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WETLANDS DELINEATION REPORT OF THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT BUTLER AND HAMILTON COUNTIES, OHIO JUNE 1993

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Wetlands Delineation Report
of the
Fernald Environmental Management Project
Butler and Hamilton Counties, Ohio

by

EBASCO ENVIRONMENTAL
A Division of Ebasco Services Incorporated

June 1993

Prepared For The

Fernald Environmental Management Project
Fernald Environmental Restoration Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704

Under Contract DE-AC05-920R21972

U.S. Department of Energy
Fernald Field Office

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FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION

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Under Contract DE-AC05-920R21972

U.S. Department of Energy

FERNALD FIELD OFFICE

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EXECUTIVE SUMMARY

An investigation of the 1,050 acre Fernald Environmental Management Project (FEMP), situated in Butler and Hamilton Counties, Ohio, was conducted to determine the extent of jurisdictional wetlands and waters of the United States. A request for a jurisdictional determination will be submitted to the U.S. Army Corps of Engineers (COE) to verify the extent and location of FEMP wetlands and waters of the United States identified in this report. The jurisdictional determination will service as a basis for demonstrating compliance with Section 404 of the Clean Water Act and 10 CFR 1022 and will enable the FEMP to avoid or minimize impacts, to the maximum extent practicable, to these resources during future remedial activities.

Section 121(e) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires that remedial actions at hazardous waste sites meet the substantive, although not the administrative or permitting, requirements of Section 404 of the Clean Water Act. These substantive requirements include avoidance and minimization of wetland impacts, mitigation of unavoidable impacts, and compliance with applicable conditions of Section 404 permits that otherwise would be required in the absence of the CERCLA permit exemption. Pursuant to Section XIII (B) of the Amended CERCLA Consent Agreement, the FEMP must submit documentation to federal and state regulatory agencies demonstrating how the substantive requirements will be met.

The information contained in this wetland delineation report is intended to provide support for documentation/demonstration of compliance with the substantive requirements of federal regulations. Although many FEMP projects will be exempted from the requirement to obtain permit approval under CERCLA, it is conceivable that some non-CERCLA FEMP projects will be required to undergo full Section 404 permitting. The terms "onsite" and "site" refer to the contiguous 1,050 acres of FEMP property.

The 1,050 acre FEMP property is a U.S. Department of Energy (DOE) facility, which produced uranium metals for military defense. Uranium was produced at the FEMP from 1951 until 1989, when production was suspended. Production formally ended in 1991, and the mission of environmental restoration of the site began. Although no longer in production, some radioactive and hazardous materials are currently stored onsite.

The FEMP site is located within a rural agricultural area that lies approximately 18 miles to the northwest of downtown Cincinnati, Ohio. Aside from the centrally located former production facility, which occupies approximately 136 acres (13%) of the entire property, most of the site is either pastureland or forested.

Field investigations were conducted from December 11 to 18, 1992 and January 7 to 16, 1993. Wetlands were identified using the three parameter methodology (Routine Onsite Determination) presented within the Corps of Engineers Wetlands Delineation Manual[1]. This methodology requires that positive wetland indicators are present for three parameters: vegetation, soils and hydrology. Onsite waters of the United States were determined pursuant to 33 CFR 328.

A total of 35.9 acres of freshwater wetlands was delineated on the FEMP site. Vegetation, soil and hydrologic characteristics were recorded for 40 sample stations located throughout the site. Delineated wetlands included 26.58 acres of palustrine forested wetlands, 6.95 acres of drainage ditches/swales, and 2.37 acres of isolated persistent emergent and isolated scrub/shrub persistent emergent wetlands. Onsite waters of the United States are confined to Paddys Run and its unnamed tributary and total approximately 8.9 acres.

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1.0 INTRODUCTION

An investigation of the Fernald Environmental Management Project (FEMP), situated in Butler and Hamilton Counties, Ohio, was conducted to determine the extent of jurisdictional wetlands and waters of the United States (U.S.). A delineation of jurisdictional wetlands and waters of the U.S. is necessary to avoid or minimize impacts to these resources, and to enable evaluation by the Army Corps of Engineers (COE) if impacts are unavoidable. Therefore, a request for a jurisdictional determination is being submitted to the U.S. Army Corps of Engineers to verify the extent and location of wetlands and waters of the United States at the FEMP. The jurisdictional determination will service as a basis for demonstrating compliance with Section 404 of the Clean Water Act and 10 CFR 1022 and will enable FEMP to avoid or minimize impacts, to the maximum extent practicable, to these resources during future remedial activities.

Section 121 (e) of CERCLA requires that remedial actions at hazardous waste sites meet the substantive, although not the administrative or permitting, requirements of Section 404 of the Clean Water Act. These substantive requirements include avoidance and minimization of wetland impacts, mitigation of unavoidable impacts, and compliance with applicable conditions of Section 404 permits that otherwise would be required in the absence of the CERCLA permit exemption. Pursuant to Section XIII (B) of the 1990 Amended CERCLA Consent Agreement, FEMP must submit documentation to federal and state regulatory agencies demonstrating how the substantive requirements will be met.

The information contained in this wetland delineation report is intended to provide support for documentation/demonstration of compliance with the substantive requirements of federal regulations. Although many FEMP projects will be exempt from the requirement to obtain permit approval it is conceivable that at some non-CERCLA FEMP projects may be required to undergo full Section 404 permitting. Future activities at the FEMP may require a Section 404 permit under the Clean Water Act, if wetlands are

to be dredged or filled. The terms "onsite" and "site" refer to the contiguous 1,050 acres of FEMP property.

In order for remedial and construction activities at the FEMP to meet requirements of the Clean Water Act (Section 404) and 10 CFR 1022 "Compliance with Floodplain/Wetland Environmental Review Requirements," onsite jurisdictional wetlands were identified and delineated. The wetland delineation was performed in accordance with the methodology provided by the 1987 COE Wetlands Delineation Manual[1].

This report presents the methodology, available background information regarding wetlands, and results of the field delineation. Appendices include captioned photographs of the site, a list of plant species recorded during the field determinations and their wetland indicator status, soil logs, and completed data forms.

1.1 History and General Description of the Site

Formerly known as the Feed Materials Productions Center (FMPC), the 1,050 acre FEMP property is a U.S. Department of Energy (DOE) facility which formerly produced uranium metals for military defense. Construction of the production facilities began in 1951 and the major portion was completed by 1954. Uranium metal was produced onsite from 1951 until 1989, when production was suspended. In 1990, DOE transferred management of the site from its Defense Programs to the Office of Environmental Restoration and Waste Management. Production was formally ended in 1991 when the site was renamed the Fernald Environmental Management Project (FEMP) and given the new mission of environmental restoration of the site. Although no longer in production, some radioactive and hazardous materials once used by the FEMP and at other DOE facilities are stored onsite.

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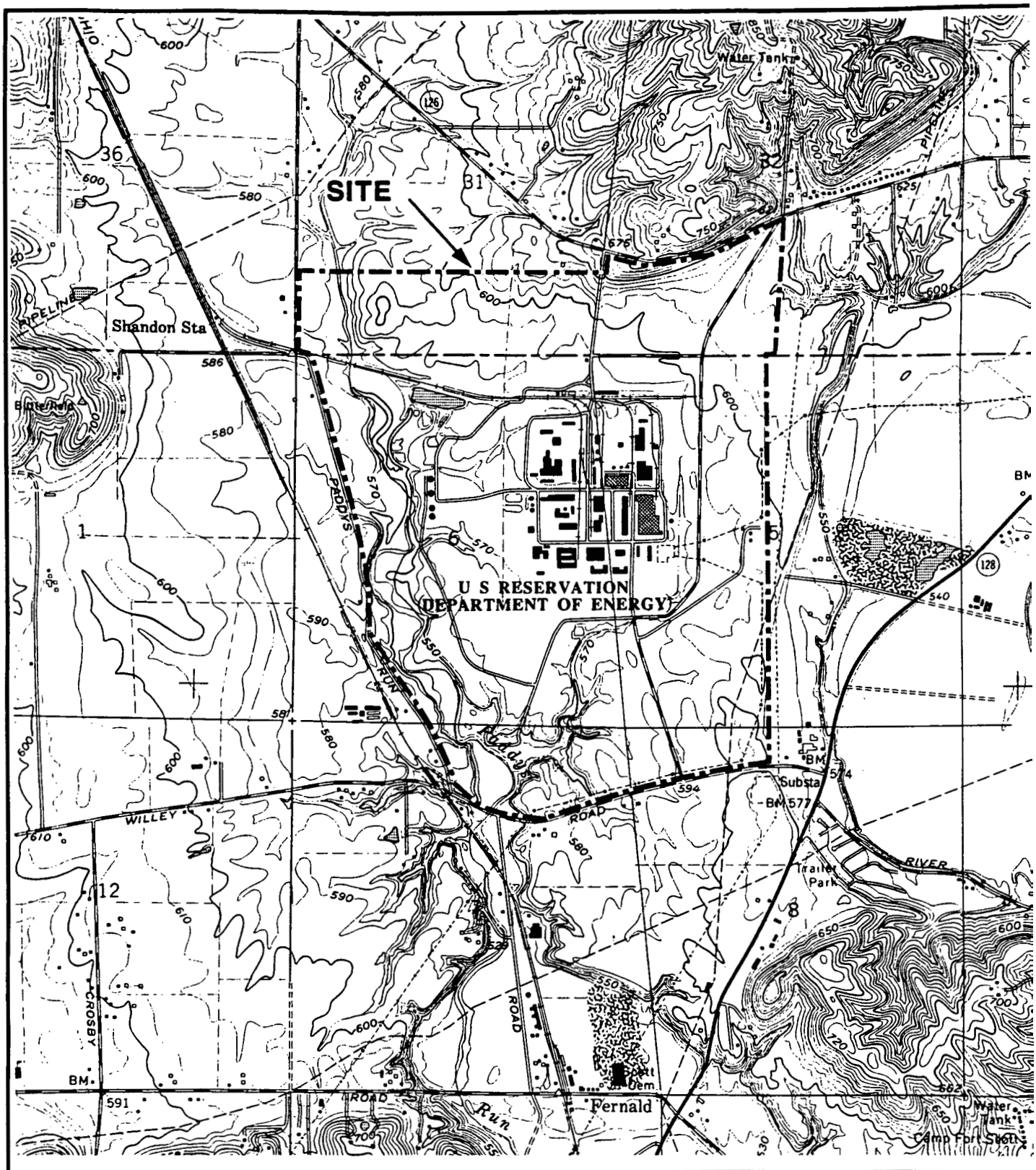
The FEMP is located within a rural agricultural area that lies approximately 18 miles northwest of downtown Cincinnati, Ohio. The property is bounded by Paddys Run Road to the west, Willey Road to the south, and Route 126 to the north (Figure 1). The eastern boundary is formed by a generally straight line an average of 6,000 feet east of Paddys Run Road. The FEMP is located at approximately 39° 18' 06" north latitude and 84° 42' 30" west longitude at its center. Topography is mainly level to gently sloping throughout, with elevations ranging from a high point of approximately 700 feet above mean sea level (MSL) within the northeastern corner, down to a low point of approximately 550 feet above MSL along Paddys Run within the southwestern corner. However, slopes associated with onsite stream channels are severe. The FEMP site occurs within the Greater Miami River Drainage Basin.

Aside from the centrally located former production facility, which occupies approximately 136 acres (13%) of the 1,050 acre property, most of the site is either pastureland or forested. Prior to construction in 1951, nearly the entire site was in agricultural use and portions of the site outside the present-day production area are still leased for cattle grazing. Two pine plantations, located in the northeastern and southwestern sections of the site, were planted in 1973 as part of an environmental improvement project. Most of the site, with the exception of the easternmost section, drains to the west/southwest towards Paddys Run. Paddys Run is an intermittent ungaged stream that runs roughly parallel to the western boundary of the FEMP. A number of smaller tributaries are deeply cut into the terrain throughout the western and southwestern portions of the site.

2.0 METHODOLOGY

2.1 Wetlands

Field investigations were conducted from December 11 to December 18, 1992, and from January 7 to January 16, 1993. Wetlands were identified in the field using the three-



SCALE

0 2000 4000 FEET

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION

FEMP WETLANDS DELINEATION

FIGURE 1

SITE LOCATION
(USGS, SHANDON, OHIO QUADRANGLE 1965, PHOTOREVISED 1981)

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parameter methodology (Routine Onsite Determination) presented within the 1987 Corps of Engineers Wetlands Delineation Manual[1], which considers vegetation, hydrologic, and soil characteristics of the areas under investigation. The 1987 manual was used rather than the more recent 1989 Federal Manual for Identifying and Delineating because Federal law (Energy and Water Development Appropriations Act of 1992) prohibits the use of the 1989 manual by the COE. As of August 1991, the COE had adopted use of the 1987 manual.

In general, the three-parameter methodology presented in the 1987 manual requires that positive wetland indicators must be present for vegetation, hydrology and soils for an area to be identified as wetland. Field characterization of wetlands on the FEMP site was accomplished through the determination of the presence or absence of wetland vegetation and hydrology, and hydric soil at sample stations located both along transects of varying length and at selected representative observation points within each vegetative community.

The presence of hydrophytic (wetland) vegetation was assessed by determining the wetland indicator status[2] of dominant plants species within each stratum. At each sample station, dominant plant species were identified[3 4] and recorded by strata (tree, shrub, woody vine, and herbaceous). Woody vegetation was identified by examination of diagnostic characteristics, e.g., buds, leaf scars, fruit, and bark. Herbaceous vegetation was identified by examination of persistent parts, e.g., leaves, stems and fruiting bodies. Dominant herbs, saplings and shrubs were recorded within a five-foot radius of each selected sample station (point), and within a 30-foot radius for trees and woody vines. An area was designated as positive for hydrophytic vegetation when greater than 50 percent of the dominant plant species observed were identified as hydrophytic on the National List of Plant Species that Occur in Wetlands: Region 1[2]. This list assigns a wetland indicator status to plants are that found in wetlands. These indicator categories are:

- Obligate Wetland (OBL). Almost always occurs in wetlands (probability greater than 99 percent)

- Facultative Wetland (FACW). Usually occurs in wetlands (probability 67 to 99 percent)

- Facultative (FAC). Equally likely to occur in wetlands or uplands (probability 34 to 66 percent)

- Facultative Upland (FACU). Usually occurs in nonwetlands, but occasionally found in wetlands (probability 1 to 33 percent)

- Obligate Upland (UPL). Rarely occurs in wetlands (probability less than 1 percent)

Additionally, a plus (+) or minus (-) associated with an indicator status indicates a frequency towards the higher or lower range of the probability, respectively.

Extracted soil borings were examined for hydric soil indicators. Hydric (wetland) soils possess characteristics that are associated with reducing (saturated) soil conditions. In the field, soil profiles were examined to a depth of 24 inches or greater and recorded in standard soil log format. Matrix color was recorded for each horizon within the 24 inches sample along with the color, frequency, size, and prominence of mottles, if present. Soil structure and texture were also noted. If the soil matrix just below the A horizon or at ten inches (whichever was shallower), possessed a chroma of two or less in mottled soils, or a chroma of one or less in unmottled soils, the area was considered to be hydric. In addition to color and presence of mottles, hydric soil indicators such as the presence high organic matter content, sulfidic odors, and iron concretions were noted.

Presence or absence of wetland hydrology, *i.e.*, indication of inundation and/or saturation at the surface, was assessed at each station. Drainage patterns of the areas under investigation were also observed. Standing and flowing waters were noted as well as depth to standing water in the soil bore holes. In addition to direct observations of inundated or saturated soil conditions, indirect hydrologic indicators such as drift lines, sediment deposition and watermarks were noted.

The wetland/upland boundary was identified from perceived changes in vegetation, soils, hydrology, and topography. The delineated boundary was corroborated by data obtained at transect sample stations located on either side of the boundary and from unrecorded data sampled at numerous paired stations (short transects) between or outside established transects. The boundary was flagged at approximately 75 foot intervals and labeled.

2.2 Waters of the United States

Onsite waters of the U.S. were determined pursuant to 33 CFR 328. There are three categories of waters of the U.S.: territorial seas, tidal waters, and nontidal waters. Only nontidal waters occur on the FEMP. Waters of the U.S. are defined as: those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use in interstate transport or foreign commerce; all interstate waters; all other intrastate waters, the degradation of which could affect interstate or foreign commerce; all impoundments of waters; tributaries to the above mentioned waters; the territorial seas; and wetlands adjacent to all of the above mentioned waters.

Federal jurisdictional limits extend laterally to the entire water surface and bed of a navigable waterbody, which includes all land and waters below the ordinary high water mark. This jurisdiction extends to the edge of all such waterbodies, regardless of depth or obstruction by shoals, vegetation or other barriers. The "ordinary high water mark" on non-tidal rivers is the line on the shore established by the fluctuations of water and

indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.

3.0 INFORMATION REVIEW

Information reviewed prior to onsite delineation of wetlands included:

- U.S. Geological Survey 7.5 minute Series Topographic map (Shandon Quadrangle, 1965, photorevised 1980)
- a one foot contour interval topographic map (photogrammetrically produced from aerial photography taken May 3, 1986)
- recent aerial photography
  - -- April 12, 1985 (Scale 1:15160)
  - -- April 20, 1988, (Scale 1:6,800)
- the Soil Conservation Service's Butler and Hamilton Counties' 1980 and 1982 soil surveys,[5, 6] respectively, and the 1992 and 1991 hydric soils lists,[7, 8] respectively
- the Soil Conservation Service's 1987 Hydric Soils of the United States list[9]
- the 1990 offsite wetland determination report[10].

No USFWS National Wetlands Inventory Maps are currently available for the FEMP site.

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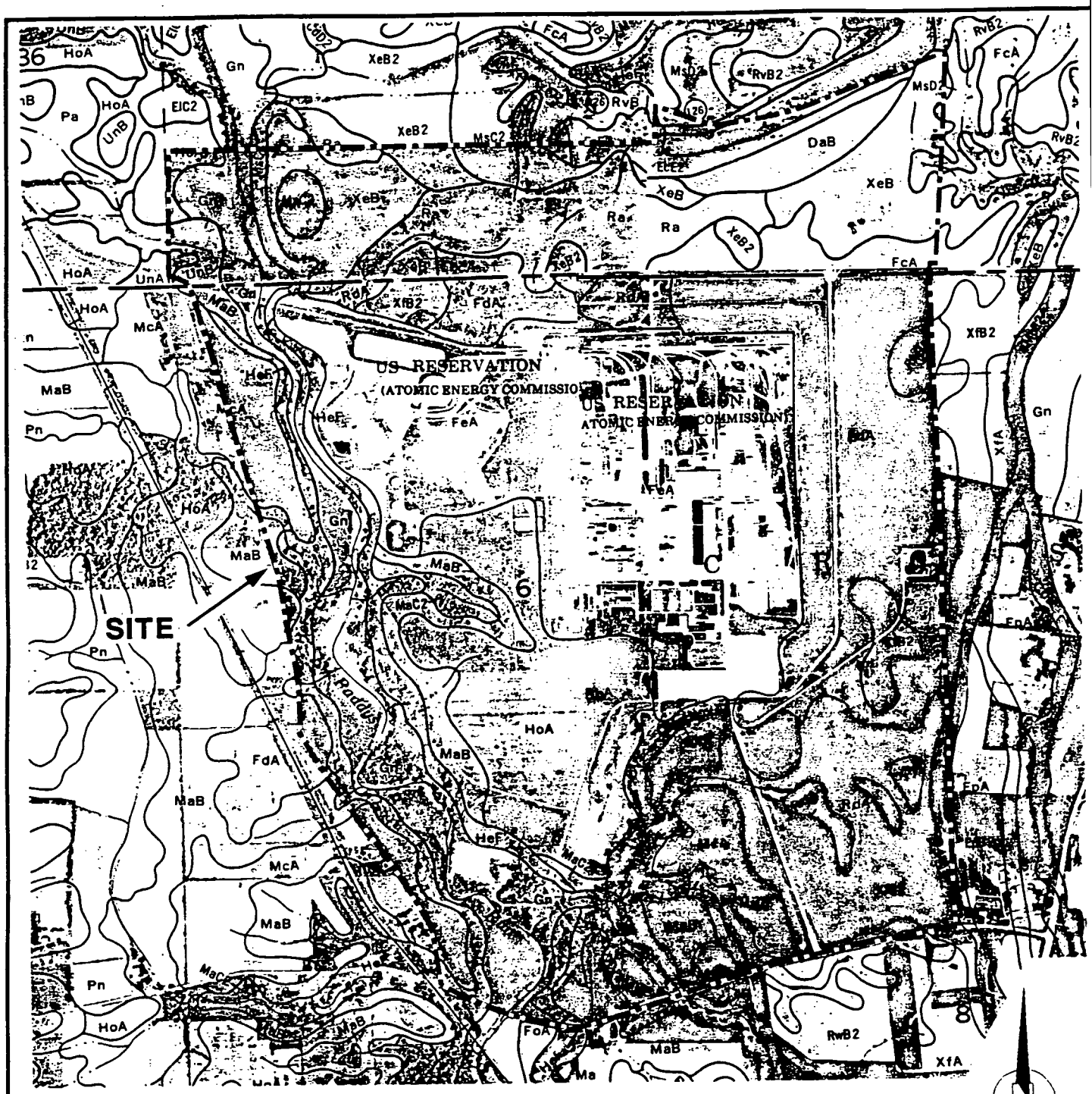
The above described documents were reviewed prior to conducting field work to identify those areas that have the highest probability of being wetlands. Additionally, these documents provided assurance that all areas were thoroughly examined during field reconnaissance. Specifically, soil surveys were used to identify hydric and poorly drained soils. Topographic maps and aerial photography were used to assess and identify streams, drainages, and topographic features typically associated with wetlands.

3.1 Soil Conservation Service Soil Surveys

The Soil Conservation Service's Soil Surveys of Butler and Hamilton counties indicates a total of fifteen different soil series occurring on the FEMP site (Figure 2). Of these mapped soil types, only the very poorly drained Ragsdale series, located within the north central portion of the site, is included on Butler and Hamilton Counties' hydric soils lists[7, 8]. The Ragsdale soil series is a deep, nearly level soil that usually occurs in long, narrow depressions or in shallow basins. The water table in this soil is at or near the surface between December and May. Approximately 53 acres of the site are mapped as Ragsdale.

In addition to areas mapped as hydric soils, approximately 364 acres of the property consist of soils considered to be somewhat poorly drained. These areas include mapping units of the Fincastle, Henshaw and Raub soil series. While not listed as hydric, these series do possess saturated conditions near the surface during the winter and early spring and may exhibit hydric characteristics in low lying areas and/or drainageways.

Soils on the remainder of the site are moderately well drained or well drained. However, several of these soils may have hydric inclusions. The Butler and Hamilton Counties hydric soil lists also includes information on soils which have the highest probability of containing hydric inclusions and lists 15 of the 26 soil units that occur onsite (Table 1). Depending on the soil unit, these hydric inclusions are most likely to occur in depressions, drainageways or seeps.



SYMBOL	SOIL LEGEND
DaB	Dana silt loam, 2–6 percent slopes.
EcE2	Eden silty clay loam, 15–25 percent slopes, moderately eroded
EcF2	Eden silty clay loam, 25–50 percent slopes, moderately eroded
FcA	Fincastle silt loam, 0–2 percent slopes (Butler County)
FdA	Fincastle silt loam, 0–2 percent slopes (Hamilton County)
FeA	Fincastle–Urban land complex, 0–2 percent slopes
FoA	Fox loam, 0–2 percent slopes
Gn	Genesee loam, 0–2 percent slopes
HeF	Hennepin silt loam, 35–60 percent slopes
HoA	Henshaw silt loam, 0–2 percent slopes
MaB	Markland silty clay loam, 2–6 percent slopes
MaC2	Markland silty clay loam, 6–12 percent slopes, eroded
McA	Martinsville silt loam, 0–2 percent slopes
MnC2	Miamian silt loam, 8–15 percent slopes eroded
MoE2	Miamian–Hennepin silt loams, 25–35 percent slopes eroded
MsC2	Miamian–Russel silt loams, 6–12 percent slopes
MsD2	Miamian–Russell silt loams, 12–18 percent slopes moderately eroded
Ra	Ragsdale silty clay loam, level percent slopes
RdA	Raub silt loam, 0–2 percent slopes
RvB	Russell–Miamian silt loams, 2–6 percent slopes
RwB2	Russell silt loam, 3–8 percent slopes eroded
UnA	Uniontown silt loam, 0–2 percent slopes
UnB	Uniontown silt loam, 2–6 percent slopes
XeB	Xenia silt loam, 2–6 percent slopes
XeB2	Xenia silt loam, 2–6 percent slopes, moderately eroded
XfA	Xenia silt loam, 0–2 percent slopes
XfB2	Xenia silt loam, 2–6 percent slopes eroded

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION

FEMP WETLANDS DELINEATION

FIGURE 2

MAPPED SOILS
(U.S. SOIL CONSERVATION SERVICE
BUTLER COUNTY, OHIO SHEETS 64 & 65
AND HAMILTON COUNTY, OHIO
SHEETS 2 & 3 SOIL SURVEYS)

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TABLE 1

CHARACTERISTICS OF MAPPED SOIL SERIES

Soil Mapping Units (Map Symbol)	U.S. Soil Taxonomy Class	Brief Description	Hydric vs. Non-Hydric Soil	Hydric Inclusion/ Component Location	Seasonal High Water Table (Feet)
Dana silt loam, 2 to 6% slope (DaB)	Typic Argiudolls	Moderately well drained, on foot slopes and gently sloping basins	Non-hydric with hydric inclusions	Ragsdale/ depressions, drainageways	3-6 Feet
Eden silty clay loam, 15 to 25% slope (EcE2)	Typic Hapludalfs	Moderately deep, well drained with steep slopes on valley walls and hill sides	Non-hydric	none	>6 Feet
Eden silty clay loam, 25 to 50% slope (EcF2)	Typic Hapludalfs	Moderately deep, well drained with steep slopes on valley walls and hill sides	Non-hydric	none	1-3 Feet
Fincastle silt loam, 0 to 2% (FcA and FdA)	Aeric Ochraqualfs	Somewhat poorly drained, on broad flats of Wisconsinan till plains	Non-hydric with hydric inclusions	Ragsdale/ depressions, low lying areas	1-3 Feet
Fincastle-Urban land complex, 0 to 2% slope (FeA)	Aeric Ochraqualfs	Somewhat poorly drained Fincastle soil and Urban land on broad flats of Wisconsinan till plains	Non-hydric with hydric inclusions	Ragsdale/ depressions	1-3 Feet
Fox loam, 0 to 2% slope (FoA)	Typic Hapludalfs	Deep, well drained, on stream terraces and outwash plains	Non-hydric	none	>6 Feet
Genesee loam, 0 to 2% slope (Gn)	Typic Udifluvents	Deep, well drained, on flood plains	Non-hydric with hydric inclusions	Poorly drained Genesee soils/ sloughs, oxbows	>6 Feet
Hennepin silt loam, 35 to 60% slope (HeF)	Typic Eutrochrepts	Deep, very steep, well drained, on slopes along streams	Non-hydric	none	>6 Feet
Henshaw silt loam, 0 to 2% slope (HoA)	Aquic Hapludalfs	Deep, somewhat poorly drained on flats and rises on low stream terraces	Non-hydric with hydric inclusions	Patton/ depressions	1-2 Feet

TABLE 1 (CONTINUED)

CHARACTERISTICS OF MAPPED SOIL SERIES

Soil Mapping Units (Map Symbol)	U.S. Soil Taxonomy Class	Brief Description	Hydric vs. Non-Hydric Soil	Hydric Inclusion/ Component Location	Seasonal High Water Table (Feet)
Markland silty clay loam, 2 to 6% slope (MaB)	Typic Hapludalfs	Deep, moderately well drained, on slack-water terraces	Non-hydric	none	3-6 Feet
Markland silty clay loam, 6 to 12% slope (MaC2)	Typic Hapludalfs	Deep, moderately well drained, on slack-water terraces	Non-hydric	none	3-6 Feet
Martinsville silt loam, 0 to 2% slope (McA)	Typic Hapludalfs	Deep, well drained, on stream terraces and outwash plains	Non-hydric	none	>6 Feet
Miamian silt loam, 8 to 15% slope (MnC2)	Typic Hapludalfs	Deep, well drained, on Wisconsin till plains	Non-hydric with hydric inclusions	Poorly drained Miamian soils potholes	>6 Feet
Miamian-Hennepin silt loams, 25 to 35% slope (MoE2)	Typic Hapludalfs	Deep, steep, well drained, on Wisconsin glacial till plains	Non-hydric	none	>6 Feet
Miamian-Russell silt loams, 6 to 12% slope (MsC2)	Typic Hapludalfs	Deep, moderately well drained, on hillsides and plains along waterways	Non-hydric with hydric inclusions	Poorly drained Russell and Miamian soils/ drainageways, seeps	>6 Feet
Miamian-Russell silt loams, 12-18% slope (MsD2)	Typic Hapludalfs	Deep, moderately steep, well drained, on hillsides and plains along waterways	Non-hydric	none	>6 Feet
Ragsdale silty clay loam, (Ra)	Typic Argiaquolls	Deep, very poorly drained, on Wisconsin glacial till plain	Hydric	Raub/ depressions	0-1 Feet
Raub silt loam, 0 to 2% slopes (RdA)	Aquic Argiudolls	Deep, somewhat poorly drained, on glacial till plain	Non-hydric with hydric inclusions	Ragsdale/ depressions, drainageways	1-3 Feet

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TABLE 1 (CONTINUED)

CHARACTERISTICS OF MAPPED SOIL SERIES

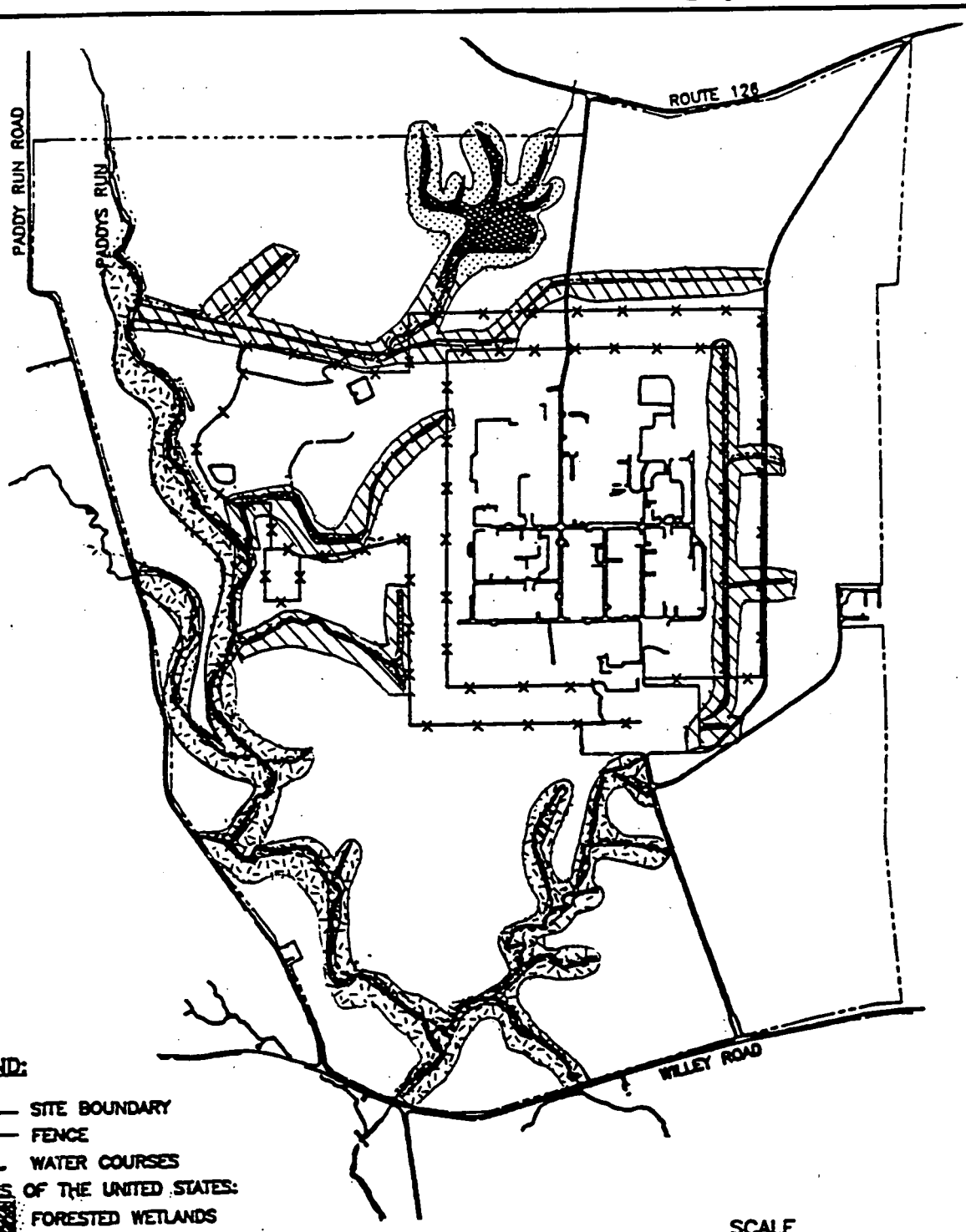
Soil Mapping Units (Map Symbol)	U.S. Soil Taxonomy Class	Brief Description	Hydric vs. Non-Hydric Soil	Hydric Inclusion/ Component Location	Seasonal High Water Table (Feet)
Russell-Miamian silt loams, 2 to 6% slope (RvB)	Typic Hapludalfs	Well drained, on upland ridges and smooth hill sides	Non-hydric with hydric inclusions	Poorly drained Russell and Miamian soils/ depression, drainageways	3.5-6 Feet
Russell-Miamian silt loam, 3 to 8% slope (RwB2)	Typic Hapludalfs	Deep, well drained, on Wisconsin till plain	Non-hydric with hydric inclusions	Poorly drained Russell and Miamian soils/ depression, drainageways	>6 Feet
Uniontown silt loam, 0 to 2% slope (UnA)	Typic Hapludalfs	Deep, well drained, formed in lake deposits on stream terraces	Non-hydric with hydric inclusions	Poorly drained Uniontown soils/ depressions	2.5-6 Feet
Uniontown silt loam, 2 to 6% slope (UnB)	Typic Hapludalfs	Deep, well drained, formed in lake deposits on stream terraces	Non-hydric with hydric inclusions	Poorly drained Uniontown soils/ depressions	2.5-6 Feet
Xenia silt loam, 2 to 6% slope (XeB)	Aquic Hapludalfs	Deep, moderately well drained, on till plain and till filled valleys	Non-hydric with hydric inclusions	Poorly drained Xenia soils/ depression, drainageways	2-6 Feet
Xenia silt loam, 2 to 6% slope (XeB2)	Aquic Hapludalfs	Deep, moderately well drained, on till plain and till filled valleys	Non-hydric with hydric inclusions	Poorly drained Xenia soils/ depression, drainageways	2-6 Feet
Xenia silt loam, 0 to 2% slope (XfA)	Aquic Hapludalfs	Deep, moderately well drained, on bedrock controlled glacial till plain	Non-hydric with hydric inclusions	Poorly drained Xenia soils/ depression, drainageways	2-6 Feet
Xenia silt loam, 2 to 6% slope (XfB2)	Aquic Hapludalfs	Deep, moderately well drained, on bedrock controlled glacial till plain	Non-hydric with hydric inclusions	Poorly drained Xenia soils/ depression, drainageways	2-6 Feet

3.2 1990 Offsite Determination

An offsite determination of wetlands occurring on the FEMP was conducted in 1990[10] using methods described in the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands. This determination mainly relied on review of published data, topographic maps, soils surveys, and aerial photographs. Limited field investigations were conducted. Results of the 1990 offsite determination concluded that:

> "...the majority of the wetlands on the FMPC [now FEMP] consist (*sic*) of drainage ditches with well-defined channels containing emergent vegetation. The exception to this pattern occurs in the northern end of the FMPC, where there is a forested wetland of approximately 53 acres. This wetland consists of five distinct drainage fingers leading to a flat basin within a pasture (Figure B-3-6). This flat basin is drained by a distinct channel into the ditches parallel to the railroad tracks, which ultimately drain into Paddys Run. Both the areas characterized as emergent wetlands and as forested wetlands would be protected by federal and state regulations concerning jurisdictional wetlands, including E. O. [Executive Order] 11990. Paddys Run and the SSOD [Storm Sewer Outfall Ditch] are well-incised into the surrounding landscape and are not jurisdictional wetlands, but remedial actions affecting these areas would be subject to the substantive requirements of regulations concerning other waters of the United States."[10]

Wetlands determined during the 1990 offsite determination are indicated in Figure 3.



LEGEND:

- SITE BOUNDARY
- FENCE
- WATER COURSES

WATERS OF THE UNITED STATES:

- FORESTED WETLANDS
- EMERGENT WETLANDS
- UNVEGETATED STREAM CHANNEL

SCALE

0 1200 2400 FEET

NOTES:

1. HATCHING ADDED BY EBASCO FOR CLARITY. APPROXIMATE BOUNDARIES REPRESENTED BY DARKER LINES WITHIN HATCHING.
2. SITE BOUNDARY IS APPROXIMATE NOT SURVEYED BOUNDARY.

SOURCE:

FIGURE B-3-6 IN DELINEATION OF JURISDICTIONAL WETLANDS AT THE FEED MATERIALS PRODUCTION CENTER FERNALD, OHIO FMPC-NEPA-006-2, NOVEMBER, 1990.

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION

FEMP WETLANDS DELINEATION

FIGURE 3
APPROXIMATE BOUNDARIES OF JURISDICTIONAL WETLANDS & OTHER WATERS OF THE UNITED STATES ESTABLISHED DURING THE 1990 OFFSITE DETERMINATION

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EBASCO SERVICES INCORPORATED

4.0 DELINEATED WETLANDS AND WATERS OF THE UNITED STATES

Twenty-nine wetland areas were delineated on the FEMP site (Appendix E, Delineated Wetlands for the FEMP Site, B. L. Payne and Associates, Inc., P.C., 1993) encompassing a total of 35.9 acres. The respective classifications, based on Cowardin's Classification of Wetlands and Deepwater Habitats of the United States[11], and acreages of these wetlands areas are summarized in Table 2. These 29 areas represent discreet wetlands that are geographically isolated entities separated by physical features such topography, roads, or in some cases, fences. Together these 29 areas form 12 hydrologically connected units, as summarized in Table 3, and represent either isolated pockets of wetlands or complexes of wetland areas corresponding to site drainage patterns.

Wetland boundary points were flagged in the field using pink flagging, while sample locations were flagged in orange. All wetland boundary points and sample station locations were surveyed and measured in the field by B. L. Payne and Associates, Inc., and are indicated on the site wetland drawing (Appendix E). Observations of soil characteristics were logged for 133 samples and appear in Appendix C. Vegetation, soil and hydrologic characteristics were recorded for 40 sample stations located throughout the site, and are included on the data forms provided in Appendix D. Plant species encountered during the field investigation area compiled in Appendix B. Representative captioned photographs of the areas investigated are presented in Appendix A, with their corresponding locations and directions shown on the site wetlands drawing found in Appendix E.

Wetlands delineated onsite during December 1992 and January 1993 generally corresponded to those areas established as wetlands during the 1990 offsite determination. Several small wetlands areas not originally identified by the 1990 determination were delineated. Additionally, a discrepancy between reported acreage of the northern forested wetlands and estimated acreage calculated from mapped approximate boundaries was

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TABLE 2

SUMMARY OF WETLANDS DELINEATED AT THE FEMP SITE

Wetland Boundary Designation	Wetland Classification	Acreage
Palustrine Deciduous Forested		
WA-WB-WC-WD-WF	Palustrine Deciduous Forested[1]	26.15
WL	Palustrine Deciduous Forested	0.13
WN	Palustrine Deciduous Forested	0.10
WQ	Palustrine Deciduous Forested (Riparian)	0.20
Subtotal		26.58
Drainage Ditches/Swales		
WG	Persistent Emergent (Drainage Ditch)	0.52
WH(1-12)	Persistent Emergent (Drainage Ditch)	0.53
WH-WJ-WT-WGG	Persistent Emergent (Drainage Ditch)	2.07
WK	Persistent Emergent (Drainage Ditch)	0.63
WO	Persistent Emergent (Swale)	0.57
WR	Persistent Emergent (Drainage Ditch)	0.67
WU	Persistent Emergent (Drainage Ditch)	0.13
WV1-WW	Persistent Emergent (Drainage Ditch)	0.37
WV2	Persistent Emergent (Swale)	0.24
WX	Persistent Emergent (Drainage Ditch)	0.06
WY	Persistent Emergent (Drainage Ditch)	0.21
WZ1	Persistent Emergent (Drainage Ditch)	0.04
WZ2	Persistent Emergent (Drainage Ditch)	0.06
WZ3	Persistent Emergent (Drainage Ditch)	0.05
WAA	Persistent Emergent (Drainage Ditch)	0.02
WBB	Persistent Emergent (Drainage Ditch)	0.02
WCC	Persistent Emergent (Drainage Ditch)	0.03
WDD	Persistent Emergent (Drainage Ditch)	0.07
WEE	Persistent Emergent (Drainage Ditch)	0.45
WFF	Persistent Emergent (Swale)	0.08
WHH	Persistent Emergent (Drainage Ditch/Swale)	0.13
Subtotal		6.95

[1]Includes some areas of Persistent Emergent Wetlands

TABLE 2 (CONTINUED)

SUMMARY OF WETLANDS DELINEATED AT THE FEMP SITE

Wetland Boundary Designation	Wetland Classification	Acreage
Isolated Persistent Emergent		
WE	Persistent Emergent	0.43
WM	Persistent Emergent	0.02
Subtotal		0.45
Isolated Scrub-Shrub/Persistent Emergent		
WI	Scrub-Shrub/Persistent Emergent	1.77
WS	Scrub-Shrub/Persistent Emergent	0.15
Subtotal		1.92
Total		35.90

TABLE 3

ACREAGE OF HYDROLOGICAL UNITS

Wetland Boundary Designation	Wetland Classification	Acreage
WA-WB-WC-WD-WF-WG-WH-WJ-WT-WGG	Palustrine Deciduous Forested/ Persistent Emergent (Drainage Ditch/Swale)	29.27
WE	Persistent Emergent (Isolated)	0.43
WI	Scrub-Shrub/Persistent Emergent (Isolated)	1.77
WK-WL-WFF	Persistent Emergent (Drainage Ditch/Swale)/ Palustrine Deciduous Forested	0.84
WM	Persistent Emergent (Isolated)	0.02
WN	Palustrine Deciduous Forested	0.10
WO-WCC-WDD-WEE-WHH	Persistent Emergent (Swale)	1.25
WQ	Palustrine Deciduous Forested (Riparian)	0.20
WR	Persistent Emergent (Drainage Ditch)	0.67
WS	Persistent Emergent/Scrub-Shrub (Isolated)	0.15
WV-WW-WX-WY-WZ-WAA-WBB	Persistent Emergent (Drainage Ditch/Swale)	1.07
WU	Persistent Emergent (Drainage Ditch)	0.13
Total Acreage		35.90

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detected. This wetland is reported to be approximately 53 acres in size in the 1990 offsite determination report[10] as compared to a calculated area of approximately 12 acres.

Differences in acreages of wetlands identified during this study and the 1990 determination may be attributable to the 1990 determination being a largely offsite, that is desk-top, study as opposed to a field investigation and extensive sampling effort as conducted during this investigation. Differences in the 1987 and 1989 methodologies may also influence the amount of wetland areas determined during each investigation. Additionally, there may have been an error in determining or reporting the acreage of mapped wetland areas during the 1990 study. Planimetered acreage calculated during this investigation was substantially less than that reported in the 1990 determination report.

4.1 Wetlands

Palustrine Deciduous Forested

A total of 26.58 acres of forested wetlands were delineated in four separate areas on the FEMP site (Table 3). The forested/wet meadow wetland complex located in the north central portion of the site, and defined by boundaries WA, WB, WC, WD, and WF, constitute the largest contiguous freshwater wetland area (26.15 acres) delineated onsite. Soils within this wetland are hydric and belong to the Ragsdale and Fincastle series. Matrix colors were typically dark gray (10YR4/1) and dark grayish brown (2.5Y4/2) with chromas of two or less with brighter mottles. Poor drainage results in a water table either at or within one foot of the surface during spring and winter. Vegetation associated with the forested finger-like drainage near the northern site boundary is dominated by American elm (*Ulmus americana*) and Tartarian honeysuckle (*Lonicera tartarica*) (Appendix D, Data Sheet 1).

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The intermittent channels associated with these narrow wetland areas drain south into a broader, flatter, more open wetland area. Vegetation in this lower lying area is a mosaic of forested wetlands and wet meadow/successional pastureland. Woody growth is dominated by an association of green ash (*Fraxinus pennsylvanica*), silver maple (*Acer saccharinum*), American sycamore (*Platanus occidentalis*), shellbark hickory (*Carya laciniosa*) and black willow (*Salix nigra*) (Appendix D, Data Sheets 3, 9, 12). A sparse to moderately dense shrub layer is found throughout with Tartarian honeysuckle, roughleaf dogwood (*Cornus drummondii*), and multiflora rose (*Rosa multiflora*) being the most commonly occurring species. Riverbank and frost grape (*Vitis riparia* and *V. vulpina*) were common throughout and were dense in more open areas. Red fescue (*Festuca rubra*) dominates the herbaceous growth in the interspersed wet meadow/successional pastureland. Yellow nutgrass (*Cyperus esculentus*) and soft rush (*Juncus effusus*) occur in the wetter areas.

Two additional small forested wetlands were delineated along naturally occurring intermittent drainage channels: one (0.20 acres) located southwest of the K-65 silos and the other (0.10 acres) located at the northeast corner of the site. Both of these areas are dominated by eastern cottonwood (*Populus deltoides*), boxelder, American sycamore and American elm. Additionally, small areas of riparian wetlands totaling 0.2 acres were delineated along the eastern bank of Paddys Run near the northern border of the site. These forested wetlands were dominated by silver maple, American elm, and boxelder (*Acer negundo*) with little herbaceous cover, being routinely scoured by floodwaters.

Drainage Ditches/Swales

Manmade drainage ditches and manmade and naturally occurring swales are the most common wetland type encountered on the FEMP site. These wetlands features are part of six major drainage systems onsite. Wetlands WG, WH, WJ, and WT comprise the northern drainage ditch which traverses nearly the entire width of the site, east to west,

just north of the production area. Northwest of the production area this ditch parallels the railroad right-of-way and eventually drains into Paddys Run. The wetland swales designated by WH (flags 1-12) and WGG connect the forested wetland area to the north to this drainage ditch. Drainage ditch WU parallels the southern side of the railroad right-of-way, west of the production area, and also drains into Paddys Run. Drainage ditch WR parallels the northern side of the railroad spur at the extreme northwest corner of the property as it leaves the mainline on its approach to the FEMP site.

The wetland drainage ditches WV, WW, WX, WY, WZ, WAA, and WBB collectively drain the waste pit area west of the northwestern corner of the production area. These vegetated drainage ditches area interrupted by sections of rip-rapped or concreted drainage ditches (Appendix A, Photographs A1-A35). Drainage ditches WK, WL, and WFF drain the portion of the site south of the K-65 silos. Both of these drainage systems eventually flow into Paddys Run as well. Wetland drainage ditches WO, WCC, WDD, WEE, and WHH parallel the eastern border of the production area and drain the higher elevations to the east. The ditch drains into an unnamed tributary to Paddys Run which joins Paddys Run near the southwest corner of the site.

All drainage ditches occur in Fincastle or Henshaw soils and exhibit soil colors and chromas indicative of hydric situations. Water was present in all delineated ditches at the time of field investigations and FEMP employees indicated that water occurs nearly year round. Onsite drainage ditches and swales support shrub and/or emergent vegetation (Appendix D, Data Sheets 1, 14, 24-34). Broad-leaf cattail (*Typha latifolia*) is the most common species found within the ditches and occurs with varying densities in nearly every ditch. Other herbaceous plants commonly encountered in ditches included yellow nutgrass, green bulrush (*Scirpus atrovirens*), and swamp milkweed (*Asclepias incarnata*). Numerous woody species were also associated with the drainage ditches in shrubby growth form and included black willow (*Salix nigra*), roughleaf dogwood, American elm, American sycamore, green ash, and boxelder.

Isolated Emergent and Scrub/Shrub Wetlands

Four isolated emergent or scrub/shrub-emergent wetlands were delineated onsite: WE (0.43 acres), WI (1.77 acres), WM (0.02 acres), and WS (0.15 acres). (Appendix D, Data Sheets 10, 16, 18, & 23). Wetland WE located along the northern property boundary just east of Paddys Run is a small depressional, seasonally ponded, emergent wetland. Dominant vegetation included an association of yellow nutgrass, green bulrush (*Scirpus atrovirens*), moneywort (*Lysimachia nummularia*) and red fescue. Wetland WM located near the northeast corner of the site also occurs within a depression and yellow nutgrass, Pennsylvania smartweed (*Polygonum pennsylvanica*) and red fescue dominate.

The two other scrub/shrub-emergent wetlands are adjacent to the waste pit area, WI to its west and WS to its east. Both of these wetlands were ponded. Soils in wetland WI appear to have been disturbed as suggested by the presence of gravel throughout the top 18 inches (SE-123). Soil color was uniformly grayish brown (10YR5/2) with gray and yellowish brown mottles occurring below 6 inches. Herbaceous species were dominant and included red fescue, soft rush, and broad-leaf cattail, with scattered occurrences of green bulrush swamp milkweed, giant goldenrod (*Solidago gigantea*) and small white aster (*Aster vimineus*). Marsh marigold (*Caltha palustris*) was common within the shallows of the ponded area. Black willow was also scattered throughout this wetland.

Wetland WS occupies a depressional area that suggests past disturbance. A soil boring was not extracted but the irregular surface and presence of rubble indicate possible fill or regrading activities. Gleyed and mottled soils were visible at the surface and may possibly be the exposed B-horizon. Vegetation was dominated by the broad-leaf cattail and Pennsylvania smartweed with heart-leaf willow scattered throughout. Algae was present in the shallow pools indicating presence of water for extended periods.

4.2 Uplands

Upland portions of the site include pastureland, deciduous and riparian forests, and pine plantations.

Pasture

Pastureland represents the largest cover type on the FEMP site. These pastures are leased by local dairy farmers for grazing their herds, consequently vegetation in these areas is almost exclusively herbaceous. Red fescue, Kentucky bluegrass (*Poa pratensis*), and white clover (*Trifolium ripens*) were the dominant species encountered with scattered occurrences of common ragweed (*Ambrosia artemisiifolia*), foxtail grass (*Sertaria italica*), and orchard grass (*Dactylis glomerata*), and occasional Japanese honeysuckle (*Lonicera japonica*), yellow nutgrass, Queen Anne's lace (*Daucus carota*), and tall goldenrod (*Solidago altissima*).

Deciduous Forest

Forested uplands in the northwest section of the FEMP site are composed of mixed hardwoods including: northern red oak (*Quercus rubra*), sugar maple (*Acer saccahrum*) white ash (*Fraxinus americana*), and common hackberry (*Celtis occidentalis*) with occasional Ohio buckeye (*Aesculus glabra*). Shrub and herbaceous growth is sparse in this area. Frost grape commonly occurs in the forested upland onsite and is dense in areas with an open canopy. Xenia soils were mapped for the area and examination of soil borings corroborated the mapping. Soil matrix chromas were three or two with no mottling (Soil Log SE-45).

Two small hills adjacent to, and south of, the northern forested wetland were dominated by upland species: chinquapin oak (*Quercus muhlenbergii*), shingle oak (*Quercus*

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imbricaria), common hackberry, black cherry (*Prunus serotina*), and eastern red cedar (*Juniperus virginiana*). Xenia soils area mapped for this area. Soil profiles indicated non-hydric soils with matrix chromas of three or two without mottling (Soil Logs SE-17, SE-92, SE-93).

A young successional forest has colonized the inactive fly ash disposal area which is dominated by typical pioneer species. Black locust (*Robinia pseudoacacia*) and eastern cottonwood are common in the canopy and Tartarian honeysuckle in the shrub layer. Herbaceous species found in this area included a mix of grasses and weedy forbs, typically red fescue, Kentucky bluegrass, ragweed, goldenrods, and poison ivy (*Toxicodendron radicans*).

Riparian forests along Paddys Run are vegetated by an association of typical floodplain species which include eastern cottonwood, boxelder, silver maple, American sycamore and occasional black walnut (*Juglans nigra*). Genesee soils are mapped for this area and examination of soil borings revealed non-hydric soil profiles with matrix chromas of three or four (Soil Logs 97, 99, 110, 113, 115). Although this area is flooded during the major storm events, particularly during the spring, such flood events are apparently of short duration and not sufficient to develop hydric soils.

Forested areas along the higher elevations west of Paddys Run contained a mix of typical riparian species (American sycamore, eastern cottonwood, boxelder) and more mesic upland species (common hackberry and chinquapin oak). Red fescue, Kentucky bluegrass, ground ivy (*Glechoma hederacea*) and common chickweed (*Stellaria media*) were the dominant herbaceous species. Soils in this area were non-hydric and belonged to the Genesee series. Soil borings examined revealed matrix chromas of two, without mottling, or three (Soil Logs SE-3, SE-4, SE-5).

Pine Plantations

Two pine plantations, planted in the early 1970's, exist on the FEMP site. One, located in the northeastern section of the site, occurs on mapped Ragsdale, Xenia, and Fincastle soils. Field investigations confirmed the presence of Xenia and Fincastle soils (Appendix C, Soil Logs SE-27 through SE-33). Dana soils were also encountered along the northern edge of the plantation (Appendix C, Soil Log SE-126). While soil profiles revealed matrix colors with chromas of two, mottles were not always present. Evidence of tile drainage was also encountered. White pine (*Pinus strobus*) and Austrian pine (*Pinus nigra*) were the two planted species and little other vegetation was present with the exception of red fescue between rows and pokeweed (*Phytolacca americana*) in openings.

The second plantation is located outside of the southwest corner of the production area. Soils in the southern pine plantation are mapped as Henshaw and similar vegetation to that found in the northern plantation was present. Based on a predominance of upland species, borderline hydric soils and evidence of tile drainage, both of these plantations were determined to be uplands.

4.3 Waters of the United States

Onsite waters of the United States are confined to Paddys Run, which runs the length of the site along the western boundary, and its tributary, which cuts diagonally (northeast to southwest) across the southern third of the site. The confluence of this tributary with Paddys Run occurs near the southwest corner of the site. Total onsite waters of the U.S. are estimated to be 8.9 acres.

5.0 SUMMARY

A total of 35.9 acres of wetlands were delineated on the FEMP site. Delineated wetlands included 26.58 acres of palustrine forested wetlands, 6.95 acres of drainage ditches/swales, and 2.37 acres of isolated persistent emergent and isolated scrub/shrub persistent emergent wetlands. The largest (WA-WB-WC-WD-WF) of the four forested wetland areas is located north of the production area. The remaining three areas are located along the east bank of Paddys Run near the northern site border (WQ), in the northeast corner of the site (WN), and southwest of the K-65 silos (WL).

Drainage ditches and swales are located in sections throughout the site but overall form four larger drainage systems. The first (WG-WH-WJ-WT-WU-WGG) is located north of the production area and traverses west across the site, eventually draining into Paddys Run. The second (WV-WW-WX-WY-WZ-WAA-WBB) drains the waste pit area, the third (WK-WL-WFF) drains the area south of the K-65 silos, and the forth (WO-WCC-WDD-WEE-WHH) is adjacent to the east boundary of the production area and drains the high elevations of the site to the east.

Two of the four isolated scrub/shrub and/or emergent wetlands are located in the very northern part of the site; one near the eastern corner and the other just east of Paddys Run near the western corner of the site. The remaining two are located in the vicinity of the waste pit area, one to the east and one to the west, and both appear to be associated with former disturbance.

Onsite waters of the United States are confined to Paddys Run and its unnamed tributary and total approximately 8.9 acres.

6.0 REFERENCES

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2. Reed, P.B., Jr., "National List of Plant Species that Occur in Wetlands: Region 1," Biological Report 88 (26.1), U.S. Fish and Wildlife Service, Washington, D. C., 1988.

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5. Lerch, N. K., W. F. Jale, and D. D. Lemaster, Soil Survey of Butler County, Ohio, U.S. Department of Agriculture, Soil Conservation Service, in cooperation with Ohio Department of Natural Resources, Division of Lands and Soil, and Ohio Agricultural Research and Development Center, 1980.

6. Lerch, N. K., W. F. Jale, and D. D. Lemaster, Soil Survey of Hamilton County, Ohio, U.S. Department of Agriculture, Soil Conservation Service, in cooperation with Ohio Department of Natural Resources, Division of Lands and Soil, and Ohio Agricultural Research and Development Center, 1982.

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10. Delineation of Jurisdictional Wetlands at the Feed Materials Production Center, Fernald, Ohio, FMPC-NEPA-0006-2, November, 1990.

11. Cowardin L.M., et al, 1979. Classification of Wetlands and Deepwater Habitats of the United States, U.S. Fish & Wildlife, office of Biological Services Washington D.C. Publ. No. FWS/OBS 79-82.

7.0 APPENDICES

7.1 APPENDIX A
SITE PHOTOGRAPHY

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Photograph A-1. Wetland WA-WB-WC-WD-WF, south view (Site Photograph No. 5281-44, March 12, 1993).

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Photograph A-2. Wetland WA-WB-WC-WD-WF at soil boring location SE-40, north view towards uplands (Site Photograph No. 5281-45, March 12, 1993).

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Photograph A-3. Wetland WE, north view (Site Photograph No. 5281-51, March 12, 1993).

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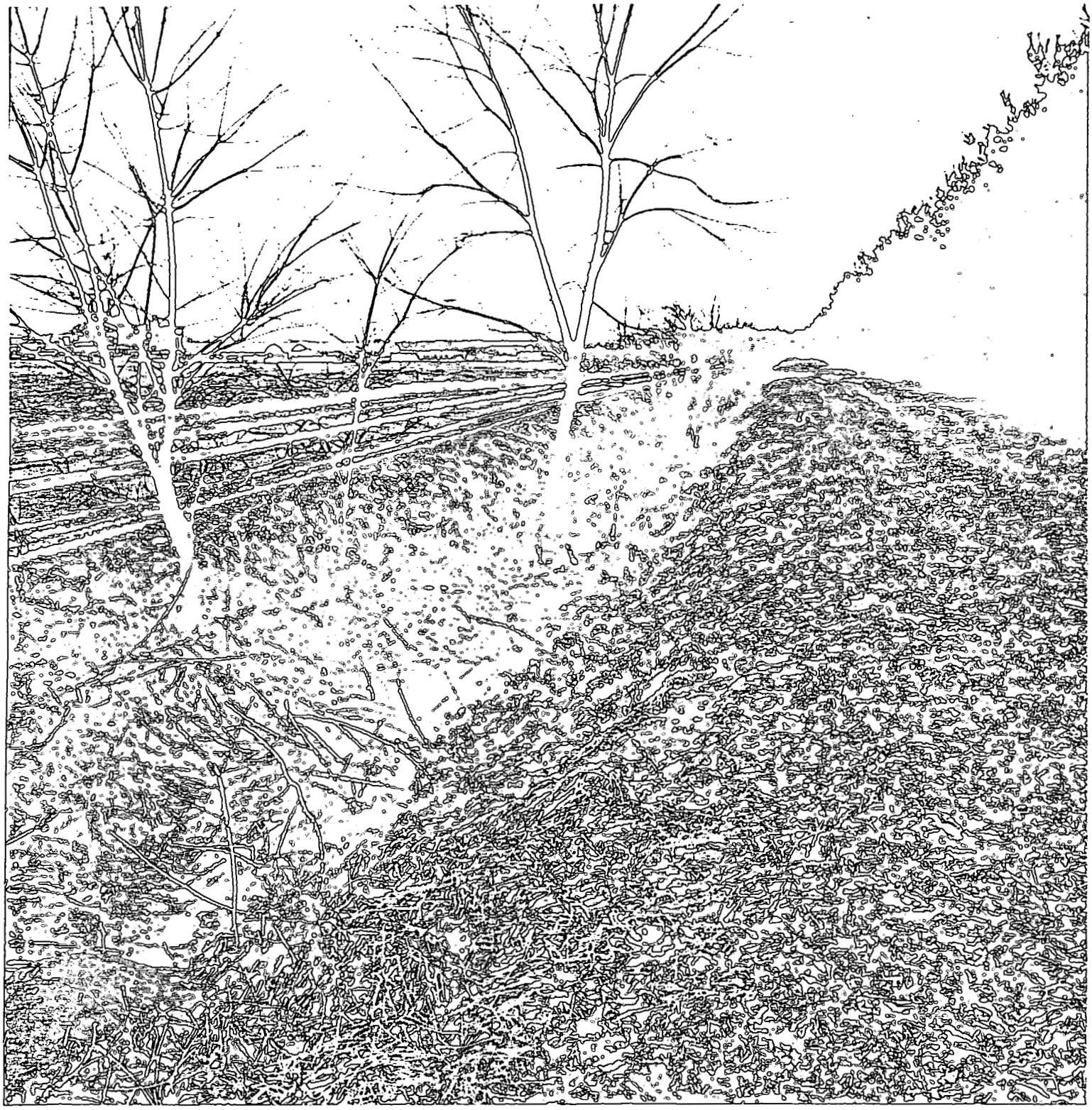

Photograph A-4. Wetland WG, west view (Site Photograph No. 5281-36, March 12, 1993)

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Photograph A-5. Wetland WGG, east view (Site Photograph No. 5281-39, March 12, 1993).

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Photograph A-6. Wetland WGG, east view (Site Photograph No. 5281-38, March 12, 1993).

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Photograph A-7. Wetland WH, northeast view (Site Photograph No. 5281-58, March 12, 1993)

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Photograph A-8. Wetland WI scrub/shrub and emergent section, south view (Site Photograph No. 5281-56, March 12, 1993).

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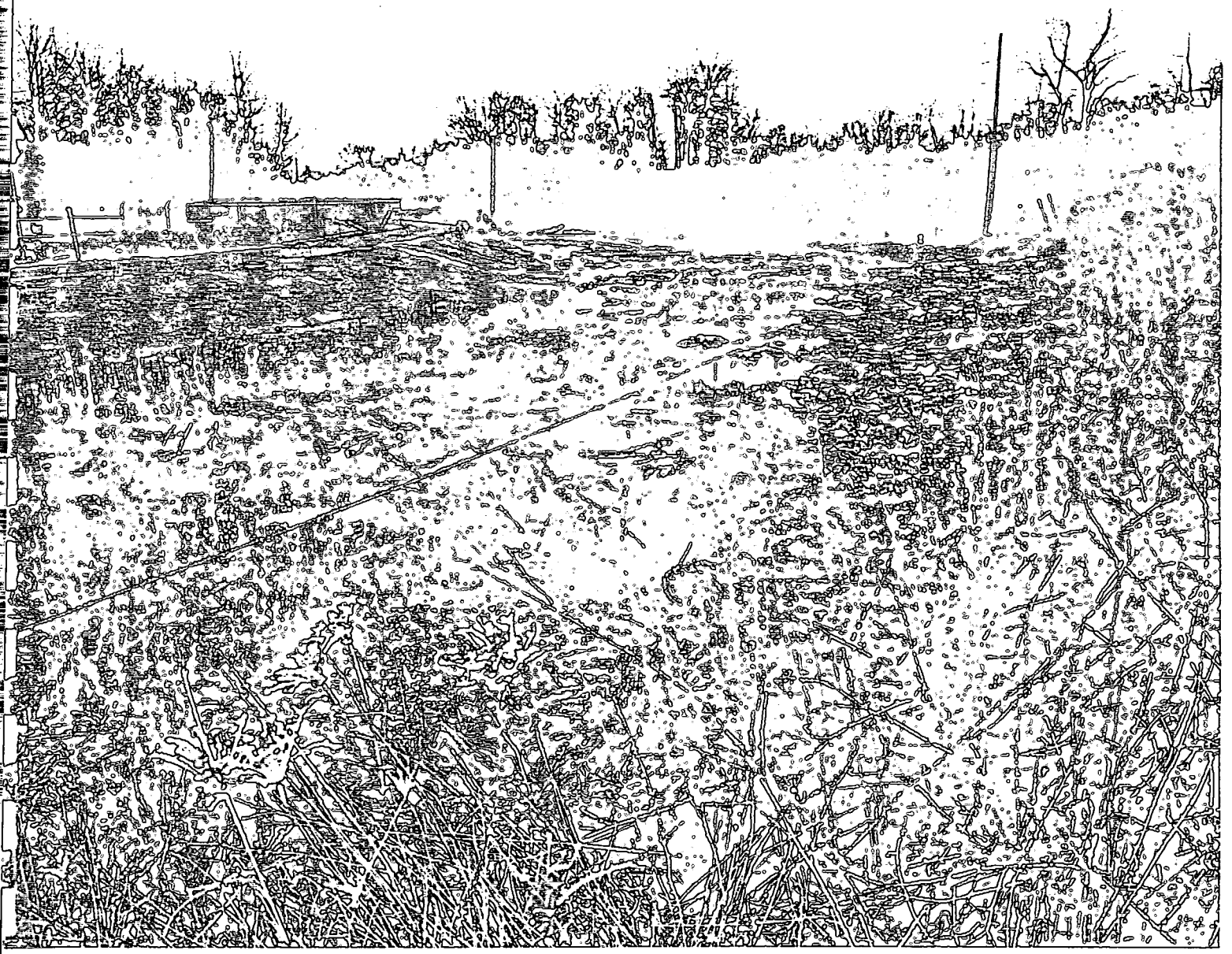
FEMP WETLANDS DELINEATION



Photograph A-9. Wetland WI emergent and open water section, south view (Site Photograph No. 5281-54, March 12, 1993).

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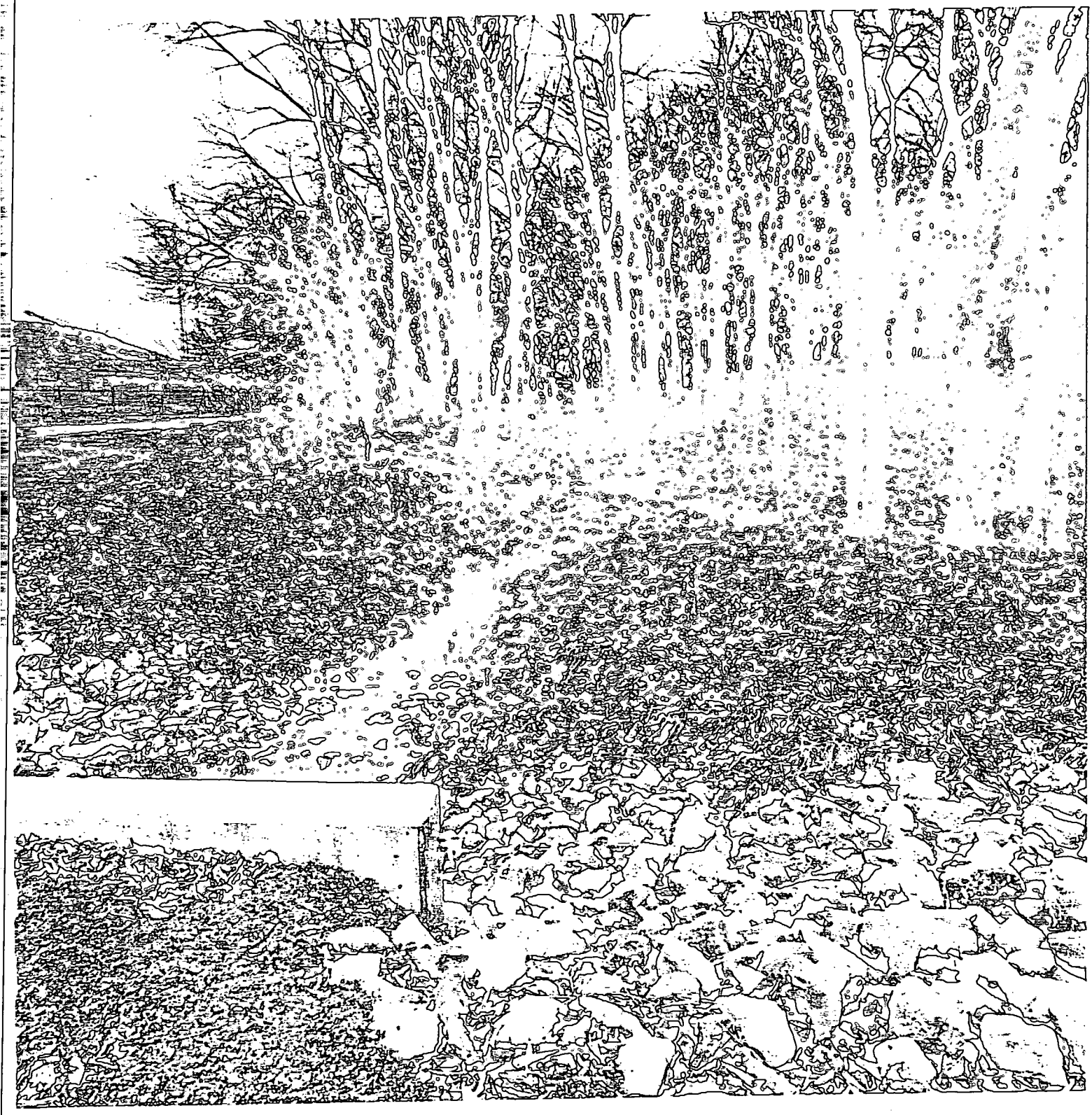

Photograph A-10. Wetland WK west of K-65 silos, east view (Site Photograph No. 5281-65, March 12, 1993).

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Photograph A-11. Wetland WN, southeast view (Site Photograph No. 5281-35, March 12, 1993).

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Photograph A-12. Wetland WO, southeast view (Site Photograph No. 5281-61, March 12, 1993)

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Photograph A-13. Wetland WQ, adjacent to the east bank of Paddys Run near northwest corner of the site (Site Photograph No. 5281-53, March 12, 1993).

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Photograph A-14. Wetland WR, adjacent to railroad spur in northwest corner of property, west view (Site Photograph No. 5281-64, March 12, 1993).

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Photograph A-15. Wetland WS, northwest view (Site Photograph No. 5281-16, January 14, 1993).

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Photograph A-16. Wetland WT, west view (Site Photograph No. 5281-8, January 14, 1993).

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Photograph A-17. Wetland WV, southwest view east of railroad track (Site Photograph No. 5281-14, January 14, 1993).

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Photograph A-18. Wetland WV, southwest view west of railroad track (Site Photograph No. 5281-10, January 14, 1993).

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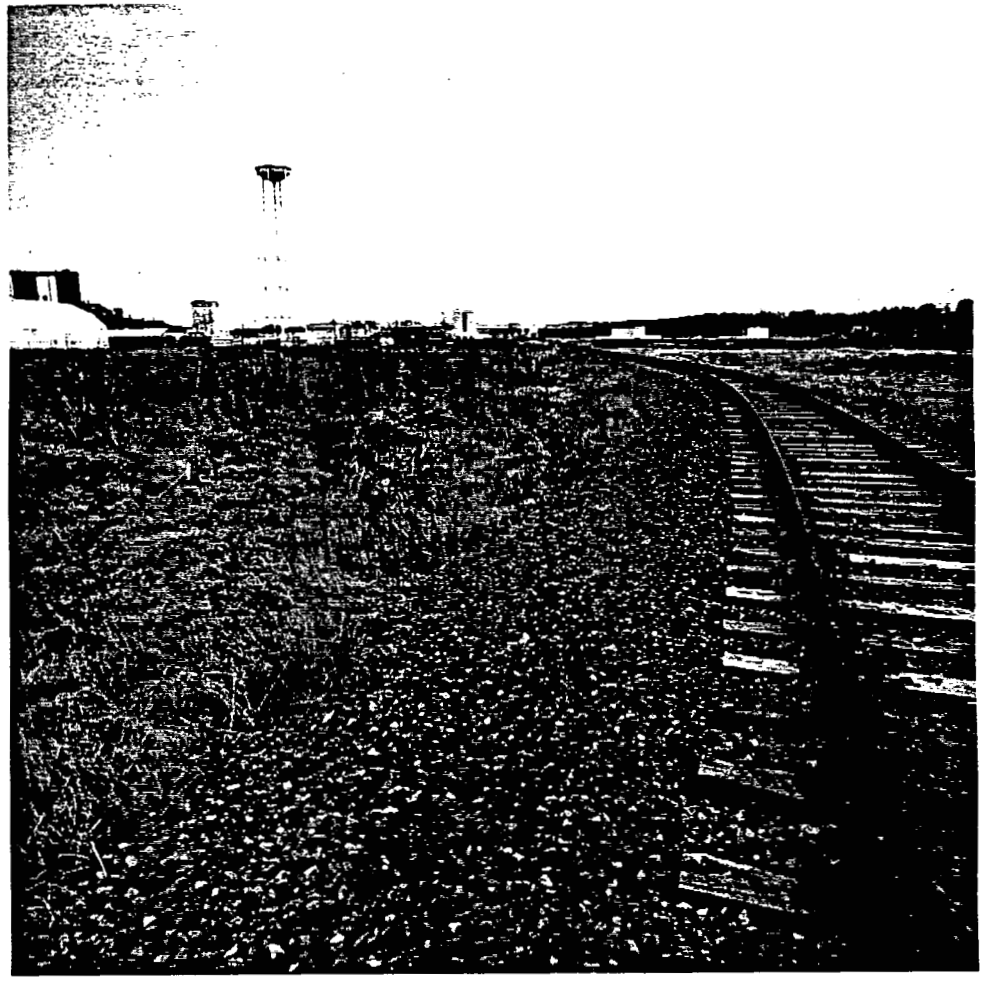

Photograph A-19. Wetland WW, southeast view (Site Photograph No. 5281-11, January 14, 1993).

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Photograph A-20. Wetland WX, southwest view (Site Photograph No. 5281-28, January 14, 1993).

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Photograph A-21. Stormwater Runoff Control Collection System southeast of Wetland WX, southeast view (Site Photograph No. 5281-26, January 14, 1993).

Photograph A-22. Stormwater Runoff Control Collection System northwest of Wetland WZ, northwest view (Site Photograph No. 5281-25, January 14, 1993).

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Photograph A-23. Wetland WY, west view (Site Photograph No. 5281-23, January 14, 1993).

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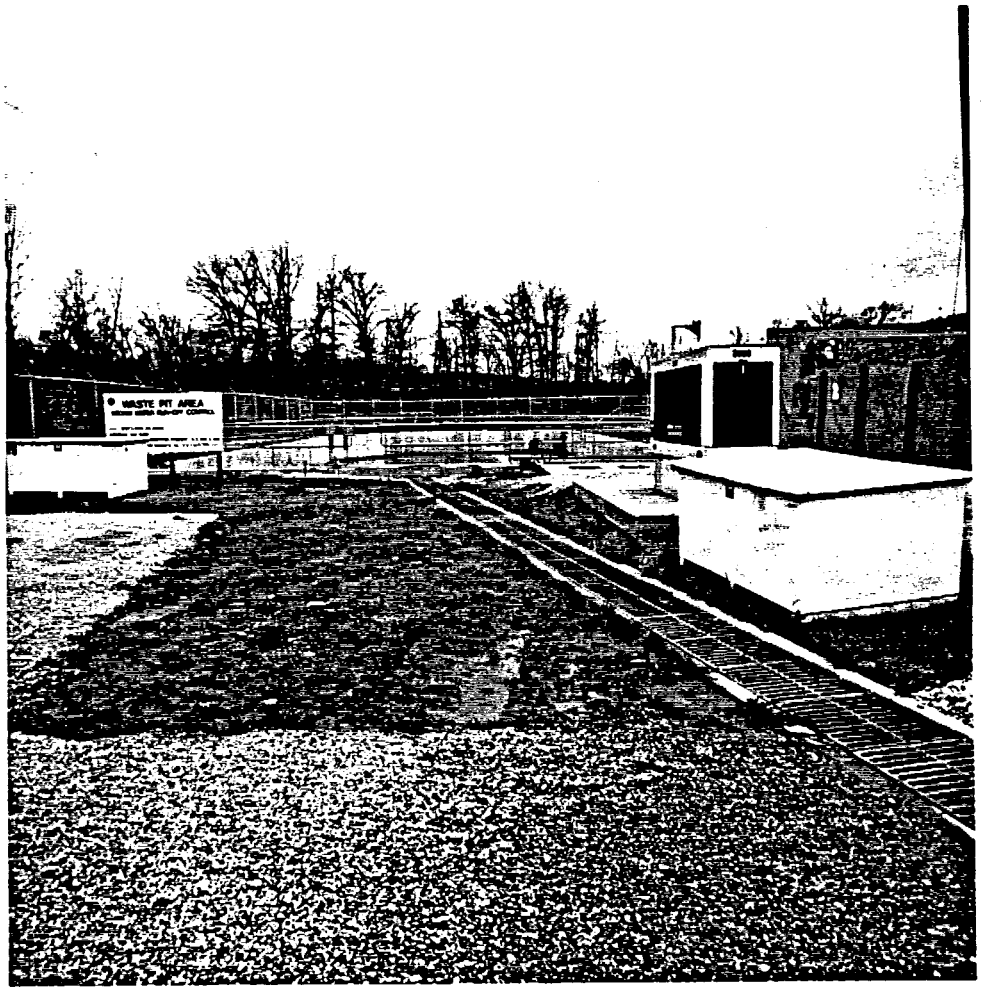
Photograph A-24. Wetland WY east of Stormwater Runoff Control Collection System, east view (Site Photograph No. 5281-22, January 14, 1993).



Photograph A-25. Stormwater Runoff Control Collection System west of Wetland WY, south view (Site Photograph No. 5281-21, January 14, 1993).

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Photograph A-26. Wetland WZ, east of Surge Lagoon, north view (Site Photograph No. 5281-5, January 14, 1993).

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Photograph A-27. Wetland WZ at southeast corner of Surge Lagoon, northwest view (Site Photograph No. 5281-7, January 14, 1993).

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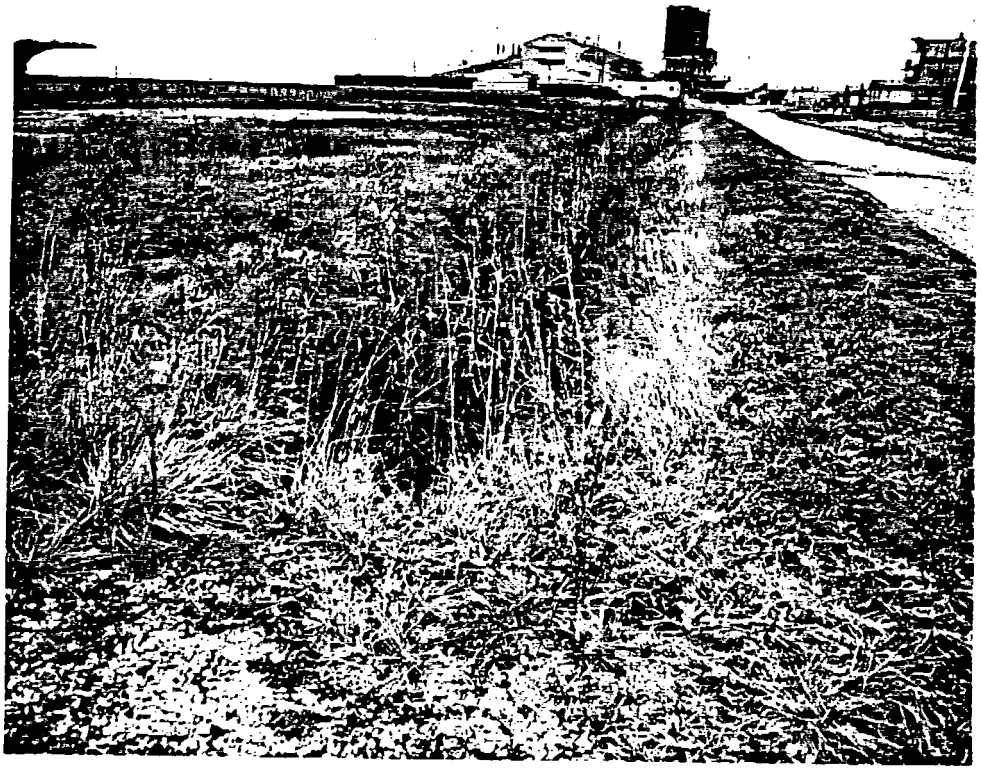
Photograph A-28. Wetland WZ south of Surge Lagoon, west view (Site Photograph No. 5281-20, January 14, 1993).



Photograph A-29. Wetland WZ southeast of Surge Lagoon, east view (Site Photograph No. 5281-3, January 14, 1993).

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Photograph A-30. Wetland WAA, east view (Site Photograph No. 5281-2, January 14, 1993).

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FEMP WETLANDS DELINEATION

Photograph A-31. Wetland WBB, east view (Site Photograph No. 5281-1, January 14, 1993).

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Photograph A-32. Wetland WEE foreground and Wetland WCC background, south view (Site Photograph No. 5281-60, March 12, 1993).

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Photograph A-33. Wetland WFF in background adjacent to fence, west view (Site Photograph No. 5281-66, March 12, 1993).

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FEMP WETLANDS DELINEATION

Photograph A-34. Wetland WHH, west view (Site Photograph No. 5281-63, March 12, 1993).

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SITE PHOTOGRAPHY
FEMP WETLANDS DELINEATION

Photograph A-35. Northern Pine Plantation, south view (Site Photograph No. 5281-32, March 12, 1993).

7.2 APPENDIX B
LIST OF PLANT SPECIES ENCOUNTERED DURING FEMP WETLAND DELINEATION

APPENDIX B

LIST OF PLANT SPECIES ENCOUNTERED DURING FEMP WETLANDS DELINEATION

Scientific Name	Common Name	Region[1] Indicator Status
Trees		
Acer negundo	Boxelder	FAC+
Acer saccharinum	Silver Maple	FACW
Acer saccharum	Sugar Maple	FACU-
Aesculus glabra	Ohio Buckeye	FACU+
Carya cordiformis	Bitternut Hickory	FACU+
Carya laciniosa	Shellbark Hickory	FAC
Celtis occidentalis	Common Hackberry	FACU
Fraxinus americana	White Ash	FACU
Fraxinus pennsylvanica	Green Ash	FACW
Juglans nigra	Black Walnut	FACU
Juniperus virginiana	Eastern Red Cedar	FACU
Pinus nigra	Austrian Pine	UPL[2]
Pinus strobus	Eastern White Pine	FACU
Platanus occidentalis	American Sycamore	FACW-
Populus deltoides	Eastern Cottonwood	FAC
Prunus serotina	Black Cherry	FACU
Quercus imbricaria	Shingle Oak	FAC
Quercus muhlenbergii	Chinquapin Oak	NI
Quercus rubra	Red Oak	FACU-
Quercus velutina	Black Oak	UPL[2]
Robinia pseudoacacia	Black Locust	FACU-
Salix nigra	Black Willow	FACW+
Salix rigida	Heart-leaf Willow	OBL
Ulmus americana	American Elm	FACW-
Ulmus rubra	Slippery Elm	FAC

APPENDIX B

LIST OF PLANT SPECIES ENCOUNTERED DURING FEMP WETLANDS DELINEATION

Scientific Name	Common Name	Region[1] Indicator Status
<u>Shrubs</u>		
Acer negundo	Box-elder	FAC+
Carya laciniosa	Shellbark Hickory	FAC
Celtic occidentalis	Common Hackberry	FACU
Cornus drummondii	Roughleaf Dogwood	FAC
Lonicera tartarica	Tartarian Honeysuckle	FACU*
Platanus occidentalis	American Sycamore	FACW-
Prunus serotina	Black Cherry	FACU
Rosa multiflora	Multiflora Rose	FACU
Rubus occidentalis	Raspberry	UPL[2]
Rubus sp.	Blackberry	--
Salix nigra	Black Willow	FACW+
Salix rigida	Heart-leaf Willow	OBL
Ulmus americana	American Elm	FACW-
<u>Herbs</u>		
Agrimonia parviflora	Small-Flowered Agrimony	FAC
Allium canadense	Wild Garlic	FACU
Alliaria petiolata	Garlic Mustard	FACU-
Ambrosia artemisiifolia	Common Ragweed	FACU
Asclepias incarnata	Swamp Milkweed	OBL
Asplenium platyneuron	Ebony Spleenwort	FACU
Aster vimineus	Small White Aster	FAC
Bidens vulgata	Tall Beggers Tick	FACW
Carex lurida	Shallow Sedge	OBL
Cirsium vulgare	Bull Thistle	FACU-
Cyperus esculentus	Yellow Nutgrass	FACW
Daucus carota	Queen Anne's Lace	UPL[2]
Dipsacus sylvestris	Teasal	FACU+
Dactylis glomerata	Orchard Grass	FACU
Eupatorium rugosum	White Snakeroot	FACU-
Festuca rubra	Red Fescue	FACU
Glecoma hederacea	Ground Ivy	FACU
Juncus effusus	Soft Rush	FACW+

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COMPILED LIST OF PLANT SPECIES ENCOUNTERED DURING FEMP WETLANDS DELINEATION

Scientific Name	Common Name	Region[1] Indicator Status
Herbs (Cont'd)		
Lemna sp.	Duckweed	OBL
Lonicera japonica	Japanese Honeysuckle	FAC-
Lysmachia nummularia	Moneywort	OBL
Panicum sp.	Panic Grass	--
Phytolacca americana	Pokeweed	FACU+
Plantago lanceolata	English Plantain	UPL[2]
Poa pratensis	Kentucky Bluegrass	FACU
Polygonum pensylvanicum	Pennsylvania Smartweed	FACW
Prunella vulgaris	Heal All	FACU
Rosa multiflora	Multiflora Rose	FACU
Scirpus atrovirens	Green Bulrush	OBL
Sertaria italica	Foxtail Grass	FACU
Solanum nigrum	Black Nightshade	FACU-
Solidago altissima	Tall Goldenrod	FACU-
Solidago canadensis	Canada Goldenrod	FACU
Solidago gigantea	Giant Goldenrod	FACW
Stellaria media	Common Chickweed	UPL[2]
Trifolium repens	White Clover	FACU-
Typha latifolia	Broad-leaf Cattail	OBL
Vines		
Lonicera japonica	Japanese Honeysuckle	FAC-
Parthenocissus quinquefolia	Virginia Creeper	FACU

APPENDIX B

COMPILED LIST OF PLANT SPECIES ENCOUNTERED DURING FEMP WETLANDS DELINEATION

Scientific Name	Common Name	Region[1] Indicator Status
Vines (Cont'd)		
Toxicodendron radicans	Poison Ivy	FAC
Vitis riparia	Riverbank Grape	FACW
Vitis vulpina	Frost Grape	FAC

1 Probability of occurring in wetlands (Reed 1988)

OBL	>99%
FACW	67%-99%
FAC	34%-66%
FACU	1-33%
UPL	<1% Occurs in wetlands in other regions
NI	No indicator assigned based on insufficient information.

+	Indicates frequency towards higher end of category.
-	Indicates frequency towards lower end of category.
*	Tentative assignment, status based on limited ecological information.

2 Not on National List (Reed 1988), therefore Upland indicator status was assigned.

7.3 APPENDIX C
SOIL LOGS

APPENDIX C

FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-1	Fincastle (FdA) silt loam	0 - 5	Dark grayish brown (10YR4/2) silt loam
		5 - 20	Gray (10YR5/1) silty clay loam with many medium prominent yellowish brown (10YR5/8) mottles
SE-2	Fincastle (FcA) silt loam	0 - 10	Very dark grayish brown (10YR3/2) silt loam (plow zone)
		10 - 20	Gray (10YR5/1) silty clay loam with common fine distinct dark yellowish brown (10YR4/6) mottles
SE-3	Miamian-Russell (MsC2) silt loam	0 - 10	Very dark grayish brown (2.5Y3/2) silt loam
		10 - 12	Dark grayish brown (2.5Y4/2) silt loam (60%) & light olive brown (2.5Y5/4) silt loam (40%) with common fine faint dark yellowish brown (10YR3/4) mottles
		12 - 18	Light olive gray (5Y6/2) silty clay loam with common medium distinct yellowish brown (10YR4/6) mottles
SE-4	Miamian-Russell (MsC2) silt loam	0 - 6	Dark grayish brown (10YR4/2) silt loam
		6 - 18	Dark yellowish brown (10YR4/6) silty clay loam with common fine faint brown (10YR5/3) mottles
SE-5	Ragsdale (Ra) silty clay loam	0 - 19	Dark grayish brown (2.5YR4/2) silt loam with few fine faint dark yellowish brown (10YR4/4) mottles
		19 - 24	Brown (10YR5/3) silt clay with many fine distinct yellowish brown (10YR5/6) mottles
SE-6	Xenia (XeB) silt loam	0 - 12	Very dark grayish brown (10YR3/2) silt loam

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-6	(Cont.)	12 - 18	Brown (10YR3/2) and (10YR5/3) silty clay loam
		18 - 24	Dark grayish brown (10YR4/2) silty clay loam
SE-7	Ragsdale (Ra) silty clay loam	0 - 3	Dark grayish brown (10YR4/2) silt loam
		3 - 11	Dark brown (10YR3/3) silt loam
		11 - 21	Very dark grayish brown (2.5Y3/2) silt loam
		21 - 26	Dark grayish brown (2.5Y4/2) silty clay loam with few fine distinct dark yellow brown (10YR4/6) mottles
SE-8	Ragsdale (Ra) silty clay loam	0 - 4	Dark brown (10YR3/3) silt loam
		4 - 13	Dark yellowish brown (10YR4/4) silt loam
		13 - 24	Very dark grayish brown (10YR3/2) silt loam
SE-9	Xenia (XeB) silt loam	0 - 10	Dark brown (10YR3/3) silt loam
		10 - 24	Brown (10YR5/3) silt loam with common medium faint yellowish brown (10YR5/6) mottles with concretional limestone & cobble around 24"
SE-10	Ragsdale (Ra) silty clay loam	0 - 3	Dark grayish brown (10YR 4/2) silt loam
		3 - 8	Dark brown(10YR4/3) silt loam
		8 - 20	Very dark grayish brown (10YR3/2) silt loam
		20 - 24	Very dark grayish brown (10YR3/2) silt loam and brown (10YR5/3) silty clay loam

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-11	Ragsdale (Ra) silty clay loam	0 - 4	Dark grayish brown (10YR4/2) silt loam
		4 - 10	Dark brown (10YR3/3) silt loam
		10 - 22	Very dark grayish brown (10YR3/2) silty clay loam
		22 - 26	Light olive brown (2.5Y5/3) silty clay loam with common fine distinct yellowish brown (10YR5/8) mottles
SE-12	Ragsdale (Ra) silty clay loam	0 - 8	Dark grayish brown (10YR4/2) silt loam
		8 - 19	Very dark grayish brown (10YR3/2) silt loam
		19 - 22	Dark gray (10YR4/1) silty clay loam with common fine faint dark yellowish brown (10YR4/4) mottles
		22 - 25	Grayish brown (2.5Y5/2) silty clay loam with common fine distinct yellowish brown (10YR5/6) mottles Standing water at 12"
SE-13	Ragsdale (Ra) silty clay loam	0 - 12	Dark gray (10YR4/1) silt loam with common fine distinct dark brown (7.5YR4/4) mottles
		12 - 24	Grayish brown (2.5Y5/2) silty clay loam with many medium prominent yellowish brown (10YR5/6) mottles Standing water at surface
SE-14	Ragsdale (Ra) silty clay loam	0 - 14	Dark grayish brown (10YR4/2) silt loam with common faint distinct dark brown (7.5YR4/4) mottles
		14 - 24	Grayish brown (2.5Y5/2) silty clay loam with many fine distinct yellowish brown (10YR5/6) mottles Standing water at 12"

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-15	Ragsdale (Ra) silty clay loam	0 - 10	Dark grayish brown (2.5Y4/2) silt loam with common fine faint dark brown (7.5YR 4/3) mottles
		10 - 22	Dark gray (10YR4/1) silt loam with common fine faint dark brown (7.5YR4/3) mottles
		22 - 25	Light yellow brown (2.5Y6/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles Standing water at 6"
SE-16	Fincastle (FcA) silt loam	0 - 12	Dark grayish brown (10YR4/2) silt loam
		12 - 24	Light olive brown (2.5Y5/3) silty clay loam with common fine faint yellowish brown (10YR 5/6) mottles Standing water at 14"
SE-17	Xenia (XeB2) silt loam	0 - 3	Very dark grayish brown (10YR3/2) silt loam
		3 - 4	Dark grayish brown (2.5Y4/2) silt loam
		9 - 17	Dark brown (10YR4/3) silt loam with few fine faint dark yellow brown (10YR4/6) mottles
		17 - 24	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct yellowish brown (10YR5/8) mottles Standing water at 20"
SE-18	Ragsdale (Ra) silty clay loam	0 - 4	Very dark grayish brown (10YR3/2) silt loam
		4 - 8	Dark grayish brown (2.5Y4/2) silty clay loam with common few faint dark yellowish brown (10YR4/4) mottles

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-18	(cont.)	8 - 18	Grayish brown (2.5Y5/2) silt loam with common medium distinct yellowish brown (5YR5/6) mottles
		18 - 24	Gray (10YR5/1) silty clay loam with many medium prominent yellowish brown (10YR5/8) mottles Standing water at 21"
SE-19	Fincastle (FcA) silt loam	0 - 6	Dark grayish Brown (10YR 4/2) silt loam
		6 - 16	Very dark grayish brown (10YR3/2) silt loam
		16 - 18	Very dark grayish brown (10YR3/2) silt loam and light yellow brown (2.5YR6/3) silty clay loam (50/50) with common fine distinct yellowish brown (10YR5/6) mottles
		18 - 24	Light yellowish brown (2.5YR6/3) silty clay loam Standing water not encountered
SE-20	Fincastle (FdA) silt loam	0 - 16	Dark grayish brown (10YR4/2) silt loam
		16 - 24	Light yellowish brown (2.5Y 6/3) silty clay loam with common fine faint yellowish brown (10YR5/6) mottles Standing water not encountered
SE-21	Raub (RdA) silt loam	0 - 12	Dark grayish brown (10YR4/2) silt loam
		12 - 24	Grayish brown (2.5Y5/2) silty clay loam with common fine faint dark yellowish brown (10YR4/6) mottles Standing water not encountered

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-22	Raub (RdA) silt loam	0 - 4	Very dark grayish brown (10YR3/2) silt loam
		4 - 13	Dark yellowish brown (10YR4/6) silt loam
		13 - 17	Light olive brown (2.5Y5/3) silt loam with few fine faint dark yellowish brown (10YR4/6) mottles
		17 - 24	Grayish brown (2.5Y5/2) silty clay loam with common fine distinct dark yellow brown (10YR4/6) mottles
			Standing water > 24"
SE-23	Raub (RdA) silt loam	0 - 12	Grayish brown (2.5Y4/2) silt loam
		12 - 16	Grayish brown (2.5Y5/2) silt loam with common fine faint dark yellowish brown (10YR4/4) mottles
		16 - 24	Gray (10YR5/1) silty clay loam with common medium distinct dark yellowish brown (10YR4/6) mottles
			Standing water > 24"
SE-24	Raub (RdA) silt loam	0 - 3	Very dark brown (10YR2/2) silt loam
		3 - 12	Very dark brown (10YR3/3) silt loam
		12 - 18	Very dark brown (10YR3/2) silty clay loam with few fine faint dark yellowish brown (10YR3/4) mottles
		18 - 26	Dark gray (10YR4/1) silty clay loam with common fine distinct dark yellowish brown (10YR4/6) mottles
SE-25	Ragsdale (Ra) silty clay loam	0 - 3	Very dark grayish brown (10YR3/2) silt loam
		3 - 12	Dark grayish brown (10YR4/2) silt loam
		12 - 18	Very dark gray (10YR3/1) silt loam

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-25	(cont.)	18 - 24	Dark gray (10YR4/1) silty clay loam with few fine faint yellowish brown (10YR4/4) mottles
SE-26	Fincastle (FcA) silt loam	0 - 14	Very dark grayish brown (10YR3/2) silt loam
		14 - 24	Light olive brown (2.5Y5/3) silty clay loam with common medium faint yellowish brown (10YR5/8) mottles Standing water at 25"
SE-27	Fincastle (FcA) silt loam	0 - 2	Very dark grayish brown (10YR3/2) silt loam
		2 - 16	Dark brown (10YR3/3) silt loam
		16 - 20	Very dark grayish brown (10YR3/2) silt loam
		20 - 25	Dark grayish brown (10YR4/2) silty clay loam with common medium distinct yellowish brown (10YR5/4) mottles
SE-28	Fincastle (FcA) silt loam	0 - 18	Very dark grayish brown (10YR3/2) silt loam
		18 - 24	Dark grayish brown (2.5Y4/2) silty clay loam with few fine faint dark yellowish brown (10YR4/4) mottles
SE-29	Fincastle (FcA) silt loam	0 - 12	Dark grayish brown (10YR4/2) silt loam
		12 - 18	Dark grayish brown (2.5Y4/2) silt loam
		18 - 24	Grayish brown (2.5Y5/2) silty clay loam with common fine faint yellowish brown (10YR5/4) mottles
SE-30	Fincastle (FcA) silt loam	0 - 12	Very dark grayish brown (10YR3/2) silt loam
		12 - 24	Dark gray brown (2.5Y4/2) silty clay loam with few medium faint dark

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-30	(cont.)		12 - 24 yellowish brown (10YR4/6) mottles
SE-31	Xenia (XeB2) silt loam	0 - 8	Very dark grayish brown (10YR3/2) silt loam
		8 - 18	Light yellowish brown (2.5Y6/3) silt loam with common fine distinct yellowish brown (10YR5/6) mottles
		18 - 24	Light brownish gray (2.5Y6/2) silty clay loam with many medium distinct yellowish brown (10YR5/6) mottles Standing water at 24"
SE-32	Xenia (XeB2) silt loam	0 - 8	Very dark grayish brown (10YR3/2) silt loam
		8 - 14	Light yellowish brown (2.5Y6/3) silt loam with common medium faint yellowish brown (10YR5/6) mottles
		14 - 28	Light brownish gray (2.5Y6/2) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles Standing water at 28"
SE-33	Xenia (XeB2) silt loam	0 - 5	Dark grayish brown (10YR4/2) silt loam
		5 - 14	Dark brown (10YR3/3) silt loam
		14 - 20	Very dark grayish brown (10YR3/2) silty clay loam
		20 - 24	Grayish brown (2.5Y4/2) with common medium prominent yellowish brown (10YR5/6) mottles
SE-34	Ragsdale (Ra) silty clay loam	0 - 8	Dark grayish brown (10YR4/2) silt loam
		8 - 12	Very dark gray brown (10YR3/1) silt loam

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-34	(cont.)	12 - 18	Very dark grayish brown (10YR3/2) silt loam
		18 - 24	Dark grayish brown (2.5Y4/2) silty clay loam with few fine distinct dark yellowish brown (10YR4/4) mottles Standing water at 16"
SE-35	Ragsdale (Ra) silty clay loam	0 - 6	Very dark grayish brown (10YR3/2) silt loam
		6 - 12	Dark grayish brown (10YR4/2) silt loam
		12 - 15	Dark brown (10YR3/3) silty loam
		15 - 24	Dark grayish brown (10YR4/2) silt clay loam Standing water not encountered
SE-36	Ragsdale (Ra) silty clay loam	0 - 12	Very dark grayish brown (10YR3/2) silt loam
		12 - 14	Dark grayish brown (10YR4/2) silty clay loam
		14 - 20	Light olive brown (2.5Y3/3) silty clay loam with common medium distinct dark yellowish brown (10YR4/6) mottles
		20 - 24	Grayish brown (2.5Y5/2) silty clay loam with common medium distinct dark yellow (10YR4/6) mottles
SE-37	Ragsdale (Ra) silty clay loam	0 - 2	Very dark grayish brown (10YR3/2) silt loam
		2 - 12	Dark brown (10YR3/2) silt loam
		12 - 20	Dark grayish brown (10YR4/2) silty clay loam
		20 - 29	Dark gray (10YR4/1) silty clay loam with common medium distinct dark yellowish brown (10YR4/4) mottles Standing water not encountered

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-38	Ragsdale (Ra) silty clay laom	0 - 1	Very dark grayish brown (10YR3/2) silt loam
		1 - 12	Dark brown (10YR3/3) silt loam
		12 - 24	Gray (10YR5/1) silty clay loam with common medium distinct dark yellowish brown (10YR4/6) mottles
			Standing water not encountered
SE-39	Ragsdale (Ra) silty clay loam	0 - 12	Very dark grayish brown (10YR3/2) silt loam
		12 - 20	Dark gray (10YR4/1) silty clay loam with common fine distinct dark yellowish brown (10YR4/6) mottles
		20 - 24	Light brownish gray (2.5Y6/2) silty clay loam with common many distinct yellowish brown (10YR5/6) mottles
			Standing water not encountered
SE-40	Ragsdale (Ra) silty clay loam	0 - 2	Very dark grayish brown (10YR3/2) silt loam
		2 - 10	Very dark grayish brown (10YR4/2) silt loam
		10 - 18	Very dark gray (10YR3/1) silty clay loam (with wood charcol in 10-12 zone)
		18 - 24	Dark gray (10YR4/1) silty clay loam with fine faint few dark yellowish brown (10YR4/4) mottles
			Standing water not encountered
SE-41	Ragsdale (Ra) silty clay loam	0 - 3	Very dark gray (10YR4/2) silt loam
		3 - 8	Dark brown (10YR4/3) silt loam

APPENDIX C

FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-41	(cont.)	8 - 16	Very dark grayish brown (10YR3/2) silt loam
		16 - 24	Light brownish gray (2.5Y6/2) silty clay with many medium prominent yellowish brown (10YR5/8) mottles
SE-42	Xenia (XeB) silt loam	0 - 8	Very dark grayish brown (10YR4/2) silt loam
		8 - 20	Dark gray (10YR4/1) silty clay loam with common fine distinct (10YR4/4) mottles
		20 - 24	Grayish brown (2.5Y5/2) silt loam with common fine distinct dark yellowish brown (10YR4/6) mottles
			Red brick at 20 (tile ?)
			Refusal at 24
SE-43	Xenia (XeB) silt loam	0 - 1	Dark Brown (10YR3/3) silt loam
		1 - 10	Brown (10YR5/3) silt loam
		10 - 16	Brown (10YR5/3) silty clay loam with few medium distinct dark yellowish brown (10YR4/6) mottles
		16 - 24	Light olive brown (2.5Y5/3) silty clay loam with many medium-coarse distinct red (2.5YR5/8) mottles
SE-44	Xenia (XeB) silt loam	0 - 6	Very dark grayish brown (10YR3/2) silt loam
		6 - 15	Dark gray (10YR4/1) silt loam
		15 - 24	Grayish brown (2.5Y5/2) silty clay loam with common fine distinct dark yellowish brown (10YR4/6) mottles
			Standing water not encountered

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-45	Xenia (XeB) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 8	Dark brown (10YR4/3) silt loam
		8 - 14	Dark yellowish brown (10YR4/6) silty clay loam
		14 - 20	Brown (10YR5/3) silty clay loam with common medium faint yellowish brown (10YR5/6) mottles
			Standing water not encountered
SE-46	Miamian-Russell (MsC2) silt loam	0 - 2	Very dark grayish brown (10YR3/2) silt loam
		2 - 24	Brown (10YR5/3) fine loam
SE-47	Genesee (Gn) loam	0 - 2	Grayish brown (10YR4/2) silt loam
		2 - 8	Dark brown (10YR3/3) fine sandy loam
		8 - 15	Dark yellowish brown (10YR4/4) fine sandy loam
		15 - 24	Dark yellowish brown (10YR3/4) medium sandy loam
SE-48	Genesee (Gn) loam	0 - 2	Very dark grayish brown (10YR3/2) silt loam
		2 - 24	Very dark grayish brown (10YR2/2) silt loam
			Standing water not encountered
SE-49	Genesee (Gn) loam	0 - 6	Dark grayish brown (10YR4/2) silt loam
		6 - 9	Dark grayish brown (10YR4/2) and yellowish brown (10YR5/6) silt loam mixed 50/50
		9 - 24	Yellowish brown (10YR5/6) silty clay loam with few many distinct light yellowish brown (2.5Y6/3) mottles

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-50	Miamia-Russell (MsC2) silt loam	0 - 4	Very dark brown (10YR3/2) silt loam
		4 - 12	Dark brown (10YR4/3) silt loam
		12 - 24	Dark yellowish brown (10YR4/4) silt loam
			Standing water not encountered
SE-51	Xenia (XeB) silt loam	0 - 3	Very dark gray brown (10YR5/2) silt loam
		3 - 10	Dark brown (10YR3/3) silt loam
		10 - 15	Very dark brown (10YR3/2) silty clay loam mixed with light yellowish brown (2.5Y6/4) silt loam with common fine distinct yellowish brown (10YR5/6) mottles
		15 - 20	Very dark gray brown (10YR3/2) silty clay loam
SE-52	Xenia (XeB) silt loam	0 - 2	Very dark grayish brown (10YR3/2) silt loam
		2 - 14	Dark grayish brown (10YR4/2) silt loam
		14 - 24	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles
			Refusal at 24 (Rock)
SE-53	Xenia (XeB) silt loam	0 - 2	Very dark gray brown (10YR3/2) silt loam
		2 - 5	Dark grayish brown (10YR4/2) silt loam
		5 - 20	Very dark grayish brown (10YR3/2) silt loam
		20 - 24	Light olive brown (2.5Y5/3) silty clay loam with common few distinct dark yellowish brown (10YR4/6) mottles
			Standing water not encountered

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-54	Ragsdale (Ra) silty clay loam	0 - 5	Very dark grayish brown (10YR4/2) silt loam with dark brown (7.5YR4/4) mottles
		5 - 24	Dark gray (10YR4/1) silt loam with common medium distinct dark brown (7.5YR4/4) mottles
SE-55	Ragsdale (Ra) silty clay loam	0 - 4	Dark grayish brown (10YR4/2) silt loam
		4 - 10	Dark brown (10YR3/3) silt loam with few fine faint dark yellowish brown (10YR3/6) mottles
		10 - 16	Very dark grayish brown (10YR3/2) silt loam with few fine faint dark yellowish (10YR4/6) mottles
		16 - 24	Dark gray (10YR4/1) silty clay loam with common medium distinct (10YR4/6) mottles
SE-56	Miamian-Russell (MsC2) silt loam	0 - 10	Dark grayish brown (10YR4/2) silt loam with common fine distinct (7.5YR4/4) mottles
		10 - 18	Light olive brown (2.5Y5/3) silt loam with common fine distinct yellowish brown (10YR5/6) mottles.
		18 - 24	Light olive brown (2.5Y5/4) silt loam with common medium distinct yellow brown (10YR5/6) mottles Standing water not encountered
SE-57	Miamian-Russell (MsC2) silt loam	0 - 8	Grayish brown (2.5Y5/2) with common medium distinct strong brown (7.5YR4/6) mottles Refusal at 8"

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-58	Ragsdale (Ra) silty clay loam	0 - 2	Very dark grayish brown (10YR3/2) silt loam
		2 - 6	Dark grayish brown (10YR4/2) silt loam
		6 - 15	Gray (10YR5/1) silty clay loam with many medium distinct (10YR4/6) mottles
		15 - 24	Very dark gray (10YR4/1) silty clay loam with common medium distinct yellowish brown (10YR4/6) mottles
			Standing water not encountered
SE-59	Ragsdale (Ra) silty clay loam	0 - 3	Very dark grayish brown (10YR3/2) silt loam
		3 - 14	Dark gray (10YR4/1) silt loam with few fine faint dark brown (7.5YR4/3) mottles
		14 - 24	Grayish brown (2.5Y5/2) and very dark grayish brown (10YR3/2) silty clay loam with common medium distinct dark yellowish brown (10YR4/6) mottles
			Standing water at 8"
SE-60	Ragsdale (Ra) silty clay loam	0 - 4	Very dark grayish brown (10YR3/2) silt loam
		4 - 15	Dark grayish brown (10YR4/2) silt loam
		15 - 24	Grayish brown (2.5Y5/2) silty clay loam with common medium distinct dark yellowish brown (10YR4/6) mottles
			Standing water at 21"
SE-61	Ragsdale (Ra) silty clay loam	0 - 13	Dark grayish brown (10YR4/2) silt loam
		13 - 24	Light olive brown (2.5Y5/3) silty clay loam with common medium faint yellowish brown (10YR5/6) mottles

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-61	(cont.)		Standing water at 22"
SE-62	Ragsdale (Ra) silty clay loam	0 - 10	Dark grayish brown (10YR4/3) silt loam
		10 - 18	Very dark grayish brown (2.5Y3/2) with common fine distinct yellowish brown (10YR5/6) mottles
		18 - 24	Dark gray (10YR4/1) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles
			Standing water > 24"
SE-63	Ragsdale (Ra) silty clay loam	0 - 4	Olive brown (2.5Y4/3) silty clay loam with common medium prominent yellowish red (5YR4/6) mottles
		4 - 10	Dark grayish brown (2.5Y4/2) silty clay loam
		10 - 24	Olive brown (2.5Y4/3) silty clay loam with common medium distinct grayish brown (10YR5/2) mottles
			Standing water not encountered
SE-64	Fincastle (FcA) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam with common fine distinct strong brown (7.5YR4/6) oxidized root channels
		2 - 10	Same matrix as 0"-2" no root channelization
		10 - 14	Grayish brown (2.5Y5/2) silty clay loam with gray (10YR6/1) and yellowish brown (10YR5/8) many medium and prominent mottles
		14 - 24	Light olive brown (2.5Y5/3) silty clay with many medium distinct dark yellowish brown (10YR4/6) mottles
			Standing water not encountered

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-65	Xenia (XeB2) silt loam	0 - 10	Dark grayish brown (10YR4/2) silt loam
		10 - 14	Dark grayish brown (10YR4/2) silt loam with medium common distinct yellowish brown (10YR5/6) mottles
		14 - 24	Olive brown (2.5Y5/3) silty clay loam with medium distinct yellowish brown (10YR5/6) mottles Standing water at 23"
SE-66	Xenia (XeB2) silt loam	0 - 4	Dark grayish brown (10YR4/2) silt loam with common medium prominent yellowish red (5YR4/6) oxidized root channels
		4 - 24	Light olive brown (2.5Y5/3) silty clay loam with fine faint few yellowish brown (10YR5/6) mottles Standing water at 17"
SE-67	Fincastle (FcA) silt loam	0 - 6	Dark grayish brown (10YR4/2) silt loam with common fine distinct dark yellowish brown (10YR4/6) mottles
		6 - 15	Light brownish gray (2.5Y6/2) silt loam with common medium distinct yellowish brown (10YR5/6) mottles
		15 - 24	Light yellowish brown (2.5Y6/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles Standing water not encountered
SE-68	Ragsdale (Ra) silty clay loam	0 - 12	Dark grayish brown (10YR4/2) silt loam
		12 - 16	Dark grayish brown (10YR4/2) silt loam with few fine faint dark yellowish brown (10YR4/4) silt loam

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-68	(cont.)	16 - 24	Light olive brown (10YR5/3) silty clay loam with common medium faint yellowish brown (10YR4/6) mottles Standing water not encountered
SE-69	Fincastle (FcA) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 6	Brown (10YR5/3) silt loam with few fine faint dark yellowish brown (10YR4/6) mottles
		6 - 12	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct yellowish brown (10YR5/8) mottles
		12 - 14	Light olive brown (2.5Y 5/3) silty clay loam with common medium distinct light brownish gray (2.5Y6/2) and yellowish brown (10YR5/8) mottles
		14 - 24	Light olive brown (2.5Y5/4) silty clay loam with many medium distinct yellowish brown (10YR5/6) mottles Standing water not encountered
SE-70	Miamian-Russell (MsD2) silt loam	0 - 3	Very dark grayish brown (10YR3/2) silt loam
		3 - 14	Dark brown (10YR3/3) silt loam
		14 - 20	Light yellowish brown (2.5Y6/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles
		20 - 26	Light brownish gray (2.5Y6/2) silty clay loam with many medium prominent (10YR5/8) mottles Standing water at 26"

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-71	Xenia (XcA) silt loam	0 - 4	Very dark gray (10YR3/1) silt loam
		4 - 10	Very dark grayish brown (10YR3/2) silty clay loam with few fine faint dark yellowish brown (10YR3/6) mottles
		10 - 20	Dark gray (10YR4/1) silty clay loam with common fine distinct dark yellowish brown (10Y4/6) silty clay loam with common medium distinct light yellowish brown (10YR5/6) mottles
		20 - 24	Light yellowish brown (2.5Y5/2) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles
SE-72	Miamian-Russell (MsD2) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 12	Dark brown (10YR3/3) silt loam
		12 - 24	Light olive brown (2.5Y5/4) silty clay loam with common medium faint (10YR5/6) mottles
			Standing water not encountered
SE-73	Xenia (XeB) silt loam	0 - 5	Dark grayish brown (10YR4/2) silt loam
		5 - 12	Grayish brown (10YR5/2) silty clay loam with common medium distinct dark yellowish brown (10YR4/6) mottles
		12 - 24	Light yellowish brown (2.5Y5/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles
			Standing water not encountered
SE-74	Fincastle (FdA) silt loam	0 - 5	Dark grayish brown (10YR4/2) silt loam
		5 - 12	Brown (10YR5/3) silt loam with common medium distinct dark yellowish brown (10YR4/6) mottles

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-74	(cont.)	12 - 20	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles
		20 - 25	Light brownish gray (2.5Y6/2) silty clay loam with common medium prominent yellowish brown (10YR5/8) mottles Standing water not encountered
SE-75	Fincastle (FdA) silt loam	0 - 3	Dark grayish brown (10YR4/2) silt loam
		3 - 8	Dark brown (10YR3/3) silt loam
		8 - 14	Very dark grayish brown (10YR3/2) silt loam
		14 - 24	Dark grayish brown (10YR4/1) silty clay loam with few medium distinct dark yellow (10YR4/6) mottles
SE-76	Fincastle (FdA) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 12	Dark brown (10YR3/3) silt loam
		12 - 15	Very dark grayish brown (10YR3/2) silty clay loam
		15 - 24	Very dark gray (10YR3/1) silty clay loam
SE-77	Fincastle (FdA) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 12	Dark brown (10YR 3/3) silt loam
		12 - 18	Very dark gray (10YR4/1) silty clay loam with common fine distinct dark brown (7.5YR4/4) mottles
		18 - 24	Grayish brown (2.5Y5/2) silty clay loam with common fine distinct yellow brown (10YR4/6) mottles

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-78	Fincastle (FdA) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 12	Light olive brown (2.5Y5/3) silt loam with few medium faint dark yellowish brown (10YR4/4) mottles
		12 - 24	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles. Standing water not encountered
SE-79	Fincastle (FdA) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 6	Light olive brown (2.5Y5/3) silt loam with common fine distinct dark yellowish brown (10YR4/6) mottles
		6 - 14	Light brownish gray (2.5Y6/2) silty clay loam with common medium distinct dark yellowish brown (10YR4/6) mottles
		14 - 24	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles Standing water not encountered
SE-80	Fincastle (FdA) silt loam	--	Soil sample not taken
SE-81	--	--	Not used
SE-82	Fincastle (FdA) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 12	Dark grayish brown (10YR4/2) silt loam with common fine faint dark brown (7.5YR4/4) mottles

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-82	(cont.)	12 - 24	Grayish brown (2.5Y5/2) silty clay loam with common medium distinctive strong brown (7.5YR4/6) mottles Standing water not encountered
SE-83	Fincastle (FdA) silt loam	0 - 3	Dark brown (10YR3/3) silt loam
		3 - 10	Brown (10YR5/3) silt loam with common medium faint yellowish brown (10YR5/6) mottles
		10 - 24	Brown (10YR5/3) silty clay loam with common medium distinct yellowish brown (10YR5/8) and few medium distinct light brownish gray (10YR6/2) mottles. Black convections at 20" Standing water not encountered
SE-84	Xenia (XfB2) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 8	Brown (10YR5/3) silt loam with few medium faint dark yellowish brown (10YR4/6) mottles
		8 - 24	Light olive brown (2.5Y5/4) silty clay loam with common medium faint yellowish brown (10YR5/6) mottles Standing water not encountered
SE-85	Xenia (XfB2) silt loam	0 - 2	Dark brown (10YR3/3) silt loam
		2 - 15	Brown (10YR5/3) silt loam with common fine faint dark yellowish brown (10YR4/6) mottles
		15 - 24	Light yellowish brown (2.5Y6/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles Standing water not encountered

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-86	Xenia (XfB2) silt loam	0 - 1	Dark grayish brown (10YR4/2) silt loam
		1 - 17	Light olive brown (2.5Y5/3) silt loam with common fine distinct dark yellowish brown (10YR4/6) mottles
		17 - 24	Light yellowish brown (2.5Y6/3) silty clay loam with many medium distinct yellowish brown (10YR5/6) mottles
SE-87	Xenia (XfA) silt loam	0 - 3	Dark brown (10YR3/3) silt loam
		3 - 12	Brown (10YR5/3) silt loam with few medium faint light brownish gray (10YR6/2) mottles
		12 - 24	Light yellowish brown (2.5Y6/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles
			Standing water not encountered
SE-88	Xenia (XeB) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 8	Dark brown (10YR4/3) silt loam
		8 - 24	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) and few medium distinct light brownish gray (2.5Y6/2) mottles
			Standing water not encountered
SE-89	Xenia (XeB) silt loam	0 - 8	Dark grayish brown (10YR4/2) silt loam with few medium faint dark yellowish brown (10YR4/6) mottles
		8 - 12	Brown (10YR5/3) silty clay loam with common medium faint dark yellowish brown (10YR4/6) mottles

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-89	(cont.)	12 - 24	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct dark yellowish brown (10YR5/6) and faint medium fine light brownish gray (2.5Y6/2) mottles Standing water not encountered
SE-90	Xenia (XeB) silt loam	0 - 6	Brown (10YR5/3) silt loam
		6 - 12	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles
		12 - 24	Yellowish brown (10YR5/4) silty clay loam with common coarse distinct brown (10YR5/3) and few fine distinct yellowish brown (10YR5/6) mottles Standing water not encountered
SE-91	Ragsdale (Ra) silty clay loam	0 - 6	Very dark grayish brown (10YR3/2) silt loam
		6 - 14	Very dark gray (10YR4/3) silty clay loam with few fine faint dark yellowish brown (10YR4/4) mottles
		14 - 20	Dark gray (10YR4/1) silty clay loam with common medium distinct dark yellowish brown (10YR4/6) mottles
		20 - 24	Light brownish gray (2.5Y6/2) silty clay loam with common medium prominent yellowish brown (10YR5/6) mottles Standing water not encountered
SE-92	Xenia (XeB) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 10	Dark brown (10YR4/3) silt loam with few medium faint dark yellowish brown (10YR4/6) mottles

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-92	(cont.)	10 - 24	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles Standing water not encountered
SE-93	Xenia (XeB) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 6	Dark brown (10YR4/3) silt loam
		6 - 14	Light yellowish brown (2.5Y6/3) silt loam with common medium distinct dark yellowish brown (10YR4/6) mottles
		14 - 24	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct yellowish brown (10YR5/6) mottles Standing water not encountered
SE-94	Xenia (XeB) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 8	Grayish brown (10YR5/2) silt loam with common medium distinct dark yellowish brown (10YR4/6) mottles
		8 - 24	Light olive brown (2.5Y5/3) silty clay loam with common medium distinct mottles Standing water not encountered
SE-95	Genesee (Gn) loam	0 - 12	Dark grayish brown (10YR4/2) silt loam
		12 - 24	Dark brown (10YR4/3) silty clay loam Standing water not encountered

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-96	Genesee (Gn) loam	0 - 8	Dark grayish brown (10YR4/2) silt loam
		8 - 24	Dark yellowish brown (10YR4/4) silt loam
			Standing water not encountered
SE-97	Genesee (Gn) loam	0 - 1	Very dark brown (10YR2/2) loam/organic
		1 - 6	Light olive brown (2.5Y5/4) silt loam
		6 - 16	Dark brown (10YR4/6) silt loam with some gravel
		16	Refusal
SE-98	Genesee (Gn) loam	0 - 16	Dark grayish brown (10YR3/2) silt loam
		16 - 24	Dark brown (10YR4/3) silt loam
SE-99	Genesee (Gn) loam	0 - 6	Dark yellowish brown (10YR4/4) silt loam
		6 - 24	Light olive brown (2.5Y5/3) with few medium faint dark yellowish brown (10YR4/6) and dark brown (10YR4/3) silt loam mottles
SE-100	Raub (RdA) silt loam	0 - 2	Very dark grayish brown (10YR3/2) silt loam
		2 - 9	Dark brown (10YR3/3) and yellowish brown (10YR5/4) silty clay loam
		9 - 16	Very dark grayish brown (10YR3/2) silt loam
		16 - 24	Dark grayish brown (2.5Y4/2) silty clay loam
SE-101	Fincastle (FdA) silt loam	0 - 4	Very dark grayish brown (10YR3/2) silt loam
		4 - 12	Dark grayish brown (2.5Y4/2) silt loam with many fine distinct strong brown (7.5YR5/8) mottles
		12 - 24	Dark gray (10YR4/1) silty clay loam with gray (10YR5/1) gley and

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-101	(cont.)		many medium distinct strong brown (7.5YR5/8) mottles
SE-102	Xenia (XfB2) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 20	Brown (10YR5/3) silty clay loam with many coarse distinct yellowish brown (10YR5/6) mottles
		20 - 24	Light olive brown (2.5Y5/4) silty clay with many yellowish brown (10YR5/6) mottles
SE-103	Xenia (XfB2) silt loam	0 - 2	Brown (10YR5/2) silt loam
		2 - 18	Grayish brown (10YR5/2) silty clay loam with gray (10YR6/1) gley and common coarse yellowish brown (10YR5/8) mottles
		18 - 19	Very dark grayish brown (10YR3/2) silty clay loam with roots and organic matter possible buried A
		19 - 24	Grayish brown (10YR5/2) silty clay loam with many medium distinct yellowish brown (10YR5/6) mottles
SE-104	Fincastle (FeA) urban land complex	0 - 4	Dark brown (10YR3/3) silt loam
		4 - 14	Yellowish brown (10YR5/3) silty clay loam
		14 - 24	Dark brown (10YR4/3) fine sandy silt loam
			No standing water encountered
SE-105	Hennepin (HeF) silt loam	0 - 2	Very dark grayish brown (10YR3/2) silt loam
		2 - 14	Dark brown (10YR3/3) fine sandy silt loam
		14 - 24	Dark brown/brown (10YR4/3) sandy silt loam
			No standing water encountered

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-106	Hennepin (HeF) silt loam	0 - 6	Dark grayish brown (10YR4/2) silty clay loam
		6 - 10	Grayish brown (10YR5/3) silty clay loam
		10 - 14	Dark grayish brown (10YR4/2) silty clay loam
		14 - 24	Dark brown (10YR4/3) silty clay loam
			Moist, no standing water encountered, possible fill
SE-107	Genesee (Gn) loam	0 - 12	Dark brown (10YR4/3) silty sand
		12 - 24	Brown (10YR5/3) silty sand alluvial deposits
			No standing water encountered
SE-108	Hennepin (HeF) silt loam	0 - 1	Very dark grayish brown (10YR3/2) silt loam
		1 - 15	Dark gray (10YR4/1) silty clay loam with many medium strong brown (7.5YR5/8) mottles, gravel scatterd throughout top 15"
			Refusal at 15"
			No standing water encountered
SE-109	Genesee (Gn) loam	0 - 6	Dark brown (10YR3/3) sandy silt loam
		6 - 16	Brown (10YR4/3) sandy silt loam
		16 - 24	Brown (10YR4/3) sandy silt loam with pea gravel throughout
			No standing water encountered

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FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-110	Genesee (Gn) loam	0 - 6	Dark brown (10YR3/3) silt loam
		6 - 16	Brown (10YR4/3) sandy silt loam
		17 - 24	Brown (10YR4/3) sandy silt loam with gravel. Alluvial
			No standing water encountered
SE-111	Genesee (Gn) loam	0 - 4	Dark brown (10YR3/3) silt loam
		4 - 12	Dark brown (10YR4/3) silt loam
		12 - 20	Dark gray brown (10YR4/2) silty clay loam with common medium distinct yellowish red (5YR4/6) mottles
		20 - 24	Dark grayish brown (10YR4/2) silty clay loam with many coarse distinct yellowish red (5YR4/6) mottles
SE-112	Fincastle (FeA) urban land complex	0 - 4	Dark brown (10YR3/3) silt loam
		4 - 12	Brown (10YR5/3) silt loam
		12 - 16	Brown (10YR5/3) silt loam with abudant gravel
			Refusal at 16"
			No standing water encountered
SE-113	Genesee (Gn) loam	0 - 8	Very dark grayish brown (10YR3/2) silt loam
		8 - 24	Dark brown/brown (10YR4/3) silt loam
			No standing water encountered
SE-114	Markland (MaB) silty clay loam	0 - 10	Dark grayish brown (10YR4/2) silt loam with common fine distinct yellowish brown (10YR5/8) mottles

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APPENDIX C

FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-114	(cont.)	10 - 14	Brown (10YR5/3) silty clay loam with common medium distinct yellowish brown (10YR5/8) mottles
		14 - 24	Light brownish gray (10YR6/2) silty clay loam with many medium yellowish brown (10YR5/8) mottles No standing water encountered
SE-115	Genesee (Gn) loam	0 - 2	Very dark grayish brown (10YR3/2) silt loam
		2 - 24	Brown/dark brown (10YR4/3) sandy silt. Alluvial No standing water encountered
SE-116	Raub (RdA) silt loam	0 - 3	Very dark grayish brown (10YR3/2) silt loam
		3 - 6	Dark brown (10YR3/3) silt loam and yellowish brown (10YR4/5) with fine faint few yellowish brown (10YR5/8) mottles
		6 - 12	Very dark gray (10YR3/1) silt clay loam with fine faint few dark yellowish brown/brown (10YR4/6) mottles
		12 - 24	Very dark gray (10YR3/1) silty clay loam with fine faint few yellowish brown (10YR5/6) mottles No standing water encountered
SE-117	Fincastle (FdA) silt loam	0 - 2	Dark brown (10YR3/3) silt loam
		2 - 16	Brown (10YR5/3) silt loam with few coarse distinct light brownish gray (10YR6/2) and medium yellowish brown (10YR5/8) mottles

APPENDIX C

FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-117	(cont.)	16 - 22	Brown (10YR5/3) silty clay loam with common medium distinct light brownish gray (10YR6/2) and (10YR5/8) yellowish brown mottles Refusal at 22", gravel throughout 16 Standing Water at 21"
SE-118	Fincastle (FdA) silt loam	0 - 3	Very dark grayish brown (10YR3/2) silt loam
		3 - 20	Brown (10YR5/3) silty clay loam with common medium distinct gray (10YR5/1) silt loam with common medium distinct yellowish brown (10YR5/8) mottles Refusal at 20" bone dry below 6"
SE-119	Fincastle (FdA) silt loam	0 - 3	Dark grayish brown (10YR4/2) silt loam
		3 - 12	Olive brown (2.5Y4/3) silt loam with common fine distinct yellowish brown (10YR5/8) mottles
		12 - 23	Olive brown (2.5Y4/3) silty clay loam with many medium distinct yellowish brown (10YR5/8) mottles No standing water encountered dry below 6"
SE-120	Fincastle (FdA) silt loam	0 - 2	Dark brown/brown (10YR4/3) silt loam
		2 - 6	Brown (10YR5/3) silty clay loam
		6 - 12	Dark grayish brown (10YR4/2) silty clay loam with few medium distinct yellowish brown (10YR5/8) mottles
		12 - 18	Grayish brown (10YR5/2) silty clay loam with common fine distinct yellowish brown (10YR5/8) mottles
		18 - 20	Very dark gray (10YR3/1) silty clay loam

APPENDIX C

FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-120	(cont.)	20 - 24	Brown (10YR5/3) silty clay loam with few fine faint yellowish brown (10YR5/8) mottles. Red tile at 20" No standing water encountered
SE-121	Fincastle (FdA) silt loam	0 - 3	Very dark grayish brown (10YR3/2) silt loam with yellowish red (5YR4/6) root channels
		3 - 14	Dark gray (10YR4/1) silty clay loam with many medium distinct strong brown (7.5YR5/6) mottles
		14 - 24	Dark gray (7.5YR5/0) silty clay loam with common medium prominent strong brown (7.5YR5/8) mottles Standing Water at 17"
SE-122	Fincastle (FdA) silt loam	0 - 4	Dark gray (10YR4/1) silty clay loam with strong brown (7.5YR5/8) oxidized root channels silt loam
		4 - 12	Light brownish gray (10YR6/2) silty clay loam with common medium prominent (5YR5/8) silty clay loam mottles
		12 - 24	Light yellowish brown (10YR6/4) silty clay loam
SE-123	Fincastle (FeA) urban land complex	0 - 2	Grayish brown (10YR5/2) silt loam
		2 - 6	Grayish brown (10YR5/2) silty clay loam with common medium distinct yellowish brown (10YR5/8) mottles
		6 - 18	Grayish (10YR5/2) silty clay loam with common coarse distinct gray (10YR5/1) and many medium distinct yellowish brown (10YR5/8) mottles Refusal at 18". Gravel throughout 2-18" possible fill

APPENDIX C

FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SE-124	Fincastle (FeA) urban land complex	0 - 4	Dark brown (10YR4/3) silty clay loam
		4 - 12	Dark yellowish brown (10YR4/4) silty clay loam with few fine faint yellowish brown (10YR5/8) mottles
		12 - 22	Brown (10YR5/3) fine silty sand with common faint distinct yellowish brown (10YR5/8) mottles
		22 - 25	Light gray (10YR7/2) silty clay loam with common medium prominent very pale brown (10YR7/4) and yellow (10YR7/8) mottles Standing Water encountered at 25"
SE-125	Dana (DaB) silt loam	0 - 6	Dark brown (10YR3/3) silt loam
		6 - 24	Very dark grayish brown (10YR3/2) silt loam
SE-126	Dana (Dab) silt loam	0 - 14	Dark brown (10YR3/3) silt loam
		14 - 24	Very dark grayish brown (10YR3/2) silt loam
SE-127	Eden (EcE2) silty clay loam	0 - 12	Dark grayish brown (2.5Y4/2) silt loam
		12 - 18	Dark grayish brown (2.5Y4/2) silty clay loam with common few distinct dark yellowish brown (10YR4/6) and few faint grayish brown (10YR5/2) mottles
		18 - 24	Olive brown (2.5Y4/3) silt loam with medium faint distinct strong brown (7.5YR4/6) mottles

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APPENDIX C

FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SW-1	Henshaw (HoA) silt loam	0 - 2	Dark grayish brown (10YR4/2) silt loam
		2 - 12	Brown (10YR5/3) silt loam with common coarse distinct gray (10YR5/1) and common medium distinct yellowish brown (10YR5/8) mottles
		12 - 24	Gray (10YR5/1) silty clay loam with many medium yellowish brown (10YR5/8) mottles Standing water at 12"
SW-2	Genesee (Gn) loam	0 - 9	Dark grayish brown (10YR3/2) silt loam
		9 - 12	Dark brown (10YR3/3) silt loam with coarse gravel Refusal at 12"
SW-3	Genesee (Gn) loam	0 - 6	Dark grayish brown (10YR4/2) silt loam with faint medium distinct dark brown (7.5YR4/4) mottles
		6 - 14	Brown/dark brown (10YR4/3) sandy silt loam with gravel few fine distinct brown (7.5YR4/4) dark brown mottles Refusal at 14" gravel
SW-4	Genesee (Gn) loam	0 - 4	Very dark grayish brown (10YR3/2) silt loam
		4 - 12	Very dark grayish brown (10YR3/2) silt loam
		12 - 24	Brown/dark brown (10YR4/3) fine sandy silt loam

APPENDIX C

FEMP WETLAND DELINEATION SOIL LOGS

Station	Name (Symbol)	Depth (")	Description
SW-5	Genesee (Gn) loam	0 - 4	Very dark grayish brown (10YR3/2) silt loam
		4 - 12	Brown (10YR5/3) sandy silt loam with few faint distinct dark yellowish brown (10YR4/6) mottles
		12 - 24	Brown (10YR5/3) silt loam
SW-6	Genesee (Gn) loam	0 - 3	Dark brown (10YR3/3) silt loam
		3 - 24	Brown/ dark brown (10YR4/3) silt loam

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7.4 APPENDIX D
DATA SHEETS

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-3
DATE: 12-12-92
INVESTIGATORS: J. Fischl
LOCATION: East of WA-2

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Forested Intermittent Drainage
PERCENT COVER: **Tree:** 90 **Shrub:** 80 **Herb:** 25 **Vine:** 20

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Ulmus americana (American Elm)	FACW-	Tree
Lonicera tartarica (Tartarian Honeysuckle)	FACU	Shrub
Aster vimineus (Small White Aster)	FAC	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Lonicera japonica (Japanese Honeysuckle)	FAC-	Vine
Vitis riparia (Riverbank Grape)	FACW	Vine

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 83%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-10	Very dark grayish brown (2.5Y3/2) silt loam
10-12	Dark grayish brown (2.5Y4/2) silt loam (60%) & light olive brown (2.5Y5/4) silt loam (40%) with common, fine, faint dark yellowish brown (10YR3/4) mottles
12-18	Light olive gray (2.5Y6/2) silty clay with common, medium, distinct yellowish brown (10YR4/6) mottles

SERIES/PHASE: Miamian-Russel (MsC2) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SAMPLE HIGH WATER TABLE:** >18"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric **HYDROLOGY:** Wetland

DECISION: WETLAND

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-4
DATE: 12-12-92
INVESTIGATORS: J. Fischl
LOCATION: West of WA-2

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Deciduous Forest
PERCENT COVER: **Tree:** 80 **Shrub:** 60 **Herb:** 20 **Vine:** 10

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Quercus muhlenbergii (Chinquapin Oak)	NI	Tree
Quercus imbricaria (Shingle Oak)	FAC	Tree
Prunus serotina (Black Cherry)	FACU	Tree
Carya laciniosa (Shellbark Hickory)	FAC	Tree
Lonicera tartarica (Tartarian Honeysuckle)	FACU*	Shrub
Lonicera japonica (Japanese Honeysuckle)	FAC-	Herb
Toxicodendron radicans (Poison Ivy)	FAC	Vine

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 65%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-6	Dark grayish brown (10YR4/2) silt loam
6-18	Dark yellowish brown (10YR4/6) silty clay loam with common, fine, faint brown (10YR5/3) mottles

SERIES/PHASE: Miamian-Russel (MsC2) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SAMPLE HIGH WATER TABLE:** >18"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Non-hydric **HYDROLOGY:** Upland

DECISION: UPLAND

114 **Prepared by:**

ROUTINE WETLAND DETERMINATION DATA SHEET - -4628

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-5
LOCATION: WA-19
DATE: 12-12-92
INVESTIGATORS: J. Fischl

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Wet Meadow/Palustrine Deciduous Forest
PERCENT COVER: **Tree:** 20 **Shrub:** 10 **Herb:** 80 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Carya laciniosa (Shellbark Hickory)	FAC	Tree
Rosa multiflora (Multiflora Rose)	FACU	Shrub
Carya laciniosa (Shellbark Hickory)	FAC	Shrub
Festuca rubra (Red Fescue)	FACU	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Aster vimineus (Small White Aster)	FAC	Herb
Solidago canadensis (Canada Goldenrod)	FACU	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 57%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-19	Dark grayish brown (2.5Y4/2) silt loam with few, fine, faint dark yellowish brown (10YR4/4) mottles
19-24	Brown (10YR5/3) silty clay with many, fine, distinct yellowish brown (10YR5/6) mottles

SERIES/PHASE: Ragsdale (Ra) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric **HYDROLOGY:** Wetland

DECISION: WETLAND

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 12-12-92
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: SE-6 **LOCATION:** WA-19

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Meadow/Deciduous forest
PERCENT COVER: **Tree:** 20 **Shrub:** 20 **Herb:** 90 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Carya laciniosa (Shellbark Hickory)	FAC	Tree/Shrub
Rosa multiflora (Multiflora Rose)	FACU	Shrub
Solidago canadensis (Canada Goldenrod)	FACU	Herb
Festuca rubra (Red Fescue)	FACU	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 40%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-12	Very dark grayish brown (10YR3/2) silt loam
12-18	Very dark grayish brown (10YR3/2) and brown (10YR5/3) silty clay loam
18-24	Dark grayish brown (10YR4/2) silty clay loam

SERIES/PHASE: Xenia (XeB) **MOTTLED?** No **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-hydric **HYDROLOGY:** Upland

DECISION: UPLAND

Prepared by:

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-26
DATE: 1-16-93
INVESTIGATORS: J. Fischl
LOCATION: East of WA-41

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Wooded Pasture
PERCENT COVER: **Tree:** 50 **Shrub:** 10 **Herb:** 100 **Vine:** 10

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Quercus imbricaria (Shingle Oak)	FAC	Tree
Acer saccharinum (Silver Maple)	FACW	Tree
Celtis occidentalis (Common Hackberry)	FACU	Tree
Juniperus virginiana (Eastern Red Cedar)	FACU	Tree
Rosa multiflora (Multiflora Rose)	FACU	Shrub
Festuca rubra (Red Fescue)	FACU	Herb
Toxicodendron radicans (Poison Ivy)	FAC	Vine

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 43%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-14	Very dark grayish brown (10YR3/2) silt loam
14-24	Light olive brown (2.5Y5/3) silty clay loam with common, medium, faint yellowish brown (10YR5/8) mottles

SERIES/PHASE: Fincastle (FcA) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** 25"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-Hydric **HYDROLOGY:** Upland

DECISION: UPLAND

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 1-16-93
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: SE-9 **LOCATION:** Meadow North of WB-10

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Pasture
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Festuca rubra (Red Fescue)	FACU	Herb
Lonicera japonica (Japanese Honeysuckle)	FAC-	Herb
Rosa multiflora (Multiflora Rose)	FACU	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Daucus carota (Queen Anne's Lace)	UPL[2]	Herb
Solidago altissima (Tall Goldenrod)	FACU-	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 33%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-10	Dark brown (10YR3/3) silt loam
10-24	Brown (10YR5/3) silt loam with common medium, faint yellowish brown (10YR5/6) mottles, with concretional (limestone and cobble) around 24"

SERIES/PHASE: Xenia (XeB) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-hydric **HYDROLOGY:** Upland

DECISION: UPLAND

[2] Not on the National List (Reed 1988), therefore assigned Upland status

Prepared by: **Sheet 6 of 40**

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-9
DATE: 1-16-93
INVESTIGATORS: J. Fischl
LOCATION: Forest North of WB-10

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Deciduous Forest
PERCENT COVER: **Tree:** 40 **Shrub:** 60 **Herb:** 50 **Vine:** 60

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Juniperus virginiana (Eastern Red Cedar)	FACU	Tree
Quercus velutina (Black Oak)	UPL[2]	Tree
Quercus imbricaria (Shingle Oak)	FAC	Tree
Celtis occidentalis (Common Hackberry)	FACU	Tree/Shrub
Prunus serotina (Black Cherry)	FACU	Shrub
Rosa multiflora (Multiflora Rose)	FACU	Shrub
Festuca rubra (Red Fescue)	FACU	Herb
Solidago altissima (Tall Goldenrod)	FACU	Herb
Agrimonia parviflora (Small-flowered Agrimony)	FAC	Herb
Lonicera japonica (Japanese Honeysuckle)	FAC-	Vine

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 27%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-10	Dark brown (10YR3/3) silt loam
10-24	Brown (10YR5/3) silt loam with common, medium, faint yellowish brown (10YR5/6) mottles concretional (limestone and cobble) around 24"

SERIES/PHASE: Xenia (XeB) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-Hydrophytic **SOIL:** Non-Hydric **HYDROLOGY:** Upland

DECISION: UPLAND

[2] Not on the National List (Reed 1988), therefore assigned Upland status

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 1-16-93
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: SE-16 **LOCATION:** West of WC-5

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Deciduous Forest
PERCENT COVER: **Tree:** 60 **Shrub:** 70 **Herb:** 100 **Vine:** 20

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Prunus serotina (Black Cherry)	FACU	Tree
Quercus imbricaria (Shingle Oak)	FAC	Tree
Ulmus rubra (Slippery elm)	FAC	Tree
Rosa multiflora (Multiflora Rose)	FACU	Shrub
Lonicera tartarica (Tartarian Honeysuckle)	FACU*	Shrub
Rubus occidentalis (Rasberry)	UPL[2]	Shrub
Rubus sp. (Blackberry)	--	Shrub
Poa pratensis (Kentucky Bluegrass)	FACU	Herb
Vitis vulpina (Frost Grape)	FAC	Vine
Lonicera japonica (Japanese Honeysuckle)	FAC-	Vine

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 44%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-12	Dark grayish brown (10YR4/2) silt loam
12-24	Light olive brown (2.5Y5/3) silt clay loam with common, fine, faint yellowish brown (10YR5/6) mottles

SERIES/PHASE: Fincastle (FcA) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** 14"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-Hydric **HYDROLOGY:** Upland

DECISION: UPLAND

[2] Not on the National List (Reed 1988), therefore assigned Upland status

Prepared by: **Sheet 8 of 40**

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
DATE: 1-16-93
SITE LOCATION: Fernald, Ohio
INVESTIGATORS: J. Fischl
APPLICANT/OWNER: DOE
STATION #: SE-13
LOCATION: NW of WC-6

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Wooded Pasture
PERCENT COVER: **Tree:** 50 **Shrub:** 50 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Fraxinus pennsylvanica (Green Ash)	FACW	Tree
Salix nigra (Black Willow)	FACW+	Tree
Acer saccharinum (Silver Maple)	FACW	Tree
Rosa multiflora (Multiflora Rose)	FACU	Shrub
Cornus drummondii (Roughleaf Dogwood)	FAC	Shrub
Festuca rubra (Red Fescue)	FACU	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 71%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-12	Dark gray (10YR4/1) silt loam with common, fine, distinct brown/dark brown (7.5YR4/4) mottles
12-24	Grayish brown (2.5Y5/2) silty clay loam with many, medium, prominent yellowish brown (10YR5/6) mottles

SERIES/PHASE: Ragsdale (Ra) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATERTABLE:** Surface
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric **HYDROLOGY:** Wetland

DECISION: WETLAND

Prepared by:

Sheet 9 of 40

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 1-16-93
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: SE-45 **LOCATION:** South of Wetland WE

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Deciduous Forest
PERCENT COVER: **Tree:** 90 **Shrub:** 30 **Herb:** 25 **Vine:** 20

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Quercus rubra (Red Oak)	FACU-	Tree
Acer saccharum (Sugar Maple)	FACU-	Tree
Fraxinus americana (White Ash)	FACU	Tree/Shrub
Celtis occidentalis (Common Hackberry)	FACU	Tree/shrub
Aesculus glabra (Ohio Buckeye)	FACU+	Tree
Vitis vulpina (Frost Grape)	FAC	Herb
Glecoma hederacea (Ground Ivy)	FACU	Vine

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 11%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-2	Dark grayish brown (10YR4/2) silt loam
2-8	Brown/dark brown (10YR4/3) silt loam
8-14	Dark yellowish brown (10YR4/6) silty clay loam
14-20	Brown (10YR5/3) silty clay loam with common, medium, faint yellowish brown (10YR5/6) mottles

SERIES/PHASE: Xenia (XeB) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >20"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-Hydrophytic **SOIL:** Non-Hydric **HYDROLOGY:** Upland

DECISION: UPLAND

Prepared by: **Sheet 10 of 40**

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
DATE: 1-16-93
SITE LOCATION: Fernald, Ohio
INVESTIGATORS: J. Fischl
APPLICANT/OWNER: DOE
STATION #: General Description
LOCATION: Wetland WE

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Emergent Shallow Pond
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 80 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Scirpus atrovirens (Green Bulrush)	OBL	Herb
Lysimachia nummularia (Moneywort)	OBL	Herb
Festuca rubra (Red Fescue)	FACU	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 75%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not Taken

SERIES/PHASE: Xenia (XeB) **MOTTLED?** **GLEYED?**
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATER TABLE:** Surface
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 1-16-93
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: General Description **LOCATION:** WF-9

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Palustrine Deciduous Forest
PERCENT COVER: **Tree:** 65 **Shrub:** 50 **Herb:** 80 **Vine:** 20

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Platanus occidentalis (American Sycamore)	FACW-	Tree
Ulmus americana (American Elm)	FACW-	Tree
Fraxinus pennsylvanica (Green Ash)	FACW	Tree
Acer saccharinum (Silver Maple)	FACW	Tree
Rosa multiflora (Multiflora Rose)	FACU	Shrub
Cornus drummondii (Roughleaf Dogwood)	FAC	Shrub
Festuca rubra (Red Fescue)	FACU	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Panicum sp. (Panic Grass)	--	Herb
Vitis vulpina (Frost Grape)	FAC	Vine

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 77%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not Taken

SERIES/PHASE: Fincastle (FcA) **MOTTLED?** **GLEYED?**
INNUNDATED? No **SATURATED?** Yes **SEASONAL HIGH WATER TABLE:** -
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by: **Sheet 12 of 40**

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 1-16-93
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: SE-92 **LOCATION:** South of WF-13

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Deciduous Forest
PERCENT COVER: **Tree:** 80 **Shrub:** 40 **Herb:** 70 **Vine:** 20

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Platanus occidentalis (American Sycamore)	FACW-	Tree
Ulmus americana (American Elm)	FACW-	Tree
Quercus imbricaria (Shingle Oak)	FAC	Tree
Lonicera tartarica (Tartarian Honeysuckle)	FACU*	Shrub
Prunus serotina (Black Cherry)	FACU	Shrub
Alliaria petiolata (Garlic Mustard)	FACU-	Herb
Poa pratensis (Kentucky Bluegrass)	FACU	Herb
Stellaria media (Common Chickweed)	UPL[1]	Herb
Toxicodendron radicans (Poison Ivy)	FAC	Vine
Vitis vulpina (Frost Grape)	FAC	Vine

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 50%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-2	Dark grayish brown (10YR4/2) silt loam
2-10	Brown/dark brown (10YR4/3) silt loam with few, medium, faint dark yellowish brown (10YR4/6) mottles
10-24	Light olive brown (2.5Y5/3) silty clay loam with common, medium, distinct yellowish brown (10YR5/6) mottles

SERIES/PHASE: Xenia (XeB) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-hydric **HYDROLOGY:** Upland

DECISION: UPLAND

[1] Not on the National List (Reed 1988), therefore assigned Upland status

Prepared by: **Sheet 13 of 40**

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-1
LOCATION: WG-3
DATE: 12-11-92
INVESTIGATORS: J. Fischl

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Scrub/Shrub - Drainage Swale
PERCENT COVER: **Tree:** 0 **Shrub:** 40 **Herb:** 60 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Salix nigra (Black Willow)	FACW+	Shrub
Ulmus americana (American Elm)	FACW-	Shrub
Typha latifolia (Broad-leaf Cattail)	OBL	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Solidago gigantea (Giant Goldenrod)	FACW	Herb
Carex lurida (Shallow Sedge)	OBL	Herb
Daucus carota (Queen Anne's Lace)	UPL[2]	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 86%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-5	Dark grayish brown (10YR4/2) silt loam
5-20	Gray (10YR5/1) silty clay loam with many, medium, prominent yellowish brown (10YR5/8) mottles

SERIES/PHASE: Fincastle (FdA) **MOTTLED?** Yes **GLEYED?** Yes
INNUNDATED? Yes **SATURATED?** Yes **SAMPLE HIGH WATER TABLE:** Surface
OTHER INDICATORS OF HYDROLOGY: Drainage swale perennial

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric **HYDROLOGY:** Wetland

DECISION: WETLAND

[2] Not on the National List (Reed 1988), therefore assigned Upland status

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-2
LOCATION: WG-3
DATE: 12-11-92
INVESTIGATORS: J. Fischl

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Pine Plantation
PERCENT COVER: **Tree:** 100 **Shrub:** 0 **Herb:** 20 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Pinus strobus (Eastern White Pine)	FACU	Tree
Phytolacca americana (Pokeweed)	FACU+	Herb
Alliaria petiolata (Garlic Mustard)	FACU-	Herb
Eupatorium rugosum (White Snakeroot)	FACU-	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 0%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-10	Very dark grayish brown (10YR3/2) silt loam (plow zone)
10-20	Gray (10YR5/1) silty clay loam with common, few, distinct dark yellowish brown (10YR4/6) mottles

SERIES/PHASE: Fincastle (FcA) **MOTTLED?** Yes **GLEYED?** Yes
INNUNDATED? No **SATURATED?** No **SAMPLE HIGH WATER TABLE:** 20"
OTHER INDICATORS OF HYDROLOGY: Tile Drainage

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Hydric (drained)[1] **HYDROLOGY:** Upland

DECISION: UPLAND

[1] Chroma indicates hydric soil, the presence of tile drainage, planted pines, and absence of hydrophitic vegetation indicate drained soils

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
DATE: 1-15-93
SITE LOCATION: Fernald, Ohio
INVESTIGATORS: J. Fischl
APPLICANT/OWNER: DOE
STATION #: SE-123
LOCATION: Wetland WI

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Scrub/Shrub/Emergent
PERCENT COVER: **Tree:** 0 **Shrub:** 30 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Salix nigra (Black Willow)	FACW+	Shrub
Festuca rubra (Red Fescue)	FACU	Herb
Juncus effusus (Soft Rush)	FACW+	Herb
Typha latifolia (Broad-leaf Cattail)	OBL	Herb
Scirpus atrovirens (Green Bulrush)	OBL	Herb
Asclepias incarnata (Swamp Milkweed)	OBL	Herb
Solidago gigantea (Giant Goldenrod)	FACW	Herb
Aster vimineus (Small White Aster)	FAC	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 88%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-2	Grayish brown (10YR5/2) silt loam
2-6	Grayish brown (10YR5/2) silty clay loam with common, medium, distinct yellowish brown (10YR5/8) mottles
6-18	Grayish brown (10YR5/2) silty clay loam with common, coarse, distinct gray (10YR5/1) and many, medium, distinct yellowish brown (10YR5/8) mottles. Refusal at 18". Gravel throughout 2-18", possible fill

SERIES/PHASE: Fincastle(FeA) **MOTTLED?** Yes **GLEYED?** Yes
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATER TABLE:** Surface
OTHER INDICATORS OF HYDROLOGY: Surface ponding, hummocks

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric **HYDROLOGY:** Wetland

DECISION: WETLAND

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-98
DATE: 1-16-93
INVESTIGATORS: J. Fischl
LOCATION: South of WL-12

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Deciduous Forest
PERCENT COVER: **Tree:** 100 **Shrub:** 0 **Herb:** 100 **Vine:** 20

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Populus deltoides (Eastern Cottonwood)	FAC	Tree
Acer negundo (Boxelder)	FAC+	Tree
Platanus occidentalis (American Sycamore)	FACW-	Tree
Carya cordiformis (Bitternut Hickory)	FACU+	Tree
Stellaria media (Common Chickweed)	UPL[2]	Herb
Glecoma hederacea (Ground Ivy)	FACU	Herb
Allium canadense (Wild Garlic)	FACU	Herb
Vitis vulpine (Frost Grape)	FAC	Vine

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 50%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-16	Very dark grayish brown (10YR3/2) silt loam
16-24	Brown/dark brown (10YR4/3) silt loam

SERIES/PHASE: Genesee (Gn) **MOTTLED?** No **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-Hydrophytic **SOIL:** Non-Hydric **HYDROLOGY:** Upland

DECISION: UPLAND

[2] Not on the National List (Reed 1988), therefore assigned Upland status

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 12-12-92
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: SE-71 **LOCATION:** West of Wetland WM

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Pasture
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Festuca rubra (Red Fescue)	FACU	Herb
Ambrosia artemisiifolia (Common Ragweed)	FACU	Herb
Daucus carota (Queen Anne's Lace)	UPL[2]	Herb
Polygonum pensylvanicum (Pennsylvania Smartweed)	FACW	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 25%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-4	Very dark gray (10YR3/1) silt loam
4-10	Very dark grayish brown (10YR3/2) silty clay loam with few, fine, faint dark yellowi brown (10YR3/6) mottles
10-20	Dark gray (10YR4/1) silty clay loam with common, fine, distinct dark yellowish brow (10YR4/6) silty clay loam with common, medium, distinct yellowish brown (10YR5/6 mottles
20-24	Light yellowish brown (2.5Y5/2) silty clay loam with common, medium, distinct yello brown (10YR5/6) mottles

SERIES/PHASE: Xenia, Silt Loam **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SAMPLE HIGH WATER TABLE:**
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-hydric **HYDROLOGY:** Upland

DECISION: UPLAND

[2] Not on the national list

Prepared by: **Sheet**

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-72

DATE: 12-12-92
INVESTIGATORS: J. Fischl
LOCATION: South of Wetland WM

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Pasture
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Festuca rubra (Red Fescue)	FACU	Herb
Ambrosia artemisiifolia (Common Ragweed)	FACU	Herb
Trifolium repens (White Clover)	FACU-	Herb
Daucus carota (Queen Anne's Lace)	UPL[2]	Herb
Cirsium vulgare (Bull Thistle)	FACU-	Herb
Solanum nigrum (Black Nightshade)	FACU-	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 0%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-2	Dark grayish brown (10YR4/2) silt loam
2-12	Dark brown (10YR3/3) silt loam
12-24	Light olive brown (2.5Y5/4) silty clay loam with common, medium, faint yellowish brown (10YR5/6) mottles

SERIES/PHASE: Miamian-Russell (MsD2) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SAMPLE HIGH WATER TABLE:** >24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-hydric **HYDROLOGY:** Upland

DECISION: UPLAND

[2] Not on the national list

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
DATE: 12-12-92
SITE LOCATION: Fernald, Ohio
INVESTIGATORS: J. Fischl
APPLICANT/OWNER: DOE
STATION #: SE-79
LOCATION: North of Wetland WO

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Pasture
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Festuca rubra (Red Fescue)	FACU	Herb
Sertaria italica (Foxtail Grass)	FACU	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 0%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-2	Dark grayish brown (10YR4/2) silt loam
2-6	Light olive brown (2.5Y5/3) silt loam with common, fine, distinct dark yellowish brown (10YR4/6) mottles
6-14	Light brownish gray (2.5Y6/2) silty clay loam with common, medium, distinct dark yellowish brown (10YR4/6) mottles
14-24	Light olive brown (2.5Y5/3) silty clay loam with common, medium, distinct yellowish brown (10YR5/6) mottles

SERIES/PHASE: Fincastle (FdA) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SAMPLE HIGH WATER TABLE:**>24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-hydric **HYDROLOGY:** Upland

DECISION: UPLAND

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
DATE: 12-12-92
SITE LOCATION: Fernald, Ohio
INVESTIGATORS: J. Fischl
APPLICANT/OWNER: DOE
STATION #: SE-80
LOCATION: Wetland WO

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Wet Meadow
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Festuca rubra (Red Fescue)	FACU	Herb
Sertaria italica (Foxtail Grass)	FACU	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Juncus effusus (Soft Rush)	FACW+	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 50%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Swamp running into culvert under road no soil log[1] assumed Hydric

SERIES/PHASE: Fincastle (FdA) **MOTTLED?** **GLEYED?** No
INNUNDATED? No **SATURATED?** Yes **SAMPLE HIGH WATER TABLE:** Surface
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 12-12-92
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: SE-85 **LOCATION:** Southwest Corner

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Pasture
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Festuca rubra (Red Fescue)	FACU	Herb
Ambrosia artemisiifolia (Common Ragweed)	FACU	Herb
Dactylis glomerata (Orchard Grass)	FACU	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 0%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-2	Dark brown (10YR3/3) silt loam
2-15	Brown (10YR5/3) silt loam with common, fine, faint dark yellowish brown (10YR4/6) mottles
15-24	Light yellowish brown (2.5Y6/3) silty clay loam with common, medium, distinct yellowish brown (10YR5/6) mottles

SERIES/PHASE: Xenia (XfB2) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SAMPLE HIGH WATER TABLE:**>24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-hydric **HYDROLOGY:** Upland

DECISION: UPLAND

Prepared by: **Sheet 22 of 40**

ROUTINE WETLAND DETERMINATION DATA SHEET

-4628

PROJECT: FEMP **DATE:** 1-13-93
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: General Description **LOCATION:** Wetland WS

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Emergent
PERCENT COVER: **Tree:** 0 **Shrub:** 20 **Herb:** 70 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Salix rigida (Heart-leaf Willow)	OBL	Shrub
Typha latifolia (Broad-leaf Cattail)	OBL	Herb
Polygonum pensylvanicum (Pennsylvania Smartweed)	FACW	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Panicum sp. (Panic Grass)	--	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 100%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not taken visual inspection only, likely fill, gleyed and mottled soils visible at surface

SERIES/PHASE: Fincastle (FeA) **MOTTLED?** Yes **GLEYED?** Yes
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATERTABLE:** Surface
OTHER INDICATORS OF HYDROLOGY: Surface ponding, algae in pools

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric(Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similiar areas which were and determined to be hydric. Sample wasn't taken because station wasn't located in radiological control area.

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 1-16-93
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: General Description **LOCATION:** Wetland WT

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Drainage Ditch
PERCENT COVER: **Tree:** 0 **Shrub:** 60 **Herb:** 45 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Salix nigra (Black Willow)	FACW+	Shrub
Typha latifolia (Broad-leaf Cattail)	OBL	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 100%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not Taken

SERIES/PHASE: Fincastle (FeA) **MOTTLED?** **GLEYED?**
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATER TABLE:** Surface
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by: **Sheet 24 of 40**

ROUTINE WETLAND DETERMINATION DATA SHEET

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PROJECT: FEMP **DATE:** 1-13-93
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: General Description **LOCATION:** Wetland WU

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Drainage Ditch
PERCENT COVER: **Tree:** 80 **Shrub:** 20 **Herb:** 20 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Platanus occidentalis (American Sycamore)	FACW-	Tree
Acer negundo (Boxelder)	FAC+	Tree
Fraxinus pennsylvanica (Green Ash)	FACW	Tree
Salix nigra (Black Willow)	FACW+	Tree
Ulmus americana (American Elm)	FACW-	Tree
Lonicera tartarica (Tartarian Honeysuckle)	FACU*	Shrub
Cornus drummondii (Roughleaf Dogwood)	FAC	Shrub
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Panicum sp. (Panic Grass)	--	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 88%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not Taken

SERIES/PHASE: Fincastle (FeA) **MOTTLED?** **GLEYED?**
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATERTABLE:** Surface
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by: **Sheet 25 of 40**

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 1-13-92
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: General Description **LOCATION:** Wetland WV

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Drainage Ditch/Wet Meadow
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Festuca rubra (Red Fescue)	FACU	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Typha latifolia (Broad-leaf Cattail)	OBL	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 66%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not Taken

SERIES/PHASE: Fincastle (FeA) **MOTTLED?** **GLEYED?**
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATERTABLE:** Surface
OTHER INDICATORS OF HYDROLOGY: Surface ponding

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by: **Sheet 26 of 40**

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: General Description
LOCATION: Wetland WW
DATE: 1-13-92
INVESTIGATORS: J. Fischl

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Drainage Ditch
PERCENT COVER: **Tree:** 0 **Shrub:** 20 **Herb:** 50 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Lonicera tartarica (Tartarian Honeysuckle)	FACU*	Shrub
Typha latifolia (Broad-leaf Cattail)	OBL	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 66%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not Taken

SERIES/PHASE: Fincastle (FeA) **MOTTLED?** **GLEYED?**
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATERTABLE:** Surface
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
DATE: 1-13-93
SITE LOCATION: Fernald, Ohio
INVESTIGATORS: J. Fischl
APPLICANT/OWNER: DOE
STATION #: General Description
LOCATION: Wetland WX

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Drainage Ditch
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 80 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Typha latifolia (Broad-leaf Cattail)	OBL	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 100%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not Taken

SERIES/PHASE: Fincastle (FeA) **MOTTLED?** **GLEYED?**
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH Water Table:** Surface
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: General Description

DATE: 1-16-93
INVESTIGATORS: J. Fischl
LOCATION: Wetland WY

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Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Drainage Ditch
PERCENT COVER: **Tree:** 80 **Shrub:** 0 **Herb:** 0 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Salix nigra (Black Willow)	FACW+	Tree
Acer negundo (Boxelder)	FAC+	Tree
Platanus occidentalis (American Sycamore)	FACW-	Tree
Fraxinus pennsyvanica (Green Ash)	FACW	Tree

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 100%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not Taken

SERIES/PHASE: Fincastle (FeA) **MOTTLED?** **GLEYED?**
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATER TABLE:** Surface
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 1-16-93
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: General Description **LOCATION:** Wetland WZ

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Drainage Ditch
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Typha latifolia (Broad-leaf Cattail)	OBL	Herb
Festuca rubra (Red Fescue)	FACU	Herb
Scirpus atrovirens (Green Bulrush)	OBL	Herb
Lemna sp. (Duckweed)	OBL	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 80%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not Taken

SERIES/PHASE: Fincastle (FeA) **MOTTLED?** **GLEYED?**
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATERTABLE:** Surface
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by: **Sheet 30 of 40**

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: General Description
DATE: 1-13-93
INVESTIGATORS: J. Fischl
LOCATION: Wetlands WAA & WBB

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Drainage Ditch
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 80 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Typha latifolia (Broad-leaf Cattail)	OBL	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 100%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not Taken

SERIES/PHASE: Henshaw (HoA) **MOTTLED?** Yes **GLEYED?** Yes
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATERTABLE:** Surface
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-120
DATE: 1-14-93
INVESTIGATORS: J. Fischl
LOCATION: West of Wetlands WCC, WDD,& WEE

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Mowed Lawn
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Poa pratensis (Kentucky Bluegrass)	FACU	Herb
Festuca rubra (Red Fescue)	FACU	Herb
Trifolium repens (White Clover)	FACU-	Herb
Plantago lanceolata (English Plantain)	UPL[2]	Herb
Daucus carota (Queen Anne's Lace)	UPL[2]	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 0%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-2	Brown/dark brown (10YR4/3) silt loam
2-6	Brown (10YR5/3) silty clay loam
6-12	Dark grayish brown (10YR4/2) silty clay loam with few, medium, distinct yellowish brown (10YR5/8) mottles
12-18	Grayish brown (10YR5/2) silty clay loam with common, fine, distinct yellowish brown (10YR5/8) mottles
18-20	Very dark gray (10YR3/1) silty clay loam
20-24	Brown (10YR5/3) silty clay loam with few, fine, faint yellowish brown (10YR5/8) mottles. Red tile at 20"

SERIES/PHASE: Fincastle (FdA) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATERTABLE:** 17"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophitic **SOIL:** Non-hydric **HYDROLOGY:** Upland

DECISION: UPLAND

[2] Not on the National List (Reed 1988), therefore assigned Upland status

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-121
DATE: 1-16-93
INVESTIGATORS: J. Fischl
LOCATION: Wetland WEE

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Drainage Ditch
PERCENT COVER: **Tree:** 0 **Shrub:** 20 **Herb:** 80 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Salix nigra (Black Willow)	FACW+	Shrub
Typha latifolia (Broad-leaf Cattail)	OBL	Herb
Cyperus esculentus (Yellow Nutgrass)	FACW	Herb
Asclepias incarnata (Swamp Milkweed)	OBL	Herb
Dipsacus sylvestris (Teasal)	FACU+	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 80%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-3	Very dark grayish (10YR3/2) silt loam with yellowish red (5YR4/6) root channels
3-14	Dark gray (10YR4/1) silty clay loam with many, medium, distinct strong brown (7.5YR5/6) mottles
14-24	Gray (7.5YR5/0) silty clay loam with common, medium, prominent strong brown (7.5YR5/8) mottles

SERIES/PHASE: Fincastle (FdA) **MOTTLED?** Yes **GLEYED?** Yes
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATERTABLE:** 17"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric **HYDROLOGY:** Wetland

DECISION: WETLAND

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP **DATE:** 1-16-93
SITE LOCATION: Fernald, Ohio **INVESTIGATORS:** J. Fischl
APPLICANT/OWNER: DOE
STATION #: General Description **LOCATION:** Wetland WHH

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Drainage Ditch
PERCENT COVER: **Tree:** 0 **Shrub:** 60 **Herb:** 30 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Salix nigra (Black Willow)	FACW+	Shrub
Platanus occidentalis (American Sycamore)	FACW-	Shrub
Ulmus americana (American Elm)	FACW-	Shrub
Typha latifolia (Broad-leaf Cattail)	OBL	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 100%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
	Not Taken

SERIES/PHASE: Fincastle (FeA) **MOTTLED?** **GLEYED?**
INNUNDATED? Yes **SATURATED?** Yes **SEASONAL HIGH WATER TABLE:** Surface
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Hydric (Assumed)[1] **HYDROLOGY:** Wetland

DECISION: WETLAND

[1] Soil was assumed hydric based on comparison with other soil in hydrologically similar areas which were sampled and determined to be hydric. Sample wasn't taken because station was located in radiological control area.

Prepared by: **Sheet 34 of 40**

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-96

DATE: 1-16-93
INVESTIGATORS: J. Fischl
LOCATION: Firing Range

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Deciduous Forest
PERCENT COVER: **Tree:** 80 **Shrub:** 60 **Herb:** 100 **Vine:** 10

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Acer negundo (Boxelder)	FAC+	Tree
Quercus imbricaria (Shingle Oak)	FAC	Tree
Quercus muhlenbergii (Chinquapin Oak)	NI	Tree
Ulmus americana (American Elm)	FACW-	Tree
Lonicera tartarica (Tartarian Honeysuckle)	FACU*	Shrub
Festuca rubra (Red Fescue)	FACU	Herb
Poa pratensis (Kentucky Bluegrass)	FACU	Herb
Sertaria italica (Foxtail Grass)	FACU	Herb
Allium canadense (Wild Garlic)	FACU	Herb
Bidens vulgata (Tall Beggers Tick)	FACW	Herb
Parthenocissus quinquefolia (Virginia creeper)	FACU	Vine

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 40%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-8	Dark grayish brown (10YR4/2) silt loam
8-24	Dark yellowish brown (10YR4/4) silt loam

SERIES/PHASE: Genesee (Gn) **MOTTLED?** No **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-Hydric **HYDROLOGY:** Upland

DECISION: UPLAND

Prepared by:

Sheet 35 of 40

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SE-126
DATE: 1-16-93
INVESTIGATORS: J. Fischl
LOCATION: Northwest Pine Plantation

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Pine Plantation
PERCENT COVER: **Tree:** 80 **Shrub:** 0 **Herb:** 50 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Pinus nigra (Austrian Pine)	UPL[2]	Tree
Pinus strobus (Eastern White Pine)	FACU	Tree
Festuca rubra (Red Fescue)	FACU	Herb
Phytolacca americana (Pokeweed)	FACU+	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 0%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-14	Dark brown (10YR3/3) silt loam
14-24	Very dark grayish brown (10YR3/2) silt loam

SERIES/PHASE: Dana (DaB) **MOTTLED?** No **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-Hydrophytic **SOIL:** Non-Hydric **HYDROLOGY:** Upland

DECISION: UPLAND

[2] Not on the National List (Reed 1988), therefore assigned Upland status

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
DATE: 1-16-93
SITE LOCATION: Fernald, Ohio
INVESTIGATORS: J. Fischl
APPLICANT/OWNER: DOE
STATION #: SW-2
LOCATION: West of K-65's

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Deciduous Forest
PERCENT COVER: **Tree:** 80 **Shrub:** 0 **Herb:** 15 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Platanus occidentalis (American Sycamore)	FACW-	Tree
Populus deltoides (Eastern Cottonwood)	FAC	Tree
Acer negundo (Boxelder)	FAC+	Tree
Celtis occidentalis (Common Hackberry)	FACU	Tree
Glecoma hederacea (Ground Ivy)	FACU	Herb
Festuca rubra (Red Fescue)	FACU	Herb
Stellaria media (Common Chickweed)	UPL[2]	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 43%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-9	Dark grayish brown (10YR3/2) silt loam
9-12	Dark brown (10YR3/3) silt loam with coarse gravel
	Refusal at 12"

SERIES/PHASE: Genesee (Gn) **MOTTLED?** No **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >12"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-Hydrophytic **SOIL:** Non-hydric **HYDROLOGY:** Upland

DECISION: UPLAND

[2] Not on the National List (Reed 1988), therefore assigned Upland status

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SW-4

DATE: 1-16-93
INVESTIGATORS: J. Fischl
LOCATION: Mid-site East of Paddys Run Road

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Deciduous Forest
PERCENT COVER: **Tree:** 80 **Shrub:** 15 **Herb:** 90 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Platanus occidentalis (American Sycamore)	FACW-	Tree
Ulmus americana (American Elm)	FACW-	Tree
Quercus muhlenbergii (Chinquapin Oak)	NI	Tree
Acer saccharinum (Silver Maple)	FACW	Tree
Acer negundo (Boxelder)	FAC+	Tree/Shrub
Stellaria media (Common Chickweed)	UPL[2]	Herb
Glecoma hederacea (Ground Ivy)	FACU	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 66%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-4	Very dark grayish brown (10YR3/2) silty loam
4-12	Very dark grayish brown (10YR3/2) silty loam
12-24	Brown/dark brown (10YR4/3) fine sandy silt loam

SERIES/PHASE: Genesee (Gn) **MOTTLED?** No **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:**>24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Hydrophytic **SOIL:** Non-Hydric **HYDROLOGY:** Upland

DECISION: UPLAND

[2] Not on the National List (Reed 1988), therefore assigned Upland status

Prepared by:

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SW-5
DATE: 1-16-93
INVESTIGATORS: J. Fischl
LOCATION: West of Firing Range

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Deciduous Forest
PERCENT COVER: **Tree:** 70 **Shrub:** 0 **Herb:** 90 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Platanus occidentalis (American Sycamore)	FACW-	Tree
Quercus muhlenbergii (Chinquapin Oak)	NI	Tree
Ulmus americana (American Elm)	FACW-	Tree
Poa pratensis (Kentucky Bluegrass)	FACU	Herb
Glecoma hederacea (Ground ivy)	FACU	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 50%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-4	Very dark grayish brown (10YR3/2) silt loam
4-12	Brown (10YR5/3) sandy silt loam with few, faint, distinct dark yellowish brown (10YR4/6) mottles
12-24	Brown (10YR5/3) silt loam

SERIES/PHASE: Genesee (Gn) **MOTTLED?** Yes **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-Hydric **HYDROLOGY:** Upland

DECISION: UPLAND

Prepared by:

Sheet 39 of 40

ROUTINE WETLAND DETERMINATION DATA SHEET

PROJECT: FEMP
SITE LOCATION: Fernald, Ohio
APPLICANT/OWNER: DOE
STATION #: SW-6

DATE: 1-16-93
INVESTIGATORS: J. Fischl
LOCATION: West of Firing Range

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No

VEGETATION

PLANT COMMUNITY CLASSIFICATION: Pasture
PERCENT COVER: **Tree:** 0 **Shrub:** 0 **Herb:** 100 **Vine:** 0

DOMINANT PLANT SPECIES Latin Name (Common Name)	INDICATOR STATUS	STRATUM
Festuca rubra (Red Fescue)	FACU	Herb
Ambrosia artemisiifolia (Common Ragweed)	FACU	Herb
Glecoma hederacea (Ground Ivy)	FACU	Herb

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, AND/OR FAC: 0%

SOILS AND HYDROLOGY

DEPTH (inches)	SOIL PROFILE (color, chroma, soil type, additional description)
0-3	Dark brown (10YR3/3) silt loam
3-24	Brown/dark brown (10YR4/3) silt loam

SERIES/PHASE: Genesee (Gn) **MOTTLED?** No **GLEYED?** No
INNUNDATED? No **SATURATED?** No **SEASONAL HIGH WATER TABLE:** >24"
OTHER INDICATORS OF HYDROLOGY:

SUMMARY

VEGETATION: Non-hydrophytic **SOIL:** Non-hydric **HYDROLOGY:** Upland

DECISION: UPLAND

Prepared by:

7.5 APPENDIX E
WETLANDS DELINEATION MAP

4628

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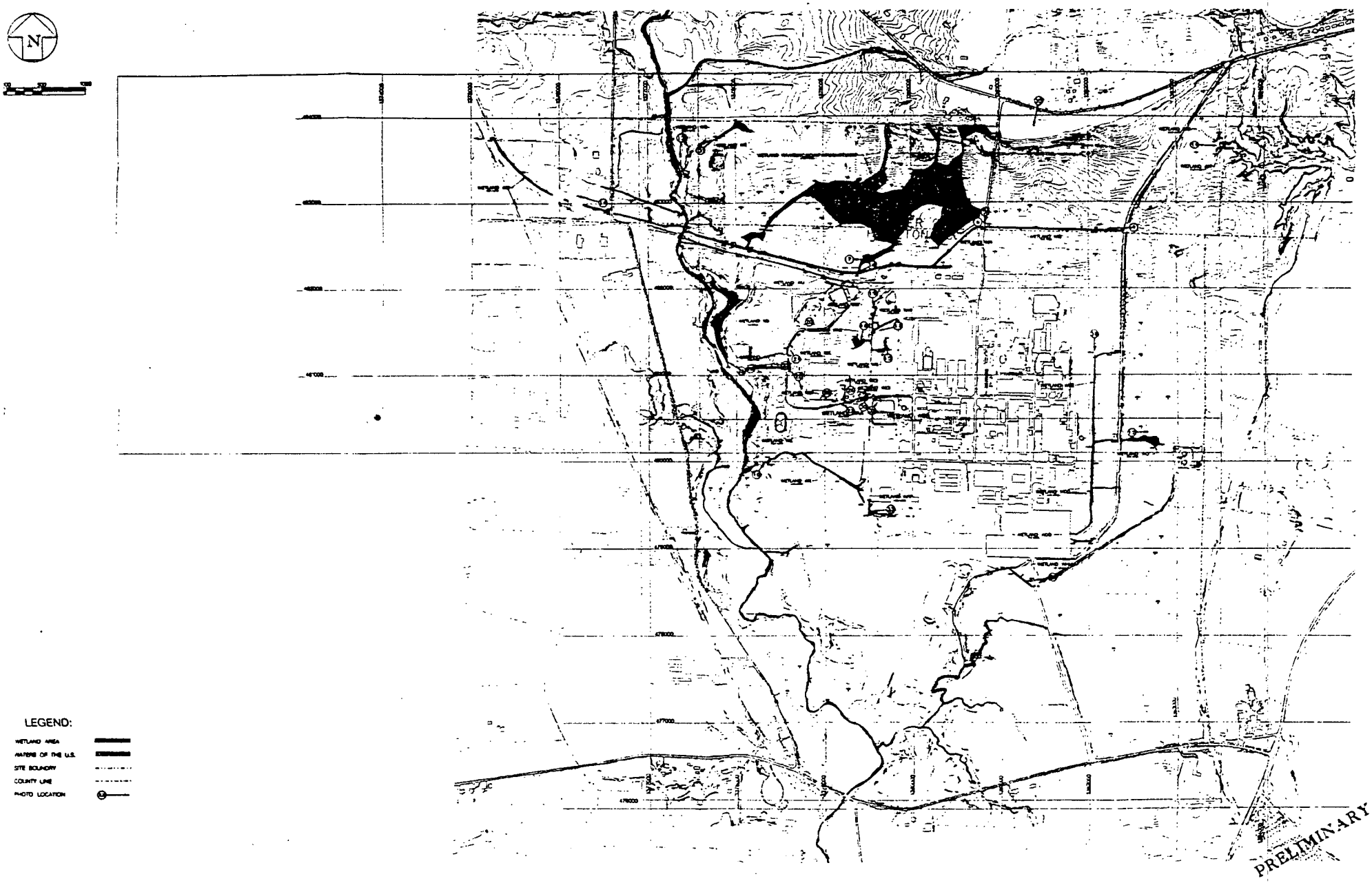

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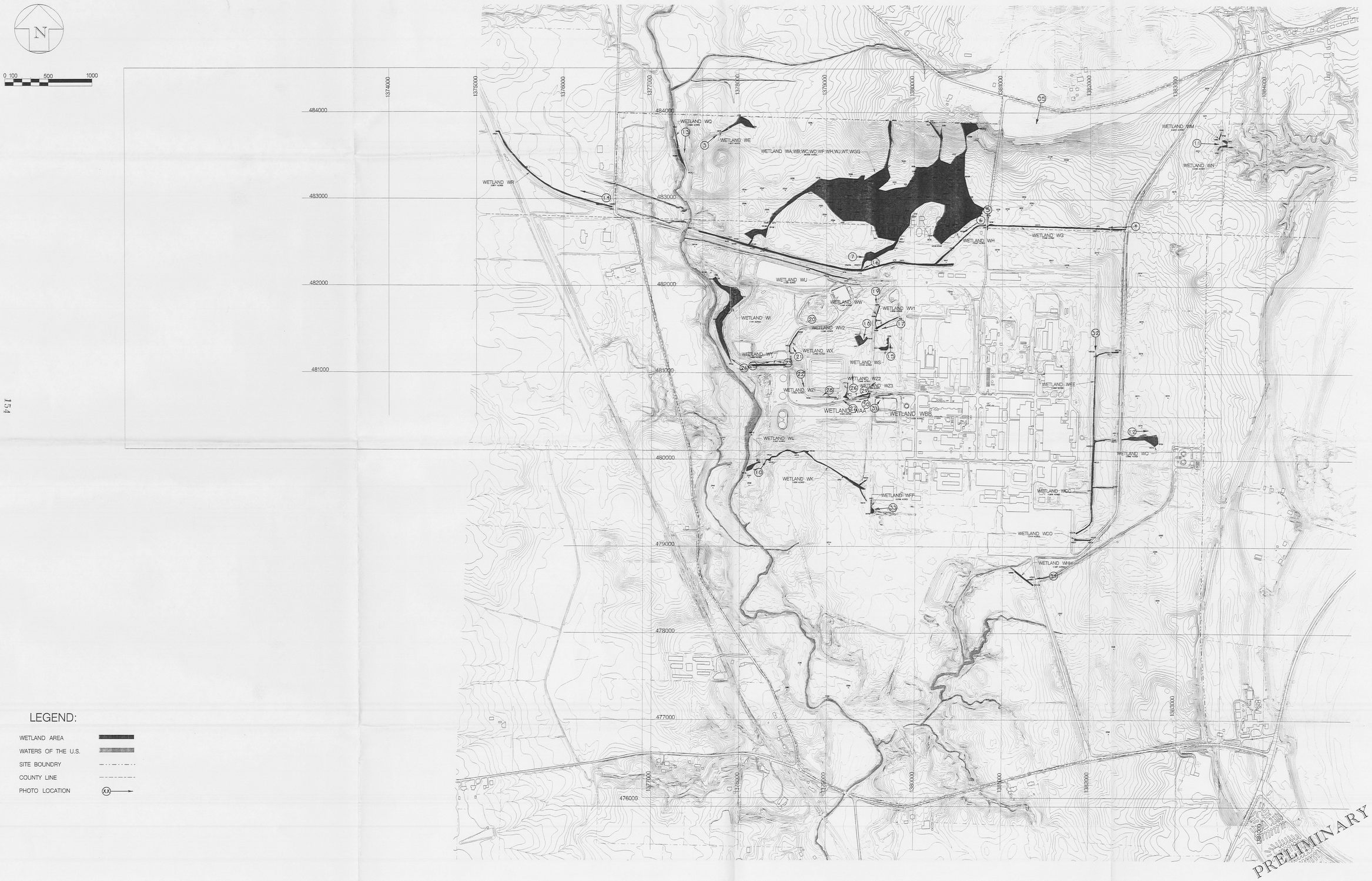
					FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION FERMCO Fernald Environmental Management Project U.S. DEPARTMENT OF ENERGY	1993 JURISDICTIONAL WETLANDS & WATERS OF THE U.S. FERNALD ENVIRONMENTAL MANAGMENT PROJECT 75X-5500-G-00372 0



LEGEND:

- WETLAND AREA
- WATERS OF THE U.S.
- SITE BOUNDRY
- COUNTY LINE
- PHOTO LOCATION (XX)

NO.	REVISIONS	DATE	DWN. BY	APPD.	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 ± 1/32
ANGLES ± 0° - 30'
DECIMALS
.X ± 0.1
.XX ± 0.03
.XXX ± 0.005
.XXXX ± 0.0050
ORIG. RELEASE DATE

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

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

1993 JURISDICTIONAL WETLANDS & WATERS OF THE U.S. FERNALD ENVIRONMENTAL MANAGMENT PROJECT

R.E.S. #2154
DATE 5/93
DRAWN MIKE LOCKE

75X-5500-G-00372 | 0

FILE NAME:

154

and.m(3182,ws7) mike@ws7 Wed Jul 21 12:22:56 EDT 1993