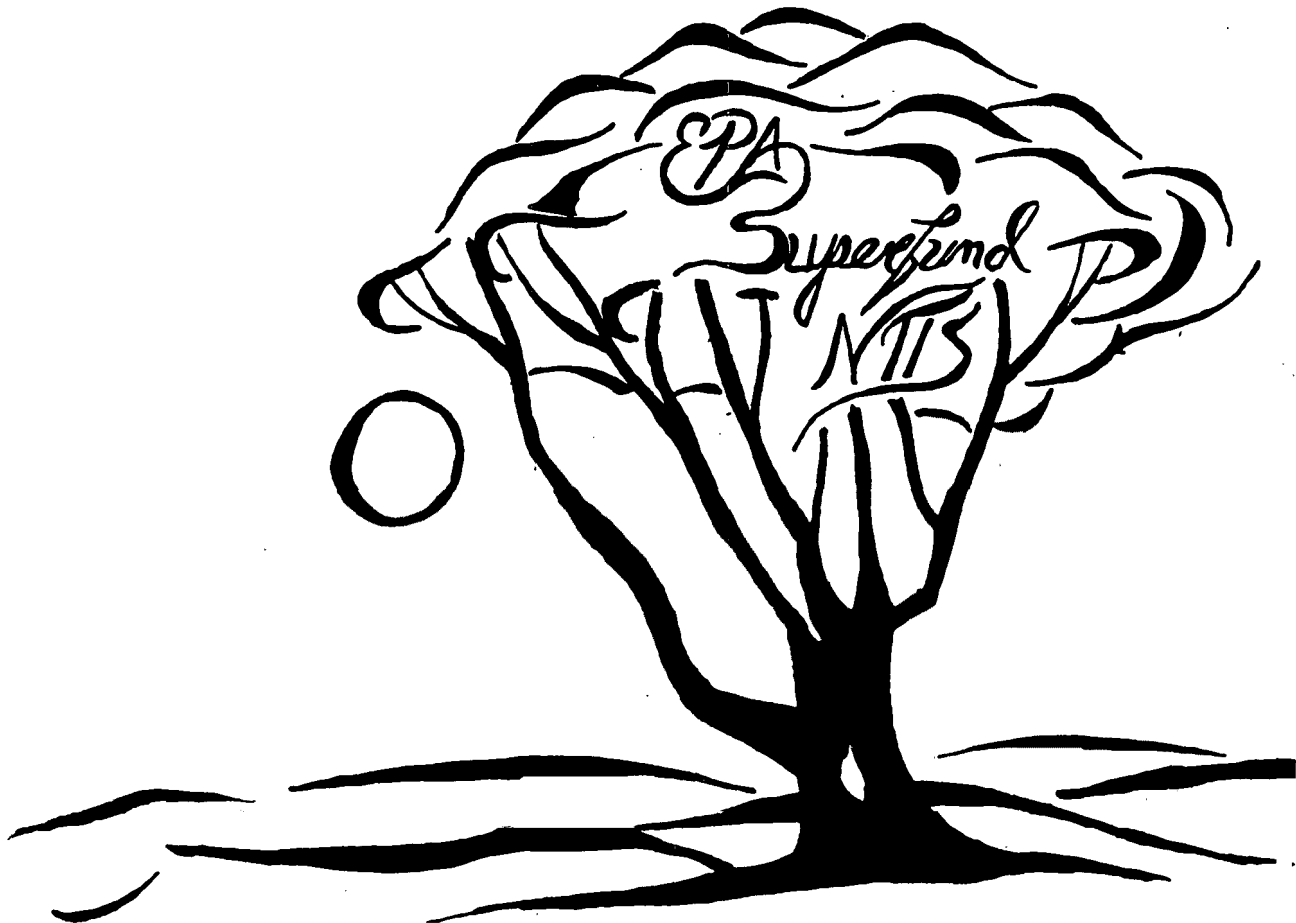


PB94-964131
EPA/ROD/R05-94/257
September 1994

EPA Superfund Record of Decision:

**South Andover Salvage Yards,
Andover, MN,
5/31/1994**



SOUTH ANDOVER SALVAGE YARDS

DECLARATION FOR THE RECORD OF DECISION AMENDMENT

SITE NAME AND LOCATION

South Andover Salvage Yards,
Andover, Anoka County, Minnesota.

STATEMENT OF BASIS AND PURPOSE

This decision document represents an amendment to a Record of Decision (ROD) issued December 24, 1991 for soil remedial action at the South Andover Salvage Yard Site (the Site). This amendment was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and to the extent practicable, consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300). This decision is also in accordance with the Minnesota Environmental Response and Liability Act of 1983 (MERLA).

This decision is based upon the contents of the administrative record for the South Andover Salvage Yard Site.

The State of Minnesota and the United States Environmental Protection Agency (U.S. EPA) agree on the selected remedy.

ASSESSMENT OF THE SITE

Potential releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Amendment, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE AMENDMENT

This operable unit is the second of two operable units for the Site. The remedy for the first operable unit, groundwater, was documented in a June 9, 1992, ROD Amendment. The major components of the amended groundwater remedy include: short term monitoring of groundwater; immediate re-sampling of wells if action levels are exceeded; and proper abandonment of those wells no longer being monitored.

U.S. EPA issued a ROD on December 24, 1991 for the second operable unit for the remedial action of soil. The major components of this remedy included: excavate and treat approximately 2,100 cubic yards of predominately carcinogenic PAH (CPAH) contaminated soils using an above-ground biological

treatment unit; excavate and transport approximately 9,300 cubic yards of soils contaminated with PCBs, CPAHs, lead and antimony to an off-site solid waste landfill permitted to receive industrial and/or commercial wastes; sample and remove drums previously inventoried by MPCA and U.S. EPA.

U.S. EPA and MPCA are amending this decision so that the predominately CPAH-contaminated soils would be taken off-site for thermal treatment in either a rotary kiln incinerator or a low temperature thermal desorption unit. Additionally, this amendment serves to update the Maximum Contaminant Levels (MCLs) for several constituents which are currently being monitored in groundwater. Groundwater monitoring will terminate three years after all excavation activities have been completed.

STATUTORY DETERMINATIONS

The amended remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment (or resource recovery) technologies, to the maximum extent practicable for this Site. This amended remedy satisfies the statutory preference for treatment.

The amended remedy when used in conjunction with the contaminated groundwater remedy addresses the threat posed to groundwater by eliminating or reducing the risks posed by the Site. All contaminated soil will either be destroyed through thermal treatment or transported off-site where it will be contained in a secured, permitted landfill. No contaminated soil would be left on-site to pose a human health or environmental risk.

May 31, 1994

Date

David A. Ullrich

for Valdas V. Adamkus
Regional Administrator
U.S. EPA, Region V

RECORD OF DECISION
AMENDMENT
SUMMARY

**South Andover Salvage Yards
Andover, Anoka County, Minnesota**

INTRODUCTION

The South Andover Salvage Yards Superfund Site (the Site) is located in Anoka County, Minnesota, approximately 16 miles north-northwest of Minneapolis and 3 miles northeast of the City of Anoka (Figure 1). The Site is comprised of several privately owned parcels of land, which jointly encompass more than 50 acres. Bunker Lake Boulevard defines the northern extent of the Site. The eastern site boundary is roughly 500 feet west of Jay Street (Figure 2).

The lead agency documenting this amended decision is the United States Environmental Protection Agency (U.S. EPA). The Minnesota Pollution Control Agency (MPCA) is the support agency. The MPCA was involved in the review and approval of those documents which lead to the amendment of the original Record of Decision (ROD) issued December 24, 1991.

U.S. EPA issued a ROD on December 24, 1991 which documented a decision for remedial action of soil. The major components of the selected remedy included: excavate and treat approximately 2,100 cubic yards of predominately carcinogenic polycyclic aromatic hydrocarbons (CPAH) contaminated soils using an above-ground biological treatment unit; excavate and transport approximately 9,300 cubic yards of soils contaminated with PCBs, CPAHs, lead and antimony to an off-site industrial and/or commercial permitted landfill; and sample and remove drums which were inventoried by MPCA and U.S. EPA. The cleanup standards for the various contaminants are 2 ppm for PCBs; 4 ppm for CPAHs; 500 ppm for lead; and 25 ppm for antimony. Figure 3 illustrates how these various contaminants are distributed across the Site. This figure is based on data contained in the July 1991 Remedial Investigation (RI).

During Remedial Design/Remedial Action (RD/RA) negotiations and as a result of a Pre-Design Study, additional soil samples were taken to refine the volume of contaminated soil. The first round of soil sampling occurred in October 1992, the second was in July 1993. Both sampling events used a grid system which placed sample points approximately 10 to 30 feet away from each other. The July 1991 RI used a grid system which placed sample points approximately 75 to 100 feet away from each other.

Results from the October 1992 and July 1993 sampling events have shown that the CPAH contaminated soil volumes originally

estimated in the July 1991 RI, were significantly less. The original volume of CPAH contaminated soils was estimated at 2,100 cubic yards. Data from the more recent sampling events indicate the volume to be approximately 250 cubic yards. Figure 4 illustrates the new hot spot configurations, based on the recent sampling events.

As a result, U.S. EPA and MPCA are amending their December 1991 decision concerning contaminated soil at the Site. Specifically, that portion of the remedy which addresses CPAH contaminated soil from hot spots 1, 5, and 6 will be amended to reflect off-site thermal treatment as opposed to on-site biological treatment. The original cleanup standards for the various soil contaminants, however, would not change. Finally, U.S. EPA and MPCA are updating the Maximum Contaminant Levels (MCLs) of those constituents which are currently being monitored in the groundwater.

Section 117 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund, and Section 300.435 (c)(2)(ii) of the National Contingency Plan (NCP), requires publication of a notice and brief description of the proposed amendment to the ROD. The notice of availability for the proposed ROD Amendment was published in the April 15, 1994 edition of the Anoka County Union, the local newspaper. This notice also included a new release which provided the dates of the public comment as well as the date of the public meeting.

The public comment period began on April 18, 1994 and ended on May 18, 1994. A response to the comments received during this period as well as during the public meeting, is included in the Responsiveness Summary, which is part of the ROD Amendment. A public meeting was held on May 4, 1994 at the Andover City Hall.

The Administrative Record for the Site has been placed at the following information repositories:

Andover City Hall
1685 Crosstown Boulevard NW
Andover, Minnesota 55303
Hours: Mon-Fri 8:00 AM - 4:30 PM

Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, Minnesota 55155
Hours: Mon-Fri 8:30 AM - 4:30 PM

U.S. EPA Docket Room
77 West Jackson Boulevard
Seventh Floor
Chicago, Illinois 60604
Hours: Mon-Fri 8:30 AM - 4:30 PM

The Administrative Record includes all documents such as work plans, data analyses, public comments, transcripts, and other relevant material used in developing the remedial alternatives for the South Andover Superfund Site. As per Section 300.825 (a)(2) of the NCP, the ROD Amendment will become part of the Administrative Record.

REASONS FOR ISSUING THE ROD AMENDMENT

On February 5, 1993, the Potential Responsible Parties (PRP), referred to as the South Andover Administrative Group (SAAG), entered into a Consent Decree with U.S. EPA. This Consent Decree was lodged with a federal court on April 30, 1993 and was later entered into the same court on August 27, 1993. As part of this Consent Decree, the SAAG agreed to perform the necessary studies and activities required to remediate the South Andover Salvage Yards.

One of the activities required under the Consent Decree was the performance of various pre-design studies. The purpose of these studies was to gather the necessary information to fully implement the remedial design and remedial action. A task identified in a particular pre-design study was to further delineate the extent of soil contamination. Under this task, the SAAG was required to put together a workplan which outlined a sampling scheme for collecting additional contaminated soil data. This workplan had to meet U.S. EPA's and MPCA's approval before sampling could take place.

Under the pre-design workplan, soils were sampled using a tighter grid system. Sample points were located a distance of 10 to 30 feet away from each other versus the 75 to 100 feet used in the July 1991 RI. This tighter sampling pattern was used on areas of suspected contamination, specifically, those areas which were assumed to be contaminated because they existed between known areas of contamination. These particular areas were assumed to be contaminated when contaminated soil volumes were calculated in the July 1991 RI.

Soil samples were collected in July 1993 using the tighter grid system. The results indicated that the volume of CPAH contaminated soils decreased in areas 1, 5, and 6. The original estimate contained in the July 1991 RI was 2,100 cubic yards. Data from the July 1993 sampling event indicate the volume to be approximately 250 cubic yards.

Previous sampling performed independently by the SAAG, also indicated that the CPAH soil volumes decreased. This sampling event occurred in October 1992.

Given the new CPAH soil volume, the effectiveness of bio-remediation for CPAH contaminated soils needed to be re-evaluated

for this Site. Several bio-remediation vendors even refused to take on the project due to the small amount soil contaminated with CPAHs. Additionally, the treatment costs per cubic yard greatly increased due to the small soil volume. The SAAG commissioned its contractor to evaluate appropriate treatment technologies that would effectively reduce CPAH compounds in the soils to the cleanup level of 4 ppm.

Off-site thermal treatment in either an incinerator or low temperature thermal desorption unit, on-site landfarming and on-site treatment with a slurry bioreactor were evaluated. Using U.S. EPA's nine remedy evaluation criteria, off-site thermal treatment proved to be the best alternative when compared against the on-site bio-remediation alternatives.

Finally, this ROD Amendment serves to update the Maximum Contaminant Levels (MCLs) for the various groundwater compounds monitored at the Site. U.S. EPA periodically updates its MCLs via the Safe Drinking Water Act. The most recent update occurred in December 1993. Several site-specific groundwater monitoring compounds were affected by this December 1993 MCL update. New MCLs were established where previously there were none or new levels were given to existing MCLs. The compounds affected and their new MCLs are identified in Table 1.

DESCRIPTION OF THE NEW ALTERNATIVE

U.S. EPA and MPCA are amending the original soil remedy by replacing on-site biological treatment with off-site thermal treatment of CPAH-contaminated soil. The CPAH-contaminated soil from areas 1, 5, and 6 would be excavated and transported to a permitted off-site facility where the material would be treated with either a rotary kiln incinerator or a low-temperature thermal desorption unit.

For rotary kiln incineration, the CPAH contaminated soil would be placed in a cylindrical, refractory-lined, rotating kiln and heated until combustion results in the breakdown and destruction of the CPAH-contaminated soil. Ash and exhaust gases would be collected and treated as necessary. Incineration is a well established technology that can provide effective treatment. Rotary kiln incineration has a destruction and removal efficiency (DRE) of greater than 99.99%. A fixed site rotary kiln incinerator is available in the area and currently holds a valid operating permit.

Low temperature thermal desorption (LTTD) reduces the volume and mobility of wastes by separating and collecting the organic contaminants. Although it uses heat to treat the waste, it is not an incineration process because it does not destroy the contaminants. The material is heated in the desorber, where the water and organic contaminants are volatilized from the soil into

a carrier gas stream. The carrier gas stream is then treated further with an afterburner or it is cooled in stages to condense the volatilized water and organics into liquids. These liquids can then be further treated with carbon filtering.

LTTD has successfully treated soils contaminated with CPAHs on a pilot scale. A fixed site low temperature thermal desorber is available in the area.

That portion of the remedy which addresses the contaminated soils in areas 2, 3, 4, and 7 will remain the same. Soils from these areas will be excavated and transported to an off-site industrial and/or commercial permitted landfill. Soils from areas 2, 3, 4, and 7 are contaminated with PCBs, CPAHs, lead and antimony.

The cleanup levels for the various site-specific contaminants will not be changed due to this ROD Amendment. The cleanup standards for the various contaminants are 2 ppm for PCBs; 4 ppm for CPAHs; 500 ppm for lead and 25 ppm for antimony. These performance standards will remain the same across the Site.

Lastly, the ROD Amendment updates the Maximum Contaminant Levels (MCLs) for the various groundwater monitoring parameters. Several site-specific groundwater parameters were affected when U.S. EPA updated the MCLs in December 1993. The site-specific compounds affected and their new MCLs are identified in Table 1. Table 2 provides the full list of groundwater monitoring parameters.

EVALUATION OF ALTERNATIVES

The nine evaluation criteria U.S. EPA considers when selecting a remedy and a comparative analysis between the previously selected CPAH treatment component and the new remedy are listed below:

- Overall Protection of Human Health and the Environment. Both bio-remediation and thermal treatment are similar in their ability to protect human health and the environment. Both alternatives irreversibly destroy the CPAHs, which eliminates the risk from these contaminants. Specifically, soil treatment will remove the source of potential groundwater contamination at the Site and reduce the public's potential exposure to both soil and groundwater contamination. Thermal treatment, however, can be completed in less time (three to four months) than biological treatment (two years).
- Compliance with ARARs. Bio-remediation and thermal treatment meet all of the federal and state environmental laws concerning soil-cleanup levels. Soil will have to be tested for total lead content,

however, before being sent to the appropriate thermal treatment facility. The MPCA has published guidelines prohibiting the thermal treatment of soils if the total lead content exceeds 100 ppm. Soils with a total lead content greater than 100 ppm must be thermally treated out-of-State. It is anticipated that the CPAH-contaminated soils from areas 1, 5, and 6 have total lead contents below the 100 ppm level.

- Long-term Effectiveness and Permanence. Both thermal and biological treatment would result in the removal and destruction of CPAH-contaminated soils to a level which is protective of human health and the environment. No soil residuals will remain on-site which would cause an impact to human health or the environment. Three years of post excavation groundwater monitoring will provide information on the effectiveness and permanence of the final remedy as well as confirm the continued quality of the Site groundwater.
- Reduction of Toxicity, Mobility or Volume. Thermal treatment is demonstrated to be effective in the treatment of CPAH-contaminated soil. Incineration or LTLD would provide the greatest reduction in toxicity, mobility and volume of CPAH-contaminated soil as opposed to biological treatment. Pilot studies which have used incineration technologies on CPAH contaminated soils, have documented destruction and removal efficiencies of approximately 97 %. Biological treatment of CPAH-contaminated soil has been done, however, the removal efficiencies are not as high as with thermal treatment.
- Short Term Effectiveness. Excavation of soil is a component of both the thermal and biological treatment remedies. Soil excavation would cause temporary dust, noise, and traffic at the Site. However, health and safety plans would require that all workers be adequately protected during the work. Under the thermal treatment remedy, contaminated soil would be taken off-site for treatment. As originally proposed, biological treatment of contaminated soil would occur on-site and take longer to perform. The short term impacts on worker health and safety are greater with biological treatment due to the longer potential exposure period. Also, there is no significant risk to the surrounding community or environment with either on-site biological treatment or off-site thermal treatment technologies.

- Implementability. Thermal and biological treatment are technically implementable and available. Both a fixed site rotary kiln incinerator and low temperature thermal desorber are available in the local area. The incinerator holds a valid operating permit; the selected desorber would need to be issued a permit by the MPCA for the treatment. Biological treatment could be accomplished by constructing an on-site landfarm or by bringing a bioreactor on-site. Both on-site biological treatment options would require more site preparation work than the off-site thermal treatment options.

- Cost. The estimated costs of the biological treatment remedy versus the thermal treatment remedy are listed below:

Biological Treatment.....	\$355,000
Off-site Incineration.....	\$67,000
Off-site LTTD unit.....	\$60,000

- State Acceptance. The State of Minnesota supports the amended remedy.

- Community Acceptance. Community acceptance is assessed in the attached Responsiveness Summary. The Responsiveness Summary provides a thorough review of the public comments received on Proposed Record of Decision Amendment and U.S. EPA's and MPCA's responses to the comments received.

STATUTORY DETERMINATIONS

The amended remedy satisfies the requirements of Section 121 of CERCLA in that it is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. The amended remedy utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable for the Site. This amended remedy does satisfy the statutory preference for treatment as a principal element because a portion of the contaminated soil will be taken off-site to a permitted thermal treatment facility.

All contaminated soil from the Site will either be destroyed through off-site thermal treatment or transported off-site where it will be contained in a secured, permitted landfill. No contaminated soil will be left on-site to pose a risk to human health or the environment.

RESPONSIVENESS SUMMARY

SOUTH ANDOVER SUPERFUND SITE

PROPOSED ROD AMENDMENT (SOIL - OU 2)

ANOKA COUNTY MINNESOTA

At the start of the public comment period, the U.S. Environmental Protection Agency (U.S. EPA) and the Minnesota Pollution Control Agency (MPCA) proposed to change the plan for cleaning up soil at the South Andover Superfund Site. The original cleanup plan was documented in a legal Record of Decision (ROD), which U.S. EPA approved on December 24, 1991. The major components of this remedy included: excavate and treat approximately 2,100 cubic yards of predominately carcinogenic PAH (CPAH) contaminated soils using an above-ground biological treatment unit; excavate and transport approximately 9,300 cubic yards of soils contaminated with PCBs, CPAHs, lead and antimony to an off-site solid waste landfill permitted to receive industrial and/or commercial wastes; sample and remove drums previously inventoried by MPCA and U.S. EPA.

The Agencies' proposed changes to their original cleanup plan, as specified in the proposed ROD Amendment, include the off-site, thermal treatment of the predominately CPAH contaminated soils and updating the Maximum Contaminant Levels (MCLs) for several groundwater monitoring constituents.

The public comment period for the proposed ROD Amendment began on April 18, 1994 and ended on May 18, 1994. The notice of availability for the proposed ROD Amendment was published in the April 15, 1994 edition of the Anoka County Union. A public meeting was held on May 4, 1994 at the Andover City Hall. A court reporter recorded the minutes of the meeting. There were no spoken comments received at the public meeting. Additionally, there were no written comments received during the public comment period.

TABLE 1

NEW MCLs

<u>CONSTITUENT</u>	<u>OLD MCL (ppb)</u>	<u>NEW MCL (ppb)</u>
Methylene Chloride	0	5
Tetrachloroethene	0	5
Aluminum	0	50 - 200 SMCL *
Barium	1,000	2,000
Beryllium	0	4
Copper	1,000 SMCL *	1,300 AL **
Lead	50	15 AL **
Nickel	0	100
Thallium	0	2

* Secondary Maximum Contaminant Level

** Action Level

TABLE 2
CONSTITUENTS TO BE MONITORED

Units: ppb

<u>Volatile Organic Compounds</u>	<u>Maximum Contaminant Level</u>	<u>Minnesota Recommended Allowable Limit</u>
Methylene Chloride	5	50
Acetone	NE	700
1,2-Dichloroethane	5	4
2-Butanone	NE	300
Trichloroethene	5	30
4-Methyl-2-pentanone	NE	NE
1,1,1-Trichloroethane	200	600
Tetrachloroethene	5	7
Ethyl Benzene	700	700
Styrene	100	10
Total Xylenes	10,000	10,000

Inorganic Compounds

Aluminum	50 - 200 *	NE
Arsenic	50	0.2
Barium	2,000	2,000
Beryllium	4	0.08
Calcium	NE	NE

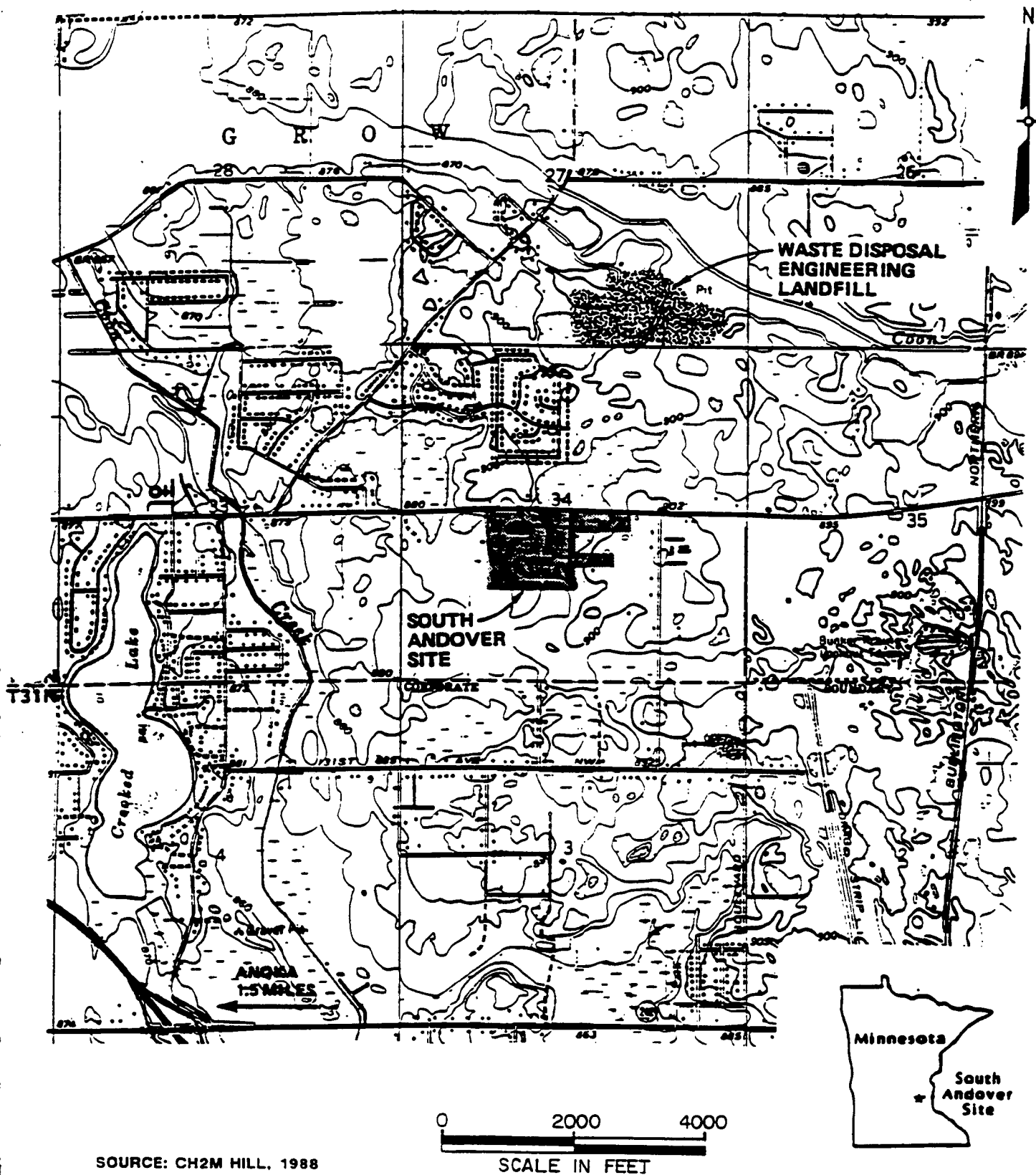
Table 2 continued.

Units: ppb

<u>Inorganic Compounds</u>	<u>Maximu Contaminant Level</u>	<u>Minnesota Recommended Allowable Limit</u>
Copper	1,300 **	1,000
Iron	300 *	NE
Lead	15 **	20
Magnesium	NE	NE
Manganese	50 *	600
Nickel	100	140
Potassium	NE	NE
Selenium	50	20
Sodium	NE	NE
Strontium	NE	NE
Thallium	2	0.6
Vanadium	NE	40
Zinc	5,000 *	1400

* Secondary Maximum
Contaminant Level

** Action Level



SOURCE: CH2M HILL, 1988

20022

FIGURE 1

SITE LOCATION MAP
SOUTH ANDOVER SUPERFUND SITE
DESIGN INVESTIGATION
ANDOVER, MINNESOTA

JULY 1991

Donohue ENGINEERS
 ARCHITECTS
 SCIENTISTS

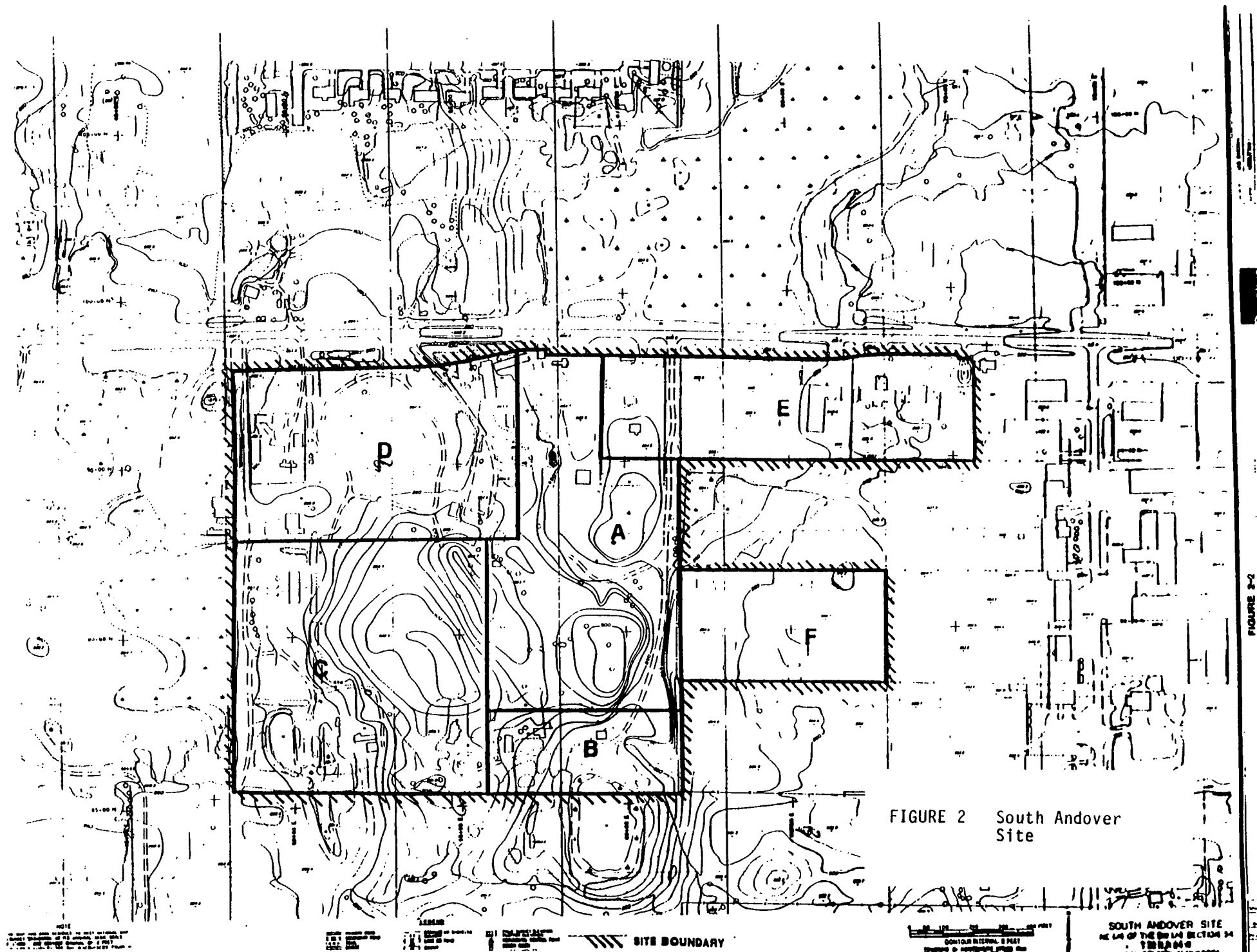


FIGURE 2 South Andover Site

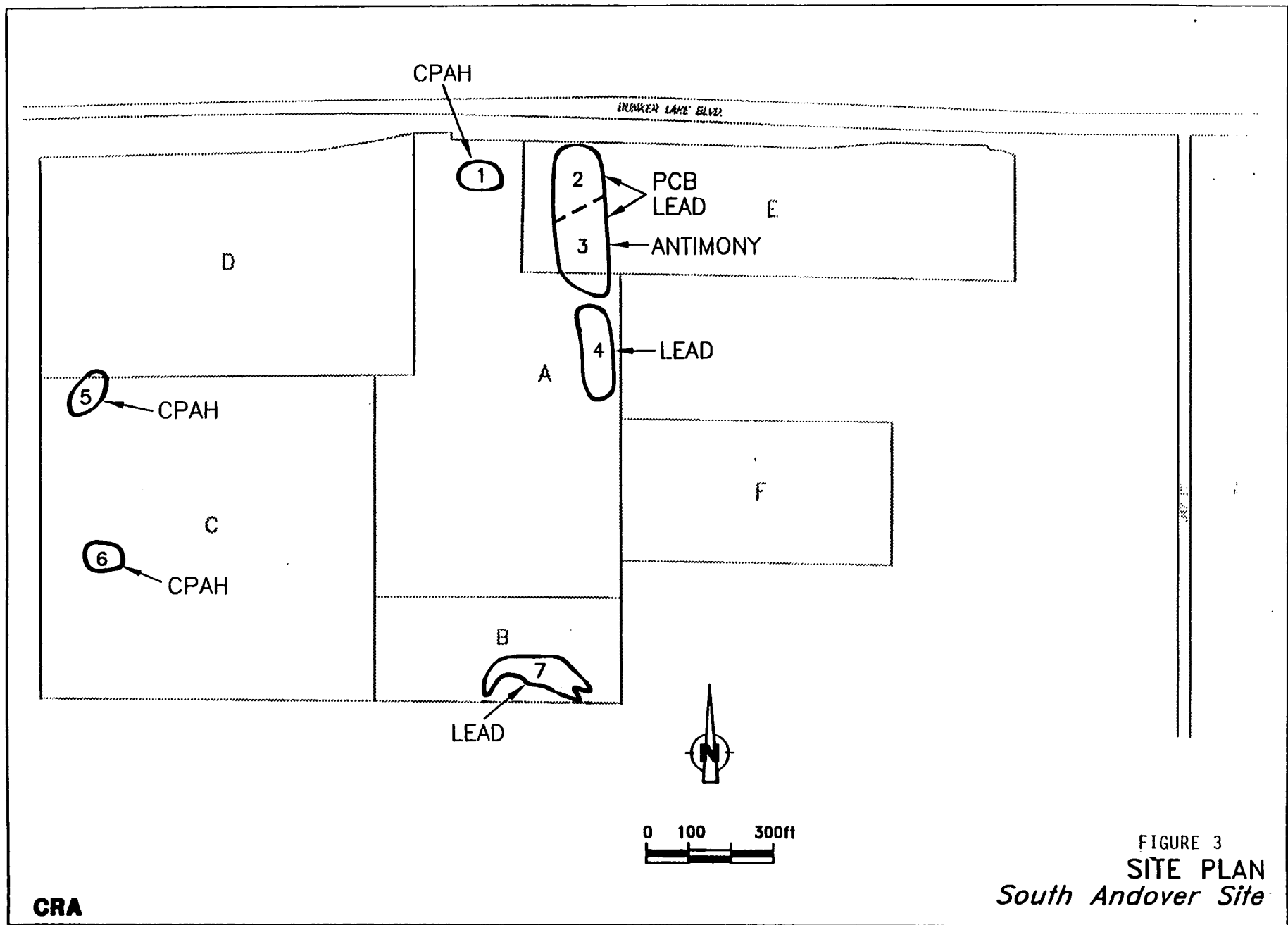
FIGURE 2-2

NOTE
1. The map was prepared from the 1:50,000 scale map of the South Andover Site, Massachusetts, published by the U.S. Geological Survey, 1964.
2. The map was prepared from the 1:50,000 scale map of the South Andover Site, Massachusetts, published by the U.S. Geological Survey, 1964.

LEGEND
1. SITE BOUNDARY
2. AREA A
3. AREA B
4. AREA C
5. AREA D
6. AREA E
7. AREA F

SCALE
0 100 200 300 400 500 600 700 800 900 1000
FOOT
CONTOUR INTERVAL: 5 FEET
SOURCE: U.S. GEOLOGICAL SURVEY

SOUTH ANDOVER SITE
NE 1/4 OF THE 36 1/4 SECTION 34
T36N R24E
MASSACHUSETTS



CRA

4769(L)-APR. 27/94-REV.0 (B-01)(MN)

