5766 G-000-104 .104

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT RENEWAL APPLICATION UNITED STATES DEPARTMENT OF ENERGY FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

07/12/94

DOE-FN USEPA
48
APPLICATION

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT RENEWAL APPLICATION

UNITED STATES DEPARTMENT OF ENERGY

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

EPA IDENTIFICATION NUMBER OH0009580

NPDES PERMIT NUMBER 1I000004*DD

SUBMITTED BY:

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION

Fernald Environmental

FERMCO
Restoration Management Corporation P.O. Box 398704 Cincinnati, Ohio 45239-8704 (513) 738-6200

5766

July 12, 1994

U. S. Department of Energy
Fernald Environmental Management Project
Letter No. C:RP:94-0038

Mr. Thomas A. Winston
Ohio Environmental Protection Agency
Southwest District Office
401 E. Fifth Street
Dayton, Ohio 45402-2911

Dear Mr. Winston:

NPDES PERMIT RENEWAL APPLICATION - FERNALD ENVIRONMENTAL MANAGEMENT PROJECT (FEMP)

Enclosed are two copies of the FEMP NPDES Permit Renewal Application and a check in the amount of $100.00 to cover the application fee. FERMCO requests OEPA's earliest screening review to ensure this application is complete for the purposes of continuing wastewater discharges under existing permit number 1I000004*DD which expires February 5, 1995.

Given the FEMP has ceased uranium production and initiated site remediation under CERCLA, the wastewater discharges reflected in this application differ from those described in the previous permit renewal application of August 1988. Pollutant loading from the FEMP site proper has steadily decreased due to sources of wastewater associated with uranium production being eliminated and pollutant concentrations in the remaining wastewater sources reduced. While some of the sources of wastewater have changed, the types of pollutants have remained consistent with the previous permit application, only in lesser concentrations. Additions to the FEMP effluent include a number of groundwater sources (South Plume Groundwater Pumping operation, perched groundwater extraction) and periodic discharges associated with the ongoing remedial investigation under CERCLA (investigation derived aqueous waste and bench/pilot scale soil washing facilities).

The FEMP seeks to permit two outfalls: 4001 combined discharge to the Great Miami River and 4002 stormwater overflow to Paddys Run from the Stormwater Retention Basin. It is FERMCO's intent to eliminate all existing internal wastewater monitoring locations. FERMCO believes the wealth of data collected under the existing permit documents the reduction in pollutant loading and adequacy of FEMP treatment systems.

Fernald Environmental
FERMCO
Restoration Management Corporation

It is important to realize that the Advanced Waste Water Treatment (AWWT) facility is scheduled to initiate operation by January 31, 1995. When operational the AWWT will become the center-piece of the FEMP wastewater management system. While this renewal application is a "snapshot" in time, FERMCO believes it to be representative of the FEMP wastewater discharges until the CERCLA Records of Decision for each of the operable units are signed and the subsequent "remediation wastewaters" become a part of the FEMP wastewater effluent.

FERMCO would welcome the chance to meet with OEPA staff to discuss this application and to answer any questions about FEMP wastewater treatment/management strategy. Our point of contact for this renewal application is Frank Johnston at AC 513/738-8644.

Sincerely,

Kenneth L. Alkema
Vice President, Regulatory Programs

KLA:kla:flj
Enclosures

c: D. J. Brettschneider, FERMCO
F. L. Johnston, FERMCO
W. J. Quaider, DOE-FN
L. Pennington, FERMCO
D. E. Faris, FERMCO

File Record Storage Copy 108.13
Administrative Record
RTS Files

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved. OMB No. 2040-0086. Approval Expires

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F 0 H 0 0 0 9 5 8 0 D

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

5766

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge to waters of the U.S.**? (FORM 2A)		X	
B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge to waters of the U.S.**? (FORM 2B)		X	
C. Is this a facility which currently results in **discharges to waters of the U.S.** other than those described in A or B above? (FORM 2C)	X		X
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge to waters of the U.S.**? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)	X		
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 ALKEMA KENNETH VICE PRESIDENT	513 738 9228

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 PO BOX 398705

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 CINCINNATI	OH	45239

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 7400 WILLEY ROAD

B. COUNTY NAME

BUTLER / HAMILTON

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 FERNALD	OH	45030	031

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
C 7 4953 (specify) Hazardous & Radioactive Waste Site	C 7 (specify)
C. THIRD	**D. FOURTH**
C 7 (specify)	C 7 (specify)

VIII. OPERATOR INFORMATION

A. NAME: C 8 F.E.R.M.C.O.

B. Is the name listed in Item VIII-A also the owner? ☐ YES ☒ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)
F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC (other than federal or state)
O = OTHER (specify)

F (specify)

D. PHONE (area code & no.): C A 513 738 6220

E. STREET OR P.O. BOX: P O B O X 3 9 8 7 0 4

F. CITY OR TOWN: C B C I N C I N N A T I

G. STATE: O H

H. ZIP CODE: 4 5 2 3 9

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water): C 9 T N I 1 I 0 0 0 0 0 4 * D D

D. PSD (Air Emissions from Proposed Sources): C 9 T P I

B. UIC (Underground Injection of Fluids): C 9 T U I

E. OTHER (specify): C 9 T I (specify)

C. RCRA (Hazardous Wastes): C 9 T R I

E. OTHER (specify): C 9 T I S E E A T T A C H E D (specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property bounderies. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements. SEE ATTACHED

XII. NATURE OF BUSINESS (provide a brief description)

SEE ATTACHED

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
Kenneth L. Alkema, Vice President	Kenneth L. Alkema	7-12-94

COMMENTS FOR OFFICIAL USE ONLY

C

Form 3510-1; Section X

OTHER ENVIRONMENTAL PERMITS

A. Hazardous Waste Management Program under RCRA

U. S. EPA Identification No. OH6890008976
Ohio Hazardous Waste Permit Application No. 05-31-0681

Part A Permit Application History:

Original Submittal	7/6/84	
Revision 1	5/15/85	
Revision 2	10/30/85	(Part B submittal)
Revision 3	3/19/86	
Revision 4	4/28/86	
Revision 5	3/27/87	
Revision 6	11/2/87	
Revision 7	2/4/88	
Revision 8	7/28/88	
Revision 9	3/22/89	
Revision 10	9/22/89	(Part B submittal)
Revision 11	9/25/90	
Revision 12	6/28/91	
Revision FEMP 0	10/31/91	(Part B submittal)
Revision FEMP 1	3/31/92	
Revision FEMP 1.1	8/31/92	
Revision FEMP 1.2	10/15/92	
Revision FEMP 1.3	3/1/93	
Revision FEMP 1.4	3/26/93	(Part B submittal)

B. National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the Clean Air Act

NESHAP approval of construction received from U. S. EPA for the following:

1. UF_6 to UF_4 Reduction Facility #2
2. Thorium Repackaging

NESHAP approval of modification received for the following:

1. Plasma Spray Crucible Coating Station
2. Crucible Grit Blaster
3. West Wagner Cold Saw
4. Flat Ingot Model 4 Milling Machine
5. Flat Ingot Model 4A Milling Machine
6. Flat Ingot Model 4B Milling Machine
7. Flat Ingot 425-20 Milling Machine
8. Flat Ingot No. 6 Milling Machine
9. Flat Ingot K&T A Milling Machine

Form 3510-1; Section X (cont.)

OTHER ENVIRONMENTAL PERMITS (cont.)

10. Flat Ingot K&T B Milling Machine
11. Plant 6 Sump and Waste Treatment System
12. D&D Facility
13. Ingot Cooling Booth
14. Plant 8 Sump
15. Plant 8 Crusher
16. Plant 1 Material Handling

C. Wastewater Treatment Facility, Ohio EPA Permits to Install (PTI)

	PROJECT	PTI NO.
1.	Ultraviolet Disinfection Unit	05-0944
2.	Stormwater/Spill Retention Facility	05-1043
3.	Process Wastewater Biodenitrification	05-3672
4.	Biodenitrification Surge Lagoon	05-2872
5.	Plant 6 Sump Reconstruction	05-2405
6.	Tank Farm Padwater Collection	05-2873
7.	General Sump/Lime Handling System	05-3368
8.	Plant 8 Sump Modification (EXPIRED)	05-3518
9.	D&D Facility	05-3390
10.	Biodenitrification Effluent Treatment System	05-3879
11.	Coal Pile Runoff Collection Facility	05-4172
12.	Manhole 34 Spill Control	05-5127
13.	Plant 8 Sump Modification	05-5471
14.	General Sump pH Control	05-5634
15.	Advanced Wastewater Treatment System	05-5722

D. Ohio EPA Air Permits to Install and Air Permits to Operate

Various permits under Ohio EPA Premise No. 1431110128

E. Plan Approval for Drinking Water System

Electrodialysis Reversal system plan approval SW-2496-WS

Form 3510-1; Section XII.

The Fernald Environmental Management Project (FEMP) is owned and operated by the U. S. Department of Energy. Mission and program direction are administered through the Fernald Office.

The FEMP was formerly the Feed Materials Production Center (FMPC) which was a large scale, fully integrated facility for producing uranium metal. The uranium metal was then fabricated into fuel cores and target elements for use in nuclear reactors at other DOE sites, or into other forms required by the Department of Defense.

The FEMP ceased production in July 1989 and was formally dedicated to environmental cleanup and restoration in August 1991. Site remediation is being conducted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Current activities include waste management operations, the Remedial Investigation/Feasibility Study under CERCLA, various removal actions pursuant to the Consent Agreement as amended under CERCLA Sections 120 & 106(a), nuclear materials disposition, and miscellaneous operations such as boiler plant operation, wastewater treatment, and the production of potable water.

Please print or type in the unshaded areas only.

EPA I.D. NUMBER (copy from Item 1 of Form 1) OH0009580

Form Approved
OMB No. 2040-0086
Approval expires 5-31-92

5766

FORM 2C NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS
Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (name)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
001	39	17	39	84	39	58	Great Miami River
002	39	17	34	84	41	21	Storm Sewer Outfall Ditch to Paddy's Run

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined *(e.g., for certain mining activities)*, provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures. SEE ATTACHED

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary. SEE ATTACHED ALSO

1. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
001	South Plume Groundwater	2.16 MGD	Partial/intermittant	2-J	
	Sanitary Sewage	0.16 MGD	Trickling Filter w/UV disinfection	1-L	1-U
	Laundry			3-H	2-H
	Personal Showers			5-B	5-U
	Production Area Stormwater Runoff	0.310 MGD	24-hr. quiescient settling	1-U	2-J
	General Sump	0.048 MGD	Floculation, aeration, neutralization	1-G	1-U
	Sludge Pond Decant.		Sedimentation	2-D	2-K
	Water Plant Lime Sludge Blowdown				
	Coal Pile Runoff				
	Boiler Blowdown, Sodium				
	Zeolite Softner Regeneration				
	Cooling Water				
	Biodenitrification Effluent	0.097 MGD	See Attached	1-G	1-U
	Pit Perimeter Stormwater			2-D	2-K
	Pit Stormwater			2-J	1-C
	Production Area Wastewater			2-A	3-A
	Decontamination			3-D	
	Investigation Derived				
	Aqueous Waste				
	Perched Groundwater				
	Soil Washings				
	Sand Filter Backwash				
002	Stormwater		Intermittant Overflow	1-U	

OFFICIAL USE ONLY *(effluent guidelines sub-categories)*

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

[X] YES *(complete the following table)* [ ] NO *(go to Section III)*

1. OUTFALL NUMBER *(list)*	2. OPERATION(s) CONTRIBUTING FLOW *(list)*	3. FREQUENCY a. DAYS PER WEEK *(specify average)*	3. FREQUENCY b. MONTHS PER YEAR *(specify average)*	4. FLOW a. FLOW RATE *(in mgd)* 1. LONG TERM AVERAGE	4. FLOW a. FLOW RATE *(in mgd)* 2. MAXIMUM DAILY	4. FLOW b. TOTAL VOLUME *(specify with units)* 1. LONG TERM AVERAGE	4. FLOW b. TOTAL VOLUME *(specify with units)* 2. MAXIMUM DAILY	4. FLOW c. DURATION *(in days)*
Internal to 001	General Sump - internal to MH-176B. Wastewater discharged in approximately 40,000 gallon batches	6	12	.048	.120	.04MG	.120	365

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

[ ] YES *(complete Item III-B)* [X] NO *(to to Section IV)*

B. Are the limitations in the applicable effluent guideline expressed in terms of production *(or other measure of operation)*?

[ ] YES *(complete Item III-C)* [ ] NO *(go to Section IV)*

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	2. AFFECTED OUTFALLS *(list outfall numbers)*

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

[X] YES *(complete the following table)* [ ] NO *(go to Item IV-B)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS a. NO.	2. AFFECTED OUTFALLS b. SOURCE OF DISCHARGE	3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE a. REQUIRED	4. FINAL COMPLIANCE DATE b. PROJECTED
Consent Agreement as Amended Under CERCLA Sections 120 & 106(a)	001	Process Wastewater Stormwater Groundwater	The FEMP site is undergoing remediation under CERCLA.		2020
Stipulated Amendment to Consent Decree	001	Process Wastewater	RCRA closures		

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs *(or other environmental projects which may affect your discharges)* you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction. [X] MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

FORM 3510-2C; SECTION II B.

The description of the wastewater sources provided below follow the order as they are presented on page 1 of 4 of Form 3510-2C. The wastewater source and treatment descriptions are as they occurred during the week of sampling of March 18, 1994. An attempt is being made to identify future anticipated changes to the FEMP wastewater treatment system (WWTS) subsequent to this application.

The FEMP wastewater treatment systems are being addressed and managed under the direction of CERCLA/RCRA Unit 5 (CRU5) management. CRU5 is responsible for the remediation of Operable Unit 5 defined in the Amended Consent Agreement as environmental media. A planning document titled "The Sitewide Wastewater Treatment Master Plan" is being used as a planning tool which attempts to predict and track how the FEMP WWTS will be altered through the CERCLA driven Remedial Investigation/Feasibility Study process. The current philosophy is to eliminate treatment systems as they become unneeded (i.e., Biodenitrification system) or replaced by new systems [i.e., Plant 8 filtration replaced by the Advanced Waste Water Treatment system (AWWT)].

The AWWT system will become the centerpiece of all FEMP wastewater treatment once it becomes operational in January 1995. All wastestreams with a uranium concentration above 20 μg/l will be kept internal to the AWWT system. The AWWT is comprised of two identical treatment schemes. Phase I is designed to treat 700 gallons/minute (gpm) stormwater/groundwater while Phase II is capable of processing up to 400 gpm of process and remediation wastewaters.

Although originally designed for uranium and radionuclide removal, steps will be taken to demonstrate the effectiveness of the AWWT process relative to other pollutants such as heavy metals and organic compounds.

South Groundwater Plume

South Plume groundwater is pumped to the FEMP site for direct discharge to the Great Miami River via Manhole 176B. An extraction well field installed at the leading edge of the uranium contamination plume extracts groundwater at a rate of 1,500 gpm. An aeration facility has been installed to ensure a sufficient level of dissolved oxygen in the groundwater is achieved before discharge to the Great Miami River. These systems were approved and installed under CERCLA Removal Action No. 3

A South Plume Interim Treatment (SPIT) system was constructed as a supplemental project under the terms of an April 1993 Operable Unit 2 Dispute Resolution Agreement and was approved December 9, 1993 as an addendum to the South Groundwater Contamination Plume Removal Action. The SPIT system is a 200 gpm system implementing ion exchange technology for uranium removal from South Plume groundwater. The SPIT system began operation March 31, 1994.

Additional groundwater treatment will be provided once Phases I and II of the AWWT are operational in February 1995. Phase I is a 700 gpm system for treating primarily stormwater collected in the Stormwater Retention Basin (SWRB). During periods of low stormwater inventory, groundwater will be diverted to Phase I for treatment. Additionally, the Interim Advanced Wastewater Treatment (IAWWT) system, currently treating SWRB effluent under

FORM 3510-2C; SECTION II B.

Part 3 of the South Groundwater Contamination Plume Removal Action, will be dedicated to south plume groundwater once AWWT is operational. The "Sitewide Wastewater Treatment Master Plan" identifies future AWWT expansions for treating contaminated groundwater under terms of the perceived CERCLA ROD for Operable Unit 5.

Sanitary sewage

The Sewage Treatment Plant (STP) currently receives domestic type wastewater (toilets, sinks, and showers) and laundry wastewater. Effluent from the STP is monitored under the existing NPDES permit as outfall *4601. Sewage sludge is digested in an anaerobic digester, dewatered by vacuum filters in Plant 8, drummed, and stored on controlled storage pads. Dewatered STP sludge is monitored under the existing NPDES permit as sludge monitoring station *4589.

A project is currently underway to allow the laundry discharge to be rerouted from the STP to the AWWT in a continuing effort to keep all uranium contaminated wastestreams internal to the AWWT facility.

Production Area Stormwater Runoff

Stormwater runoff from the entire fenced portion of the former Production Area enters the stormsewer system which converges at Manhole 34. Under normal operating conditions, stormwater flows by gravity from Manhole 34 to the SWRB where it is allowed to undergo 24-hour quiescent settling.

There are two discharge points from the SWRB. First, stormwater from the retention basin is pumped through the IAWWT-SWRB. When excessive stormwater inventory exists in the SWRB the discharge is split between the IAWWT-SWRB and a bypass line to Manhole 176B. Pumping is accomplished by one 700 gpm pump with a second provided as a spare. When unusually heavy rainfall is experienced both pumps are used simultaneously. These pumps replaced the previous 300 gpm pumps in May 1994.

> NOTE: Until March 10, 1994, all SWRB stormwater, whether or not it was treated through the IAWWT, was discharged to Manhole 175. The NPDES monitoring for the SWRB stormwater, formerly Outfall *4606, was eliminated in the latest NPDES Permit modification effective May 20, 1993. As of March 11, 1994 all SWRB stormwater is discharged into the pipeline carrying South Plume groundwater directly to Manhole 176B.

The IAWWT-SWRB was installed under CERCLA Removal Action No. 3, "South Groundwater Contamination Plume" to treat the effluent from the SWRB for uranium removal. This IAWWT consists of two trailer mounted 150 gpm treatment systems consisting of pH adjustment, filtration, and ion exchange. A part of the SPIT project referenced above included the installation of an enhanced filtration system for the IAWWT-SWRB consisting of multi-media filtration with backwash capability. The filtration system was placed into operation on March 31, 1994.

FORM 3510-2C; SECTION II B.

The second discharge point from the SWRB is the overflow from the west basin to Paddys Run via the old Storm Sewer Outfall Ditch. This discharge point is currently NPDES Outfall *4002. With the installation of the new 700 gpm SWRB pumps, the probability for overflow has been significantly reduced. The future probability will be further reduced when the normal discharge from the SWRB is to the Phase I AWWT.

The FEMP has retained the ability to activate the Storm Sewer Lift Station (SSLS) (formerly NPDES Outfall *4604) to pump any spill which may occur in the process area to the Contaminated General Sump via a new force main which became operational March 31, 1994. In addition, the SSLS may be used to pump stormwater directly to Manhole 175 under abnormal circumstances such as problems with downstream stormwater processing units.

General Sump

The type of wastewater currently discharged from General Sump to Manhole 175 is primarily associated with the operation of the boiler plant for the production of steam and the water plant for the production of potable water [lime softening and/or electrodialysis reversal (EDR)]. Specific sources of wastewater include: water plant chemical sump (receiving sodium zeolite regeneration and reactivator lime sludge blowdown), coal pile runoff basin (receiving runoff from the coal pile and ash waste from the boilers), decant from the lime sludge ponds, and a brine type wastewater stream from the EDR.

NOTE: At this time, the EDR is in operational standby where it is operated periodically. The EDR wastestream is currently discharged to the water plant chemical sump.

This wastewater is received at the non-contaminated General Sump (i.e., uranium concentration less than 20 μg/l received in Tanks 6, 7, 8, and 9) where it undergoes coagulation, sedimentation, aeration, and pH adjustment. The treated wastewater is discharged under current NPDES outfall *4602.

In the future, the FEMP plans to receive all water from the Cincinnati Water Works thus eliminating on-site production of water. When this water supply connection is in place, the EDR will be used for supplying high quality water to the boilers. The EDR brine waste stream will be discharged directly to MH-175 along with the sodium zeolite regeneration water, prior to combination with all other plant effluents at MH-176B (South Plume Groundwater. etc).

Biodenitrification Effluent

Effluent from the Biodenitrification (BDN) facility is comprised of a variety of different wastewater and stormwater sources which have undergone varying degrees of treatment. The BDN facility itself consists of the BDN Surge Lagoon (BSL), a High Nitrate Storage Tank (HNT), four BDN Towers, and the BDN Effluent Treatment System (BDN-ETS). The effluent from the BDN-ETS is currently monitored under the existing permit as NPDES outfall *4605.

Each of the four BDN Towers is a fluidized bed of anthracite coal on which bacteria is attached. This bacteria removes nitrates from wastewater by

converting nitrate to gaseous nitrogen. The effluent from these towers contain a high concentration of Biological Oxygen Demand (BOD) due primarily to excess methanol feed. Methanol is used as the carbon source in the biological conversion of nitrate to nitrogen. The BDN-ETS is a package activated sludge plant and was installed specifically to treat this BOD laden effluent from the BDN towers. The IAWWT-BDN was installed under CERCLA Removal Action 3, "South Groundwater Contamination Plume" to provide uranium removal from the BDN-ETS effluent. The IAWWT-BDN has the ability to treat 150 gpm and consists of sand filtration followed by ion exchange. The HNT and BSL provide the ability to dose the BDN Towers in such a way as to equalize flows and nitrate concentration.

The BDN facility accepts effluent from the uranium-contaminated General Sump and stormwater runoff from the Waste Pit Area collected in the Clearwell and from the Waste Pit Area Runoff Control system installed under CERCLA Removal Action #2; "Waste Pit Area Runoff Control."

All process type wastewater is received at uranium-contaminated General Sump (CGS) and segregated according to uranium content in accordance with site operating procedures. Wastewater with a uranium content of less than 0.0004 lbs/gal (~48 mg/l) is discharged directly to the BSL. Wastewater with a uranium content above this level, which normally contain other heavy metals, is discharged to the Plant 8 Sump system for precipitation and filtration through the rotary vacuum filters. Plant 8 filtrate water is routed back to General Sump for transfer to the BSL.

Once the AWWT becomes operational the discharge from the BDN system directly to MH-175 will cease. If wastewaters are being processed through the BDN towers, the BDN-ETS will remain operational, however, BDN-ETS effluent will be discharged directly to AWWT rather than MH-175. When processing wastewater through the BDN towers is discontinued, the discharge to AWWT will be made by bypassing the towers to the BDN-ETS where the wastewater will simply pass through the BDN-ETS (i.e., the BDN-ETS will not be operated as an activated sludge plant) and pumped to AWWT using the same piping as before until a direct connection from the BSL to AWWT is installed. In either scenario, current NPDES outfall *4605, defined as "[e]ffluent from biodenitrification after settling and/or biological treatment discharged via manhole 175 and final outfall (001)," will be discontinued.

The "Sitewide Wastewater Treatment Master Plan" targets the Plant 8 Sump filtration system for shutdown after successful demonstration of the AWWT capabilities relative to heavy metal removal. The BDN towers are also targeted for shutdown after all significant nitrate bearing inventories are eliminated. When the BDN towers come off-line, the FEMP plans to use the BDN-ETS for domestic wastewater treatment to replace the existing, aged, sewage treatment plant and allow the cleanup of the surrounding contaminated soils to proceed.

FORM 3510-2C; SECTION II B.

The following describe current "process" wastewaters. Special controls and/or treatment are identified as applicable.

o Production Area Wastewater

This type of wastewater is contaminated with uranium and encompasses controlled stormwater from containment dikes and pads, floor washings, and condensate collection from the various chemical and metal plant buildings. Process wastewater also includes discharges from the laboratory building sump (Bldg.15).

o Decontamination Wastewater

There are primarily three sources of decontamination wastewater. The first is from the regular decontamination, via high pressure water, of equipment, vehicles and scrap metal in the old Decontamination & Decommissioning (D&D) facility (Building 69) and the new D&D facility (Building 78). Wastewater from these operations are discharged to CGS and handled as a normal production area wastewater.

The second source is from the washdown of plant buildings targeted for decontamination and dismantlement. This process involves washing loose contamination from floors, walls, piping, equipment, etc., prior to building dismantlement. To date, only Plant 7 has been washed down in this manner. The Plant 7 decontamination and dismantlement [CERCLA Removal Action No. 19] will be used as a model for other building demolition activities.

NOTE: In the Plant 7 washdown, water was containerized in 10,000 gallon portable tanks and analyzed for various parameters [heavy metals, radionuclides, and volatile organic compounds (VOCs)]. The point of entry into the wastewater treatment system was then determined by the type and concentration of the pollutants encountered. This washdown water indicated the pollutants of concern to be heavy metals and radionuclides. Discharge was then made to the Plant 8 filtration system for appropriate treatment.

The third source includes aqueous treatment residuals from the processing of decontamination waters and hazardous debris from Hazardous Waste Management Unit (HWMU) closures. (See the HWMU location map and the HWMU Status and Schedule table for information on FEMP HWMU's.) Any discharge associated with a HWMU is accomplished in compliance with applicable RCRA/CERCLA regulations. Decisions for discharge are made on a case by case basis.

o Investigation Derived Aqueous Waste

CERCLA guidance defines Investigation-Derived Wastes (IDW) as including drilling muds, cuttings, and purge water from test pit and well installation; purge water, soil, and other materials from collection of samples; residues (e.g., ash, spent carbon, and well development purge water) from testing of treatment technologies and pump and treat

systems; contaminated personal protective equipment; and solutions (aqueous and otherwise) used to decontaminate nondisposable protective clothing and equipment. Also included as IDW are materials from sampling activities including returned unused sample portions and extracts and residues from laboratories.

Aqueous IDW is generally discharged in small, irregular batches. These batches may range from a single 55 gallon drum up to a 500 gallon tank.

Aqueous IDW is treated and discharged through the wastewater treatment system to the Great Miami River. A threshold level for VOCs of 0.1 mg/l has been established to determine the waters that are appropriate to discharge directly to the FEMP wastewater treatment system via the General Sump. Aqueous IDW above these threshold levels will be pretreated in the Plant 8 granular activated carbon (GAC) wastewater pretreatment system installed under CERCLA Removal Action 1. This system is a 10 gpm capacity system fed by a single 6,000 gallon feed tank. Cartridge filters, placed ahead of carbon adsorption canisters, remove any solids present. Effluent from the GAC pretreatment system is discharged directly to the Plant 8 sump system for precipitation, filtration, and transfer to General Sump as other production area wastewater.

- Perched Groundwater

Perched groundwater from beneath FEMP Plants 6, 9, 2/3, and 8 including the Plant 6 motor bay sumps is collected and transferred to the Plant 8 GAC pretreatment system described above.

- Soil Washing

There are two soil washing facilities installed as treatability studies at the FEMP. The Operable Unit 5/Integrated Demonstration study soil washing facility is located in Plant 8. Effluent is accumulated in batches and discharged to the Plant 8 sump filtration system.

The Minimum Additive Waste Stabilization (MAWS) soil washing facility is located in Plant 9. The MAWS process washes soils to separate non uranium contaminated soils from uranium-contaminated soils. These uranium contaminated soils are then used as the silicon source for bench or pilot-scale vitrification of waste pit sludges or K-65 silo material. Soil washing effluent is discharged through a small ion exchange system for uranium removal and then recycled or discharged to CGS. There are no planned wastewater discharges from the vitrification process.

- Multi-media Filter Backwash

A part of the SPIT project referenced above included the installation of an enhanced filtration system consisting of multi-media filtration with backwash capability. Filter backwash waters are routed to the CGS for disposition.

FORM 3510-2C; SECTION IV A

SCHEDULE AND STATUS FOR SUBMITTING CLOSURE PLAN INFORMATION AND DATA\FIELD ACTIVITIES

HWMU NO.		HWMU Identification	Closure Schedule Submittal\Action	Comments\Status	Submt.	Aprv.	Start	Compl.
		HWMUs (17) TO BE CLEAN CLOSED UNDER RCRA						
30		BARIUM CHLORIDE SALT TREATMENT FACILITY	19-Apr-90	Submitted Closure Certification	x	x	x	x
3		WASTE OIL STORAGE IN GARAGE	08-Jul-92	CPID In OEPA Review	x			
5	(1)	DRUM STORAGE AREA SOUTH OF W-26 (LAB)	06-Oct-92	CPID In OEPA Review	x			
4	(1,2)	DRUM STORAGE AREA NEAR LOADING DOCK (LAB)	04-Apr-93	Submitted- Do w/o Prior Approval	x			
7	(1,2)	DRUMMED HF RESIDUE STORAGE NW OF PLANT 4	24-Jun-93	To Be Replaced w/Admin. Closure	x			
9	(3,6)	NITRIC ACID RAIL CAR AND AREA	21-Oct-93	Completed RAWP Field Work	x	US\	x	
26	(2)	DETREX STILL	05-Nov-93	CPID in OEPA Review	x			
31/32	(1,2)	BULK STORAGE TANKS T5 & T6	18-Nov-93	Amendments in OEPA Review	x	x	x	
52	(1,2)	NORTH AND SOUTH SOLVENT TANKS (PILOT PLANT)	30-Dec-93	CPID in OEPA Review	x			
36	(1,2)	STORAGE PAD NORTH OF PLANT 6	30-Dec-93	Amendments in OEPA Review	x	x	x	
6		DRUMMED HF RESIDUE STORAGE INSIDE PLANT 4	21-Jan-94	Closure Certification due OEPA	x	x	x	
38	(1,2)	HF TANK CAR	15-Mar-94	Revised Rev 2./NOD to OEPA	x		x	
8	(1)	DRUMMED HF RESIDUE STORAGE S OF COOLING TOWER	To Be Determined	Anticiapte Administrative Closure				
21	(5)	HILCO OIL RECOVERY	To Be Determined	Anticipate Reclassification				
53	(2)	SAFE GEOMETRY DIGESTION SUMP (PLANT 1)	To Be Determined	Close (Safe Shutdown) w/o Apprv.				
13		WHEELABRATOR DUST COLLECTOR - BUILDING 66	To Be Determined	Rescheduling From 30-Apr-94				
		HWMU CLOSURES (22) TO BE COMPLETED UNDER CERCLA						
42	(3)	WASTE PIT 5	26-Sep-91	CPID In OEPA Review	x		x	
27	(3,4)	WASTE PIT 4	15-Sep-89	Certification of Interim Closure	x	x	x	i
47	(1)	UNH TANKS - NORTH OF PLANT 2	22-Jun-93	CPID In OEPA Review	x		x	
50		UNH TANKS - RAFFINATE BUILDING (2 LOCATIONS)	22-Jun-93	CPID In OEPA Review	"		"	
49		UNH TANKS - DIGESTION AREA (2 LOCATIONS)	22-Jun-93	CPID In OEPA Review	"		"	
46	(1)	UNH TANKS - NFS STORAGE AREA	22-Jun-93	CPID In OEPA Review	"		"	
48	(1)	UNH TANKS - SOUTHEAST OF PLANT 2	22-Jun-93	CPID In OEPA Review	"		"	
10	(1)	NAR SYSTEM COMPONENTS	30-Jun-93	CPID In OEPA Review	x			
1	(2,3,	FIRE TRAINING FACILITY	06-Aug-93	Initiate Approved RAWP in FY'94	RAWP	x		
	& 6)		To Be Determined	Comment Response to OEPA	CPID			
28	(1)	TRANE INCINERATOR	To Be Determined	Rev. 3 Due to OEPA	x	x		
14	(1)	BOX FURNACE	To Be Determined	Rescheduling from 30-Nov-93				
16	(5)	PRIMARY CALCINER	To Be Determined	Anticipate Reclassification				
15		OXIDATION FURNACE #1	To Be Determined	Rescheduling from 28-Feb-94				

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22	(3,7)	ABANDONED SUMP WEST OF PILOT PLANT	To Be Determined	Rescheduling from 05-May-94	RAWP	US/	x
12	(5)	WHEELABRATOR - BUILDING 66	To Be Determined	Anticipate Reclassification			
25		PLANT 1 STORAGE BUILDING - BUILDING 67	To Be Determined	Rescheduling from 30-Nov-94			
51	(3,5)	EXPERIMENTAL TREATMENT FACILITY (ETF)	To Be Determined	Rescheduling from 30-Apr-95			x
11	(1)	TANK FARM SUMP	To Be Determined	No Previous Date Scheduled			
17	(3)	PLANT 8 EAST DRUM STORAGE PAD	To Be Determined	No Previous Date Scheduled			
18	(3)	PLANT 8 WEST DRUM STORAGE PAD	To Be Determined	No Previous Date Scheduled			
40	(3)	BIO-SURGE LAGOON	To Be Determined	No Previous Date Scheduled			
41	(3)	SLUDGE DRYING BEDS	To Be Determined	No Previous Date Scheduled			

ACTIVE HWMUS (7) TO BE CLOSED UNDER RCRA PART B

20	(3)	PLANT 1 STORAGE PAD	29-Mar-93	Rev 1 to Part B (Rev 0. Oct '91)	x
33		PILOT PLANT WAREHOUSE (BUILDING 68)	29-Mar-93	Rev 1 to Part B (Rev 0. Oct '91)	x
19		CP STORAGE WAREHOUSE - BLDG. 56 (BUTLER BLDG.)	29-Mar-93	Rev 1 to Part B (Rev 0. Oct '91)	x
34		KC-2 WAREHOUSE (BUILDING 63)	29-Mar-93	Rev 1 to Part B (Rev 0. Oct '91)	x
35		PLANT 9 WAREHOUSE (BUILDING 81)	29-Mar-93	Rev 1 to Part B (Rev 0. Oct '91)	x
37		PLANT 6 WAREHOUSE (BUILDING 79)	29-Mar-93	Rev 1 to Part B (Rev 0. Oct '91)	x
29		PLANT 8 WAREHOUSE (BUILDING 80)	29-Mar-93	Rev 1 to Part B (Rev 0. Oct '91)	x

UNITS (7) RECLASSIFIED FROM HWMU TO SWMUs, WITH OEPA WRITTEN CONCURRANCE

39	CLEARWELL	Not Submitted	OEPA Concurrance 6/7/93
43	LIME SLUDGE PONDS	Not Submitted	OEPA Concurrance 6/7/93
44	COAL PILE RUNOFF BASIN	Not Submitted	OEPA Concurrance 6/7/93
45	UST #5	Being Withdrawn	OEPA Concurrance 11/1/93
2	PARTS CLEANER IN WELDING SHOP (BLDG 12)	Not Submitted	OEPA Concurrance 11/1/93
23	WELL DRILLING STORAGE AREA	Not Submitted	OEPA Concurrance 11/1/93
24	EQUIPMENT STORAGE AREA	Being Withdrawn	OEPA Concurrance 11/1/93

Totals: Total # HWMUS = 46. Total # CPIDs = 41 (number CPID less than HWMU because some are combined) 25 6:OEPA 9 2 (1)

(1) - Need to evaluate potential media contamination issues.
(2) - The FEMP will implement field closure actions for these units in FY'94 independent of CPID approvals. Certification of the closures will occurr after OEPA approves the CPID documents submitted.
(3) - Media contamination issues have been confirmed or are anticipated basd on process knowledge.
(4) - Under Stipulation Agreement w/OEPA Final CPID for Waste Pit 4 is to be integrated with final ROD (predated OU1 and OU5 designations).
(5) - HWMU determination being reevaluated may be reclassified and withdrawn from list of HWMUs at the FEMP.
(6) - Combined RCRA Closure Plan Information and Data and CERCLA Removal Action Work Plans.
(7) - Field work under Removal Action No. 28 was completed in October 1993. The sump was excavated and the drain line to the sump has been capped. The FEMP is evaluating additional actions necessary to complete closure of the HWMU and anticipates completing closure through CERCLA response actions.

FORM 3510-2C; SECTION IV B.

1. The Advanced Wastewater Treatment Project

The Advanced Waste Water Treatment (AWWT) system will provide the ability to treat both process wastewater/groundwater (400 gpm) and stormwater/groundwater (700 gpm). The AWWT is currently under construction (construction start May 11, 1993) and is scheduled to undergo by January 31, 1995.

The AWWT was designed for the removal of uranium and other radionuclides. Removals of uranium and radionuclides will occur in the precipitation/clarification steps while additional uranium removal will be accomplished in the ion exchange system.

FERMCO believes the precipitation/clarification step will adequately address heavy metal removal and is currently under evaluation. Once demonstrated successful, the AWWT will not only provide the polishing of wastewater for uranium removal but will also replace the existing Plant 8 filtration system for heavy metal removal. This will allow Plant 8 to be decontaminated and dismantled under CERCLA.

The AWWT facility also contains activated carbon adsorption columns installed to protect the ion exchange columns from volatile organic chemicals. Designed as a safety measure, FERMCO believes these columns will be very effective in removing what can best be described as "residual" VOCs from the wastewater/stormwater/groundwater streams. VOC contamination has been found in numerous locations throughout the FEMP site. Generally, these contamination levels are 1 mg/l or less. The Plant 8 granular activated carbon pretreatment system, or a similar type of system, will be retained as pretreatment for high concentration wastestreams or wastestreams which contain a listed hazardous waste if such a need arises.

2. The AWWT Dewatering Facility

This facility is intended to replace the solids dewatering capability at Plant 8 with a new dewatering facility located in close proximity to the AWWT. A dewatering facility is necessary to process waste slurries from the AWWT process and other solids streams such as sewage treatment plant sludge. It is the planned to have this facility operational by January 1996.

3. Cincinnati Water Works Supply

The FEMP plans to tie in to the Cincinnati Water Works system by August 1995 to supply all potable and nonpotable water needs. At that time, water treatment will be limited to the operation of the electrodialysis reversal (EDR) system for the production of high quality boiler feed water. The FEMP wastewater discharges will be effected by eliminating the water plant chemical sump discharge to General Sump and discharging the EDR waste brine stream directly to Manhole 175 where it eventually combines with all FEMP waste streams at Manhole 176B.

FORM 3510-2C; SECTION IV B.

4. Improved Storage of Soil and Debris

This project is being conducted under CERCLA Removal Action No. 17 and involves the installation of permanent engineered controls for the storage of soil and debris. Specifically, this project will install a 40,000 square foot central soil storage facility, a new storage pad for materials awaiting decontamination, and the regrading and vegetative cover for the Third Street soil pile. These controls will reduce and control contamination resulting from the exposure to weather (wind erosion, stormwater contact, etc.,).

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*
0H0009580

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V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding – Complete one set of tables for each outfall – Annotate the outfall number in the space provided.
NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
	See Attached		

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ YES *(list all such pollutants below)* ☒ NO *(go to Item VI-B)*

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ YES *(identify the test(s) and describe their purposes below)* ☒ NO *(go to Section VIII)*

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☐ YES *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ NO *(go to Section IX)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code & no.)*	D. POLLUTANTS ANALYZED *(list)*
TCT - St. Louis	1908 Innerbelt Business Center Drive St. Louise, MO 63114-5700	314-426-0880	All pollutants except BOD, fecal, coliform, sulfite, chlorine residual, temperature, PH, alpha, beta, radium, color, radium 226

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE *(type or print)*	B. PHONE NO. *(area code & no.)*
Kenneth L. Alkema, Vice President Regulatory Programs	513-738-9228
C. SIGNATURE Kenneth L. Alkema	D. DATE SIGNED 7-12-94

FORM 3510-2C, SECTION V

Introduction to Analytical Data

Samples were collected in accordance with FEMP Site Media Sampling Plan EM-SMPLN-93-549 (Rev.1). This sampling plan was developed from the instructions for EPA Form 3510-2C and 40 CFR 136 requirements. All samples were collected between March 20, 1994 and April 6, 1994.

The sampling locations (and in the case of outfall 4002 - sampling strategy) were selected in consultation with OEPA-SWDO during a meeting on July 27, 1993 at OEPA-SWDO offices involving OEPA, FERMCO, and DOE-FN representatives. These sampling locations are defined as follows:

- 4001 - Final Outfall Prior to Discharge to Great Miami River. Samples were collected from the new parshall flume chamber downstream of Manhole 176B.
- 4002 - Spillway from the west chamber of the Stormwater Retention Basin (SWRB) to Paddys Run via the Storm Sewer Outfall Ditch.
- Intake water after treatment for potable distribution (see Water Balance for potable water treatment description).

Outfall 4001

All required composite samples [with the exception of volatile organic chemicals (VOCs)] for 4001 were collected using an American SIGMA Portable Automatic Sampler, Model 800SL. The sampler was programmed for flow proportional sampling, collecting 500 ml aliquots every 130,000 gallons. VOC samples were collected in accordance with Form 3510-2C instructions. Flow measurement was accomplished by locating the sampler's pressure transducer in the stilling well located adjacent to the Parshall Flume; comparing and calibrating the depths of the stilling well against the staff gauge located in the Parshall Flume; and programming the flume dimensions into the sampler.

Unlike other FEMP internal outfalls where a wealth of data are available, the new monitoring location at Manhole-176B is relatively uncharacterized. Therefore, the sampling effort to obtain the required data for this application is the initial characterization of the outfall where process wastewater, stormwater, and groundwater combine prior to discharge to the Great Miami River. This is important to realize because of the method the data are reported on Form 3510-2C.

The automatic sampler recorded a flow measurement at five minute intervals during a the 24-hour composite cycle. The maximum flow rate reported is the highest recorded flow rate recorded during the three composite sample cycles. The highest analyte concentration is also recorded. The resultant maximum daily mass value reported is calculated based on these two pieces of information.

Because the sampling effort occurred over the course of a one week period, maximum 30 day values are not provided. However, long-term average values are provided based on an arithmetic average of the analyte concentrations and the

average of all the flow rates recorded during the three automatic composite sampling cycles. Arithmetic averages are appropriate in this instance because of the marginal variation between average and maximum flow rates.

No data for surfactants is provided due to the inability of either the on-site lab or the contracting lab to perform the analysis per an approved analytical procedure. FERMCO believes surfactants to be present in the wastewater discharge due to the use of various soaps, detergents, and dust suppressants on site. Surfactant data reported at Manhole 175 (currently Outfall *4001) in the permit application of 1988 range from 0.07 to 0.09 mg/l (0.08 to 0.14 kg/d). FERMCO has no reason to believe that an appreciable change in site usage has occurred. The same range of concentration at Manhole 175 would now be further diluted at Manhole 176B by south plume groundwater.

The mass loading for radium (total) and radium-226 are both based on the activity of radium-226. It was assumed that all the reported radium was radium-226. The reported concentrations support this assumption. A conversion factor of 1 X 10^-6 μg/pCi was used in calculating the mass loading.

No data for bis(chloro-methyl)ether is provided because this compound is water reactive. FERMCO does not believe this substance to be present in the discharge.

Outfall 4002

The samples for the SWRB Overflow were collected in a manner to attempt to mirror an overflow event while prohibiting an actual overflow. While an overflow is always possible, FEMP policy is to take all reasonable steps to prevent such an occurrence. To mirror an overflow event FERMCO, awaited a rain event at which time the SWRB lift station pumps were deactivated allowing the basins to fill. Samples were then collected near the spillway location.

At 10:00 pm March 20, 1994, a rain event began. At 11:00 pm March 20, 1994 the SWRB lift station pumps were deactivated thus allowing the basins to fill. Samples were then collected between 12:30 am on March 21 and 12:30 am March 22, 1994. The composite sample was developed from 5 aliquots collected at 12:30 am, 7:00 am, 1:30 pm, and 7:30 pm on March 21, 1994 and 12:30 am on March 22, 1994. Those analyses requiring the grab method of sample collection were collected at 7:00 am on March 21, 1994. The SWRB lift station pumps were allowed to remain deactivated until all aliquots were collected. The total rainfall measured by the FEMP site meteorological system was 0.08 inches. Total rainfall measured at the Cincinnati/Kentucky Regional Airport measured 0.17 inches.

Concentration data has been reported. Mass loading data has not been reported because an actual overflow did not occur. FERMCO believes that an actual overflow would only occur under extreme circumstances. The last overflow event occurred on May 17 and 18, 1990. An estimated discharge volume of 0.608 million gallons (MG) and 0.010 MG respectively occurred during these events. With the installation of two new, 700 gpm pumps at the SWRB lift station under CERCLA Removal Action No. 3, which replaced the old 300 gpm pumps, the

FORM 3510-2C, SECTION V

likelihood of a future overflow event is remote.

Intake Water

Intake water samples were collected between 9:30 am and 11:00 am on April 6, 1994 at the first available location subsequent to treatment and chlorination.

Oil and grease data for the intake water is not provided. Oil and grease contamination was found in the field blank quality assurance sample making the oil and grease result suspect.

Beryllium data for the intake water is provided but may be suspect. It was reported as detected but at the detection limit of 4.0 μg/l. However, beryllium was detected in the method blank.

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: OH0009580

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 4001

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (2) MASS	d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	3. UNITS b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand *(BOD)*	< 2.0	< 22.6	NA	NA	< 2.0	< 20.1	3	mg/l	kg/d	< 2.0	< 2.3	1
b. Chemical Oxygen Demand *(COD)*	< 5.0	< 56.4	NA	NA	< 5.0	< 50.2	3	mg/l	kg/d	< 5.0	< 5.7	1
c. Total Organic Carbon *(TOC)*	55.2	622.9	NA	NA	53.9	541.1	3	mg/l	kg/d	4.7	5.4	1
d. Total Suspended Solids *(TSS)*	4.0	45.3	NA	NA	3.0	30.1	3	mg/l	kg/d	< 2.0	< 2.3	1
e. Ammonia *(as N)*	0.145	1.64	NA	NA	0.123	1.23	3	mg/l	kg/d	< 0.03	< 0.03	1
f. Flow	VALUE 2.99 MGD		VALUE NA		VALUE 2.66 MGD		864	NA	NA	VALUE .304 MGD		NA
g. Temperature *(winter)*	VALUE 14.1		VALUE NA		VALUE 12.1		12	°C		VALUE NA		NA
h. Temperature *(summer)*	VALUE 17.5		VALUE NA		VALUE NA		1	°C		VALUE NA		NA
i. pH	MINIMUM 7.42	MAXIMUM 8.16	MINIMUM NA	MAXIMUM NA			12	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X	0.1	1.1	NA	NA	0.1	1.0	2	mg/l	kg/d	< 0.1	< 0.11	1
b. Chlorine, Total Residual	X		< 0.01	< 0.11	NA	NA	<0.01	< 0.10	2	mg/l	kg/d	0.7	0.8	1
c. Color	X		44	NA	NA	NA	41	NA	3	CU	NA	0	NA	1
d. Fecal Coliform	X		670	NA	NA	NA	197	NA	2	#/100ml	NA	0	NA	1
e. Fluoride (16984-48-8)	X		0.21	2.37	NA	NA	0.20	2.00	2	mg/l	kg/d	0.09	0.10	1
f. Nitrate-Nitrite *(as N)*	X		1.1	12.4	NA	NA	0.7	7.2	3	mg/l	kg/d	< 0.02	< 0.02	1

CONTINUE ON REVERSE

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ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X' a. BELIEVED PRESENT	2. MARK 'X' b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)	X		0.46	5.2	NA	NA	0.27	2.7	3	mg/l	kg/d	< 0.1	<0.11	1
h. Oil and Grease	X		< 5.0	< 56.4	NA	NA	< 5.0	< 50.2	3	mg/l	kg/d	Invalid	Data	1
i. Phosphorus (as P), Total (7723-14-0)	X		0.149	1.68	NA	NA	0.146	1.47	3	mg/l	kg/d	0.38	0.44	1
j. Radioactivity														
(1) Alpha, Total	X		60.0	NA	NA	NA	53.3	NA	3	pci/l	NA	1.8	NA	1
(2) Beta, Total	X		35.0	NA	NA	NA	32.7	NA	3	pci/l	NA	4.1	NA	1
(3) Radium, Total	X		2.16	2.5×10^{-8}	NA	NA	2.08	2.1×10^{-8}	2	pci/l	kg/d	< 1.4	$< 1X10^{-9}$	1
(4) Radium 226, Total	X		1.9	2.2×10^{-8}	NA	NA	1.8	1.8×10^{-8}	2	pci/l	kg/d	0.059	$6.8X10^{-11}$	1
k. Sulfate (as SO_4) (14808-79-8)	X		77.4	873.4	NA	NA	73.8	740.8	2	mg/l	kg/d	66.4	76.2	1
l. Sulfide (as S)	X		2.4	27.1	NA	NA	2.4	24.1	1	mg/l	kg/d	<1.0	<1.1	1
m. Sulfite (as SO_3) (14265-45-3)		X	< 1.0	< 11.3	NA	NA	< 1.0	< 10.0	1	mg/l	kg/d	<1.0	<1.1	1
n. Surfactants	X		NO	DATA										
o. Aluminum, Total (7429-90-5)	X		64	0.72	NA	NA	48	0.48	3	ug/l	kg/d	151.0	0.17	1
p. Barium, Total (7440-39-3)	X		53	0.60	NA	NA	48.3	0.48	3	ug/l	kg/d	6	0.007	1
q. Boron, Total (7440-42-8)	X		83	0.94	NA	NA	62.3	0.63	3	ug/l	kg/d	27	0.03	1
r. Cobalt, Total (7440-48-4)	X		< 12	< 0.14	NA	NA	< 12	< 0.12	3	ug/l	kg/d	<11.0	<0.013	1
s. Iron, Total (7439-89-6)	X		608	6.86	NA	NA	517	5.19	3	ug/l	kg/d	43.0	0.05	1
t. Magnesium, Total (7439-95-4)	X		26,300	297.0	NA	NA	23,927	240.2	3	ug/l	kg/d	10,400	11.9	1
u. Molybdenum, Total (7439-98-7)	X		< 21	< 0.24	NA	NA	< 21	< 0.21	3	ug/l	kg/d	< 21.0	<0.02	1
v. Manganese, Total (7439-96-5)	X		153	1.73	NA	NA	146	1.46	3	ug/l	kg/d	< 3.0	<0.003	1
w. Tin, Total (7440-31-5)		X	< 143	< 1.61	NA	NA	< 143	< 1.44	3	ug/l	kg/d	< 143.0	<0.16	1
x. Titanium, Total (7440-32-6)	X		5	0.06	NA	NA	4.3	0.04	3	ug/l	kg/d	< 4.0	<0.005	1

00003

CONTINUED FROM PAGE 3 OF FORM 2-C

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
0H0009580	4001

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)		X		< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	< 5.0	<0.006	1
2M. Arsenic, Total (7440-38-2)		X		4.6	0.05	NA	NA	3.5	0.04	3	ug/l	kg/d	< 3.0	<0.003	1
3M. Beryllium, Total, 7440-41-7)		X		< 4.0	< 0.05	NA	NA	< 4.0	< 0.04	3	ug/l	kg/d	4.0	0.005	1
4M. Cadmium, Total (7440-43-9)		X		< 2.0	< 0.02	NA	NA	< 2.0	< 0.02	3	ug/l	kg/d	<2.0	<0.002	1
5M. Chromium, Total (7440-47-3)		X		< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	<7.0	<0.008	1
6M. Copper, Total (7440-50-8)		X		< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	<8.0	<0.009	1
7M. Lead, Total (7439-92-1)		X		1.11	0.01	NA	NA	1.04	0.01	3	ug/l	kg/d	1.25	0.001	1
8M. Mercury, Total (7439-97-6)		X		< 0.1	< 0.001	NA	NA	< 0.1	< 0.001	3	ug/l	kg/d	<0.1	< 0.0001	1
9M. Nickel, Total (7440-02-0)		X		< 12.0	< 0.14	NA	NA	< 12.0	< 0.12	3	ug/l	kg/d	<15.0	< 0.017	1
10M. Selenium, Total (7782-49-2)		X		< 3.0	< 0.03	NA	NA	< 2.0	< 0.02	3	ug/l	kg/d	<1.0	< 0.001	1
11M. Silver, Total (7440-22-4)		X		< 10.0	< 0.11	NA	NA	< 10.0	< 0.10	3	ug/l	kg/d	<10.0	< 0.01	1
12M. Thallium, Total (7440-28-0)		X		< 1.0	< 0.01	NA	NA	< 1.0	< 0.01	3	ug/l	kg/d	<1.0	< 0.001	1
13M. Zinc, Total (7440-66-6)		X		10.0	0.11	NA	NA	8.3	0.08	3	ug/l	kg/d	88.0	0.10	1
14M. Cyanide, Total (57-12-5)		X		< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	<5.0	< 0.006	1
15M. Phenols, Total		X		< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	<5.0	< 0.006	1
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS MAXIMUM < 0.02 ng/l;<0.0000002kg/d; AVG < 0.013 ng/l <0.0000002 kg/d											

5766

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TEST ING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
C/MS FRACTION – VOLATILE COMPOUNDS															
V. Acrolein (107-02-8)			X	< 10.0	< 0.11	NA	NA	< 6.7	< 0.07	3	ug/l	kg/d	< 5.0	< 0.006	1
V. Acrylonitrile (107-13-1)			X	< 10.0	< 0.11	NA	NA	< 6.7	< 0.07	3	ug/l	kg/d	< 5.0	< 0.006	1
V. Benzene (71-43-2)			X	< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	< 5.0	< 0.006	1
V. Bis (Chloromethyl) Ether (542-88-1)			X	NO DATA											
V. Bromoform (75-25-2)			X	< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	< 5.0	< 0.006	1
V. Carbon Tetrachloride (56-23-5)		X		< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	< 5.0	< 0.006	1
V. Chlorobenzene (108-90-7)			X	< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	< 5.0	< 0.006	1
V. Chlorodibromomethane (124-48-1)			X	< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	< 5.0	< 0.006	1
V. Chloroethane (75-00-3)		X		< 10.0	< 0.11	NA	NA	< 8.3	< 0.08	3	ug/l	kg/d	< 10.0	< 0.01	1
0V. 2-Chloroethylvinyl Ether (110-75-8)			X	< 10.0	< 0.11	NA	NA	< 10.0	< 0.10	3	ug/l	kg/d	< 10.0	< 0.01	1
1V. Chloroform (67-66-3)		X		< 10.0	< 0.11	NA	NA	< 8.3	< 0.08	3	ug/l	kg/d	< 10.0	< 0.01	1
2V. Dichlorobromomethane (75-27-4)			X	< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	< 5.0	< 0.006	1
3V. Dichlorodifluoromethane (75-71-8)			X	< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	< 5.0	< 0.006	1
4V. 1,1-Dichloroethane (75-34-3)		X		< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	< 5.0	<0.006	1
5V. 1,2-Dichloroethane (107-06-2)		X		< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	<5.0	<0.006	1
6V. 1,1-Dichloroethylene (75-35-4)		X		< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	<5.0	<0.006	1
7V. 1,2-Dichloropropane (78-87-5)			X	< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	<5.0	<0.006	1
8V. 1,3-Dichloropropylene (542-75-6)			X	< 10.0	< 0.11	NA	NA	< 6.7	< 0.07	3	ug/l	kg/d	<5.0	<0.006	1
9V. Ethylbenzene (100-41-4)		X		< 5.0	< 0.06	NA	NA	< 5.0	< 0.05	3	ug/l	kg/d	<5.0	<0.006	1
20V. Methyl Bromide (74-83-9)			X	< 10.0	< 0.11	NA	NA	< 10.0	< 0.10	3	ug/l	kg/d	<10.0	<0.01	1
21V. Methyl [illegible]			X	< 10.0	< 0.11	NA	NA	< 10.0	< 0.10	2	ug/l	kg/d	<10.0	<0.01	1

CONTINUED FROM PAGE V-4

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
OH0009580	4001

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)		X		<5.0	<0.06	NA	NA	<5.0	<0.05	3	ug/l	kg/d	<5.0	<0.006	1
23V. 1,1,2,2-Tetrachloroethane (79-34-5)		X		<5.0	<0.06	NA	NA	<5.0	<0.05	3	ug/l	kg/d	<5.0	<0.006	1
24V. Tetrachloroethylene (127-18-4)		X		<5.0	<0.06	NA	NA	<5.0	<0.05	3	ug/l	kg/d	<5.0	<0.006	1
25V. Toluene (108-88-3)		X		<5.0	<0.06	NA	NA	<5.0	<0.05	3	ug/l	kg/d	<5.0	<0.006	1
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X	<5.0	<0.06	NA	NA	<5.0	<0.05	3	ug/l	kg/d	<5.0	<0.006	1
27V. 1,1,1-Trichloroethane (71-55-6)		X		<5.0	<0.06	NA	NA	<5.0	<0.05	3	ug/l	kg/d	<5.0	<0.006	1
28V. 1,1,2-Trichloroethane (79-00-5)		X		<5.0	<0.06	NA	NA	<5.0	<0.05	3	ug/l	kg/d	<5.0	<0.006	1
29V. Trichloroethylene (79-01-6)		X		<5.0	<0.06	NA	NA	<5.0	<0.05	3	ug/l	kg/d	<5.0	<0.006	1
30V. Trichlorofluoromethane (75-69-4)		X		<10.0	<0.11	NA	NA	<6.7	<0.07	3	ug/l	kg/d	<5.0	<0.006	1
31V. Vinyl Chloride (75-01-4)		X		<10.0	<0.11	NA	NA	<6.7	<0.07	3	ug/l	kg/d	<5.0	<0.006	1
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X	<20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
2A. 2,4-Dichlorophenol (120-83-2)			X	<20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
3A. 2,4-Dimethylphenol (105-67-9)			X	<20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X	<100.0	<1.13	NA	NA	<66.7	<0.67	3	ug/l	kg/d	<50.0	<0.06	1
5A. 2,4-Dinitrophenol (51-28-5)			X	<100.0	<1.13	NA	NA	<66.7	<0.67	3	ug/l	kg/d	<50.0	<0.06	1
6A. 2-Nitrophenol (88-75-5)			X	<20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
7A. 4-Nitrophenol (100-02-7)			X	<100.0	<1.13	NA	NA	<66.7	<0.67	3	ug/l	kg/d	<50.0	<0.06	1
8A. P-Chloro-M-Cresol (59-50-7)			X	<40.0	<0.45	NA	NA	<26.7	<0.27	3	ug/l	kg/d	<20.0	<0.02	1
9A. Pentachlorophenol (87-86-5)		X		<100.0	<1.13	NA	NA	<66.7	<0.67	3	ug/l	kg/d	<50.0	<0.06	1
10A. Phenol (108-95-2)		X		<20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
11A. 2,4,6-Trichlorophenol (88-06-2)			X	<20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
2B. Acenaphtylene (208-96-8)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
3B. Anthracene (120-12-7)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
4B. Benzidine (92-87-5)			X	< 200.0	<2.26	NA	NA	< 133.3	<1.34	3	ug/l	kg/d	< 100.0	<0.11	1
5B. Benzo *(a)* Anthracene (56-55-3)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
6B. Benzo *(a)* Pyrene (50-32-8)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
7B. 3,4-Benzo-fluoranthene (205-99-2)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
8B. Benzo *(ghi)* Perylene (191-24-2)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
9B. Benzo *(k)* Fluoranthene (207-08-9)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
10B. Bis *(2-Chloro-ethoxy)* Methane (111-91-1)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
11B. Bis *(2-Chloro-ethyl)* Ether (111-44-4)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
12B. Bis *(2-Chloroiso-propyl)* Ether (102-60-1)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
13B. Bis *(2-Ethyl-hexyl)* Phthalate (117-81-7)		X		< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
15B. Butyl Benzyl Phthalate (85-68-7)		X		< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
16B. 2-Chloro-naphthalene *(91-58-7)*			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
18B. Chrysene (218-01-9)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
19B. Dibenzo *(a,h)* Anthracene (53-70-3)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
20B. 1,2-Dichloro-benzene (95-50-1)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1
21B. 1,3-Dichloro-benzene (541-73-1)			X	< 20.0	<0.23	NA	NA	< 13.3	<0.13	3	ug/l	kg/d	< 10.0	<0.01	1

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EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
OH0009580	4001

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION — BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1,4-Dichlorobenzene (106-46-7)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
23B. 3,3'-Dichlorobenzidine (91-94-1)			X	< 40.0	<0.45	NA	NA	<26.7	<0.27	3	ug/l	kg/d	<20.0	<0.02	1
24B. Diethyl Phthalate (84-66-2)		X		< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
25B. Dimethyl Phthalate (131-11-3)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
26B. Di-N-Butyl Phthalate (84-74-2)		X		< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
27B. 2,4-Dinitrotoluene (121-14-2)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
28B. 2,6-Dinitrotoluene (606-20-2)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
29B. Di-N-Octyl Phthalate (117-84-0)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7)			X	< 200.0	<2.26	NA	NA	<133.3	<1.34	3	ug/l	kg/d	<100.0	<0.11	1
31B. Fluoranthene (206-44-0)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
32B. Fluorene (86-73-7)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
33B. Hexachlorobenzene (118-74-1)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
34B. Hexachlorobutadiene (87-68-3)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
35B. Hexachlorocyclopentadiene (77-47-4)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
36B. Hexachloroethane (67-72-1)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
38B. Isophorone (78-59-1)		X		< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
39B. Naphthalene (91-20-3)		X		< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
40B. Nitrobenzene (98-95-3)			X	< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
41B. N-Nitrosodimethylamine (62-75-9)		X		< 20.0	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1
42B. N-Nitrosodi-N-Propylamine		X		< 20.00	<0.23	NA	NA	<13.3	<0.13	3	ug/l	kg/d	<10.0	<0.01	1

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
3B. N-Nitrosodiphenylamine (86-30-6)			X	< 20.0	< 0.23	NA	NA	< 13.3	< 0.13	3	ug/l	kg/d	< 10.0	< 0.01	1
4B. Phenanthrene (85-01-8)			X	< 20.0	< 0.23	NA	NA	< 13.3	< 0.13	3	ug/l	kg/d	< 10.0	< 0.01	1
5B. Pyrene (129-00-0)			X	< 20.0	< 0.23	NA	NA	< 13.3	< 0.13	3	ug/l	kg/d	< 10.0	< 0.01	1
6B. 1,2,4 - Trichlorobenzene (120-82-1)			X	< 20.0	< 0.23	NA	NA	< 13.3	< 0.13	3	ug/l	kg/d	< 10.0	< 0.01	1
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X	< 0.05	< 0.0006	NA	NA	< 0.05	< 0.0005	3	ug/l	kg/d	< 0.05	< 0.00006	1
2P. α-BHC (319-84-6)			X	< 0.05	< 0.0006	NA	NA	< 0.05	< 0.0005	3	ug/l	kg/d	< 0.05	< 0.00006	1
3P. β-BHC (319-85-7)			X	< 0.05	< 0.0006	NA	NA	< 0.05	< 0.0005	3	ug/l	kg/d	< 0.05	< 0.00006	1
4P. γ-BHC (58-89-9)			X	< 0.05	< 0.0006	NA	NA	< 0.05	< 0.0005	3	ug/l	kg/d	< 0.05	< 0.00006	1
5P. δ-BHC (319-86-8)			X	< 0.05	< 0.0006	NA	NA	< 0.05	< 0.0005	3	ug/l	kg/d	< 0.05	< 0.00006	1
6P. Chlordane (57-74-9)			X	< 0.1	< 0.001	NA	NA	< 0.1	< 0.001	3	ug/l	kg/d	< 0.1	< .0001	1
7P. 4,4'-DDT (50-29-3)			X	< 0.1	< 0.001	NA	NA	< 0.1	< 0.001	3	ug/l	kg/d	< 0.1	< .0001	1
8P. 4,4'-DDE (72-55-9)			X	< 0.1	< 0.001	NA	NA	< 0.1	< 0.001	3	ug/l	kg/d	< 0.1	< .0001	1
9P. 4,4'-DDD (72-54-8)			X	< 0.1	< 0.001	NA	NA	< 0.1	< 0.001	3	ug/l	kg/d	< 0.1	< .0001	1
10P. Dieldrin (60-57-1)			X	< 0.1	< 0.001	NA	NA	< 0.1	< 0.001	3	ug/l	kg/d	< 0.1	< .0001	1
11P. α-Endosulfan (115-29-7)			X	< 0.05	< 0.0006	NA	NA	< 0.05	< 0.0005	3	ug/l	kg/d	< 0.05	< .00006	1
12P. β-Endosulfan (115-29-7)			X	< 0.1	< 0.001	NA	NA	< 0.1	< 0.001	3	ug/l	kg/d	< 0.1	< .0001	1
13P. Endosulfan Sulfate (1031-07-8)			X	< 0.1	< 0.001	NA	NA	< 0.1	< 0.001	3	ug/l	kg/d	< 0.1	< .0001	1
14P. Endrin (72-20-8)			X	< 0.1	< 0.001	NA	NA	< 0.1	< 0.001	3	ug/l	kg/d	< 0.1	< .0001	1
15P. Endrin Aldehyde (7421-93-4)			X	< 0.1	< 0.001	NA	NA	< 0.1	< 0.001	3	ug/l	kg/d	< 0.1	< .0001	1
16P. Heptachlor (76-44-8)			X	< 0.05	< .0006	NA	NA	< 0.05	< 0.0005	3	ug/l	kg/d	< 0.05	< .00006	1

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CONTINUED FROM PAGE V-8

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
0H0009580	4001

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION — PESTICIDES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)		X		< 0.05	< 0.0006	NA	NA	< 0.05	< 0.0005	3	ug/l	kg/d	< 0.05	<.00006	1
18P. PCB-1242 (53469-21-9)			X	< 0.5	< 0.006	NA	NA	< 0.5	< 0.005	3	ug/l	kg/d	< 0.5	<0.0006	1
19P. PCB-1254 (11097-69-1)			X	< 1.0	< 0.011	NA	NA	< 1.0	< 0.010	3	ug/l	kg/d	< 1.0	<0.001	1
20P. PCB-1221 (11104-28-2)			X	< 0.5	< 0.006	NA	NA	< 0.5	< 0.005	3	ug/l	kg/d	< 0.5	<0.0006	1
21P. PCB-1232 (11141-16-5)			X	< 0.5	< 0.006	NA	NA	< 0.5	< 0.005	3	ug/l	kg/d	< 0.5	<0.0006	1
22P. PCB-1248 (12672-29-6)			X	< 0.5	< 0.006	NA	NA	< 0.5	< 0.005	3	ug/l	kg/d	< 0.5	<0.0006	1
23P. PCB-1260 (11096-82-5)			X	< 1.0	< 0.011	NA	NA	< 1.0	< 0.010	3	ug/l	kg/d	< 1.0	<0.001	1
24P. PCB-1016 (12674-11-2)			X	< 0.5	< 0.006	NA	NA	< 0.5	< 0.005	3	ug/l	kg/d	< 0.5	<0.0006	1
25P. Toxaphene (8001-35-2)			X	< 1.0	< 0.011	NA	NA	< 1.0	< 0.010	3	ug/l	kg/d	< 1.0	<0.001	1

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PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item I, of Form 1)*: 0H0009580

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 4002

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS *(specify if blank)* a. CONCENTRATION	b. MASS	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand *(BOD)*	6.9	NA	NA	NA	NA	NA	1	mg/l	NA			
b. Chemical Oxygen Demand *(COD)*	25.0	NA	NA	NA	NA	NA	1	mg/l	NA			
c. Total Organic Carbon *(TOC)*	28.3	NA	NA	NA	NA	NA	1	mg/l	NA			
d. Total Suspended Solids *(TSS)*	7.0	NA	NA	NA	NA	NA	1	mg/l	NA			
e. Ammonia *(as N)*	0.126	NA	NA	NA	NA	NA	1	mg/l	NA			
f. Flow	VALUE See Introduction to		VALUE Analytical Data		VALUE					VALUE		
g. Temperature *(winter)*	VALUE 12.1		VALUE NA		VALUE NA		1	°C		VALUE		
h. Temperature *(summer)*	VALUE 27.0		VALUE NA		VALUE NA		1	°C		VALUE		
i. pH	MINIMUM 6.9	MAXIMUM 9.02	MINIMUM NA	MAXIMUM NA				STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X	< 0.1	NA	NA	NA	NA	NA	1	mg/l	NA			
b. Chlorine, Total Residual	X		0.33	NA	NA	NA	NA	NA	1	mg/l	NA			
c. Color	X		22	NA	NA	NA	NA	NA	1	CU	NA			
d. Fecal Coliform	X		0	NA	NA	NA	NA	NA	1	#/100ml	NA			
e. Fluoride (16984-48-8)	X		0.39	NA	NA	NA	NA	NA	1	mg/l	NA			
f. Nitrate-Nitrite *(as N)*	X		1.0	NA	NA	NA	NA	NA	1	mg/l	NA			

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CONTINUE ON REVERSE

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X' a. BELIEVED PRESENT	2. MARK 'X' b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)	X		4.084	NA	NA	NA	NA	NA	1	mg/l	NA			
h. Oil and Grease	X		< 5.0	NA	NA	NA	NA	NA	1	mg/l	NA			
i. Phosphorus (as P), Total (7723-14-0)	X		0.108	NA	NA	NA	NA	NA	1	mg/l	NA			
j. Radioactivity														
(1) Alpha, Total	X		430	NA	NA	NA	NA	NA	1	pCi/l	NA			
(2) Beta, Total	X		170	NA	NA	NA	NA	NA	1	pCi/l	NA			
(3) Radium, Total	X		1.1	NA	NA	NA	NA	NA	1	pCi/l	NA			
(4) Radium 226, Total	X		< 1.4	NA	NA	NA	NA	NA	1	pCi/l	NA			
k. Sulfate (as SO_4) (14808-79-8)	X		61.0	NA	NA	NA	NA	NA	1	mg/l	NA			
l. Sulfide (as S)	X		< 1.0	NA	NA	NA	NA	NA	1	mg/l	NA			
m. Sulfite (as SO_3) (14265-45-3)	X		2.0	NA	NA	NA	NA	NA	1	mg/l	NA			
n. Surfactants	X		NO DATA											
o. Aluminum, Total (7429-90-5)	X		89.0	NA	NA	NA	NA	NA	1	ug/l	NA			
p. Barium, Total (7440-39-3)	X		35.0	NA	NA	NA	NA	NA	1	ug/l	NA			
q. Boron, Total (7440-42-8)	X		78.0	NA	NA	NA	NA	NA	1	ug/l	NA			
r. Cobalt, Total (7440-48-4)		X	< 12.0	NA	NA	NA	NA	NA	1	ug/l	NA			
s. Iron, Total (7439-89-6)	X		156.0	NA	NA	NA	NA	NA	1	ug/l	NA			
t. Magnesium, Total (7439-95-4)	X		13200	NA	NA	NA	NA	NA	1	ug/l	NA			
u. Molybdenum, Total (7439-98-7)	X		< 21.0	NA	NA	NA	NA	NA	1	ug/l	NA			
v. Manganese, Total (7439-96-5)	X		31.0	NA	NA	NA	NA	NA	1	ug/l	NA			
w. Tin, Total (7440-31-5)		X	< 143.0	NA	NA	NA	NA	NA	1	ug/l	NA			
x. Titanium, Total (7440-32-6)		X	< 4.0	NA	NA	NA	NA	NA	1	ug/l	NA			

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CONTINUED FROM PAGE 3 OF FORM 2-C

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
OH0009580	4002

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X	< 5.0	NA	NA	NA	NA	NA	1	ug/l	NA			
2M. Arsenic, Total (7440-38-2)		X		< 3.0	NA	NA	NA	NA	NA	1	ug/l	NA			
3M. Beryllium, Total, 7440-41-7)			X	< 4.0	NA	NA	NA	NA	NA	1	ug/l	NA			
4M. Cadmium, Total (7440-43-9)		X		3.0	NA	NA	NA	NA	NA	1	ug/l	NA			
5M. Chromium, Total (7440-47-3)		X		< 5.0	NA	NA	NA	NA	NA	1	ug/l	NA			
6M. Copper, Total (7440-50-8)		X		8.0	NA	NA	NA	NA	NA	1	ug/l	NA			
7M. Lead, Total (7439-92-1)		X		< 1.0	NA	NA	NA	NA	NA	1	ug/l	NA			
8M. Mercury, Total (7439-97-6)			X	< 0.1	NA	NA	NA	NA	NA	1	ug/l	NA			
9M. Nickel, Total (7440-02-0)		X		< 12.0	NA	NA	NA	NA	NA	1	ug/l	NA			
10M. Selenium, Total (7782-49-2)		X		4.31	NA	NA	NA	NA	NA	1	ug/l	NA			
11M. Silver, Total (7440-22-4)		X		10.0	NA	NA	NA	NA	NA	1	ug/l	NA			
12M. Thallium, Total (7440-28-0)			X	< 1.0	NA	NA	NA	NA	NA	1	ug/l	NA			
13M. Zinc, Total (7440-66-6)		X		39.0	NA	NA	NA	NA	NA	1	ug/l	NA			
14M. Cyanide, Total (57-12-5)			X	< 5.0	NA	NA	NA	NA	NA	1	ug/l	NA			
15M. Phenols, Total		X		6.3	NA	NA	NA	NA	NA	1	ug/l	NA			
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

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CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)			X												
4V. Bis (Chloromethyl) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon Tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)			X												
8V. Chlorodibromomethane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloroethylvinyl Ether (110-75-8)			X												
11V. Chloroform (67-66-3)			X												
12V. Dichlorobromomethane (75-27-4)			X												
13V. Dichlorodifluoromethane (75-71-8)			X												
14V. 1,1-Dichloroethane (75-34-3)			X												
15V. 1,2-Dichloroethane (107-06-2)			X												
16V. 1,1-Dichloroethylene (75-35-4)			X												
17V. 1,2-Dichloropropane (78-87-5)			X												
18V. 1,3-Dichloropropylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl Bromide (74-83-9)			X												
21V. Methyl Chloride (74-87-3)			X												

 CONTINUE ON PAGE V-5

CONTINUED FROM PAGE V-4

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
0H0009580	4002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)			X												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)			X												
24V. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoromethane (75-69-4)			X												
31V. Vinyl Chloride (75-01-4)			X												
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichlorophenol (120-83-2)			X												
3A. 2,4-Dimethylphenol (105-67-9)			X												
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X												
5A. 2,4-Dinitrophenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-Cresol (59-50-7)			X												
9A. Pentachlorophenol (87-86-5)			X												
10A. Phenol (108-95-2)			X												
11A. 2,4,6-Trichlorophenol (88-06-2)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphtylene (208-96-8)			X												
3B. Anthracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo *(a)* Anthracene (56-55-3)			X												
6B. Benzo *(a)* Pyrene (50-32-8)			X												
7B. 3,4-Benzo-fluoranthene (205-99-2)			X												
8B. Benzo *(ghi)* Perylene (191-24-2)			X												
9B. Benzo *(k)* Fluoranthene (207-08-9)			X												
10B. Bis *(2-Chloro-ethoxy)* Methane (111-91-1)			X												
11B. Bis *(2-Chloro-ethyl)* Ether (111-44-4)			X												
12B. Bis *(2-Chloroiso-propyl)* Ether (102-60-1)			X												
13B. Bis *(2-Ethyl-hexyl)* Phthalate (117-81-7)			X												
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X												
15B. Butyl Benzyl Phthalate (85-68-7)			X												
16B. 2-Chloro-naphthalene (91-58-7)			X												
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo *(a,h)* Anthracene (53-70-3)			X												
20B. 1,2-Dichloro-benzene (95-50-1)			X												
21B. 1,3-Dichloro-benzene (541-73-1)			X												

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CONTINUED FROM PAGE V-6

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
0H0009580	4002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3'-Dichlorobenzidine (91-94-1)			X												
24B. Diethyl Phthalate (84-66-2)			X												
25B. Dimethyl Phthalate (131-11-3)			X												
26B. Di-N-Butyl Phthalate (84-74-2)			X												
27B. 2,4-Dinitrotoluene (121-14-2)			X												
28B. 2,6-Dinitrotoluene (606-20-2)			X												
29B. Di-N-Octyl Phthalate (117-84-0)			X												
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachlorobenzene (118-74-1)			X												
34B. Hexachlorobutadiene (87-68-3)			X												
35B. Hexachlorocyclopentadiene (77-47-4)			X												
36B. Hexachloroethane (67-72-1)			X												
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitrosodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
43B. N-Nitrosodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4 - Trichlorobenzene (120-82-1)			X												
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			X												
3P. β-BHC (319-85-7)			X												
4P. γ-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												
6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α-Endosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

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CONTINUED FROM PAGE V-8

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
0H0009580	4002

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICIDES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

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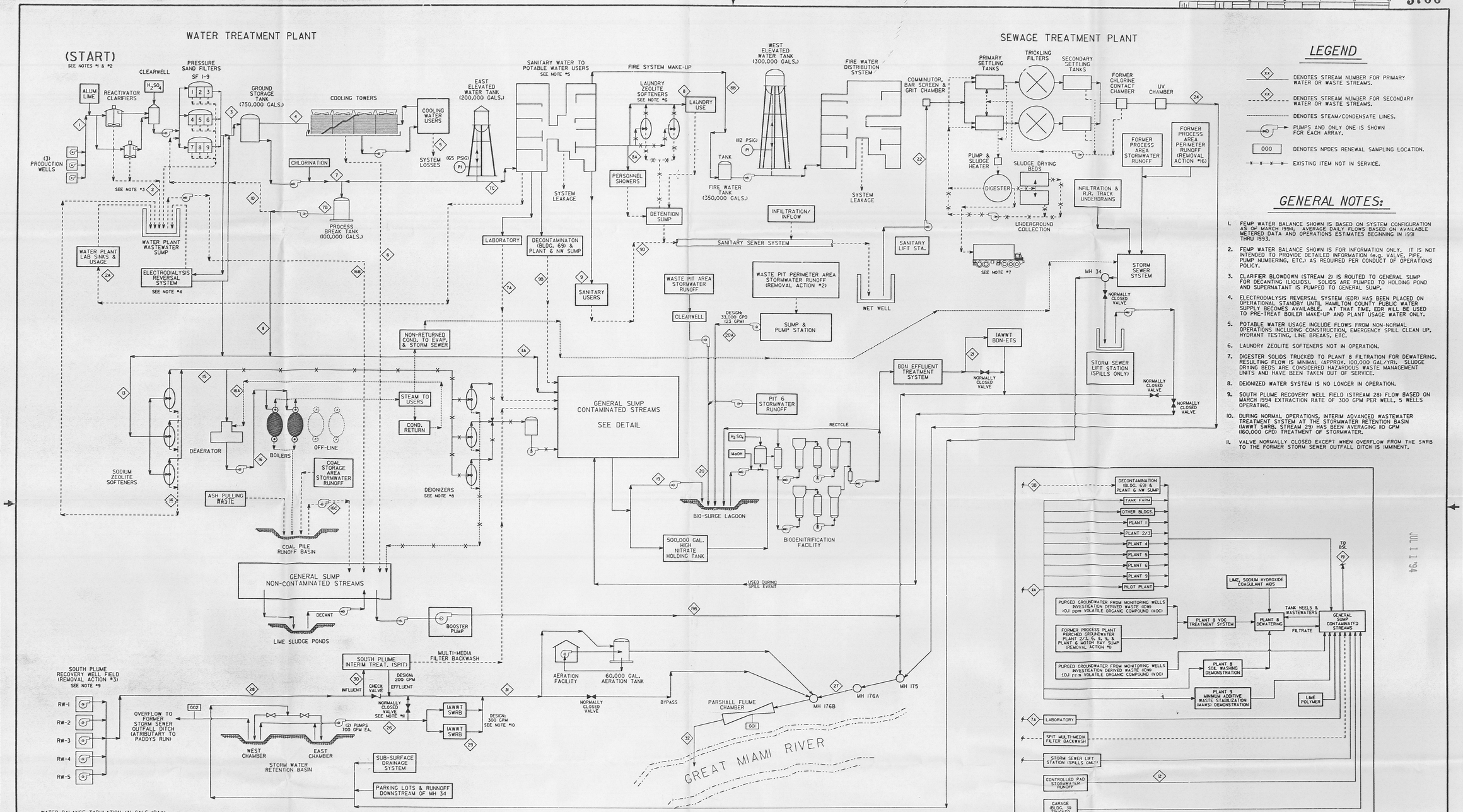
FORM 3510-2C, SECTION V D

The following list of pollutants is an attempt to identify those hazardous substances which have some degree of probability of being present in the FEMP wastewater discharge. Those marked with an asterisk represent the chemicals which appear on both Table 2C-3 of EPA Form 3510-2C instructions and the initial screening list of contaminants of concern developed during the Operable Unit 1 (OU1), OU2, OU3, OU4, and OU5 Remedial Investigation study.

1. POLLUTANT	2. SOURCE
Asbestos	Pipe insulation & building material
Carbon Disulfide *	Groundwater contaminant
Cresol	Railroad ties
Malathion *	Soil contaminant
Methyl Parathion *	Soil contaminant
Strontium	Soil & groundwater contaminant
Styrene *	Soil contaminant
Uranium	Process wastewaters, contaminated stormwater and groundwater
Vanadium *	Soil & groundwater contaminant
Vinyl Acetate *	Soil & groundwater contaminant
Xylene *	Soil & groundwater contaminant
Benzoic Acid *	Soil & groundwater contaminant
Uranyl Nitrate (UNH)	Significant inventory of UNH remains on site yet to be processed
Sulfuric Acid	Used for pH adjustment @ BDN facility and SWRB-IAWWT
Hydrofluoric acid	Inventory remains from past production; yet to be processed
Toluene *	Soil & groundwater contaminant
Chlorine	Residual chlorine maintained in potable water
Trichloroethylene *	Groundwater contaminant

In addition to these compounds, it is expected that methanol also appears in the discharge because methanol is used as the carbon source in the biological conversion of nitrate to gaseous nitrogen at the biodenitrification facility.



LEGEND

- DENOTES STREAM NUMBER FOR PRIMARY WATER OR WASTE STREAMS.
- DENOTES STREAM NUMBER FOR SECONDARY WATER OR WASTE STREAMS.
- DENOTES STEAM/CONDENSATE LINES.
- PUMPS AND ONLY ONE IS SHOWN FOR EACH ARRAY.
- 000 DENOTES NPDES RENEWAL SAMPLING LOCATION.
- EXISTING ITEM NOT IN SERVICE.

GENERAL NOTES:

1. FEMP WATER BALANCE SHOWN IS BASED ON SYSTEM CONFIGURATION AS OF MARCH 1994. AVERAGE DAILY FLOWS BASED ON AVAILABLE METERED DATA AND OPERATIONS ESTIMATES BEGINNING IN 1991 THRU 1993.
2. FEMP WATER BALANCE SHOWN IS FOR INFORMATION ONLY. IT IS NOT INTENDED TO PROVIDE DETAILED INFORMATION (e.g. VALVE, PIPE, PUMP NUMBERING, ETC.) AS REQUIRED PER CONDUCT OF OPERATIONS POLICY.
3. CLARIFIER BLOWDOWN (STREAM 2) IS ROUTED TO GENERAL SUMP FOR DECANTING (LIQUIDS). SOLIDS ARE PUMPED TO HOLDING POND AND SUPERNATANT IS PUMPED TO GENERAL SUMP.
4. ELECTRODIALYSIS REVERSAL SYSTEM (EDR) HAS BEEN PLACED ON OPERATIONAL STANDBY UNTIL HAMILTON COUNTY PUBLIC WATER SUPPLY BECOMES AVAILABLE. AT THAT TIME, EDR WILL BE USED TO PRE-TREAT BOILER MAKE-UP AND PLANT USAGE WATER ONLY.
5. POTABLE WATER USAGE INCLUDE FLOWS FROM NON-NORMAL OPERATIONS INCLUDING CONSTRUCTION, EMERGENCY SPILL CLEAN UP, HYDRANT TESTING, LINE BREAKS, ETC.
6. LAUNDRY ZEOLITE SOFTENERS NOT IN OPERATION.
7. DIGESTER SOLIDS TRUCKED TO PLANT 8 FILTRATION FOR DEWATERING. RESULTING FLOW IS MINIMAL (APPROX. 100,000 GAL/YR). SLUDGE DRYING BEDS ARE CONSIDERED HAZARDOUS WASTE MANAGEMENT UNITS AND HAVE BEEN TAKEN OUT OF SERVICE.
8. DEIONIZED WATER SYSTEM IS NO LONGER IN OPERATION.
9. SOUTH PLUME RECOVERY WELL FIELD (STREAM 28) FLOW BASED ON MARCH 1994 EXTRACTION RATE OF 300 GPM PER WELL, 5 WELLS OPERATING.
10. DURING NORMAL OPERATIONS, INTERIM ADVANCED WASTEWATER TREATMENT SYSTEM AT THE STORMWATER RETENTION BASIN (IAWWT SWRB, STREAM 29) HAS BEEN AVERAGING 110 GPM (160,000 GPD) TREATMENT OF STORMWATER.
11. VALVE NORMALLY CLOSED EXCEPT WHEN OVERFLOW FROM THE SWRB TO THE FORMER STORM SEWER OUTFALL DITCH IS IMMINENT.

JUL 1 1 '94

WATER BALANCE TABULATION (IN GALS./DAY):

1 M PRODUCTION WELLS	2 E REACTIVATOR BLOWDOWN	24 E WATER PLANT USAGE	7 D GROUND STORAGE TANK	4 E COOL. TWR. MAKE-UP	5 D COOL. TWR. LOSSES	6 E COOL. TWR. BLOWDOWN	7 D SANITARY WATER	14 E LABORATORY
320,000	7000	1000	313,000	9000	8000	1000	304,000	5000

79 D PROCESS BREAK TANK	1C E POTABLE WATER USERS	8 E LAUNDRY SUPPLY	8A E PERSONNEL SHOWERS	8B E FIRE SYSTEM MAKE-UP	9 D SANITARY USERS	9B E DECON. (BLDG. 69) & PLT. 6 NW SUMP	9D D SANITARY WASTE	10 E SAND FILTER BACKWASH
125,000	179,000	35,000	14,000	12,000	112,000	11,000	111,000	14,000

11 D NON-POTABLE WATER	14 E PLANT USAGE	12 D CONTROLLED PAD STM. WATER RUNOFF	13 M BOILER MAKE-UP	14 E SODIUM ZEOLITE REGEN.	15 D SOFTENED WATER	16 M BOILER FEEDWATER	16A E CONDENSATE RETURN	16B M WATER PLANT WASTEWATER SUMP	16C M COAL PILE RUNOFF BASIN SUMP	19 M GEN. SUMP BSL	19B M GEN. SUMP TO MH-175	20 E PIT STM. WATER RUNOFF	20A E PIT PERIMETER STM. WATER RUNOFF	21 M BDN-ETS EFFLUENT	22 D SANITARY LIFT STATION	24 M STP TO MH-175	26 E SWRB TRANSFER PUMPS	27 D MH-175	28 M SOUTH PLUME RECOVERY WELL FIELD	29 M IAWWT SWRB	30 M SOUTH PLUME INTERIM TREAT. (SPIT) & B/WASH	3 D AERATION FACILITY	32 D OUTFALL
111,000	10,000	17,000	101,000	10,000	91,000	165,000	74,000	32,000	15,000	43,000	48,000	21,000	33,000	97,000	160,000	160,000	310,000	305,000	2,160,000	160,000	288,000	2,470,000	2,775,000

WATER BALANCE TABULATION LEGEND

- M - STREAM IN WHICH AVERAGE DAILY FLOW IS BASED ON METERED DATA.
- E - STREAM IN WHICH AVERAGE DAILY FLOW IS BASED ON OPERATION ESTIMATES (e.g. TANK VOLUME, PUMP DISCHARGE RATE, ETC.)
- D - STREAM IN WHICH AVERAGE DAILY FLOW WAS DERIVED ARITHMETICALLY.

NO.	REVISIONS	DATE	DWN. BY	APPD.
0	REVISED PER RES #2357	5/2/94	S.J.S.	
B	REVISED PER RES #1408	7/11/90	S.J.S.	
A	REVISED PER RES #1283	8/10/89	J.M.L.	

NOTE: FERMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE
FRACTIONS ± 1/16
ANGLES ± 0° - 30'
DECIMALS
.X ± 0.1
.XX ± 0.03
.XXX ± 0.005
.XXXX ± 0.0005
ORIG. RELEASE DATE

APPROVALS				
CIVIL & STR.			SAFETY ENG.	
ELECTRICAL			MAINTENANCE	
ENGINEER	Thomas L. Crawford	5/2/94	Q.A.	
INSTRUMENT			FIRE PROTECT.	
MECHANICAL			WASTE MANAGE.	
			SECURITY	
			CRU 5	
CHECKED			UTILITIES	
APPROVED			COMPLIANCE	

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
FERMCO
Fernald Environmental Management Project
U.S. DEPARTMENT OF ENERGY

WATER BALANCE TABULATION

NPDES PERMIT RENEWAL APPLICATION - 1994

RES-1081/CRG.*PDW.00
DATE 8/22/88
DRAWN MIKE LOCKE
20X-5500-F-00377 | 0

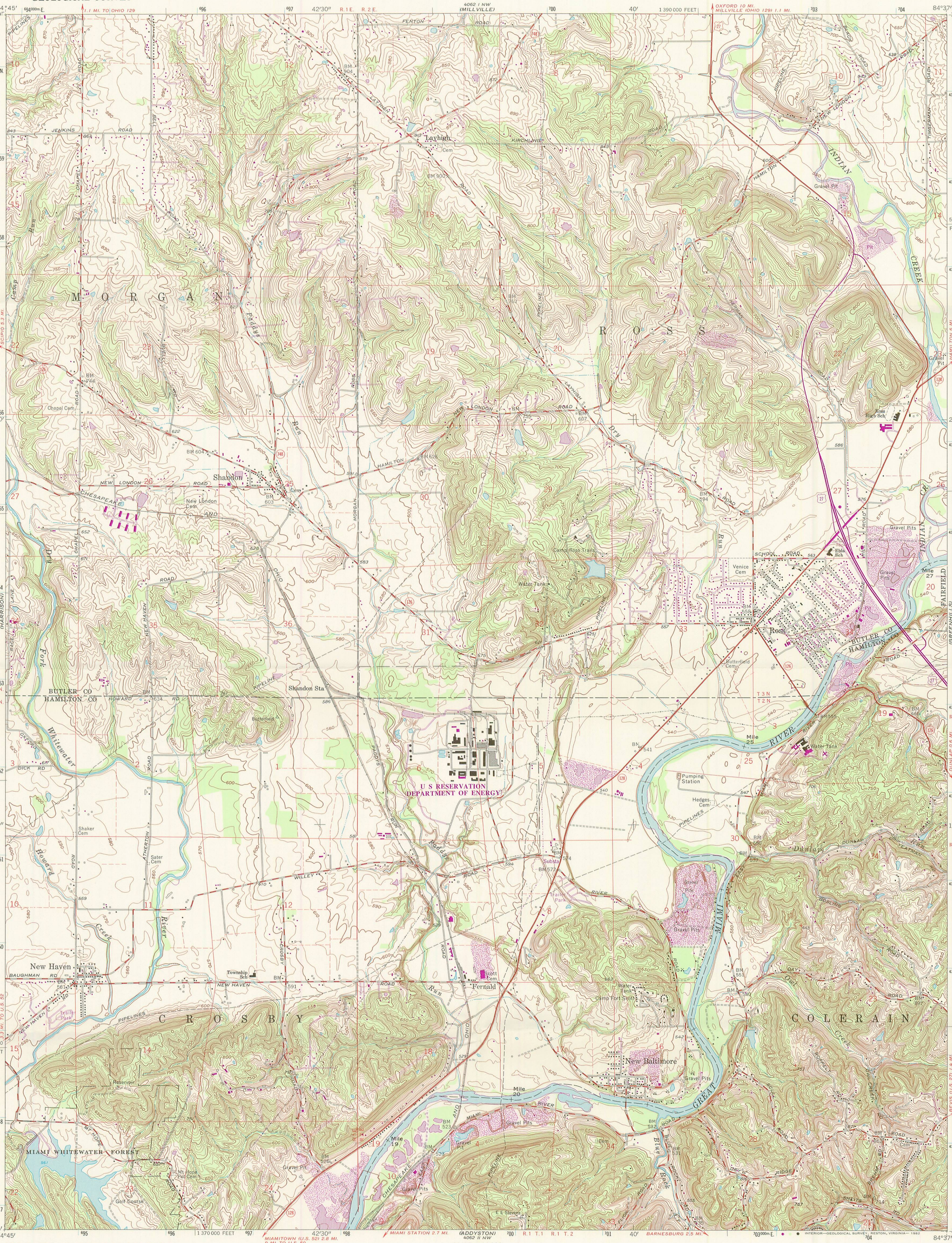
FILE NAME: /RES2357/20XF0377.DGN

000014

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SHANDON QUADRANGLE
OHIO
7.5 MINUTE SERIES (TOPOGRAPHIC)

5766



Mapped, edited, and published by the Geological Survey
in cooperation with the Defense Mapping Agency
Revised in cooperation with State of Ohio agencies

Control by USGS, NOS/NOAA, and City of Cincinnati

Topography by photogrammetric methods from aerial photographs taken 1954. Field checked 1955. Revised 1965

Polyconic projection. 10,000-foot grid ticks based on Ohio coordinate system, south zone. 1000-meter Universal Transverse Mercator grid ticks, zone 16, shown in blue. 1927 North American Datum. To place on the predicted North American Datum 1983 move the projection lines 3 meters south and 5 meters west as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

Area west of the Great Miami River lies within the Miami River Survey
Area east of the Great Miami River lies within the Between the Miamis
Land lines based on the Great Miami River Base. Dotted land lines established by private subdivision of the Symmes Purchase

There may be private inholdings within the boundaries of the National or State reservations shown on this map

MN GN
2½° 44 MILS
1°28′ 26 MILS
UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

000008

OHIO
QUADRANGLE LOCATION

Revisions shown in purple and woodland compiled in cooperation with State of Ohio agencies from aerial photographs taken 1979 and other sources. This information not field checked. Map edited 1981

ROAD CLASSIFICATION

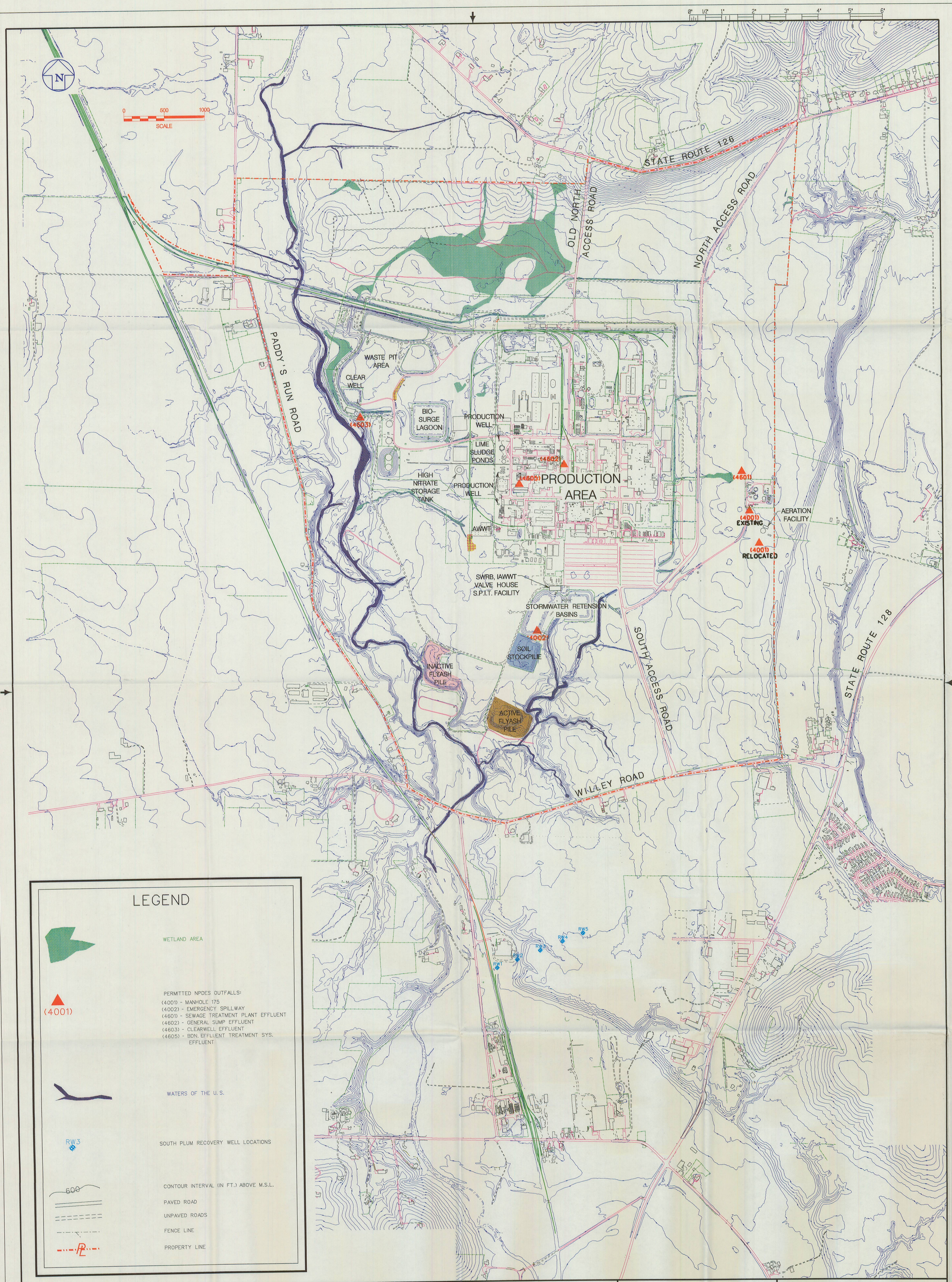
Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
U. S. Route — State Route

SHANDON, OHIO

N3915—W8437.5/7.5

1965
PHOTOREVISED 1981
DMA 4062 I SW—SERIES V852

5766



NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.

NOTE: FERMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE
FRACTIONS ± 1/16
ANGLES ± 0°- 30'
DECIMALS
.X ± 0.1
.XX ± 0.03
.XXX ± 0.005
.XXXX ± 0.0010
ORIG. RELEASE DATE

APPROVALS					
CIVIL & STR.			SAFETY ENG.		
ELECTRICAL			MAINTENANCE		
ENGINEER			Q.A.		
INSTRUMENT			FIRE PROTECT.		
MECHANICAL			WASTE MANAGE		
REG. PROGRAMS			SECURITY		
CHECKED			CRU		
APPROVED					

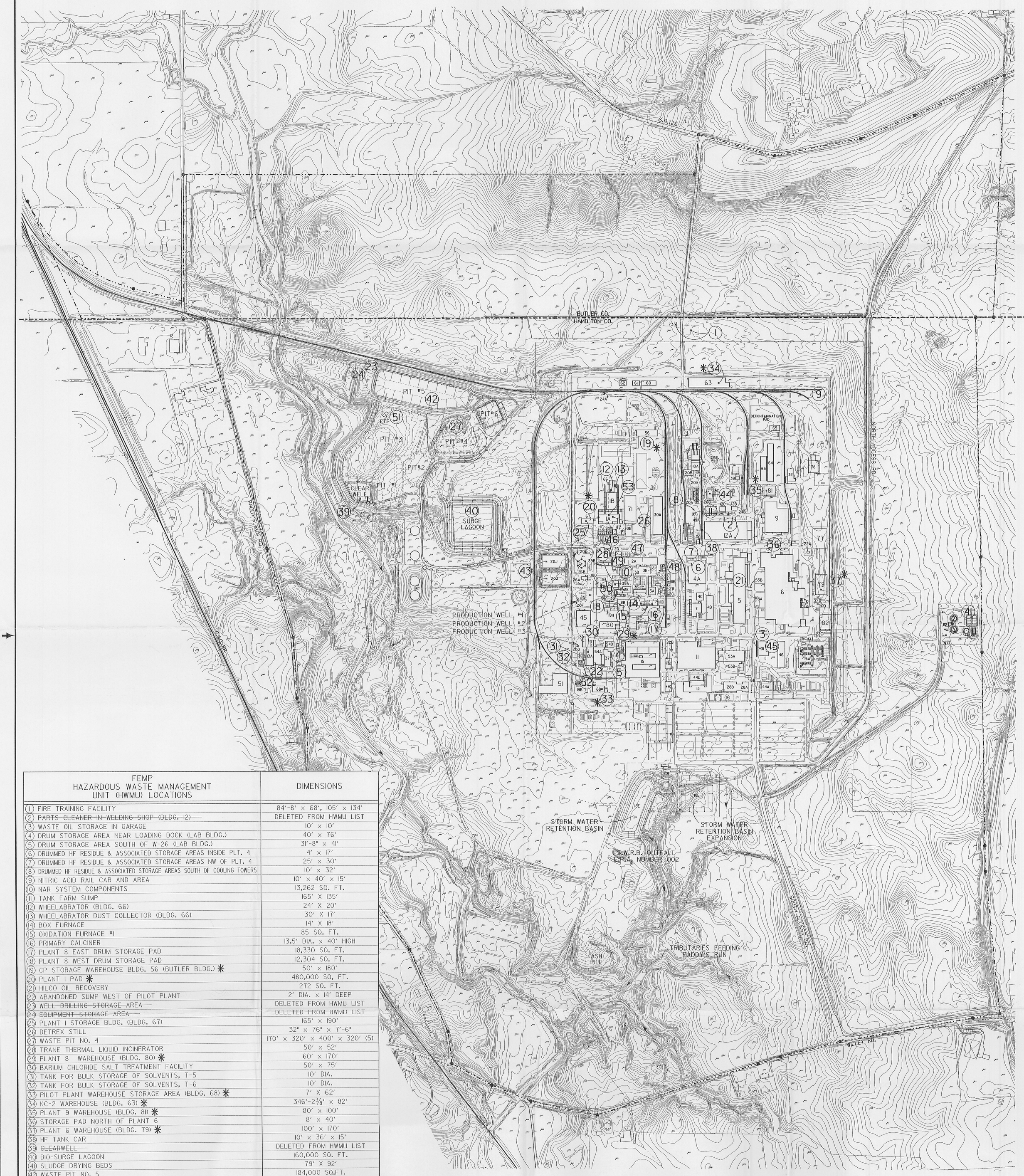
FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
FERMCO
Fernald #3
Environmental Management Project
U.S. DEPARTMENT OF ENERGY

FEMP SITE
NPDES PERMIT RENEWAL APPLICATION 1994

R. E. S. #2332
DATE 9/20/91
DRAWN MIKE LOCKE
00X-5500-G-02594 0

FILE NAME: SERVER1:MODEL/PERMIT/00XG2594.DGN

5766



FEMP HAZARDOUS WASTE MANAGEMENT UNIT (HWMU) LOCATIONS	DIMENSIONS
(1) FIRE TRAINING FACILITY	84'-8" × 68', 105' × 134'
(2) ~~PARTS CLEANER IN WELDING SHOP (BLDG. 12)~~	DELETED FROM HWMU LIST
(3) WASTE OIL STORAGE IN GARAGE	10' × 10'
(4) DRUM STORAGE AREA NEAR LOADING DOCK (LAB BLDG.)	40' × 76'
(5) DRUM STORAGE AREA SOUTH OF W-26 (LAB BLDG.)	31'-8" × 41'
(6) DRUMMED HF RESIDUE & ASSOCIATED STORAGE AREAS INSIDE PLT. 4	4' × 17'
(7) DRUMMED HF RESIDUE & ASSOCIATED STORAGE AREAS NW OF PLT. 4	25' × 30'
(8) DRUMMED HF RESIDUE & ASSOCIATED STORAGE AREAS SOUTH OF COOLING TOWERS	10' × 32'
(9) NITRIC ACID RAIL CAR AND AREA	10' × 40' × 15'
(10) NAR SYSTEM COMPONENTS	13,262 SQ. FT.
(11) TANK FARM SUMP	165' X 135'
(12) WHEELABRATOR (BLDG. 66)	24' X 20'
(13) WHEELABRATOR DUST COLLECTOR (BLDG. 66)	30' X 17'
(14) BOX FURNACE	14' X 18'
(15) OXIDATION FURNACE #1	85 SQ. FT.
(16) PRIMARY CALCINER	13.5' DIA. × 40' HIGH
(17) PLANT 8 EAST DRUM STORAGE PAD	18,330 SQ. FT.
(18) PLANT 8 WEST DRUM STORAGE PAD	12,304 SQ. FT.
(19) CP STORAGE WAREHOUSE BLDG. 56 (BUTLER BLDG.) *	50' × 180'
(20) PLANT 1 PAD *	480,000 SQ, FT.
(21) HILCO OIL RECOVERY	272 SQ. FT.
(22) ABANDONED SUMP WEST OF PILOT PLANT	2' DIA. × 14' DEEP
(23) ~~WELL DRILLING STORAGE AREA~~	DELETED FROM HWMU LIST
(24) ~~EQUIPMENT STORAGE AREA~~	DELETED FROM HWMU LIST
(25) PLANT 1 STORAGE BLDG. (BLDG. 67)	165' × 190'
(26) DETREX STILL	32" × 76" × 7'-6"
(27) WASTE PIT NO. 4	170' × 320' × 400' × 320' (5)
(28) TRANE THERMAL LIQUID INCINERATOR	50' × 52'
(29) PLANT 8 WAREHOUSE (BLDG. 80) *	60' × 170'
(30) BARIUM CHLORIDE SALT TREATMENT FACILITY	50' × 75'
(31) TANK FOR BULK STORAGE OF SOLVENTS, T-5	10' DIA.
(32) TANK FOR BULK STORAGE OF SOLVENTS, T-6	10' DIA.
(33) PILOT PLANT WAREHOUSE STORAGE AREA (BLDG. 68) *	7' X 62'
(34) KC-2 WAREHOUSE (BLDG. 63) *	346'-2 3/8" × 82'
(35) PLANT 9 WAREHOUSE (BLDG. 81) *	80' × 100'
(36) STORAGE PAD NORTH OF PLANT 6	8' × 40'
(37) PLANT 6 WAREHOUSE (BLDG. 79) *	100' × 170'
(38) HF TANK CAR	10' × 36' × 15'
(39) ~~CLEARWELL~~	DELETED FROM HWMU LIST
(40) BIO-SURGE LAGOON	160,000 SQ. FT.
(41) SLUDGE DRYING BEDS	79' X 92'
(42) WASTE PIT NO. 5	184,000 SQ.FT.
(43) ~~LIME SLUDGE PONDS~~	DELETED FROM HWMU LIST
(44) ~~COAL PILE RUNOFF BASIN~~	DELETED FROM HWMU LIST
(45) ~~UST #5~~	DELETED FROM HWMU LIST
(46) URANYL NITRATE TANKS (NFS STORAGE AREA)	61'-7" × 53'-9"
(47) URANYL NITRATE TANKS (NORTH OF PLANT 2)	63'-6" × 40'-6"
(48) URANYL NITRATE TANKS (SOUTHEAST OF PLANT 2)	54'-7" × 45'-4"
(49) URANYL NITRATE TANKS (DIGESTION AREA)	127' × 20'
(50) URANYL NITRATE TANKS (RAFFINATE BLDG.)	14' × 50', 15' × 30'
(51) EXPERIMENTAL TREATMENT FACILITY (ETF)	20' × 48'
(52) NORTH & SOUTH SOLVENT TANKS (PILOT PLANT)	6'-6" DIA.
(53) SAFE GEOMETRY DIGESTION SUMP	8" DIA. × 12" DEEP

*-HWMU'S THE FEMP IS SEEKING TO PERMIT

NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.
3	REVISED PER RES #2283	10/1/93	S.J.S.	GEP	
2	ADDED HWMU NO.53	2/10/92	S.J.S.	GEP	
1	REVISED PER RES #1841	1/29/92	S.J.S.	GEP	

NOTE: FERMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE
FRACTIONS ± 1/32
ANGLES ± 0° - 30'
DECIMALS
.X ± 0.1
.XX ± 0.03
.XXX ± 0.005
.XXXX ± 0.0010
ORIG. RELEASE DATE

APPROVALS

CIVIL & STR.			SAFETY ENG.		
ELECTRICAL			MAINTENANCE		
ENGINEER			O.A.		
INSTRUMENT			FIRE PROTECT.		
MECHANICAL			WASTE MANAGE		
			SECURITY		
			CRU		
CHECKED					
APPROVED					

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
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U.S. DEPARTMENT OF ENERGY

SITE PLAN — RCRA PART A

FIGURE 1-1
FACILITY LOCATION MAP
SCALE: 1" = 300'

RES #1626
DATE 5-24-91
DRAWN S.J.SMOCK

75X-5500-X-00171 | 3

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FILE NAME: /91RCRA/75XX00171.DGN