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**BIOLOGICAL ASSESSMENT FOR THE FERNALD  
ENVIRONMENTAL MANAGEMENT PROJECT  
PUBLIC WATER SUPPLY PROJECT HAMILTON  
AND BUTLER COUNTIES, OHIO APRIL 1993**

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**REPORT**

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**BIOLOGICAL ASSESSMENT FOR  
THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT  
PUBLIC WATER SUPPLY PROJECT  
HAMILTON AND BUTLER COUNTIES, OHIO**

**PREPARED BY  
HALLIBURTON NUS CORPORATION  
900 TRAIL RIDGE ROAD  
AIKEN, SC 29803**

**APRIL 1993**

**PREPARED FOR**

**FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION  
P.O. BOX 398704  
CINCINNATI, OHIO 45239-8704**

**and**

**U.S. DEPARTMENT OF ENERGY, FERNALD FIELD OFFICE  
P.O. BOX 398705  
CINCINNATI, OHIO 45239-8705**

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 Water Supply Project

BIOLOGICAL ASSESSMENT FOR  
THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT  
PUBLIC WATER SUPPLY PROJECT  
HAMILTON AND BUTLER COUNTIES, OHIO

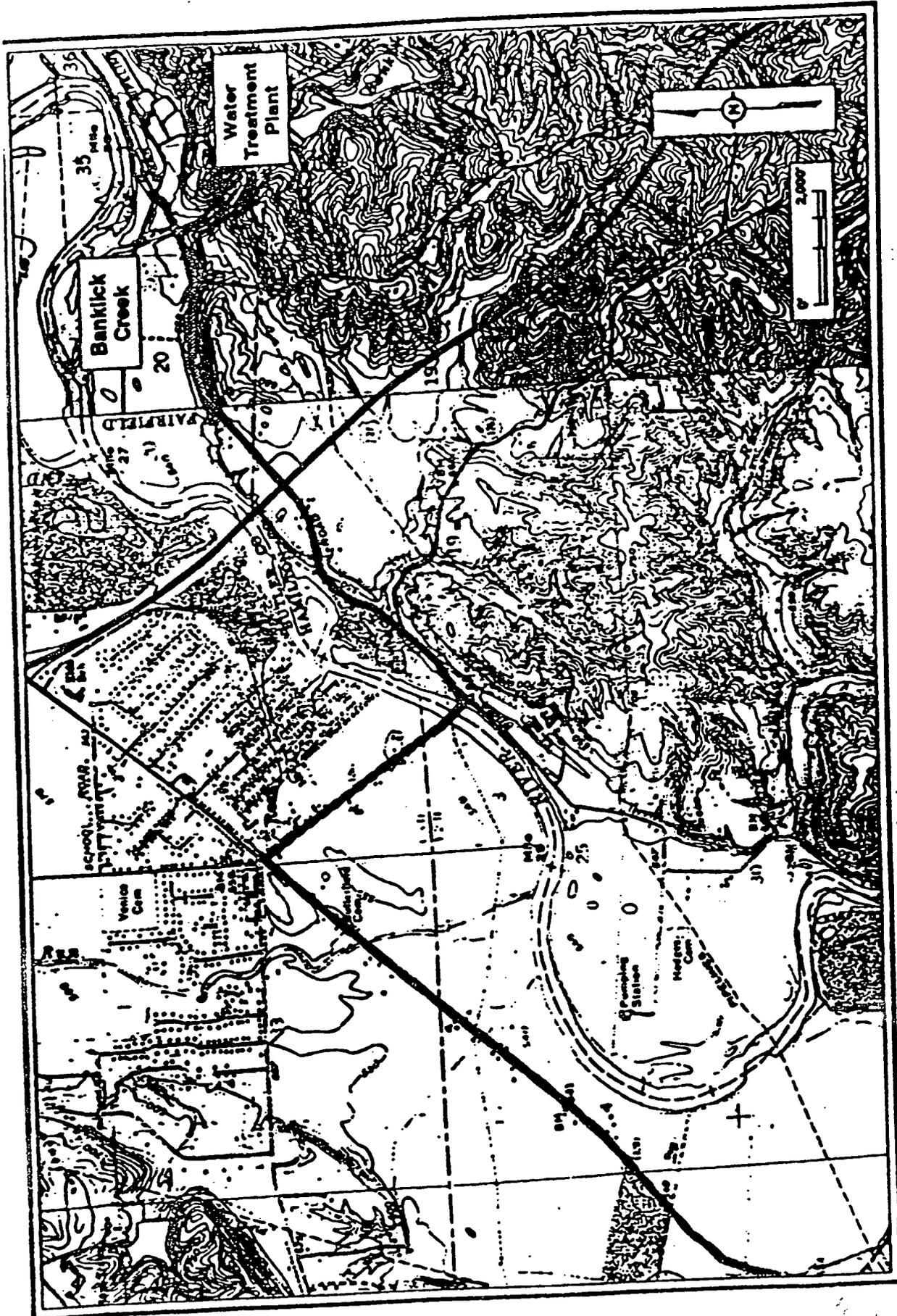
1.0 PROPOSED ACTION

The U.S. Department of Energy (DOE) proposes to partially fund the installation of a public water supply for residents whose drinking water has been contaminated or has the potential to become contaminated by the South Groundwater Contamination Plume (South Plume). The South Plume has resulted from past operations at the Fernald Environmental Management Project (FEMP).

The project involves the installation of approximately 13 miles of pipeline within road rights-of-way in Hamilton and Butler Counties, Ohio (Figure 1). A trench approximately 6-feet deep and 3-feet wide will be excavated within 3 feet of the pavement on the maintained portion of the road shoulder. Soil removed during construction will be stockpiled adjacent to the trench until needed for backfill. Standard practices for controlling erosion will be employed during construction.

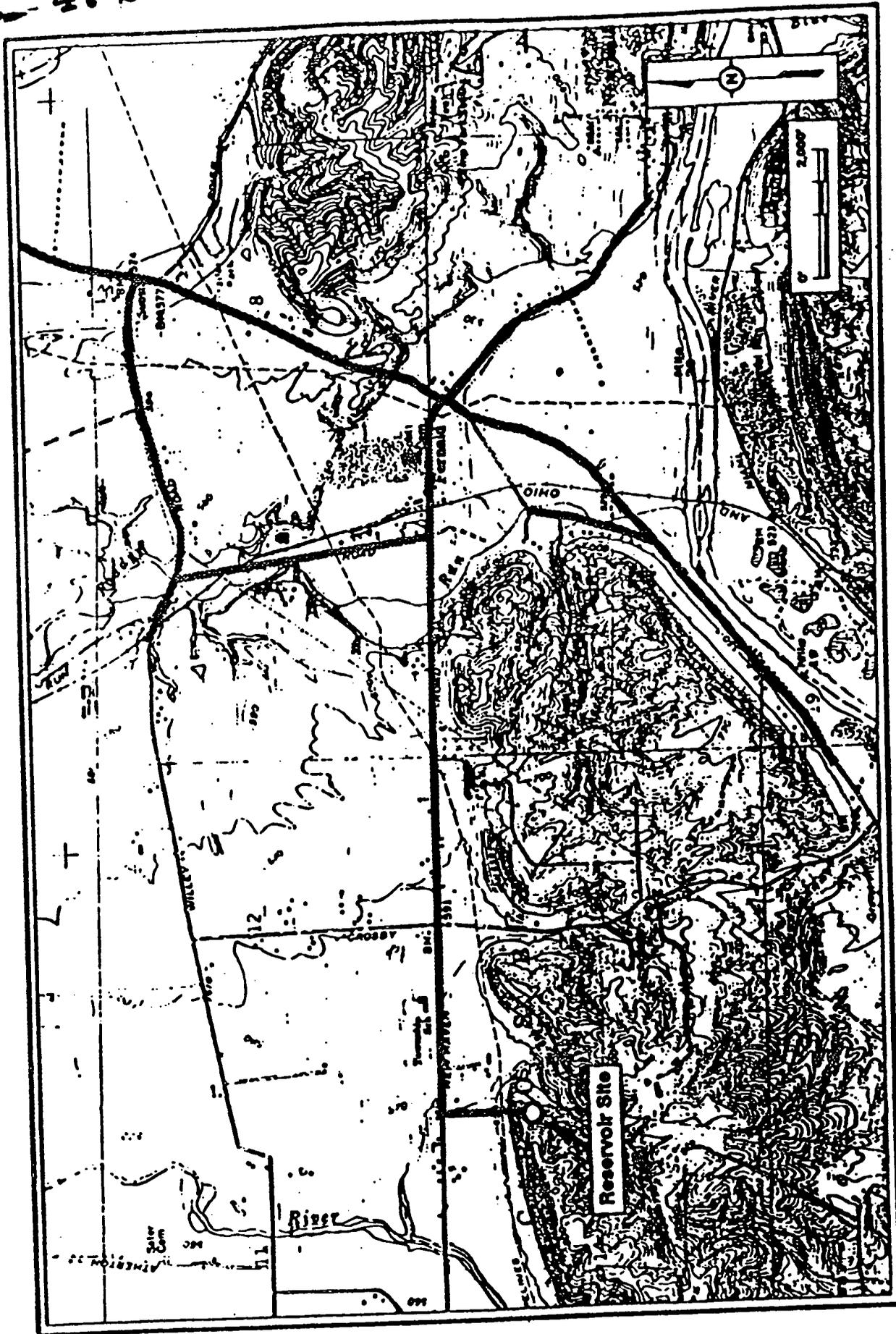
The project will begin with the installation of a 20-inch pipeline along the north side of East Miami River Road from the Cincinnati Water Works (CWW) Bolton Water Plant, west to the State Route (SR) 126 bridge across the Great Miami River (Figure 2). The pipeline will be suspended under the north side of the SR 126 bridge, reduced to 16 inches on the west side of the river, and will continue west along the north side of SR 126 to the town of Ross, Ohio, and the junction with SR 128. The 16-inch pipeline will turn south on the east side of SR 128 and continue to the junction with Willey Road. An 8-inch pipeline will be installed on the north shoulder of Willey Road to its junction with the Chesapeake and Ohio Railroad (Figure 3). The 16-inch pipeline will continue down the east side of SR 128 to the junction with New Haven Road. An 8-inch pipeline will be installed for approximately 1,800 feet to the east





Source: USGS 7.5 minute series Greenhills, Ohio and Shandon, Ohio quadrangles.

Figure 2. Water Pipeline Route



Source: USGS 7.5 minute series Shandon, Ohio quadrangle.

Figure 3. Water Pipeline Route

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down the north side of New Haven Road toward New Baltimore. A 16-inch pipeline will continue approximately 2.1 miles west down the north side of New Haven Road toward New Haven. A 12-inch pipeline will continue 1.7 miles down the east side of SR 128 toward Miamitown. Four hundred feet south of the SR 128 bridge over Paddys Run, an 8-inch pipeline will be laid for 1,600 feet to the north on the east side of Paddys Run Road. An 8-inch pipeline will be placed along the east side of Paddys Run Road between Willey Road and New Haven Road.

A 1-million gallon water tank will be constructed on Miami Whitewater Forest County Park property approximately 4,800 feet east of the town of New Haven. The tank will be connected to the pipeline by a 16-inch pipeline constructed through wooded and agricultural land. A 1,400-foot pipeline will connect the tank to the pipeline adjacent to New Haven Road and is the only portion of the pipeline that will not be constructed within 3 feet of road pavement (i.e., will traverse an agricultural field).

The proposed route of the pipeline will cross the following waters of the United States: Banklick Creek, the Great Miami River, Paddys Run (three crossings), and 14 small streams, creeks, or ditches. The pipeline will be placed under the bed of each except the Great Miami River where it will be suspended from the SR 126 bridge.

The project site was visited on March 15 through 18, 1993, to record information about the presence of suitable habitat for threatened and endangered (T&E) plant and animal species. Because of the time of year (March), no surveys for T&E species were attempted.

## 2.0 PROJECT SITE DESCRIPTION

The FEMP site, located on 1,050 acres in a rural area of Hamilton and Butler Counties, is approximately 18 miles northwest of Cincinnati, Ohio. The villages of Fernald, New Baltimore, Ross, New Haven, and Shandon are all located within a few miles of the site.

The FEMP and surrounding areas lie in a transition zone between two distinct sections of the Eastern Deciduous Forest Province: the Oak-Hickory and the Beech-Maple.<sup>1</sup> The region is characterized by a mosaic of these forest types. The Eastern Deciduous Forest was historically dominated by tall broadleaf trees which provided a continuous dense summer canopy. Nearly all indigenous forest stands in southwestern Ohio have been cleared, cut, or altered for agriculture or urban development. Vegetative communities within and surrounding the FEMP reflect these land use practices. Land use outside FEMP is predominantly agricultural, resulting in a landscape of open pasture and plowed fields dissected by forests occupying drainages, steep slopes, and ditch banks. There are several distinct terrestrial habitats including plowed fields, pasture and lawn, floodplain forest, and upland forest.

Upland forested habitats are characterized by American elm (Ulmus americana), eastern cottonwood (Populus deltoides), black locust (Robinia pseudo-acacia), black cherry (Prunus serotina), white ash (Fraxinus americana), black walnut (Juglans nigra), box elder (Acer negundo), honey locust (Gleditsia triacanthos), and several species of oak (Quercus spp.).

The floodplain forests along the Great Miami River, Banklick Creek, and Paddys Run are dominated by American sycamore (Platanus occidentalis), hackberry (Celtis occidentalis), red maple (Acer rubrum), eastern cottonwood, American elm, and box elder.

Inclusion of T&E species in this report was based on the following three sources.

- (1) Ken Multerer, a biologist with the U.S. Fish and Wildlife Service (FWS), stated that there were only two Federally listed T&E species in the area.<sup>2</sup> He suggested that the Indiana bat (Myotis sodalis) and running buffalo clover (Trifolium stoloniferum) be included.

(2) Patricia D. Jones, Ohio Department of Natural Resources (ODNR), provided information from the state's Natural Heritage Database (NHD), which included records from the southern half of the Shandon, Ohio quadrangle, and the western half of the Greenhills, Ohio quadrangle for the following species: Sloan's crawfish (Orconectes sloanii), bigeye shiner (Notropis boops), cave salamander (Eurycea lucifuga), running buffalo clover, and spring coral-root (Corallorhiza wisteriana).<sup>3</sup>

(3) The 1992 FEMP Site-Wide Characterization Report identified cobblestone tiger beetle (Cicendela margipennis), Sloan's crawfish, cave salamander, Northern harrier (Circus cyaneus), red-shouldered hawk (Buteo lineatus), Northern waterthrush (Seiurus noveboracensis), dark-eyed junco (Junco hyemalis), Indiana bat, running buffalo clover, slender finger-grass (Digitaria filiformis), and mountain bindweed (Polygonum cilinode) as occurring or having the potential to occur on the FEMP.<sup>4</sup> The red-shouldered hawk and cobblestone tiger beetle are listed as "special interest" and were not included in this assessment.

**3.0 FEDERALLY-LISTED THREATENED AND ENDANGERED SPECIES THAT MIGHT OCCUR ON THE PROPOSED PROJECT SITE**

**3.1 Indiana Bat (Myotis sodalis)**

**3.1.1 Life History**

The Indiana bat, listed as endangered in 1967, usually hibernates in limestone caves characterized by floors covered with standing water. During the summer, females form maternity colonies in hollow trees and under loose bark. Most summer roosts are near streams and small rivers and the bats forage at night for moths, mayflies, and other flying insects near the tops of trees and over streams.<sup>5</sup> The Indiana bat is

found from New York south to northern Georgia, and west to eastern Oklahoma and eastern Iowa.<sup>6</sup>

### 3.1.2 Project Populations

Indiana bats were surveyed during the summer of 1988 along the Great Miami River from the I-275 bridge upstream to the CWW Bolton Water Plant (Reference 4). In addition, potential habitat for the bats was also surveyed. Excellent habitat, defined as mature woodland with dead trees extending more than 30 yards beyond the stream edge on one or both banks, was noted on one area of Paddys Run at the Butler/Hamilton County line. Good habitat, defined as mature woodland on one or both banks but not extending far beyond the stream edge, was noted on Paddys Run at the New Haven and the Willey Road bridges and along portions of the Great Miami River near the CWW Bolton Water Plant. Eight Indiana bats were trapped on Banklick Creek near the East Miami River Road bridge in July and August 1988 (Reference 4).

### 3.1.3 Consequences of Proposed Actions

The proposed water pipeline will be installed within the cleared and maintained shoulder of existing roads and within 3-feet of the pavement. No trees are anticipated to be felled for this construction; and all land, including streambeds, will be protected from erosion and returned to pre-construction conditions. The only location that trees will be felled for construction of the pipeline is near the tank site on Miami Whitewater Forest County Park Property. This forested area is characterized by second growth osage-orange (Maclura pomifera), honey locust, hackberry, and black cherry. No trees large enough to serve as maternity colonies are located in the pipeline path. The proposed action should not affect populations of the Indiana bat.

### 3.2 Running Buffalo Clover (Trifolium stoloniferum)

#### 3.2.1 Life History

Running buffalo clover is adapted to rich soils in "relatively stable ecotones, with continual, moderately intense disturbance" between open forest and pastures or prairies.<sup>7</sup> When the running buffalo clover was listed as endangered on June 5, 1987, the species was known to occur at only one location in West Virginia.<sup>8</sup> This species has since been reported in disturbed areas of Hamilton County, Ohio; however, it was not recorded during the 1986 and 1987 surveys (Reference 4) and has not been reported on maintained roadsides (Reference 2).

#### 3.2.2 Project Populations

The 1986 and 1987 botanical surveys did not record this species on the FEMP.<sup>9</sup> However the ODNr NHD indicates that running buffalo clover exists in the Miami Whitewater Forest County Park 3.5 miles from the tank site to the southwest on the south shore of Miami Whitewater Lake (Reference 3). The park, including the pipeline route from the tank site to New Haven Road, was surveyed by the Hamilton County Parks Department during the summer of 1992 and no running buffalo clover populations were located.<sup>10</sup>

#### 3.2.3 Consequences of Proposed Actions

This species has not been reported along mowed and maintained roadsides and should not be impacted by the proposed pipeline route.

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#### 4.0 STATE-LISTED THREATENED AND ENDANGERED SPECIES THAT MIGHT OCCUR ON THE PROPOSED PROJECT SITE

##### 4.1 Sloan's Crawfish (Orconectes sloanii)

###### 4.1.1 Life History

This species is listed as threatened by ODNR but is not listed by the FWS. The ODNR NHD records it in Indian Creek at the SR 128 bridge (Reference 3).

###### 4.1.2 Project Populations

This species was recorded as common in Paddys Run during the winter of 1986-1987 (References 4 and 9). It is likely that it also occurs in Banklick Creek, the Great Miami River, and in several small streams in the floodplain of the Great Miami River, which the proposed pipeline will cross.

###### 4.1.3 Consequences of Proposed Actions

While the ODNR stated in 1993 that no records for rare and endangered species were found in the Hamilton County water supply project area (Appendix A)<sup>11</sup>; this species has been reported in Paddys Run and could occur in Banklick Creek and several small streams in the floodplain of the Great Miami River. This species could be adversely impacted by the construction of the pipeline under these streambeds. To avoid impact, trained ecologists will clear the streambeds by removing rocks and using dipnets to temporarily move any species found to an upstream location until construction in that area is completed. The habitat will not be significantly altered and the streambed will be returned to pre-construction conditions.

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## 4.2 Bigeye Shiner (Notropis boops)

### 4.2.1 Life History

This species is listed as endangered by ODNR but is not listed by the FWS. It prefers the clearest of streams with stream bottoms of sand, gravel, bedrock, and small amounts of organic matter. This species was common in western Ohio prior to 1900 but has disappeared from much of its range with the clearing of the forests and the subsequent increased siltation of the streams.<sup>12</sup>

### 4.2.2 Project Populations

The ODNR NHD has recorded this species at the mouth of Paddys Run (Reference 3). This record is based on a survey conducted in 1973.<sup>13</sup> The authors concluded that this species may have moved into Paddys Run from the Great Miami River, where its occurrence was more common. Subsequent surveys in the Great Miami River from 1980 - 1991 failed to locate this species.<sup>14, 15, 16</sup> In addition, a 1986 stream survey in Paddys Run did not indicate its presence (Reference 9). Since the species has not been located since 1973, it is unlikely that it occurs in Paddys Run or the Great Miami River.

### 4.2.3 Consequences of Proposed Actions

It is unlikely that this species occurs in Paddys Run, the Great Miami River, or the other small streams within the project area and it should not be impacted by the construction of the pipeline.

#### 4.3 Cave Salamander (Eurycea lucifuga)

##### 4.3.1 Life History

The cave salamander is listed as endangered by the State of Ohio and is not listed by the FWS.<sup>17</sup> Its favorite habitat is the dimly lit entrance to limestone caves; however, it may also be found in forested areas or along streams removed from any known caves.<sup>18</sup> Streams favored by this species are commonly narrow (less than 3 feet wide) and intermittent, often disappearing underground and reappearing some distance down the slope.<sup>19</sup> The three known cave salamander sites on the Miami Whitewater Forest County Park are all small steep ravines in deciduous woodlots.<sup>20</sup>

##### 4.3.2 Project Populations

A 1988 survey of T&E species on and around FEMP searched for cave salamander populations along Paddys Run, Ross Trails Girl Scout Camp, and Camp Fort Scott (Reference 4). A population of cave salamanders was located on Ross Trails Girl Scout Camp north of the project area on May 25, 1988. Potential habitat exists on Camp Fort Scott north of New Baltimore and on Paddys Run downstream of New Haven Road. This study also listed previously discovered populations near Banklick Creek and north of New London Road. The ODNR NHD recorded three locations on Miami Whitewater Forest County Park, including one location 2,500 feet west of the proposed tank site (Reference 3). The species was also recorded north of Day Road on the east side of the Great Miami River. Surveys conducted by J. Davis during the summer of 1989 located another previously discovered population 25 yards south of East Miami River Road near its junction with Stone Mill Road. No populations were located in Banklick Creek or Paddys Run. These streams are too large and contain unsuitable habitat (References 19 and 20). A small, intermittent limestone stream adjacent to Stone Mill Road that flows under East Miami River Road contains suitable habitat for cave salamanders on both sides of the road. This stream was searched by J. Davis during a 1989 survey

for Richardson Forest Preserve County Park and no cave salamanders were located (Reference 19).

4.3.3 Consequences of Proposed Actions

No caves or limestone outcrops were noted during the March 1993 survey and no potential habitat exists for the cave salamander near the bridges over Banklick Creek, Paddys Run, or the small streams and ditches in the floodplain of the Great Miami River. One small intermittent stream located 100 feet east of the junction of East Miami River Road and Stone Mill Road contains the only suitable cave salamander habitat along the pipeline route. A 1989 survey located no cave salamanders (Reference 19). While excavations for the pipeline along the road shoulders and at the various stream crossings will have no impact on this species, excavations at the stream crossing near Stone Mill Road could adversely impact the species. To avoid possible impact, rocks will be lifted and the area searched for cave salamanders at the time of construction. Any species found will be temporarily moved until construction in that area is completed. Impact to the cave salamander at the tank site was minimized by avoiding an area on Hamilton County Park land with known populations.

4.4 Northern Harrier (Circus cyaneus)

4.4.1 Life History

This rare summer resident is classified as endangered by ODNR due to limited nesting records in Ohio but is not listed by FWS. The northern harrier was a common nester in the wetlands and pastures of northern Ohio as late as the 1920s. Populations have declined so that only 5 to 15 pairs are estimated to be nesting in the entire state. Nesting records in the southwestern portion of the state have always been rare. The species, common during migration, is most often seen near meadows and wetlands.<sup>21</sup>

#### 4.4.2 Project Populations

This species was observed during the 1986 summer survey (Reference 9). It is likely that the species migrates through the area during the fall and spring, but it is doubtful that the species nests in the project area.

#### 4.4.3 Consequences of Proposed Actions

It is highly unlikely that this species nests in southwestern Ohio. Migrating populations that would occur here would be found around wetlands, meadows, wet pastures, and overgrown fields. This species should not be impacted by the proposed pipeline.

#### 4.5 Northern Waterthrush (Seiurus noveboracensis)

##### 4.5.1 Life History

This common migrant is listed as endangered by the ODNR due to limited nesting records in Ohio and is not listed by the FWS. It is a rare summer resident in northeastern Ohio and prefers quiet backwaters and wooded swamps. A related species, the Louisiana waterthrush, is common throughout Ohio and prefers shaded streams with adjacent, mature deciduous woods (Reference 21).

##### 4.5.2 Project Populations

This species was reported on FEMP during the spring of 1987 but not during the summer of 1986 or the winter of 1986-1987 (Reference 9). It is probable that this species is locally common during migration and doubtful that it nests further south than northern Ohio.

##### 4.5.3 Consequences of Proposed Actions

It is highly unlikely that this species nests in southwestern Ohio. Migrating populations that may occur here would be found around wetlands, still backwater swamps and brushy margins of ponds. This species should not be impacted by the proposed pipeline.

4.6 Dark-Eyed Junco (Junco hyemalis)

4.6.1 Life History

This common migrant is listed as endangered by the ODNR due to limited nesting records in Ohio and is not listed by the FWS. It is a rare summer resident in northern Ohio and prefers to nest in cool hemlock ravines and mature beech-maple forests (Reference 21).

4.6.2 Project Populations

This species was reported on the FEMP during the winter of 1986-1987 (Reference 9). It is probable that this species is locally common during migration and over winters in southwestern Ohio but it is doubtful that it nests further south than northern Ohio.

4.6.3 Consequences of Proposed Actions

It is highly unlikely that this species nests in southwestern Ohio. Migrating populations that would occur here would be found around brushy thickets, fencerows, and woodland edges bordering fields or at suburban feeding stations. This species should not be impacted by the proposed pipeline.

4.7 Slender Finger-Grass (Digitaria filiformis)

4.7.1 Life History

This rare crab grass is classified as endangered by ODNR but is not listed by FWS. The plant blooms from August to October and prefers full

sun in sterile sandy soils.<sup>22</sup> The species in Ohio is confined to dry sandy native prairie habitat.<sup>23</sup>

#### 4.7.2 Project Populations

This plant was located during the 1986 botanical survey of the area. It was recorded as being rare in the riparian habitats of the FEMP (Reference 9). The 1992 survey at Miami Whitewater Forest County Park failed to locate the species (Reference 10). J. McCormick, Staff Botanist with ODNR, stated that the species should not be found on roadsides and is largely confined to dry, sandy native prairie (Reference 23).

#### 4.7.3 Consequences of Proposed Actions

While this species was recorded in riparian habitats of the FEMP during 1986, it is unlikely that it occurs along the roadsides where the pipeline will be placed. This species should not be adversely impacted by the project.

### 4.8 Spring Coral-Root (Corallorhiza wisteriana)

#### 4.8.1 Life History

This rare orchid is classified as threatened by ODNR but is not listed by FWS. The plant blooms from April through May and is found in swamp forests and wooded ravines.<sup>24</sup>

#### 4.8.2 Project Populations

This plant was not located during the botanical surveys of the area in 1986 and 1987 (Reference 9); however, ODNR NHD reports a population on the Miami Whitewater Forest approximately 1,500 feet southwest of Miami Whitewater Lake (Reference 3). The 1992 survey of Miami Whitewater Forest failed to locate the species (Reference 10).

4.8.3 Consequences of Proposed Actions

This species is most often found in swamp forests and wooded ravines. This habitat does not occur along the pipeline route and consequently this species should not be impacted by the proposed pipeline.

4.9 Mountain Bindweed (Polygonum cilinode)

4.9.1 Life History

This rare smartweed or climbing buckwheat is classified as endangered by ODNR but is not listed by FWS. The plant blooms from June through September and is found in openings and clearings in forested areas.<sup>24</sup> This species has been reported (post-1960) from Portage and Summit Counties in northeastern Ohio (Reference 22).

4.9.2 Project Populations

This plant was not mentioned in the 1988 T&E species survey of the area; however, it was reported as being rare in the riparian woodlands and pine plantations on the FEMP during the 1986 botanical survey (Reference 9). The 1992 survey of Miami Whitewater Forest failed to locate this species (Reference 10).

4.9.3 Consequences of Proposed Actions

This species is most often found in wooded areas rather than along maintained roadsides; thus it should not be impacted by the proposed pipeline.

## 5.0 SUMMARY OF SPECIES FOUND ON THE PROPOSED PROJECT SITE

The Indiana bat has been recorded on Banklick Creek near the location of the pipeline crossing. Sloan's crawfish has been found in Paddys Run and it probably occurs in Banklick Creek. The bigeye shiner was found at the mouth of Paddys Run in 1973 but has not been located since 1973. While slender finger-grass has been reported from the FEMP, it is unlikely that it occurs along the proposed pipeline route; no suitable habitat exists along the roadsides. Suitable habitat for the cave salamander exists in a small intermittent stream 100 feet east of the junction of Stone Mill Road and East Miami River Road. No cave salamanders were located in this area during a 1989 survey. Suitable habitat does not exist for the following species within the proposed pipeline route: running buffalo clover, spring coral-root, mountain bindweed, northern harrier (nesting habitat), northern waterthrush (nesting habitat), and dark-eyed junco (nesting habitat). Sloan's crawfish and the cave salamander could be impacted by this project. Table 1 summarizes the locations and the potential impacts to each Federally- and State-listed T&E species.

## 6.0 ANALYSIS OF ALTERNATIVE ACTIONS TO MINIMIZE OR ELIMINATE IMPACTS TO THE SPECIES

This project has been designed to minimize adverse impacts to T&E species, wetlands, cultural resources, and wildlife habitat in general. The proposed pipeline will be placed within 3-feet of the road pavement and within the maintained road right-of-way. The only trees that will be removed for this project will be in the area designated for the 1-million gallon reservoir in Miami Whitewater Forest County Park. This area was surveyed for T&E species in the summer of 1992 and none were located. The water tank will be placed on a low hill at the edge of the park adjacent to a cleared

Table 1. Summary Table of Threatened and Endangered Species for the Proposed Pipeline

FEDERALLY-LISTED

| Species                | Status     | Potential Locations                           | Potential Impact to Populations |
|------------------------|------------|---|---------------------------------|
| Indiana Bat            | Endangered | Paddys Run, Great Miami River, Banklick Creek | None                            |
| Running Buffalo Clover | Endangered | None  | None                            |

STATE-LISTED

| Species              | Status     | Potential Locations   | Potential Impact to Populations   |
|----------------------|------------|---|---|
| Sloan's Crawfish     | Threatened | Paddys Run, Banklick Creek, Great Miami River, several small streams                                  | Some potential for impact at Paddys Run, Banklick Creek, and several smaller streams  |
| Bigeye Shiner        | Endangered | None  | None  |
| Cave Salamander      | Endangered | Small intermittent stream 100 yards east of the junction of Stone Mill Road and East Miami River Road | Some potential for impact at small, intermittent stream 100 yards east of the junction of Stone Mill Road and East Miami River Road |
| Northern Harrier     | Endangered | None (migratory)  | None  |
| Northern Waterthrush | Endangered | None (migratory)  | None  |
| Dark-Eyed Junco      | Endangered | None (migratory)  | None  |
| Slender Finger-Grass | Endangered | None  | None  |
| Spring Coral-Root    | Threatened | None  | None  |
| Mountain Bindweed    | Endangered | None  | None  |

pasture on private land to reduce any unnecessary forest fragmentation and the deleterious impacts to neotropical migrants (birds that winter in South and Central America). This area is dominated by a young, second-growth forest of honey locust, hackberry, and black cherry with trees not more than 8 inches in diameter.

The pipeline will be suspended from the SR 126 bridge over the Great Miami River to reduce cost and avoid impacts to Sloan's crawfish, which might occur in this stretch of the river. Stream crossings at Paddys Run, Banklick Creek, and several other small streams in the floodplain of the Great Miami River will involve excavation of the streambed and subsequent restoration of the streambed to pre-construction conditions. Standard erosion control devices, including silt fences and straw bales, will be employed to reduce the adverse impacts of soil erosion.

An alternative route for a portion of the pipeline that would have bypassed the town of Ross and followed a transmission line to the south was abandoned during the early planning stages of this project due to the potential of finding archeologically significant resources.

Two alternatives for the location of the water tank were rejected because they were on private land. The selected location was moved to avoid a population of cave salamanders and an area of hydric soils.

## 7.0 CONCLUSIONS

No federally endangered or threatened species or critical habitat of species suggested for inclusion in this biological assessment by the FWS will be impacted by the proposed pipeline. The potential exists for adverse impacts to the state-listed Sloan's crawfish at the stream crossings at Banklick Creek, Paddys Run, and several smaller streams, and to the cave salamander at the small intermittent stream at the junction of Stone Mill Road and East Miami River Road. Measures will be taken to avoid impact on these species, which includes searching these areas for these species and temporarily moving them immediately before

construction takes place. Impacts to potential habitats will be temporary. The streambed will be restored to pre-construction conditions and no permanent loss of habitat will result from the proposed project.

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George V. Voinovich • Governor  
Frances S. Buchholzer • Director

April 6, 1993

Robert K. Abernethy  
Halliburton NJS Corporation  
Savannah River Center  
900 Trail Ridge Road  
Aiken, SC 29803

Dear Mr. Abernethy:

After reviewing our maps and files, I find the Division of Natural Areas & Preserves has no records of rare and endangered species in the Hamilton County Water Supply and Fernald Environmental Management project area.

There are no existing or proposed nature preserves or scenic rivers in the project area, and we are unaware of any other unique ecological sites in the vicinity of the Colerain and Crosby townships, Hamilton County and Ross Township, Butler County site.

Because our inventory program relies on information supplied by a number of individuals and organizations, a lack of records for any particular area is not a statement that special plant or animal species are absent from a site. Please note that we inventory only high-quality plant communities and do not maintain an inventory of all Ohio wetlands.

Please contact me if I can be of further assistance.

Sincerely,

*Jennifer A Hillmer*

Jennifer Hillmer, Ecological Analyst  
Division of Natural Areas & Preserves

JH/ks

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APPENDIX A

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