United States
Environmental
Protection Agency

Office of Public Affairs
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

Illinois, Indiana,
Michigan, Minnesota,
Ohio, Wisconsin

Fields Brook Superfund Site Project Update

September 1996

This Update Will Tell You About

- Recent site activites
- Future activities
- How you can learn more about the site

Public Availability Session

U.S. EPA staff will hold an availability session to update you on progress at the Fields Brook site. The availability session will be held on September 26, 1996, 7 p.m.

at the

Kent State-Ashtabula Campus
Auditorium
Kent State Campus
3325 W. 13th Street
Ashtabula, Ohio

Introduction

This project update report provides information about the Fields Brook Superfund site in Ashtabula, Ohio. The U.S. Environmental Protection Agency (U.S. EPA) will provide updates for the remainder of the project's design phase and during the cleanup phase. U.S. EPA is also planning other activities, such as public meetings, to keep the public informed about progress at the site. U.S. EPA has scheduled a availability session on September 26, 1996, 7 p.m. in the Kent State-Ashtabula Campus Auditorium in Ashtabula Ohio. A notice of this availability session will be published in the Ashtabula Star Beacon. If you have any questions about this update or the site in general, contact the U.S. EPA staff listed at the end of this update.

Background

Between 1984 and 1986, U.S. EPA studied the type and amount of contamination in Fields Brook and examined methods to cleanup the Brook's contaminated sediment. In September 1986, U.S. EPA decided that incinerating, solidifying, and landfilling the contaminated sediment would be the final cleanup method. In addition, U.S. EPA required two additional studies to be conducted:

- A study to identify current sources of contamination to the Brook and to develop ways to stop further contamination
- A study to determine the type and amount of contamination in the Ashtabula River and Harbor

U.S. EPA divided the work needed to implement the selected remedy and studies into four tasks. The sediment operable unit involves the cleanup of contaminated sediment in Fields Brook and its tributaries. The source control operable unit will locate sources of contamination to the Brook and identify ways to prevent future contamination. The Ashtabula River Area of Concern may determine the type and amount of contamination in the river, the effect Fields Brook and other contamination sources have had on the River's sediments, and risks to human health and environment that are present. The Floodplain and Wetland Area Operable Unit involves the cleanup of contaminated soils and sediments in floodplain areas surrounding Fields Brook, and is the focus of the September 26, 1996 public availability session.

Figure 1 shows the geographic areas of the study area, including the operable units and River Area of Concern. The operable units and investigation are currently in the investigation and design phase. To prevent recontamination of Fields Brook and the Ashtabula River, work on the source control operable unit will precede or coincide with work on the sediment and Floodplains Area operable units and Ashtabula River Area of Concern.

In order to facilitate locating features and sampling points along Fields Brook and its tributaries, the stream and system has been divided into segments identified by a unique numbering system involving stream reaches. Figure 2 depicts the watershed area and stream reach numbers.

In late 1986, U.S. EPA began negotiating with a number of companies thought to be responsible for contaminating Fields Brook to conduct source control and sediment operable units. It is U.S. EPA's policy to have these companies, known

as potentially responsible parties (PRPs), pay for the cleanup rather than using funds from the superfund program. In 1989 the PRPs agreed to design the Fields Brook remedy, identify the contamination sources, and develop potential remedies for those sources. In addition, several PRPs agreed to conduct the river investigation.

A brief update for the sediment and source control operable units, river investigation and interim dredging project follows.

Operable Unit Update

Sediment Operable Unit

As was mentioned earlier, the sediment operable unit involves the cleanup of sediments from Fields Brook and its tributaries. This operable unit will determine the:

- amount of sediment in Fields Brook to be excavated, treated and disposed;
- best means of incinerating the sediment offsite;
- best location for the disposal facility within the Fields Brook industrial area; and
- best methods for treating wastewater during excavation and treatment of the sediment.

The PRPs have collected sediment samples from Fields Brook and its tributaries. Based on the sampling results, the PRPs estimated the amount of sediment to be excavated and treated. All sediments between 16th Street and Columbus Avenue are planned to be excavated. Most of the sediments between Columbus Avenue and Route 11 are also planned to be excavated; the locations for these excavation areas are indicated on Figure 6. All excavation areas of the Brook are planned to have clean soil and small rocks placed as backfill.

Source Control Operable Unit

The source control operable unit will locate industrial properties that are contaminating Fields Brook and develop methods to stop the contamination. The operable unit investigated over 200 potential sources of contamination to Fields Brook on 19 industrial properties. Currently, there are five properties and one sewer which have been identified as potential sources of contamination which require cleanup to prevent future contamination of Fields Brook. The first phase of the study investigated the direction of ground-water and surface water flow in the study area. The second phase collected soil and water samples and conducted various other studies on industrial properties in the project area. All fieldwork required to complete investigation studies of this operable unit was completed in fall 1995. The final source area plan to prevent continued contamination of the Brook is expected to be presented to the public in late fall 1996 or in early winter of 1996/1997.

Ashtabula River Investigation

The Ashtabula River investigation is studying the type and amount of sediment, surface water, and fish contamination in the river. It is also studying the potential sources of river and harbor contamination on Ashtabula's water supply. The area under investigation includes the river from its mouth to 1 mile south of the 24th Street Bridge, adjacent land areas, mouths of tributary streams, the Ashtabula Harbor, and the nearshore area of Lake Erie. Sediment and surface water samples from the river and harbor have been collected. As a result of this sampling, it was determined that the City of Ashtabula's water supply in Lake Erie is not being contaminated.

U.S. EPA is conducting, through the U.S. Army Corps of Engineers, a hydrodynamic and sediment transport assessment for the river study area. It includes collecting additional data for computer modeling that will assess potential scour and movement of contaminated sediments in the river. Based on the results of the assessment a contaminant transport model may be required. This information will be used by the U.S. EPA to determine any potential ecological and human risks posed by the contamination and will assist in making final decisions on potential Superfund remedies. This modeling report is expected to be available for public review by early winter 1996.

A separate public/private partnership effort involving the City and County of Ashtabula, State of Ohio, U.S. EPA, U.S. Army Corps of Engineers, Ashtabula Remedial Action Plan Group, and local businesses and industries is currently producing plans for the excavation and disposal of contaminated sediments from the Ashtabula River.

Floodplain/Wetlands Area Operable Unit

A wetland survey, which identified the size and location of wetlands that could be affected by the Fields Brook cleanup is complete. An extensive wetland sampling effort was completed in fall 1995. An ecological Assessment and a Human Risk Assessment of the wetlands and floodplains will be finalized and completed by the U.S. EPA by fall 1996. These studies will assess human and ecological risks in these areas and will form the basis for cleanup decisions in the wetland areas.

The PRPs voluntarily conducted a Remedial Investigation/Feasibility Study (RI/FS) for the Fields Brook floodplains/wetlands area (FWA), and have submitted a draft Feasibility Study for the FWA. U.S. EPA is developing a draft final Feasibility Study and separate Human and Ecological Baseline Risk Assessments for the FWA. These reports are planned to be released in October 1996 to the public for review at the information repositories noted on the back of this fact sheet.

Floodplain Area Data Management

Since 1985, additional sampling has been done to further quantify the levels of contaminants in the wetlands and floodplains. The floodplain soil analytical results presented in data reports have been sent to the information repositories, and represent sampling efforts primarily performed by the PRP's that have taken place in the floodplain/wetland area during the past five years. Some of the soils data were collected as part of brook sampling programs. The soils data used in this risk assessment were collected from the upper 12 inches of mineral soil identified in the floodplain. This was accomplished by removing leaf litter and the vegetation root mat at each location prior to sampling. The data were compiled by the PRP's.

A total of 211 floodplain soil samples have been included in this analysis. Included are:

- 14 Samples - Phase I Sediment Quantification Design Investigation (SQDI), Spring 1990
- 55 Samples - Phase II SQDI, September 1993

- 137 Samples - Phase III Floodplain/ Wetland Assessment, December 1994
- 5 Samples - Phase I Source Control RI, January 1993

The sampling strategy for each of these projects has been described in their respective work plans. In general, a total of 40 samples were collected along each of the two 2000 foot lengths of floodplain areas located behind residential homes. An attempt was made to spread evenly the sampling locations along each length of the floodplain areas and maintain an equal number on the north and south sides of the main channel of Fields Brook.

FWA Chemicals of Concern

Soil sampling yielded 95 contaminants which were detected in some or all portions of the FWA. As would be expected based on the site's history, volatile and semi-volatile organic chemicals, pesticides, PCB's and inorganic chemicals were detected in the floodplain soils. The human health and ecological risk assessments focused on those chemicals which were determined to be chemicals of concern (COC) in the Fields Brook sediment risk assessment. This decision reflects the assumption that the primary source of contamination is via effluent into the Brook which resulted in subsequent sediment and floodplain soil contamination. It was noted that levels of contamination in the floodplains soil did not exceed the level of contamination in the sediment. The following COC's were considered: arsenic, benzo(a)pyrene, beryllium, hexachlorobenzene, hexachloro-butadiene, hexachloroethane, PCBs, 1,1,2,2,-tetrachloroethane, tetrachloroethene, trichloroethene, and vinyl chloride.

Data Analysis and Risk Assessment

The FWA sampling confirmed prior results and was the basis of the U.S. EPA (CH2M Hill contractor) risk assessment/ clean up goal (CUG) calculation performed in October of 1994. Copies of U.S. EPA's 10/20/94 letter which includes these CUGs, and copies of U.S. EPA's 1/31/94 letter which indicates Radionuclide Contamination CUGs, have been sent to the information repositories.

U.S. EPA is also developing a separate Human and Ecological Baseline Risk Assessment for the FWA which is planned to be released to the public for review at the repositories in October 1996. The impact of this contamination on receptors along Fields Brook raises some concerns. Homes exist and may exist in the future along the entire stretch of Fields Brook, primarily from Route 11 to the Ashtabula River. In addition, there is concern that the contaminants found in the floodplain of Fields Brook will be washed into the Brook and consequently into Ashtabula River and ultimately into Lake Erie. This would result in a negative impact upon an even greater number of receptors.

The exposure scenario developed for the FWA maintains the grouping of Fields Brook reaches into exposure units (EU) as found acceptable under the Fields Brook sediment exposure scenario; these FEU's are indicated on Figure 2. Land use designation for the FEU's were negotiated with the PRPs and based upon several considerations: 1) general homogeneity with respect to historical waste management activities, 2) differences in land use, terrain, accessibility or media type which can affect exposure scenarios, and 3) U.S. EPA Guidance documents. It is understood that some FEU's may not have floodplains or wetlands but are set up only to retain a consistent numbering system with the sediment FEU's. The grouping of FEU's and their associated land use designation follows.

- Residential:
  EU1 Reach 1
  EU2 Reach 2-1, 2-2, and portion of 9
  EU3 Reach 3
- Occupational:
  EU4 Reach 4
  EU5 Reach 11-1 and 11-2
  EU6 Reach 5-1 and 5-2
  EU7 Reach 11-3 and 11-4
  EU8 Reach 6 and 7-1
  EU9 Reach 7-2 and 8-1
  EU10 Reach 8-2, 8-3, 8A, 13-1, 13-2, and 13A

Five exposure units contain floodplain soils with CUG exceedances and these are referred to as floodplain exposure units (FEU's): FEU2, FEU3, FEU4, FEU6 and FEU8. The other five FEU's were eliminated from further consideration within this risk assessment for several reasons. FEUs 1, 5 and 7 do not have a floodplain area (i.e., the Brook, during a 100 year storm, stays within the brook channel and does not overflow the banks in these FEU's). FEU's 9 and 10 are upstream of the chemical facilities which release COCs above the CUGs, and sampling results indicated no exceedances in the FWA in these FEU's above CUGs. FEU's 2 and 3 are considered residential based upon the presence of homes on the property. FEU's 4 and 6 are not typical of either residential or industrial usage.

The risk assessments address exposure to the soils of the floodplains. Discussions between the PRP's and U.S. EPA resulted in the consideration of FEU4 and FEU6 as industrial usage for the following reasons: a) the area east of route 11 currently does not have residential development; b) the properties that fall within FEU4 and FEU6 primarily belong to the industry or the City of Ashtabula, and do not belong to private land owners; and c) the properties would be permanently restricted from residential development through deed restrictions and covenants.

The assumption of exposure frequency is merely a best estimate of human behavior. As such, it may over or underestimate the true risk. It is U.S. EPA's policy to assume that current land use will continue into the future. In addition, it is the goal of the remedial process that Fields Brook be returned to a condition that would allow for its frequent and unrestricted use.

Risks are calculated for both a residential and occupational scenario. There are no fences which separate the residential from the industrial exposure units and therefore the behavior patterns of the individuals on the site are not likely to be as circumscribed as the terms would suggest. In addition, the industrial FEU's are upstream of the residential FEU's. Also, the contaminated floodplains and wetlands soil are present in the backyards of the current residences and it is assumed that future residences would also be built upon the floodplain in the residential FEU's. Because the contamination is located in the backyards of residences, exposure is assumed to be relatively frequent.

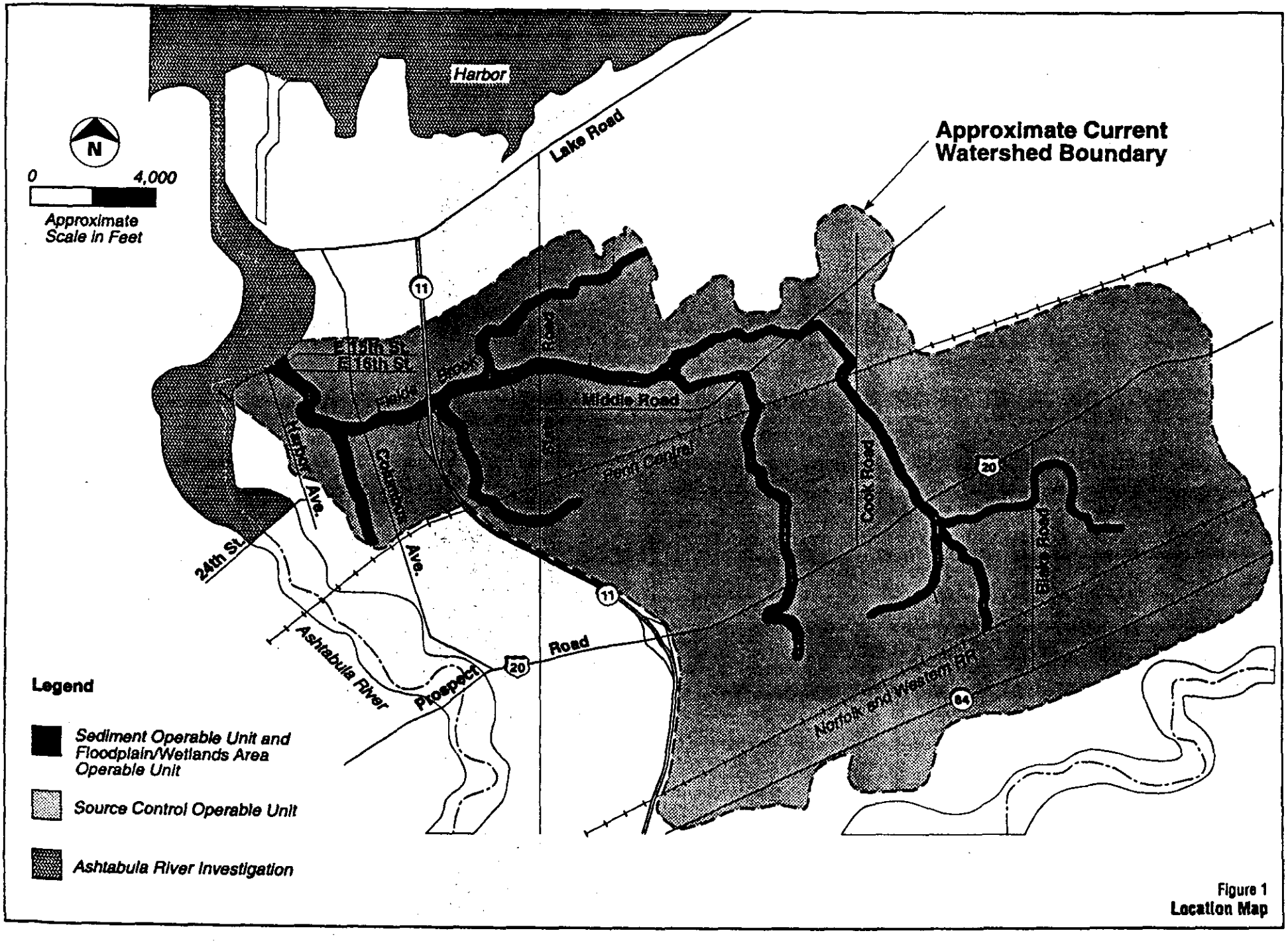


Figure 1
Location Map

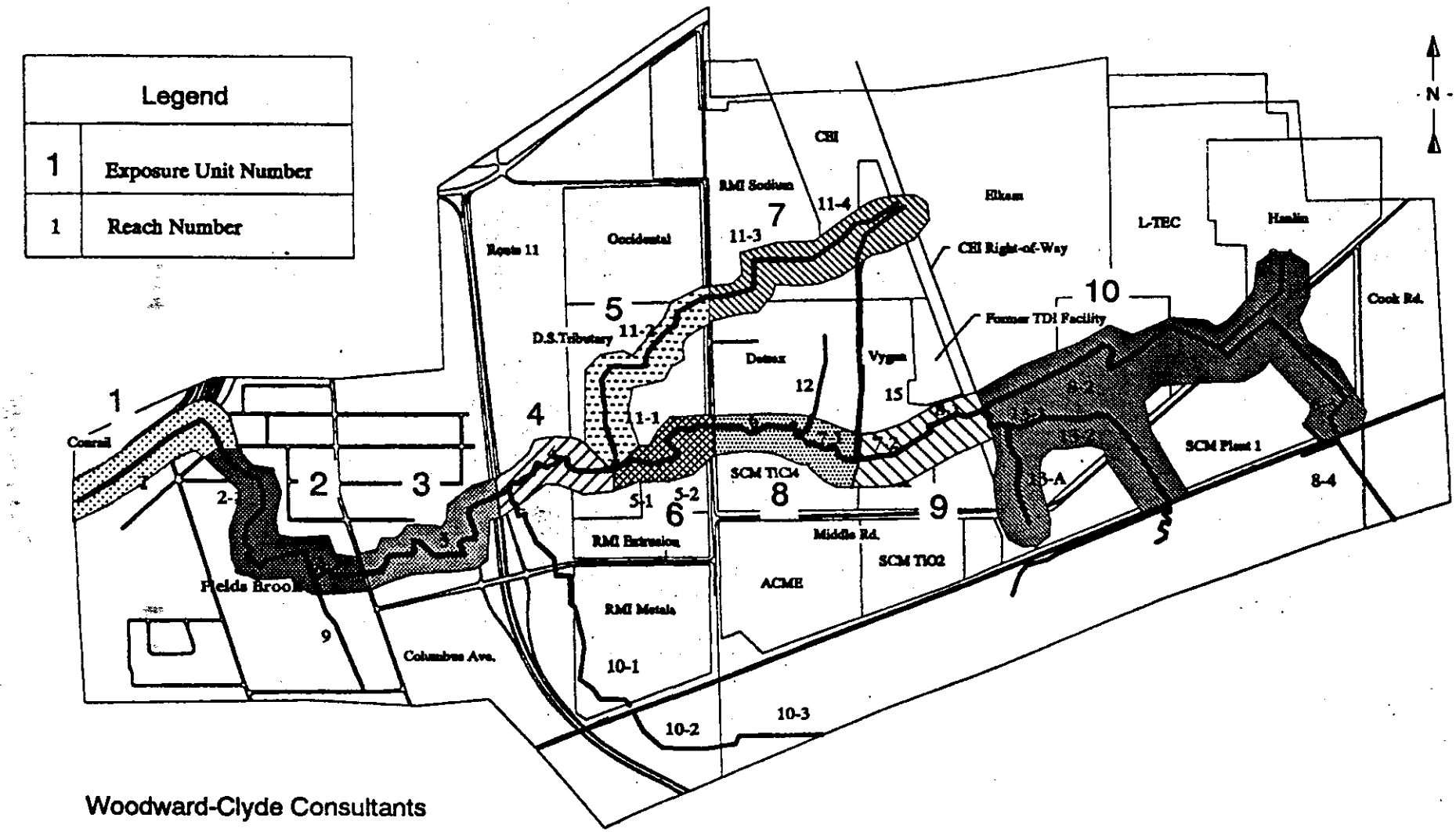
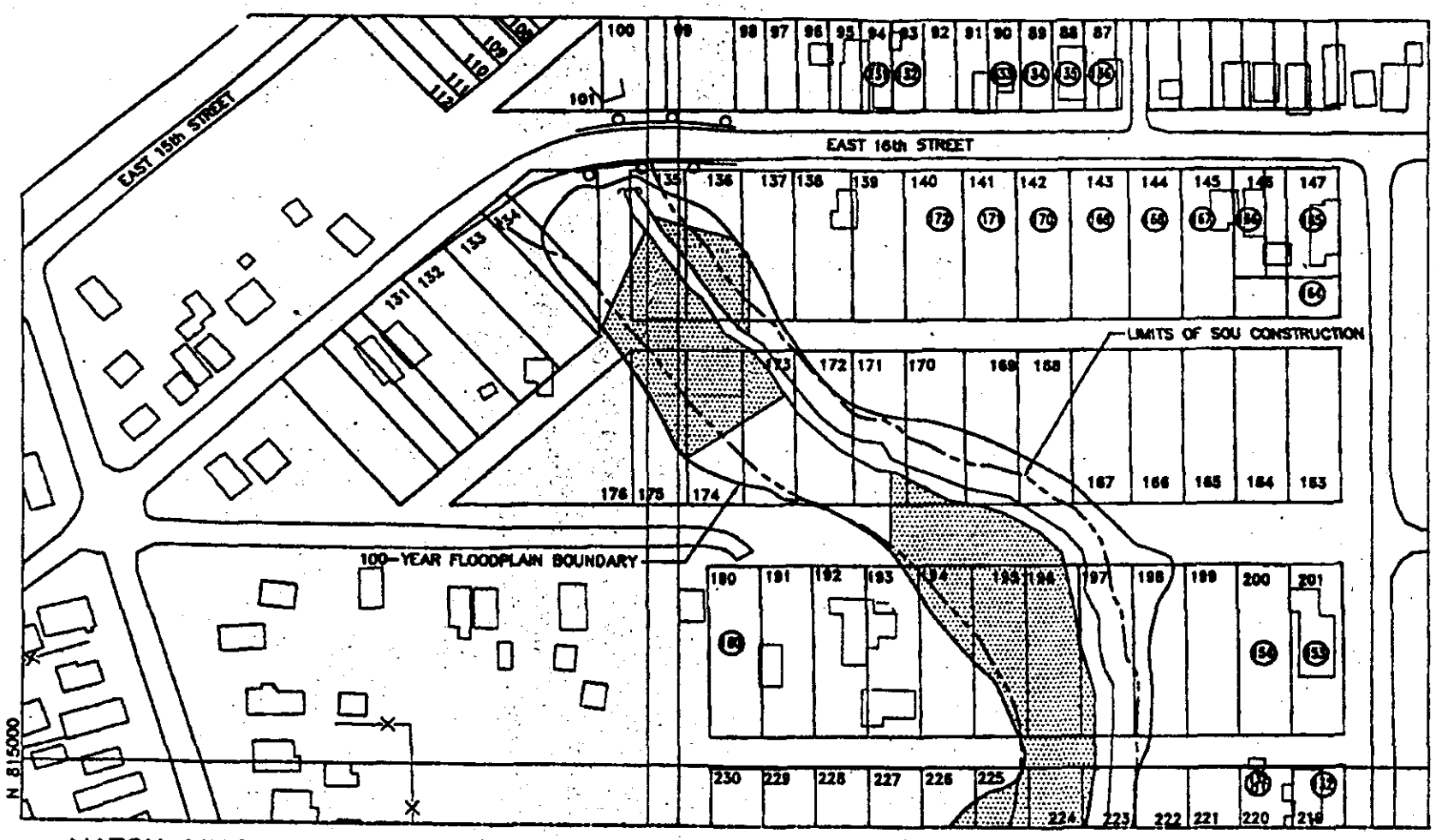


Figure 2
Exposure Units
Sediment Operable Unit/Floodplain-Wetlands Area Proposed Remedial Response Area



NOTES TO READER:

1) PROPERTIES BOUNDARIES HAVE NOT BEEN SURVEYED AND ARE SUBJECT TO CHANGE.

2) LIMITS OF SOU CONSTRUCTION REPRESENT PROBABLE AREA INFLUENCED BY SEDIMENT OPERABLE UNIT REMEDIAL ACTIVITIES.

3) THE FOLLOWING FLOODPLAIN AREAS ARE PLANNED TO HAVE A CLEANUP ACTION.

AREA MAY BE CAPPED OR EXCAVATED.

Figure 3
Exposure Unit #2A
Property Ownership Along Fields Brook
Sediment Operable Unit/Floodplain-Wetlands Area Proposed Remedial Response Area

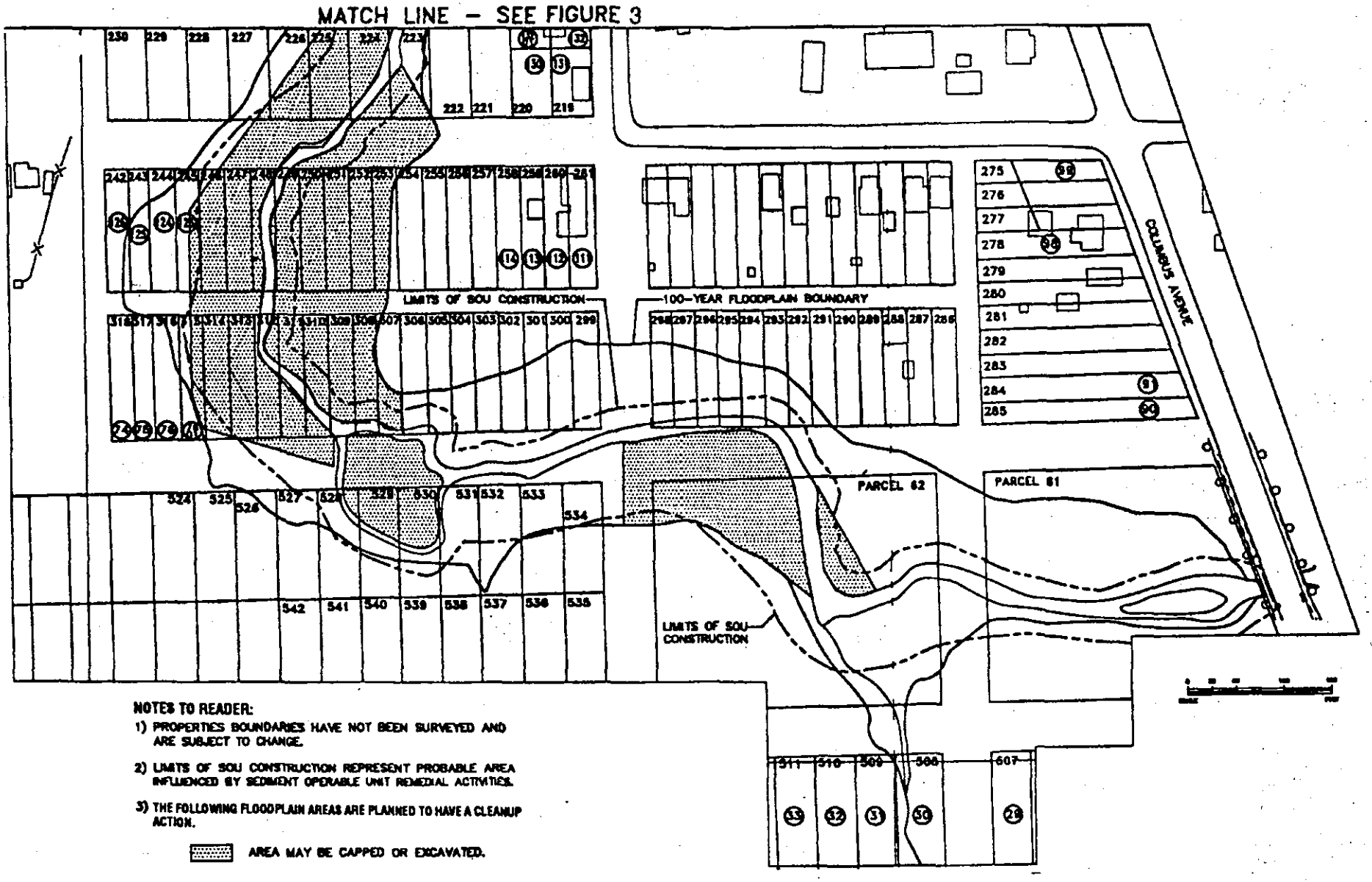


Figure 4
Exposure Unit #2B
Property Ownership Along Fields Brook
Sediment Operable Unit/Floodplain-Wetlands Area Proposed Remedial Response Area

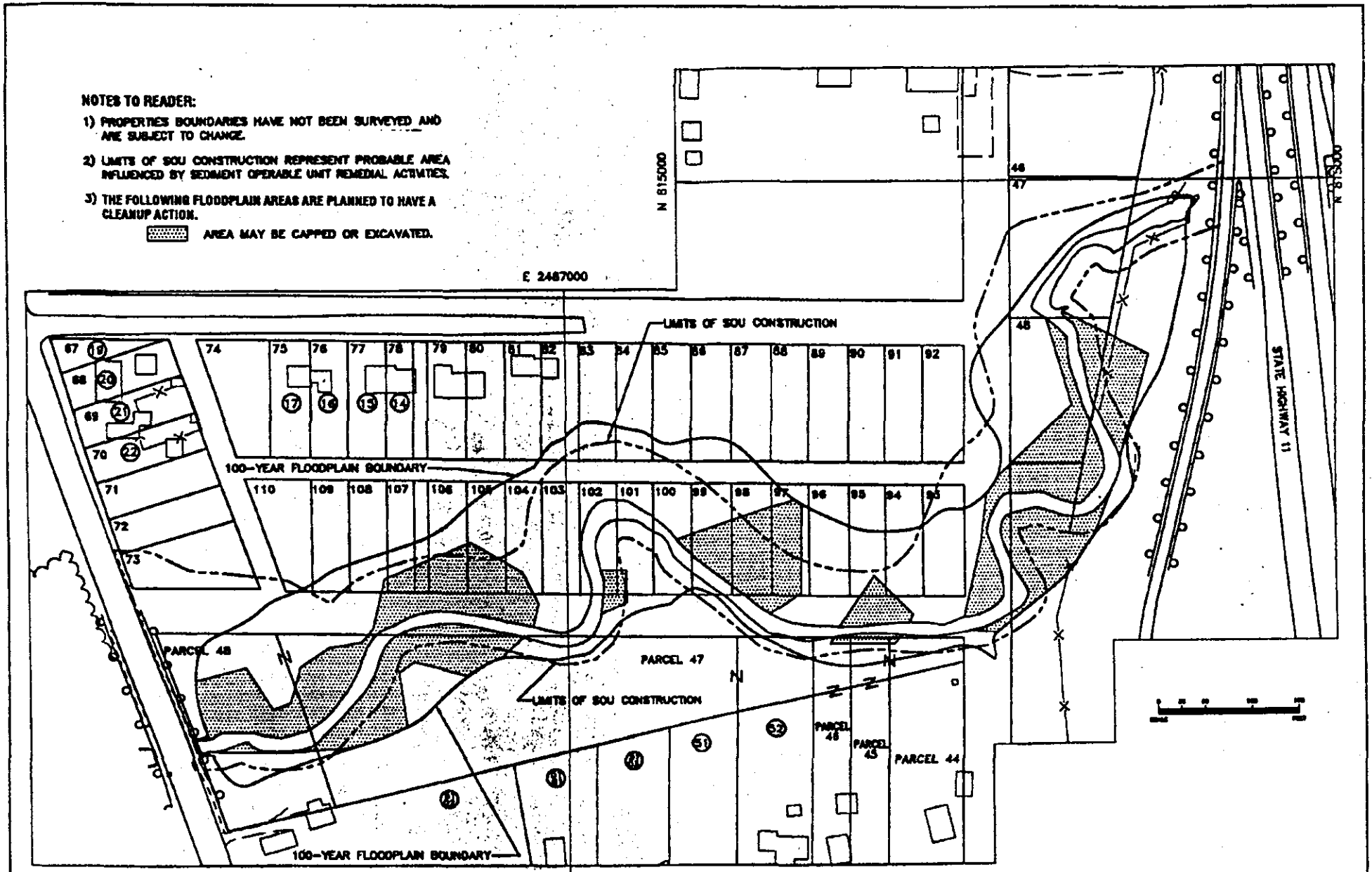


Figure 5
Exposure Unit #3
Property Ownership Along Fields Brook
Sediment Operable Unit/Floodplain-Wetlands Area Proposed Remedial Response Area

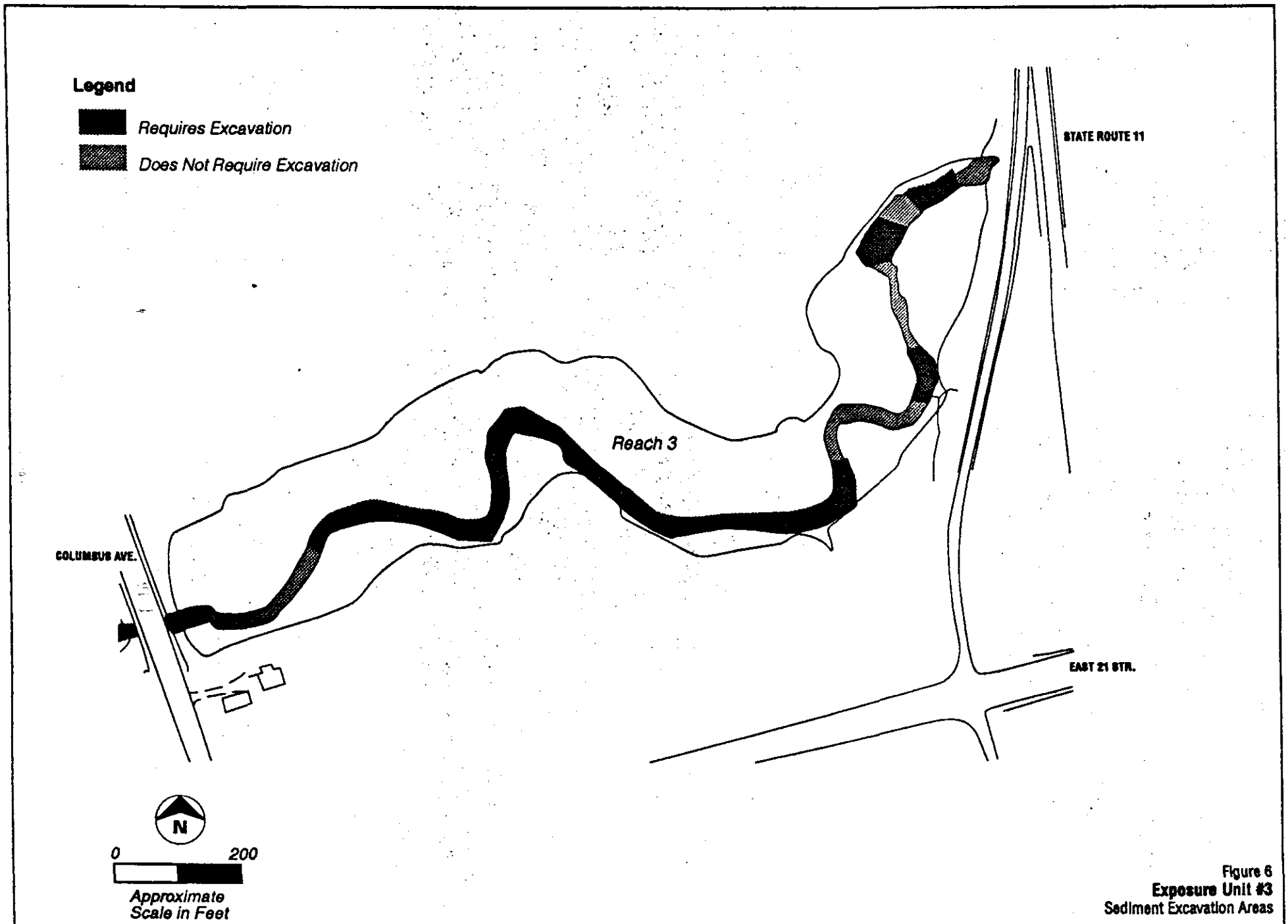


Figure 6
Exposure Unit #3
Sediment Excavation Areas

Within both scenarios, the potential for cumulative chemical intake resulting from multiple-exposure routes was evaluated. The exposure routes assessed are incidental ingestion of soil and dermal absorption of contaminants in soil. Exposures through inhalation of volatilized contaminants and inhalation of contaminants sorbed to airborne particulates are not included in this evaluation. Relative to chemical intake through ingestion and dermal absorption, the chemical intake for the other exposure routes would be insignificant and toxicologically inconsequential; volatilized contaminant concentrations would be dilute in open air and the wet nature of the FWA would preclude significant dust generation.

Within the residential scenario, the exposures for a child (ages 0-6), an adolescent (ages 7-15) and an adult (ages 16-30) were assessed for chemical intake over a typical residential span of 30 years. The receptor evaluated within the occupational scenario is an adult, since it is assumed that only adults would be employed on site.

The following exposure frequencies to floodplain area soils were assumed in the assessment of risk and in the calculation of cleanup goal concentrations for the contaminants of concern: 61 days per year for the residential child (ages 0-6), 110 days/year for adolescents, and 37 days per year for adults.

The areal size of the floodplain exposure units is a source of uncertainty in the risk assessment. Considerable discussions occurred between the State of Ohio, U.S. EPA and the PRPs regarding what is the appropriate size of the FWA exposure units. These discussions considered what would be the appropriate length of floodplain along each side of the Brook which adequately represents the geographic area to which a given individual would be exposed along that length, and included review of survey data, discussions with local citizens, inspection of all floodplain areas, investigations of plants and animals along the FWA, and evidence of use along the floodplain. The exposure unit lengths also considered potential exposures by ecological receptors to the floodplain area. Upon consideration of this information, U.S. EPA judged that it would be acceptable to divide the FWA into ten separate exposure units, each of approximately 2000 feet in length, which represent the geographic area to which a given individual would be exposed. U.S. EPA has reviewed these lengths and conclude that if after cleanup activities occurred contamination levels were on average at or below the Cleanup Goals for each exposure unit, the remedy would be protective of human health and the environment.

Radionuclide Contamination

As long as the average of all of the radionuclide hits in the backyard exposure unit is at or below the CUG, then there should be no adverse health effects. U.S. EPA reviewed all of the radionuclide data taken on the RMI Extrusion facility, both as part of the Fields Brook RI/FS and as part of RMI's decommissioning efforts (12/95 RMI Report). The maximum uranium concentration measured at any location in the Brook of floodplain is 18.52 picocuries per gram (Pci/g), a level which is below the NRC and U.S. EPA standard of 30 Pci/g. Therefore, it is unlikely that uranium contamination is contributing significantly to the risk at Fields Brook and uranium is not considered a chemical of concern at the Site.

Floodplain Area Cleanup Proposal

A proposed remedial alternative which U.S. EPA would find to be protective for human health and the environment has been developed by U.S. EPA for the Floodplain/Wetlands Area Operable Unit (FWA) of the Fields Brook Superfund Site. Figure's 3, 4 and 5 indicate the proposed floodplain areas in the residential areas (EU's 2 and 3) located between East 16th Street and Route 11 where remedial activities are planned to take place. These figures indicate the existing property ownership blocks and street names which intersect the Brook and FWA areas in various locations.

As discussed previously in this fact sheet, the proposed FWA remedy involves conducting a cleanup action along fove of the ten exposure unit lengths of the floodplain area so that contamination levels after cleanup would be on average at or below the Cleanup Goals for each exposure unit. U.S. EPA's review of the data also indicate that if the cleanup activities removed the elevated areas of PCB and hexachlorobenzene (HCB) soil contamination, that the cleanup would also remove all areas of elevated levels of other contaminants of concern indicated in the floodplain area. This is because contaminants other than PCBs and HCBs exist where the PCBs and HCB exist above the CUGs. Also, the cleanup will remove high areas of contamination (i.e., "hot spots") which may exist in any exposure unit.

The proposed FWA remedy involves the following activities. These activities, if conducted, would provide for protectiveness of human health and the environment.

- excavate all soil areas with PCB contamination above 30 ppm and hexachlorobenzene (HCB) above 80 ppm in the residential area, and above 50 ppm PCBs and over 200 ppm HCBs in the industrial area.
- cover all soil areas with between 6-30 ppm PCBs in the residential areas with 6 inches of soil.
- transport of all excavated soils, construction debris, and roadways to a containment cell (landfill) to be built on one of the industrial properties located within the Fields Brook watershed (i.e., ACME property). This landfill would have a bottom liner and would be covered with a plastic liner and clean soil.
- remove all trees which exist in excavation areas, and all trees below 12 inches diameter in cover areas, and send roots to the landfill.
- leave in place all trees above 12 inches diameter which are in FWA areas designated for cover.
- backfill all excavation areas with clean soils and revegetate using native vegetation.

To construct this FWA remedy, a temporary access road will need to be installed along most of the floodplain area; this temporary road would be made of crushed stone, would be removed after construction and brought to the ACME, and would have periodic access points to existing traffic roadways.

The FWA remedy will also include excavation of Fields Brook sediments - approximately 12,500 cubic yards of Fields Brook sediments to be excavated from various locations within Fields Brook; most of these sediments are planned to be disposed in the ACME landfill, and approximately 3000 yards of the sedi

ments will be brought offsite for thermal treatment at an existing approved thermal treatment facility. All sediments within FEU2 (between 16th Street and Columbus Avenue) are planned to be excavated. Most of the sediments within FEU3 (between Columbus Avenue and Route 11) are also planned to be excavated' the locations for these excavation areas are indicated on Figure 6. All excavation areas of the Brook are planned to have clean soil and small rocks placed as backfill.

Lastly, the floodplain area and Brook sediment cleanups will have post-cleanup chemical sampling and monitoring to ensure that the cleanup activities in both of these areas remain protective of human health and the environment.

What's Planned to Occur Next?

October 1996: U.S. EPA sends various documents for public review to the information repositories noted on the back of this fact sheet. These documents include:

- FWA Feasibility Study (FS)
- FWA Human and Ecological Baseline Risk Assessment
- Proposed Plan for FWA Remedial Action

November 1996: U.S. EPA conducts public meeting regarding the Floodplain Area proposed remedy, Source Control and changes planned to Fields Brook Sediment Operable Unit.

December 1996: U.S. EPA finalizes Record of Decision for FWA.

U.S. EPA sends hydrodynamic and sediment transport assessment report to the information repositories for public review regarding the river study area.

Summer 1997: Brook Sediment Operable Unit and FWA Operable Unit Designs are completed.

Spring 1998: Construction begins for Source Control, FWA and Brook Sediment areas.

Terms for Fields Brook Glossary

COC - Chemicals of Concern

COG - Cleanup Goal

EU - Exposure Unit

FEU - Floodplain Exposure Unit

FWA - Floodplain Wetland Area

HCB - Hexachlorobenzene

PCB - Polychlorinated Biphenyls

PRPs - Potentially Responsible Parties

RI/FS - Remedial Investigation/Feasibility Study

SOU - Brook Sediment Operable Unit

Mailing List Additions

If you did not receive this fact sheet in the mail you are not on the Fields Brook mailing list. If you wish to be placed on the mailing list, please fill out, detach, and mail this form to:

Virginia Narsete
Community Relations Coordinator
77 West Jackson Boulevard
Chicago, IL 60604

Name _____

Address _____

_____

Organization _____

Phone (Daytime) _____ (Night) _____

For More Information

Anyone desiring additional information may consult various U.S. EPA documents pertaining to the site. Copies of the Consent Orders, Work Plans, RI/FS fact sheets, and other site-related documents are available at:

Ashtabula County District Library
335 W. 44th Street
Ashtabula, Ohio

Kent State Ashtabula Campus Library
3325 W. 13th Street
Ashtabula, Ohio

If you have any questions, the following people may be contacted:

Virginia Narsete
U.S. EPA Region 5
Community Relations Coordinator
Office of Public Affairs
312–886-4359

Edward Hanlon
Remedial Project Manager
Office of Superfund
312-353-9228

U.S. EPA
77 West Jackson Boulevard
Chicago, IL 60604
Toll Free: 800-621-8431
(9 a.m. - 4:30 p.m., Central Time)

U.S. Environmental Protection Agency
Region 5
Office of Public Affairs
77 West Jackson Boulevard
Chicago, Illinois 60604

ADDRESS CORRECTION REQUESTED