OUI should be initiated to resolve questions in the FS. The DOE will propose an additional work package for approval by the U.S. EPA.

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Operable Unit 1: Waste Pits (cont'd.)

1.2 Feasibility Study

d. **Planned Activities for February 1991**

Revise the FS report to incorporate internal review comments and determine impacts to schedule of additional data requirements.

Prepare Treatability Work Plan for cement stabilization technology.

Initiate discussions on Treatability Plan for vitrification.

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Operable Unit 2: Other Waste Units

2.1 Remedial Investigation

a. Status of Work - Key Milestones

Preparation of responses to DOE-HQ comments on the Operable Unit 2 Remedial Investigation Report was initiated. In the monthly remedial project managers meeting conducted on January 15, 1991, the U.S. EPA informed DOE that completion of the additional OU2 field characterization program (Work Plan Addendum of July 25, 1990) was additional work necessary to accomplish the objectives of the Consent Agreement. This program cannot be completed prior to the scheduled delivery date for the RI Report as established by the Consent Agreement.

Planning for the implementation of the Work Plan Addendum (additional site characterization for Operable Unit 2) is proceeding so that initiation of field activities can begin.

<u>Activity</u>	<u>Comment</u>
Issue draft RI Report to the U.S. EPA on February 11, 1991.	Open, additional work identified.

b. Issues/Problems

The results of additional site characterization will not be available for inclusion in the RI document on the scheduled date for submittal.

c. Corrective Actions

Develop a new schedule for delivery of the RI report based upon the availability of the U.S. EPA approved additional characterization data. Present the revised schedule to DOE-HQ and the U.S. EPA for approval.

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Operable Unit 2: Other Waste Units (cont'd.)

d. Planned Activities for February 1991

Continue implementation of the Work Plan Addendum.

Prepare a revised schedule for delivery of the RI report incorporating the U.S. EPA approved additional site characterization.

2.2 Feasibility Study

a. Status of Work - Key Milestones

The draft final ISA Report for Operable Unit 2 was delivered to the U.S. EPA on January 9, 1991. The Detailed Analysis of Alternatives presentation to the U.S. EPA has been delayed pending the outcome of the U.S. EPA review of the ISA Report. Responses to the U.S. EPA comments on the initial draft ISA Report are being incorporated into the Detailed Analysis of Alternatives presentation.

Responses to internal review comments on the draft FS report have been prepared. The report is being revised in response to those comments, and changes resulting from the U.S. EPA review of the draft initial ISA Report are being incorporated as well.

<u>Activity</u>	<u>Comment</u>
Issue draft final Initial Screening of Alternatives Report to the U.S. EPA for review and approval.	Completed January 9, 1991.
Present Detailed Analysis of Alternatives to the U.S. EPA	Open, additional work identified.
Issue draft Feasibility Study to the U.S. EPA on March 25, 1991	Open, additional work identified.

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Operable Unit 2: Other Waste Units

2.2 Feasibility Study (cont'd.)

b. **Issues/Problems**

Changes made to incorporate the U.S. EPA comments into the ISA report resulted in two alternatives for each waste unit being added. These alternatives incorporate waste treatment as a means of reducing contaminant leaching.

A treatability study is necessary to determine the effectiveness of the stabilization technology selected for further evaluation. The results of this testing will not be available prior to the scheduled delivery date of the FS report as specified in the Consent Agreement.

c. **Corrective Actions**

A Work Plan Addendum will be prepared to identify and describe the treatability testing necessary to adequately evaluate the effectiveness of the alternatives undergoing detailed analysis. Upon approval of the Work Plan Addendum by the U.S. EPA, a revised schedule for delivery of the FS report will be prepared for approval by the U.S. EPA.

d. **Planned Activities for February 1991**

Incorporate changes from the ISA revision into the detailed analysis. Prepare a treatability study work plan for Operable Unit 2.

FMPC RIIFS FFA TRACKING
 OPERABLE UNIT 2 - OTHER WASTE UNITS

ACTIVITY	FY 1990												FY 1991												FY 1992												% COMPL	
	OND	J	F	M	A	M	J	J	A	S	OND	J	F	M	A	M	J	J	A	S	OND	J	F	M	A	M	J	J	A	S	PLN	ACT						
RI REPORT/RISK ASSESSMENT																														97	97							
TASK 12 - INITIAL SCREENING OF ALTs																														100	100							
TASK 13 - DETAILED ANALYSIS OF ALTs																														100	100							
TASK 14 - SELECTION OF PREFERRED ALT																														100	35							
TASK 15/16 - FS REPORT																														76	74							
TASK 17 - PROPOSED PLAN																														27	0							
TASK 18 - RESPONSIVENESS SUMMARY																														0	0							
TASK 19 - DRAFT RECORD OF DECISION																														0	0							

LEGEND: PLANNED AS/IT MILESTONE DEL TO EPA PRIMARY DOCUMENT
 PROGRESS DOE MILESTONE DOE MAY EXTEND 20 DAYS
 SECONDARY DOCUMENT/PRESENTATION

NOTES:
 * - PRIMARY DOCUMENT
 ** DOE MAY EXTEND 20 DAYS
 + - SECONDARY DOCUMENT/PRESENTATION

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Operable Unit 3: Production Area and Suspect Areas

3.1 Remedial Investigation (RI)

a. Status of Work - Key Milestones

On January 22, 1991, an informal dispute resolution meeting was held with the U.S. EPA and the Ohio EPA to discuss issues related to the disapproval of the Operable Unit 3 ISA Report. This meeting resulted in a tentative understanding on the majority of issues which included: alternatives development, treatability studies, preliminary remediation goals, additional site characterization, and the need for structural analysis and additional data on the mechanical properties of soils. The dispute was elevated to the Senior Executive Committee (SEC) on January 25, 1991. The DOE advised the U.S. EPA that primary documents for Operable Unit 3 will not be submitted until such time that the agreed resolution of all issues is incorporated into those documents. This will delay the submittal of the Operable Unit 3 RI Report since issues raised in the ISA disapproval and NOV relating to the operable unit scope, perched water point of compliance, and clean-up levels remain unresolved. These unresolved issues, which are being discussed in the formal dispute resolution sessions along with the additional site characterization requirements, will impact the completion of the RI document. The DOE also submitted to the U.S. EPA on January 29, 1991, a notification of additional work under the Consent Agreement Section XV.B.

Operable Unit 3 RI work related to the incorporation of internal draft comments and the following additional activities were initiated in January: 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 determining the criteria for consideration of these zones as potable water sources.

<u>Activity</u>	<u>Comment</u>
Issue draft RI Report to the U.S. EPA on April 8, 1991	Open, in formal dispute resolution.

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Operable Unit 3: Production Area and Suspect Areas

3.1 Remedial Investigation (RI) (cont'd.)

b. **Issues/Problems**

The U.S. EPA contends that production area facilities, aboveground drums, underground storage tanks, and thorium are within the scope of Operable Unit 3. A Notice of Violation (NOV) was received on December 26, 1990 concerning the scope of OU3, and other issues relative to the Draft Final Initial Screening of Alternatives (ISA) Report.

c. **Corrective Actions**

An informal dispute resolution meeting was held on January 22, 1991 in response to the disapproval of the ISA Report and the NOV. A tentative understanding was reached on the majority of issues not directly related to scope. Formal dispute resolution is underway to resolve scope related disagreements. RI work will concentrate on preparation of work plan addenda related to the characterization efforts (additional work) required to identify the nature and extent of contamination within the Operable Unit.

d. **Planned Activities for February 1991**

Complete preparation of responses to internal review comments received in January 1991. Initiate preparation of work plans relative to additional field programs necessary to fully characterize Operable Unit 3. 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/FS documentation; continuing the analysis of the perched groundwater zones; and determining the criteria for consideration of these zones as potable water sources.

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Operable Unit 3: Production Area and Suspect Areas (cont'd.)

3.2 Feasibility Study (FS)

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

On January 22, 1991, an informal dispute resolution meeting was held with the U.S. EPA and the Ohio EPA to discuss issues related to the disapproval of the Operable Unit 3 ISA Report. For the reasons stated in Section 3.1, this will delay the submittal of the Operable Unit 3 FS Report since issues raised in the ISA disapproval and NOV relating to operable unit scope, perched water point of compliance, and clean-up levels remain unresolved and are being discussed as part of the formal dispute resolution process.

Operable Unit 3 FS work initiated in January included preparation of responses to the U.S. EPA and the Ohio EPA comments relative to the ISA Report and incorporation of those comments into the Detailed Analysis of Alternatives presentation and the FS report. A major portion of this work consisted of the development and screening of 23 alternatives consisting of process options for addressing the current Operable Unit 3 scope contaminants.

<u>Activity</u>	<u>Comment</u>
Issue Draft Final Initial Screening of Alternatives Report to the U.S. EPA	Open, In formal dispute resolution.
Present Detailed Analysis of Alternatives to the U.S. EPA	Open, pending completion of ISA dispute resolution.
Issue Draft FS Report to the U.S. EPA	Open, In formal dispute resolution.

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Operable Unit 3: Production Area and Suspect Areas (cont'd.)

3.2 Feasibility Study (cont'd.)

b. Issues/Problems

The U.S. EPA contends that production area facilities, aboveground drums, underground storage tanks, and thorium are within the scope of Operable Unit 3. A disapproval of the Draft Final ISA Report was received from U.S. EPA on December 21, 1990 and a Notice of Violation (NOV) was received on December 26, 1990 concerning the scope of OU3, and other issues relative to the Draft Final Initial Screening of Alternatives Report.

c. Corrective Actions

An informal dispute resolution meeting was held on January 22, 1991 in response to the disapproval of the ISA Report and the NOV. The dispute was elevated to the SEC on January 29, 1991. Tentative agreement was reached on the majority of issues not directly related to scope, however, formal dispute resolution is now underway to resolve scope related disagreements. Work will continue on tasks that will be useful irrespective of the outcome of dispute resolution regarding the scope of OU3.

d. Planned Activities for February 1991

The FS Report will be revised to incorporate the tentative understanding resulting from the January 22, 1991 informal dispute resolution meeting with the U.S. EPA. The emphasis will be placed on pursuing tasks that will not be affected by the outcome of the ISA scope issue.

These tasks which will be initiated in February include refining the alternatives definition, completing the process option evaluation, preparing engineering descriptions of process options for ARARs assessment and cost estimating, and preparation of comparative analysis of alternatives.

FMPC RI/FS FFA TRACKING
 OPERABLE UNIT 3 - PRODUCTION AND SUSPECT AREAS

ACTIVITY	FY 1990			FY 1991			FY 1992			% COMPL							
	O	N	D	J	F	M	A	M	J	J	F	M	A	M	J	PLN	ACT
RI REPORT/RISK ASSESSMENT *																70	71
TASK 12 - INITIAL SCREENING OF ALTs																100	100
TASK 13 - [†] DETAILED ANALYSIS OF ALTs																100	85
TASK 14 - SELECTION OF PREFERRED ALT																98	0
TASK 15/16 - FS REPORT **																51	51
TASK 17 - PROPOSED PLAN																0	0
TASK 18 - [†] RESPONSIVENESS SUMMARY																0	0
TASK 19 - DRAFT RECORD OF DECISION																0	0

LEGEND: PLANNED AS/UT MILESTONE DEL TO EPA PRIMARY DOCUMENT
 PROGRESS DOE MILESTONE DOE MAY EXTEND 20 DAYS
[†] - SECONDARY DOCUMENT/PRESENTATION

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

4.1 Remedial Investigation

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

The formal dispute resolution of the Operable Unit 4 RI Report was resolved during January and a letter was issued by the U.S. EPA that described the resolution. Both parties agreed the RI Report was incomplete since complete data was not provided. A meeting was held with the U.S. EPA on Wednesday, January 23, 1991, to discuss new detailed schedules. A preliminary revised schedule was presented to the U.S. EPA and comments received. The DOE will submit a formal schedule extension as requested for the U.S. EPA consideration.

b. **Issues/Problems**

The current sampling and analysis schedule will delay the incorporation of analytical data for Operable Unit 4 into the RI Report. The U.S. EPA expressed concern over the integrated risk assessment approach. Waiting for an integrated risk assessment before establishing remedial action objectives may delay the completion of the RI Report.

c. **Corrective Actions**

An integrated sampling schedule is being prepared for the RI/FS for all operable units. This schedule will be compared with the Operable Unit 4 schedule to determine if integration is possible on a timely basis.

d. **Planned Activities for February 1991**

Work will be initiated on the slant boring and berm sampling programs for OU4.

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

4.2 Feasibility Study

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

Work continued on revising the FS Report based upon comments received.

The impacts of the Bentonite and Decant Sump Tank Removal Actions are being incorporated into alternative analysis.

b. **Issues/Problems**

The submission of the Feasibility Study and subsequent documents is being delayed pending U.S. EPA approval of a revised schedule for the delivery of the RI Report.

c. **Corrective Actions**

The schedule mentioned under Section 4.1, Remedial Investigation, included networks for the Feasibility Study and for the subsequent documents. These activities will be optimized and presented to the U.S. EPA.

d. **Planned Activities for February 1991**

A thorough quality assurance review of the Feasibility Study will be completed during the RI dispute resolution process.

ACTIVITY		FY 1990												FY 1991												FY 1992												% COMPL	
		OND	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	PLN	ACT		
RI REPORT/RISK ASSESSMENT *																																				100	100		
TASK 12 - INITIAL SCREENING OF ALTs																																			100	100			
TASK 13 + DETAILED ANALYSIS OF ALTs																																			100	100			
TASK 14 - SELECTION OF PREFERRED ALT																																			100	75			
TASK 15/16 - ** FS REPORT																																			100	99			
TASK 17 - PROPOSED PLAN																																			100	82			
TASK 18 + RESPONSIVENESS SUMMARY																																		0	0				
TASK 19 - DRAFT RECORD OF DECISION																																		0	0				

LEGEND: PLANNED AS/IT MILESTONE DEL TO EPA
 PROGRESS DOE MILESTONE

NOTES:
 * - PRIMARY DOCUMENT
 ** DOE MAY EXTEND 20 DAYS
 + - SECONDARY DOCUMENT/PRESENTATION

* SCHEDULE SUBJECT TO UPDATE

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Operable Unit 5: All Environmental Media

5.1 Remedial Investigation

a. Status of Work - Key Milestones

Internal comments were received in January on the draft RI Report. Work continued on the resolution of these comments and revision of the RI Report for submittal to DOE-HQ for review and approval. The FMPC Groundwater Report is currently undergoing internal review. This document contains detailed information and interpretation of site-wide groundwater data and is intended as a source document for the RI Report.

<u>Activity</u>	<u>Comment</u>
Issue draft RI Report to U.S. EPA on April 8, 1991	Open, On schedule, 72% complete

b. Issues/Problems

The untimely receipt of analytical results has adversely impacted the finalization of the RI report. Additional sampling requirements (Paddy's Run Seep Study) may also impact the schedule.

c. Corrective Actions

A meeting is scheduled for early February with laboratory personnel in an effort to expedite sample analysis.

d. Planned Activities for February 1991

Incorporate the internal review comments into the revised draft RI Report.

Submit the revised RI Report for DOE-HQ review.

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Operable Unit 5: All Environmental Media

5.2 Feasibility Study

a. Status of Work - Key Milestones

Comments from the internal review of the Detailed Analysis of Alternatives (secondary document) were received on January 28, 1991. These comments are being incorporated into a revised version of the document for submittal to the U.S. EPA on February 22, 1991.

The draft Feasibility Study Report is being finalized for submittal for internal review.

The Treatability Study Work Plan for Operable Unit 5 is currently being revised to reflect internal review comments.

<u>Activity</u>	<u>Comment</u>
Issue Detailed Analysis of Alternatives Report to the U.S. EPA on February 22, 1991.	Open, On schedule; 88% complete.
Issue Draft Feasibility Study to U.S. EPA on June 4, 1991	Open, On schedule; 44% complete.

b. Issues/Problems

None to report.

c. Corrective Actions

None required.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

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Period Ending January 31, 1991

Operable Unit 5: All Environmental Media

5.2 Feasibility Study

d. **Planned Activities for February 1991**

Submit the Detailed Analysis of Alternatives Report to the U.S. EPA.

Submit the draft Feasibility Study for internal review.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
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RI/FS Community Relations

6.0 RI/FS Community Relations

a. Status of Work

Community Meeting

Local residents and community groups participated in scoping meetings for the DOE Programmatic Environmental Impact Statement (PEIS) in both Cincinnati and Columbus.

The articles for the February 1991 issue of FMPC Cleanup Update were distributed for internal review.

A questionnaire regarding community interest in holding future community roundtable meetings was distributed to area residences.

Approximately 30 technical and community relations staff members participated in a training course aimed at dealing with angry, upset people.

b/c. Problems/Corrective Action

None to report/none required.

d. Planned Activities for February 1991

The FMPC Community Relations Council will meet in February, 1991.

Issue the FMPC Cleanup Update to area residents by February 28, 1991.

Make presentations to community groups upon request.

Continue to tabulate and report on roundtable questionnaires.

Distribute announcements for the March 19, 1991 Community Meeting.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
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7.0 **Field Activities**

Surveying Activities

Surveying activities continued during January focusing on establishing the horizontal and vertical coordinates for borings and installed monitoring wells. Some surveying activities included re-establishing control points within the RI/FS study areas. Surveying activities also continued in January on establishing landowner boundaries in support of the Paddy's Run South Seepage Investigation.

Monitoring Wells Installations

Three monitoring wells were installed in January, Well 2558, Well 2559 and Well 2561, in support of the Paddy's Run South Seepage Investigation. Final approval of landowner agreements are pending on the remaining three monitoring wells in this program. Table 1 summarizes pertinent information for Wells 2558, 2559 and 2561. The well boring logs can be found in Enclosure C.

TABLE 1: MONITORING WELL INSTALLATIONS

<u>Monitoring Well No.</u>	<u>Date Completed</u>	<u>Depth Drilled (Ft.)</u>	<u>Depth to Bottom of Casing (Ft.)</u>
2558	1-15-91	20.5	20.0
2559	1-19-91	31.5	25.0
2561	1-07-91	36.5	30.0

Monitoring Well Development

During January, two 1000-series monitoring wells; Wells 1643 and 1644, were developed and sampled. These wells were installed for the RCRA Monitoring Well Program and are located on the western perimeter of Waste Pit No. 4.

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7.0 Field Activities (cont'd.)

Water Sampling: Monitoring Wells

Groundwater sampling efforts resumed in January with six monitoring wells sampled: Wells 1643, 1644, 2396, 3396, 2397 and 3385.

Water Sampling: Facility Testing

Facility testing groundwater sampling efforts resumed in January with four piezometers sampled: Piezometers 1258, 1259, 1361 and 1423.

Production and Additional Suspect Areas Drilling Program (Facility Testing)

The Production and Additional Suspect Areas Drilling Program continued during January with borings drilled in the Pilot Plant and Plant 6.

Boring 1251 was completed as a piezometer and concluded the interior boring program for the Pilot Plant Plan. Three borings were drilled within Plant 6 as part of the Sectors 1 and 4 HSL Soil Sampling Plan. Borings 1610 and 1613 were completed as flush-mounted four-inch stainless steel piezometers. Two drilling and sampling attempts were made on Location 1609 within Plant 6 and both failed. Underground drain lines were encountered in both attempts although soil samples were collected to a depth of seven feet on the initial attempt. Plans are being made to relocate Boring 1609 in order to complete it as a piezometer. Table 2 summarizes the Facility Testing Drilling Program for January 1991. Boring logs can be found in Enclosure C.

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7.0 Field Activities (cont'd.)

TABLE 2: FACILITY TESTING DRILLING PROGRAM

<u>Boring No.</u>	<u>Date Completed</u>	<u>Depth Drilled (Ft.)</u>	<u>Piezometer Installed Yes/No</u>	<u>Sector No.</u>
1251	01-07-91	20.0	Yes	3
1609	01-22-91	6.5	Yes	1
1610	01-20-91	20.0	Yes	1
1613	01-31-91	20.0	Yes	1

Water Level Measurements: Monitoring Wells and Piezometers

Water levels measurements were taken for 224 monitoring wells and 185 piezometers contained in the FMPC RI/FS Program.

K-65 Silo Sampling

Due to weather constraints and the availability of the Radon Treatment System, no content sampling was completed in January. A three-day window of acceptable weather is required for sample extraction.

Preparations are underway to begin the slant borings beneath the Silos in February 1991.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
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ENCLOSURE A

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

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
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Period Ending January 31, 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 January 1991.

Summary - January 1991

The total quantity of uranium discharged from the FMPC to the Great Miami River via Manhole 175 (Outfall 1I000004001) was 136.21 kilograms. The average uranium concentration for the previous twelve months was 0.83 mg/l. This is 93.3 percent of the Derived Concentration Guide (DOE Order 5400.5) for ingested water.

There was no discharge from the Stormwater Retention Basin (Outfall 1I000004002) to Paddy's Run via the Storm Sewer Outfall Ditch in January 1991. Based on 2.37 inches of rainfall in January 1991, the total quantity of uranium discharged to Paddy's Run from uncontrolled areas of the FMPC is estimated to be 10.67 kilograms.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
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Period Ending January 31, 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: January 1991
Manhole 175 (Effluent to Great Miami River)

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	1.331	599	243	1.10	5.54	372
2	1.324	653	324	1.32	6.61	446
3	1.270	486	135	0.98	4.71	331
4	1.274	662	149	1.60	7.71	541
5	1.325	982	248	2.14	10.73	723
6	1.360	671	432	1.86	9.57	628
7	1.424	640	383	1.66	8.94	561
8	1.377	685	306	1.50	7.81	507
9	1.221	703	405	1.40	6.47	473
10	1.433	509	284	1.24	6.72	419
11	1.454	590	261	1.10	6.05	372
12	1.341	527	248	0.96	4.87	324
13	1.346	514	144	0.84	4.28	284
14	1.251	351	126	0.86	4.07	291
15	1.375	437	104	0.74	3.85	250
16	1.315	572	176	0.88	4.38	297
17	0.942	369	68	0.90	3.21	304
18	0.729	324	212	0.94	2.59	318
19	0.594	432	243	0.82	1.84	277
20	0.426	396	239	0.86	1.39	291
21	0.453	414	198	0.82	1.41	277
22	0.595	392	180	0.76	1.71	257
23	0.622	329	99	0.60	1.41	203
24	0.679	284	207	0.82	2.11	277
25	0.658	527	315	1.64	4.08	554
26	0.802	703	198	1.48	4.49	500
27	0.569	541	230	1.36	2.93	459
28	0.440	347	149	0.75	1.25	253
29	0.690	396	122	0.80	2.09	270
30	0.606	347	113	0.63	1.44	213
31	0.563	392	117	0.92	1.96	311
	30.789				136.21	

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

Period Ending January 31, 1991

Wastewater Flows and Radionuclide Concentrations (cont.)

FACILITY: Feed Materials Production Center

LOCATION: 001 Total Discharge

MONTH: January 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.	0.993	543	227	1.17	4.39	395
Max.	1.454	982	432	2.14	10.73	723
Min.	0.426	284	68	0.60	1.25	203

The average uranium concentration for the previous twelve months was 0.83 mg/l. This is 93.3 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 January 31, 1991

Wastewater Flows and Radionuclide Concentrations (cont.)

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: January 1991

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

Based on 2.37 inches of rainfall in January 1991, the uranium discharge to Paddy's Run from uncontrolled areas of the FMPC is estimated to be 10.67 kgs.

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

PERIOD ENDING JANUARY 31, 1991

ENCLOSURE B

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

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

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Period Ending January 31, 1991

INTRODUCTION

Enclosure B describes actions undertaken at the Feed Materials Production Center (FMPC) during the period January 1 through January 31, 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 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 - Inclement weather and constraining factors associated with the Radon Treatment System resulted in no samples being taken from the K-65 Silos during January. Three consecutive days of acceptable weather conditions are required for sample extraction.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

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Period Ending January 31, 1991

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND
LIABILITY ACT (CERCLA)

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).

3. Reports and Record Keeping

Section B

The RI/FS Monthly Technical Progress Report for December 1990 was transmitted to the U.S. EPA on January 18, 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 3, 1990 through January 3, 1991 will be submitted to the U.S. EPA in late February 1991.

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

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Period Ending January 31, 1991

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

RADIATION DISCHARGE INFORMATION

Section A

The seventeenth Quarterly Liquid Discharge Report for the period October through December 1990 will be submitted to the U.S. EPA in late February 1991.

REPORTING REQUIREMENTS

Section B

The Federal Facilities Compliance Agreement Monthly Progress Report for December 1991 was transmitted to the U.S. EPA on January 18, 1991 as Enclosure B of the Consolidated Consent Agreement/Federal Facility Compliance Agreement (CA/FFCA) Monthly Progress Report.

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

**STATUS OF ACTIONS AS OF
JANUARY 31, 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 December 1990 was transmitted to the U.S. EPA on January 18, 1991 (DOE-616-91).
CLEAN AIR ACT			
3.4	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.

TABLE 1

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

**STATUS OF ACTIONS AS OF
JANUARY 31, 1991**

ACTION	DESCRIPTION	COMPLETION TIME AFTER FFCA SIGNED	FY91 STATUS
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.
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 3, 1990 through January 3, 1991 will be submitted to the U.S. EPA in late February 1991. 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 a 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.

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

**STATUS OF ACTIONS AS OF
JANUARY 31, 1991**

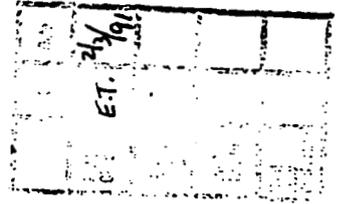
ACTION	DESCRIPTION	COMPLETION TIME AFTER FFCA SIGNED	FY91 STATUS
RADIATION DISCHARGE INFORMATION			
A.3	Report to U.S. EPA, Ohio EPA and Ohio Department of Health the results of the continuous liquid discharge samples.	quarterly	The seventeenth Quarterly Liquid Discharge Report for the period October through December 1990 will be transmitted to the U.S. EPA in late February 1991. 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	December's FFCA Monthly Progress Report was transmitted to the U.S. EPA on January 18, 1991 (DOE-616-91).

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT
PERIOD ENDING JANUARY 31, 1991**

**ENCLOSURE C
DRILLING AND BORING LOGS**

FERNALD
RI/FS

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VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER	602.3.7	PROJECT NAME	FMPC RIFFS
BORING NUMBER	1609 #1	COORDINATES	
ELEVATION		GWL Depth	Date/Time
ENGINEER/GEOLOGIST	J. LEAR, M. GARMAN	Depth	Date/Time
DRILLING METHOD	COCS. HOLLOW STEM AUGER		PAGE 1 OF 3

DEPTH (FT)	SAMPLE TYPE & DATE	BLOW COUNT (SAMPLER IN 10 IN)	RECOVERY (IN)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (%)	NA WELL CLASSIFICATION	REMARKS
	NA 01-22 1850	NA	NA	0.0 - 1.0 FT IS CONCRETE.	NA	NA		NA
	NA 01-22 1850	NA	NA		NA	NA		
TOTAL SAMPLE	57314 01-22 2200	11	6	DENSE (104R, 15/2) GRAYISH BROWN SANDY WELL GRADED GRAVEL, SOME SILT, SLIGHTLY MOIST.	GW	NA		H _N U = 0 α = 0 B _x = 100 cpm
	57315 01-22 2200	14	6	DENSE (104R, 15/3) BROWN WELL GRADED SAND, SOME SILT, SOME GRAVEL, SLIGHTLY MOIST.	SW	NA		
TOTAL SAMPLE	57316 01-22 2200	19	0	SAA	SW	NA		
	57317 01-22 2205	21	6	DENSE (104R, 15/4) YELLOWISH BROWN SILTY FINE TO MEDIUM GRAINED SAND, TRACE GRAVEL, SLIGHTLY MOIST.	SM	NA		H _N U = 0 α = 0 B _x = 150 cpm
	57318 01-22 2205	20	6	SAA	SM	NA		
	57319 01-22 2205	24	3	SAA	SM	NA		
HSL SAMPLE	57320 01-22 2210	20	6	MEDIUM DENSE (104R, 15/4) YELLOWISH BROWN SILTY FINE TO MEDIUM GRAINED SAND, TRACE GRAVEL, SLIGHTLY MOIST.	SM	NA		H _N U = 0 α = 0 B _x = 150 cpm
	57321 01-22 2210	11	6	SAA	SM	NA		
HSL SAMPLE	57322 01-22 2210	14	5	SAA	SM	NA		
	57323 01-22 2216	8	0	NR	NA	NA		
6	57324 01-22 2300	11	6	LOOSE (104R, 15/4) YELLOWISH BROWN SILTY SAND, TRACE LARGE GRAVEL, SLIGHTLY MOIST, FRAGMENTS OF RED PLASTIC AND OFF-WHITE TERZA COTTA CAN BE SEEN.	SM	NA		H _N U = 0 α = 0 B _x = 180 cpm
	57325 01-22 2300	7	6	SOFT (104R, 15/4) MOTTLED GRAYISH BROWN SILTY CLAY, MEDIUM PLASTICITY, MOIST.	CL	0.25 4.5 12.2		
7	57326 01-22 2300	3	0	NR	NA	NA		

NOTES: 10" PIPE AT 6.0 - 6.5 FT. HOLD PLUGGED AND ABANDONED.

Drilling Contractor: YENN DRILL CO.

Drilling Equipment: CME 45

Driller: BOB YOST

ASST: MARK REIBOLD

BACKGROUND:

H_NU = 0

α = 0

B_x = 3000 - 5000 cpm

FERNALD RI/FS

INSTALLATION DATE: 01-22-91

P. 2/3

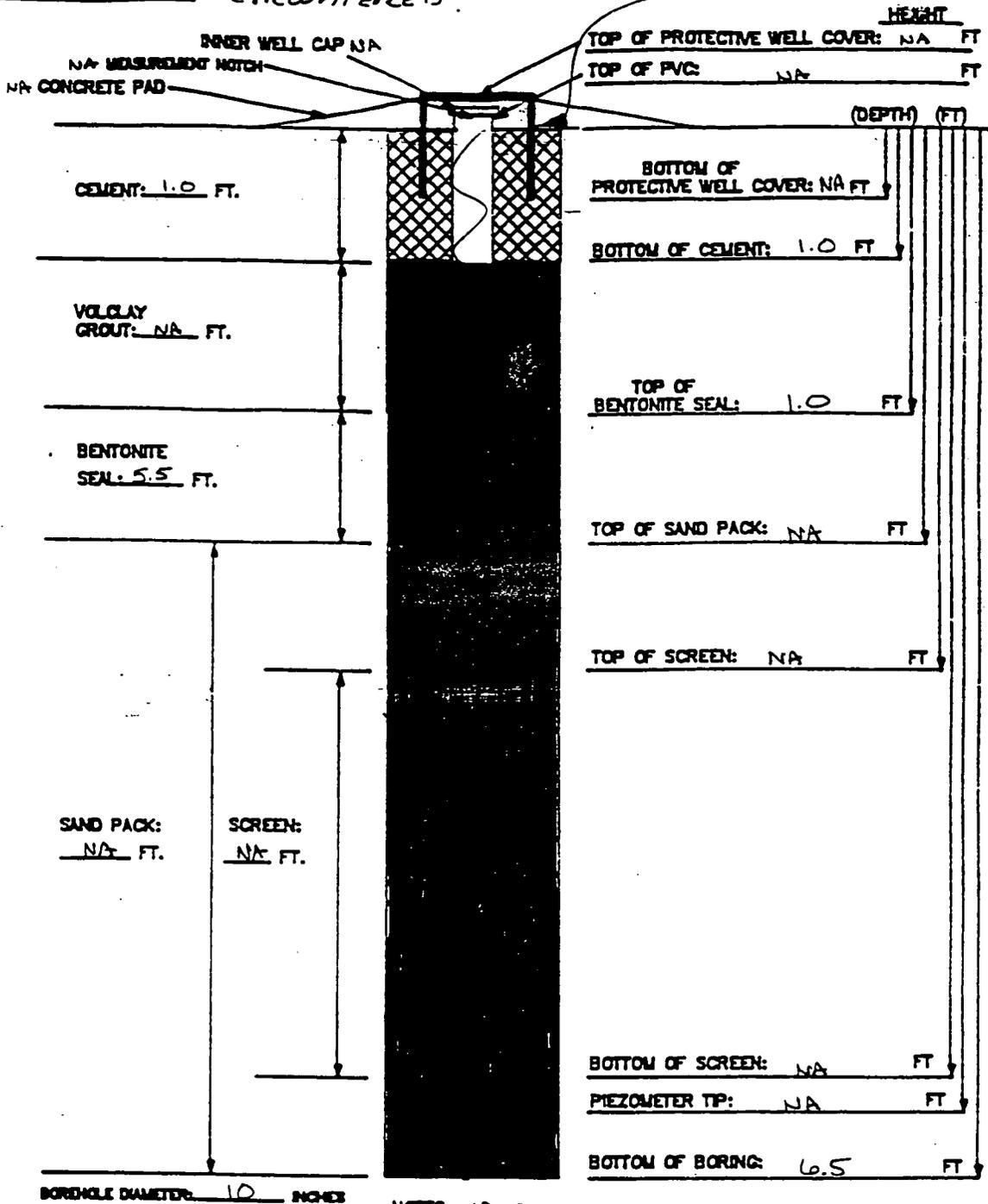
INSTALLATION DIAGRAM
MONITORING WELL NO.

1609

*Boring Abandoned.
Underground Drain Line
Encountered.*

* CEMENTED TO SURFACE
FLUSH WITH FLOOR.

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BORING DIAMETER: 10 INCHES

MATERIALS USED:

- SAND TYPE AND QUANTITY: NA
- BENTONITE PELLETS (5-GALLON BUCKETS): 2
- BAGS OF VOLCLAY GROUT: NA
- AMOUNT OF CEMENT: 1.5 BAGS
- AMOUNT OF WATER USED: 16 GALLONS
- OTHER:

NOTES: NA

- 1) RISER PIPE IS 2-INCH SCHEDULE 40 PVC PIPE, FLUSH-THREADED JOINTS.
- 2) SCREEN IS 2-INCH I.D. SCHEDULE 40 PVC PIPE WITH 0.020-INCH SLOTS.
- 3) LOWER END OF SCREEN IS CAPPED WITH AN END CAP OR THREADED PLUG.
- 4) WATER DEPTH/DATE:
- 5) TOP OF PVC IS SECURED WITH EXPANDABLE RUBBER PLUG AND PADLOCK.
- 6) PARENTHESES INDICATE DEPTH BELOW GROUND LEVEL.

TASK: 3.7

GEOLOGIST/ENGINEER: N. GARMAN

FIGURE 2-3 FLUSH PIEZOMETER COMPLETION

PIEZOMETER INSTALLATION SHEET

PROJECT NAME FMPC RI/FS FIELD ENG./GEO. MARY GARMAN DATE 1-22-91
 PROJECT NO. 602 3.7 CHECKED BY S.T. DATE 2-3-91
 BORING NO. 1609
 PIEZOMETER NO. NA DATE OF INSTALLATION 1-22-91
PLUGGED & ABANDON

BOREHOLE DRILLING

DRILLING METHOD <u>Auger CME 45</u>	TYPE OF BIT <u>Auger</u>
DRILLING FLUID (S) USED:	CASING SIZE (S) USED:
FLUID <u>NA</u> FROM <u>-</u> TO <u>-</u>	SIZE <u>NA</u> FROM <u>-</u> TO <u>-</u>
FLUID <u>NA</u> FROM <u>-</u> TO <u>-</u>	SIZE <u>NA</u> FROM <u>-</u> TO <u>-</u>

PIEZOMETER DESCRIPTION

TYPE <u>Abandoned Boring</u>	RISER PIPE MATERIAL <u>NA</u>
DIAMETER OF PERFORATED SECTION <u>NA</u>	RISER PIPE DIAMETERS:
PERFORATION TYPE: <u>NA</u>	O.D. <u>NA</u> I.D. <u>NA</u>
SLOTS <input type="checkbox"/> HOLES <input type="checkbox"/> SCREEN <input type="checkbox"/>	LENGTH OF PIPE SECTIONS <u>NA</u>
AVERAGE SIZE OF PERFORATIONS <u>NA</u>	JOINING METHOD <u>NA</u>
TOTAL PERFORATED AREA <u>NA</u>	

PROTECTION SYSTEM

RISER PROTECTIVE PIPE LENGTH <u>NA</u>	OTHER PROTECTION <u>CEMENTED TO SURFACE</u>
PROTECTIVE PIPE O.D. <u>NA</u>	<u>TO RE-ESTABLISH FLOOR SURFACE</u>

ITEM	DISTANCE ABOVE/BELOW GROUND SURFACE (FT.)		ELEVATION () ESTABLISHED @ LATEST DATE.		
TOP OF RISER PIPE	NA				
GROUND SURFACE	0.0				
BOTTOM OF PROTECTIVE PIPE	NA				
BOREHOLE FILL MATERIALS:	GROUT/SLURRY	TOP NA	BOTTOM NA	TOP	BOTTOM
	BENTONITE PELLETS & WATER	TOP 1.0	BOTTOM 6.5	TOP	BOTTOM
	SAND	TOP NA	BOTTOM NA	TOP	BOTTOM
	GRAVEL	TOP NA	BOTTOM NA	TOP	BOTTOM
PERFORATED SECTION	TOP NA	BOTTOM NA	TOP	BOTTOM	
PIEZOMETER TIP	NA				
BOTTOM OF BOREHOLE	7.5 FT				
GWL AFTER INSTALLATION	NA				

WAS THE PIEZOMETER FLUSHED AFTER INSTALLATION? YES NO
 WAS A SENSITIVITY TEST PERFORMED ON THE PIEZOMETER? YES NO **48**

REMARKS BORING 1609 WAS PLUGGED AND ABANDONED AFTER DRAIN LINE ENCOUNTERED ON 1ST ATTEMPT. ON 2ND ATTEMPT DRAIN-LINE ENCOUNTERED AGAIN AND NO SAMPLES WERE TAKEN. 2ND ATTEMPT COLLAPSED ON REMOVAL OF SAMPLE SPONS ONLY CEMENTED BACK TO SURFACE. NOT RE-NUMBERED.

FERNALD RI/FS

1132

Index	Date		
Field Notes	ET.		
1st Key In			
2nd Key In			
Head Log			
Vertical			

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 60237	PROJECT NAME: FMDL RI/FS
SPRING NUMBER: 1610	COORDINATES
ELEVATION:	GWL: Deem Date/Time
ENGINEER/GEOLOGIST: M. GARMAN, J. LEAR	Deem Date/Time
DRILLING METHOD: COS. HOLLOW STEM AUGER	PAGE 1 OF 5
	DATE: 01-19-91
	DATE STARTED: 01-19-91
	DATE COMPLETED: 01-20-91

DEPTH (FT)	SAMPLE ELEV. (FT)	BLOWS ON SAMPLER (N)	RECOVERY (IN)	DESCRIPTION	USCS SYMBOL	MEASURED LIQUIDITY (%)	NA WELL	REMARKS
	NA 1-13-91 1830	NA	6	0.0 TO 0.5 FT IS CONCRETE	NA	NA		NA
1	57354 01-13 2141	4	6	MEDIUM DENSE (10% S/S) YELLOWISH BROWN SILTY SAND. SOME GRAVEL. DRY.	SM	NA		HNU = 0 $\alpha = 0$ B ₇ = 200-300 cpm
	57359 01-13 2141	9	6	SAA	SM	NA		
	57360 01-13 2141	16	2	SAA	SM	NA		
2	57361 01-13 2146	17	6	SAA	SM	NA		HNU = 0 $\alpha = 0$ B ₇ = 260 cpm
	57362 01-13 2146	15	6	SAA	SM	NA		
3	57363 01-13 2146	14	6	SAA	SM	NA		
	57364 01-13 2146	14	3	SAA	SM	NA		
4	57365 01-13 2153	12	6	LOOSE (10% S/S) BROWN SILTY GRAVELLY SAND. DRY.	SM	NA		HNU = 0 $\alpha = 0$ B ₇ = 250 cpm
	57366 01-13 2153	8	6	SAA	SM	NA		
	57367 01-13 2153	5	6	SAA	SM	NA		
	57368 01-13 2153	3	6	SAA	SM	NA		
6	57369 01-13 2257	2	6	VERY LOOSE (10% S/S) BROWN SILTY GRAVELLY SAND. DRY.	SM	NA		HNU = 0 $\alpha = 0$ B ₇ = 250 cpm
	57370 01-13 2257	1	6	SAA	SM	NA		
7	57371 01-13 2257	1	2	VERY LOOSE (10% S/S) BROWN CLAYEY SANDY SILT. TRACE GRAVEL. SLIGHTLY MOIST.	ML	NA		

NOTES.

Drilling Contractor: PENN DRILL CO.
 Drilling Equipment: C.M.I.E. 45T
 Driller: BOB YOST
45T MILL REPROD

BACKGROUND:

HNU = 0 PPM
 $\alpha = 0$ cpm
 B₇ = 3000-5000 cpm