

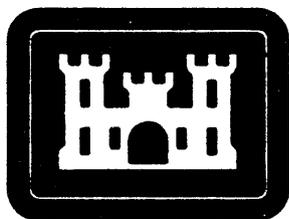
PIT Q-51 (NPL SITE)
OPERABLE UNIT TO B3001
PROPOSED PLAN
TINKER AIR FORCE BASE

OKLAHOMA CITY, OKLAHOMA



INSTALLATION RESTORATION PROGRAM
PROJECT NO. WWYK89-0310B
SITE IDENTIFICATION NO. TINKER-WP30

FINAL
MARCH 1990



US Army Corps
of Engineers

Tulsa District

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Proposed Plan

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PREPARED FOR:
ENVIRONMENTAL MANAGEMENT DIRECTORATE
DEPARTMENT OF THE AIR FORCE
HEADQUARTERS OKLAHOMA CITY AIR LOGISTICS CENTER

PREPARED BY:
U.S. ARMY CORPS OF ENGINEERS
TULSA DISTRICT

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MARCH 1990

PIT Q-51 PROPOSED PLAN

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PIT Q-51 PROPOSED PLAN

1.0 General. This Proposed Plan (Plan) is issued to describe the options for remediating Pit Q-51 (Q-51) located inside of Building 3001 at Tinker Air Force Base (TAFB), Oklahoma.

2.0 Introduction. Building 3001, located in the northeast portion of Tinker Air Force Base (TAFB), Oklahoma, houses a large industrial complex where aircraft and jet engines are serviced, repaired, and/or upgraded. The United States Environmental Protection Agency (EPA) has placed the Building 3001 site on the National Priorities List (NPL) of hazardous waste sites. Remedial investigations (RI) have been conducted at the site by the Tulsa District Corps of Engineers (COE) to define and characterize the sources, extent, and magnitude of the contamination (COE, 1988). The investigations are part of the Tinker AFB Installation Restoration Program (IRP). The investigations indicate that past activities within and in the vicinity of Building 3001 have resulted in contamination of the upper groundwater zones with industrial solvents, metals, and fuel products. The primary groundwater contaminants are trichloroethylene (TCE) and chromium (Cr) (predominantly hexavalent chromium (Cr⁺⁶)). A Feasibility Study (FS) (COE, 1989) was conducted in order to determine the appropriate action for remediating groundwater contamination at Building 3001. The Risk Assessment (COE, 1988) determined there was not any significant

short-term risk to human health and the environment. The long-term risk is minimal, however, remedial action is to be taken in order to insure that the operable unit will not pose any future risk.

The Environmental Protection Agency (EPA), Oklahoma State Department of Health (OSDH) and the U.S. Air Force (USAF) signed a Federal Facility Agreement (FFA) under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) in December 1988. The FFA addresses investigation, remediation, and documentation procedures for hazardous waste contamination at Building 3001 and Soldier Creek. It also specifies procedures for the separate operable units that have been identified at the Building 3001 site. Pit Q-51 (or Q-51) has been designated as an operable unit in the FFA. According to the agreement, the pit is to undergo a focused Remedial Investigation (RI) and Feasibility Study (FS). The Building 3001 RI (COE, 1988) discusses the remedial investigations at Q-51 in more detail.

This Plan is a summary of the cleanup alternatives that Tinker has considered for remediating Pit Q-51. It also presents and evaluates remedial alternatives preferred by TAFB, which is the owner of the site and the lead agency for Building 3001. The alternatives summarized in the Plan are described in the Focused Feasibility Study (FFS) report, (COE, 1989) for Q-51. The RI and FFS reports are included in the Administrative Record

and should be consulted for detailed information.

2.1 Purpose and Scope. Section 117(a) of CERCLA requires publication of a notice and brief analysis of a Proposed Plan for site remediation. The Plan also must be made available to the public. This Plan provides background information on the site, describes the alternatives being considered to remediate contaminated groundwater at the site, presents the rationale for identification of the preferred alternatives, and outlines the public's role in helping EPA make a final decision on a remedy.

2.2 Site Background. Tinker AFB is located in central Oklahoma, in the southeast portion of the Oklahoma City metropolitan area, in Oklahoma County, as shown on Figure 1 and Figure 2. The building houses an aircraft overhaul and modification facility to support the mission of the Oklahoma City Air Logistics Center. Pit Q-51 is located inside of Building 3001 at column-line Q-51 as shown in Figure 3. The pit is 20 feet long, 8 feet wide, and 10 feet in depth. The pit contains a sump area partially filled with liquid which is 3 feet wide, 3 feet long, and 2 feet in depth. The liquid is contaminated with TCE, cadmium (Cd), chromium (Cr), and lead (Pb).

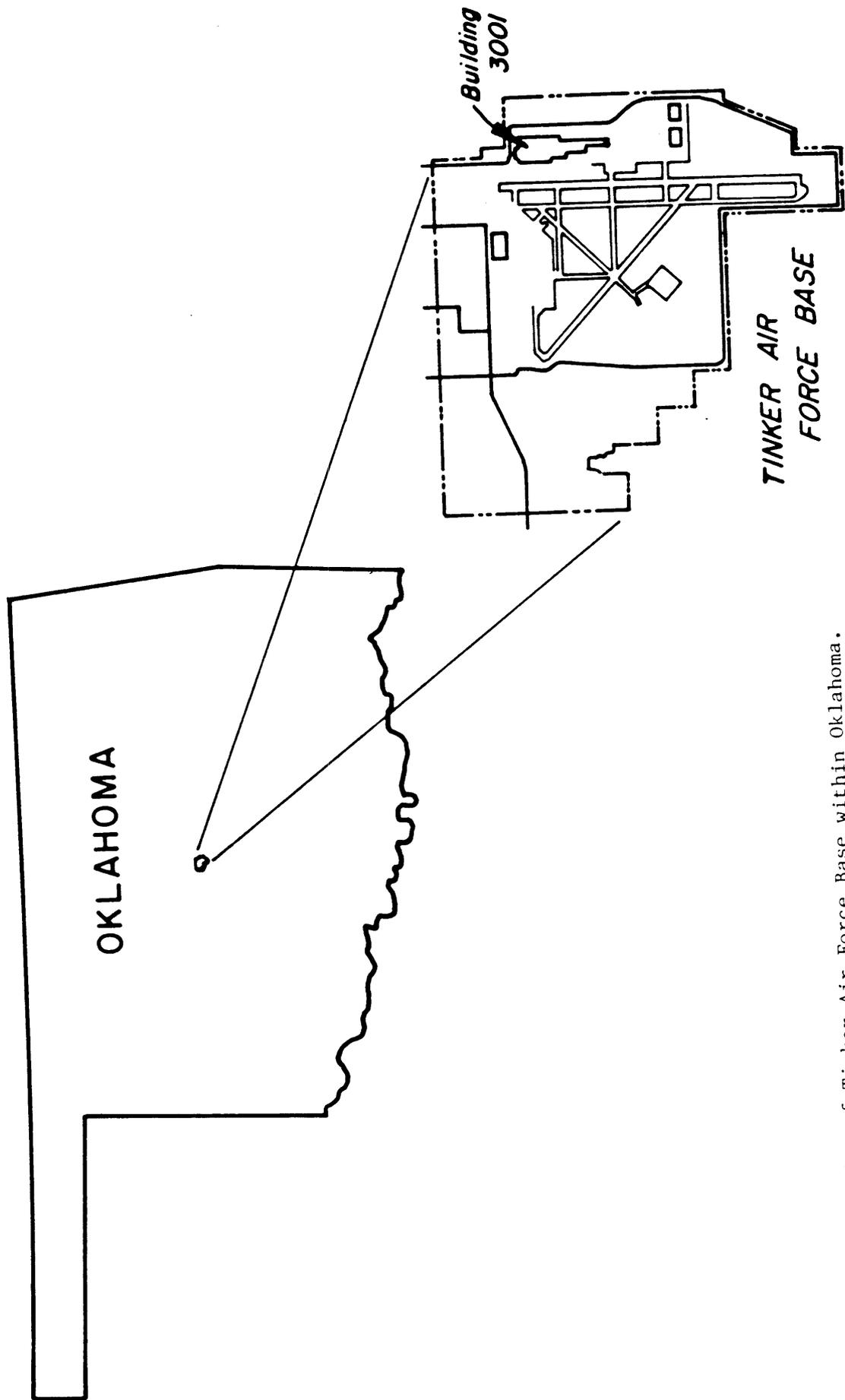


Figure 1 Location of Tinker Air Force Base within Oklahoma.

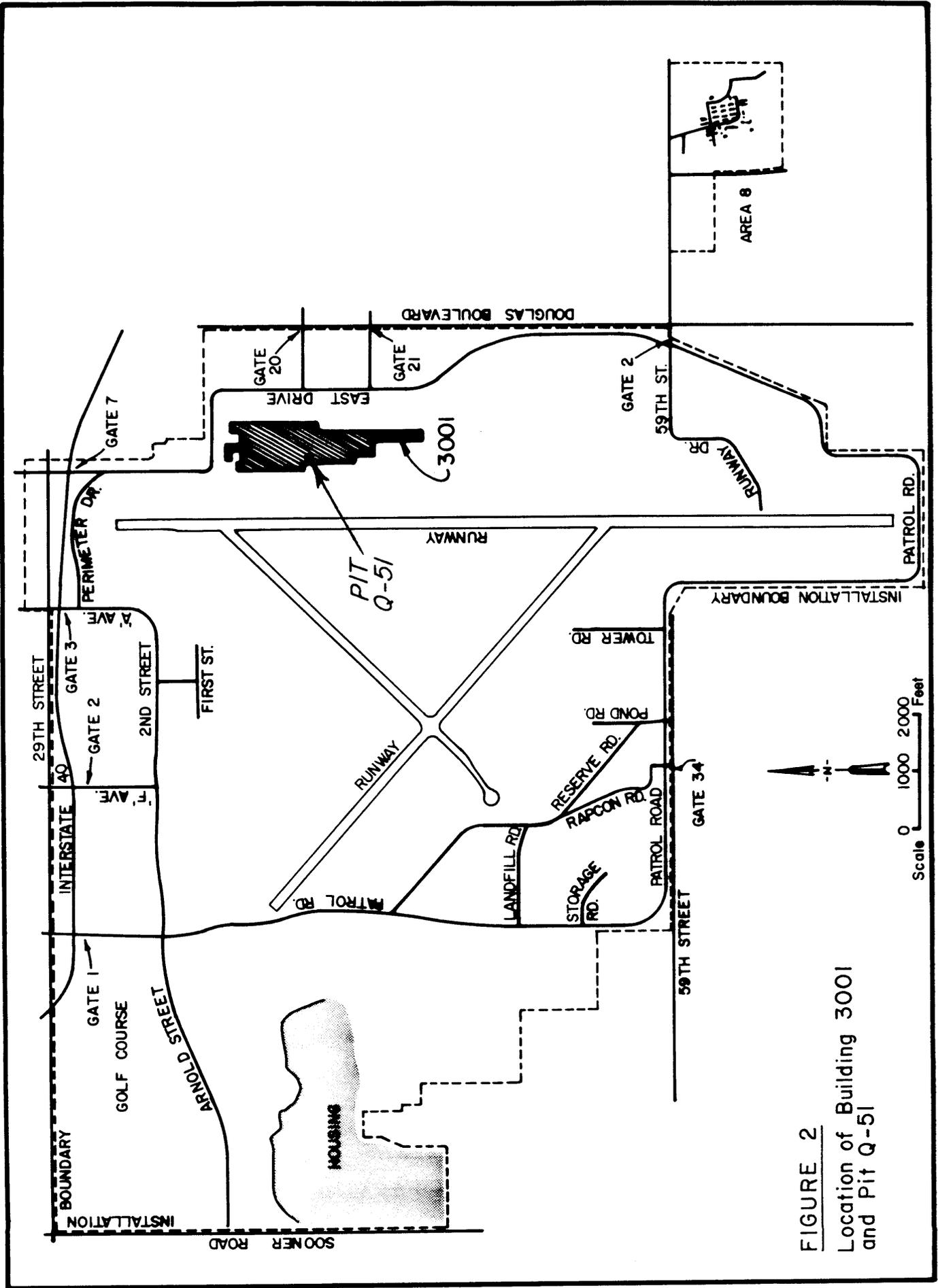
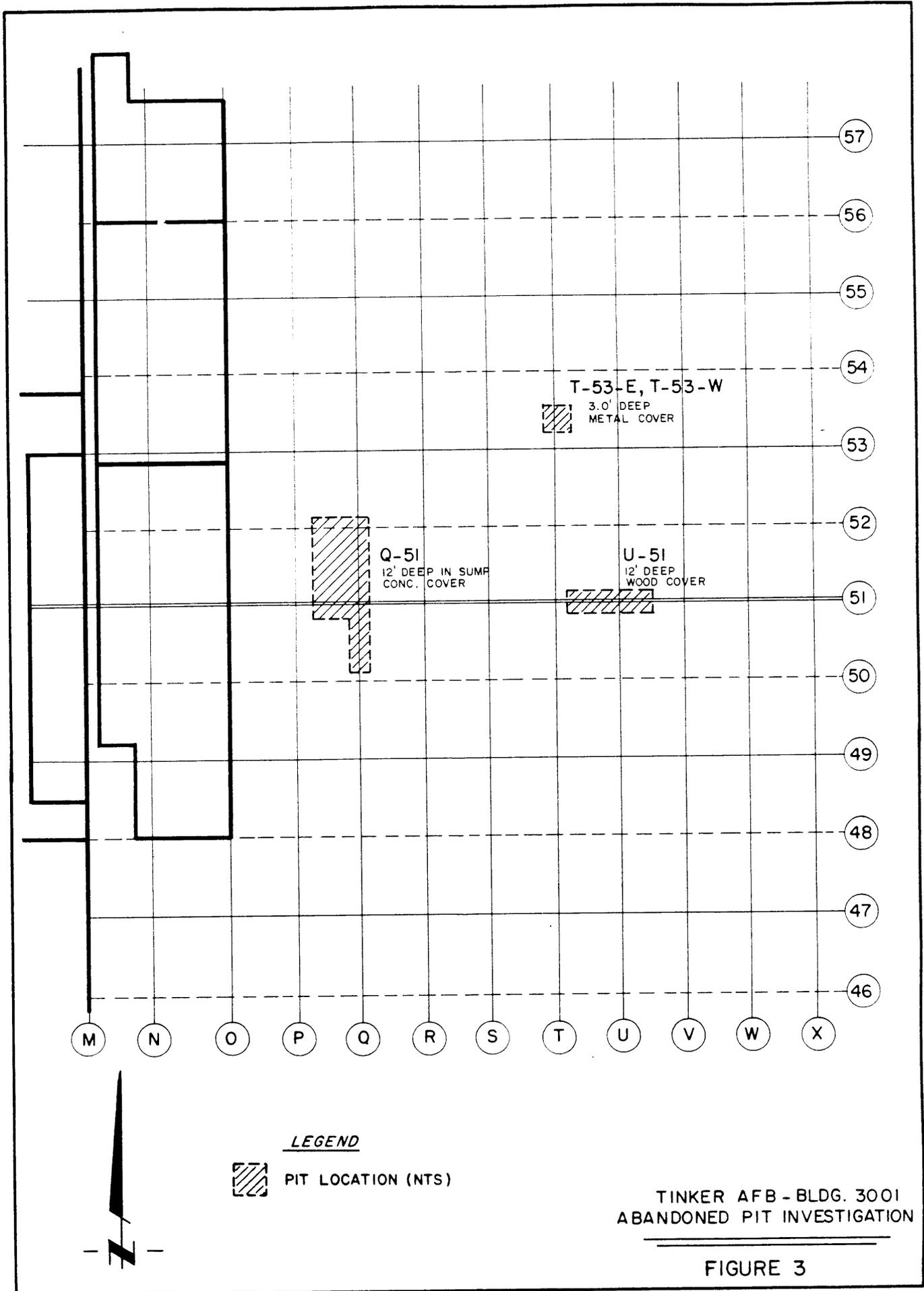


FIGURE 2
 Location of Building 3001
 and Pit Q-51



2.3 Site History. During the period from the 1940's to the 1970's, industrial solvents and wastewaters inside Building 3001 were contained in subsurface pits and trenches of steel-lined or concrete-lined construction. Leakage from some of the pits percolated into the soils and groundwater beneath Building 3001. In the early 1970's, solvent pits began to be replaced with aboveground tanks. Most of the subsurface pits were backfilled with sand and covered with a concrete or wood cap. Based on investigations of these abandoned pits conducted in 1985 in the north and in 1986 in the south portions of Building 3001, Q-51 was identified to contain hazardous contaminants.

2.4 Site Investigations

In June 1986, a sample was taken of the pit's contents. Results revealed that the concentrations of the contaminants were:

TCE - 42 parts per million (ppm)

Cd - 3 ppm

Cr - .4 ppm

Pb - 22 ppm

The Building 3001 RI Report (COE, 1988) provides further discussion of the pit investigations in Appendix D.

3.0 Scope and Role of Operable Unit or Response Action. Q-51

will be treated as a separate operable unit (OU).

The alternatives under consideration for cleaning up the contaminated groundwater at the site are presented in section 4.0. Among these is the alternative currently preferred for remediating the site. All of the remedies being considered are analyzed on pages 8 through 13. Pages 9 and 10 describe the alternatives in terms of technologies, processes, and cost, while pages 10-13 evaluate and compare the alternatives to EPA's nine evaluation criteria. The focused FS report present a more thorough description and evaluation of the alternatives.

Based on new information or public comment, TAFB, in consultation with EPA and OSDH may modify the preferred alternative or select another response action presented in this Plan and the Pit Q-51 focused FS report, (COE 1990). The public is encouraged to review and comment on all of the alternatives identified in this Plan. The RI/FS reports for Building 3001 should be consulted for more information on these alternatives.

4.0 Summary of Alternatives. The response action alternatives presented below are numbered to correspond with the numbers in the focused FS report. The alternatives for remediating the site are:

Alternative 1: No Action

Alternative 2: Removal of Pit Contents/Onbase Treatment

Alternative 3: Removal of Pit Contents/Offbase Treatment

5.0 Discussion of Detailed Alternatives

Alternative 1 - No-Action

Estimated Construction Cost: \$ 0.00
Estimated Annual Operation & Maintenance (O&M) Cost: \$ 0.00
Estimated Present Worth: \$ 0.00
Estimated Time to Implement: 0

The CERLA Program requires that the "No Action" alternative be considered at every site. Alternative 1 would require no action to be taken at the site.

Alternative 2 - Removal of Pit Contents/Onbase Treatment

Estimated Construction Cost: \$ 3662.00
Estimated Annual O&M Costs: \$ 0.00
Estimated Present Worth: \$ 3662.00
Estimated Time to Implement: 6 weeks (includes time for sampling analysis)

(All costs and implementation times are estimated)

Alternative 2 consists of removing approximately 45 gallons of liquid. The liquid would be placed in 55-gallon drum(s) and sampled for volatile and metals. The pit would be steam-cleaned and the washwater placed in 55-gallon drum(s). One sample would be taken from the contaminated material and washwater from the final rinse. The drums would be transported to an approved temporary storage area for no more than 90 days. After the

sample is analyzed to determine the concentration of TCE, Cd, Cr⁺⁶, and Pb, the contaminated material and washwater would be transported to the Industrial Waste Treatment Plant (IWTP) for treatment. The organic contaminants would be removed by volatilization, a metals precipitation process would extract heavy metals and an optional fine filtration process would be used to remove non-volatile organics to satisfy the stream discharge standards. The Building 3001 FS (COE, 1989) describes the IWTP process. The pit would be backfilled with sand and covered with an eight-inch concrete cap.

Alternative 3 - Removal of Pit Contents/Offbase Treatment

Estimated Construction Cost:	\$ 5200.00
Estimated Annual O&M costs:	\$ 0.00
Estimated Present Worth:	\$ 5200.00
Estimated Time to Implement:	6 weeks (includes time for sampling analysis)

Alternative 3 is identical to Alternative 2 with the exception of the method of disposal. This alternative requires that the contaminated material and washwater be transported offsite to a facility that is approved to receive CERCLA waste.

6.0 Evaluation of Alternatives. Alternative 3 is recommended for remediating Q-51. Based on current information this alternative provides the best site remediation. Alternative 3

would be a permanent remedy and would require no operation and maintenance. The National Contingency Plan (NCP) requires that the alternatives meet nine evaluation criteria. They are:

1. Overall Protection of Human Health and the Environment
2. Compliance with ARARs
3. Long-term Effectiveness and Permanence
4. Reduction of mobility, toxicity, or volume
5. Short-term Effectiveness
6. Implementability
7. Cost
8. State Acceptance
9. Community Acceptance

The Building 3001 Proposed Plan defines the nine evaluation criteria.

7.0 Evaluation of Nine-Point Criteria.

Overall Protection. Alternatives 2 and 3 would provide adequate protection of human health and the environment by eliminating, reducing, or controlling risk through treatment engineering controls, or institutional controls. The preferred alternative would properly abandon Q-51 and remove and dispose contaminated liquids from the pit to an approved disposal site.

Compliance with ARARs. Alternative 3 is the only alternative that would meet all of the Applicable or Appropriate

and Relevant Requirements (ARARs) of Federal and State laws. Alternative 2 would introduce CERCLA waste into a facility that is permitted to receive RCRA waste, thus creating comingling of the wastes. Comingling of the wastes would not be in compliance with environmental regulations.

Longterm Effectiveness and Performance. Alternative 1 would allow the migration of the contaminants into the groundwater beneath the building. Alternatives 2 and 3 would remove the contents of Q-51 and prevent any migration of contaminated material into the groundwater beneath Building 3001. The remedial action would be permanent and would require no maintenance.

Reduction of Mobility, Toxicity, or Volume. Alternatives 2 and 3 would reduce mobility and volume of the contaminated material. Alternative 2 would reduce toxicity of the material by treating it at the base IWTP. The treatment process is discussed in more detail in the Building 3001 FS report. Alternative 1 would not meet this criterion.

Short-term Effectiveness. Remediating the site using Alternatives 2 and 3 would pose no short-term effect to Tinker personnel or the environment.

Implementability. There would be no adverse site

conditions to affect the removal of the pit material or construction of the concrete cap. There are no site restrictions that would hinder equipment from reaching the site.

Cost. The construction cost for each of the alternatives is:

Alternative 1:	\$ 0.00
Alternative 2:	\$ 3662.00
Alternative 3:	\$ 5200.00

The construction cost for the preferred alternative is greater than the remainder of the alternatives. However, it utilizes the best technologies for obtaining the desired results.

State Acceptance. This criterion will be addressed in the Record of Decision (ROD) following the public comment period.

Community Acceptance. This criterion will be addressed in the Responsiveness Summary and attached to the Building 3001 Record of Decision (ROD) following the public comment period. The ROD will include the selected remedial action for Q-51.

8.0 The Preferred Alternative. Alternative 3 is recommended for remediating Q-51. Implementation of Alternative 2 requires the introduction of a CERCLA waste in to an RCRA regulated treatment facility. Treating waste at the IWTP could cause comingling of

RCRA and CERCLA waste. Thus, all of the sludges at the IWTP would have to be disposed of in a facility approved to receive CERCLA waste. This would increase costs significantly. Alternative 3 is permanent and no operation and maintenance would be required. The alternative would adequately protect human health and the environment.

The Q-51 remedy would remediate any contamination that could contribute to the groundwater beneath Building 3001. The remedy is not inconsistent with the Building 3001 final remedial action.

9.0 Glossary.

Specialized terms used in this Proposed Plan are defined below:

Applicable or Relevant and Appropriate Requirements (ARARs) - refers to the federal and state requirements that a remedy must attain.

Aquifer - a formation that contains saturated permeable material to yield significant quantities of water to wells and springs.

Building 3001 - shall mean the area underlying or adjacent to Building 3001 located on Tinker Air Force Base which has been contaminated by the migration of hazardous substances, pollutants, or contaminants which have been released from Building 3001.

Chromium - Found primarily in Tinker`s plating operations. Most of the chromium detected at Tinker was hexavalent. Hexavalent chromium is considered a greater health threat than any other chromium species.

Contaminants - any element, substance, compound, or mixture, including disease causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingesting through food chains will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions or physical deformation in such organisms or their offspring.

Feasibility Study (FS) - The FS involves the screening and detailed analysis of remedial action alternatives using data collected from the RI. The factors that are considered in screening and analyzing the alternatives are public health, economics, engineering practicality, environmental impacts and institutional issues.

Groundwater - water in a saturated zone or stratum beneath the surface of land or water.

Operable Unit - a discrete part of the entire response action

that decreases a release, threat of release, or pathway of exposure.

Pit Q-51 - the operable unit located inside of Building 3001 at column Q and row 51.

Remedial Investigation (RI) - The RI involves investigating and characterizing a site in order to define the extent and magnitude of contamination of site.

Site - shall mean Building 3001 and the areal extent of contamination areas in close proximity to Building 3001.

10.0 The Community's Role In The Selection Process.

Tinker AFB solicits input from the community on the cleanup methods proposed for this response action. Tinker has set a public comment period from March 19, 1990 to April 18, 1990 to encourage public participation in the selection process. The comment period includes a public meeting at which Tinker AFB will present the RI/FS reports and Proposed Plan, answer questions, and receive both oral and written comments.

The public meeting is scheduled at 7 p.m., Thursday, April 5, 1990 and will be held at the Midwest City Library.

If special assistance is needed because of physical limitations,

vision or hearing impairments, please contact Mr. Michael Johnson, Tinker Public Affairs Office, at (405) 739-2215 before April 5, 1990. Every effort will be made to ensure that all of the participants can be involved in the decision-making process.

Comments will be summarized and responses provided in the Responsiveness Summary section of the Record of Decision (ROD). The ROD is the document that presents Tinker's final selection for cleanup. The public can send written comments to or obtain further information from:

Sam Becker (6H-E)
Chief, Superfund Enforcement Branch
U.S. Environmental Protection Agency
Region VI
1445 Ross Ave.
Dallas, Texas 75202

Tinker AFB, EPA, and OSDH are soliciting public comments about the most acceptable way to clean up the Q-51 site. The Proposed Plan and the RI/FS reports have been placed in the Information Repositories and Administrative Record for the site at the address shown below. 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 Q-51 site. These documents are available for public review and copying at the following location:

Midwest City Library
8143 E. Reno
Midwest City, OK 73110

REFERENCES

1. U.S. Army Corps of Engineers, Tulsa District, Building 3001 Remedial Investigations, January 1988
2. U.S. Army Corps of Engineers, Tulsa District, Building 3001 Feasibility Study, August 1988
3. U.S. Army Corps of Engineers, Tulsa District, Building 3001 Risk Assessment, August 1988
4. U.S. Army Corps of Engineers, Tulsa District, Pit Q-51 Focused Feasibility Study, January 1990