

Site Review And Update

TABERNACLE DRUM DUMP

TABERNACLE TOWNSHIP, BURLINGTON COUNTY, NEW JERSEY

CERCLIS NO. NJD980761357

SEPTEMBER 29, 1993

REVISED

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia 30333

Site Review and Update: A Note of Explanation

The purpose of the Site Review and Update is to discuss the current status of a hazardous waste site and to identify future ATSDR activities planned for the site. The SRU is generally reserved to update activities for those sites for which public health assessments have been previously prepared (it is not intended to be an addendum to a public health assessment). The SRU, in conjunction with the ATSDR Site Ranking Scheme, will be used to determine relative priorities for future ATSDR public health actions.

REVISED SITE REVIEW AND UPDATE

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Prepared by:

**New Jersey Department of Health
Under Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry**

SUMMARY OF BACKGROUND AND HISTORY

The Tabernacle Drum Dump site originated on a wooded, one-acre parcel of undeveloped land located on Carranza Road in Tabernacle Township, Burlington County, New Jersey (Figure 1). The site is bordered to the northwest by farmland and to the south and east by residential properties. In a one-time dumping incident in the summer of 1976 or 1977, approximately 200 containers of solvents, paint, and paint sludges were deposited on a 2,000 square foot portion of the property (Figure 2). Land use in the area consists mainly of woodland, bogs, agriculture (including cranberry and blueberry farming).

In August 1982, the Burlington County Health Department (BCHD) conducted a site visit of Tabernacle Drum Dump in response to a referral from Tabernacle Township officials, discovering abandoned drums.

The New Jersey Department of Environmental Protection and Energy (NJDEPE) conducted a site investigation of the site in October 1982. Soil sampling detected carbon tetrachloride, benzene, toluene, ethylbenzene, xylenes, chromium, and lead at elevated levels.

In November 1982, the BCHD sampled private potable water wells in the area (approximately 25). Levels of contamination were measured below the drinking water standard at that time.

The site was placed on the National Priorities List (NPL) in 1984 by the U.S. Environmental Protection Agency (EPA). The USEPA issued, in February 1984, an Administrative Order (AO) to perform a surface cleanup of the site, to install monitoring wells, and to sample and analyze surface and subsurface soil.

In July 1984, one of the potentially responsible parties (PRPs) removed the containers, 40 yards of drummed materials, 8 truckloads of excavated soil, and approximately 3,000 gallons of liquid material.

In July 1985, the EPA conducted a Remedial Investigation (RI) at the Tabernacle Drum Dump Site. The Remedial Investigation and Feasibility Study was completed in June 1988.

The RI report identified contamination of soil and groundwater at the site. The contaminants of concern in groundwater were identified as cadmium, chromium, lead, 1,1,1-trichloroethane (TCA) and 1,1-dichloroethene (DCE). Subsequent to the RI, there has been additional residential well sampling in October 1989, June 1990, November 1990, and August 1991. An additional groundwater and soil investigation was conducted in 1991.

In May 1992, the Remedial Design Investigation Report for the Tabernacle Drum and Dump site was completed. The remediation system design was approved by the EPA in September 1992. In February 1993, the construction of the air stripper system was initiated. Start-up and testing is anticipated to occur in the fall of 1993.

The Agency for Toxic Substances and Disease Registry (ATSDR) completed a health assessment for the site in October 1988. The health assessment noted that contaminated groundwater and soil were the identifiable human exposure pathways associated with the site. Contaminants of concern at the site consisted of TCA, DCE, chromium, cadmium, and lead in the groundwater. It also concluded that there is a potential for future human exposure to contaminated ground and surface waters. The 1988 health assessment did not identify any current community health concerns. Residents had previously expressed concern about the impact of the site on their private potable well water. The ATSDR identified the following public health concerns in the 1988 health assessment:

1. The population at risk of exposure to the site are trespassers, remedial workers, and residents who live near the site.
2. If the site's groundwater remains unremediated, migration of the on-site groundwater contamination plume may result in residential well contamination with DCE and TCA at levels comparable to those currently present in the on-site groundwater.

In summary, the ATSDR categorized the site in 1988 as a potential public health concern because of the risk to human health resulting from possible exposure to hazardous substances at concentrations that may result in adverse health effects. Recommendations were made to conduct the following activities:

1. Continued monitoring of residential wells. The concentrations of metals, especially lead, should be monitored closely to determine if further increases occur.
2. Restriction of site access so that further exposure to lead and chromium is minimized.
3. Real time air monitoring during remedial activities on-site and at the worksite periphery. Adequate personal protective equipment to workers should be provided.
4. Institutional controls to prevent installation of new water supply wells within the contaminated portion of the aquifer.

CURRENT CONDITIONS OF SITE

On July 12, 1993, James Pasquale and N.P. Singh of the New Jersey Department of Health (NJDOH) visited the Tabernacle Drum Dump Site accompanied by a representative of the

Burlington County Health Department. The following observations were made and information obtained during the site visit:

1. The legal boundary of the site now extends onto Block 1402, Lot 5 from the original site of drum dumping Block 1202, Lot 22. The groundwater contaminant plume traveled from the original dump location to Block 1402, Lot 5. This location is approximately 2,600 feet downgradient to the former drum disposal/storage area.
2. The wooded area has been partially cleared for installation of an air stripper system. At the time of the site visit, the construction of the air stripping system was complete. The air stripper system was also fenced and posted with signs reading "No Trespassing" and "Hazardous Site".
3. Several groundwater extraction pumps were also seen at this location.

Conditions at the site, since the 1988 health assessment, have changed physically. The ground water plume is no longer beneath the original drum dump location. Contaminated soil from the original drum dump location was excavated and properly disposed of off-site.

Additional site data is now available , further characterizing the contamination at the site. Sampling of residential potable water wells was done in August 1991. The samples were analyzed for organic and inorganic compounds. Each organic compound detected in well water were below the Federal as well as New Jersey drinking water standards. Lead was detected in seven out of twenty two samples collected from residential well water, only one well showed contamination with lead above EPA's Action Level of 15 ug/L.

CURRENT ISSUES

Based on the RI and Remedial Design Investigation, site-related contamination is present in groundwater. Groundwater remains as the primary medium of concern because groundwater in the area is the only viable source of drinking water for the local community. About 25 residences are within one-half mile of the site. There are approximately 100 residences within a one-mile radius of the site.

Residential wells in the area have been monitored periodically for the presence of contaminants. The most recent residential well sampling was conducted on August 26 and 27, 1991. Twenty-two well water samples were collected from resident's homes and analyzed for organic and inorganic compounds. Based on the results of this well water sampling, human exposure to lead is occurring via ingestion of contaminated groundwater. However, it is not determined whether this lead contamination of well water is site-related.

Residents have expressed concern about the air stripping treatment method, the length of time required to clean-up the contaminated groundwater, and the impact of site remediation on the area.

CONCLUSIONS

1. Based on the Remedial Investigation, site-related contamination is present in groundwater.
2. In light of current site conditions, the former conclusion that was made, in the 1988 health assessment, regarding the site being of potential (indeterminate) public health concern (hazard) is valid because it cannot be determined if the ongoing lead exposure to contaminated residential well water is site-related.
3. Under present site conditions, no residential well is contaminated with TCA and DCE above health-based criteria. However, the TCA contamination plume is projected to reach the nearest residential well in 9 years. The construction of the air stripper system is complete and its operation is designed to prevent this from occurring.
4. The recommendation from the 1988 ATSDR health assessment calling for periodic monitoring of contaminant levels in the residential well water has been satisfied.
5. As recommended in the 1988 ATSDR health assessment site access is restricted.
6. As recommended in the 1988 ATSDR health assessment institutional controls do exist to prevent the installation of new water supply wells within the contaminated portion of the aquifer.

RECOMMENDATIONS

After a review of the most recent documents and the current site conditions for the Tabernacle Drum Dump, the ATSDR and the NJDOH have determined that, while no current human exposures to TCA and DCE are occurring at the present time, there is concern about exposure to the contaminated groundwater. At the Tabernacle Drum Dump site there is a potential for direct ingestion of contaminated water through potable wells that may become contaminated in the future. It is therefore recommended that monitoring of the private residential wells continue and the pumping of contaminated groundwater continue.

Previous evaluations by the ATSDR and the NJDOH have determined that past exposures via ingestion of lead contaminated well water to the residents have occurred. The most recent residential well water sampling results have also indicated the presence of lead at levels above

EPA's action level of 15ug/L. However, it has not been determined whether it is site-related. ATSDR and NJDOH is recommending a health consultation to evaluate the ongoing lead exposure via ingestion of contaminated residential well water.

New environmental, toxicological, health outcome data, or changes in conditions as a result of implementing the proposed remedial plan, may determine the need for additional actions at Tabernacle Drum Dump site.

Except for the ongoing lead exposure, through the use of contaminated residential well water, remedial activities specified in the ROD, when implemented, are sufficient to address remaining concerns of the ATSDR, the NJDOH, and the community regarding the site and are consistent with protection of the public health.

The data and information developed in the Site Review and Update have been evaluated to determine if follow-up actions may be indicated. Further site evaluation is needed to determine follow-up actions.

DOCUMENTS REVIEWED

1. **Tabernacle Drum Dump Residential Well Sampling Report, Tabernacle Township, Burlington County, New Jersey. USEPA. June 1992.**
2. **Waste Technology, Inc., Remedial Design Investigation Report for the Tabernacle Drum Dump Site, Tabernacle Township, Burlington County, New Jersey. May 1992.**
3. **Health Assessment for the Tabernacle Drum Dump Site, Tabernacle Township, Burlington County, New Jersey. ATSDR. October 1988.**
4. **Record of Decision, Tabernacle Drum Dump Site, Tabernacle Township, Burlington County, New Jersey. USEPA. June 30, 1988.**
5. **CDM, Inc., Draft Remedial Investigation Report for the Tabernacle Drum Dump Site, Tabernacle Township, Burlington County, New Jersey. May 1987.**

INTERVIEWS/PERSONAL COMMUNICATIONS:

1. **Emergency & Remedial Response Division/USEPA:
Remedial Project Manager**
2. **Site Remediation Program/NJDEPE:
Site Manager.**
3. **Environmental Services/Burlington County Health Department:
Environmental Specialist.**

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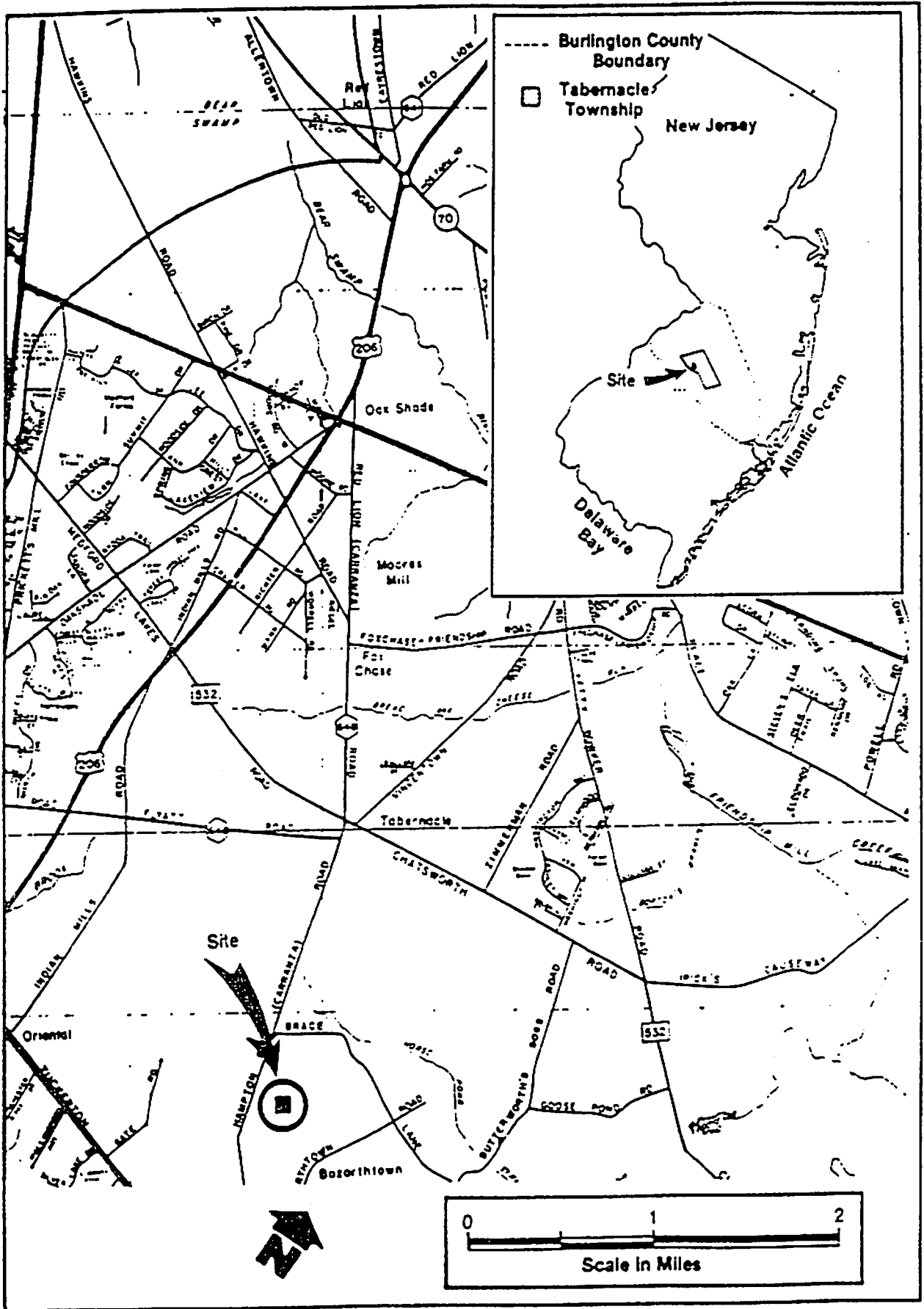


FIGURE 1 SITE LOCATION MAP- TABERNAACLE DRUM DUMP SITE

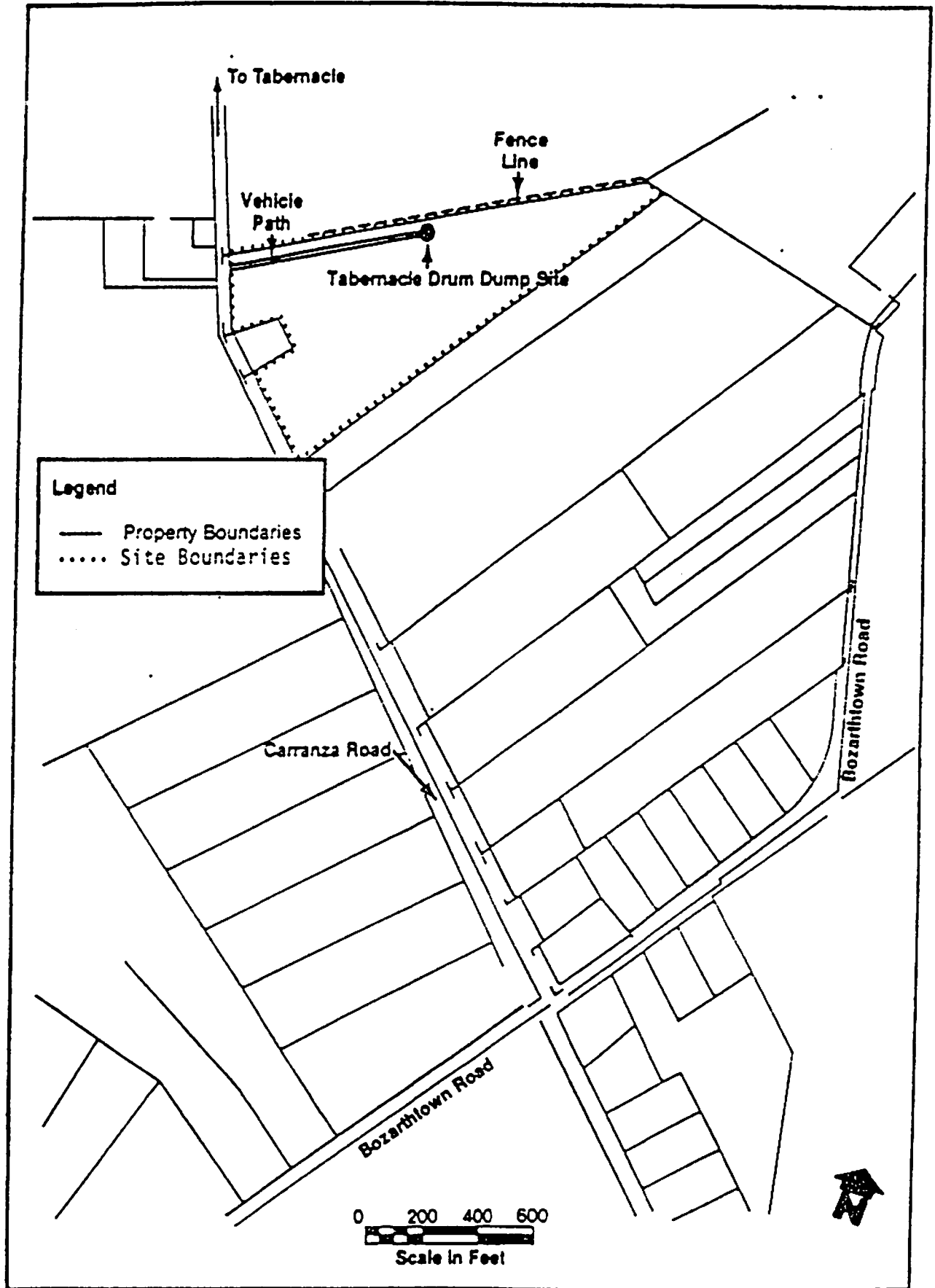


FIGURE 2 LOCATION OF TABERNAACLE DRUM DUMP SITE