

2293

G-000-711.45

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

09/30/91

DOE-FSO/EPA

**129
REPORT**

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Introduction

The Consent Agreement (CA) under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Sections 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 Fernald Environmental Management Project (FEMP) during the period September 1 through September 30, 1991 and planned actions for the period October 1 through October 31, 1991.

Highlights of work completed in September by the DOE includes the following:

- The updated appendices for the RI/FS and Removal Actions Community Relations Plan were submitted to the U.S. EPA under Document Change Request #67 on September 4, 1991.
- Stabilization treatability studies for Operable Unit 2 were initiated on September 9, 1991.
- The Engineered Waste Management Facility (EWMF) Sampling and Analysis Plan (SAP) was transmitted to the U.S. EPA and the Ohio EPA on September 10, 1991 for review and approval.
- The 13-Well Program associated with Operable Unit 1 Site Characterization activities was completed ahead of schedule on September 11, 1991. Some rework will be required due to missed holding times on two boring samples for some analytical parameters.
- The Consent Agreement as amended was signed by the U.S. DOE on September 18, 1991 and the U.S. EPA on September 20, 1991.
- Mapping of Removal Action No. 4 Silos 1 and 2 was initiated on September 26, 1991 following the successful demonstration of the mapping technology and equipment in Silo 4 during August 1991.
- The property owners' drinking water well sampling project was completed in September 1991.
- Phase I of the process knowledge interviews for Operable Unit 3 was completed in September 1991. Phase II was initiated with five interviews conducted in September 1991.

8094

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

Period Ending September 30, 1991

Introduction (cont'd.)

- Two of the eight construction sequences for the Waste Pit Area Runoff Control Removal Action were completed in September 1991
- The South Plume Removal Action, Part 1 Test Well and Sampling, was completed on September 26, 1991.

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.
- o Enclosure D - Archive Sampling Procedure.
- o Enclosure E - South Groundwater Contamination Plume Removal Action Proposal.

CA Section IX. Removal Actions

This section provides an update of activities associated with the implementation of Removal Actions (RAs) at the FEMP during September 1991. Information is presented for each of the Removal Actions identified in the Consent Agreement and the four previously agreed upon Removal Actions:

- o RA No. 1, Contaminated Water Beneath FEMP 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.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Introduction (cont'd.)

CA Section IX. Removal Actions (cont'd.)

- o RA No. 5, K-65 Decant Sump Tank.
- o RA No. 6, Waste Pit 6 Residues.
- o RA No. 7, Plant 1 Pad Continuing Release.
- o RA No. 8, Inactive Flyash Pile Control.
- o RA No. 9, Removal of Waste Inventories.
- o RA No. 10, Active Flyash Pile Controls.
- o RA No. 11, Pit 5 Experimental Treatment Facility.
- o RA No. 12, Safe Shutdown.
- o RA No. 13, Plant 1 Ore Silos.
- o RA No. 14, Contaminated Soils Adjacent to Sewage Treatment Plant Incinerator.
- o RA No. 15, Scrap Metal Piles.
- o RA No. 16, Collect Uncontrolled Production Area Runoff--Northeast.
- o RA No. 17, Improved Storage of Soil and Debris.
- o RA No. 18, Control Exposed Material in Pit 5.

RA No. 1, Contaminated Water Beneath FEMP Buildings

Plant 6 - Pumping and collection of the perched water from underneath Plant 6 began on May 31, 1991. Through the end of September 1991, a total of 12,000 gallons of groundwater were extracted and collected at Plant 6. Approximately 10,000 gallons of perched groundwater were collected and transported for treatment by the Plant 8 VOC treatment system. The milestone for pumping and treatment of the Plant 6 perched water was completed on schedule.

Plants 2/3 and Plant 8 - Construction activities are underway to complete the extraction and collection system for Plants 2/3 and Plant 8. The Plants 2/3 and Plant 8 extraction systems are scheduled to be operational by November 1, 1991.

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

Period Ending September 30, 1991

RA No. 1, Contaminated Water Beneath FEMP Buildings

Plant 9 - Pumping from Plant 9 began on August 20, 1991 per the U.S. EPA and U.S. DOE milestone. Approximately 3,000 gallons were extracted and collected by the end of September 1991.

Plant 8 - The startup date for the Plant 8 treatment system was July 24, 1991. The carbon adsorption treatment system in Plant 8 will be used to treat the perched groundwater from Plants 2/3 and 8 as they come on line November 1, 1991. Through September 1991, approximately 10,000 gallons of groundwater were transported and treated utilizing the Plant 8 system. The milestone for startup of the Plant 8 treatment system was completed on schedule.

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>
Pumping and treatment of the Plant 6 perched groundwater became operational.	Completed. July 23, 1991	July 24, 1991
Initiate Pumping in Plant 9.	Completed. August 20, 1991	August 20, 1991
Initiate Pumping in Plants 2/3 and 8.	Open, on schedule.	November 1, 1991

RA No. 2, Waste Pit Area Runoff Control

The Work Plan for the Waste Pit Area Runoff Control Removal Action was approved with modifications by the U.S. EPA on January 10, 1991 and conditional approval was received from the Ohio EPA on April 2, 1991.

A modified Sampling and Analysis Plan and a revised schedule based on the conditions and modifications to the project were submitted to the U.S. EPA and the Ohio EPA on May 14, 1991.

Field studies showed permeability factors as high as 1×10^{-3} cm/sec in the north and east detention areas. As a result of these field studies, modifications in the form of a soil liner have been made to the design for these detention areas.

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

Period Ending September 30, 1991

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

Construction activities have been ongoing since June 6, 1991. Two of the eight construction sequences for the Waste Pit Area Runoff Control Removal Action were completed in September 1991.

The pre-excavation soil sampling and the subsequent reevaluation of the goals and objectives of the Sampling and Analysis Plan with respect to Hazardous Substance List (HSL) materials has resulted in a revision of the criteria for identifying the need for more samples, the disposition of excess construction soil, and the technical requirements for stockpiling the excavated soil. The reevaluation of the results and the plan are to ensure that the criteria developed in the plan are adequate and appropriate for addressing each objective stated. Due to difficulties with site-wide issues related to disposition of soils and debris, the revision of the Sampling and Analysis Plan was delayed and is expected to be submitted to the U.S. EPA and Ohio EPA for review and comment in October 1991. The revised Sampling and Analysis Plan will include a final determination for the disposition of excavated soil and the basis for the decision.

Planned activities in October 1991 include continuing the revision of the Sampling and Analysis Plan, the evaluation of the analytical results of the pre-excavation samples, and the continuation of excavation activities.

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Initiation of Bid/Award construction activities with issuance of the construction work order.	Completed. June 6, 1991.	June 1991
Completion of construction/system testing (system operational).	Open, on schedule.	July 1992

RA No. 3, South Groundwater Contamination Plume

Part 1

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. Responses to these comments are being prepared. The U.S. Army Corps of Engineers (COE) reached an agreement with the owner of the property where the Part 1 test well is to be installed. The Ohio EPA inspected the well field and found the site acceptable.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

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

Part 1 (cont'd.)

The COE obtained Right of Entry from all but one of the affected property owners where the alternate water supply mains are to be located. The Right of Entry allows surveying and exploration. The COE archaeologist completed a cultural resource investigation (archaeological/historical survey) of the Part 1 well site area and found no reason to delay the proposed well test activities. This information was transmitted to the Ohio State Historic Preservation Officer along with information for all areas affected by Part 1 construction activities on August 12, 1991. Based on the COE findings, approval to proceed on the test well activities was granted by the DOE/FO. Procurement of materials and mobilization for installation of the test well began on July 8, 1991 and drilling of the test well began on July 15, 1991. A decision was made to proceed with the completion of the 100% drawings and specifications for Part 1, assuming the results of the well field testing will be positive. A summary of the most recent and ongoing activities are listed below:

- 100% Design Review - Issued August 8, 1991.
- 100% Design Review - Comments received and reviewed as of August 30, 1991.
- Certified For Construction (CFC) Issue (Albright and Wilson Americas) was received on September 19, 1991.
- Test well and sampling was completed on September 26, 1991.
- Delta Steel meeting is scheduled for October 3, 1991 to discuss acceptance or rejection of an alternate well. If accepted, the design will be completed near the end of October 1991.

Part 2

Part 2 (pump South Plume and discharge to Great Miami River) and Part 3 (the installation and operation of an Interim Advanced Wastewater Treatment System [IAWWT] to reduce contaminant loading discharged to the Great Miami River to a level less than 1,700 pounds per year) were 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.

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

Period Ending September 30, 1991

RA No. 3, South Groundwater Contamination Plume (cont'd.)**Part 2 (cont'd.)**

A meeting was held on February 8, 1991 at the Ohio EPA Dayton office to discuss key comment items and FEMP'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 as well as 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 the 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, which is the most time consuming to construct, contains the transfer pump station, groundwater discharge pipeline, outfall pipeline, and associated appurtenances. The second package contains the well field details. Construction will be delayed on the well field package until the issues on the well field relocation are resolved.

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, provided that fifteen and two comments, respectively, were satisfactorily resolved.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

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

Part 2 (cont'd.)

A meeting was held with the U.S. EPA on May 22, 1991 to discuss the scope of work prepared to determine the location of the South Plume Removal Action Part 2 well field. After much discussion, it was determined that the well field could not be successfully installed near New Haven Road because of the organic contaminants in this area from the PRRS plume. Consequently, it was determined that the proposed well field and transfer pump station would be relocated north of the Albright & Wilson Americas' (AWA) facilities. However, a Part 5, in support of Part 2, would be added to the South Plume Removal Action to determine the exact relocation. Part 5 would include groundwater sampling to determine what portion of the greater-than 20 $\mu\text{g/l}$ of total uranium is downstream of the well field and to establish the boundary of the PRRS. The DOE/FO will determine the impact of these changes on the project schedules and funding.

The 100% Design Review drawings and specifications for Part 2 were issued on May 31, 1991. The design package was sent to the Ohio and U.S. EPAs for informational purposes on June 7, 1991. The design package did not reflect the May 22, 1991 decision to relocate the well field and transfer pump station.

The initial computer modeling required to relocate the Part 2 well field was completed in July 1991. A meeting was held with the U.S. EPA and the Ohio EPA on July 23, 1991 to discuss the results of the modeling. Draft findings were presented. High levels of uranium were predicted by the model to be discharged from the relocated well field. This prediction raised concerns that the equivalent mass resolution will be difficult to meet with the currently scheduled associated projects discussed at the meeting. All parties agreed that the well field be installed north of the industrial user, but the issue of equivalent mass will need to be addressed in Part 3. The DOE/FO will study options and another meeting will be held to discuss the study results.

In late August 1991, it was determined that the contractor for the Part 3 IAWWT trailer portion of the project (see below) could not perform. Therefore, the project would have to be rebid and the target date of December 15, 1991 could not be met.

Based on the reevaluation of all the above information, it seemed desirable to adjust the course of action for both projects. Accordingly, a restructuring concept for future direction was prepared which aggregately addressed the major outstanding issues for both the Part 2 and the Part 3 projects.

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

Period Ending September 30, 1991

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

Part 2 (cont'd.)

A formal proposal was prepared and presented to the U.S. EPA and the Ohio EPA at the August 29, 1991 Project Managers' meeting in Chicago. The proposal received verbal approval from the U.S. EPA and the Ohio EPA.

Accordingly, an addendum to the Engineering Evaluation/Cost Analysis (EE/CA) was prepared which defined the restructuring concept and was issued to the U.S. EPA and the Ohio EPA for review and comment. Comments were received from the Ohio EPA on September 25th. Comments from the U.S. EPA have yet to be received but are expected to be similar to those of the Ohio EPA.

Revisions to the addendum are being made to reflect the comments received. The addendum will then be forwarded so that it can be incorporated into the EE/CA - Environmental Assessment (EA) and issued for HQ review. After review, the EE/CA-EA will be issued for public comment.

The operating plan for the Part 2 well field was prepared and issued for comments. Comments were received and the document is being revised to reflect those comments. The operating plan is expected to be submitted for U.S. EPA and Ohio EPA review in mid-October.

The draft report on the groundwater computer modeling results which support the relocation of the extraction well field was received and issued for internal review. Comments will be consolidated and submitted to ASI/IT for resolution prior to transmitting the document to the U.S. EPA and the Ohio EPA for review and comment.

Part 3

The work plan for Part 3 (the installation and operation of an Interim Advanced Wastewater Treatment [IAWWT] System 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 with Part 2 as described above. The Design Basis Document for the IAWWT was issued to the U.S. EPA for informational purposes on March 19, 1991. Comments were received from the Ohio EPA on the IAWWT design basis document. Responses to the comments were issued on May 30, 1991. The IAWWT System will be handled as a two-part design: the trailer package, which includes the treatment system; and the utilities services package, which includes all utilities and support systems. The IAWWT trailer package specifications were finalized and issued for bid on May 16, 1991. The bids were received on June 6, 1991.

8850

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

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

Part 3 (cont'd.)

The contract for the fabrication of the trailer package was awarded on June 21, 1991. The 100% drawings and specifications utility portion of the project were Certified for Construction (CFC) on June 28, 1991. An evaluation indicated that incremental treatment capacity would be needed to meet the new equivalent mass requirements due to relocation of the Part 2 well field. As a result, a second identical treatment unit will be integrated into the revised design packages. Therefore, the contract for the fabrication of the trailer package, awarded June 21, 1991, was terminated on September 10, 1991 and also due to complications with the procurement of the original bidder. Revised bid packages for the Trailer Package and the Utilities Support Package will be reissued in mid-October and mid-November, respectively.

Part 4

Part 4 of the South Groundwater Contamination Plume Removal Action Work Plan involves groundwater monitoring and institutional controls. Property owner drinking water wells continued to be sampled on a monthly basis along Ohio State Route 128 where previous above-background levels of uranium have been detected. Uranium concentrations in these wells are not increasing. The property owners' drinking water well special sampling project was completed in September 1991. A follow-up round of sampling is tentatively scheduled for October 1992. Sampling of other RI/FS wells continued.

Part 5

The Part 5 Work Plan (Groundwater Modeling and Geochemical Investigation) was prepared and submitted to the U.S. EPA for review on June 4, 1991. Comments were received from the Ohio EPA on June 25, 1991 and from the U.S. EPA on July 3, 1991. Per the agreement at the July 23, 1991 meeting between the DOE, the U.S. EPA, and the Ohio EPA, the scope of the Part 5 field investigation is being expanded to include investigation of the area north and inclusive of the relocated Part 2 extraction well field. Conditional approval was received on the Part 5 well field work plan. Additional comments were to be resolved. Comments were prepared and draft responses were issued for internal review on September 26, 1991.

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

Period Ending September 30, 1991

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

Summary

A meeting was held with the U.S. EPA and the Ohio EPA on August 29, 1991 in Chicago where the current status of the South Groundwater Contamination Plume Removal Action was discussed. The DOE presented justification for delay of Parts 1, 2, and 3. The DOE continued submitting weekly reports on the South Plume Removal Action to provide all parties with up-to-date information.

Activities in October 1991 will focus on completing the drawing and specifications for the Part 1 water supply; determining the changes required due to the relocation of the Part 2 well field and transfer pump station to the south side of Delta Steel; issuing the EE/CA Addendum to HQ so that efforts to obtain National Environmental Policy Act's (NEPA) approval for Parts 2/3 can be initiated; completing and submitting responses to the U.S. EPA and the Ohio EPA comments on the Part 5 Work Plan; obtaining access to the Part 5 study area and performing a cultural resource investigation of the Part 5 study area; and issuing a letter requesting delay of the Part 1, 2, and 3 milestones.

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Complete Part 1 (Alternate Water Supply).	Behind schedule	December 1991
Complete Parts 2 and 3 (Extraction wells, force main, effluent pipeline and treatment system).	Behind schedule	April 1992
Complete Part 4 (institutional control and monitoring).	Open	Ongoing
Complete Part 5 (groundwater modeling and geochemical investigation).	Open	To be determined

EPSS

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 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 demonstration of the mapping technology and equipment in Silo 4 was completed on August 2, 1991. Mapping of Silos 1 and 2 was initiated on September 26, 1991. The following contracts associated with the procurement of the equipment necessary to complete the installation of the bentonite were awarded and fabrication initiated: the distributor spray head assembly package, the main basket weldment, data logging system, and the bentonite handling system.

Work in October will center on fabricating and vendor testing of the equipment necessary to complete the installation of the bentonite.

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Complete installation of bentonite slurry into Silos 1 and 2.	Open, on schedule.	December 1, 1991

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's 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 those responses.

Pumping and removal of the decant liquid was initiated on March 26, 1991. 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 analytical results for the general water quality parameters, HSL volatile organics, HSL semi-volatile organics, and HSL pesticide organics and inorganics were received for the three samples of the decant liquid taken during the implementation of the Removal Action. Once the analytical results of the full radiological analyses for the three samples of the decant liquid are received, the treatment option will be determined. Sludge samples were collected from the decant sump in late June 1991. The sludge samples were shipped to the contract laboratory on August 20, 1991 for full radiological analyses only.

12

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

Period Ending September 30, 1991

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

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 is made. The analytical results and the RCRA determination will define the treatment required for the decant sump liquid.

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Complete the removal of the liquid from the K-65 decant sump tank.	Completed. (April 16, 1991)	April 26, 1991

RA No. 6, Waste Pit 6 Residues

This removal action was completed on December 19, 1990.

RA No. 7, Plant 1 Pad Continuing Release

The revised Plant 1 Pad Continuing Release Removal Action Work Plan was approved by the U.S. EPA on August 19, 1991 and the Ohio EPA on April 13, 1991. The removal action consists of three phases. Phase I implements the run-on/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. The Phase III upgrading activities include installation of a polymeric vapor barrier over the existing concrete and the installation of concrete above the barrier with an epoxy sealant. In addition, 22,000 square feet of the Phase III work area will be enclosed beneath a tension structure.

September activities included analysis of the additional sampling needed to characterize potential HSL contaminants for the Phase II work area.

Activities in October will include the receipt of analytical results and the continued mobilization of the construction contractor. Procurement of materials for the Phase I work is planned. Planning for the post excavation sampling of the Phase II area is continuing.

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

Period Ending September 30, 1991

RA No. 7, Plant 1 Pad Continuing Release (cont'd.)

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Complete Phase 1	Open, on schedule.	March 13, 1992
Complete Phase 2	Open, on schedule.	December 21, 1992
Complete Phase 3	Open, on schedule.	February 21, 1995

RA No. 8, Inactive Flyash Pile Control

The Inactive Flyash Pile/Southfield (IFAP/SF) Removal Action Workplan was submitted to the U.S. EPA on August 14, 1991. Comments on the workplan were received from the U.S. EPA in a letter dated September 18, 1991. The comments are being reviewed and the workplan is being revised.

The installation of warning signs around the perimeter of the IFAP/SF was completed on September 27, 1991.

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Submit workplan	Completed August 14, 1991.	August 15, 1991
Revise workplan and respond to comments.	Open, on schedule.	October 23, 1991

RA No. 10, Active Flyash Pile Controls

The U.S. DOE was required to conduct a Survey of Electrical Utility Practices for Applicability to the development of the Removal Action for the Active Flyash Pile by September 27, 1991. This task was accomplished and the Utility Survey Report was submitted to the U.S. EPA in a letter dated September 26, 1991.

A Removal Site Evaluation and Action Memorandum are being developed. A workplan is to be submitted to the U.S. EPA by March 2, 1992.

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

Period Ending September 30, 1991

RA No. 10, Active Flyash Pile Controls (cont'd.)

<u>KEY MILESTONES</u>	<u>STATUS</u>	<u>DUE DATE</u>
Submit letter report for Survey of Electrical Utility Practices for Applicability.	Completed September 26, 1991.	September 27, 1991
Submit Work Plan.	Open, on schedule.	March 2, 1991

8029

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

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

This section provides an update on RI/FS Operable Units (OUs), RI/FS Community Relations, and Site Characterization for September 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, ponds, sanitary landfill and Southfield.
- 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.).

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

Period Ending September 30, 1991

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

1.1 Site Characterization

a. Status of Work - Key Milestones

The two remaining borings in Pit 2 were completed and wells were set at the following locations:

- Boring 1773 - Depth 30.6 ft.
- Boring 1775 - Depth 30.0 ft.

Concrete rubble was encountered within Borings 1773 and 1775 at depths of approximately four feet. The concrete continued to a depth of 11 feet at Boring 1775 and to nine feet at Boring 1773. Drums and greensalt were revealed at Boring 1775 at a depth of 12.6 feet.

The waste material encountered was slightly moist and a well-defined liner was present at both boring locations.

Borings 1773 and 1775 were completed on September 10, 1991.

<u>Activity</u>	<u>Comment</u>
Complete 13 Well Program by September 19, 1991.	Completed. September 11, 1991. Rework is required. See issues below.
Complete leachate sampling of 13 wells by October 4, 1991.	Delayed. Laboratory capacity has caused schedule slippage. See issues below.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

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

1.1 Site Characterization (cont'd.)

b. **Issues/Problems**

Holding times for several parameters on samples from Borings 1768 and 1769 at Pit 2 were exceeded. Reboring was required to collect samples for the missed parameters.

Holding times for samples from Burn Pit Boring 1776 were exceeded. Reboring of the Burn Pit to collect samples will be required.

The well development and groundwater sampling efforts were temporarily suspended. This action was necessary to balance the quantity of samples being sent to the contract laboratory with the laboratory's capacity.

c. **Corrective Actions**

Two new borings were advanced and completed in Pit 2. Borings 1817 and 1818 were designated as rebores for 1768 and 1769, respectively. Depths of the borings were as follows:

- Boring 1817 - Depth 13.6 feet
- Boring 1818 - Depth 21.0 feet

Boring 1776 will be rebored to allow resampling for missed parameters.

The well development and groundwater sampling team will be redeployed to purge and sample the wells installed in the waste pits. Additional resources will be applied to maintain the schedule.

d. **Planned Activities for October 1991**

Complete the reboring effort in the Burn Pit for Boring 1776. Redeploy the well development and groundwater sampling team to develop, purge, and sample the wells installed in the waste pits. Complete all decontamination and demobilization of the equipment used for augering and well installation after rebores operations are completed.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

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

1.2 Remedial Investigation

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

Submittal of the Operable Unit 1 Remedial Investigation (RI) Report is on hold pending the completion of additional waste pit sampling. A revised schedule for completing the RI Report was established by the Consent Agreement As Amended. Work on the RI Report is scheduled to resume on December 1, 1991.

A Treatability Process Development Program was developed to improve coordination and implementation of treatability studies. The management plan is an internal document that will define the roles of various contractors and agencies in the treatability program. The first draft of the document was be distributed for internal review on September 4, 1991. Comments have been received and the document is being revised.

A work plan for sampling Pits 5, 6, and the Clearwell was developed and transmitted to the U.S. EPA and the Ohio EPA on August 15, 1991. Additional sampling of Pits 5, 6, and the Clearwell is being conducted to provide material for the treatability studies.

A work plan for conducting radon flux measurements in the waste pit area was received from the contractor on August 20, 1991 and is being reviewed internally. Initiation of sampling is expected in November 1991.

A draft Treatability Study Work Plan was submitted for U.S. EPA review on July 26, 1991. Comments were received from the Ohio EPA on August 26, 1991 and from the U.S. EPA on September 10, 1991.

<u>Activity</u>	<u>Comment</u>
Revise the Treatability Study Work Plan to incorporate U.S. EPA and Ohio EPA comments by September 27, 1991.	Delayed. U.S. EPA comments not received until September 10, 1991. Submittal of revised work plan is scheduled for October 8, 1991.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

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

1.2 Remedial Investigation (cont'd.)

a. Status of Work - Key Milestones (cont'd.)

<u>Activity</u>	<u>Comment</u>
Issue the draft work plan for sampling Pits 5, 6, and Clearwell to the U.S. EPA and the Ohio EPA on August 15, 1991.	Completed. Draft work plan submitted on August 15, 1991. Awaiting comments from the U.S. EPA and the Ohio EPA.
Issue the draft Radon Sampling Work Plan to the U.S. EPA and the Ohio EPA on October 18, 1991.	Open, on schedule. Draft work plan submitted for internal review on August 20, 1991. Review comments submitted for incorporation on September 5, 1991.

b. Issues/Problems

The draft Treatability Study Work Plan was submitted to the U.S. EPA and the Ohio EPA for review and comment on July 26, 1991. Comments were scheduled for receipt on August 27, 1991. Final U.S. EPA comments were not received until September 10, 1991, resulting in a day-for-day slippage for dependent activities in the RI/FS schedule.

The draft Pits 5, 6, and Clearwell Work Plan was submitted to the U.S. EPA on August 15, 1991. Comments on this plan have not been received to date.

c. Corrective Actions

The DOE will formally notify the U.S. EPA regarding the impact of the delay in receiving the U.S. EPA comments on the Treatability Study Work Plan.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

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

1.2 Remedial Investigation (cont'd.)

d. Planned Activities for October 1991

Incorporate U.S. EPA draft and Ohio EPA final comments into the draft Treatability Study Work Plan.

If available, incorporate U.S. EPA and Ohio EPA comments into the Pits 5, 6, and the Clearwell Work Plan.

Revise the draft Radon Sampling Work Plan to reflect internal review comments and submit the work plan to the U.S. EPA by October 18, 1991.

1.3 Feasibility Study

a. Status of Work - Key Milestones

Submittal of the Feasibility Study (FS) Report is on hold pending the completion of the additional waste pit sampling and treatability studies. Revised FS schedules that include the incorporation of the additional sampling and treatability studies were developed.

Activity

Comment

Submit Draft Feasibility Study Report to the U.S. EPA on March 7, 1994.

Open, on schedule. Submittal date per Consent Agreement As Amended.

b. Issues/Problems

None to report.

c. Corrective Action

None required.

d. Planned Activities for October 1991

None scheduled.

8893

1991		1992		1993		1994	
OPERABLE UNIT 1							
SITE INVESTIGATION AS 1 MAR 91 LF 19 NOV 92							
TREATABILITY STUDIES AS 30 APR 91 LF 5 DEC 94							
REMEDIAL INVESTIGATION LS 28 AUG 92 LF 7 MAR 94							
FEASIBILITY STUDY LS 12 APR 93 LF 1 AUG 94							
SITEWIDE FS RISK EVALUATION LS 13 JUL 93 LF 11 OCT 93							
NOTICE OF AVAILABILITY LS 29 MAR 94 LF 22 AUG 94							
PUBLIC COMMENT PERIOD LS 2 AUG 94 LF 3 NOV 94							
DRAFT RECORD OF DECISION LS 4 JUL 94 LF 6 DEC 94							
<div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <p>10 OCT 90 21 JUL 92</p> </div> <div style="width: 40%; text-align: center;"> <p>Sheet 1 of 1</p> <p>Requested by ARMT Corp</p> </div> </div>							
<p>RJFS PROGRAM</p> <p>FERNALD ENVIRONMENTAL MGMT. PROJECT</p> <p>FEMP RJFS OUI CONSENT AGMT TRACKING</p>							
<p>Project Start: 10 OCT 90 Project Finish: 21 JUL 92</p> <p>Draw Date: 30 SEP 92 Plot Date: 11 OCT 92</p>							
<p>Revised and New Data</p> <p>Original Designation</p> <p>Program File</p> <p>Target Date as of 10 OCT 90</p> <p>Published by: [unclear], Inc. rev. 10/90</p>							

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

Period Ending September 30, 1991

Operable Unit 2: Other Waste Units

2.1 Site Characterization

a. Status of Work - Key Milestones

All planned borings for Operable Unit 2 have been completed. Treatability samples were collected and shipment of all treatability media was completed.

<u>Activity</u>	<u>Comment</u>
Complete well installation in the 19 Well Program by August 12, 1991.	Completed August 10, 1991.
Complete additional HSL sampling program by August 25, 1991.	Completed August 22, 1991.
Complete sampling of all wells in the 19 Well Program by August 1991.	Delayed. One well was installed but unable to obtain leachate. Will sample later if available during wet season.
Complete analysis of all waste samples by November 4, 1991.	Open, on schedule. Some chemical parameters delayed but recovery possible without impact to schedule.
Complete analysis of all samples from additional HSL program by November 18, 1991.	Open, on schedule. Some resampling necessary but no schedule impact anticipated.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Operable Unit 2: Other Waste Units

2.1 Site Characterization (cont'd.)

b. Issues/Problems

Due to an administrative error, samples associated with the Active Fly Ash Pile Boring 1725 were not processed at the contract laboratory. These samples were not processed because the administrative error precluded the ability to meet the established holding lines.

Holding times for two samples were missed: one for Boring 1710 located in the Inactive Fly Ash Pile and one sample for Hand Boring 1717 located in the Southfield.

Holding times were exceeded for the North Lime Sludge Pond water samples.

Sludge sampling in the Lime Sludge Ponds for Appendix IX parameters did not occur as planned in September 1991.

c. Corrective Actions

Rebore Active Fly Ash Boring 1725. Rebore Boring 1710 of the Inactive Fly Ash Pile and Boring 1717 of the Southfield to collect samples for the identified parameters, which exceeded the hold-time requirements. Resample the water at the Lime Sludge Ponds and forward all samples for final analyses.

d. Planned Activities for October 1991

Commence reboring of Active Fly Ash Pile Boring 1725. Rebore Inactive Fly Ash Pile Boring 1710 and the Southfield Boring 1717 to recover samples for the parameters for which holding times were missed. Resample the water at the North Lime Sludge Pond and initiate sampling of the sludge at both ponds.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Operable Unit 2: Other Waste Units

2.2 Remedial Investigation

a. Status of Work - Key Milestones

Treatability Study Work Plan comments were received from the U.S. EPA and the Ohio EPA in letters dated September 23 and 24, 1991, respectively. The comments generally addressed issues similar to Operable Units 1 and 4. A preliminary review of these comments did not reveal any issues that would impact the schedule for Operable Unit 2. Waste material for use in the treatability study was received at the laboratory. Phase I activities were initiated in September. Incineration of the Sanitary Landfill waste material was completed. Specimen preparation for treatability testing was also initiated.

<u>Activity</u>	<u>Comment</u>
Deliver and pre-treat materials for treatability study by August 30, 1991.	Completed September 9, 1991.
Initiate stabilization treatability studies by September 2, 1991.	Completed September 9, 1991. Initiated one week late.
Issue revised draft Treatability Study Work Plan to the U.S. EPA and the Ohio EPA by October 23, 1991.	Open, on schedule.
Issue draft RI Report to the U.S. EPA and Ohio the EPA on October 19, 1992.	Open, on schedule.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

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

2.2 Remedial Investigation

b. Issues/Problems

The waste material collected as part of the recent characterization of the Sanitary Landfill was inspected at the laboratory as it was being burned in the laboratory furnace. This inspection revealed that the waste collected was mostly soil. Boring logs were subsequently reviewed and revealed that there were zones of nonrecovery in some of the landfill borings. This information is being assessed, and re-evaluation of these areas may be necessary in order to close the gaps in these data.

It is anticipated that the administrative problems with sample analysis will not impact the schedule.

c. Corrective Actions

If it is determined that samples collected in the landfill are non-representative, a work plan will be prepared to fill any data gaps.

d. Planned Activities for October 1991

Planned activities for the treatability study include completion of the Phase I specimen preparation. Curing of specimens will begin as preparation is completed. Responses to comments and revision of the Treatability Study Work Plan are also planned.

As part of the RI, an assessment of characterization data will begin as data are received from the laboratory. Review and evaluation of field data from the recently completed field activity will continue.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Operable Unit 2: Other Waste Units

2.3 Feasibility Study

a. Status of Work - Key Milestones

Consent Agreement negotiations between the U.S. EPA and the DOE were completed in September 1991, and the Consent Agreement As Amended was signed by both parties. An assessment of the redefinition of Operable Unit 2 and its impact on the alternatives developed for evaluation in the feasibility study was initiated. Minor revisions to some alternatives may be required.

Activity

Comment

Issue draft Feasibility Study Report and Proposed Plan to the U.S. EPA and the Ohio EPA on March 15, 1993.

Open, on schedule.

b. Issues/Problems

None to report.

c. Corrective Actions

None required.

d. Planned Activities for October 1991

None scheduled.

1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
OPERABLE UNIT 2									
SITE INVESTIGATION AS 1MAR91 EF 4DEC91									
TREATABILITY STUDIES AS 1APR91 EF 15JUN92									
REMEDIAL INVESTIGATION ES 1OCT91 EF 13JAN93									
FEASIBILITY STUDY ES 3FEB92 EF 16AUG93									
SITWIDE FS RISK EVALUATION ES 10APR92 EF 24SEP92									
NOTICE OF AVAILABILITY ES 23MAR93 EF 16AUG93									
PUBLIC COMMENT PERIOD ES 17AUG93 EF 17NOV93									
DRAFT RECORD OF DECISION ES 25NOV92 EF 17DEC93									
Summary and Study Data Critical Designator Program No. Target Date as of 10CT99 10CT99 21JUL99 Project Start: Project Finish:									
R/FS PROGRAM FERNALD ENVIRONMENTAL MGMT. PROJECT FEMP R/1'S OU2 CONSENT AGMT TRACKING									
Sheet 1 of 1 Draw Date: 303 EPP Print Date: 155CT91									
Prepared by: ABBT Corp.									

1/2

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Operable Unit 3: Production Area and Suspect Areas

3.1 Site Characterization

No activities were scheduled for the Operable Unit 3 site characterization during September 1991.

3.2 Remedial Investigation

a. Status of Work - Key Milestones

Operable Unit 3 initial scoping activities in September 1991 included the continuation of employee process knowledge interviews, review of existing data, and creation of facility and building maps.

Phase I of the process knowledge interviews (the first 25 interviews) was completed in September. Information gathered during these interviews is being summarized and sorted by plant, building, or area. Part of the information gathered during those interviews included potential new interviewees for Phase II. The Phase II interviewee list currently contains 49 people. The basis for selecting all interviewees was their specialized knowledge of the FEMP process, activities, and operations and/or long tenure at the FEMP. Of the 49 interviewees selected for Phase II, five were interviewed in September.

The review of existing data, including information gathered during the process knowledge interviews, continued. During September 1991, both electronic and hard-copy files of available information were updated. A summary of the status of the current data including data identified, collected, or sorted in previous months is presented below.

Data sources that have been collected and sorted by physical location include the following:

- RI/FS soil and perched groundwater.
- Hazardous waste/solid waste management units.
- Abandoned-in-Place (AIP) equipment data.
- Historical plant operations data.
- Plant occurrence reports and unusual occurrence reports.
- Health and Safety plans for maintenance and operation activities (e.g., new construction, etc.).
- Material control and accountability data (75% complete).

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Operable Unit 3: Production Area and Suspect Areas

3.2 Remedial Investigation (cont'd.)

a. Status of Work - Key Milestones (cont'd.)

Data sources that have been collected but not yet evaluated include the following:

- RCRA determination analytical results (drummed material).
- Standard Operating Procedures (SOPs).
- Minor Events Reports.
- Summary of air permit applications.
- Radiological technician survey data.
- Spill events records.
- Thorium inventory (new data from MC&A records).

Data sources that have been identified but not yet assembled or evaluated include the following:

- Plant maintenance records.
- Regulatory actions (NOVs).
- Chemical inventory data.

In addition to gathering, evaluating, and analyzing existing data, a series of maps are being created for the facilities and buildings within Operable Unit 3. These maps will be used to show the type and extent of contamination. These maps will be used in the Sampling and Analysis Plan (SAP) and/or in the field program during characterization data collection.

b. Issues/Problems

None to report.

c. Corrective Actions

None required.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Operable Unit 3: Production Area and Suspect Areas

3.2 Remedial Investigation (cont'd.)

d. Planned Activities for October 1991

Continue scoping activities for Operable Unit 3: complete process knowledge interviews; continue data collection, sorting, and analysis; complete initial drafts of the facility maps; and begin to update facility maps with known contamination data.

3.3 Feasibility Study

a. Status of Work - Key Milestones

No activities were scheduled for the Operable Unit 3 Feasibility Study during September 1991.

b. Issues/Problems

None to report.

c. Corrective Actions

None required.

d. Planned Activities for October 1991

None scheduled.

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

Period Ending September 30, 1991

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

4.1 Site Characterization

a. Status of Work - Key Milestones

Silo Contents Sampling

Geotechnical and treatability samples associated with the 1991 resampling efforts of Silos 1 and 2 have been packaged. Repackaging of the 1989 residues samples is in progress.

Slant Boring Sampling

Decontamination and demobilization efforts are proceeding.

The plugging of all five Borings at the K-65 Silos was completed. The decontamination and demobilization of all associated equipment utilized for this task is in process.

The containerization and screening of archive samples generated during slant boring operations was completed.

The radiological screening, packaging, and shipping preparation of samples which are to be sent to the contract laboratory was initiated. Selected samples may be analyzed for radionuclide content based on the screening results. The archive sample scanning technique procedure is included, as well as tables identifying the results, in Enclosure D.

<u>Activity</u>	<u>Comment</u>
Complete analysis of slant boring soils by December 30, 1991.	Open, on schedule.
Complete analysis of vertical boring soils by October 10, 1991.	Open, on schedule.
Complete analysis of silo content samples by December 26, 1991.	Open, on schedule.

b. Issues/Problems

None to report.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

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

4.1 Site Characterization (cont'd.)

c. **Corrective Actions**

None required.

d. **Planned Activities for October 1991**

Continue repackaging geotechnical and treatability samples from Silos 1 and 2. Initiate repackaging Silo 3 material for archiving and treatability studies.

Complete the packaging of slant boring samples for shipment to the contract laboratory for full radiological analysis.

4.2 Remedial Investigation

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

In September, the schedule for the completion of all Operable Unit 4 RI/FS activities was agreed to by the U.S. EPA as part of the renegotiated Consent Agreement.

Work on the RI Report is on hold awaiting the conclusion of the site characterization program for Operable Unit 4. A revised Treatability Study Work Plan was distributed for U.S. EPA and Ohio EPA review in July. Review comments were received from both the U.S. EPA and the Ohio EPA.

A revised draft Treatability Study Work Plan for Stabilization/Chemical Extraction was submitted for internal review on September 30, 1991.

The draft Treatability Study Work Plan for vitrification was issued for internal review.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Operable Unit 4: Silos 1, 2, 3, and 4 (cont'd.)

4.2 Remedial Investigation (cont'd.)

a. Status of Work - Key Milestones

<u>Activity</u>	<u>Comment</u>
Issue the draft Treatability Study Work Plan for Stabilization/Chemical Extraction to the U.S. EPA and the Ohio EPA on July 23, 1991.	Completed. Comments were expected by August 22, 1991. Draft comments were received on August 29, 1991. Formal comments were received on September 6, 1991.
Incorporate U.S. EPA comments and resubmit Treatability Study Work Plan for Stabilization/Chemical Extraction for U. S. EPA approval by October 5, 1991.	Open, on schedule.
Issue the draft Treatability Study Work plan for vitrification to the U.S. EPA on or before November 13, 1991.	Open, on schedule.
Issue the Addendum to the Treatability Study Work Plan for Stabilization/Chemical Extraction outlining the analysis of radon on or before October 11, 1991.	Open, on schedule.
Deliver the draft RI Report to the U.S. EPA on April 19, 1993.	Open, on schedule.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

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

4.2 Remedial Investigation (cont'd.)

b. **Issues/Problems**

None to report.

c. **Corrective Actions**

None required.

d. **Planned Activities for October 1991**

Submit the Treatability Study Work Plan for Stabilization/Chemical Extraction to the U.S. EPA and the Ohio EPA by October 5, 1991. Issue the Addendum to the Treatability Study Work Plan for Stabilization/Chemical Extraction to the U.S. EPA and the Ohio EPA by October 11, 1991.

Initiate field data analysis for the RI Report and begin the Treatability Study.

4.3 Feasibility Study

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

No activities were completed on this task during September 1991 pending receipt of site characterization analytical results.

b. **Issues/Problems**

None to report.

c. **Corrective Actions**

None required.

d. **Planned Activities for October 1991**

No activities can be completed pending receipt of site characterization analytical results.

000

33

<p>1991 1992 1993 1994</p> <p>OPERABLE UNIT 4</p>	<p>SITE INVESTIGATION AS 15/JAN/91 EF 10/JAN/92</p> <p>TREATABILITY STUDIES AS 18/JAN/91 EF 12/JAN/93</p> <p>REMEDIAL INVESTIGATION ES 10/OCT/91 EF 12/MAY/93</p> <p>FEASIBILITY STUDY ES 2/DEC/91 EF 12/JAN/94</p> <p>SITELWIDE FS RISK EVALUATION ES 6/JAN/92 EF 3/APR/92</p> <p>NOTICE OF AVAILABILITY ES 19/AUG/93 EF 12/JAN/94</p> <p>PUBLIC COMMENT PERIOD ES 13/JAN/94 EF 18/APR/94</p> <p>DRAFT RECORD OF DECISION ES 23/APR/93 EF 18/MAY/94</p>
---	--

37

Secondary Relief Duty Status
 Child's Disposition
 Program Fee
 Page Number of 4

Project Start: 10/CT/90
 Project Finish: 21/JUL/97

R/FS PROGRAM
 FERNALD ENVIRONMENTAL MGMT. PROJECT
 FEMP R/FS O&U CONSENT A GMT TRACKING

Sheet 1 of 1
 Date Drawn: JCS/SPN
 Plot Date: 15/OCT/91

Request by: ABBE Corp.
 Title:

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Operable Unit 5: Environmental Media

5.1 Site Characterization

a. Status of Work - Key Milestones

The groundwater sampling for September 1991 will be completed on October 3, 1991. Due to an insufficient amount of stormwater, surface water samples were not collected in support of the Paddy's Run Creek South Seepage Investigation.

A cable tool rig on Location 0551 was mobilized for the installation of contingency Monitoring Well 3551.

Access agreements have been secured for Wells 2557 and 3557.

Facility Testing

Six wells remain that require development and two rounds of sampling:

- 2055 - Full HSL
- 1235 - HSL Semi-volatiles, volatiles and Full Radiological
- 1247 - HSL Semi-volatiles, volatiles and Full Radiological
- 1248 - HSL Semi-volatiles, volatiles and Full Radiological
- 1251 - HSL Semi-volatiles, volatiles and Full Radiological
- 1258 - HSL Semi-volatiles, volatiles and Full Radiological

31-Well Program

The installation of Well 3397, which is located in the Southfield on the FEMP, was completed.

8-RCRA Well Program

A variance report was written for wells 1645 and 1646 due to the very poor recharge rates of both wells. The variance report provides justification for deleting the requirement of purging three-five well volumes for development prior to sampling operations.

Wells 2643, 2648, and 2649 require second round sampling, which is to be initiated.

E188

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

Period Ending September 30, 1991

Operable Unit 5: Environmental Media

5.1 Site Characterization (cont'd.)

a. Status of Work - Key Milestones (cont'd.)

Water Level Measurements

The water level measurements at the 410 wells were completed in September. The water level measurement task responsibilities were transferred to the Westinghouse Environmental Management Company of Ohio (WEMCO) in order to consolidate all water level measurement activities.

b. Issues/Problems

Facility Testing

Due to insufficient recharge rates, development and sampling efforts were delayed.

31-Well Program

Securing the access agreement for the off-site Well 2395.

8-RCRA Well Program

Poor recharge rates at the identified well locations have precluded development and sampling activities from commencing in a timely manner.

c. Corrective Actions

31-Well Program

Access agreement negotiations indicate that an agreement will be secured in October 1991.

d. Planned Activities for October 1991

Complete the installation of Wells 2557, 3550, and 3551, including development and first round of groundwater sampling.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Operable Unit 5: Environmental Media

5.1 Site Characterization (cont'd.)

d. **Planned Activities for October 1991 (cont'd.)**

Facility Testing

Attempt development and sampling of Wells 2055, 1235, 1247, 1248, 1251, and 1258. A variance may be written per the RI/FS QAPP which deletes the requirement to purge three-five well volumes prior to sampling due to the very poor recharge rate of these wells.

31-Well Program

Complete the first round of groundwater sampling of Monitoring Well 3397.

Commence cable tool operations on monitoring well Location 2395 upon securing a landowner access agreement.

8-RCRA Well Program

Commence first round of groundwater sampling at Wells 1645 and 1646, after approval of the variance has been secured.

Commence second (final) round sampling at Well Locations 2643, 2648, and 2649.

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

Period Ending September 30, 1991

Operable Unit 5: Environmental Media

5.2 Remedial Investigation

a. Status of Work - Key Milestones

The draft Treatability Study Work Plan for the soil washing technology was submitted for internal review on September 4, 1991. During September 1991, the DOE Fernald Office reviewed the document and submitted comments for subsequent incorporation into the Work Plan.

<u>Activity</u>	<u>Comment</u>
Issue draft Treatability Study Work Plan for site review by February 20, 1992.	Completed September 4, 1991.
Complete internal review of draft Treatability Study Work Plan by March 20, 1992.	Open, on schedule.
Deliver draft Treatability Study Work Plan to the U.S. EPA and the Ohio EPA for review by April 17, 1992.	Open, on schedule. It is likely that submittal of this deliverable will be accelerated.
Issue draft Operable Unit 5 RI Report to the U.S. EPA and the Ohio EPA by June 23, 1994.	Open, on schedule.

b. Issues/Problems

None to report.

c. Corrective Actions

None required.

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

Period Ending September 30, 1991

Operable Unit 5: Environmental Media

5.2 Remedial Investigation (cont'd.)

d. Planned Activities for October 1991

Revise the Treatability Study Work Plan based on DOE Fernald Office review comments.

5.3 Feasibility Study

a. Status of Work - Key Milestones

Final agreement of the schedule for all FS activities was also reached in September, as part of Consent Agreement renegotiations. During renegotiations, the definition of Operable Unit 5 was changed to include all environmental media including perched groundwater, which was previously addressed in Operable Unit 3. Based on this new definition, it was determined that the approved Operable Unit 5 Initial Screening of Alternatives (ISA) document would be revised. Work from the original Operable Unit 5 ISA Report is being integrated with applicable portions of the draft Operable Unit 3 ISA Report. The outline agreed upon during the Operable Unit 3 dispute resolution is also being incorporated. Work continued on the preparation of this document. Specific activities included revision of technology screening.

<u>Activity</u>	<u>Comments</u>
Complete revision of Remedial Action Objectives (RAOs), General Response Actions (GRAs) and process option descriptions by September 11, 1992.	Completed September 13, 1991.
Issue revised Initial Screening of Alternatives to the U.S. EPA by April 15, 1993.	Open, on schedule.

b. Issues/Problems

None to report.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

Operable Unit 5: Environmental Media

5.3 Feasibility Study (cont'd.)

c. Corrective Actions

None required.

d. Planned Activities for October 1991

Continue to revise the Operable Unit 5 ISA Report based upon the modified scope of the operable unit developed during the Consent Agreement renegotiations.

1991	1992	1993	1994	1995	1996	1997	1998
OPERABLE UNIT 5							
SITE INVESTIGATION AS 10CT90 EF 7JAN93							
TREATABILITY STUDIES AS 12AUG91 EF 15SEP93							
REMEDIAL INVESTIGATION ES 10AUG92 EF 13MAY94							
INITIAL SCREENING OF ALTERNATIVES AS 12AUG91 EF 9SEP92							
FEASIBILITY STUDY ES 14JUL93 EF 14FEB95							
SITEWIDE FS RISK EVALUATION ES 17NOV93 EF 15FEB94							
NOTICE OF AVAILABILITY ES 21SEP94 EF 14FEB95							
PUBLIC COMMENT PERIOD ES 15FEB95 EF 5MAY95							
DRAFT RECORD OF DECISION ES 26MAY94 EF 6JUN95							

Project Start: 10CT90
 Project End: 21JUL92

RJ/FS PROGRAM
FERNALD ENVIRONMENTAL MGMT. PROJECT
FEMP RJ/FS OUS CONSENT AGMT TRACKING

Sheet 1 of 1
 Date Drawn: 303 B/P/91
 Plot Date: 15OCT91

Preliminary Staff Study Data
 Critical Design
 Program for
 Target Dates as of 10CT90
 Prepared by: 10044 988
 Performance Systems, Inc.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

6.0 RI/FS Community Relations

a. Status of Work

Two addenda for removal actions will be added to the RI/FS and Removal Actions Community Relations Plan: Addendum E--Plant 1 Pad Continuing Release Removal Action and Addendum F--Contaminated Water Beneath FEMP Buildings Removal Action.

A Community Roundtable focusing on the K-65 Silos was held on September 16 at the ERA Alpha Building. Eleven community residents and four WEMCO/DOE representatives were in attendance.

The updated appendices for the RI/FS and Removal Actions Community Relations Plan were submitted to the U.S. EPA under Document Change Request #67 on September 4, 1991.

b. Issues/Problems

None to report.

c. Corrective Actions

None required.

d. Planned Activities for October 1991

Submit the addenda to the RI/FS and Removal Actions Community Relations Plan, Volume III of the Work Plan, to the U.S. EPA.

The next RI/FS Community Meeting will be held October 29, 1991. The location will be the Meadowbrook Inn in Ross, Ohio.

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

Period Ending September 30, 1991

7.0 Engineered Waste Management Facility (EWMF) RI/FS Site Characterization

a. Status of Work - Key Milestones

The EWMF Sampling and Analysis Plan (SAP) was transmitted to the U.S. EPA and the Ohio EPA on September 10, 1991 for review and approval. The field activities covered by this Work Plan were to be initiated in the fall of 1991 so that field work could be completed prior to the onset of wet weather. Due to the delay in revising the SAP, efforts to accelerate mobilization following receipt of U.S. EPA and Ohio EPA comments on the plan have been initiated.

<u>Activity</u>	<u>Comments</u>
Transmit SAP to the U.S. EPA and the Ohio EPA for approval by August 21, 1991.	Completed September 10, 1991.
Receive U.S. EPA and Ohio EPA comments for incorporation into SAP by October 9, 1991.	Anticipated.
Initiate field activities in support of the SAP by November 21, 1991.	Delayed. SAP transmittal was delayed causing a three week slippage in the schedule. No impact to Consent Agreement milestones is expected.

b. Issues/Problems

None to report.

c. Corrective Actions

None required.

d. Planned Activities for October 1991

Prepare response to the comments on the SAP and revise as necessary. Initiate mobilization for field program.

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

PERIOD ENDING SEPTEMBER 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 September 30, 1991

Introduction

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

Summary - September 1991

The total quantity of uranium discharged from the FEMP to the Great Miami River via Manhole 175 (Outfall 11000004001) was 21.10 kilograms. The average uranium concentration for the previous 12 months was 0.82 mg/l. This is 92.1 percent of the Derived Concentration Guide (DOE Order 5400.5) for dischargeable offsite water.

There was no discharge from the Stormwater Retention Basin (Outfall 11000004002) to Paddy's Run via the Storm Sewer Outfall Ditch in September 1991. Based on 2.08 inches of rainfall in September 1991, the total quantity of uranium discharged to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 9.36 kilograms.

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

Period Ending September 30, 1991

Wastewater Flows and Radionuclide Concentrations (cont'd.)

FACILITY: Fernald Environmental Management Project

LOCATION: 001 Total Discharge

MONTH: September 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.	0.463	241	162	0.40	0.70	136
Max.	1.132	405	378	0.86	1.86	291
Min.	0.156	149	59	0.14	0.18	47

The average uranium concentration for the previous 12 months was 0.82 mg/l. This is 92.1 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 September 30, 1991

Wastewater Flows and Radionuclide Concentrations (cont'd.)

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

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

MONTH: September 30, 1991

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

Based on 2.08 inches of rainfall in September 1991, the uranium discharge to Paddy's run from uncontrolled areas of the FEMP is estimated to be 9.36 kgs.

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

PERIOD ENDING SEPTEMBER 30, 1991

ENCLOSURE B

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

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT MONTHLY PROGRESS REPORT

Period Ending September 30, 1991

INTRODUCTION

Enclosure B describes actions undertaken at the FEMP during the period September 1 through September 30, 1991 that are not covered by the reporting requirements of the Consent Agreement under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sections 120 and 106(a).

WORK ASSIGNMENTS AND PROGRESS

Descriptions of ongoing work progress are presented in the following sections of this report. The status of ongoing work in support of the Federal Facility Compliance Agreement (FFCA) is summarized in Table 1 of Enclosure B. Completed work previously reported upon has been eliminated for 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 - Status information on the K-65 Silo project normally reported in this section is being provided under Operable Unit 4: Silos 1, 2, 3, and 4, Section 1.0, Site Characterization.

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 Sections 120 and 106(a).

EHS1

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

Period Ending September 30, 1991

**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND
LIABILITY ACT (CERCLA)****3. Reports and Record Keeping***Section B*

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

CLEAN AIR ACT (CAA)*Section E*

The nineteenth Quarterly Particulate Emissions Report for the period April 1, 1991 through June 30, 1991 was submitted to the U.S. EPA on August 30, 1991.

RADIATION DISCHARGE INFORMATION*Section A*

The nineteenth Quarterly Liquid Discharge Report for the period April through June 1991 was submitted to the U.S. EPA on August 30, 1991.

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

Period Ending September 30, 1991

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

REPORTING REQUIREMENTS

Section B

The Federal Facility Compliance Agreement Monthly Progress Report for August 1991 was transmitted to the U.S. EPA on September 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
SEPTEMBER 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 Sections 120 and 106(a).
2.E	Amend and submit revised RI/FS Work Plan to U.S. EPA if deficiencies are found.		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement under CERCLA Sections 120 and 106(a).
2.F	Implement tasks described in the approved RI/FS Work Plan.		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement under CERCLA Sections 120 and 106(a).
3.	REPORTS AND RECORD KEEPING		
3.B	Submit monthly RI/FS progress reports.	monthly	The RI/FS Monthly Progress Report for August 1991 was transmitted to the U.S. EPA on September 19, 1991 (DOE-2266-91).
CLEAN AIR ACT			
B.4	Prepare annual progress report on installation and replacement of emission control devices.	yearly	The Third Annual Progress Report on the installation and replacement of emission control devices was transmitted to the U.S. EPA on February 8, 1991 (DOE-708-91).
C.	Provide annual reports to U.S. EPA per 40 CFR 61.94(c).	yearly	The Annual NESHAP Compliance Report for CY 1990 was transmitted to the U.S. EPA on June 25, 1991 (DOE-1537-91).
D.1	Provide U.S. EPA with yearly stack-testing schedule.	yearly	The 1989 stack testing schedule was transmitted to the 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 FEMP, the 1989 FFCA Stack Testing Program was being deferred. In August 1991, the DOE confirmed that no further production would take place at the facility, and renamed the facility the FEMP. Some stack operations are expected when waste processing operations are resumed. The U.S. EPA will be provided with notification of future stack testing dates when operating schedules are formulated.

TABLE 1

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

**STATUS OF ACTIONS AS OF
SEPTEMBER 30, 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	Because the FEMP has been out of production since mid-1989, there was no opportunity to perform stack testing. The DOE, in August 1991, confirmed that no future production will take place at the FEMP. Some stack operations are expected when waste processing operations are resumed. Stack test results will be provided following the completion of testing on stacks which are returned to operation.
E.1	Maintain records of monthly particulate matter emissions.	-----	Ongoing.
E.2	Provide quarterly reports to U.S. EPA on these emissions.	quarterly	The eighteenth Quarterly Particulate Emissions Report for the period January 4, 1991 through April 5, 1991 was submitted to the U.S. EPA May 24, 1991 (DOE-1389-91). The nineteenth Quarterly Particulate Emissions Report for the period April 1, 1991 through June 30, 1991 was transmitted to the U.S. EPA on August 30, 1991. (DOE-2120-91).
RCRA			
A.1	Conduct a hazardous waste determination on all waste streams.	30 days	Pursuant to the proposed 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 proposed 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
SEPTEMBER 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 eighteenth Quarterly Liquid Discharge Report for the period January through March 1991 was transmitted to the U.S. EPA on May 24, 1991 (DOE-1389-91). The nineteenth Quarterly Liquid Discharge Report for the period April through June 1991 was transmitted to the U.S. EPA on August 30, 1991 (DOE-2120-91).
REPORTING REQUIREMENTS			
B.	Issue monthly progress report of actions taken to ensure compliance with FFCA requirements.	monthly	August's FFCA Monthly Progress Report was transmitted to the U.S. EPA on September 19, 1991 (DOE-2266-91).

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

**ENCLOSURE C
DRILLING AND BORING LOGS**

FERNALD
R/FS

B# 1773

FIELD ACTIVITY DAILY LOG

2293

DAILY LOG	DATE	9	7	91
	NO.			
	SHEET			OF

PROJECT NAME *FMP R/FS 04-1*

PROJECT NO. *002.3.15*

FIELD ACTIVITY SUBJECT: *SITE RESTORATION*

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

- 0700 - ARRIVE AT FACILITY
- 0730 - CREW ASSEMBLES IN FIELD
- 0800 - KEV BARNHART CONDUCTS HPS MEETING
- 0830 - DRILLERS SUIT UP TO CLEAN AREA
SAMPLERS SUIT UP TO CLEAN SAMPLE TENT.
- 1100 - RIG MOVED TO B# 1775
- 1130 - CREW ISGARS FOR LUNCH
- 300 - CREW REASSEMBLES IN FIELD
- 330 - SETTING UP EXCLUSION ZONE ON 1775
- 500 - TRAILERS CONSTRUCT FORMERS FOR CONCRETE PADS.
- 700 - DRILLERS MAKE AUGERS TO DEPTH
SAMPLERS PREPARE PAPER WORK FOR 1775
- 730 - AUGERS CLEANED AND PLACED ON DRILL PLATFORM
- 800 - CREW GOES HOME

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

CRUIT DRILL UNTIL MANDAT. DUE TO LAB OVERLOAD.

WEATHER CONDITIONS:

Clear Hot

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE:

James H. ...

SUPERVISOR:

Mark H. ...

DATE: *9/7/91*

FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	9/28/91		
	NO.			
	SHEET		OF	

PROJECT NAME FAPC RI/FS 04-1 PROJECT NO. 602.3.15

FIELD ACTIVITY SUBJECT: SITE RESTORATION / SAMPLING

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

0700 - ARRIVE AT FACILITY

0730 - CREW ASSEMBLES IN FIELD.

0800 - RON BARNHART CONDUCT H&S MEETING.

0830 - DAVID MYERS CALLS AND INFORMS ME THAT OUR AINSATE SAMPLES FROM 177S WERE OUT OF SPEC. 6°C INSTEAD OF 4°C. WE DECIDE TO DO ANOTHER AINSATE SAMPLE.

0900 - CONCRETE PADS FINISHED BY DRILLERS ON OURN PIT

1000 - MULLER GOES TO SAMPLE TRAILER TO ACQUIRE AINSATE KIT.

1100 - CREW TAKES BREAKS FOR LUNCH.

1230 - CREW REASSEMBLES IN FIELD.

1260 - FORMERS PULLED FROM OURN PIT.

1330 - DRILLERS FINISH PADS ON PIT 3 + PIT 1. SAMPLERS PREPARING AINSATE SAMPLES.

1400 - AINSATE SAMPLES TAKEN TO SAMPLE TRAILERS

1500 - CREW GOES HOME.

VISITORS ON SITE:
NONE

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
Can't drill until Monday (6:40 overland)
MUST RE DO AINSATE SAMPLES.

WEATHER CONDITIONS:
Clear / HOT

IMPORTANT TELEPHONE CALLS:
DAVID'S - AINSATE SAMPLES OUT OF SPEC.

PERSONNEL ON SITE: David Myerson, Ron Barnhart, Pauline, William, Thomas, James, John, James

SUPERVISOR: John L. Harris DATE: 9/28/91

**FERNALD
RI/FS**

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: <u>60225.91</u>	PROJECT NAME: <u>FMPC RI/FS OU-1</u>
BORING NUMBER: <u>1773</u>	COORDINATES: _____
ELEVATION: _____	GWL: Depth _____ Date/Time _____
ENGINEER/GEOLOGIST: <u>HARRIS/CASSEY</u>	Depth _____ Date/Time _____
DRILLING METHODS: <u>HOLLOW STEM AUGER</u>	PAGE <u>1</u> OF <u>5</u>

DEPTH (ft)	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED LIQUIDITY (%)	WELL CONSTRUCTION	REMARKS
0	63725 9:18 9-5-91	7	6	VERY DENSE (2.54, NS/1) GRAY CLAY WITH SMALL PEBBLES MIXED THROUGHOUT. SLIGHTLY MOIST, LITTLE WELLSION				HWU 0
	63726 9:18 9-5-91	14	6	SAA				SO 0 800
1	63727 9:18 9-5-91	20	0	NR				NA NA NA
	63728 9:18 9-5-91	20	0	NR				NA NA NA
2	63729 9:24 9-5-91	23	6	SAA, BUT LARGER GRAVEL PIECES BEING APPEAR. POCKETS OF GRANULAR (10/2, 5/10) YELLOWISH BROWN SANDY MATERIAL APPEAR.				0 0 2000
	63730 9:24 9-5-91	23	6	SAA				0 0 2000
3	63731 9:24 9-5-91	26	6	SAA				0 0 2000
	63732 9:24 9-5-91	29	6	SAA, BUT COLOR CHANGES TO (2.54, NU) GRAY				0 0 2000
4	63733 9:41 9-5-91	10	6	DENSE (10/2, 4/1) DARK GRAY CLAY WITH LARGE PIECES OF CONCRETE INTERMIXED (2-5 cm). DRY, WITH SOME SMALL PIECES OF NATURAL GRAVEL.				0 0 6000
	63734 9:41 9-5-91	17	6	SAA				0 0 4000
5	63735 9:41 9-5-91	26	6	SAA				0 0 2000
	63736 10:08 9-5-91	30	6	* NOTE: SPOON ONLY DRIVEN 1.5 ft. VERY DENSE (10/2, 4/1) DARK GRAY CLAY MIXED WITH LARGE (2-7 cm) CONCRETE PIECES AND SANDY MATERIAL (10/2, 6/4) LIGHT YELLOWISH BROWN DRY.				0 0 2000
6	63737 10:08 9-5-91	60	6	SAA				0 0 2000
	63738 10:08 9-5-91	36	0	NR				NA NA NA
7	63739 10:08 9-5-91	24	0	NR				NA NA NA

NOTES:
 Drilling Contractor PENNA DRILL CO.
 Drilling Equipment SIMCO
 Driller: E. GARDNER
Asst. J. STRAPPAZOV

SAA - SAME AS ABOVE
 NR - NO RECOVERY
 NA - NOT APPLICABLE

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602.25.91	PROJECT NAME: FMPC RI/FS 00-1	
BORING NUMBER: 1773	COORDINATES:	DATE: 9-5-91
ELEVATION:	GWL: Deom	Date/Time
ENGINEER/GEOLOGIST: HARRIS/CASSEDAY	Deom	Date/Time
DRILLING METHODS: HOLLOW STEM AUGER	PAGE 2 OF 5	

DEPTH	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER	RECOVERY	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (%)	WELL CONSTRUCTION	REMARKS		
								BR = 90		
8	63740 10:19 9-5-91		0	NR				HNU NA	α NA	BY NA
	63741 9-5-91 10:51	52	6	DENSE (10 HR, 5/2) GRAYISH BROWN SILTY CLAY WITH CONCRETE PIECES INTERMINED DRY.	CL			HNU 30	α 0	BY 200
9	63742 9-5-91 10:51	26	0	SAA	CL			HNU 40	α 0	BY 200
	63743 9-5-91 11:06	8	0	NR				HNU 10	α NA	BY NA
10	63744 9-5-91 11:06	8	0	NR				HNU NA	α NA	BY NA
	63745 4-5-91 11:06	5	0	NR				HNU NA	α NA	BY NA
11	63746 9-5-91 11:06	5	0	NR				HNU NA	α NA	BY NA
	63747 14:27 9-5-91			SHELBY TUBE PUSHED 24" RECOVERY				HNU NA	α NA	BY NA
12								HNU NA	α NA	BY NA
								HNU NA	α NA	BY NA
13	63748 9-5-91 14:36	36	6	DENSE (2.51 MZ) BLACK, CLAYEY, SLUDGE MATERIAL WITH FLECKS OF PURPLE YELLOW AND GREEN MATERIAL INTERSPERSED THROUGHOUT VERY WET CONSISTENTLY OF USED MOTOR OIL FLOWS LIKE MUD SOME LARGE CHUNKS OF MATERIAL	CL			HNU 0	α 0	BY 120000
	63749 9-5-91 14:38	32	6	SAA	CL			HNU 0	α 0	BY 120000
14	63750 9-5-91 14:38	12	6	SAA	CL			HNU 0	α 0	BY 120000
	63751 9-5-91 14:38	4	6	SAA	LL			HNU 0	α 0	BY 110000

NOTES:

Drilling Contractor PENN DRILL CO.
 Drilling Equipment SIMCO
 Driller: E GARDNER
ASST. J STRANDBERG

SAA - SAME AS ABOVE
 NR - NO RECOVERY
 NA - NOT APPLICABLE

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602.25.91	PROJECT NAME: FAMP RI/FS DU-1
BOILING NUMBER: 1773	COORDINATES:
ELEVATION:	GWL: Depth Date/Time
ENGINEER/GEOLOGIST: HARRIS / CASSIDAY	Depth Date/Time
DRILLING METHODS: Hollow Stem Auger	PAGE 3 OF 5

DEPTH	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER	RECOVERY	DESCRIPTION	NOMINAL BORE	MEASURED CONSISTENCY (1:1)	WELL CONSTRUCTION	REMARKS
15 PUGA LUGA	63752 14:52	6	6	MEDIUM DENSE (D.R. 7/2) VERY DARK BROWN CLAYEY SLUDGE - CONTAINS STRINGY MATERIAL (HILY HEAD) VERY WET - FLOWS	CL			HWU 0 0 10000
	63753 14:52	4	6	SAA, BUT CONTAINS BROWN PAPER TRASH	CL			0 0 10000
	63754 14:52	4	6	SAA, BUT INTERMIXED WITH GREEN AND WHITE GRANULAR MATERIAL.	CL			0 0 10000
	63755 14:52	7	0	NR				NA NA NA
17 RUAL 2 EQUA 3	63756 15:00 9-5-41	13	6	DENSE (7.54, N4) DARK GRAY CLAY LIKE MATERIAL, INTERSPERSED WITH BROWN GRANULAR DEPOSITS, VERY WET - PLASTIC - FLOWS.	CL			0 0 8000
	63757 15:00 9-5-41	15	6	SAA	CL			0 0 9000
	63758 15:00 9-5-41	18	6	SAA - BUT CONTAINS LENSES OF LOOSE WHITE MATERIAL - VERY WET - TAR LIKE CONSISTENCY.	CL			0 0 10000
19	63759 15:00 9-5-41	10	6	SAA	CL			0 0 6000
	63760 15:12 9-5-41	5	6	DENSE (7.54, N4) DARK GRAY CLAY MATERIAL WITH LARGE GRAINS & PEBBLES INTERSPERSED MORE GARBAGE, VERY WET, TAR-LIKE.	CL			0 0 8000
20	63761 15:12 9-5-41	4	0	NR				NA NA NA
	63762 15:12 9-5-41	4	0	NR				NA NA NA
	63763 15:12 9-5-41	3	0	NR				NA NA NA
21	63764 15:24 9-5-41	4	6	LOOSE (7.54, N4) DARK GRAY CLAY-LIKE MATERIAL LESS GARBAGE (L.PAPER), STILL CONTAINS PEBBLES. WET - FLOWING.	CL			0 0 9000
	63765 15:24 9-5-41	4	6	SAA	CL			0 0 9000
	63766 15:24 9-5-41	4	6	SAA	CL			0 0 6000

NOTES:

Drilling Contractor PENN DRILL Co.
 Drilling Equipment SIMCO
 Driller: E. GARDNER
ASSISTANT: J. STRAPPATON

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602.25.91	PROJECT NAME: FMPC RI/FS OU-1	
BOHNG NUMBER: 1773	COORDINATES:	DATE: 9-5-91
ELEVATION:	GWL: Depth	Date/Time
ENGINEER/GEOLOGIST: HARRIS/CASSEDAY	Depth	Date/Time
DRILLING METHODS: HOLLOW STEM AUGER	PAGE 4 OF 5	

DEPTH	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER	RECOVERY	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (LL)	WELL CONSTRUCTION	REMARKS
23	63767 15:29 9-5-91	4	6	SAA NR				HNU NA NA 90
24	63768 15:37 9-5-91	7	6	LOOSE (7.54, N31) DARK GRAY CLAY-LIKE MATERIAL CONTAINS PEBBLES (2-3 cm), LITTLE GARBAGE, WET FLOWS, TAR LIKE CONSISTENCY.				HNU 0
24	63769 9-5-91	4	6	SAA				HNU 0
24	63770 15:37 9-5-91	5	6	SAA				HNU 0
25	63771 9-5-91	4	6	SAA				HNU 0
26	16:02 9-5-91	9.5	0	SHELBY TUBE PUSHED NO RECOVERY				HNU NA NA NA NA NA NA NA
27	63772 16:21 9-5-91	7	6	MEDIUM DENSE, SOFT (2.54, N31) VERY DARK GRAY CLAY LIKE MATERIAL. CONTAINS AREAS OF WHITE MATERIAL (SAME CONSISTENCY) VERY WET & PLASTIC. FLOWS - TAR LIKE				HNU 0
28	63773 16:21 9-5-91	5	6	SAA				HNU 0
28	63774 16:21 9-5-91	4	6	SAA, but increased amounts of white material				HNU 0
29	63775 16:21 9-5-91	4	6	SAA				HNU 0
29	63776 16:34 9-5-91	5	6	MEDIUM DENSE (2.54, N31) VERY DARK GRAY CLAY-LIKE MATERIAL WITH SOME SILT. LITTLE OTHER DEBRIS. VERY WET, FLOWS				HNU 0
29	63777 16:34 9-5-91	7	6	SAA				HNU 0

NOTES:
 Drilling Contractor PENN DRILL CO.
 Drilling Equipment SINCE
 Driller: E. GARDNER
JOSEPH J. STRAPAZZINI

SAA SAME AS ABOVE
 NR NO RECOVERY
 NA NOT APPLICABLE

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602.25.91	PROJECT NAME: FMPC RI/FS OU-1
BOHING NUMBER: 1773	COORDINATES: DATE: 9-5-91
ELEVATION:	GWL: Depth Date/Time DATE STARTED: 9-5-91
ENGINEER/GEOLOGIST: HARRIS / CASSEDAY	Depth Date/Time DATE COMPLETED: 9-5-91
DRILLING METHODS: Hollow Stem Auger	PAGE 5 OF 5

DEPTH	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER	RECOVERY	DESCRIPTION	USCS SYMBOL	MEASURED CLINICALITY (%)	WELL CONSTRUCTION	REMARKS
30	63778 10.34 9-5-91	9	6	SAA				HNU C X BY 4500
31	63779 10.34 9-5-91	17	6	DENSE, HARD (10 PR, 51) GRAY CLAY WITH SOME SAND AND PEBBLES. SLIGHTLY MOIST (LIMB)				HNU C X BY 3000
32								HNU C X BY
33								HNU C X BY
34								HNU C X BY
35								HNU C X BY
36								HNU C X BY
37								HNU C X BY

NOTES:

Drilling Contractor PENN DRILL CO. SAA - SAME AS ABOVE

Drilling Equipment SMITH NR - NO RECOVERY

Driller: F. WARDNER NA - NOT APPLICABLE

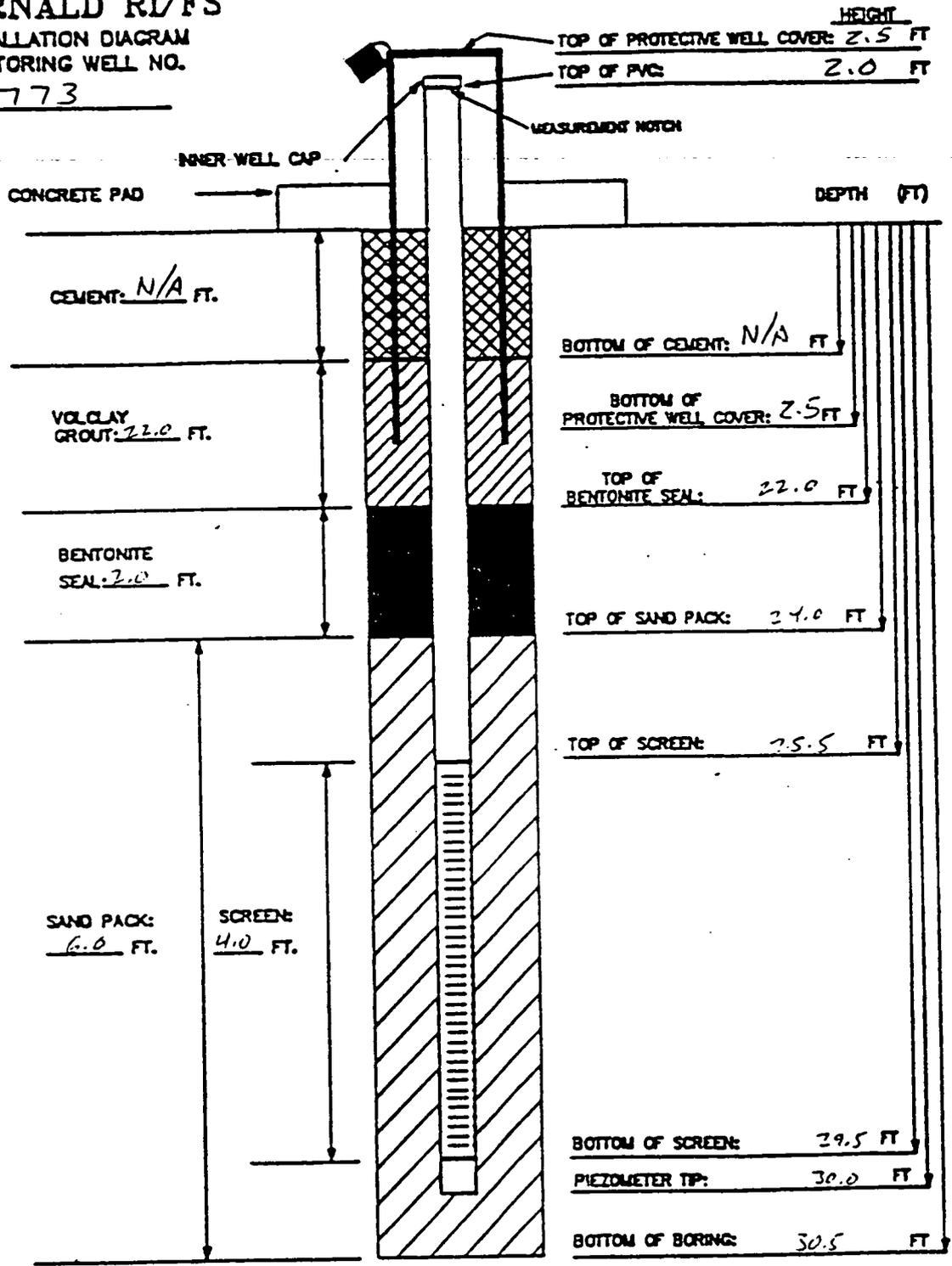
DATE: 9-5-91

INSTALLATION DATE: 9/6/91

FERNALD RI/FS

INSTALLATION DIAGRAM
MONITORING WELL NO.

1773



BORING HOLE DIAMETER: 10.0 INCHES

MATERIALS USED:
 SAND TYPE AND QUANTITY: 3 50lb bags
 BENTONITE PELLETS (5-GALLON BUCKETS): 1 50lb bucket
 BAGS OF VOLCLAY GROUT: 2 50lb bags
 AMOUNT OF CEMENT: N/A
 AMOUNT OF WATER USED:
 OTHER:

NOTES: 1.0" I.D. STAINLESS
 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 STAMP.
 4) WATER DEPTH/DATE:

TASK: (000)002 3 10 GEOLOGIST/ENGINEER: M. NARZIS

PIEZOMETER INSTALLATION SHEET

PROJECT NAME FMPC RIFS FIELD ENG./GEO. M. HARRIS DATE 9/6/91
 PROJECT NO. 602-3-15 CHECKED BY _____ DATE _____
 BORING NO. 1773
 PIEZOMETER NO. 1773 DATE OF INSTALLATION 9/6/91

BOREHOLE DRILLING

DRILLING METHOD <u>HOLLOW STEM AUGER</u>	TYPE OF BIT <u>AUGER</u>
DRILLING FLUID(S) USED: FLUID <u>NONE</u> FROM _____ TO _____ FLUID <u>NONE</u> FROM _____ TO _____	CASING SIZE(S) USED: SIZE <u>NONE</u> FROM _____ TO _____ SIZE <u>NONE</u> FROM _____ TO _____

PIEZOMETER DESCRIPTION

TYPE <u>MONITORING WELL</u>	RISER PIPE MATERIAL <u>316 STAINLESS STEEL</u>
DIAMETER OF PERFORATED SECTION <u>4.0" I.D.</u>	RISER PIPE DIAMETERS: O.D. <u>4 3/8"</u> I.D. <u>4.0"</u>
PERFORATION TYPE: SLOTS <input checked="" type="checkbox"/> HOLES <input type="checkbox"/> SCREEN <input type="checkbox"/>	LENGTH OF PIPE SECTIONS _____
AVERAGE SIZE OF PERFORATIONS <u>0.01 IN</u>	JOINING METHOD <u>FLUSH JOINT</u> <u>THREADED</u>
TOTAL PERFORATED AREA _____	

PROTECTION SYSTEM

RISER PROTECTIVE PIPE LENGTH <u>5.0' (EPA)</u>	OTHER PROTECTION <u>LINGED LOCKING</u>
PROTECTIVE PIPE O.D. <u>10 3/4"</u>	<u>COVER WITH PADLOCK</u>

ITEM	DISTANCE ABOVE/BELOW GROUND SURFACE (FT)		ELEVATION (FT)	
TOP OF RISER PIPE				
GROUND SURFACE	0.0		589.0	
BOTTOM OF PROTECTIVE PIPE				
BOREHOLE FILL MATERIALS:				
GROUT/SLURRY	TOP <u>Surface 0.0</u>	BOTTOM <u>22.0</u>	TCP	BOTTOM
BENTONITE	TOP <u>22.0</u>	BOTTOM <u>24.0</u>	TOP	BOTTOM
SAND	TOP <u>24.0</u>	BOTTOM <u>30.5</u>	TOP	BOTTOM
GRAVEL <u>NONE USED</u>	TOP <u>N/A</u>	BOTTOM <u>N/A</u>	TOP	BOTTOM
PERFORATED SECTION	TOP <u>25.5</u>	BOTTOM <u>29.5</u>	TOP	BOTTOM
PIEZOMETER TIP	<u>30.0</u>			
BOTTOM OF BOREHOLE	<u>30.5</u>			
GWL AFTER INSTALLATION				

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

REMARKS NEED HUG USED IN AUGER DURING

PROJECT NAME *FMPL RI/FS QUI* PROJECT NO. *602-315*

FIELD ACTIVITY SUBJECT: *Drilling / Sampling*

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

0600- ARRIVE AT OFFICE / TURN IN TIMESHEETS

0630- ARRIVE AT FACILITY

0700- ARRIVE AT SITE

0730- CREW ASSEMBLED IN FIELD
L. BARNHART CONDUCTS HHS MEETING

0800- DRILLERS NOTICE THAT SOME OF THE DRILLING EQUIPMENT IS MISSING
TONY GOES TO DECON TO FIND IT.

0830- EQUIPMENT FOUND / DRILLERS SUIT UP TO DRILL.

0845- DRILLING BEGINS ON 1775

0900- SOME CONCRETE ENCOUNTERED AT 4.0'
MASSIVE CONCRETE ENCOUNTERED AT 8.0' WE WERE ABLE TO AUGER THROUGH.

1020- APPARENTLY, WE FIRED A DRUM AT 10.5', CONTAINS GREEN SALT 150 K CPM

1040- SHELBY TUBE PUSHED 13.0'-15.6' FULL RECOVERY. WATER ENCOUNTERED.

1100- HSC & TCF VOA COLLECTED 12.0'-17.0' STD 63529 + 63530

1130- BREAK FOR LUNCH

1200- CREW REASSEMBLED IN FIELD.

1230- DRILLING BEGINS AT 19.0'

1430- SHELBY TUBE PUSHED 3.0' 23.0'-26.0' NO RECOVERY (TWO ATTEMPTS)

1500- CLAY LINER ENCOUNTERED AT 28.0'
DRILLING CEASES.

1600- SUPPLIES CONTINUE WORKING IN TENT
DRILLERS ORDER STAINLESS

1700- CREW GOES TO SHOWERS

1800- GOING HOME

VISITORS ON SITE:

NONE

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

FRANK HANSEL - STATUS UP

WEATHER CONDITIONS:

OVERCAST / RAIN

IMPORTANT TELEPHONE CALLS:

FRANK HANSEL - STATUS UPDATE

PERSONNEL ON SITE: *Harris / Assistant / Westerman / ...*

SUPERVISOR: *MARC HARRIS* DATE: *9/9/91*

PROJECT NAME *FMPC R/FS 04-1* | PROJECT NO. *602.3.15*

FIELD ACTIVITY SUBJECT: *SAMPLING / WELL INSTALLATION*

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

0700 - ARRIVE AT OFFICE
B. MYERS CONDUCTS FIELD MEETING

0830 - CREW ASSEMBLES IN FIELD
PAUL CASSEDAY CALLS IN SICK

0900 - STAINLESS CASING ARRIVES
SAMPLERS BEGIN WORKING ON COMPOSITES
M. FIELDING SMEARING ANALYSIS BOTTLES
CALLED L. EVANS - HE SAYS THAT RINSATES DON'T HAVE TO ACCOMPANY SOIL SAMPLES

0930 - WELL INSTALLATION BEGINS
TOTAL LENGTH OF STAINLESS - 30.0' + 2.0' STANDPIPE
4.0' SCREEN
TOP OF SAND 24.0' 1-5016 BK USED
TOP OF BENTONITE 22.0' 1 SICKET USED
CURET TO SURFACE

1130 - SAMPLERS COMPLETE COMPOSITES.

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Cloudy Hot

IMPORTANT TELEPHONE CALLS:
*L. EVANS - RINSATES CAN BE DONE LATER
P. CASSEDAY - SICK*

PERSONNEL ON SITE: *Harris/Westerman/Hollen/Barnhart/Williams/Fielding/Hunt/Jensen/Deo/Kozlowski/H. Myers*

SUPERVISOR: *Mark Harris* | DATE: *9/10/91*

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: <u>602.25.91</u>	PROJECT NAME: <u>FMPC RI/FS 00-1</u>
BOILING NUMBER: <u>1775</u>	COORDINATES: _____ DATE: <u>9-9-91</u>
ELEVATION: _____	GWL: Depth _____ Date/Time _____ DATE STARTED: <u>9-9-91</u>
ENGINEER/GEOLOGIST: <u>HARRIS / PASSEDAY</u>	Depth _____ Date/Time _____ DATE COMPLETED: _____
DRILLING METHODS: <u>HOLLOW STEM AUGER</u>	PAGE <u>1</u> OF <u>4</u>

DEPTH	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER	RECOVERY	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (S:1)	WELL CONSTRUCTION	REMARKS
								BR = 40
0	63800 9-9-91 8:47	10	6	VERY DENSE (2.5Y, 5/2) GRAYISH BROWN CLAY WITH INTERMIXED PEBBLES, SOME SILT AND SAND PRESENT. DRY				HNU 0 α 0 B ₈ 100
	63801 9-9-91 8:47	17	6	SAA				HNU 0 α 0 B ₈ 120
1	63802 9-9-91 8:47	26	6	SAA				HNU 0 α 0 B ₈ 160
	63803 9-9-91 8:47	33	0	NR				HNU NA α NA B ₈ NA
2	63804 9-9-91 8:54	48	6	VERY DENSE, VERY HARD (2.5Y, NS1) GRAY CLAY INTERMIXED WITH VARIOUS PEBBLES. LITTLE OR NO SAND OR SILT. DRY				HNU 0 α 0 B ₈ 100
	63805 9-9-91 8:54	45	6	SAA				HNU 0 α 0 B ₈ 120
3	63806 9-9-91 8:54	26	6	SAA				HNU 0 α 0 B ₈ 120
	63807 9-9-91 8:54	23	6	SAA, BUT MORE SAND AND SILT INTERMIXED WITH THE CLAY, GIVING A (2.5Y, 5/2) GRAYISH BROWN CLAY.				HNU 0 α 0 B ₈ 140
4	63808 9-9-91 9:05	15	6	DENSE, VERY HARD (2.5Y, 5/2) GRAYISH BROWN CLAY WITH WHITE CONCRETE INTERSPERSED. DRY. NOT VERY COHESIVE				HNU 0 α 0 B ₈ 120
	63809 9-9-91 9:05	18	6	SAA				HNU 0 α 0 B ₈ 120
5	63810 9-9-91 9:05	22	6	SAA, BUT SOME SANDY MATERIAL APPEARS.				HNU 0 α 0 B ₈ 1000 1000 600
	63811 9-9-91 9:05	17	6	SAA, BUT BEGINNING TO SEE BLACK (2.5Y, 4/2) CLAY-LIKE MATERIAL. STILL DRY				HNU 0 α 0 B ₈ 600
6	63812 9-9-91 9:26	8	6	MEDIUM DENSE, FIRM (2.5Y, 5/2) GRAYISH BROWN CLAY. CONTAINS SOME SILT & SAND, FEW PEBBLES, DRY				HNU 0 α 0 B ₈ 260
	63813 9-9-91 9:26	8	6	SAA				HNU 0 α 0 B ₈ 260
7	63814 9-9-91 9:26	8	6	SAA				HNU 0 α 0 B ₈ 260

NOTES:

Drilling Contractor PENN DRILL Co.
 Drilling Equipment Simco
 Driller: E. GARDNER
ASST. J. STRAPAZON

SAA - SAME AS ABOVE
 NR - NO RECOVERY
 NA - NOT APPLICABLE

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: <u>602.25.91</u>	PROJECT NAME: <u>FMPC RI/FS OU-1</u>	
BORING NUMBER: <u>1775</u>	COORDINATES:	DATE: <u>9-9-91</u>
ELEVATION:	GWL: Depth	Date/Time
ENGINEER/GEOLOGIST: <u>HARRIS/CASSEDAY</u>	Depth	Date/Time
DRILLING METHODS: <u>HOLLOW STEM AUGER</u>	PAGE <u>2</u> OF <u>4</u>	

DEPTH	SAMPLE TYPE & NO	BLOWS ON SAMPLER	RECOVERY	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (SPT)	WELL CONSTRUCTION	REMARKS		
8	63815 9-9-91 9:26	8	6	SAA, BUT CONTAINS SOME GARBAGE, MOSTLY BLACK (2.5% UC) CHUNKS, WOOD.				HNU O	α O	B1 260
	63840 9-9-91 10:07			DRILLED THROUGH CONCRETE NO SAMPLES TAKEN OF DEBRIS				HNU NA	α NA	B1 NA
9								HNU NA	α NA	B1 NA
								HNU NA	α NA	B1 NA
10	63816 9-9-91 10:12	50	6	SAA				HNU O	α O	B1 140
	63817 9-9-91 10:15	7	6	VERY DENSE, HARD (2.5% 5/3) LIGHT OLIVE BROWN CLAY WITH PEBBLES AND CONCRETE DEBRIS DRY				HNU O	α O	B1 3000
11	63818 9-9-91 10:15	13	6	DENSE, HARD (2.5% 5/3) VERY DARK GRAY CLAY MIXED WITH WHITE GRANULAR SANDY MATERIAL SOME PEBBLES SLIGHTLY MOIST				HNU O	α O	B1 3200
	63819 9-9-91 10:15	23	6	SAA				HNU O	α O	B1 10000
12	63820 9-9-91 10:15	38	0	NR				HNU NA	α NA	B1 NA
	63821 9-9-91 10:22	25	6	VERY DENSE, HARD (2.5% 5/3) VERY DARK GRAY CLAY-LIKE MATERIAL. LOWER 1/3 CONTAINS GREEN GRANULAR SAND-LIKE MATERIAL. DRY, COHESIVE. * NOTE - DRUM PIERCED.				HNU O	α O	B1 15000
13	63822 9-9-91 10:22	37	0	NR				HNU NA	α NA	B1 NA
	63823 9-9-91 10:22	63	0	NR				HNU NA	α NA	B1 NA
14	63824 9-9-91 10:23	50	0	NR				HNU NA	α NA	B1 NA
	63825 9-9-91 10:25	-	0	NR				HNU NA	α NA	B1 NA

NOTES:

Drilling Contractor PEARL DRILL CO.
 Drilling Equipment SINCO
 Driller: E. GARDNER
DAVID J. STRAPPEZON

SAA - SAME AS ABOVE
 NR - NO RECOVERY
 NA - NOT APPLICABLE

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: <u>602.25.91</u>	PROJECT NAME: <u>FMPC RI/FS OU-1</u>
BORING NUMBER: <u>1775</u>	COORDINATES: _____
ELEVATION: _____	GWL: Depth _____ Date/Time _____
ENGINEER/GEOLOGIST: <u>HARRIS/CASSEDAY</u>	DATE STARTED: <u>9-9-91</u>
DRILLING METHODS: <u>HOLLOW STEEL AUGER</u>	DATE COMPLETED: <u>9-9-91</u>
	PAGE <u>3</u> OF <u>4</u>

DEPTH	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER	RECOVERY	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (15%)	WELL CONSTRUCTION	REMARKS
15	63826 9-9-91 10:46							HNU NA BX NA
16		SHELBY TUBE PUSHED	24	SHELBY TUBE PUSHED FULL RECOVERY				HNU NA BX NA
17	63827 10:55 9-9-91 63828 4-9-91 10:55	1	6	LOOSE, VERY SOFT (2.5Y, N3) VERY DARK GRAY CLAY LIKE MATERIAL, WITH STREAKS OF YELLOW GREEN GRAINY MATERIAL THROUGHIT. WET, FLOWING JELLY-LIKE				HNU O BX 3000
18	63829 9-9-91 10:55 63830 10:55 9-9-91	3	6	SAA, ONLY GRAINY STREAKS ARE OBSERVED				HNU O BX 2000
19	63831 9-9-91 13:58 63832 9-9-91 13:58 63833 9-9-91 13:58 63834 9-9-91 13:58	3	6	MEDIUM DENSE, SOFT (2.5Y, N3) VERY DARK GRAY CLAY LIKE MATERIAL, TAR-LIKE APPEARANCE AND CONSISTENCY. VERY WET-FLOWING.				HNU O BX 1800
20		6	6	SAA, BUT NOT AS WET WITH FLECKS OF BROWN GRANULAR MATERIAL.				HNU O BX 4000
21		7	6	SAA				HNU O BX 2000
21	63835 9-9-91 14:05 63836 9-9-91 14:05	10	6	MEDIUM DENSE, SOFT (2.5Y, N3) VERY DARK GRAY CLAY-LIKE MATERIAL. VERY WET, FLOWS NO NOTICABLE PEBBLES, PUDDING-LIKE TEXTURE				HNU O BX
22		5	6	SAA, BUT LENSES OF GREEN MATERIAL APPEAR				HNU O BX
22	63837 9-9-91 14:05	7	6	SAA				HNU O BX

LEVEL 2
LEVEL 3

NOTES.

Drilling Contractor PENN DRILL CO.
 Drilling Equipment SIMCO
 Driller: E. GARDNER
ASST. J. STRAPPAREN

SAA - SAME AS ABOVE
 NR - NO RECOVERY
 N/A - NOT APPLICABLE

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602.25.91	PROJECT NAME: FMPC RI/FS OU-1
BORING NUMBER: 1775	COORDINATES: _____ DATE: 9-9-91
ELEVATION: _____	GWL: Depth _____ Date/Time _____ DATE STARTED: 9-9-91
ENGINEER/GEOLOGIST: HARRIS/CASSEDAY	Depth _____ Date/Time _____ DATE COMPLETED: _____
DRILLING METHODS: HOLLOW STEM AUGER	PAGE 4 OF 4

DEPTH	SAMPLE TYPE & NO	BLOWSON SAMPLER	RECOVERY	DESCRIPTION	USCS SYMBOL	MEASURED (UNSATURATED)	WELL CONSTRUCTION	REMARKS
23	63838 14:05 9-9-91	6	6	SAA				HNU 0 α B1 0 0 2000
24	63839 14:35 9-9-91	SHELBY TUBE PUSHED	0	SHELBY TUBE PUSHED (NO RECOVERY)				HNU NA α B1 NA NA NA HNU NA α B1 NA NA NA HNU NA α B1 NA NA NA
25		7	0	NR SHELBY TUBE				HNU α B1
26	63840 14:44 9-9-91	8	0	NR				HNU α B1
27	63841 14:49 9-9-91	8	0	NR				HNU α B1
28	63842 14:49 9-9-91	8	0	NR				HNU α B1
28	63843 14:49 9-9-91	9	0	NR				HNU α B1
28	63844 9-9-91 15:04	2	6	LOOSE, VERY SOFT (2.5Y, U3) VERY DARK GRAY CLAYEY MATERIAL. FLOWS, VERY WET, PUDDING LIKE TEXTURE				HNU 0 α B8 0 0 1200
29	63845 9-9-91 15:04	2	6	SAA				HNU 0 α B8 0 0 800
29	63846 9-9-91 15:04	3	6	SAA, but CONTAINS SMALL DEPOSITS OF BROWN GRANULAR MATERIAL.				HNU 0 α B8 0 0 800
30	63847 9-9-91 15:04	7	6	SAA				HNU 0 α B8 0 0 600

HSL VOA

NOTES: * - LINER WAS PRESENT IN BOTTOM OF

Drilling Contractor: PENN DRILL CO. SUCT. OILY CLAY. SPAN. CLEAN CLAY. 2" RECOVERY.

Drilling Equipment: SIMCO

Driller: E. GARDNER
ASST. J. STRAPAZON

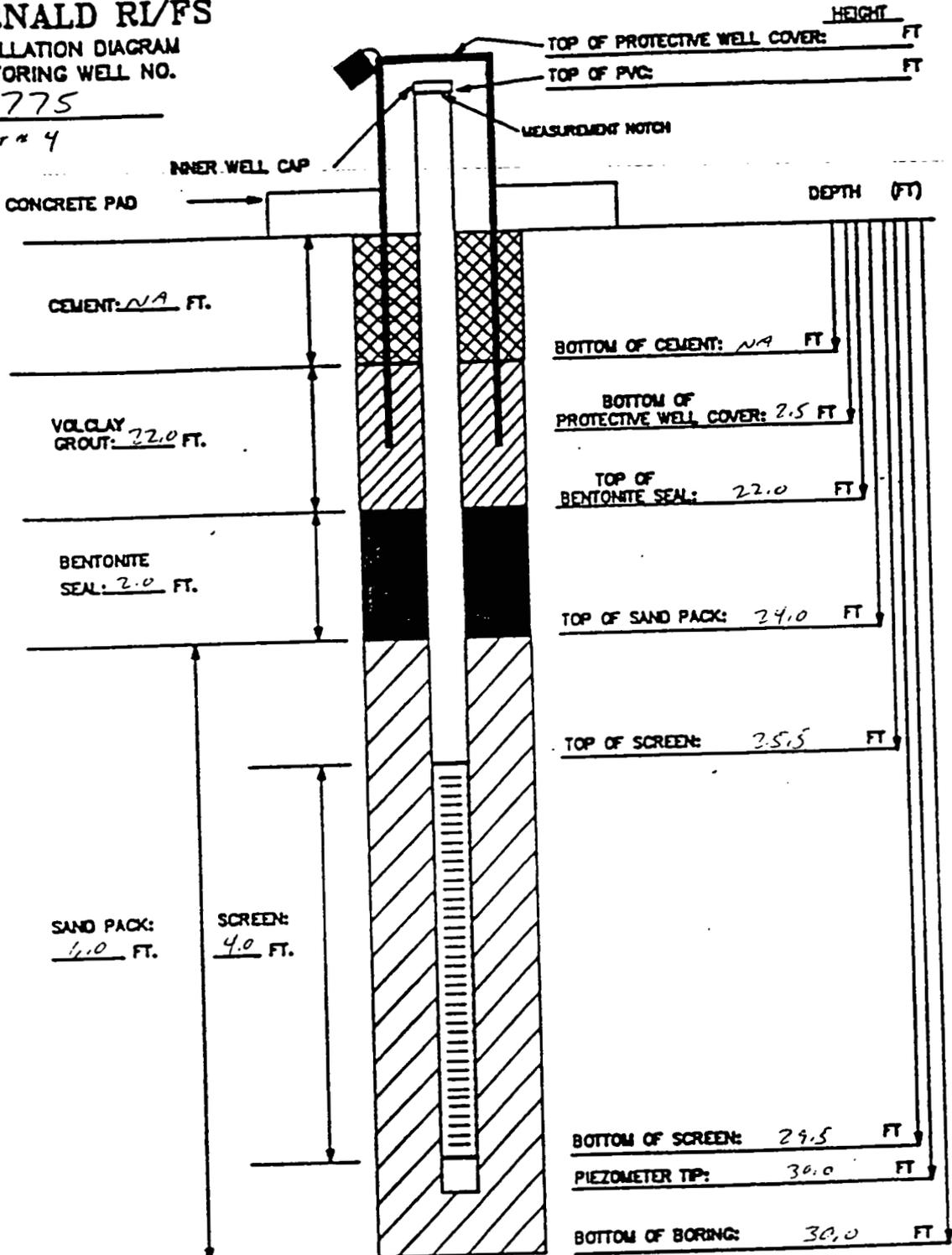
SAA - SAME AS ABOVE
NR - NO RECOVERY
NA - NOT APPLICABLE

FERNALD RI/FS

INSTALLATION DIAGRAM
MONITORING WELL NO.

1775

PI # 4



BORING HOLE DIAMETER: _____ INCHES

MATERIALS USED:
 SAND TYPE AND QUANTITY: 1 bag
 BENTONITE PELLETS (5-GALLON BUCKETS):
 BAGS OF VOLCLAY GROUT:
 AMOUNT OF CEMENT:
 AMOUNT OF WATER USED:
 OTHER:

NOTES:

- 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 SLAMP.
- 4) WATER DEPTH/DATE:

TASK: 3-5

GEOLOGIST/ENGINEER: [Signature]

PIEZOMETER INSTALLATION SHEET

PROJECT NAME _____ FIELD ENG./GEO. _____ DATE _____
 PROJECT NO. _____ CHECKED BY _____ DATE _____
 BORING NO. _____
 PIEZOMETER NO. _____ DATE OF INSTALLATION _____

BOREHOLE DRILLING

DRILLING METHOD _____	TYPE OF BIT _____
DRILLING FLUID (S) USED:	CASING SIZE (S) USED:
FLUID _____ FROM _____ TO _____	SIZE _____ FROM _____ TO _____
FLUID _____ FROM _____ TO _____	SIZE _____ FROM _____ TO _____

PIEZOMETER DESCRIPTION

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

PROTECTION SYSTEM

RISER PROTECTIVE PIPE LENGTH _____	OTHER PROTECTION _____
PROTECTIVE PIPE O.D. _____	_____

ITEM	DISTANCE ABOVE /BELOW GROUND SURFACE ()		ELEVATION ()	
	TOP	BOTTOM	TOP	BOTTOM
TOP OF RISER PIPE				
GROUND SURFACE	0.0			
BOTTOM OF PROTECTIVE PIPE				
BOREHOLE FILL MATERIALS:				
GROUT/SLURRY	TOP	BOTTOM	TOP	BOTTOM
BENTONITE	TOP	BOTTOM	TOP	BOTTOM
SAND	TOP	BOTTOM	TOP	BOTTOM
GRAVEL	TOP	BOTTOM	TOP	BOTTOM
PERFORATED SECTION	TOP	BOTTOM	TOP	BOTTOM
PIEZOMETER TIP				
BOTTOM OF BOREHOLE				
GWL AFTER INSTALLATION				

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

REMARKS _____

PIEZOMETER INSTALLATION SHEET

PROJECT NAME _____ FIELD ENG./GEO. _____ DATE _____
 PROJECT NO. _____ CHECKED BY _____ DATE _____
 BORING NO. _____
 PIEZOMETER NO. _____ DATE OF INSTALLATION _____

BOREHOLE DRILLING

DRILLING METHOD _____ DRILLING FLUID(S) USED: FLUID _____ FROM _____ TO _____ FLUID _____ FROM _____ TO _____	TYPE OF BIT _____ CASING SIZE(S) USED: SIZE _____ FROM _____ TO _____ SIZE _____ FROM _____ TO _____
--	---

PIEZOMETER DESCRIPTION

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

PROTECTION SYSTEM

RISER PROTECTIVE PIPE LENGTH _____ PROTECTIVE PIPE O.D. _____	OTHER PROTECTION _____
--	------------------------

ITEM	DISTANCE ABOVE / BELOW GROUND SURFACE ()		ELEVATION ()	
TOP OF RISER PIPE				
GROUND SURFACE	0.0			
BOTTOM OF PROTECTIVE PIPE				
BOREHOLE FILL MATERIALS:				
GROUT / SLURRY	TOP	BOTTOM	TCP	BOTTOM
BENTONITE	TOP	BOTTOM	TOP	BOTTOM
SAND	TOP	BOTTOM	TOP	BOTTOM
GRAVEL	TOP	BOTTOM	TOP	BOTTOM
PERFORATED SECTION	TOP	BOTTOM	TOP	BOTTOM
PIEZOMETER TIP				
BOTTOM OF BOREHOLE				
GWL AFTER INSTALLATION				

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

REMARKS _____

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: <u>602.3.29</u>	PROJECT NAME: <u>EMPC RI/FS</u>	
BORING NUMBER: <u>1780</u>	COORDINATES: <u>N 48° 59' 4.23 E, 1,580,211.84</u>	DATE: <u>9/15/91</u>
ELEVATION: <u>70W 579.07</u>	GWL: Depth _____ Date/Time _____	DATE STARTED: <u>9/5/91</u>
ENGINEER/GEOLOGIST: <u>Ken Marion</u>	Depth _____ Date/Time _____	DATE COMPLETED: _____
DRILLING METHODS: <u>10" Hollow stem Augers</u>	PAGE: <u>1</u>	OF: <u>3</u>

DEPTH (ft.)	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER 16 in.	RECOVERY (in.)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
1	9-5-91 1638	N/A	12 in.	Concrete	N/A	N/A	cored through concrete H _{nu} = 0 ppm
	9-6-91 0953	5	6	Light olive brown (2.5Y, 5/4) very stiff CLAY with a little sand and gravel, trace strong brown (7.5YR, 5/6) mottling, damp, low plasticity	CL	2.5	H _{nu} = 0 ppm B _γ = 300 cpm α = 0 cpm
		4	0	No Recovery	N/A	N/A	
		4	0	No Recovery	N/A	N/A	
2.5	9-6-91 0904	3	6	Light olive brown (2.5Y, 5/4) to olive gray (5Y, 5/2) stiff CLAY with trace sand and gravel, damp, medium plasticity	CL	1.5	H _{nu} = 0 ppm B _γ = 100 cpm α = 0 cpm
		6	0	No Recovery	N/A	N/A	
		4	0	No Recovery	N/A	N/A	
7.0	9-6-91 0912	4	5	Light olive brown (2.5Y, 5/4) stiff SANDY CLAY, moist, high plasticity	CL	1.5	H _{nu} = 0 ppm B _γ = 100 cpm α = 0 cpm
		4	0	No Recovery	N/A	N/A	
		2	0	No Recovery	N/A	N/A	
5.5	9-6-91 0916	3	2	Brown (10YR, 5/3) loose clayey SAND with trace black and yellowish brown (10YR, 5/6) mottling, moist	SC	N/A	H _{nu} = 0 ppm B _γ = 100 cpm α = 0 cpm
		2	0	No Recovery	N/A	N/A	
		4	0	No Recovery	N/A	N/A	
7.0	9-6-91 0922	4	6	Light olive brown (2.5Y, 5/4) stiff CLAY with trace sand, gravel and shells, moist, high plasticity	CL	1.5	H _{nu} = 0 ppm B _γ = 100 cpm α = 0 cpm

NOTES: Contractor: Penn Drill
Rig: CME-45
Driller: Bobby Yeast
Assistant Driller: Mark Rebold
Geo Assistant: Jim Capannuri

Samples collected per ASTM standard Penetration Test
Colors Identified using Munsell Color Chart

H_{nu} S/N 401345 | 0 ppm
B_γ S/N 46460 | 100 cpm
α S/N 50750 | 0 cpm } Background Levels

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602.3.29	PROJECT NAME: FMP/ RI/FS		
BORING NUMBER: 1780	COORDINATES: See p1	DATE 9/5/91	
ELEVATION: See p1	GWL: Depth	Date/Time	DATE STARTED: 9/5/91
ENGINEER/GEOLOGIST: Ken Marion	Depth	Date/Time	DATE COMPLETED:
DRILLING METHODS: 10" Hollow Stem Augers	PAGE 2		OF 3

DEPTH (ft.)	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER 16 in.	RECOVERY (in.)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
7.5							
	9-6-91 0930	4	6	SAME AS ABOVE	CL	1.5	
				2" of coarse sand	SC	N/A	
		3	6	light brownish gray (10YR, 6/2) and dark gray (10YR, 4/1) stiff CLAY, moist high plasticity	CL	1.5	
8.5	9-6-91 0940	2	6	Light olive brown (2.5Y, 5/4) low well graded clayey sand with trace gravel	SC	N/A	H _{nu} = 0 ppm B _r = 100 cpm α = 0 cpm
		3	6	Saturated Gray (5Y, 5/1) stiff clay with trace sand and trace yellowish brown	CL	1.5	
		3	6	(10YR, 5/6) mottling, wet, med. plasticity	CL	1.5	
10	9-6-91 0950	1	6	Light olive brown (2.5Y, 5/4) medium dense clayey medium sand, saturated	SC	N/A	H _{nu} = 0 ppm B _r = 100 cpm α = 0 cpm
		5	6	Light olive brown (2.5Y, 5/4) medium dense - SILT and fine SAND with CLAY, trace brownish yellow (10YR, 6/6) mottling, wet	ML	N/A	
		8	6	Gray (5Y, 5/1) stiff CLAY with trace SAND, moist, medium plasticity	CL	1.5	
11.5	9-6-91 1020	7	6	Gray (5Y, 5/1) clayey silt, medium dense with a few sand and high plastic clay layers, moist	ML	N/A	H _{nu} = 0 ppm B _r = 100 cpm α = 0 cpm
		9	6	Same As Above	ML	N/A	
		9	0	No Recovery	N/A	N/A	
13	9-6-91 1030	14	6	Gray (5Y, 5/1) medium dense silty sand, wet	SM	N/A	H _{nu} = 0 ppm B _r = 100 cpm α = 0 cpm
		15	5	Same As Above	SM	N/A	
		12	0	No Recovery	N/A	N/A	
14.5	9-6-91 1048	7	6	Gray (5Y, 5/1) medium dense clayey SANDY SILT, wet	ML	N/A	H _{nu} = 0 ppm B _r = 100 cpm α = 0 cpm

NOTES:

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602.3.29	PROJECT NAME: FMPC RI/FS	
BORING NUMBER: 1780	COORDINATES: See p 1	DATE 9/5/91
ELEVATION: See p 1	GWL: Depth Date/Time	DATE STARTED: 9/5/91
ENGINEER/GEOLOGIST: Ken Marion	Depth Date/Time	DATE COMPLETED:
DRILLING METHODS: 10" Hollow Stem Augers	PAGE 3	OF 3

DEPTH (ft.)	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER 16 in. 1	RECOVERY (in.)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
15	9-6-91 1048	11	3	Same As Above	ML	N/A	
16		14	0	NO Recovery	N/A	N/A	
	9-6-91 1055	8	6	olive brown (2.5%, 4/3) medium dense Coarse sand, Saturated	SP	N/A	H _{nu} = 0 ppm B _x = 100 cpm α = 0 cpm
		12	6	Same As Above	SP	N/A	
	16	6	Same As Above	SP	N/A		
17.5	9-6-91 1102	26	6	Light olive brown (2.5%, 5/3) very dense medium SAND with trace gravel, Saturated	SP	N/A	H _{nu} = 0 ppm B _x = 100 cpm α = 0 cpm
		25	6		SP	N/A	
		29	6	SAME As Above	SP	N/A	
19	9-6-91 1110	28	6	olive brown (2.5%, 4/3) dense coarse SAND, Saturated	SP	N/A	H _{nu} = 0 ppm B _x = 100 cpm α = 0 cpm
		32	6	Same As Above	SP	N/A	
20				Bottom of Bore hole			

NOTES:

82

FERNALD RI/FS

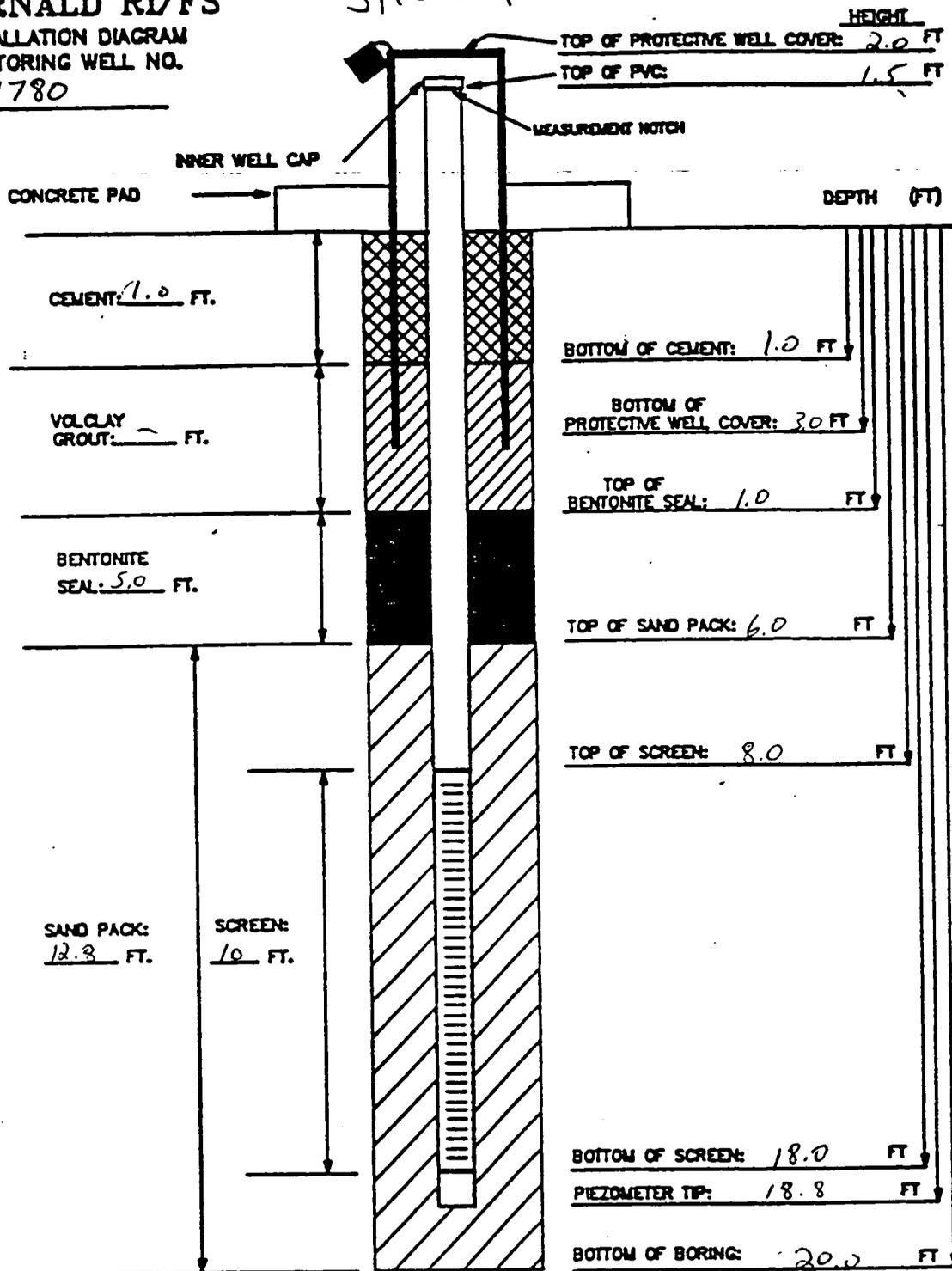
INSTALLATION DIAGRAM
MONITORING WELL NO.

1780

Stickups

INSTALLATION DATE: 8-6-91

2293



MATERIALS USED:

SAND TYPE AND QUANTITY: Silica - 6-80lb. bags
 BENTONITE PELLETS (5-GALLON BUCKETS):
 BAGS OF VOLCLAY GROUT: 1/4
 AMOUNT OF CEMENT:
 AMOUNT OF WATER USED: none
 OTHER: Riser pipe and screen are 4" stainless steel.
Screen = .010 slot

TASK: 602.3-29

NOTES:

- 1) RISER PIPE IS 2-INCH SCHEDULE 40 PVC PIPE, FLUSH-THREADED JOINTS. T.A. 8-7-91
- 2) SCREEN IS 3-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:

GEOLOGIST/ENGINEER: Tom Anderson

FERNALD
RI/FS

WATER QUALITY FIELD COLLECTION REPORT

Date: 7-9-91
Time: 1300
Page: 1 of 2293

FADL
REF#

PROJECT NAME <u>PMPC RI/FS</u>	SAMPLE LOCATION <u>1980</u>
PROJECT NUMBER <u>602-3.29</u>	SAMPLE ID NUMBER <u>N/A</u>
DATE COLLECTED <u>9-9-91</u>	RFA NUMBER <u>N/A</u>
TIME COLLECTED <u>13:00</u>	C/C NUMBER <u>N/A</u>
COLLECTED BY <u>L.M.J.H.</u>	SAMPLE TYPE <u>GRD/UTR</u>

SAMPLING INFORMATION	
BAROMETRIC PRESSURE	<u>760</u>
AIR TEMPERATURE	<u>24.4</u>
DO SATURATION IN AIR	<u>9.3 PPM</u>
WATER TEMPERATURE	<u>23.0°C</u>
DEPTH OF SAMPLE	<u>18'8</u>
WATER LEVEL	<u>7.2'</u>

FIELD READINGS			
	BEGINNING READ 1	MIDDLE READ 2	END READ 3
pH	<u>6.94</u>	<u>6.95</u>	
SPEC. COND. uMHOS/cm	<u>150MS</u>	<u>149MS</u>	
D.O. MG/L	<u>1.5</u>	<u>1.3</u>	
	BACKGROUND	BREATHING ZONE	DOWN-HOLE READING
HNU	<u>0</u>	<u>0</u>	<u>0</u>

METER CALIBRATION													
pH Temp	pH Std	pH Std	D.O. Temp	D.O.		D.O. Cells O ₂	Spec Cond. Temp	Spec Cond. Low	Spec Cond. High	HNU Stand	HNU Lot #	HNU Reading	HNU Span
				Zero	Full Sc								
<u>19°C</u>	<u>4</u>	<u>7</u>	<u>19°C</u>	<u>0</u>	<u>15</u>	<u>0</u>	<u>19°C</u>	<u>147</u>	<u>1413</u>	<u>750</u>	<u>1207001</u>	<u>55</u>	<u>8.82</u>
OK	✓	✓	OK	✓	✓	✓	OK	✓	✓	✓	✓	✓	✓

WEATHER CONDITIONS cloudy, raining
ADDITIONAL REMARKS

TEST EQUIPMENT LIST			
EQUIPMENT NUMBER	EQUIPMENT NAME	EQUIP.	NUMBER
<u>91071151</u>	<u>ICM WATER ANALYZER</u>	BAILER	
<u>406345</u>	<u>HNU Meter</u>	HOSES	
<u>N/A</u>	<u>12 Bailer</u>	PUMP	<u>tel/ben</u>
		FILTER KIT	

NOTE: ONLY EQUIPMENT SUBJECT TO CALIBRATION NEED BY LISTED

(T.D. 18.8) - (W.L. 7.2) = 11.6 Ht. of Water Column

11.6 Ht. of Water Column x .68 = 7.7 (3 Volumes)

11.6 Ht. of Water Column x .65 = 7.7 (5 Volumes)

FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	9	15	19	91
	NO.				
	SHEET	1	285	03	

PROJECT NAME FMPC RI/FS

PROJECT NO. 602-3.29

FIELD ACTIVITY SUBJECT: Perched Water Removal Action

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

- 0700 Meet with field crew
Go to supply trailer
- 0800 Rust employees are working in our site. I tell them we will be bringing the rig in soon. I meet with Lanny Marshall in the field. I show him the well locations and brief him on how to remove filled drums.
- 1030 The drillers don't show up on site (boring 1780) until now. Apparently they had some more work left to do on the drill rig.
- 1100 The rig is set up to core through the concrete. The Decon area and drums, etc. are in place.
- 1130 Health & Safety meeting held by Mark Turner. Mark goes over the Health & Safety plan in great detail.
- 1140 Leaving the drill site for lockers (Lunch time). Jim Capannari and I go to Sears for supplies (i.e. speed wrench, crescent wrench, sockets, nylon rope, utility knife, and hammer).
- 1330 Tom Anderson is at WMCO overseeing the coring operation. I'm at the office filling out paper work and getting signatures for today's expenses. I didn't expect to spend over \$50 on items. Doug Hermal says the vertical Boring project is missing the originals of some of my geologic logs. He also says the lab can't take any more samples for awhile. The drillers need a wrench for the hydrant in order to run water through the core bit.
- 1538 Start 82 meter coring begins
- 1638 Finished coring
- 1730 leaving ASI

VISITORS ON SITE:

Lanny Marshall

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

None

WEATHER CONDITIONS:

sunny and hot

IMPORTANT TELEPHONE CALLS:

None

PERSONNEL ON SITE:

Jim Capannari, Tom Anderson, Joe Mediate, Bobby Yost, Mark Rebold

SUPERVISOR:

Ken Marion

DATE: 9/5/85

FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	9	14	1991
	NO.			
	SHEET	1	OF	1

2293

PROJECT NAME *FmPC RT/FS* PROJECT NO. *602.3.29*

FIELD ACTIVITY SUBJECT: *Perched Water Removal Action*

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

0700 Meet Field crew at office
 Weekly field meeting held by Bruce Myers - He gives out internal dosimetry cards
 Tom Anderson gives me the FAOL he wrote on 8/28/91 - I was out sick that day
 Bruce calls a rain day - my field crew leaves accordingly
 I use the down time to get my paper work in order

1000 I go to the farm house to meet with Jim Wheat. Jim's not there.
 I have tried to reach him over the phone and at the other work location.
 We had planned to have my 6 month review today
 There's nothing else I can get done without the drillers today, I go home and take a "rain day"

VISITORS ON SITE: <i>None</i>	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS. <i>None</i>
----------------------------------	---

WEATHER CONDITIONS: <i>rain day</i>	IMPORTANT TELEPHONE CALLS: <i>None</i>
--	---

PERSONNEL ON SITE:
 SUPERVISOR: *Ken Marion* DATE: *9/4/91*

FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	9	16	191
	NO.			
	SHEET	122097		

PROJECT NAME FMP RI/FS PROJECT NO. 602,309
 FIELD ACTIVITY SUBJECT: Perched Water Removal Action 1780

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

0700 Meet with field crew at ASI
 0805 Health & Safety Meeting held at boring 1780
 0853 Split spoon sample from 1-2.5 ft.
 The BT Frisker read 300 cpm or 200 cpm above background over the soil sample
 0904 Split spoon sample from 2.5-4.0 ft.
 0912 4.0-5.5 ft.
 0916 5.5-7.0 ft.
 0922 7.0-8.5 ft.
 0940 8.5-10 ft. Beginning of water zone
 0950 10-11.5 ft.
 1020 11.5-13 ft.
 1030 13-14.5 ft.
 1048 14.5-16 ft.
 1055 16-17.5 ft.
 1102 17.5-18 ft.
 1110 18-20 ft Bottom of bore hole
 1130 Leave area for Lunch
 1300 Arrive back at site
 1400 Augering hole using 10" hollow stem augers
 1430 John Vendine brings the riser pipe and screen into the process area
 The riser is too long. Since John's accident using the grinder he isn't supposed to cut riser pipe.
 1600 Mark Rebold brings well sand over to the bore hole
 Mark gets a short piece of riser to attach to the pipe that John Vendine brought over. This eliminates having to cut the well using a back saw
 There's a lot of formation sand in this bore hole. I expect there may be trouble with the formation sand caving into the bottom of the hole.
 1730 leaving office

BT meter 40460 and di meter 30750 passed calibration check using a lantern mantle
 Han S/N 901345 calibration checked w/ isobutylene/air mixture, calibrated to 55ppm at a span setting of 3.66

VISITORS ON SITE: <u>Leo Singleton</u>	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS. <u>None</u>
---	---

WEATHER CONDITIONS: <u>Sunny and warm</u>	IMPORTANT TELEPHONE CALLS: <u>None</u>
--	---

PERSONNEL ON SITE: Tom Anderson, Joe Mediate, Jim Capomare, Bobby East, Mark Rebold
 SUPERVISOR: Ker Matias DATE: 9/16/91 87

FERNALD
RI/FS

WATER QUALITY
FIELD COLLECTION REPORT

Date: 9-17-91
Time: 0900
Page: 1 of 1

2293

FADL REF# date
9-17 to 9-19

PROJECT NAME	<u>FEMP RI/FS</u>	SAMPLE LOCATION	<u>1780</u>
PROJECT NUMBER	<u>602.3.29</u>	SAMPLE ID NUMBER	<u>N/A</u>
DATE COLLECTED	<u>9-17-91</u>	RFA NUMBER	<u>N/A</u>
TIME COLLECTED	<u>1000</u>	C/C NUMBER	<u>N/A</u>
COLLECTED BY	<u>TA, J.L. J.M.</u>	SAMPLE TYPE	<u>groundwater</u>

SAMPLING INFORMATION

BAROMETRIC PRESSURE 754
AIR TEMPERATURE Unknown
DO SATURATION IN AIR N/A
WATER TEMPERATURE 21.3 / 21.8
DEPTH OF SAMPLE 10.0 ft.
WATER LEVEL 7.46 ft. toe

FIELD READINGS

	BEGINNING READ 1	MIDDLE READ 2	END READ 3
pH	<u>6.75</u>	<u>N/A</u>	<u>6.82</u>
SPEC. COND. UMHOS/cm	<u>1.52ms</u>	<u>N/A</u>	<u>1.53ms</u>
D.O. MG/L	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
	BACKGROUND	BREATHING ZONE	DOWNHOLE READING
HNU	<u>0</u>	<u>0</u>	<u>0</u>

METER CALIBRATION

pH Temp	pH Std	pH Std	D.O. Temp	D.O.		D.O. Calc. O ₂	Spec Cond. Temp	Spec Cond.		Spec Cond. High	HNU Stand	HNU Lot #	HNU Reading	HNU Span
				Zero	Full Sc.			Low	High					
<u>10</u>	<u>4</u>	<u>7</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>147</u>	<u>1413</u>					
<u>OK 9:55</u>	<u>3.81</u>	<u>6.98</u>	<u>OK</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>OK</u>	<u>73.0</u>	<u>51.7</u>	<u>71.5</u>	<u>6.49</u>			

WEATHER CONDITIONS sunny and mild mid 70's
ADDITIONAL REMARKS used teflon bailers to purge and sample.

TEST EQUIPMENT LIST

EQUIPMENT NUMBER	EQUIPMENT NAME	EQUIP.	NUMBER
		BAILER	
		HOSE/S	
		PUMP	
		FILTER KIT	

NOTE: ONLY EQUIPMENT SUBJECT TO CALIBRATION NEED BY LISTED

D. - (W.L.) = Ht. of Water Column x = (3 Volumes)
 Ht. of Water Column x = (5 Volumes)

purged well dry - removed - 25 gallons.

FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	9 07 91
	NO.	2493
	SHEET	1 OF

PROJECT NAME *Fernald RIFS* PROJECT NO. *602.3.29*

FIELD ACTIVITY SUBJECT: *Perched water removal wells #1780*

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

0700 - arrive at office; set paper work from Ken Marion (Ken will be supervising K-65 for the rest of the week, Tom A. will be working in his place) go dress out.

0730 - arrive at site.

0745 - get supplies ready

0800 - Tailgate safety Meeting

0815 - start setting well.

1030 - Had trouble with sand coming up around well pipe.
- Called Ken M. to confirm well depth.

1130 - complete well (1780) used 6 bags of sand, 3 buckets Bentonite.
Bottom of Well 18.7 ft.; Screen 18.0 - 8.0; sand to 6.0.
Bentonite to 1.0 ft.

1200 - Leave for Lunch

1300 - go to ASI trailer for supplies

1330 - arrive at site. diller's pick up deconated equipment; begin setting up to sample.

1400 - call 202 to have overhead electric shut off.

1420 - get confirmation from 202 that power has been shut off.

1430 - meet with Mark T. for H&S pre-work checklist review

1445 - sample for well #1782

1630 - finish sampling; clean up site

1715 - leave site to change out.

1740 - Talk w/ Bruce M. at office

1800 - leave for the day.

VISITORS ON SITE: *Mark Turner; 202*

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
Fog in the morning, cool, then sunny and warm

IMPORTANT TELEPHONE CALLS: *7:45 AM*
1400 - called 202 to get overhead power shut off.

PERSONNEL ON SITE: *Tom Anderson, Jim Capannari, Joe Mediate, Bobby Yost, Mark Lebold*

SUPERVISOR: *Bruce Myers* **DATE:** *8-07-91*

VISUAL CLASSIFICATION OF SOILS

Jan 10.4.91

PROJECT NUMBER: 602 3.29	PROJECT NAME: FMPC RI/FS
BORING NUMBER: 1781	COORDINATES: 480.540.39 E 1.390.54 N
ELEVATION: 579.3	DATE: 9-10-91
ENGINEER/GEOLOGIST: T. Anderson	DATE STARTED: 9-10-91
DRILLING METHODS: HOLLOW STEM AUGER	DATE COMPLETED:
	PAGE 1 OF 3

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER (6 in.)	RECOVERY ft.	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
1	NA	7	6	Very stiff, Brown (10YR 4/14) moist, silty clay trace gravel	CL	3.5	HNU = 0 ppm α = 0 cpm B _x = 160 cpm
		8	6	SAA	CL		
		8	4	SAA	CL		
2		5	6	SAA	CL	3.5	HNU = 0 ppm α = 0 cpm B _x = 120 cpm
		8	6	SAA	CL		
3		7	6	SAA	CL		
		7	6	Medium stiff, dark grayish brown (10YR 3/2), silty clay trace wood and gravel	CL	1.5	HNU = 0 ppm α = 0 cpm B _x = 100 cpm
		7	6	SAA	CL		
4		6	2	SAA	CL		
		4	0	NR	CL		
5		4	0	NR	CL		HNU = 0 ppm α = 0 cpm B _x = 0 cpm
		5	0	NR	CL		
		5	0	NR	CL		
6		4	6	Soft, mottled gray (10YR 3/1) and brown (10YR 3/2), silty clay trace wood pieces and gravel	CL	1.25	HNU = 0 ppm α = 0 cpm B _x = 120 cpm
		5	6	SAA	CL		
		4	6	SAA	CL		

NOTES:

Drilling Contractor Penn Drill
 Drilling Equipment CME-45 Auger Drill
 Driller: Bobby Yost
 Helper Mark Rebold
 Geo Assistant Jim Capunna
 HNU Serial # _____

Samples collected per ASTM standard penetration test

Colors identified using Munsell Color Chart

Background Levels:

SAA=Same As Above
 NR=No Recovery

HNU = 0 ppm
 α = 0 cpm
 B_x = 100 cpm
 LEL = n/a %
 O₂ = n/a %

90

VISUAL CLASSIFICATION OF SOILS

Jan 10.4.91

PROJECT NUMBER: 602 3.29	PROJECT NAME: FMPC RI/FS
BORING NUMBER: 1781	COORDINATES: See p1
ELEVATION: See p1	GWL: Depth Date/Time
ENGINEER/GEOLOGIST:	DATE STARTED: 9.10.91
DRILLING METHODS: HOLLOW STEM AUGER	DATE COMPLETED:
	PAGE 2 OF 3

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER (6 in.)	RECOVERY (in.)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
8	NA	1	6	very soft, mottled brown (10YR 5/4), very moist sandy clay trace gravel	CL	.1	HNU = 0 ppm α = 0 cpm β = 100 cpm
		2	6	SAA	CL	n/A	
		1	1	SAA	CL	n/A	
9		1	6	loose brown (10YR 5/3) wet medium sand	SP	n/A	HNU = 0 ppm α = 0 cpm β = 120 cpm
		1	6	soft, gray (10YR 5/1), very moist sandy clay trace gravel	CL	n/A	
		1	6	loose, brown (10YR 5/3), wet coarse sand trace gravel	SP	n/A	
11		6	6	SAA	SP	n/A	HNU = 0 ppm α = 0 cpm β = 100 cpm
		11	6	medium dense, brown (10YR 5/3) silty fine sand	SM	n/A	
		16	5	SAA	SM	n/A	
12		10	6	SAA	SM	n/A	HNU = 0 ppm α = 0 cpm β = 140 cpm
		14	6	SAA	SM	n/A	
		19	6	SAA	SM	n/A	
14		8	6	medium dense, grayish-brown (10YR 5/2) medium to coarse sand trace gravel	SP	n/A	HNU = 0 ppm α = 0 cpm β = 100 cpm
		17	6	SAA	SP	n/A	
		14	6	medium dense to dense, brownish-gray (10YR 6/2) fine to medium sand trace angular gravel	SM	n/A	

NOTES:

Drilling Contractor Penn drill
 Drilling Equipment CME-45 auger drill
 Operator: Bobby York
Mark DeBorja

Samples collected per ASTM standard penetration test
 Colors identified using Munsell Color Chart
 SAA=Same As Above
 NR=No Recovery

VISUAL CLASSIFICATION OF SOILS

June 10-4-91

PROJECT NUMBER: 602 3.29	PROJECT NAME: FMPC RI/FS
BORING NUMBER: 1781	COORDINATES: See p.1
ELEVATION: See p.1	DATE: 9-10-91
ENGINEER/GEOLOGIST: T. Anderson	DATE STARTED: 9-10-91
DRILLING METHODS: HOLLOW STEM AUGER	DATE COMPLETED:
	PAGE 3 OF 3

DEPTH (FT.)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER 16 in.	RECOVERY in.	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
16	NA	13	6	SAA	SM	N/A	HNU = 0 ppm α = 0 cpm B _γ = 120 cpm
		20	6	SAA	SM	N/A	
		19	6	dense, brown (10YR 5/4) and gray (10YR 6/1) silty sand	SM	N/A	
17		10	6	SAA	SM	N/A	HNU = 0 ppm α = 0 cpm B _γ = 100 cpm
		11	6	SAA	SM	N/A	
		9	6	SAA	SM	N/A	
19		12	6	medium dense, gray (10YR 6/1) silty fine sand	SM	N/A	HNU = 0 ppm α = 0 cpm B _γ = 110 cpm
		18	6	SAA	SM	N/A	
		14	6	SAA	SM	N/A	
		14	6	SAA	SM	N/A	
20							

NOTES:

Drilling Contractor Penn Drill

Drilling Equipment CME-45 auger 11'

Operator: Bobby Yost
Mark Rebold

Samples collected per ASTM standard penetration test

Colors identified using Munsell Color Chart

SAA=Same As Above
NR=No Recovery

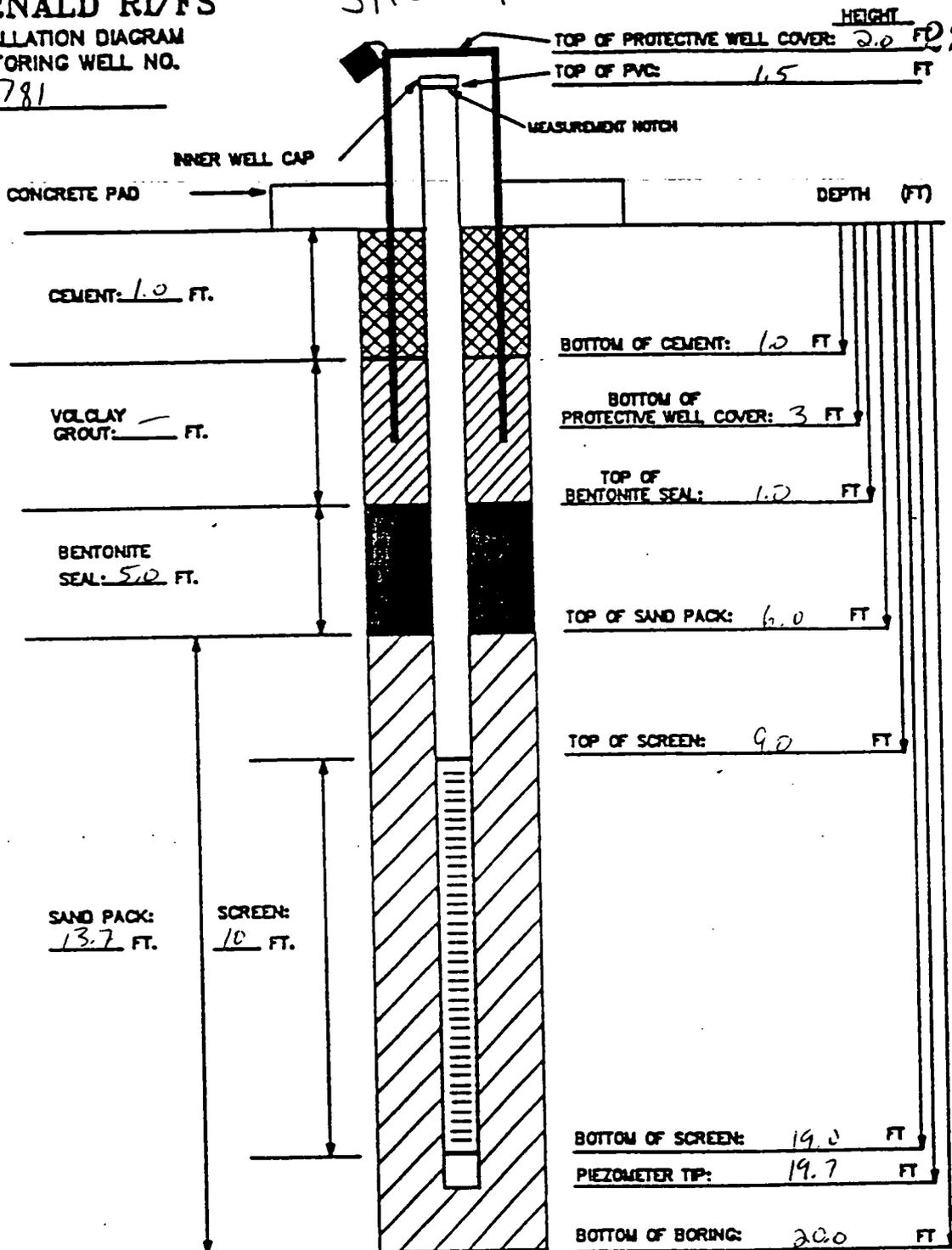
FERNALD RI/FS

INSTALLATION DIAGRAM
MONITORING WELL NO.

1781

Stickups

INSTALLATION DATE: 9-10-91



293

MATERIALS USED:

SAND TYPE AND QUANTITY:

BENTONITE PELLETS (5-GALLON BUCKETS):

BAGS OF VOLCLAY GROUT:

AMOUNT OF CEMENT:

AMOUNT OF WATER USED: None

OTHER: *Riser and screen are 4" stainless steel.*

TASK: *602.3.29*

NOTES:

- 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 SLAMP.
- 4) WATER DEPTH/DATE:

GEOLOGIST/ENGINEER: *T. Anderson*

FERNALD
RI/FS

WATER QUALITY
FIELD COLLECTION REPORT

Date: 9-17-91
Time: 0900
Page: 1 of 2 of 2293

FADL
REF#

PROJECT NAME FEMP RI/FS SAMPLE LOCATION 1781
PROJECT NUMBER 602.3.29 SAMPLE ID NUMBER n/A
DATE COLLECTED 9-17-91 RFA NUMBER n/A
TIME COLLECTED 1000 CIC NUMBER n/A
COLLECTED BY TA, J.L. J.M SAMPLE TYPE groundwater

SAMPLING INFORMATION

BAROMETRIC PRESSURE 75.4
AIR TEMPERATURE unknown
DO SATURATION IN AIR n/A
WATER TEMPERATURE 19.9 / 19.3
DEPTH OF SAMPLE 9.5 ft.
WATER LEVEL 6.60 ft. TOC

FIELD READINGS

	BEGINNING READ 1	MIDDLE READ 2	END READ 3
pH	6.69	n/A	6.90
SPEC. COND. uMHOS/cm	98mS	n/A	103mS
D.O. MGL	n/A	n/A	n/A
	BACKGROUND	BREATHING ZONE	DOWNHOLE READING
HNU	0	0	0

METER CALIBRATION

pH Temp	pH Std	pH Std	D.O. Temp	D.O.		D.O. Cells O ₂	Spec. Cond. Temp	Spec. Cond.		Spec. Cond. High	HNU Stand	HNU Lot #	HNU Reading	HNU Span	
				Zero	Full Sc.			Low	High						
10	4	7	n/A	n/A	n/A	n/A	n/A	73.5	55.4	71.3	6.7				
OK 9.95	3.84	6.98	OK	n/A	n/A	n/A	OK	73.0	51.7	71.5	6.44				

WEATHER CONDITIONS sunny and mild mid 70's
ADDITIONAL REMARKS used teflon bailers for purging and sampling

TEST EQUIPMENT LIST

EQUIPMENT NUMBER	EQUIPMENT NAME	EQUIP.	NUMBER
		BAILER	
		HOSE/S	
		PUMP	
		FILTER KIT	

NOTE: ONLY EQUIPMENT SUBJECT TO CALIBRATION NEED BY LISTED

D. - (W.L.) = Ht. of Water Column Ht. of Water Column x = (3 Volumes)
 Ht. of Water Column x = (5 Volumes)

purged well dry - 20 gallons

PROJECT NAME <i>Fernald R/FS</i>		PROJECT NO. <i>602.3.29</i>
FIELD ACTIVITY SUBJECT: <i>Perched water well installation</i>		
DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:		
<p>0700 - weekly field meeting</p> <p>0730 - gather paper work, and signatures on drum labels; - Talk to Jon Van Dyne to tentatively arrange for drum disposal;</p> <p>0750 - go to plant, dress out, go to site;</p> <p>0800 - call 202 to have electric shut off, informed that they will get to it in a few minutes and will call;</p> <p>0820 - call 202, again, informed that they will get with electric and call back;</p> <p>0845 - 202 stops by to inform that power has been shot off; - begin setting up to drill;</p> <p>0900 - Jim C. conducts tailgate safety meeting;</p> <p>0910 - Begin drilling 1781;</p> <p>1030 - finish drilling 1781, dropped well pipe into boring, when the plug was pushed out, formation sand surged into the augers around the screen. Upon measure, there was 4 feet of formation sand around the screen;</p> <p>1045 - begin pulling the augers, will get a new plug at lunch and redrill the same hole, and attempt to set the well this afternoon;</p> <p>1140 - all augers are out of the ground, go to dress out and go to lunch;</p> <p>1300-1430 - redrill 1781, drop well pipe down through augers, push plug out, sand never pushes bottom of well to 19.0 feet, no formation sand around well screen;</p> <p>1430 - install sand pack - 5 bags of sand</p> <p>1600 - finish sand pack and pulling augers, add bentonite seal 3 buckets.</p> <p>1630 - install protective casing, clean up site, dispose of garbage. Bottom of well @</p> <p>1705 - call 202 to inform them that the derrick on the drill rig was down, and they can turn the electric back on; dress out and go to the off. co.</p> <p>1800 - leave for the day</p>		
VISITORS ON SITE: <i>Mark Turner - Health and Safety</i>		CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
WEATHER CONDITIONS: <i>Sunny and warm.</i>		IMPORTANT TELEPHONE CALLS: <i>202 - shot off overhead electric.</i>
PERSONNEL ON SITE: <i>Tom Anderson, Jim Laddumari, Joe Mediate, Bobby Yost, Mark Rebold</i>		
SUPERVISOR:		DATE:

PROJECT NAME *Fernald RIFS*

PROJECT NO. *602.3-29*

FIELD ACTIVITY SUBJECT: *Perched water well sampling*

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

- 0700 - arrive at office, talk with Tom M. about what has been done previously on purging the perched water wells.
- 0800 - Talk to Dave Spatta about previous samples - will meet him at the sample trailer to review 1783 and 1784 samples. go to sample trailer.
- 0815 - arrive at sample trailer. go through previous well purging paper work.
- 0840 - Dave spatta arrives, 1783 samples were left in cooler ^{TA 9-16-91} unlabeled, 1784 samples were incomplete - missing metals filtered. Decide to resample these wells.
- 0915 - Ron G. arrives at sample trailer arrange to meet at office to pick up meters, finish going over paper work.
- 1000 - check out BG from Ron G., go to process area to inventory of water in drums → need 3 pallets (2 drums left off pallets), one drum left unsealed, half full of water, *also need keys to procovers.
- 1105 - return to ASI to track down key
- 1135 - Doug H. said to get key at security shack at 1300
- 1300 - pick up keys from security
- 1315 - Keys from security are not the keys on the wells, need master lock.
- 1345 - get master lock key from Bill H., go dress out.
- 1425 - set up at 1783 and 1784 take water levels from TDC
- 1783 - 10.52 ft.; 1784 - 10.93 ft.
- 1445 - take pH, spec. cond., Temp. using water analyzer (see attached forms) cal^{ib}
- 1510 - purge 1784 dry - removed 10 gallons
- 1610 - purged 1783 dry - removed 6 gallons
- 1645 - clean up site; dress out.

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
-------------------	--

WEATHER CONDITIONS: <i>Sunny, very hot (95°)</i>	IMPORTANT TELEPHONE CALLS:
---	----------------------------

PERSONNEL ON SITE: *Tom Anderson, Joe Holtzgrewe, Joe Mediate*

SUPERVISOR: _____ DATE: _____

FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	9	17	91
	NO.			
	SHEET	1 OF 2		

PROJECT NAME Fernald RI/FS PROJECT NO. 602.3.29
 FIELD ACTIVITY SUBJECT: purging perched water wells

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

- 0730 - Arrive at office, get paperwork from Bruce tell him about the status of the purging of perched water wells.
- 0800 - go to sample trailer, pick up sample bottles, coolers, ice, and RFA forms. Don M. could not find C-O-C forms.
- 0830 - go to new trailers to see if Larry M. had any at his desk, he had none.
- 0855 - meet with Jim W. in Visitors locker room, tell him of our need for C-O-C forms. He said he will track some down.
- 0910 - Dress out, go to site, begin setting up to purge. Place plastic around wells, check calibration of water analyzer. (see attached ~~isobaric~~ pressure forms).
- 0930 - check water levels: 1779 - 7.12 ft., 1780 - 7.46 ft., 1781 - 6.60 ft.; measured from top of casing (TOC) 1782 - 7.22 ft.
- 1000 - measure Temp, specific conductivity, pH of 1779-1782. (see attached forms)
- 1015 - begin purging 1781 - removed 20 gallons to dry
- 1100 - decon boiler - Alconox → DI water → methanol → DI → DI.
- 1110 - begin purging 1779 - removed 10 gallons to dry;
- 1140 - decon boiler - Alconox → DI → methanol → DI → DI.
- clean up site
- 1210 - leave for lunch
- 1310 - go to sample trailer pick up C-O-C forms and sample numbers
- dress out
- 1400 - set up on 1785, check water level - 8.60 ft TOC
- 1445 - removed 20 gallons - water level - 9.80

VISITORS ON SITE: Ken Grumski - QA Ted Hunt - HES	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
---	--

WEATHER CONDITIONS: Sunny and mild	IMPORTANT TELEPHONE CALLS:
---------------------------------------	----------------------------

PERSONNEL ON SITE:
 SUPERVISOR: _____ DATE: 97

PROJECT NAME *Fernald RI/FS* PROJECT NO. *602.3.29*

FIELD ACTIVITY SUBJECT: *Purging perched water wells*

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

1515 - removed 25 more gallons of water from 1785, checked water level = 10.16
 - Total of 45 gallons of water removed from 1785.
 - clean up site → will sample first thing in the morning.

1355 - check water level in 1784 = 10.97 ft. below TOC

1600 - check water level in 1783 = 9.83 ft. below TOC

1610 - Label drums

1630 - ~~purged~~ set up on 1780 and 1782

1645 - purged 1780 → 25 gallons removed

1715 - purged 1782 → 25 gallons removed

1745 - cleanup site

1830 - dress out, go back to office, and to sample trailer.

1900 - leave for day

VISITORS ON SITE:
Ted Hunt - HES
Ken Gurnski - QA

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
SUNNY and warm

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE *Tom Anderson, Jim Capomuro, Joe Mediate, Joe Holtzgren*

SUPERVISOR: _____ **DATE:** _____

PROJECT NAME Fernald RI/FS PROJECT NO. 602.3.29

FIELD ACTIVITY SUBJECT: Sampling perched water wells

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

0700 - arrive at office, get a vehicle, talk to Bruce M.
 0730 - go out to sample trailers to pick up sample bottles, numbers, coolers ice, water analyzer, and various supplies.
 0810 - calibrate water analyzer with Don Nelson
 0930 - go to ASI to pick up Hsu
 1000 - dress out and go to 1785 and set up to sample, tailgate safety meeting
 1045 - Take water level - 8.60 ft. TOC (1785)
 - Take water analyzer reading (see attached tables)
 1110 - Begin sampling well 1785
 1210 - finish sampling well 1785; clean up site
 1235 - dress out for lunch
 1325 - go to sample trailers to see if bottles came in (not in); pick up clear tape, gear bag, and paper towels, go to process area.
 1400 - set up 1783 and 1784 for sampling.
 1415 - take water levels 1783 - 4.85 ft. (TOC); 1784 - 10.00 ft. (TOC).
 1430 - take water analyzer readings (see attached tables)
 1450 - sampled well 1783
 1535 - sampled well 1784
 1620 - Jim Wheat called to say that we should finish sampling 1784 and clean up for the day due to the rain.
 1630 - clean up site; go to sheltered area to get samples smeared for release from process area;
 1730 - Ted H. takes smears to be analyzed
 1945 - smears cleared to be taken off site.
 2000 - take samples to the sample trailers, to check in samples, and check labels and COL/RFA
 2100 - leave for the day.

VISITORS ON SITE:
 Ken Brumski - QA
 Ted Hunt - HHS

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
 cloudy and cool before lunch;
 rain developing during the afternoon

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE: Tom H., Jim L., Joe M., Joe H.

SUPERVISOR: _____ **DATE:** 99

FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	9 19 91
	NO.	602 3 29
	SHEET	1 OF 1

2293

PROJECT NAME FEMP RIFS

PROJECT NO. 602.3.29

FIELD ACTIVITY SUBJECT: Sampling Perched water wells

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

- 0700 - go out to sample trailers to pick up coolers, bottles, ice, etc;
- 0815 - go to plant, dress out;
- 0845 - Tailgate safety meeting, begin setting up site for sampling
- 0945 - calibrate water analyzer
- 0945 - finish calibrating water analyzer begin sampling 1779 and 1781
- 1100 - finish sampling both wells; place pH strips and chain of custody tape on bottles; all bottles placed in coolers with ice.
- 1125 - straighten up site - secure for lunch
- 1155 - dress out; go to lunch;
- 1300 - dress out - go to site;
- 1320 - set up site for sampling
- 1345 - begin sampling 1780 and 1782;
- 1510 - finish sampling both wells, clean bailer, all samples pH and chain of custody tape, placed in coolers on ice.
- 1530 - collect rinsate sample, Ted H. starts smears to get samples out of plant
- 1550 - clean up site; dispose of trash; paint water drums;
- 1715 - Ted finished smears and took them to be analyzed;
- wait for smears to be released
- 2000 - sample smears all o.k., get samples out of process area and out to trailers
- check in samples, put samples in Refrigerator, check over labels and C-O-C/REA.
- 2130 - leave for the day.

VISITORS ON SITE:

Ted Hunt - H&S

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:

SUNNY - 60°; light breeze

IMPORTANT TELEPHONE CALLS:

PERSONNEL ON SITE:

T. Lindeman, J. Capannari, Joe Mediate, Joe Holzman, Jim Henry

SUPERVISOR:

DATE:

100

VISUAL CLASSIFICATION OF SOILS

Jan 10.4.91

PROJECT NUMBER: 602-329	PROJECT NAME: FMPC RI/FS
BORING NUMBER: 1782 1782 Jan 10.4.91	COORDINATES: N 480,539.34 E 1,380,133.52
ELEVATION: 579.6	GWL: Depth Date/Time
ENGINEER/GEOLOGIST: T.A.	Depth Date/Time
DRILLING METHODS: HOLLOW STEM AUGER	PAGE 1 OF 3

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER (6 in.)	RECOVERY in.	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
1	NA	6	6	Stiff, Brown (10YR 4/3), moist silty clay trace limestone gravel	CL	2.25	HNU = 0 ppm α = 0 cpm B ₈ = 160 cpm
		11	6	SAA	CL	SAA	
		8	2	SAA	CL	SAA	
2		5	6	SAA	CL	2.0	HNU = 0 ppm α = 0 cpm B ₈ = 120 cpm
		6	6	SAA	CL	SAA	
		10	1	SAA	CL	SAA	
3		7	6	SAA	CL	2.5	HNU = 0 ppm α = 0 cpm B ₈ = 100 cpm
		11	6	Stiff, Brownish gray (10YR 6/2) moist, medium to 1/2 plastic, silty clay with limestone gravel	CL	SAA	
		11	1	Stiff, gray (10YR 5/1), moist, plastic trace sand and gravel CLAY	CL	SAA	
5		11	0	NR		NR	HNU = 0 ppm α = 0 cpm B ₈ = 0 cpm
		8	0	NR		NR	
		7	0	NR		NR	
6		3	6	Medium stiff, brown (10YR 4/3) very moist, silty clay trace sand and gravel	CL	1.0	HNU = 0 ppm α = 0 cpm B ₈ = 120 cpm
		4	6	SAA	CL	SAA	
		4	2	SAA	CL	SAA	

NOTES: Penn Drill
 Drilling Contractor: Penn Drill
 Drilling Equipment: LME 45 auger drill
 Driller: Bobby Yost
 Helper: Muck Rebold
 Geo Assistant: Jim Capannari
 HNU Serial #: _____

Samples collected per ASTM standard penetration test
 Colors identified using Munsell Color Chart
 Background Levels: HNU = 0 ppm
 α = 0 cpm
 B₈ = 100 cpm
 LEL = N/A %
 O₂ = N/A %101

SAA=Same As Above
 NR=No Recovery

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602 3,29	PROJECT NAME: FMPC RI/FS	
BORING NUMBER: 1782	COORDINATES: See p1	DATE:
ELEVATION: See p1	GWL: Depth Date/Time	DATE STARTED:
ENGINEER/GEOLOGIST: TA	Depth Date/Time	DATE COMPLETED:
DRILLING METHODS: HOLLOW STEM AUGER	PAGE 2 OF 3	

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER (6 IN.)	RECOVERY (in)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
8	NA	2	6	soft, Brown (10 YR 4/3), wet, silty clay with sand and gravel	CL	15	H _N U = 0 ppm α = 0 cpm B _x = 100 cpm
		2	6	SAA	CL	SAA	
		3	5	SAA	CL	SAA	
9		1	6	loose, Brown (10 YR 5/3), wet, fine to medium sand, trace gravel and clay	SM	N/A	H _N U = 0 ppm α = 0 cpm B _x = 120 cpm
		2	6	SAA	sm	N/A	
		2	1	SAA	sm	N/A	
11		7	6	medium dense, Brown (10 YR 5/3), medium SAA and trace gravel	SP	N/A	H _N U = 0 ppm α = 0 cpm B _x = 100 cpm
		9	6	SAA	SP	N/A	
		12	6	SAA	SP	N/A	
12		8	6	SAA	SP	N/A	H _N U = 0 ppm α = 0 cpm B _x = 125 cpm
		13	6	SAA	SP	N/A	
		10	6	SAA	SP	N/A	
13		9	6	SAA	SP	N/A	H _N U = 0 ppm α = 0 cpm B _x = 150 cpm
		10	6	SAA	SP	N/A	
		10	6	SAA	SP	N/A	

NOTES:

Drilling Contractor Penn Drill Samples collected per ASTM standard penetration test

Drilling Equipment CME-45 auger drill Colors identified using Munsell Color Chart

Operator: Bobby Yost SAA=Same As Above

Mark Rebold NR=No Recovery

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602 3.29	PROJECT NAME: FMPC RI/FS
BORING NUMBER: 1782	COORDINATES: See p1
ELEVATION: See p1	GWL: Depth Date/Time
ENGINEER/GEOLOGIST: JA	DATE STARTED:
DRILLING METHODS: HOLLOW STEM AUGER	DATE COMPLETED:
	PAGE 3 OF 3

DEPTH (FT)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER (6 in.)	RECOVERY in.	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
16	NA	9	6	SAA	SP	N/A	HNU = 0 ppm α = 0 cpm Bγ = 100 cpm
		10	6	SAA	SP	N/A	
		15	6	medium dense to dense, grayish brown, wet, medium to coarse SAA with trace gravel (10YR 3/2)	SP	N/A	
17		9	6	SAA	SP	N/A	HNU = 0 ppm α = 0 cpm Bγ = 100 cpm
		12	6	SAA	SP	N/A	
		17	6	SAA	SP	N/A	
19		19	6	SAA	SP	N/A	HNU = 0 ppm α = 0 cpm Bγ = 100 cpm
		27	6	SAA	SP	N/A	
		23	6	SAA	SP	N/A	
		22	6	SAA	SP	N/A	
20							

NOTES:

Drilling Contractor Penn Drill
 Drilling Equipment LINE -45 auger drill
 Per: Bobby Yost
Mark Rebold

Samples collected per ASTM standard penetration test
 Colors identified using Munsell Color Chart
 SAA=Same As Above
 NR=No Recovery

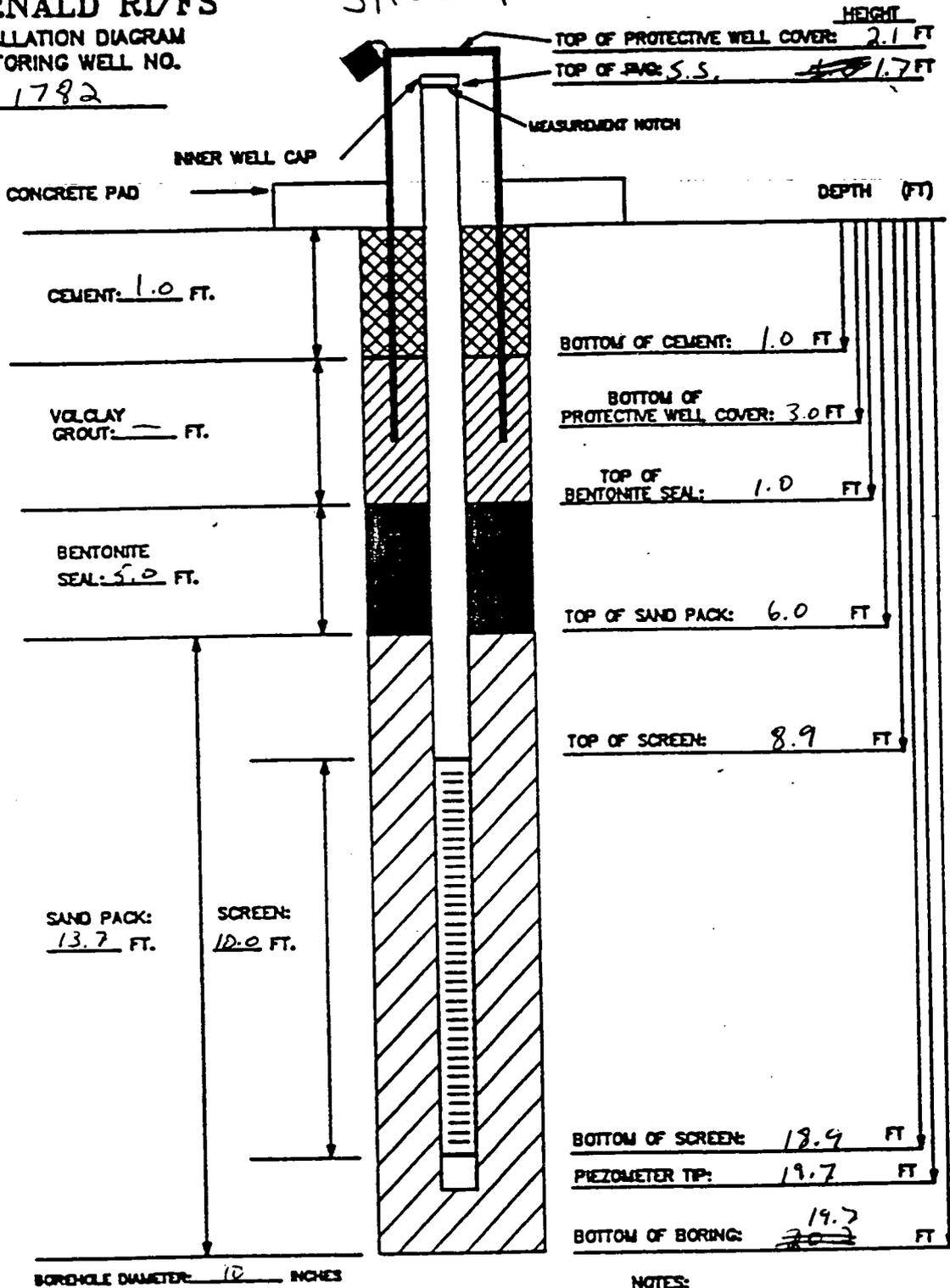
FERNALD RI/FS

INSTALLATION DIAGRAM
MONITORING WELL NO.

1782

Stickups

INSTALLATION DATE: 9-2-91 2293



MATERIALS USED:

SAND TYPE AND QUANTITY: 4 bags
 BENTONITE PELLETS (5-GALLON BUCKETS): 3 buckets
 BAGS OF VOLCLAY GROUT:
 AMOUNT OF CEMENT:
 AMOUNT OF WATER USED:
 OTHER:

NOTES:

- 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 STOP.
- 4) WATER DEPTH/DATE:

TASK: 602.329

GEOLOGIST/ENGINEER: T. Anderson

FERNALD
RI/FS

WATER QUALITY
FIELD COLLECTION REPORT

Date: 9-17-91
Time: 0900
Page: 1 of 1

2293

FADL
REF#

PROJECT NAME FCmp P1/FS SAMPLE LOCATION 1782
 PROJECT NUMBER 602.3.29 SAMPLE ID NUMBER n/a
 DATE COLLECTED 9-17-91 RFA NUMBER n/a
 TIME COLLECTED 1000 C/C NUMBER n/a
 COLLECTED BY TA, JC, JM. SAMPLE TYPE ground water

SAMPLING INFORMATION

BAROMETRIC PRESSURE 754
 AIR TEMPERATURE unknown
 DO SATURATION IN AIR n/a
 WATER TEMPERATURE 14.9 / 14.4
 DEPTH OF SAMPLE 10.0 ft.
 WATER LEVEL 7.20 ft. Toc

FIELD READINGS

	BEGINNING READ 1	MIDDLE READ 2	END READ 3
pH	7.61	n/a	7.66
SPEC. COND. uMHOS/cm	421.5	n/a	400.5
D.O. MGL	n/a	n/a	n/a
	BACKGROUND	BREATHING ZONE	DOWNHOLE READING
HNU	0	0	0

METER CALIBRATION

pH Temp	pH Std	pH Std	D.O. Temp	D.O.		D.O. Calib. O ₂	Spec. Cond. Temp	Spec. Cond.		HNU Stand	HNU Lot #	HNU Reading	HNU Span
				Zero	Full Sc.			Low	High				
10	4	7	n/a	n/a	n/a	n/a	n/a	147	1413				
OK 9.8	3.84	6.98	OK	n/a	n/a	n/a	OK	73.0	51.7	715	6.44		

WEATHER CONDITIONS swamy and mild - mid 70's
 ADDITIONAL REMARKS used teflon bailers for purging and sampling

TEST EQUIPMENT LIST

EQUIPMENT NUMBER	EQUIPMENT NAME	EQUIP.	NUMBER
		BAILER	
		HOSE/S	
		PUMP	
		FILTER KIT	

NOTE: ONLY EQUIPMENT SUBJECT TO CALIBRATION NEED BY LISTED

D.) - (W.L.) = Ht. of Water Column Ht. of Water Column x = (3 Volumes)
 Ht. of Water Column x = (5 Volumes)

→ removed 25 gallons to dry

FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	9 08 91
	NO.	602 3 29
	SHEET	2203 OF 1

PROJECT NAME	Fernald R/FS	PROJECT NO.	602-3-29
--------------	--------------	-------------	----------

FIELD ACTIVITY SUBJECT: purified water well installation

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

0700 - arrive at office; get paper work together, go dress out;

0745 - arrive at plant 2/3; informed by drillers that equipment still not out of decon;

0800 - call 202 to have overhead electric shut off prior to drilling;

0810 - 202 visited site to confirm that electric has been shut off;

0900 - got augers back from decon; set up to install well;

0940 - begin installing well 1782;

1230 - finish setting well 1782, 4 bags sand, 3 buckets bentonite;

1245 - clean up and secure site, bust out for lunch;

1345 - return to site, take equipment to decon, dump excess cuttings finish cleanup work area;

1450 - take garbage to disposal area;

1510 - call 202 to have Rust equipment and signs moved from the work area surrounding well 1781;

1530 - 202 arrives, move equipment and signs out of 1782 area;

1550 - move drill rig from 1782 and set up on 1781;

1615 - go to decon to check on equipment;

1630 - dress out

1645 - go to trailers to check ^{on} equipment; pick up gloves, boot covers, tyvels;

1730 - return to office, finish up paper work;

1900 - leave for the day.

VISITORS ON SITE: <u>Mark Turner (HP)</u> <u>202</u>	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
---	--

WEATHER CONDITIONS: <u>Sunny and warm</u>	IMPORTANT TELEPHONE CALLS: <u>202 202 to have electric shut off</u>
--	--

PERSONNEL ON SITE: Jim Casanova, Joe Mediate, Tom Anderson, Bobby Yost, Mack R. Kolb

SUPERVISOR: _____ DATE: 9-25-91

FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	9/09/91
	NO.	602.3.29
	SHEET	1 OF 2293

PROJECT NAME Fernald R/FS PROJECT NO. 602.3.29

FIELD ACTIVITY SUBJECT: Perched water wells installation

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

- 0700 - meet at office; make copies of field forms; drillers are completing weekly paper work.
- 0730 - dress out go to site;
- 0800 - call control and 202 to have electric turned off;
- 0815 - 202 stopped by site to confirm that electric has been shut off;
 - set up site for well 1781 installation.
- 0845 - begin ~~augering~~^{sampling} for 1782
- 1115 - finish sampling 1782; secure site, dress out for lunch;
- 1230 - return to site, augers still aren't out of decon;
- 1300 - go pick up drums and pallets;
- 1330 - check with decon, augers still not completed
- 1430 - auger completed, begin augering 1782;
- 1530 - plug fell out of the auger, had to pull the auger and try to fit another one, 45 minute delay due to rain;
- 1700 - drillers can't get a plug to fit, have to make a new one;
 - secure site and leave site to dress out;
- 1735 - leave process area, go to office;
- 1745 - check in with Bruce M.;
- 1800 - leave for the day.

VISITORS ON SITE:
Mark Turner H&S.

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:
mostly to partly cloudy, hot, and humid.

IMPORTANT TELEPHONE CALLS:
call 202 to have electric turned off.

PERSONNEL ON SITE: Tom Anderson Bobby Yost Jim Lapunnari Joe Mediate, Mark Kels

SUPERVISOR: _____ **DATE:** _____

VISUAL CLASSIFICATION OF SOILS

Jan 12.4.91

PROJECT NUMBER: 6023.10	PROJECT NAME: FEMP RI/FS	
BORING NUMBER: 3397	COORDINATES: As yet Not surveyed	DATE 9-19-91
ELEVATION:	GWL: Depth Qate/Time	DATE STARTED: 9-19-91
ENGINEER/GEOLOGIST: J. Lear	Depth Date/Time	DATE COMPLETED: 9-25-91
DRILLING METHODS: cable tool	PAGE 1 OF 8	

DEPTH ft	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER - 16.0 -	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
5				All Descriptions may be cross referenced with Boring # 2397 up to 71.5'			
10							
15							

NOTES: Drilling Contractor - Penn Drill
 Drilling equipment - Cyclone 43 cable tool
 Driller - Craig Coulter
 Asst. - Gary Dye

S. A. A. - Same as Above
 N.R. - No recovery

Background
 H_{no} - 0 ppm
 C_b - 500 ppm
 a - 00 ppm

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 603.3.10	PROJECT NAME: FMPC RI/FS		
BORING NUMBER: 3397	COORDINATES: See p1	DATE 9-20-91	
ELEVATION: See p1	GWL: Depth	Date/Time	DATE STARTED: 9-19-91
ENGINEER/GEOLOGIST: J. Lear	Depth	Date/Time	DATE COMPLETED: 9-25-91
DRILLING METHODS: cable tool			PAGE 2 OF 8

DEPTH (ft)	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER 10 in	RECOVERY (in)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
70							
71							
72							
73							
74							
75	33415	9		Dense, Dark gray (dry, 41) med sand, (poorly sorted) some fine gravel, wet.	SP	NA	H _{nu} - 0 ppm
76	1615	13	11				B ₈ - 50 cpm
	7-20-91	25					α - 0 cpm
77							
78							
79							
80	33416	14		S. A. A.	SP	NA	H _{nu} - 0 ppm
81	1640	17	18				B ₈ - 50 cpm
	7-20-91	28					α - 0 cpm
82							
83							
84							
85							

NOTES: See page 1

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602.3.10	PROJECT NAME: FEMP RI/FS		
BORING NUMBER: 3397	COORDINATES: See p 1	DATE: 9-21-91	
ELEVATION: See p 1	GWL: Depth	Date/Time	DATE STARTED: 9-19-91
ENGINEER/GEOLOGIST: J. Lear	Depth	Date/Time	DATE COMPLETED: 9-25-91
DRILLING METHODS: cable tool			PAGE 3 OF 8

DEPTH	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER 4 in	RECOVERY (in)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
85							
86	33417 0930 9-21-91	9 18 19	5	Dense, dark gray (lovr. s.) poorly sorted coarse sand, some gravel, wet	SW	NA	H ₂ O - 0 ppm BB - 50 cpm α - 0 cpm
87							
88							
89							
90							
91	33418 0945 9-21-91	29 16 19	18	S.A.A	SW	NA	H ₂ O - 0 ppm BB - 50 cpm α - 0 cpm
92							
93							
94							
95	33419 1115 9-21-91	15 25 5/4	8	Very dense, ^{J.L. 9-21-91} dark gray (lovr. s.) poorly sorted gravelly sand, wet.	SW	NA	H ₂ O - 0 ppm BB - 50 cpm α - 0 cpm
96							
97							
98							
99							

100
NOTES: see pg 1

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: <i>COZ.3.10</i>	PROJECT NAME: <i>FEMP RI/FS</i>	
BORING NUMBER: <i>3397</i>	COORDINATES: <i>See p1</i>	DATE: <i>9-21-91</i>
ELEVATION:	GWL: Depth	DATE STARTED: <i>9-19-91</i>
ENGINEER/GEOLOGIST: <i>J. Lear</i>	Depth	DATE COMPLETED: <i>9-25-91</i>
DRILLING METHODS: <i>cable tool</i>		PAGE <i>4</i> OF <i>8</i>

DEPTH (ft)	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER 16.7	RECOVERY (in)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
100							
101	<i>33420 1150 9-21-91</i>	<i>20 16 12</i>	<i>18</i>	<i>med. dense, dark gray (10yr, 41%) poorly sorted gravelly sand, wet.</i>	<i>SW</i>	<i>NA</i>	<i>H₂O - 0 ppm C_d - 50 cpm a - 0 cpm</i>
102							
103							
104							
105	<i>33421 1430 9-21-91</i>	<i>11 21 30</i>	<i>18</i>	<i>v. dense, dark gray (10yr, 41%) well sorted med. sand wet dense, dark gray (10yr, 41%) poorly sorted gravelly sand, wet.</i>	<i>SP SW</i>	<i>NA NA</i>	<i>H₂O - 0 ppm C_d - 50 cpm a - 0 cpm</i>
106							
107							
108							
109							
110	<i>33422 1545 9-21-91</i>	<i>21 33 37</i>	<i>12</i>	<i>v. dense, dark gray (10yr, 41%) poorly sorted, gravelly sand, wet.</i>	<i>SW</i>	<i>NA</i>	<i>H₂O - 0 ppm C_d - 50 cpm a - 0 cpm</i>
111							
112							
113							
114							
115							

NOTES: *see p9 1*

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602.3.10	PROJECT NAME: FEMP RI/FS		
BORING NUMBER: 339Z	COORDINATES: See p1	DATE: 9-22-91	
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 9-19-91
ENGINEER/GEOLOGIST: J. Lear	Depth	Date/Time	DATE COMPLETED: 9-25-91
DRILLING METHODS: cable tool			PAGE 5 OF 8

DEPTH (ft)	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER 16 in	RECOVERY (in)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
115							
116	33423 15 1710 9-21-91	50/6	10	S.A.A	SW	NA	H ₂ O - 0 ppm Cd - 50 cpm α - 0 cpm
117							
118							
119							
110	33424 10 0830 9-22-91	9 23	0	N.R	NA	NA	H ₂ O - 0 ppm Cd - 50 cpm α - 0 cpm
122							
123							
124							
125	33425 5 1015 9-22-91	10 11	12	med. dense, dark gray (10 yr. 4%) well sorted med. sand, trace sand gravel, wet. J-69-2147	SP	NA	H ₂ O - H ₂ O - 0 ppm Cd - Cd - 50 cpm α - α - 0 cpm
126							
127							
128							
129							
130							

NOTES: see pg 1

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602-3-10	PROJECT NAME: FEMP RI/FS		
BORING NUMBER: 3387	COORDINATES: See p1	DATE 9-22-91	
ELEVATION:	GWL: Depth	Date/Time	DATE STARTED: 9-19-91
ENGINEER/GEOLOGIST: J. Lear	Depth	Date/Time	DATE COMPLETED: 9-25-91
DRILLING METHODS: cable Tool			PAGE 2 OF 8

DEPTH (FT.)	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER 16" I	RECOVERY (in)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
130	33426 1050 9-22-91	4	10	Hard (2.57, 4/2) olive gray, clay, some s.H med plast., moist	CL	2.75	H _{av} - 0 ppm B _t - 50 cpm α - 0 cpm
131	NA	NA	NA	Drilled out Boring to 133.5' to clear out sand.			NA
132	NA	NA	NA				
133	NA	NA	NA				
134	33427 1640 9-22-91	NA	24	S.A.A.			H _{av} - 0 ppm B _t - 50 cpm α - 0 cpm
135							
136				well set at 120.0'. Blue clay found at 130.0'			

city
jbe

NOTES see page 1

PIEZOMETER INSTALLATION SHEET

PROJECT NAME TEMP RI/FS FIELD ENG./GEO. J. Lear DATE 9-24-91
 PROJECT NO. 602.3.10 CHECKED BY Jaw DATE 10-4-91
 BORING NO. 3397
 PIEZOMETER NO. 3397 DATE OF INSTALLATION 9-24-91

BOREHOLE DRILLING

DRILLING METHOD <u>Cable tool</u>	TYPE OF BIT <u>8 in cable tool bit</u>
DRILLING FLUID(S) USED: FLUID <u>H₂O</u> FROM <u>0</u> TO <u>60.0</u> FLUID <u>NA</u> FROM <u> </u> TO <u>→</u>	CASING SIZE(S) USED: SIZE <u>10 in</u> FROM <u>0:0</u> TO <u>130.0</u> SIZE <u>NA</u> FROM <u> </u> TO <u>→</u>

PIEZOMETER DESCRIPTION

TYPE <u>4 in stainless steel monitoring well</u>	RISER PIPE MATERIAL <u>316 stainless steel</u>
DIAMETER OF PERFORATED SECTION <u>4 in ID</u>	RISER PIPE DIAMETERS: O.D. <u>4 3/8 in</u> I.D. <u>4 in</u>
PERFORATION TYPE: SLOTS <input type="checkbox"/> HOLES <input type="checkbox"/> SLOTS <input type="checkbox"/> HOLES <input type="checkbox"/> SCREEN <input checked="" type="checkbox"/>	LENGTH OF PIPE SECTIONS <u>10ft, 5ft, 2ft</u>
AVERAGE SIZE OF PERFORATIONS <u>0.10 in</u>	JOINING METHOD <u>Threaded Flush Jointed</u>
TOTAL PERFORATED AREA <u>10 ft</u>	

PROTECTION SYSTEM

RISER PROTECTIVE PIPE LENGTH <u>5ft</u>	OTHER PROTECTION <u>Hinged locking well cover</u>
PROTECTIVE PIPE O.D. <u>10.75 in</u>	

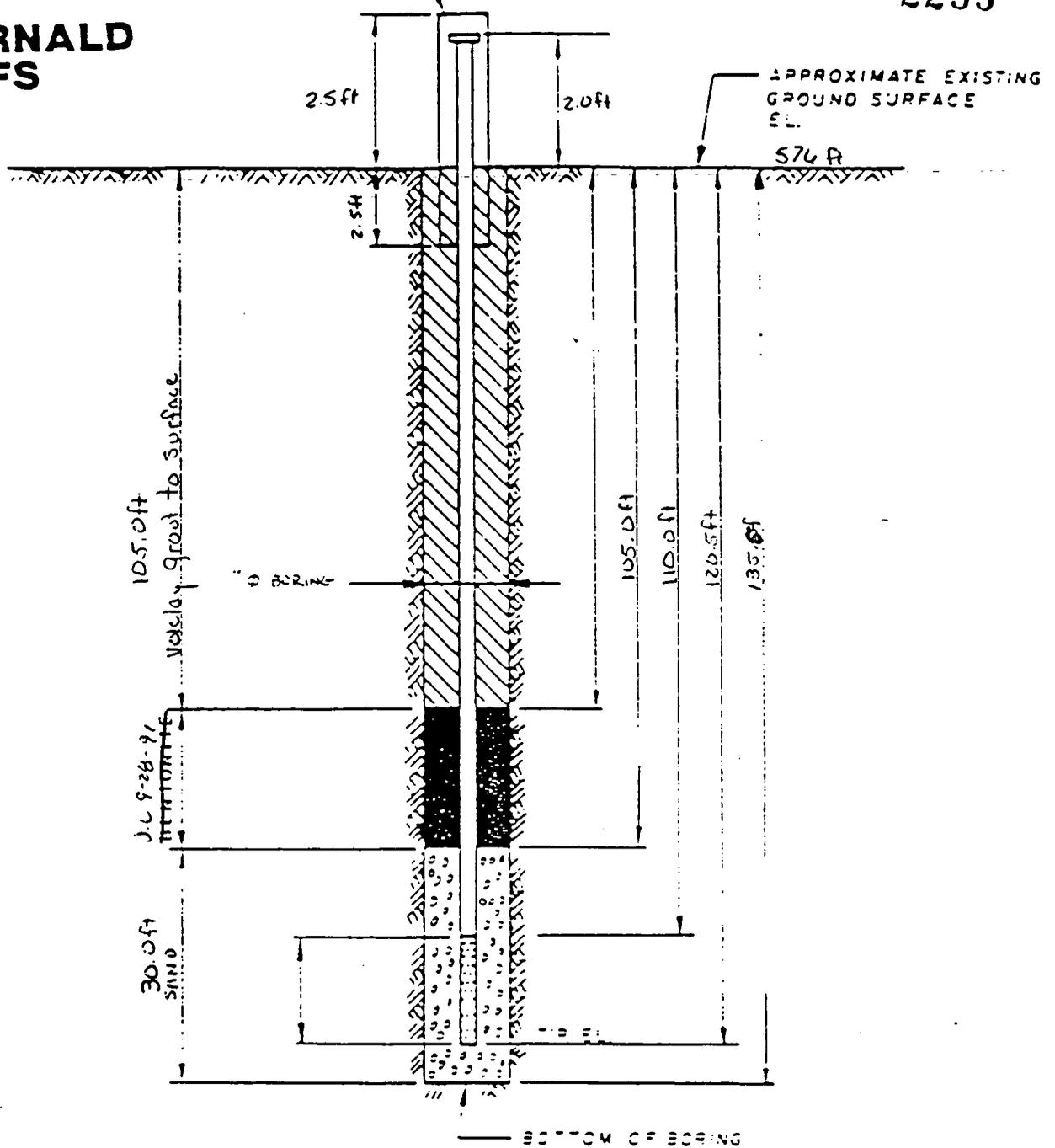
ITEM	DISTANCE ABOVE/BELOW GROUND SURFACE (ft)		ELEVATION ()	
TOP OF RISER PIPE	2.0			
GROUND SURFACE	0.0			
BOTTOM OF PROTECTIVE PIPE	2.5			
BOREHOLE FILL MATERIALS:				
GROUT/SLURRY	TOP 0.0	BOTTOM 105.0	TCP	BOTTOM
BENTONITE	TOP NA	BOTTOM NA	TOP	BOTTOM
SAND	TOP 135.0	BOTTOM 105.0	TOP	BOTTOM
GRAVEL	TOP NA	BOTTOM NA	TOP	BOTTOM
PERFORATED SECTION	TOP 120.0	BOTTOM 110.0	TOP	BOTTOM
PIEZOMETER TIP				
BOTTOM OF BOREHOLE	120.5 135.0 135.5			
GWL AFTER INSTALLATION				

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

REMARKS _____

FERNALD RI/FS

PROTECTIVE RISER CASING



DRAWING NUMBER

CHECKED BY
APPROVED BY

J. L. G. 7-28-91

DRAWN BY

NOTES

1. RISER PIPE IS 4.0 IN I.D SCHEDULE PIPE, THREADED, FLUS-JOINTED
2. SCREEN IS 4.0 IN I.D SS PIPE CONTINUOUS SLOT SCREEN (0.010 IN SLOT SIZE)
3. LOWER END OF SCREEN IS CAPPED.
4. ELEVATION OF WATER LEVEL
5. WATER LEVEL READING ON

20 17 bags 10x10 sand 80lbs.
 15 bags verclay grout 50lbs
 10ft screen .5ft silttrap, 10-10ft sections, 2-5ft sections 1-2ft riser
 Total water Added - 600 gals

INSTALLATION DETAILS
MONITORING WELL

3397

PREPARED FOR
Fernald RI/FS

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

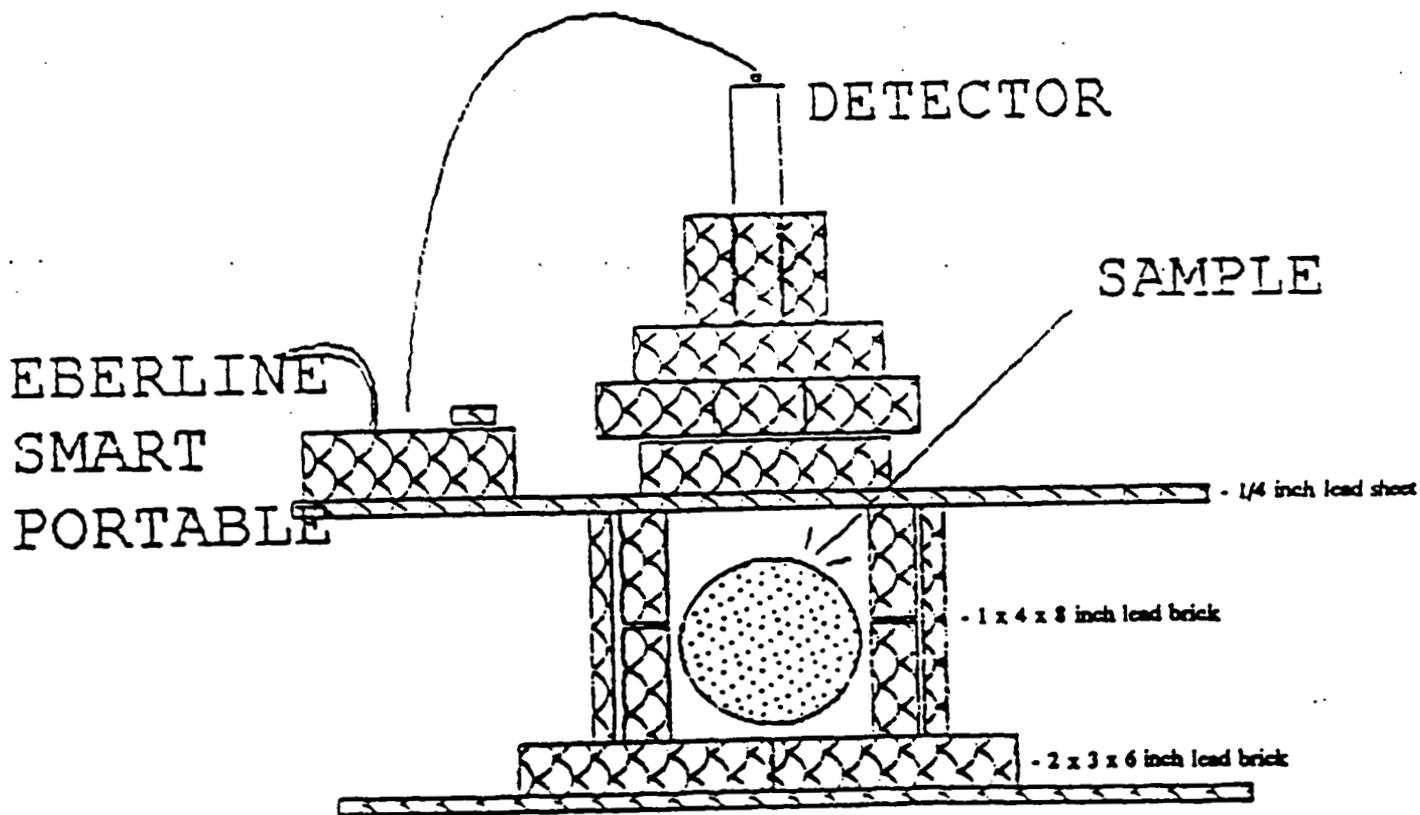
**ENCLOSURE D
ARCHIVE SAMPLING PROCEDURE**

ARCHIVE SAMPLE SCANNING TECHNIQUE USED FOR SAMPLES FROM THE K-65
LOW ANGLE BORING PROJECT

The archive samples are scanned for gamma radiation content using an Eberline Smart Portable, model ESP-2 survey instrument and an Eberline Scintillation Detector, Model SPA-3 (Sodium Iodide Detector). The cylindrical detector is inserted through the opening in the top of the lead brick constructed scanning platform or "pig". The tip of the detector rests 1/8 inch above the 3 inch diameter sample tube and protrudes a couple of inches from the top center of the sample tunnel (opening in the shield wall).

The archive scanning procedure is as follows: First, turn on the survey meter. Insure the reading is in counts per second. Determine the background radiation inside the open sample tunnel. Perform response and operability checks using a radioactive material source such as Cs 137. Wipe off any excess dirt on the outside of the sample tube to prevent contaminating the scanning area. Insert the tenite tube into the tunnel until the first two inch length of tube is centered under the detector. Two inch by two inch sections are selected to maintain conformity with detector size and to provide overlapping of surveyed areas. Observe the read-out. Rotate the sample tube five times at 72 degree increments, taking a measurement at each increment of rotation. Repeat the process at two inch intervals for the remaining sections of sample. Record the highest and lowest reading for the entire sample.

See the figure below.



Not to Scale

8895

ARCHIVE SAMPLE SCANNING RESULTS

BORING 1615

Background = 8 counts/sec.

Sample Number	Depth Interval (feet)	Counts/Sec. Min. - Max.	Radiation Count Number	Date Surveyed	Comments
66953	0 - 2.2	11-25	1	9/16/91	2.5 ft. tenite tube
66954	3.0 - 4.6	11-17	2	9/16/91	2.5 ft. tenite tube
66955	12.4 - 12.6	9-14	3	9/16/91	500 ml amber glass
66955	9.9 - 12.4	11-27	4	9/16/91	2.5 ft. tenite tube
66955	8.4 - 9.9	11-30	5	9/16/91	2.5 ft. tenite tube
66956	13.2 - 13.7	9-20	6	9/16/91	500 ml amber glass
66956	15.0 - 17.5	31-263	7	9/16/91	2 ft. tenite tube
66956	13.7 - 14.6	16-57	8	9/16/91	2.5 ft. tenite tube
66956	14.6 - 15.0	125-260	9	9/16/91	500 ml amber glass
66953	2.2 - 2.4	9-12	10	9/16/91	9 inch tenite tube
66954	4.6 - 4.8	8-12	11	9/16/91	6 inch tenite tube
66962	17.5 - 22.5	18-53	12	9/16/91	8 inch tenite tube
66962	17.5 - 22.5	8-15	13	9/17/91	9 inch tenite tube
66962	17.5 - 22.5	10-21	14	9/17/91	9 inch tenite tube
66963	22.5 - 23.8	9-17	15	9/17/91	2.5 ft. tenite tube
66963	23.8 - 26.3	10-17	16	9/17/91	2.5 ft. tenite tube
66963	26.3 - 26.5	8-12	17	9/17/91	500 ml amber glass
66964	27.5 - 29.8	10-17	18	9/17/91	2.5 ft. tenite tube
66964	29.8 - 32.3	9-17	19	9/17/91	2.5 ft. tenite tube
66964	32.3 - 32.5	8-10	20	9/17/91	500 ml amber glass
66965	32.5 - 34.8	9-17	21	9/17/91	2.5 ft. tenite tube
66965	34.8 - 37.3	9-16	22	9/17/91	2.5 ft. tenite tube

90

BORING 1615 Continued.

Sample Number	Depth Interval (Feet)	Counts/Sec. Min. - Max.	Radiation Count Number	Date Surveyed	Comments
66965	37.3 - 37.5	8-13	23	9/17/91	500 ml amber glass
66971	37.5 - 41.25	8-15	24	9/17/91	11 inch tenite tube
66972	42.5 - 44.8	8-14	25	9/17/91	2.5 ft. tenite tube
66972	44.8 - 47.3	10-14	26	9/17/91	2.5 ft. tenite tube
66972	47.3 - 47.5	8-10	27	9/17/91	500 ml amber glass
66973	47.5 - 49.8	8-15	28	9/17/91	2.5 ft. tenite tube
66973	49.8 - 52.3	9-15	29	9/17/91	2.5 ft. tenite tube
66973	52.3 - 52.5	8-10	30	9/17/91	500 ml amber glass
66975	52.5 - 54.8	10-17	31	9/17/91	2.5 ft. tenite tube
66975	54.8 - 57.3	9-16	32	9/17/91	2.5 ft. tenite tube

8888

BORE HOLE 1616

Background = 8 counts/sec.

Sample Number	Depth Interval (Feet)	Counts/Sec. Min. - Max.	Radiation Count Number	Date Surveyed	Comments
64011	0.0 - 1.67	8-14	1	9/22/91	2.5 ft. tenite tube
64011	1.67 - 4.17	94-276	2	9/22/91	2.5 ft. tenite tube
64013	8.0 - 9.9	8-16	3	9/22/91	2.5 ft. tenite tube
64013	9.9 - 12.4	9-20	4	9/22/91	2.5 ft. tenite tube
64015	18.0 - 19.9	9-16	5	9/22/91	2.5 ft. tenite tube
64015	19.9 - 22.4	8-16	6	9/22/91	2.5 ft. tenite tube
64016	23.0 - 25.5	9-17	7	9/22/91	2.1 ft. tenite tube
64017	28.0 - 30.5	8-16	8	9/22/91	2.5 ft. tenite tube
64016	25.5 - 28.0	9-16	9	9/22/91	2.5 ft. tenite tube
64017	30.5 - 33.0	10-17	10	9/22/91	2.5 ft. tenite tube
64018	33.0 - 35.3	9-18	11	9/22/91	2.5 ft. tenite tube
64018	35.3 - 38.0	10-17	12	9/22/91	2.5 ft. tenite tube
64019	38.0 - 40.1	8-15	13	9/22/91	2.5 ft. tenite tube
64019	40.1 - 42.6	9-18	14	9/22/91	2.5 ft. tenite tube
64020	43.0 - 45.5	8-12	15	9/22/91	2.5 ft. tenite tube
64020	45.5 - 48.0	9-13	16	9/22/91	2.5 ft. tenite tube
64023	48.0 - 49.7	8-13	17	9/22/91	2.5 ft. tenite tube
64024	53.0 - 54.3	8-12	18	9/22/91	2.5 ft. tenite tube
64024	54.3 - 56.8	8-12	19	9/22/91	2.5 ft. tenite tube
64025	58.0 - 59.5	8-11	20	9/22/91	2.5 ft. tenite tube
64025	59.5 - 62.0	9-14	21	9/22/91	2.5 ft. tenite tube
64026	63.0 - 65.5	9-13	22	9/22/91	2.5 ft. tenite tube
64026	65.5 - 68.0	10-14	23	9/22/91	2.5 ft. tenite tube
64027	68.0 - 70.5	8-12	24	9/22/91	2.5 ft. tenite tube

BORE HOLE 1616 Continued..

2293

Sample Number	Depth Interval (Feet)	Counts/Sec. Min. - Max.	Radiation Count Number	Date Surveyed	Comments
64027	70.5 - 73.0	10-13	25	9/22/91	2.5 ft. tenite tube
64028	73.0 - 75.5	9-13	26	9/22/91	2.5 ft. tenite tube
64028	75.5 - 78.0	10-14	27	9/22/91	2.5 ft. tenite tube
64029	78.0 - 80.5	10-14	28	9/22/91	2.5 ft. tenite tube
64029	80.5 - 83.0	8-16	29	9/22/91	2.5 ft. tenite tube
64035	90.5 - 93.0	10-15	30	9/22/91	2.5 ft. tenite tube
64037	93.0 - 95.5	10-14	31	9/22/91	2.5 ft. tenite tube
64037	95.5 - 98.0	11-17	32	9/22/91	2.5 ft. tenite tube
64038	98.0 - 100.5	10-13	33	9/22/91	2.5 ft. tenite tube
64038	100.5 - 103	9-13	34	9/22/91	2.5 ft. tenite tube
64045	104.4 - 105.5	9-11	35	9/22/91	2.5 ft. tenite tube
64049	108.0 - 110.5	10-15	36	9/22/91	2.5 ft. tenite tube
64049	110.5 - 113.0	10-16	37	9/22/91	2.5 ft. tenite tube
64050	118.0 - 119.6	8-11	38	9/22/91	2.5 ft. tenite tube
64051	119.6 - 120.1	8-9	39	9/22/91	2.5 ft. tenite tube

221

121

BORE HOLE 1617

Background = 8 counts/sec.

Sample Number	Depth Interval (Feet)	Counts/Sec. Min. - Max.	Radiation Count Number	Date Surveyed	Comments
66976	0.0 - .5	8-10	1	9/17/91	2.5 ft. tenite tube
66976	0.5 - 1.3	10-18	2	9/17/91	2.5 ft. tenite tube
66976	1.3 - 1.5	8-11	3	9/17/91	500 ml amber glass
66977	1.5 - 2.2	8-12	4	9/17/91	2.5 ft. tenite tube
66977	2.2 - 4.7	11-19	5	9/17/91	2.5 ft. tenite tube
66977	4.7 - 4.9	8-10	6	9/17/91	500 ml amber glass
66978	6.5 - 6.9	8-10	7	9/17/91	2.5 ft. tenite tube
66978	6.9 - 9.4	11-18	8	9/17/91	2.5 ft. tenite tube
66978	9.4 - 9.6	8-10	9	9/17/91	500 ml amber glass
66979	11.5 - 12.0	9-14	10	9/17/91	2.5 ft. amber glass
66979	12.0 - 14.5	11-18	11	9/17/91	2.5 ft. amber glass
66979	14.5 - 14.7	8-11	12	9/17/91	500 ml amber glass
66980	16.5 - 17.5	9-14	13	9/17/91	2.5 ft. tenite tube
66980	17.5 - 20.2	9-15	14	9/17/91	9 inch tenite tube
66980	17.5 - 20.2	8-13	15	9/17/91	11 inch tenite tube
66986	22.5 - 24.8	8-19	16	9/17/91	2.3 ft. tenite tube
66986	24.8 - 25.0	8-10	17	9/17/91	500 ml amber glass
66987	26.5 - 28.7	9-18	18	9/17/91	2.5 ft. amber glass
66987	28.7 - 31.2	9-17	19	9/18/91	2.5 ft. amber glass
66987	31.2 - 31.4	8-10	20	9/18/91	500 ml amber glass
66988	31.5 - 32.9	8-12	21	9/18/91	2.5 ft. tenite tube
66988	32.9 - 35.4	9-16	22	9/18/91	2.5 ft. tenite tube
66988	35.4 - 35.6	8-10	23	9/18/91	500 ml amber glass
66989	36.5 - 37.5	9-14	24	9/18/91	2.5 ft. tenite tube

BORE HOLE 1617 continued.

Sample Number	Depth Interval (Feet)	Counts/Sec. Min. - Max.	Radiation Count Number	Date Surveyed	Comments
66989	37.5 - 40.0	9-19	25	9/18/91	11 inch tenite tube
66989	40.0 - 40.2	8-13	26	9/18/91	500 ml amber glass
66989	37.5 - 40.2	9-12	27	9/18/91	2.5 ft. tenite tube
66995	42.5 - 43.5	9-16	27A	9/18/91	14 inch tenite tube
66995	43.5 - 46.0	9-16	28	9/18/91	2.5 ft. tenite tube
66995	46.0 - 46.2	8-9	29	9/18/91	500 ml amber glass
66996	46.5 - 48.8	8-16	30	9/18/91	2.5 ft. tenite tube
66996	48.8 - 51.3	8-18	31	9/18/91	2.5 ft. tenite tube
66996	51.3 - 51.5	8-10	32	9/18/91	500 ml amber glass
66997	51.5 - 53.8	9-14	33	9/18/91	2.5 ft. tenite tube
66997	53.8 - 56.3	8-14	34	9/18/91	2.5 ft. tenite tube
66997	56.3 - 56.5	8-9	35	9/18/91	500 ml amber glass
64004	58.5 - 62.2	8-9	36	9/18/91	500 ml amber glass
64005	63.5 - 65.7	8-17	37	9/18/91	2.5 ft. tenite tube
64005	65.7 - 68.2	9-16	38	9/18/91	2.5 ft. tenite tube
64005	68.2 - 68.4	8-10	39	9/18/91	500 ml amber glass

BORE HOLE 1618

Background = 8 counts/sec.

Sample Number	Depth Interval (Feet)	Counts/Sec. Min. - Max.	Radiation Count Number	Date Surveyed	Comments
64092	0.0 - 2.5	8-13	1	9/20/91	2.5 ft. tenite tube
64092	2.5 - 5.0	9-18	2	9/20/91	2.5 ft. tenite tube
64093	5.0 - 6.5	8-12	3	9/20/91	2.5 ft. tenite tube
64093	6.5 - 9.0	9-18	4	9/20/91	2.5 ft. tenite tube
64094	10.0 - 12.1	10-19	5	9/20/91	2.5 ft. tenite tube
64094	12.1 - 14.6	15-25	6	9/20/91	2.5 ft. tenite tube
64095	15.0 - 15.5	8-10	7	9/20/91	2.5 ft. tenite tube
64095	15.5 - 18.0	12-22	8	9/20/91	2.5 ft. tenite tube
64096	20.0 - 20.6	8-12	9	9/20/91	2.5 ft. tenite tube
64096	20.6 - 23.1	8-12	10	9/20/91	2.5 ft. tenite tube
64097	25.0 - 25.9	8-10	11	9/20/91	2.5 ft. tenite tube
64097	25.9 - 28.4	8-18	12	9/20/91	2.5 ft. tenite tube
64098	30.0 - 32.5	9-17	13	9/20/91	2.5 ft. tenite tube
64098	32.5 - 35.0	9-17	14	9/20/91	2.5 ft. tenite tube
64099	35.0 - 37.5	9-16	15	9/20/91	2.5 ft. tenite tube
64099	37.5 - 40.0	9-17	16	9/20/91	2.5 ft. tenite tube
64100	40.0 - 40.9	9-14	17	9/20/91	2.5 ft. tenite tube
64100	40.9 - 43.4	10-18	18	9/20/91	2.5 ft. tenite tube
64101	45.0 - 46.0	8-10	19	9/20/91	2.5 ft. tenite tube
64101	46.0 - 47.5	10-18	20	9/20/91	18 in. tenite tube
64104	52.5 - 53.75	8-18	21	9/20/91	15 in. tenite tube
64109	55.0 - 57.5	10-19	22	9/20/91	2.5 ft. tenite tube
64109	57.5 - 60.0	9-19	23	9/20/91	2.5 ft. tenite tube
64110	60.0 - 62.5	9-17	24	9/20/91	2.5 ft. tenite tube

BORE HOLE 1618 continued.

Sample Number	Depth Interval (Feet)	Counts/Sec. Min. - Max.	Radiation Count Number	Date Surveyed	Comments
64110	62.5 - 65.0	9-18	25	9/20/91	2.5 ft. tenite tube
64111	65.0 - 67.5	9-17	26	9/20/91	2.5 ft. tenite tube
64111	68.75 - 70.0	9-14	27	9/20/91	15 in. tenite tube
64119	72.5 - 75.0	9-17	28	9/21/91	2.5 ft. tenite tube
64120	75.0 - 77.5	10-20	29	9/21/91	2.5 ft. tenite tube
64120	77.5 - 80.0	9-21	30	9/21/91	2.5 ft. tenite tube
64121	80.0 - 82.5	12-26	31	9/21/91	2.5 ft. tenite tube
64121	82.5 - 85.0	9-21	32	9/21/91	2.5 ft. tenite tube
64122	85.0 - 87.5	10-20	33	9/21/91	2.5 ft. tenite tube
64122	88.75 - 90.0	8-17	34	9/21/91	15 in. tenite tube
64128	92.5 - 95.0	8-18	35	9/21/91	2.5 ft. tenite tube
64132	95.0 - 97.5	10-22	36	9/21/91	2.5 ft. tenite tube
64132	97.5 - 100.0	10-19	37	9/21/91	2.5 ft. tenite tube
64133	100.0 - 102.5	10-21	38	9/21/91	2.5 ft. tenite tube
64133	102.5 - 105.0	11-30	39	9/21/91	2.5 ft. tenite tube
64141	106.25 - 107.5	8-20	40	9/21/91	15 in. tenite tube
64141	107.5 - 108.75	9-20	41	9/21/91	15 in. tenite tube
64142	110.0 - 112.5	9-23	42	9/21/91	2.5 ft. tenite tube
64142	112.5 - 115.0	8-23	43	9/21/91	2.5 ft. tenite tube
64143	115.0 - 117.5	9-21	44	9/21/91	2.5 ft. tenite tube
64143	117.5 - 120.0	11-22	45	9/21/91	2.5 ft. tenite tube
64144	120.0 - 122.5	8-18	46	9/21/91	2.5 ft. tenite tube
64144	122.5 - 125.0	10-19	47	9/21/91	2.5 ft. tenite tube
64145	125.0 - 127.5	8-14	48	9/21/91	2.5 ft. tenite tube
64145	127.5 - 128.75	8-15	49	9/21/91	15 in. tenite tube

PSI

BORE HOLE 1619

Background = 8 counts/sec.

Sample Number	Depth Interval (Feet)	Counts/Sec. Min. - Max.	Radiation Count Number	Date Surveyed	Comments
64055	0.0 - 1.5	8-11	1	9/18/91	2.5 ft. tenite tube
64055	1.5 - 3.0	11-18	2	9/18/91	2.5 ft. tenite tube
64056	5.0 - 7.5	9-17	3	9/18/91	2.5 ft. tenite tube
64056	7.5 - 10.0	9-17	4	9/18/91	2.5 ft. tenite tube
64057	10.0 - 11.0	8-10	5	9/18/91	2.5 ft. tenite tube
64057	11.0 - 13.5	9-20	6	9/18/91	2.5 ft. tenite tube
64058	15.0 - 16.4	9-14	7	9/18/91	2.5 ft. tenite tube
64058	16.4 - 18.9	9-19	8	9/18/91	2.5 ft. tenite tube
64059	20.0 - 22.5	8-17	9	9/18/91	2.5 ft. tenite tube
64059	22.5 - 25.0	11-18	10	9/18/91	2.5 ft. tenite tube
64060	25.0 - 27.5	10-15	11	9/18/91	2.5 ft. tenite tube
64060	27.5 - 30.0	12-18	12	9/18/91	2.5 ft. tenite tube
64061	30.0 - 32.5	8-17	13	9/18/91	2.5 ft. tenite tube
64061	32.5 - 35.0	9-17	14	9/18/91	2.5 ft. tenite tube
64062	35.0 - 36.5	8-11	15	9/18/91	2.5 ft. tenite tube
64062	36.5 - 39.0	8-16	16	9/18/91	2.5 ft. tenite tube
64063	40.0 - 42.5	8-12	17	9/18/91	2.5 ft. tenite tube
64063	42.5 - 45.0	9-16	18	9/18/91	2.5 ft. tenite tube
64064	45.0 - 46.3	8-12	19	9/18/91	2.5 ft. tenite tube
64064	46.3 - 48.8	9-16	20	9/18/91	2.5 ft. tenite tube
64065	50.0 - 52.5	9-16	21	9/18/91	2.5 ft. tenite tube
64065	52.5 - 55.0	8-12	22	9/19/91	2.5 ft. tenite tube
64066	55.0 - 57.5	8-14	23	9/19/91	2.5 ft. tenite tube
64066	57.5 - 60.0	9-13	24	9/19/91	2.5 ft. tenite tube

BORE HOLE 1619 Continued.

9/24/91: Background = 9 counts/sec.

Sample Number	Depth Interval (Feet)	Counts/Sec. Min. - Max.	Radiation Count Number	Date Surveyed	Comments
64074	62.5 - 65.0	8-17	25	9/19/91	2.5 ft. tenite tube
64075	65.0 - 67.5	8-13	26	9/19/91	2.5 ft. tenite tube
64075	67.5 - 70.0	8-18	27	9/19/91	2.5 ft. tenite tube
64076	70.0 - 71.6	10-14	28	9/24/91	2.5 ft. tenite tube
64076	71.6 - 74.1	11-18	29	9/24/91	2.5 ft. tenite tube
64077	75.0 - 77.5	9-15	30	9/24/91	2.5 ft. tenite tube
64077	77.5 - 80.0	11-16	31	9/24/91	2.5 ft. tenite tube
64078	80.0 - 81.25	10-12	32	9/24/91	15 in. tenite tube
64078	82.5 - 85.0	10-14	33	9/24/91	2.5 ft. tenite tube
64081	85.0 - 87.5	10-13	34	9/24/91	2.5 ft. tenite tube
64081	87.5 - 90.0	9-13	35	9/24/91	2.5 ft. tenite tube
64083	95.0 - 97.5	9-15	36	9/24/91	2.5 ft. tenite tube
64083	97.5 - 100.0	10-15	37	9/24/91	2.5 ft. tenite tube
64084	100.0 - 102.5	9-10	38	9/24/91	2.5 ft. tenite tube
64084	102.5 - 103.75	11-16	39	9/24/91	15 in. tenite tube
64087	105.0 - 107.5	10-14	40	9/24/91	2.5 ft. tenite tube
64087	107.5 - 110.0	9-14	41	9/24/91	2.5 ft. tenite tube

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

ENCLOSURE E

SOUTH GROUNDWATER CONTAMINATION PLUME REMOVAL ACTION PROPOSAL

CONTINUATION OF THE PROPOSAL PRESENTED AT THE
 JULY 23, 1991 MEETING CONCERNING
 SOUTH GROUNDWATER CONTAMINATION PLUME REMOVAL ACTION:
 PART 2 - PUMPING AND DISCHARGE SYSTEM AND
 PART 3 - INTERIM ADVANCED WASTEWATER TREATMENT SYSTEM
 (IAWWT)

Proposal

- 1) Provide additional interim treatment to compensate for the additional mass to be extracted by the relocated South Plume Part 2 well field. This will consist of:
 - a) ~ 150 gpm IAWWT unit, status: design complete (orig. dispute resolution concept)
 - b) ~ 100 gpm AAWT Pilot Plant converted to production unit currently under design (discussed at July 23rd meeting)
 - c) ~ A second 150 gpm IAWWT unit (new proposal)

- 2) Prepared addendum (letter format) for the EE/CA which explains:
 - a) the relocation of the well field to the south edge of Delta Steel
 - b) providing interim uranium removal facilities to limit FEMP discharge of uranium to 1700 lbs/year
 - c) eliminate ceiling of 150 gpm IAWWT

Report will consist of a description of the change and an attached list of specific items in EE/CA which will be modified by this agreement.

- 3) The Part 2/3 Work Plan will be modified to include all three units and the relocated well field.

- 4) Change Part 2/3 Work Plan schedule to show that treatment units will be operational by July 30, 1992 (date when Waste Pit Perimeter Area Runoff Control Removal Action is to become operational). The Part 2 schedule is currently being revised.

- 5) EE/CA will not have to be reissued to public, but will be revised by addendum and concurred with by the U.S. EPA and the Ohio EPA only.

- 6) The permit information in the Part 2/3 Work Plan will be revised to include the equivalent information for the 100 gpm AAWT Pilot Plant and the second 150 gpm IAWWT unit that would otherwise be required by a PTI.