

Explanation of Significant Differences

For

Fields Brook Superfund Site

Ashtabula County

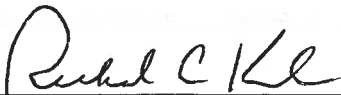
Ashtabula, Ohio

September 2009



Approved by:

Date:



Richard C. Karl
Director, Superfund Division

9.23-09

Department of Health and Human Services

1

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

PHYSICIAN ASSISTANT

[This Page Intentionally Left Blank]

PHYSICIAN ASSISTANT



Faint, illegible text or markings in the bottom right corner, possibly a signature or stamp.

Executive Summary

The United States Environmental Protection Agency (EPA) is issuing this Explanation of Significant Differences (ESD) to provide notice of a modification to the cleanup decision for source control areas of the Fields Brook Superfund site in Ashtabula, Ohio. The Fields Brook site consists of Fields Brook, its tributaries, and surrounding source areas that contribute, potentially may contribute, or have contributed to the contamination of the brook and its tributaries. EPA signed a Record of Decision (ROD) on September 29, 1997, to address all source control areas jointly, designating them as OU 2. Subsequently, this OU was further subdivided into OUs 5 through 10 in order to facilitate settlement negotiations. The Source Control ROD specified that the remedy was intended to protect Fields Brook. Pathways unrelated to Fields Brook were not evaluated because the source areas are active facilities regulated under other statutes.

The ROD for the source control areas selected a variety of excavation and containment remedies for source control areas and also established certain general and facility-specific requirements for institutional controls (ICs) related to the active components of the remedy. EPA previously modified the Source Control ROD on April 8, 1999. That ESD did not affect requirements for ICs.

The present ESD modifies the remedies regarding IC requirements for the Millennium Titanium Tetrachloride ($TiCl_4$) Plant (OU 6), Acme Scrap Iron and Metal/South Sewers (OU 8), and the Conrail Bridge Yard (OU 9). This modification clarifies how the ROD requirements will be applied at OU 6 and 8. It also removes requirements for ICs at OU 9, based on the implementation of a complete excavation remedy rather than the excavation and containment remedy anticipated in the ROD, that eliminated the need for ICs. The present ESD does not affect the ROD for Fields Brook sediment issued in September 1986 or the ROD issued for Fields Brook floodplain areas issued in June 1997, or any of the ESDs issued for those RODs.

List of Acronyms

ARARs	Applicable or Relevant and Appropriate Requirements
Agency	United States Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CRG	Confidence Removal Goal
CUG	Cleanup Goal
DNAPL	Dense Non-Aqueous Phase Liquid
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Difference
EU	Exposure Unit
FBAG	Fields Brook Action Group
FFS	Focused Feasibility Study
FS	Feasibility Study
FYR	Five Year Review
HCB	Hexachlorobenzene
NPL	National Priorities List
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
ODH / BRP	Ohio Department of Health / Bureau of Radiation Protection
Ohio EPA	Ohio Environmental Protection Agency
OMM	Operation, Maintenance and Monitoring
OU	Operable Unit
PCBs	Polychlorinated biphenyls
PPB	Parts per billion
pic/g	Pico-curies per gram
PPM	Parts per million
RA	Remedial Action
RI	Remedial Investigation
ROD	Record of Decision
RMI	Reactive Metals Incorporated
TiCl ₄	Titanium tetrachloride
TSCA	Toxic Substances Control Act

Explanation of Significant Differences
Fields Brook Site
Ashtabula County, Ashtabula, Ohio

I. Introduction to the Site and Statement of Purpose

A. Site Name and Location

Fields Brook Superfund site
Ashtabula County, Ashtabula, Ohio

B. Identification of Lead and Support Agencies

Lead Agency: U.S. Environmental Protection Agency (EPA)
Support Agency: Ohio Environmental Protection Agency (Ohio EPA)

C. Statement of Purpose

This decision document sets forth the basis for EPA's decision to issue an Explanation of Significant Differences (ESD) to the September 29, 1997, Record of Decision (ROD) for the Source Control Areas of the Fields Brook Superfund site in Ashtabula County, Ashtabula, Ohio. At the time of the ROD, all source control areas were grouped together as Operable Unit (OU) 2. Subsequently, each source area was defined as its own OU. This ESD relates to the Millennium Titanium Tetrachloride (TiCl₄) Plant (OU 6), Acme Scrap Iron and Metal/South Sewers (OU 8), and the Conrail Bridge Yard (OU 9).

D. Statutory Basis for Issuing the ESD

EPA is issuing this ESD in accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, and Section 300.435(c)(2)(i) of the National Contingency Plan (NCP). CERCLA is known as the Superfund law, and the NCP contains the regulations setting forth how EPA will carry out its responsibilities under Superfund.

Section 117(c) of CERCLA¹ states that EPA shall publish an explanation of the significant differences if EPA determines that the remedial action at the site should differ significantly from the remedial action previously selected in the ROD. EPA shall also publish the reasons such changes are being made. EPA policy and regulations² indicate that an ESD, rather than a ROD

¹ 42 U.S.C 9617(c)

² See 40 CFR 300.435(c) of the NCP: EPA Office of Solid Waste and Emergency Response Directive 9355.3-02.

Amendment, is appropriate where the changes being made to the remedy are significant, but do not fundamentally alter the overall remedy with respect to scope, performance, or cost.

E. Summary of Circumstances Warranting this ESD

The Source Control Areas ROD for the Fields Brook site included the following requirement for institutional controls (ICs) in areas where contamination will remain on-site within a containment area:

Placement of institutional controls on deeds and title for properties where hazardous substances, pollutants or contaminants will remain above levels that allow for unlimited use and unrestricted exposure. These controls will limit the future use of areas so as to ensure that contamination does not migrate to the Brook.

At the Fields Brook site, the scope of the Remedial Investigation (RI) for the industrial source control areas was limited to an investigation of contamination that could impact Fields Brook. EPA did not conduct a risk assessment for these areas. The remedy for the source areas was limited to eliminating or controlling the sources or potential sources of contamination to the Brook. This site-specific circumstance warrants a clarification of ROD requirement for ICs at source areas where the remedy as implemented does not include on-site containment of contaminants, but the cleanup levels do not allow for unlimited use and unrestricted exposure.

The ROD also included facility-specific statements concerning ICs at some source areas. For the Millenium $TiCl_4$ Plant (OU 6) and the Conrail Bridge Yard (OU 9), the remedial action that was implemented was more stringent than required in the ROD (see Section II (D) below). This circumstance also warrants a clarification of how the IC requirements apply at these areas.

F. Agency Determination

EPA, in consultation with the OEPA has determined that changes are required to the RODs, as amended, for the remedy to be protective of human health and the environment. However, the proposed changes, while significant, do not fundamentally alter the overall Site action with respect to scope, performance, or cost. Thus, EPA finds that it is appropriate to issue an ESD to document the remedy modification.

G. Administrative Record

In accordance with Section 300.435(c) of the NCP, this ESD and supporting documentation will become part of the Administrative Record for the cleanup decision at the Fields Brook Site. The Administrative Record is available for public review at the following information repositories:

Records Center
EPA Region 5
77 W. Jackson Blvd. - 7th Floor
Chicago, IL 60604
(Mon through Fri 8:00 am to 4:00 pm)

The repositories near the site can be found at the following locations:

Ashtabula County District Library
335 West 44th Street
Ashtabula, Ohio
(Mon/Tues 10:00 am – 8:00 pm; Weds/Thurs/Fri 11:00 am –
6:00 pm; Sat 11:00 am – 4:00 pm)

Kent State Campus Library
3325 West 13th Street
Ashtabula, Ohio
(Mon 10:30 am – 5:00 pm; Tues/Weds 8:00 am – 5:00 pm; Thur
8:00 – 4:00 pm; Fri 8:00 am – 11:30 am)

II. Site History, Contaminants, and Selected Remedy

A. Site History

The Fields Brook site is located in northeast Ohio, in Ashtabula County, approximately 55 miles east of Cleveland, Ohio. Fields Brook drains a six square-mile watershed. The eastern portion of the watershed drains Ashtabula Township and the western portion drains the eastern portion of the city of Ashtabula (Figures 1 & 2). The main channel is 3.9 miles in length and begins at Cook Road, just south of the Penn Central Railroad tracks. From this point, Fields Brook flows northwest to Middle Road, then west to its confluence with the Ashtabula River. From Cook Road downstream to State Route 11, Fields Brook flows through an industrialized area. Downstream of State Route 11 to near its confluence with the Ashtabula River, Fields Brook flows through undeveloped and residential areas in the City of Ashtabula. Fields Brook discharges to the Ashtabula River approximately 8,000 feet upstream from Lake Erie.

The industrial zone of Ashtabula is concentrated around Fields Brook and is comprised of several chemical industries and waste disposal sites. Manufacturing has occurred since the early 1940's in this area. Activities ranging from metal-fabrication to production of complex chemical products occurred on approximately 18 separate industrial properties, and the decades of industrial activity along Fields Brook and its tributaries resulted in the release of chemical contamination to the Fields Brook watershed, particularly the sediments of Fields Brook, the floodplain soils and sediments, and the soils surrounding the industries.

The Fields Brook site was placed on the National Priorities List (NPL) for hazardous waste sites on September 8, 1983. The site consists of Fields Brook, its tributaries, and any surrounding areas that contribute, potentially may contribute, or have contributed to the contamination of the brook and its tributaries.

The Fields Brook site OUs are summarized in the table below. Source control OUs are shown on Figure 3.

Operable Unit	Description
1	Fields Brook sediment
2	Historically known as the Source Control OU, OU2 was further broken down into OUs 5 - 10 to allow for facility-specific negotiations
3	Historically the Ashtabula River and Harbor, which is being addressed outside of the Superfund program by the Ashtabula River Partnership
4	Floodplain/wetland areas associated with Fields Brook
5	Detrex Corporation source area
6	Millennium TiCl ₄ Plant source area
7	North Sewers source area
8	Acme Scrap Iron and Metal / South Sewers source area
9	Conrail Bridge Yard source area
10	RMI Metals Property source area

OUs 6, 8, and 9 are the subject of this ESD. As documented in the 2009 Five Year Review (FYR), current IC requirements are adequate for Fields Brook sediment (OU 1), floodplain and wetland areas (OU 4), the Detrex Corporation (OU 5), and the North Sewers (OU 7). For each of these areas, ICs are either already in place or are in the process of being put in place, and stewardship plans will be implemented. No modification of the ROD is necessary for RMI Metals property (OU 10) because the ROD did not require containment of contamination on-site.

B. Summary of Contamination for OUs Which Are the Subject of this ESD

Millennium TiCl₄ Plant (OU 6)

Millennium Plant II, the TiCl₄ facility, is located in the south-central portion of the industrialized area near Fields Brook, at the intersection of State Road and Middle Road (Figure Millennium-1). The structures currently at the site include several process buildings, numerous aboveground storage tanks, a clarifier, and three settling ponds. The western half of the property contains most of the process-related structures, whereas the eastern half remains largely undeveloped and was historically covered by a large pile of mining wastes and filter residue.

The TiCl₄ plant was constructed in 1956 and was initially operated by the Stauffer Chemical Company. The facility was sold a number of times in subsequent years and the name of the company was changed to Millennium Inorganic Chemicals in 1997. The current owner, National Titanium Dioxide Company of Saudi Arabia, usually known as Cristal Global, purchased the facility in 2007.

At the start of operations at the TiCl₄ facility, the plant utilized a heat transfer system that used Aroclor-based fluids. This system remained in use until pure Aroclor was removed from the heat transfer system in 1974 and replaced it with Monsanto PCB-Free Therminol.

Prior to Superfund involvement, there were multiple investigations of contamination at the TiCl₄ facility. A Toxic Substances Control Act (TSCA) action in 1983 led to the excavation and disposal of PCB-contaminated sediment from rainwater trenches and overflow channels. As part of the Source Control RI, the Recontamination Assessment of Millennium identified the Mining Residuals Pile, the Non-Traffic Area and the North Traffic Area as areas that possess the potential for contamination in soils to re-contaminate Fields Brook with PCBs. Later investigations added radionuclides in soils as contaminants of concern. The groundwater pathway was determined not to be a medium of concern at this OU, in part due to the low leachability of the major contaminants and the lack of transmissivity in underlying materials.

Acme Scrap Iron and Metal/South Sewers (OU 8)

The Acme property is located in the southwest portion of the industrialized area near Fields Brook. Structures at the site include former manufacturing plant buildings, loading and unloading areas, drum storage areas, and an oil retention lagoon (Figures Acme-1 and Acme-2). The South Sewers consist of a 36 to 48-inch diameter sewer east of State Road that runs between the Acme facility and Fields Brook, as well as a 30-inch sewer outfall that connects the former oil retention pond on the Acme property to the catch basin at the corner of the intersection of State and Middle Roads.

The property is currently vacant, but was previously a scrap recycling facility. The site has had various ownership and uses in the past, including operation as a calcium carbide manufacturing plant, prior to purchase by Acme Scrap for use as a recycling facility. The property was purchased in December 2001 by Lakeside Industrial Park and Railyard, Inc.(Lakeside). Lakeside has leased the northern section of the property for the operation of a cement/asphalt plant and is evaluating possible industrial development options for the remainder of the property, which includes the response area. In the past, Acme dismantled and recycled transformers to recover copper, aluminum, and steel for resale as scrap metal. A preliminary assessment of the Acme facility in 1985 identified the chemicals of interest in soils to include PCBs and several metals, including aluminum, arsenic, copper, iron, lead, mercury and zinc. Groundwater was not contaminated at levels of concern and was determined not to be a medium of concern at this OU.

Conrail Bridge Yard (OU 9)

Conrail's Bridge Yard is located north of Fields Brook, east of the Ashtabula River, and west of a residential area within the City of Ashtabula, Ohio (Figures Conrail-1 and Conrail-2). Only a small portion of the Bridge Yard lies within the Fields Brook watershed. The area of interest includes a long (approximately 1600 ft.), narrow strip of land along Fields Brook from 15th Street to the Ashtabula River. This area extends from the centerline of the southernmost set of railroad tracks south to Fields Brook.

Conrail uses the Bridge Yard for marshaling or staging rail cars containing coal before and after loading and unloading rail cars. Features in the Bridge Yard area include numerous sets of tracks, a small lift bridge control (or yardmaster) building, and a small building that formerly housed a compressor. Trains enter and leave the Bridge Yard from the south end of the Yard near the confluence of Fields Brook and the Ashtabula River.

Within the Conrail Bridge Yard, potential source areas originally identified in the remedial investigation included the aboveground storage tanks located near the east side of the yardmaster building, the former compressor building, and soil staining in the area near the light duty bridge. Surface soil samples collected at the Conrail property contained arsenic concentrations ranging from 10.4 ppm to 62 ppm. Similar to the source areas discussed above, groundwater was determined not to be a medium of concern at this OU.

C. Selected Remedies

EPA signed a Record of Decision (ROD) on September 29, 1997 to address source areas which could re-contaminate Fields Brook sediment above cleanup goals (Source Control Areas ROD). The Ohio EPA elected not to concur with this ROD because they disagreed with limiting the scope of the source area cleanup to those areas which could re-contaminate the brook.

EPA selected the following remedy components for all source areas where contamination will remain on-site within containment areas:

- Long-term operation and maintenance (O&M) and post-closure care of the remedial actions to help ensure effectiveness;
- Long-term monitoring to verify the effectiveness of the remedial actions;
- Placement of institutional controls on deeds and title for properties where hazardous substances, pollutants or contaminants will remain above levels that allow for unlimited use and unrestricted exposure. These controls will limit the future use of areas so as to ensure that contamination does not migrate to the Brook; and
- Implementation of access restrictions, including the construction of new fencing where necessary to prevent access and maintain the integrity of cover systems.

EPA selected the following more specific remedies for the areas subject to this ESD:

Millenium TiCl₄ Plant (OU 6)

The Millenium remedy was intended to address the potential for erosion of contaminated soils to Fields Brook.

The Source Control Areas ROD requirements included:

- Excavation of surface soil with PCB concentrations greater than or equal to 50 ppm;
- Disposal at either an on-site or off-site TSCA landfill;
- Backfill excavated areas with clean soil and grading to allow for adequate drainage;
- On-site containment of remaining surface soils included in the remedial response area
- Deed restrictions to limit the future use of the site and protect the cover system and drainage controls; and
- Maintenance of an existing site fence.

Following the discovery of radionuclide contamination in Fields Brook and at the Millenium TiCl₄ plant source area, EPA modified the source control RODs in an ESD dated April 4, 1999. This ESD added the following requirement for the Millenium property:

- Excavation of additional soil to meet industrial radium cleanup level of 1 pCi/g above background.

Acme Scrap Iron & Metal/South Sewers (OU 8)

The Acme Scrap remedy was intended to address erosion of contaminated soils through the storm sewer system to Fields Brook. It included the following requirements for soils:

- Excavation of surface soil with PCB concentrations greater than or equal to 50 ppm;
- Disposal at either an on-site or off-site TSCA-approved landfill;
- Backfill excavated areas with clean soil and grade to allow for adequate drainage; and
- The remaining surface soils included in the remedial response area will be contained on-site with a 12-inch soil cover and an erosion control blanket and will be vegetated to reduce erosion (for traffic and work areas, a geotextile and 6 inches of gravel).

The remedy also included the following requirements for the storm sewers (“south sewers”):

- Removal of sediment and debris from inside the sewer lines and the associated catch basins;
- Portions of sewers that are blocked and difficult to clean would be closed off, and the sediment within the sewers contained. The sediments in these sewer segments would be

contained by filling the sewer pipe with a cement grout to restrict flow in the sewer and prevent migration of sediments into Fields Brook; and

- Replacement sewers would be constructed to divert water from the sections that have been closed and to connect the remaining sections of the sewers that have been cleaned. These sewers would continue to be used after remedial activities are completed.

Conrail Bridge Yard

The Conrail remedy was intended to address erosion of contaminated soils to Fields Brook. It included the following requirements:

- Consolidation and containment of arsenic-contaminated soils; and
- Excavated soils will be moved a short distance to a consolidation area (on Conrail property) for final disposal. Upon placement of excavated soils, this area will be graded and covered with 6 inches of gravel to prevent soil erosion.

The full text of the source control ROD and ESD, as well as the ROD and ESD for other parts of the Fields Brook Site, are available at the EPA Website:

<http://www.epa.gov/superfund/sites/rods/>

D. Remedial and Removal Action

Millennium TiCl₄ Plant

During remedial design review by EPA, Millennium elected to exceed the requirements of the Source Control Areas ROD and 1999 ESD. The remedial action at the TiCl₄ Plant included the following:

- Excavation of soil and mining residuals containing ≥ 3.1 ppm total PCBs within the Mining Residual Pile or outside the Facility Stormwater Collection Area (FSCA);
- Excavation of soils containing ≥ 50 ppm total PCBs inside the FSCA; and
- Excavation of soils containing total radium ≥ 12 pCi/g. (The 12 pCi/g is based on 10 pCi/g above background, which is estimated at 1 pCi/g Ra-226 background and 1 pCi/g Ra-228 background.)

Approximately 700,000 cubic yards of PCB and radionuclide-contaminated soil was sent to the Millennium landfill for disposal. The remedy as implemented did not include an on-site containment of contaminated soils. Excavation was completed on June 28, 2000.

However, during the course of operation and maintenance in the Fields Brook sediment and floodplain in 2007, the field crew encountered an oily DNAPL in an excavation near the Millennium TiCl₄ Plant. This DNAPL was later identified as Therminol originating from the

plant. Therminol is a heat transfer fluid historically used at the Millennium TiCl₄ facility. Early versions contained Arochlor 1248 (a PCB) in an oil carrier. Later versions were PCB-Free. On October 18, 2007, EPA issued a Unilateral Administrative Order (UAO) to Millennium to conduct a removal action. At the Millennium TiCl₄ Plant, the UAO required Millennium to:

- Perform an investigation to determine all sources of PCBs migrating to Fields Brook from the Millennium plant; and
- Remove, and treat as appropriate, all PCB contaminated liquid. Also remove any PCB contaminated soil, to a level of 50 ppm, found within the plant area.

The UAO included other requirements for Fields Brook sediments and floodplain soils which are not discussed in this document. The UAO is available in the public repositories listed in Section I (G) above.

Millennium complied with the terms of the UAO. Millennium installed an interceptor trench between the TiCl₄ plant and Fields Brook to ensure that any subsurface DNAPL that could be present on the Millennium property could not migrate to the floodplain. Millennium also collected soil borings from the perimeter of its facility and additional samples within the facility in areas of historic PCB contamination. These facility samples did not identify any Therminol DNAPL or any PCB contamination that might be indicative of nearby Therminol DNAPL. With the interceptor trenches in place along the northern edge of the Millennium facility and no significant PCB contamination found within the facility, no additional source control actions have been identified for the Millennium facility. Water from the interceptor trenches has shown only low-level PCB detections, but there have not been any indications of Therminol DNAPL collection within the trenches. No additional follow-up work is anticipated on the Millennium facility.

Acme Scrap Iron and Metal

The cleanup requirements at the Acme Scrap Iron and Metal property were based on the potential for erosion of Acme soils through the storm sewer system to Fields Brook. Design studies demonstrated that with the removal of soils with 50 ppm or greater PCBs, no cover would be required to ensure erosion would not exceed the cleanup level at the brook. The remedy was designed to remove all soil above the cleanup level regardless of depth.

Based upon a video inspection of the South Sewers, EPA determined that the sewers could be effectively cleaned. Each length of sewer line was cleaned a minimum of two times in September 2000. Approximately 12,000 gallons of wash water was collected and sent to the Fields Brook water treatment system for treatment prior to discharge to Fields Brook. Collected sediment was transported to the Fields Brook landfill for disposal.

EPA approved the Remedial Action Report documenting completion of remedial action at this OU on March 17, 2003.

Periodic monitoring was required at the Acme facility to ensure that Field Brook was protected from recontamination. Sediment samples from three locations were collected biannually from the fall of 2001 through 2003, and then collected annually through 2006 to ensure that residual PCB contamination from the Acme property or south sewers is not moving off-site at concentrations that could lead to an exceedance of the PCB cleanup level in Fields Brook. All results indicated that soil and sediment eroding from the former Acme Scrap facility and south sewers had levels below that which could cause an exceedance of the cleanup level for PCBs at Fields Brook. EPA determined that sufficient information had been collected to evaluate the performance of the Acme Scrap cleanup and determined that monitoring could be discontinued.

Conrail Bridge Yard

The Source Control ROD selected a remedy that included consolidation and containment because it was thought to be effective and was slightly cheaper than the excavation and off-site disposal option. However, because of the maintenance, monitoring and reporting requirements, Conrail requested to completely excavate the contaminated area. Approximately 350 cubic yards of soil with low-level arsenic contamination were excavated and sent off-site for disposal in 1998. Since the cleanup removed soils above residential health-based cleanup level for arsenic, institutional controls were not triggered and O&M was not required. In the 2004 FYR for the site, EPA documented that Conrail exceeded the requirements of the ROD by excavating arsenic-contaminated soils to residential standards and no further monitoring or maintenance is required.

II. Basis for ESD

The latest FYR (2009) documented the need to clarify institutional control requirements for the Millenium $TiCl_4$ Plant (OU 6) and the Acme Scrap Iron and Metal/South Sewers (OU 8). The previous Five Year review (2004) documented that the IC requirements of the ROD were no longer needed for the Conrail Bridge Yard (OU 9), but the ROD was not modified at that time.

Millenium $TiCl_4$ Plant

For the Millenium $TiCl_4$ Plant (OU 6), the second FYR (2009) concluded that EPA should assess whether ICs are necessary to ensure long-term protectiveness of the remedy. It concluded that if IC's are necessary, long-term protectiveness of the remedy will require compliance with effective ICs, which will be ensured through long-term stewardship.

Following further assessment, EPA has determined that although the remedial and removal actions summarized above exceeded ROD requirements, ICs are still needed to ensure that the property remains in industrial use.

EPA's remedial investigation at this property was limited and the cleanup level significantly exceeds residential standards. Currently the Millenium $TiCl_4$ plant is an active facility which is secured by fencing and access controls, and regulated by the Resource Conservation and Recovery Act (RCRA), which may require additional cleanup or institutional controls in the future.

Acme Scrap and South Sewers

For the Acme Scrap and South Sewers (OU 8), the second FYR (2009) concluded that EPA should assess whether ICs are necessary to ensure long-term protectiveness. It concluded that if IC's are necessary, long-term protectiveness of the remedy will require compliance with effective ICs, which will be ensured through long-term stewardship.

The ROD did not require ICs as a facility-specific requirement for the Acme property. However, the remedy did include on-site containment of soils (see Section II (C) above):

The remaining surface soils included in the remedial response area will be contained on-site with a 12-inch soil cover and an erosion control blanket and will be vegetated to reduce erosion. For traffic and work areas, a geotextile and 6 inches of gravel will be used.

Therefore, the Acme property should be subject to the general IC requirement of the ROD which specifies protection of the cover system. In addition, like other source area properties, EPA's remedial investigation at this property was limited and the cleanup level significantly exceeds residential standards. Therefore future uses of the property should be restricted to industrial use.

Conrail Bridge Yard

For the Conrail Bridge Yard (OU 9), the first FYR (2004) concluded that Conrail had exceeded the requirements of the ROD by excavating soil areas with elevated arsenic concentrations instead of consolidating and containing the soils on-site. EPA was satisfied that this area had been sufficiently addressed, as soils were excavated to meet a residential cleanup level for arsenic. No further monitoring or maintenance was required. The second Five Year Review confirmed that this continues to be the case.

Therefore, the IC requirements for the Conrail Bridge Yard (OU 9) of the Source Control Areas ROD are no longer necessary.

III. Description of Significant Differences

This ESD changes the IC requirements for three Fields Brook OUs. The changes are described below and summarized in Table 1.

For the Millenium TiCl₄ Plant (OU 6):

The current requirement for deed restrictions to limit the future use of the site and to protect the cover system and drainage controls are replaced with the following:

- Deed restrictions will be implemented to restrict future use of the plant property to industrial uses; and
- Maps which areas which require restrictions will be developed as part of the IC Work Plan.

EPA will ensure that an IC work plan is developed which consists of IC evaluation activities and a plan to implement the ICs and long-term stewardship procedures. The work plan will include a map which depicts the areas which require controls, title work to ensure no prior encumbrances exist on the Site which are inconsistent with the ICs to be implemented and the draft deed restrictions to be implemented. Accordingly, EPA will review the work plan and provide direction to the PRPs on how to revise the work plan, if necessary.

For the Acme Scrap Iron and Metal/South Sewers (OU 8):

The following facility-specific clarification is added:

- Deed restrictions will be implemented to restrict future use of the property to industrial uses;
- An institutional control will be implemented to maintain the soil cover over areas where PCBs below 50 ppm remain in place; and
- Maps which depict areas which require restrictions will be developed as part of the IC Work Plan.

EPA will ensure that an IC work plan is developed which consists of IC evaluation activities and a plan to implement the ICs and long-term stewardship procedures. The work plan will include a map which depicts the areas which require controls, title work to ensure no prior encumbrances exist on the Site which are inconsistent with the ICs to be implemented and the draft deed restrictions to be implemented. Accordingly, EPA will review the work plan and provide direction to the PRPs on how to revise the work plan, if necessary.

For the Conrail Bridge Yard (OU 9):

The following facility-specific clarification is added:

No institutional controls are required for this OU by the Superfund program because the section of the property subject to the Superfund remedy was cleaned up to residential standards. EPA notes that the Superfund investigation on this property was limited to areas which could re-contaminate Fields Brook; therefore, it makes no statements concerning appropriate future uses of the remaining parts of the property.

The remedial action objectives and all other remedy requirements for the Fields Brook site remain unchanged by this ESD.

IV. Support Agency Comments

The Ohio EPA has declined EPA's invitation to comment on this ESD.

V. Statutory Determinations

EPA has determined that this remedy modification involving institutional controls for source control areas of the Fields Brook site is in accordance with Section 121 of CERCLA, 42 U.S.C. § 9621, and that the selected remedy for the Fields Brook site is protective of human health and the environment. The remedy modification also complies with federal and state requirements that are ARARs, uses permanent solutions to the maximum extent practicable, and is cost-effective. FYRs will continue to be required for the Millenium TiCl₄ Plant (OU 6) and Acme Scrap Iron and Metal/South Sewers (OU 8) to ensure the remedy remains protective. Since the remedial action for the Conrail Bridge Yard (OU 9) was conducted to residential levels, FYRs will no longer be required for this OU.

VI. Public Participation Compliance

EPA shall publish a notice of availability and a brief description of this ESD in the local newspaper as required by NCP 300.435(c)(2)(i)(B). EPA will also place this ESD into the Administrative Record file and Site Information Repositories located at the Ashtabula County District Library and the Kent State Campus Library, as required by NCP 300.825(a)(2).

VII. Declaration

EPA has reviewed the history of the Fields Brook site and has evaluated current and historical data. Based upon this review, EPA has determined that a modification of the IC requirements for portions of the source areas of the Fields Brook Site is appropriate and will be

protective of human health and the environment. EPA has changed the remedy set forth in the September 29, 1997, Source Control Areas ROD in the manner described above.

Table

Table1: Summary of Existing Requirements and Changes Specified in This ESD

Figures

- Figure 1: Location of Fields Brook Superfund Site Sediment and Floodplains Operable Units**
- Figure 2: Location of Fields Brook (and exposure units used for investigation purposes)**
- Figure 3: Location of Fields Brook Source Control Operable Units**
- Figure Millenium-1: Location of Millenium TiCl₄ Plant**
- Figure Acme-1: Location of Acme Scrap**
- Figure Acme-2: Site Features of Acme Scrap**
- Figure Conrail-1: Location of Conrail Facility**
- Figure Conrail-2: Waste Characterization, Conrail**

Table 1. Summary of Existing Requirements and Changes Specified in This ESD

Operable Unit	Remedy	Remedy as Implemented	Changes Specified in Current ESD
<p>Millennium TICL4 Plant (OU 6)</p>	<p>Specified in Source Control Areas ROD (1997) General requirements related to ICs:</p> <ul style="list-style-type: none"> Placement of institutional controls on deeds and title for properties where contaminants will remain above levels that allow for unlimited use and unrestricted exposure. These controls will limit the future use of areas so as to ensure that contamination does not migrate to the Brook. Implementation of access restrictions, including the construction of new fencing where necessary to prevent access and maintain the integrity of cover systems. <p>Additional facility-specific requirements:</p> <ul style="list-style-type: none"> Excavation of surface soil with PCB concentrations greater than or equal to 50 ppm Disposal at either an on-site or off-site TSCA landfill Backfill excavated areas with clean soil and grading to allow for adequate drainage On-site containment of remaining surface soils included in the remedial response area Deed restrictions to limit the future use of the site and protect the cover system and drainage controls. Maintenance of existing site fence. <p>Groundwater was not a media of concern at this OU.</p> <p>Added in ESD (1999)</p> <ul style="list-style-type: none"> Excavation of additional soil to meet industrial radium cleanup level of 1 pCi/g above background <p>Specified in Removal Order (2007)</p> <ul style="list-style-type: none"> Perform an investigation to determine all sources of PCBs migrating to Fields Brook from the Millennium plant. <p>Remove, and treat as appropriate, all PCB contaminated liquid. Also remove any PCB contaminated soil, to a level of 50 ppm, found within the plant area.</p>	<p>Remedial Action:</p> <ul style="list-style-type: none"> Excavation of soil and mining residuals containing ≥ 3.1 ppm total PCBs outside the stormwater collection area Excavation of soils containing ≥ 50 ppm total PCBs inside the stormwater collection area Excavation of soils containing total radium ≥ 12 pCi/g Approximately 700,000 cubic yards of PCB and radionuclide-contaminated soil was sent to the Millennium landfill for disposal as part of the remedial action. <p>Removal Action:</p> <ul style="list-style-type: none"> Millennium collected soil borings from the perimeter and interior of its facility and installed an interceptor trench between the plant and Fields Brook. No PCB containing liquid or soil above the cleanup level was found at the plant. Neither remedial nor removal action as implemented included any on-site containment of contaminated soils. 	<p>The existing requirements for ICs are replaced with the following because the remedy as implemented did not include on-site containment:</p> <ul style="list-style-type: none"> Deed restrictions will be implemented to restrict future use of the plant property to industrial uses. Maps depicting the areas requiring restrictions will be developed as part of the implementation of institutional controls or IC Plan.

Acme Scrap Iron & Metal/South Sewers (OU 8)

Specified in Source Control Areas ROD (1997)

General requirements related to ICs:

- Placement of institutional controls on deeds and title for properties where contaminants will remain above levels that allow for unlimited use and unrestricted exposure. These controls will limit the future use of areas so as to ensure that contamination does not migrate to the Brook.
- Implementation of access restrictions, including the construction of new fencing where necessary to prevent access and maintain the integrity of cover systems.

Facility-specific requirements for soils:

- Excavation of surface soil with PCB concentrations greater than or equal to 50 ppm
 - Disposal at either an on-site or off-site TSCA-approved landfill.
 - Backfill excavated areas with clean soil and graded to allow for adequate drainage
 - The remaining surface soils included in the remedial response area will be contained on-site with a 12-inch soil cover and an erosion control blanket and will be vegetated to reduce erosion.
- For traffic and work areas, a geotextile and 6 inches of gravel will be used.

Facility-specific requirements for south sewers:

- Removal of sediment and debris from inside the sewer lines and the associated catch basins.
- Portions of sewers that are blocked and difficult to clean would be closed off, and the sediment within the sewers contained. The sediments in these sewer segments would be contained by filling the sewer pipe with a cement grout to restrict flow in the sewer and prevent migration of sediments into Fields Brook.
- Replacement sewers would be constructed to divert water from the sections that have been closed and to connect the remaining sections of the sewers that have been cleaned. These sewers would continue to be used after remedial activities are completed.

Ground water was not a media of concern at this OU.

For soils:

The cleanup requirements at the Acme Scrap property were based on the potential for erosion of Acme soils through the storm sewer system to Fields Brook. Design studies demonstrated that with the removal of soils with 50 ppm or greater PCBs, no cover would be required to ensure erosion would not exceed the cleanup level at the brook. The remedy was designed to remove all soil above the cleanup level regardless of depth.

For South Sewers:

A video inspection of the south sewers assured EPA that the sewers could be effectively cleaned. Each length of sewer line was cleaned a minimum of two times in September 2000. Approximately 12,000 gallons of wash water was collected and sent to the Fields Brook water treatment system for treatment prior to discharge to Fields Brook. Collected sediment was transported to the Fields Brook landfill for disposal.

Sediment sampling from 2001 through 2006 documented that residual PCB contamination from the Acme property or south sewers is not moving off-site at concentrations that could lead to an exceedance of the PCB cleanup level in Fields Brook.

The following facility-specific clarification is added to the current general requirements related to ICs:

- Deed restrictions will be implemented to restrict future use of the property to industrial uses.
- An institutional control will be implemented to maintain the soil cover where PCBs below 50 ppm remain in place.
- Maps depicting the areas requiring restrictions will be developed as part of the implementation of institutional controls or IC Plan.

**Conrail Bridge Yard
(OU 9)**

Specified in Source Control Areas ROD (1997)

General requirements related to ICs:

- Placement of institutional controls on deeds and title for properties where contaminants will remain above levels that allow for unlimited use and unrestricted exposure. These controls will limit the future use of areas so as to ensure that contamination does not migrate to the Brook.
- Implementation of access restrictions, including the construction of new fencing where necessary to prevent access and maintain the integrity of cover systems.

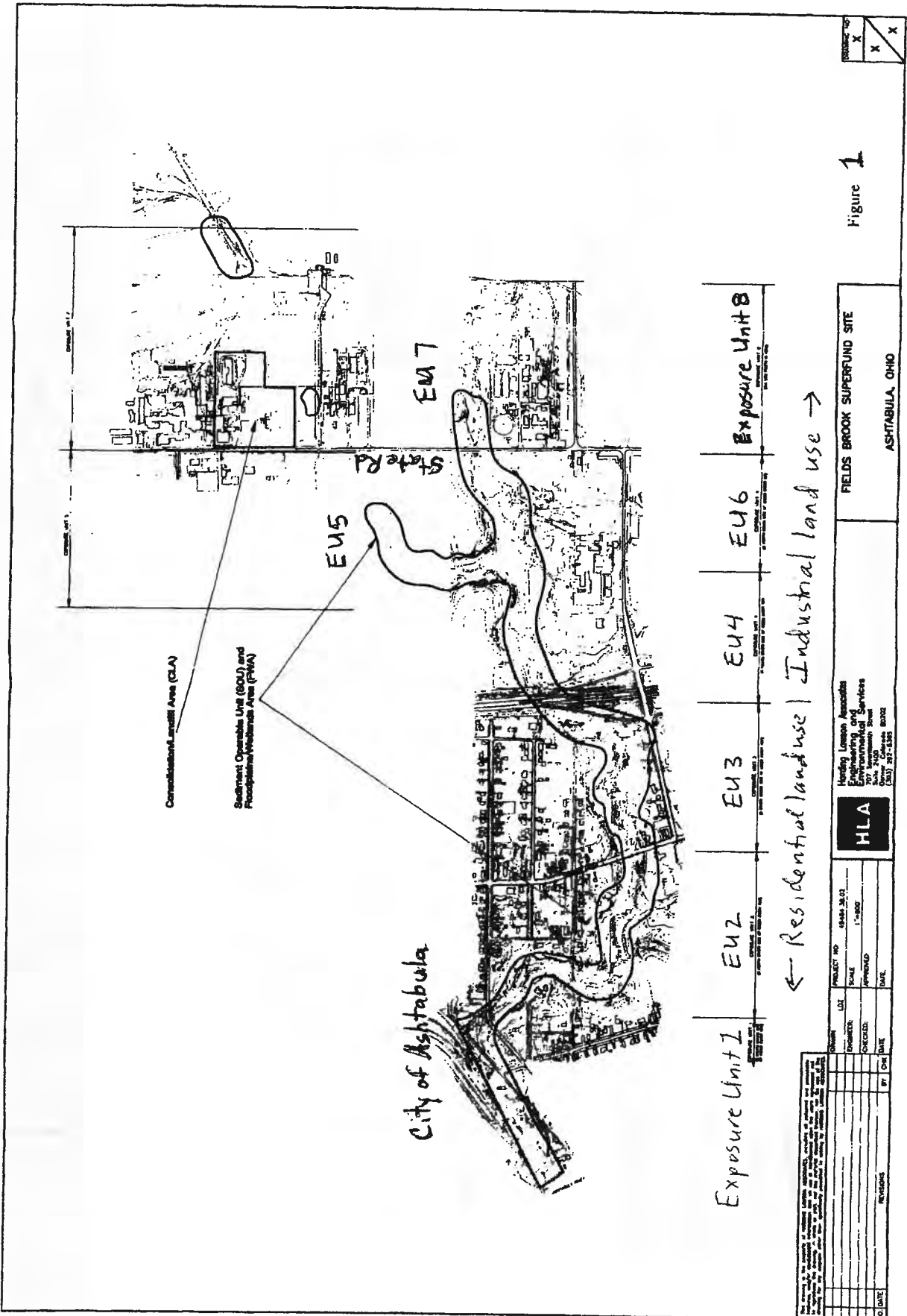
Facility-specific requirements:

- Consolidation and containment of arsenic-contaminated soils.
- Excavated soils will be moved a short distance to a consolidation area (on Conrail property) for final disposal. Upon placement of excavated soils, this area will be graded and covered with 6 inches of gravel to prevent soil erosion.

Groundwater was not a media of concern at this OU.

Conrail completely excavated the contaminated area rather than containing any on-site. Approximately 350 cubic yards of soil with low-level arsenic contamination were excavated and sent off-site for disposal in 1998. Since soils were removed above residential health-based cleanup level for arsenic, institutional controls were not triggered.

The IC requirements of the Source control Areas ROD are removed for the Conrail Bridge Yard (OU 9) because Conrail exceeded the requirements of the ROD by excavating soil areas with elevated arsenic concentrations to meet residential standards instead of consolidating and containing the soils on-site. As documented in the Five Year Review, no contamination remains onsite which could endanger Fields Brook.



PROJECT NO.	X
SCALE	X
APPROVED	X
DATE	X

Figure 1

Exposure Unit I	EU2	EU3	EU4	EU6	Exposure Unit B
-----------------	-----	-----	-----	-----	-----------------

← Residential land use | Industrial land use →

HLA Harding Linsen Associates Engineering and Environmental Services 10000 Lakeshore Blvd. Suite 1000 (440) 297-8222		FIELDS BROOK SUPERFUND SITE ASHTABULA, OHIO
PROJECT NO.	08-04-24-02	
SCALE	1"=100'	
APPROVED		
DATE		
BY	DLK	
DATE		

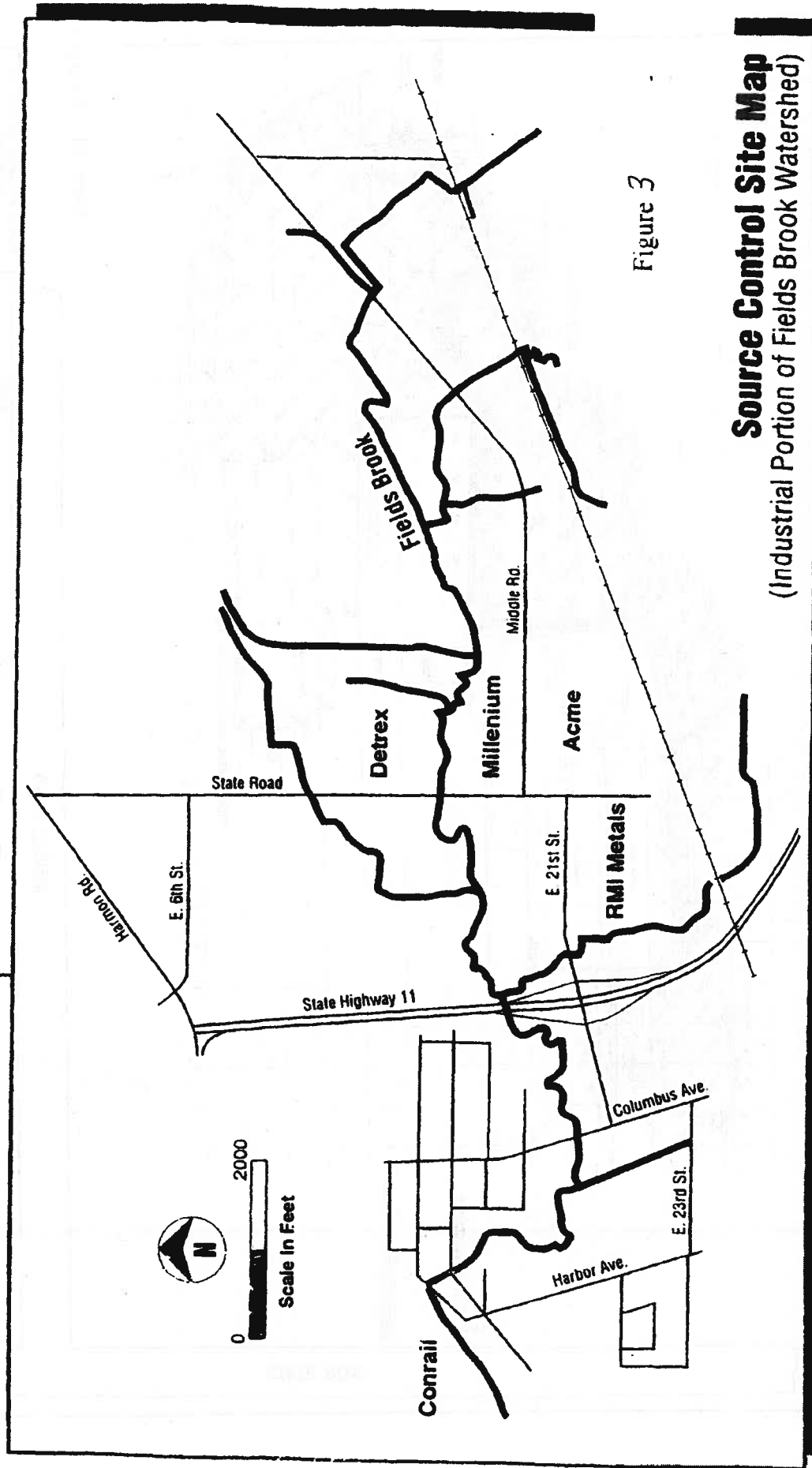


Figure 3

Source Control Site Map
 (Industrial Portion of Fields Brook Watershed)

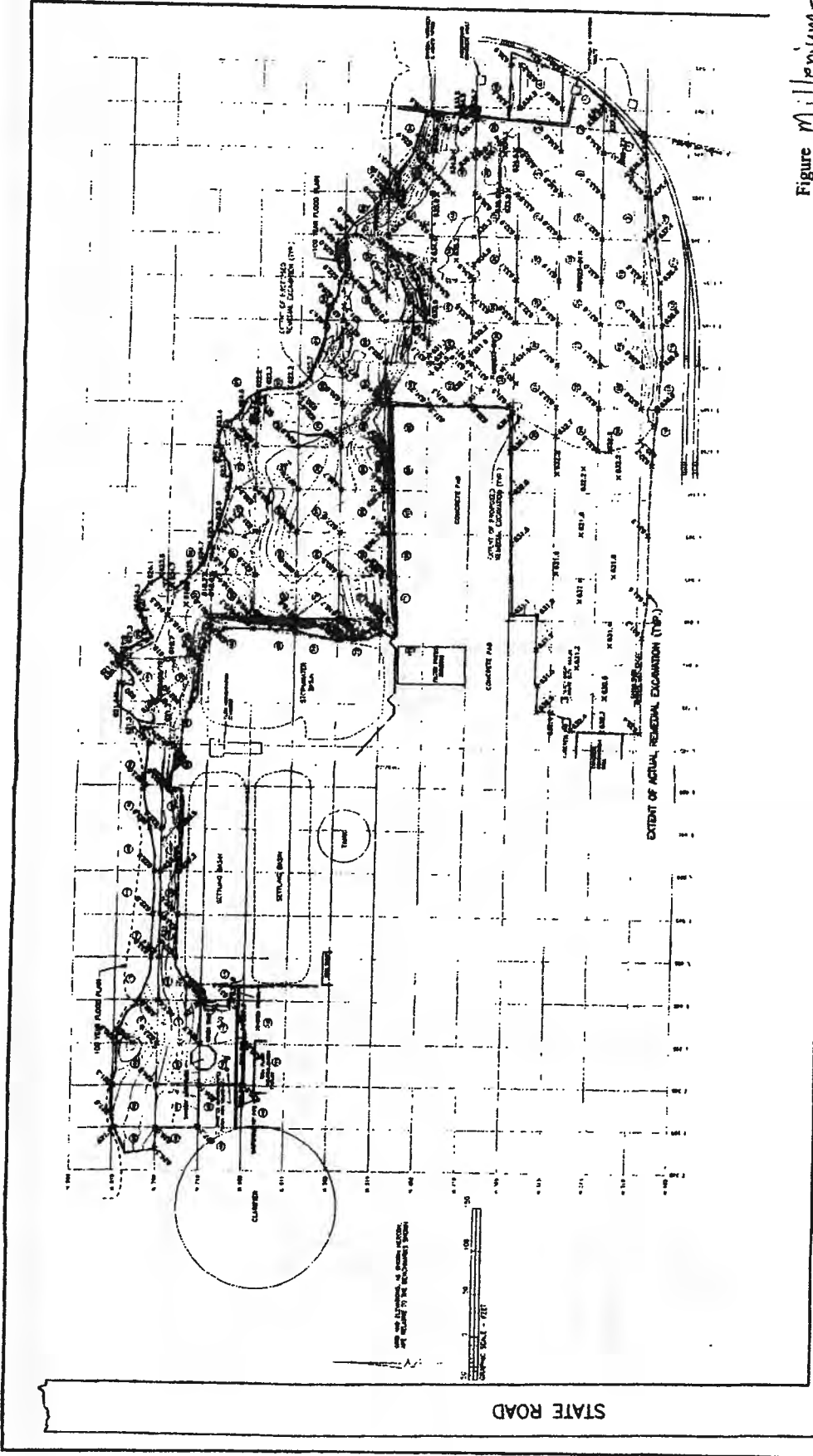


Figure Millennium-1

MILLENNIUM INORGANIC CHEMICALS, INC. ASHTABULA, OHIO	
Project No. 1-100	Sheet No. 1
EXTENT OF REMEDIAL EXCAVATION MINING RESIDUAL PILE	
SHARP'S LAND SURVEYING 1111 W. 12th St., Toledo, Ohio 43606 Tel. 469-1234	



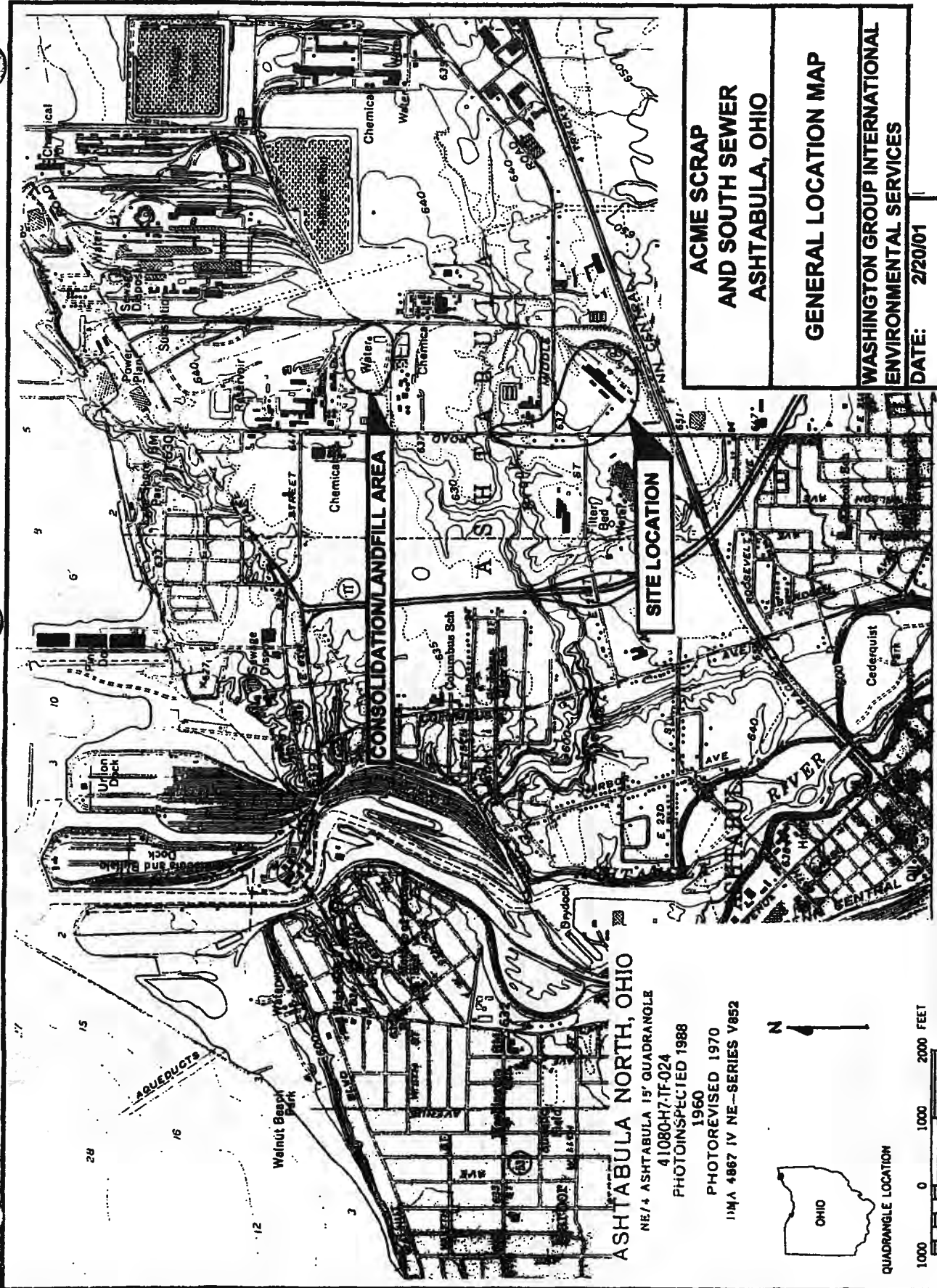
M. J. Miller
SURVEYOR

MIDDLE ROAD

- NOTES:
1. SHOWS THE EXTENT OF REMEDIAL EXCAVATION.
 2. SHOWS THE EXTENT OF EXISTING CONCRETE EXCAVATION.
 3. SHOWS THE EXTENT OF PROPOSED REMEDIAL EXCAVATION.
 4. SHOWS THE EXTENT OF EXISTING CONCRETE EXCAVATION.
 5. SHOWS THE EXTENT OF EXISTING CONCRETE EXCAVATION.

3. COUNTY OF WARD

STATE ROAD



**ACME SCRAP
AND SOUTH SEWER
ASHTABULA, OHIO**

GENERAL LOCATION MAP

**WASHINGTON GROUP INTERNATIONAL
ENVIRONMENTAL SERVICES**

DATE: 2/20/01

ASHTABULA NORTH, OHIO

NE/4 ASHTABULA 15' QUADRANGLE
41080H7-TF-024
PHOTOINSPECTED 1988

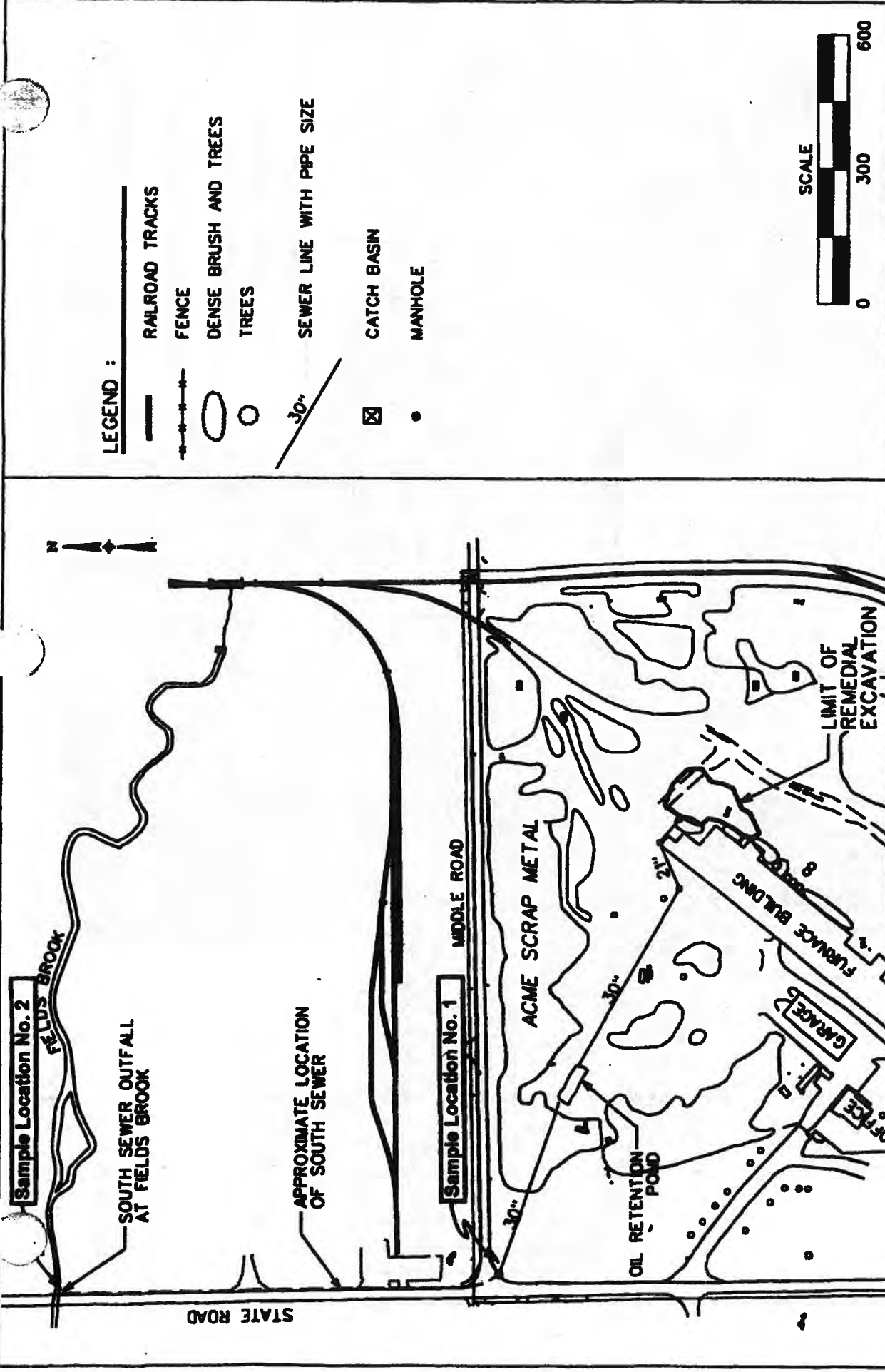
1960
PHOTOREVISED 1970
114A 4867 IV NE-SERIES V852



QUADRANGLE LOCATION



Figure Acme-1



- LEGEND :**
- RAILROAD TRACKS
 - - - FENCE
 - DENSE BRUSH AND TREES
 - TRESSES
 - 30" SEWER LINE WITH PIPE SIZE
 - 24" SEWER LINE WITH PIPE SIZE
 - ☒ CATCH BASIN
 - MANHOLE



ACME SCRAP & SOUTH SEWER
SITE FEATURES MAP
ASHTABULA, OHIO

DESIGN: JCF	CHECK:	APPD:
SCALE: 1"=300'		DATE: 18 OCT 2000

4895-303

Washington
1600 WEST 250 STREET
CLEVELAND, OHIO 44115-1008
CITY 213-3000

Figure Acme-2

Woodward-Clyde Consultants

Fields Brook

Phase I Source Control RI

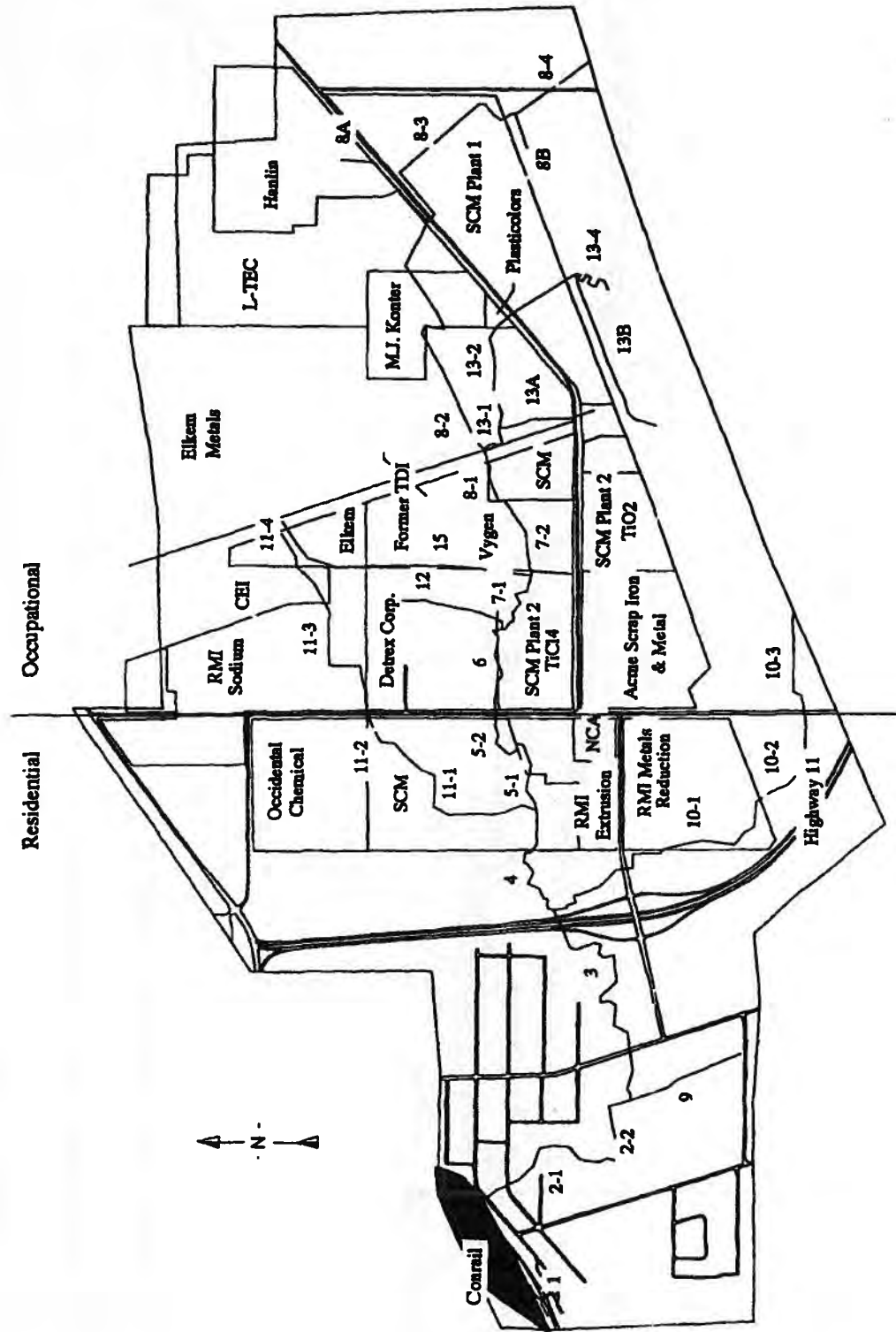
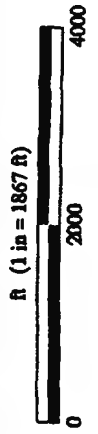


Figure Conrail-1

2-1 Reach Number
Property Boundary



Facility Location and Reach Map

