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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

DEC 21 1998

REPLY TO THE ATTENTION OF

MEMORANDUM

SUBJECT: ACTION MEMORANDUM - Determination of Threat to Public Health, Welfare, or the Environment at the Sauget Area 2 Site (Site Q), Cahokia, St. Clair County, Illinois (Site ID # 05XX)

FROM: Kevin Turner, On-Scene Coordinator M. Mitten for K.T.
Emergency Response Branch - Section 2

TO: William E. Muno, Director
Superfund Division

THRU: Richard C. Karl, Chief R. Karl
Emergency Response Branch

I. PURPOSE

The purpose of this memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by the presence of approximately 150 to 200 drums present at the surface, with the possibility of additional drums buried beneath the surface, surrounded by soil contaminated with high levels of polychlorinated biphenyls (PCBs) and heavy metals (particularly arsenic, lead, chromium, mercury and cadmium) located in the southeastern corner of the southern third portion of Site Q at the Sauget Area 2 Site (See Attachment 1).

The actions proposed herein will mitigate threats to public health, welfare, and the environment posed by the presence of uncontrolled hazardous wastes substances located in drums and in the soil at the site. Proposed removal actions include the assessment of the chemical hazards at the site, stabilization of the hazardous wastes and substances, off-site disposal of the hazardous wastes and substances, removal of all waste containers, and if needed, the on-site consolidation of remaining low levels of contamination in soils with stabilization and covering of these soils to prevent further movement due to flooding. The deteriorated condition of the abandoned drums, the presence of hazardous substances in surface soils, the unrestricted access to the property, and the evidence and knowledge that the site is frequented by local residents require that this removal be classified as an emergency response. This project will require an estimated 120 on-site working days to complete

The Sauget Area 2 Site is not on the National Priorities List (NPL), however, listing activities are now underway.

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II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILD000605790

A. Physical Location and Description

The subject area of this Action Memorandum is part of the Sauget Area Sites. These sites are located in west-central St. Clair County, Illinois, directly across the Mississippi River from St. Louis, Missouri. (See Attachment 1). The Sauget Sites consist of twelve waste disposal sites and six segments of Dead Creek, which is an intermittent stream flowing in a southerly direction in the eastern portion of the Site area. The waste disposal areas consist of former municipal and industrial waste landfills, surface impoundments or lagoons, surface disposal areas and past excavations thought to be filled or partially filled with unkown industrial wastes. Waste disposal activities in the area apparently began sometime prior to 1940, and continued until approximately 1983. The entire Sauget Site area is divided into Area 1 and Area 2. Sauget Area 2 is made up of five waste disposal areas (Sites O, P, Q, R, and S). Site Q of the Sauget Area 2 Site is an inactive mixed industrial/municipal waste landfill covering approximately 90 acres of land along the east bank of the Mississippi River in west-central St. Clair County, Illinois. This Action Memorandum relates to two former borrow pits located in the southeastern corner of the southern third of Site Q where approximately 150 to 200 drums have been disposed of on the ground surface with the possibility of additional drums buried beneath the surface. The entire landfill is located on the river side of a flood control levee constructed by the U.S. Army Corps of Engineers. Due to its location, the landfill is highly vulnerable to flooding from the adjacent Mississippi River. The most recent flooding occurred in 1977, 1987, 1993 and in 1995. During the 1993 flood the entire site was inundated by Mississippi River flood waters. As a result of flooding and due to the shallow depth to groundwater in this area, the two borrow pits, containing the drums and contaminated soil, are filled with water during various times of the year. The land immediately surrounding the borrow pits is unoccupied. Access to the borrow pits is unrestricted and local residents use the pits for fishing and hunting. The nearest residential areas are approximately 3/4 miles east of the site.

Site Q of Sauget Area 2 is situated within a census tract and block group designated as 100% minority and 100% low income and therefore meets the U.S. EPA Region 5 Environmental Justice Case criteria. However, it should be noted that the census tract and block group for the Site Q area shows a population of only 10 people (1990 Census database).

B. Site Background

Site Q was actively used as a waste disposal area for industrial and municipal wastes between the years 1966 and 1973 and was operated by Sauget & Company. Most of Site Q, including the southern pit areas, is currently owned by Eagle Marine Industries, Inc. of St. Louis, Missouri.

According to aerial photographs of the area, initial activities were noticed in 1955, with a marked increase in activity in 1962. In 1973, landfill operations appeared to have ceased in the northern portion of Site Q but continued in the southern portion. In January of 1975, Illinois EPA inspected the site and indicated disposal activities had ceased. In 1980, Illinois EPA received notice that chemical wastes and drums were uncovered during excavation activities for the railroad spur that cuts across Site Q. It was reported that construction workers became nauseous, but specific worker exposure information was not found. In 1981, the Illinois Attorney General filed suit against Sauget & Company for alleged violations against Illinois EPA regulations. In October of 1981, Illinois EPA sampled seeps along the boundaries of Site Q and results showed high concentrations of organics. In October of 1984, the Illinois EPA conducted inspections in order to determine the scope of proposed cleanup work at the site. As part of an Expanded Site Investigation conducted by Illinois EPA in March of 1987, a monitoring well was installed in the borrow pit area of Site Q (well No. EE-09). A sample collected from this well showed the presence of benzene (1J ppb) (J = estimated value), chlorobenzene (33 ppb) and di-n-octyl phthalate (4J ppb). In June of 1993, as a result of finding buried drums at the northern section of Site Q, a U.S. EPA Field Investigation Team (FIT) contractor collected 33 subsurface soil samples at the site. A total of 63 of 112 organic compounds from the priority pollutant list were detected, including dioxins. As a result of severe flooding on the Mississippi River in the summer of 1993, waste materials including drums were left exposed along the shoreline side of Site Q. Samples collected by U.S. EPA from the exposed wastes indicated elevated levels of semi-volatile organics and polychlorinated biphenyls (PCBs) (total PCBs at 260,000 ppm). Subsequently, a removal action was conducted by U.S. EPA to remove the waste materials and to repair the exposed sections of the fill area. Also as follow-up to the severe flooding of the Mississippi River, the Illinois EPA collected 11 surface soil and waste samples from the borrow pit area in Site Q on November 9 and 10, 1994. These samples showed the presence of elevated levels of metals such as antimony (17,900 ppm), arsenic (216 ppm), cadmium (2,260 ppm), chromium (3,650 ppm), copper (1,630 ppm), lead (195,000 ppm), mercury (4.9 ppm), nickel (371 ppm), selenium (59.9 ppm), silver (28.9 ppm) and cyanide (3.3 ppm). Elevated concentrations of PCBs were also detected at levels as high as 223,000 ppb.

In April of 1997, U.S. EPA conducted a Preliminary Ecological Risk Assessment of the two pit areas located in the southern area of Site Q. The Preliminary Ecological Risk Assessment was

completed by Ecology & Environment, Inc. (E&E) for U.S. EPA to evaluate the risks to the local wildlife from the contamination in this area. During this assessment, U.S. EPA collected soil samples from the pits. These soil samples indicated elevated levels of heavy metals and PCBs (total PCBs at 120 ppm). The Ecological Risk Assessment concluded that the elevated levels of cadmium, chromium, lead, mercury, and PCBs could decrease the species diversity of the area including sensitive species. These threatened species include the endangered Black-Crowned Night Heron. The effects of these contaminants include acute toxicity, reduced growth, inhibited reproduction, and other adverse effects. The metals and PCBs may also bioconcentrate in fish tissue at high levels. Local fishermen who use the Site for fishing and who consume their catch could be exposed to the high levels of metals and PCBs. Further, the risk assessment determined that a definite need exists for further evaluation and concluded that a removal action may be appropriate.

III. THREATS TO PUBLIC HEALTH, WELFARE, OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The conditions at Sauget Area 2, Site Q present an imminent and substantial threat to the public health, or welfare, and the environment and meet the criteria for a removal action provided for in the National Contingency Plan (NCP), Section 300.415, Paragraph (b)(2). 40 C.F.R. § 300.415(b)(2)(I), (iii), (iv), and (v), respectively, specifically allows removal actions for:

a) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

Approximately 150 to 200 deteriorating 55-gallon drums with unknown contents are located within the two former borrow pits. The possibility exists for additional drums buried beneath the surface in this same area. These drums are under water at various times during the year. Soil and waste samples collected from the areas surrounding the drum piles show elevated levels of heavy metals and PCBs.

During the April 17, 1997, site visit, a U.S. EPA ecologist evaluated the habitat quality found on the site area. Observations made by the ecologist included the fact that the area is disturbed and the habitat quality is low, but it supports a variety of organisms. The water filled borrow pits have substantial growths of macropytes and algae, as well as amphibians, fish and waterfowl. Local fishermen reported the presence of catfish and buffalo head. Several state-listed birds are likely to utilize the site: Black-Crowned Night Herron, Little Blue Heron, Snowy Egret, Great Egret, and Pied-Billed Grebe. Residences are located approximately 3/4 miles east from the site

area. The site is unsecured and readily accessible due to the lack of any fencing around the southern end of Site Q.

The preliminary Ecological Risk Assessment completed by E&E and dated August 31, 1997, concluded that metals and PCBs that can bioconcentrate in fish tissue were detected at high levels, and therefore, are threats to human health (primarily based on local fishermen who consume their catch). Further, the presence of cadmium, chromium, lead, mercury, and PCB. greater than the severe soil contamination guideline levels may decrease the species richness of the area. Sensitive species on or near the site may be subject to acute toxicity, reduced growth, inhibited reproduction and other adverse effects. Species feeding upon contaminated organisms may bioaccumulate the contaminants and become adversely affected.

Trespassers and animals may contact hazardous materials located on the ground surface. Unauthorized, indiscriminate site access could also result in human exposure to heavy metals and PCBs in the contaminated soil.

b) Hazardous substances, pollutants, or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;

Approximately 150 to 200 deteriorating 55-gallon drums with unknown contents are located within the former borrow pits on site and there are possibly additional drums buried beneath the surface in this location. The drums are sometimes completely submerged in the pits during high water periods. Evidence of soil contamination within the pit areas suggest that the contents of the drums have been released in part or in whole. Soil and waste samples contained high levels of heavy metals and PCBs.

c) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;

Analytical results indicated that surface soils in the area surrounding the drums contained elevated levels of arsenic (216 ppm), cadmium (2,260 ppm), lead (195,000 ppm) and PCBs (223,000 ppb) (See Attachment 2). PCBs and heavy metals in surface soils at the site may migrate primarily as a result of recurring flooding of this area. Similarly, releases of heavy metals in surface soils may result in degradation of the groundwater.

d) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

Contaminants contained within the soil and possibly still contained within the drums are subject to further migration outward from their present location as a result of recurring floods on the adjacent Mississippi River. All of Site Q is situated within the floodplain of the Mississippi River and within the river side of the Corps of Engineers levee.

IV. ENDANGERMENT DETERMINATION

Given the site conditions, the nature of the hazardous substances on site, and the potential exposure pathways described in Sections II and III above, actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

The OSC proposes that the following actions be taken to mitigate threats posed by the presence of hazardous substances at the Sauget Area 2 Site (Site Q):

1) Develop and implement a site health and safety plan and emergency contingency plan;

2) Implement appropriate site security measures;

3) If site conditions warrant, remove and possibly treat water from the pits in order to conduct investigation and removal activities;

4) Conduct comprehensive site investigation activities, including site sampling and analyses (including TCLP testing), necessary to fully characterize the nature and extent of surface and subsurface contamination at the site. U.S. EPA expects the amount of soil to be removed from the southern pit areas to be approximately 7,000 to 15,000 cubic yards;

5) Secure and characterize all drums and containers at the surface and buried beneath the surface on-site;

6) Exhume, transport and dispose of hazardous substances/hazardous wastes at a U.S. EPA-approved disposal facility;

7) Backfill and stabilize the soil covering of any excavated areas with clean fill.

All hazardous substances, pollutants, or contaminants removed off site pursuant to this removal action for treatment, storage, and disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by U.S. EPA, with the U.S. EPA Off-Site Rule, 40 CFR § 300.440, 58 Federal Register 49215 (September 22, 1993).

The OSC has initiated consideration for provision of post-removal site control consistent with the provisions of Section 300.415(l) of the NCP. It is anticipated that any post-removal site control will be undertaken by potentially responsible parties (PRPs).

The response actions described in this memorandum directly address the actual or threatened release at the site of a hazardous substance, or of a pollutant, or of a contaminant which may pose

an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed. It is anticipated that time-critical removal activities will take approximately 120 on-site working days to complete.

Applicable or Relevant and Appropriate Requirements

All applicable or relevant and appropriate requirements (ARARs) will be complied with to the extent practicable. A letter was sent to Mr. Paul Takacs of the Illinois EPA on October 21, 1998, requesting that he identify State ARARs. Any State ARARs identified in a timely manner will be complied with to the extent practicable.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Continued risk to public health and the environment will result if no action or delayed action ensues.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues associated with this site.

VIII. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this site is contained in the Enforcement Confidential Addendum.

IX. RECOMMENDATION

This decision document represents the selected removal action for the southern portion of Site Q in Sauget Area 2 developed in accordance with CERCLA as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for the site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal and I recommend your approval of the proposed removal action. You may indicate your decision by signing below.

APPROVE: Richard Karl DATE: 12-21-98
Director, Superfund Division

DISAPPROVE: _____ DATE: _____
Director, Superfund Division

cc: K. Mould, U.S. EPA, 5202-G
M. Chezik, U.S. Department of the Interior, **w/o Enf. Addendum**
M. Gade, Illinois EPA, **w/o Enf. Addendum**
P. Takacs, Illinois EPA, **w/o Enf. Addendum**
J. Morgan, Illinois Dept. of Attorney General, **w/o Enf. Addendum**

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(1 PAGE)

REDACTED

NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

ENFORCEMENT ADDENDUM

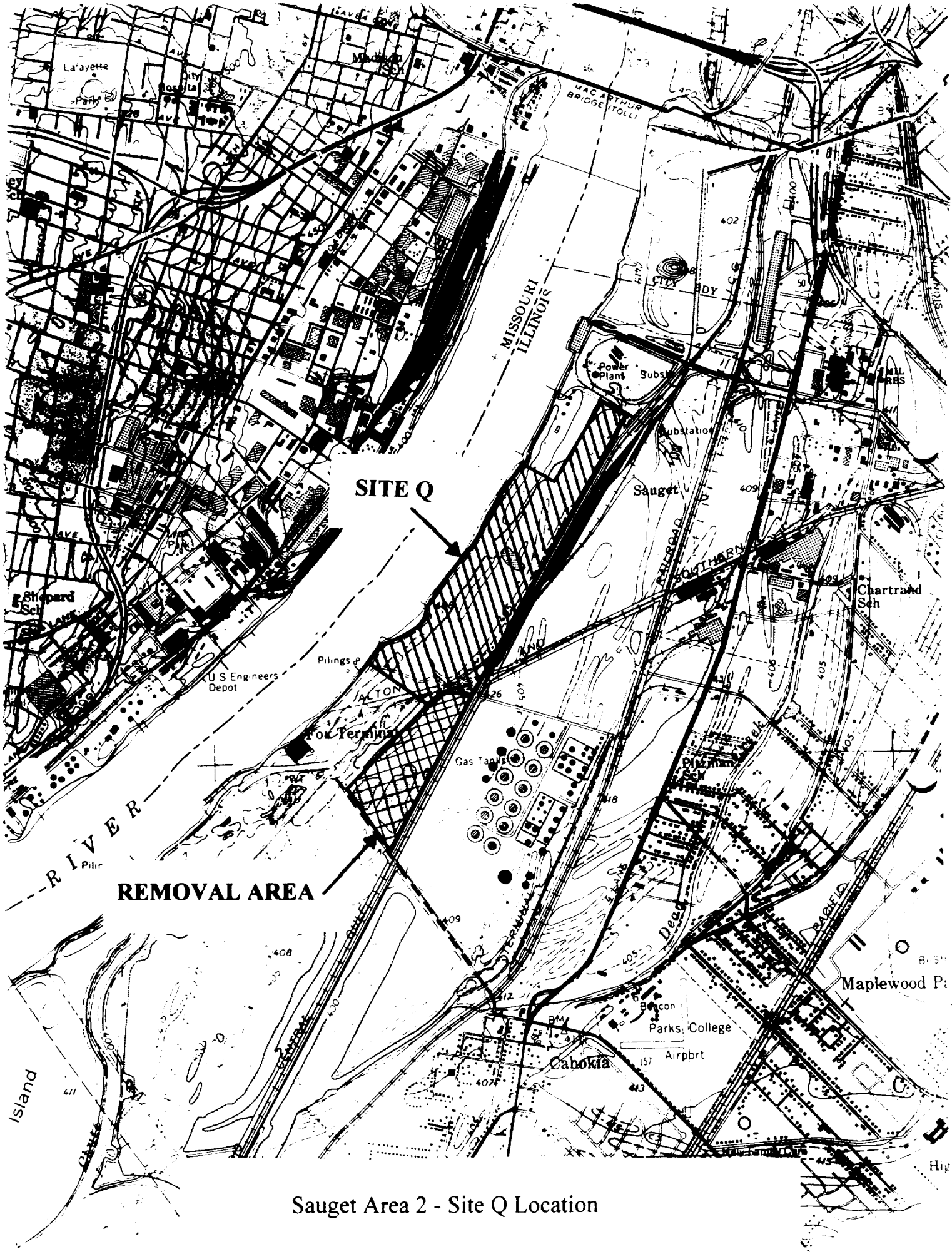
SAUGET AREA 2, SITE Q
CAHOKIA, ST. CLAIR COUNTY, ILLINOIS
(3 PAGES)

REDACTED

NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

ATTACHMENT 1

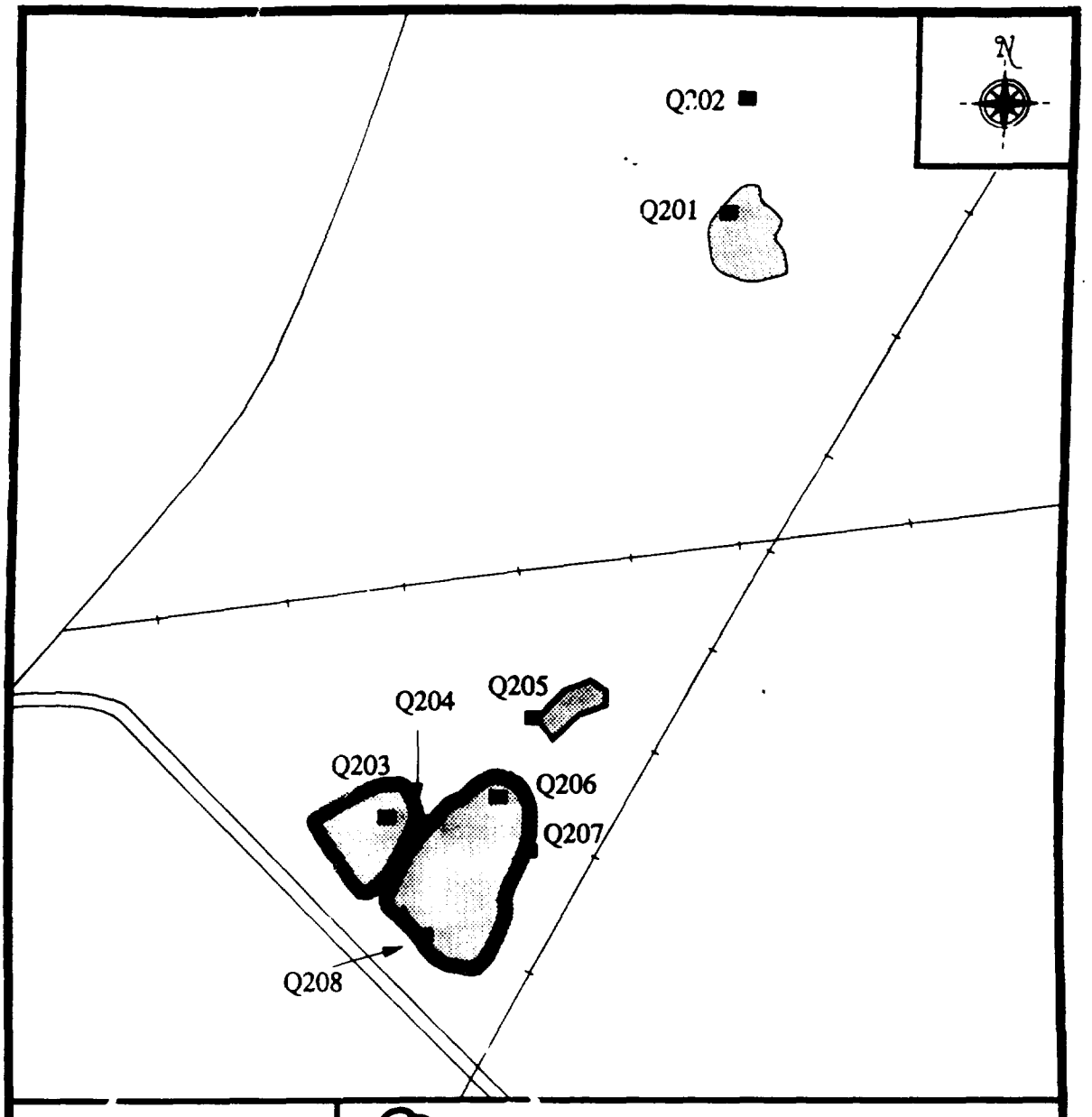
SITE LOCATION MAP
SAUGET AREA 2 - SITE Q
CAHOKIA, ST CLAIR COUNTY, ILLINOIS



Sauget Area 2 - Site Q Location

ATTACHMENT 2

U.S. EPA AND ILLINOIS EPA SAMPLING LOCATIONS
SAUGET AREA 2 - SITE Q
CAHOKIA, ST. CLAIR COUNTY, ILLINOIS

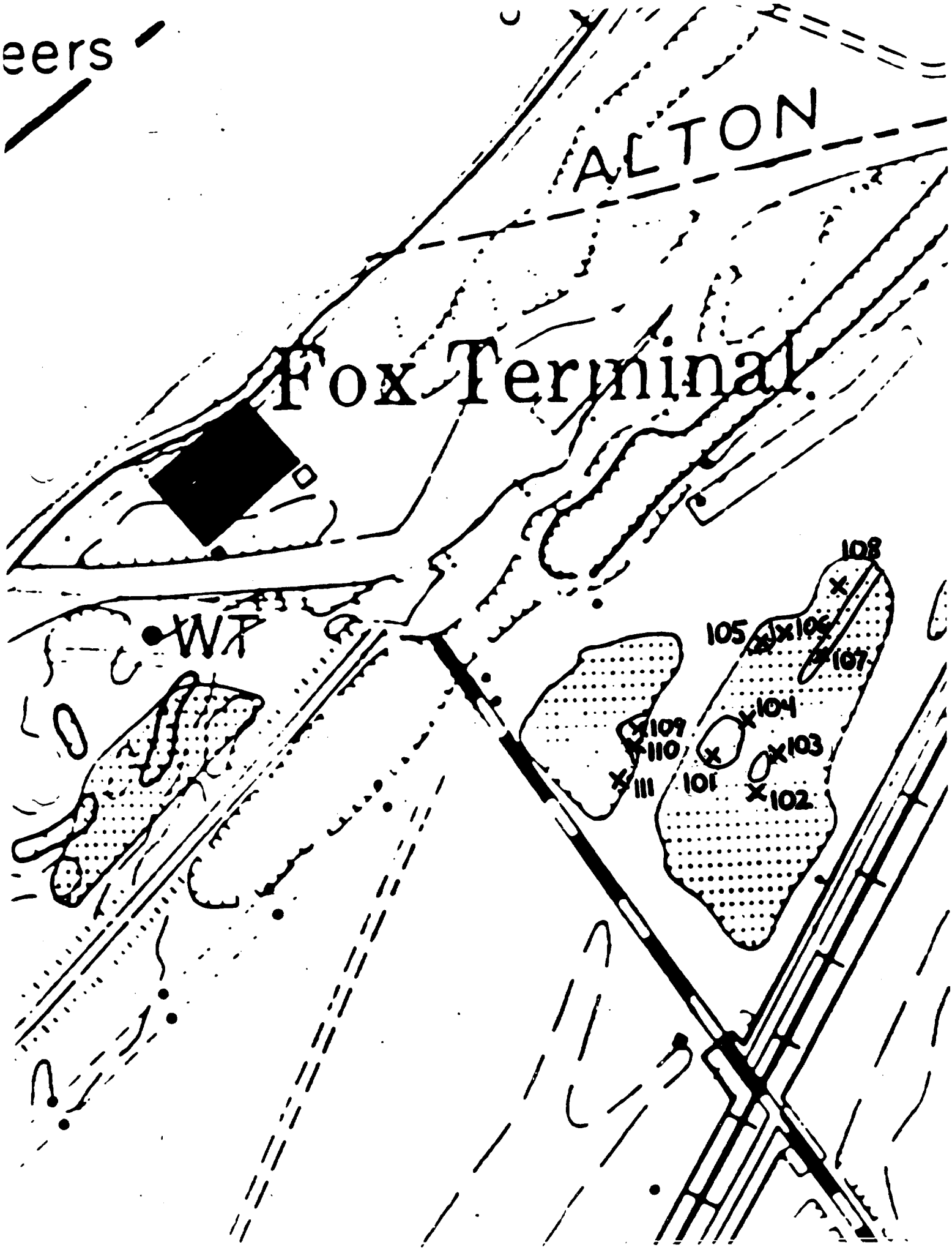


Legend

■ Sample Location

ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region 5
33 North Dearborn Street, Chicago, Illinois 60602

TITLE: Sample Location Map	FIGURE #:
SITE: Sauget Area 2	SCALE: Not to scale
CITY: Sauget STATE: Illinois	TDD: S05-9703-013
SOURCE: Ecology and Environment, Inc.	DATE: 1997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ATTACHMENT 3

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION #2

ADMINISTRATIVE RECORD
FOR
SAUGET AREA 2, SITE Q
CAHOKIA, ST. CLAIR COUNTY, ILLINOIS

ORIGINAL
NOVEMBER 19, 1998

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	07/00/94	Ecology and Environment, Inc.	U.S. EPA	*Removal Action Report* for Sauget Area 2, Site Q	57
2	12/30/94	Takacs, P., IEPA	Rebbe, M., IDPH	Memorandum re: Sauget Sites, Area 1 and Area 2 w/ Attachments	224
3	08/31/97	Ecology and Environment, Inc.	U.S. EPA	*Preliminary Ecological Risk Assessment* for Sauget Area 2, Site Q	68
4	02/00/98	Ecology and Environment, Inc.	U.S. EPA	Sauget Area 2 Data Tables and Maps	50
5	10/15/98	Jones, B., U.S. EPA	McAteer, M., U.S. EPA	Memorandum: Information for Removal Action Memorandum for Sauget Area 2, Site Q	2
6	00/00/00	Turner, K., U.S. EPA	Muno, W., U.S. EPA	*Action Memorandum*: Determination of Threat to Public Health, Welfare, or the Environment at the Sauget Area 2 Site (Site Q) **[PENDING]**	