

**TRANSMITTAL OF GEOTECHNICAL SAMPLING AND TESTING PLAN
FOR PHASE III OF THE SITE-WIDE DISPOSAL FACILITY FIELD
INVESTIGATION - (CONTAINS COMMENT RESPONSES ON PREVIOUS
SUBMITTAL)**

05/01/95

DOE-0912-95
DOE-FN EPAS
12
RESPONSE



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

MAY 0 1 1995

DOE-0912-95

Mr. James A. Saric, Remedial Project Director
 U.S. Environmental Protection Agency
 Region V - 5HRE-8J
 77 W. Jackson Boulevard
 Chicago, Illinois 60604-3590

Mr. Thomas Schneider, Project Manager
 Ohio Environmental Protection Agency
 401 E. 5th Street
 Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF GEOTECHNICAL SAMPLING AND TESTING PLAN FOR PHASE III OF THE SITE-WIDE DISPOSAL FACILITY FIELD INVESTIGATION

The Department of Energy, Fernald Area Office (DOE-FN) is pleased to submit the enclosed Geotechnical Sampling and Testing Plan (GSTP) for Phase III of the Site-Wide Disposal Facility Field Investigation, Revision 2, April 26, 1995, following incorporation of U.S. Environmental Protection Agency (U.S. EPA) comments.

A response document is also enclosed with this letter that indicates revisions to the GSTP per U.S. EPA comments. In addition, two technical changes have been made to the document, as follows:

- Sulfate and chloride ion content testing in soils has been added to the GSTP (see Section 7.2.2.1. and Tables 2-3, 7-2, and 7-3) to determine the service life of concrete.
- Bulk specific gravity tests (ASTM C127) has been substituted for the Los Angeles abrasion testing (ASTM C535) (see Tables 2-3, 7-2, and 7-3). Bulk specific gravity tests are considered more pertinent to the initial evaluation of durability of limestone rock.

The Ohio Environmental Protection Agency (OEPA) had no comments to the GSTP.

If you have any questions, please contact Rod Warner at (513) 648-3156.

Sincerely,

for Johnny Reising
 Jack R. Craig
 Fernald Remedial Action
 Project Manager

Enclosures: As Stated

cc w/enc:

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**RESPONSE TO TECHNICAL REVIEW COMMENTS ON
"DRAFT GEOTECHNICAL SAMPLING AND TESTING PLAN FOR PHASE III
OF THE SITE-WIDE DISPOSAL FACILITY FIELD INVESTIGATION,"
REVISION 1, MARCH 9, 1995
FERNALD ENVIRONMENT MANAGEMENT PROJECT**

Comment #1:

Commenting Organization: U.S. EPA
Section #: 6.2 Page #: 6-2
Original Specific Comment #: 1

Commentor: Saric
Line #: NA

Comment: The field operations procedures are discussed in this section. However, the slug testing to be conducted in Type I wells is not mentioned here. This test should be discussed here and listed in Table 6-4.

Response:

Slug testing will be listed on page 6-2 and in Table 6-4.

Note, ASTM D4104 "Standard Test Method (Analytical Procedure) for Determining Transmissivity of Nonleaky Confined Aquifers by Overdamped Well Response to Instantaneous Change in Head (Slug Test)" is identified in Table 7-5 and is included in Appendix I.

Action:

Table 6-4 will be modified to add Slug test as a field procedure, and to add references for slug tests as follows:

"SCQ Appendix J.4.6.2, Borehole Hydraulic testing for Aquifer Characteristics"

"ASTM reference methods as shown on Table 7-5"

In addition, the text in Section 6.2 will be modified by adding slug tests to the list of various activities having references in Table 6-1 through 6-4.

See attached change pages (6-2 and 6-6).

6.2 FIELD OPERATIONS PROCEDURES

Tables 6-1 through 6-4 provide references for administrative, field, and sample handling/laboratory procedures for various activities in the Final Geotechnical Investigation for the On-site Disposal Facility. These activities are:

- Geological survey using a cone penetrometer
- Soil sampling for geotechnical soil properties
- Soil sampling for selected radiological analysis
- Well installation
- Water level measurements
- Slug Tests

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TABLE 6-4

GROUNDWATER SAMPLING PROCEDURES AND REFERENCE DOCUMENTS

Administrative Procedures	Reference Documents
See Table 6-1	See Table 6-1
Field Procedures	Reference Documents
General Groundwater Purging and Sampling Techniques	SCQ Volume I, Subsection 6.2; Appendix K, Subsection K4.2; SC-GWM-FO-201 Groundwater Sampling Activities
Water Level Measurements	SCQ Volume I, Section 6.2.2.1; Appendix K, Subsection K.4.2.1; EP-GWM-FO-201 Groundwater Elevation Measurements
Field Analytical Methods	SCQ Volume I, Subsection 6.2; Appendix K, Subsection K.4.1
Slug Tests	SCQ Appendix J.4.6.2, Borehole Hydraulic Testing for Aquifer Characteristics
	ASTM reference methods as shown on Table 7-5
Decontamination	SCQ Appendix K, Subsection K.11
	SC-GWM-FO-201 Groundwater Sampling Activities
Sample Handling/Laboratory Procedures	Reference Documents
Classification, Transportation, and Shipment of FEMP RI FS Samples	See Table 6-1

Comment # 2:

Commenting Organization: U.S. EPA
Section #: 7.2.4.3 Page #: 7-18
Original Specific Comment #: 2

Commentor: Saric
Line #: 7

Comment: The handling of investigation derived wastewater (IDW) is discussed here. IDW should be analyzed for contaminants of concern (COC) because it could be contaminated. IDW should be transported to the general sump for discharge to the Great Miami River only if analytical results show the presence of COCs below their discharge limits for the Great Miami River. If IDW has COCs above limits for discharging water to the Great Miami River, then it should be treated or transported to a permitted treatment or disposal facility.

Response:

It is understood that EPA's concern is the potential for IDW to be discharged to the Great Miami River without complying with the FEMP NPDES permit.

Investigation derived wastewater (IDW) generated during the Phase III Field Investigation for the Site Wide Disposal Facility will be handled in accordance with the OEPA approved Policy for Management of Aqueous Investigation Derived Waste (OEPA approval letter dated March 31, 1995). All IDW will be treated at the AWWT before being discharged to the Great Miami River in compliance with established NPDES limits. The Policy states the following:

"Purge water and well development water from wells in Operable Unit 2 (OU2) and Operable Unit 5 (OU5) will be collected in a truck-mounted tank, transported to the Stormwater Retention Basin (SWRB), and discharged directly to whichever of the two basins is being pumped to the AWWT at that time. Discharging purge water from these two areas to the SWRB avoids the need to transport the material through the production area, and as illustrated in the attached flow diagram, provides direct access to the AWWT. All other IDW streams will be discharged to the General Sump for subsequent treatment at the AWWT."

This is also consistent with the consensus DOE reached during a recent meeting with both U.S. and Ohio EPAs concerning the management of CERCLA investigation derived waste (IDW) at the FEMP.

Action:

The text in the Geotechnical Sampling and Testing Plan for Phase III of the Site-Wide Disposal Facility Field Investigation will be modified to be in agreement with the OEPA Approved Policy for Management of Aqueous Investigation Derived Waste (see attached change page 7-18).

Appendix J (OEPA Approved Policy for Management of Aqueous Investigation Derived Waste) will be added to the document and the Table of Content (page iv) will be modified to list Appendix J.

7.2.4.2 Well Construction

Wells will be completed using 2-inch ID, 316 stainless steel riser and .010-inch slotted screen 2 to 5 feet in length across the perched ground water interval. The screening interval will be determined by the Lead Geologist with approval from the OU2 Environmental Task Manager. Filter pack will be well-sorted quartz sand of 20-40 mesh (medium). A bentonite seal will be placed above the filter pack, and will be a maximum of 5 feet in length. The annular space will then be filled to 2.5 feet below ground surface with a slurry of volclay grout. Wells will be developed after the grout surface seal has cured per the SCQ requirements.

A concrete cap and a 3 feet by 3 feet by 4-inch pad will be poured from 2.5 feet below surface. A 10-inch carbon steel protective casing 5 feet in length with a hinged lid will be lowered into place to a depth of 2.5 feet below surface. Protective casing lid will be stamped with the corresponding five digit well identification number using a standard metal stamping set. All wells will be surveyed by a State of Ohio licensed surveyor and their locations (Northing, Easting, and elevations) will be added to the Site-Wide Environmental Database (SED).

7.2.4.3 Well Development

Wells will be developed according to the procedure (SRS-FO-005)Monitoring Well Development, if possible. If the well does not well recharge in a reasonable period of time to allow development of the well per procedures, the well will be bailed dry three times.

Well development ground water will be collected in either a 55 gallon drum or a development/purge tank in a Ground Water Monitoring truck, drums shall have the well identification number and date development started. Each must be labeled as IDW water. IDW development water will be ~~transported to the General Sump and discharged to the Great Miami River handled in accordance with the OEPA Approved Policy for Management of Aqueous Investigation Derived Waste (see Appendix J, OEPA Approved Policy for Management of Aqueous Investigation Derived Waste).~~

7.2.4.4 Groundwater Measurements

Ground water level measurements will be collected from each additional well at the time of completion and after well development. Ground water measurements will be collected on a weekly basis for a period of one month. Collection of ground water measurements will be conducted within

APPENDIX J

OEPA APPROVED POLICY FOR MANAGEMENT OF

AQUEOUS INVESTIGATION DERIVED WASTE



State of Ohio Environmental Protection Agency

Southwest District Office

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Post-It™ brand fax transmittal memo 7571		# of pages • 22	
To	Terry Hagen	From	Tom Schneider
Co.	FERMCO	Co.	OEPA SWDO
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6868

George V. Voinovich
Governor

March 31, 1995

RE: DOE FEMP
MSL #531-0297
HAMILTON COUNTY
AQUEOUS IDW POLICY-
APPROVAL

Mr. Jack Craig
Director
U.S. DOE FEMP
P.O. Box 398705
Cincinnati, OH 45329-8705

Dear Mr. Craig:

This letter provides Ohio EPA's approval of DOE's "Request for Approval of Policy for Management of Aqueous Investigation Derived Waste" submitted to Ohio EPA on March 24, 1995.

If you should have any questions, please contact me.

Sincerely,

Thomas A. Schneider
Fernald Project Manager
Office of Federal Facilities Oversight

cc: Jim Saric U.S. EPA
Terry Hagen, FERMCO
Ruth Vandegrift, ODH
Manager TPSSU, DERR/CO
Jean Michaels, PRC
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MAR 23 1995

DOE-0711-95

Mr. James A. Saric, Remedial Project Manager
U. S. Environmental Protection Agency
Region V-5HRE-8J
77 W. Jackson Blvd
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Southwest District Office
Ohio Environmental Protection Agency
401 East Fifth Street
Dayton, Ohio 45402-2086

Dear Mr. Saric and Mr. Schneider:

REQUEST FOR APPROVAL OF POLICY FOR MANAGEMENT OF AQUEOUS INVESTIGATION DERIVED WASTE

This letter requests your formal approval of the Fernald Environmental Management Project (FEMP) policy for management of aqueous Investigation Derived Waste (IDW). IDW to be managed under this policy includes purge water and development water from FEMP groundwater monitoring wells, as well as, wastewater generated by decontaminating sampling equipment. The inventory of backlog aqueous IDW currently in storage at the FEMP is also included. Unused sample fractions, extracts and other residues from laboratory analyses will be managed under a separate policy currently being developed; these materials are not addressed in this proposed policy.

The aqueous IDW policy previously presented for your review has been modified to take into account the treatment provided by the Advanced Wastewater Treatment (AWWT) facility, which began operation January 27, 1995. This modified proposal is based upon the fact that all IDW, regardless of its source, will be treated through the AWWT facility. The AWWT facility currently treats all FEMP stormwater and process wastewater, along with a portion of the South Plume groundwater. As illustrated in the attached schematic, the AWWT includes carbon filters upstream of the ion exchange beds. The carbon filters were included in the design to protect the ion exchange resin from possible damage caused by incidental Volatile Organic Compound (VOC) contamination. These carbon filters accomplish the same level of VOC removal provided by the Granular Activated Carbon (GAC) filters in the Plant 8 VOC system.

Since all process wastewater and stormwater is now subjected to adequate VOC treatment, pretreatment based upon a threshold level of VOC contamination is no longer necessary, except for instances where VOC contamination is known to originate from listed waste. The Fire Training Facility and the Sewage Treatment Plant Sludge Drying Beds are potential sources of known listed hazardous constituents. Since these units are isolated from other potential sources of VOC contamination, VOCs encountered in perched water beneath these two units will be considered to potentially originate from listed waste. IDW from the vicinity of these two units which exhibits detectable levels of a "listed" VOC will be treated through the Plant 8 GAC system to remove the listed RCRA constituent to below the analytical detection limit before being sent to the AWWT via the General Sump.

All other aqueous IDW will be discharged to the wastewater treatment system at the location that most efficiently provides direct access to AWWT treatment. Purge water and well development water from wells in Operable Unit 2 (OU2) and Operable Unit 5 (OU5) will be collected in a truck-mounted tank, transported to the Stormwater Retention Basin (SWRB), and discharged directly to whichever of the two basins is being pumped to the AWWT at that time. Discharging purge water from these two areas to the SWRB avoids the need to transport the material through the production area and, as illustrated in the attached flow diagram, provides direct access to the AWWT. All other IDW streams will be discharged to the General Sump for subsequent treatment at the AWWT.

If you have any questions or comments, please contact Pete Yerace at (513)648-3161 or John Sattler at (513)648-3145.

Sincerely,



for Jack R. Craig
Fernald Remedial Action
Project Manager

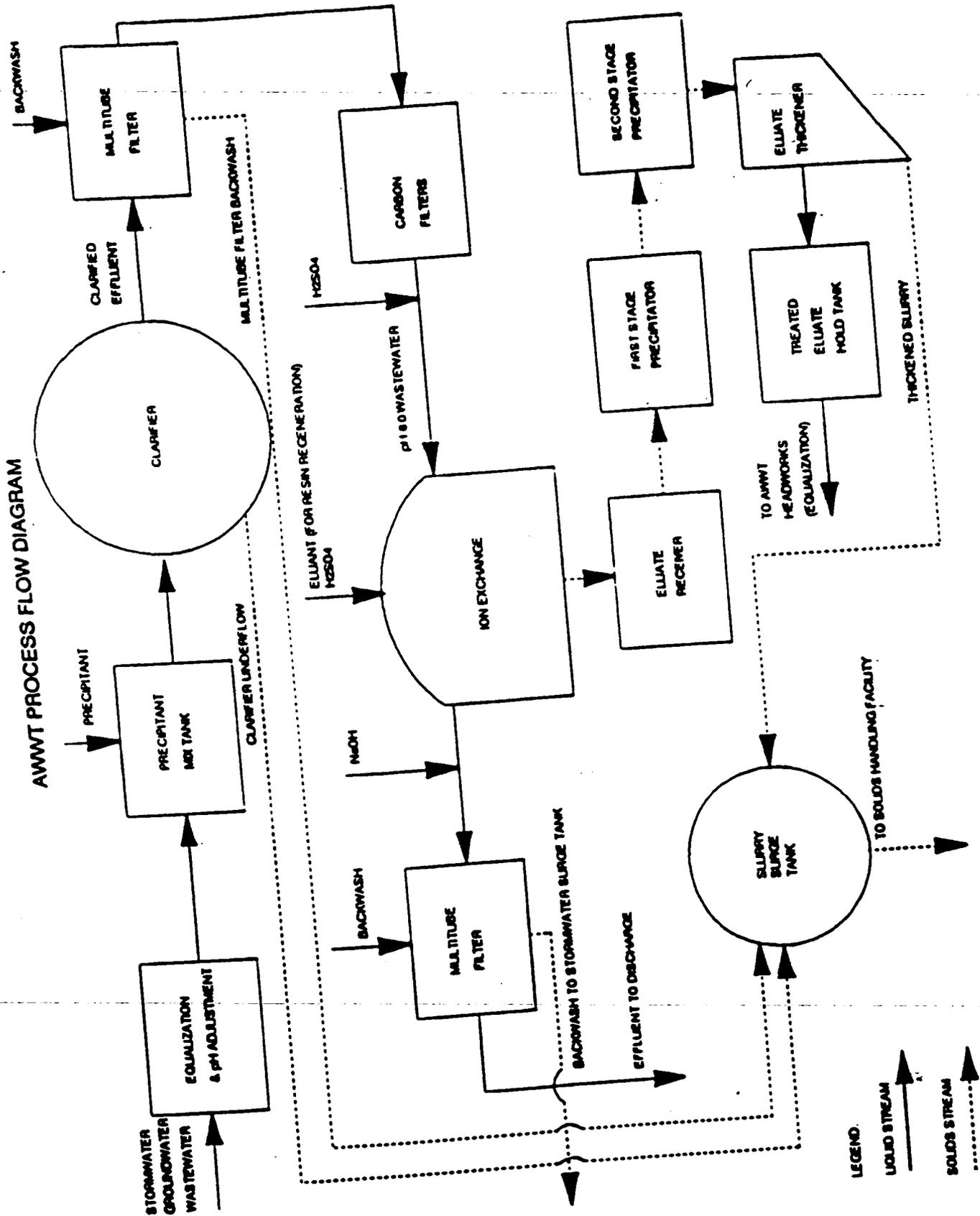
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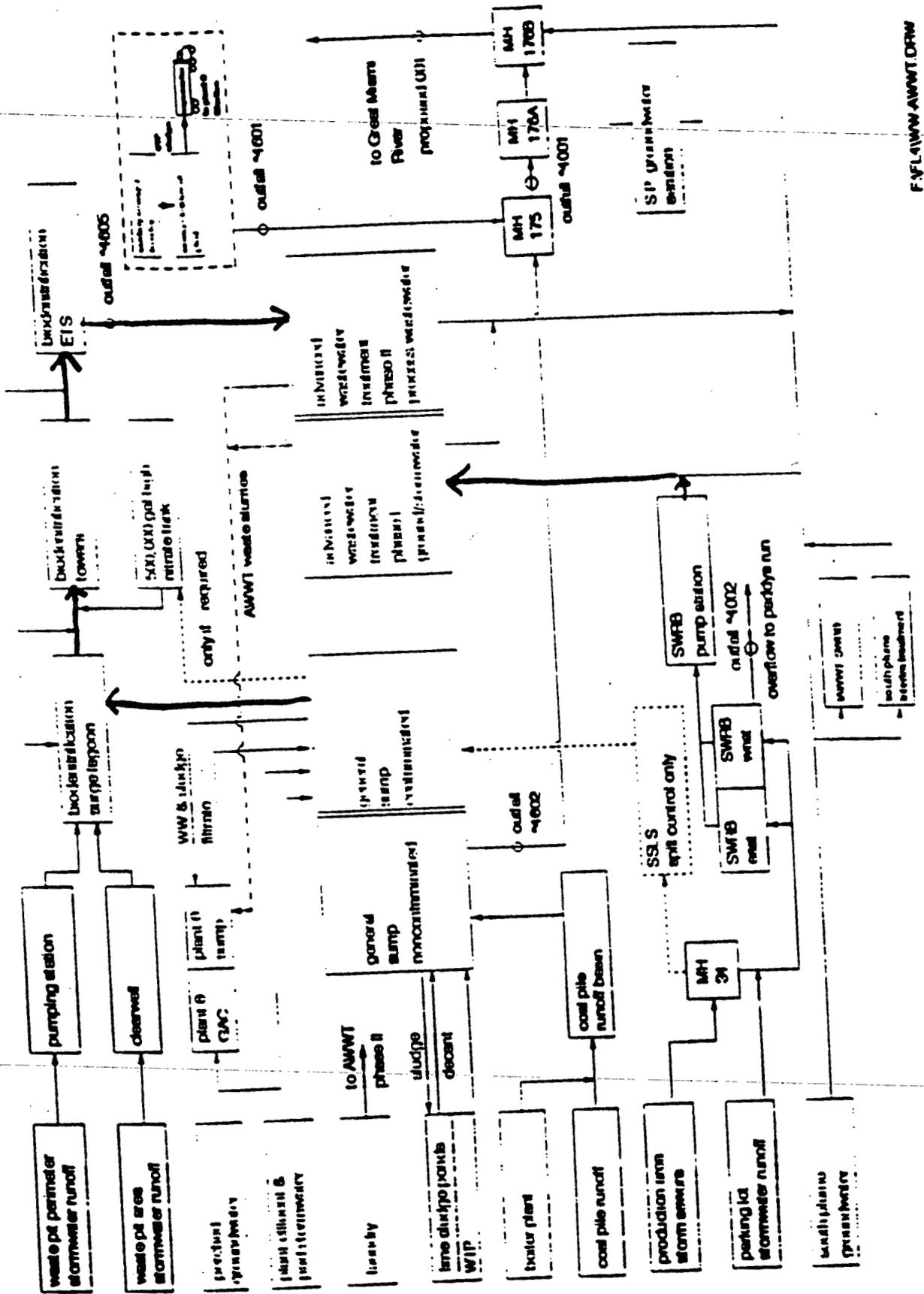
cc:

- K. H. Chaney, EM-423/QO
- D. R. Kozlowski, EM-423/QO
- G. Jablonowski, USEPA-V, HRE-8J
- J. Kwasniewski, OEPA-Columbus
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- AR Coordinator, FERMCO

AWWT PROCESS FLOW DIAGRAM



WASTEWATER FLOW DIAGRAM - AWWT OPERATIONAL



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